NARRABRI MINE

2016 ANNUAL REVIEW

WHITEHAVEN COAL

Table 1: Annual Review Title Block

Name of Operation	Narrabri Mine
Name of Operator	Narrabri Coal Operations Pty Ltd
Development consent / Project Approval #	Project Approval 08_0144
Name of holder of development consent/project approval	Narrabri Coal Operations Pty Ltd
Mining lease #	ML 1609
Name of holder of mining lease	Narrabri Coal Pty Ltd
Water Licence #	Refer to Water Licences in Table 2
Name of holder of water licence	Narrabri Coal Pty Ltd, POSCO Daewoo International Narrabri Investment Pty Ltd, EDF Trading Australia Pty Ltd, J-Power Australia Pty Ltd, Kores Narrabri Pty Ltd and Upper Horn Investments (Australia) Pty Ltd
MOP/RMP start date[1]	11 August 2011
MOP/RMP end date	30 November 2017
Annual Review Commencement Date	1 April 2016
Annual Review Completion Date	31 December 2016

I, Steve Bow, certify that this audit report is a true and accurate record of the compliance status of the Narrabri Mine for the period 1st April 2016 to 31st December 2016, and that I am authorised to make this statement on behalf of Narrabri Coal Operations Pty Ltd.

Note.

a) The Annual Review is an 'environmental audit' for the purposes of section 122B (2) of the Environmental Planning and Assessment Act 1979. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.

b) The Crimes Act 1900 contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or $22,000, or both).

Name of Authorised Reporting Officer	**Steve Bow**
Title of Authorised Reporting Officer	**General Manager – Narrabri Mine**
Signature	
Date	29-6-17

[1]NSW Annual Review Guideline was released in October 2015

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1 STATEMENT OF COMPLIANCE

This Annual Review has been prepared to provide a summary of the environmental performance of the Narrabri Mine over the reporting period, i.e. 1 April 2016 to 31 December 2016. The compliance status of the mine against relevant approvals was assessed as at the end of the reporting period and is summarised in Table 2. References to the mine's Environment Protection Licence (EPL) 12789 are limited to those that relate to the Project Approval, specifically: Schedule 4, Conditions 10 and 11 and Schedule 6, Condition 7(c).

Table 2: Statement of Compliance

Where all the conditions of the relevant approvals complied with?	Yes/No
Project Approval (PA) 08_0144	No
Mining Operations Plan (MOP)	Yes
Mining Lease (ML) 1609	Yes
Environment Protection Licence (EPL) 12789	Yes
Exploration Licence (EL) 6243	Yes
Subsidence Management Plan (SMP) Approval 10/9000	Yes
90CA811347	Yes
90WA812891	Yes
90CA802130	Yes
90WA822539	Yes
WAL15922	Yes
WAL12833	Yes
WAL20131	Yes
WAL6762	Yes
WAL2671	Yes
WAL2728	Yes
WAL20152	Yes
WAL29549	Yes
Groundwater Monitoring Bores: 90BL254481-487, 90BL254658-663, 90BL254701, 90BL254958-967, 90BL255167-173, 90BL255216-218, 90BL255769-772, 90BL256060-064, 90BL256344 and 90BL256346	Yes

Any non-compliance during the reporting period are ranked according to the compliance status key in Table 3 and are detailed in Table 4. Section 11 provides further details of any non-compliance and actions undertaken or proposed for the following reporting period to prevent re-occurrence and mitigate any potential adverse effects.

Table 3: Compliance Status Key

Risk Level	Colour Code	Description
High	Non-Compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-Compliant	Non-compliance with: • potential for serious environmental consequences, but is unlikely to occur; or • potential for moderate environmental consequences, but is likely to occur
Low	Non-Compliant	Non-compliance with: • potential for moderate environmental consequences, but is unlikely to occur; or • potential for low environmental consequences, but is likely to occur
Administrative non-compliance	Non-Compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)

Table 4: Non-Compliances

Relevant Approval	Cond. #	Condition Description (Summary)	Compliance Status	Comment	Where addressed in Annual Review
PA 08_0144	Schedule 3, Condition 4	Extraction Plan – Biodiversity Management Plan (EP-BMP) – which has been prepared in consultation with OEH and DRE, which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on flora and fauna	Non-Compliant	An increase of 10% or more in change in floristic composition occurred at Plot 16 which is affected by ponding. Supplementary planting may be required.	Section 6.5.2 & 11
	Schedule 3, Condition 4	Extraction Plan – Biodiversity Management Plan (EP-BMP) – which has been prepared in consultation with OEH and DRE, which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on flora and fauna	Non-Compliant	An increase of 10% or more in weed cover was recorded at Plot 13. A combination of disturbance and heavy rainfall may have provided good conditions for weeds to germinate.	Section 6.5.2 & 11
	Schedule 3, Condition 4	Extraction Plan – Biodiversity Management Plan (EP-BMP) – which has been prepared in consultation with OEH and DRE, which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings on flora and fauna	Non-Compliant	Woodland monitoring plots MW1, MW2, MW3 and MW5 exceeded performance criteria in autumn, with a reduction in species diversity between 2015 and 2016. MW2 and MW5 also saw a reduction in species abundance. MW1 also exceeded performance criteria for species diversity in spring. Creekline monitoring plot MC2 exceeded the performance criteria in species number and abundance in winter.	Section 6.5.2 & 11
	Schedule 3, Condition 4	Extraction Plan – Land Management Plan (EP-LMP) – which has been prepared in consultation with OEH and DRE, which provides for the management of the potential impacts and/or environmental consequences of the proposed second workings upon land in general.	Non-Compliant	An increase of 10% or more in weed cover was recorded at monitoring plots in the pillar zones above LW102 and LW105. A combination of disturbance and heavy rainfall may have provided good conditions for weeds to germinate.	Section 6.5.2 & 11
	Schedule 4, Condition 1	The Proponent shall ensure that the noise generated by the project does not exceed the noise criteria in Table 1.	Non-compliant	One noise exceedance was recorded during the reporting period. The relevant Government agencies were notified at the time as required by the NMP.	Sections 6.1 & 11
	Schedule 5, Condition 4	LMP – a detailed description of how the performance of the rehabilitation works would be monitored over time to achieve the stated objectives and against the relevant performance and completion criteria; and	Non-compliant	LMP states: “The Wild Dog is the only feral animal species that requires control across the site. The number of baits placed, the number of baits taken and any dead animals observed will be recorded. This will be undertaken for each baiting period as recommended by the local LHPA officer. This will be undertaken for the duration of the mining lease.”	Sections 6.5 & 11

Relevant Approval	Cond. #	Condition Description (Summary)	Compliance Status	Comment	Where addressed in Annual Review
				While feral animal control has occurred, wild dogs were not included as the most prolific feral animal onsite is the feral pig.	
	Schedule 5, Condition 6	Biodiversity Offset Strategy (BOS) – provide a detailed assessment of offset proposal/s involving the property/ies (agreed to by OEH) adjoining Mt Kaputar National Park to confirm the ability of either of these property/ies to meet "like for like or better" and "maintain or improve" conservation outcomes;	Non-compliant	The BOS requires a Vertebrate Pest Management Program (VPMP) to be developed. While feral animal control has been undertaken a formal VPMP has not been developed in consultation with surrounding landholders.	Sections 6.5 & 11

2 INTRODUCTION

This is the tenth Annual Review produced for the Narrabri Mine (Figure 1) and has been prepared in accordance with the NSW Department of Planning and Environment's (DP&E) Integrated Mining Policy – Annual Review Guideline, October 2015. This document has been prepared to satisfy the following requirements:

- the Annual Review requirements of the DP&E under Project Approval (PA) 08_0144 (Schedule 6, Condition 6);
- Environmental Management Report requirements of the Division of Resources & Energy (DRE) under the Narrabri Mine Mining Lease (ML) 1609; and
- the routine reporting expectations of DPI-Water.

Though primarily covering the period from 1 April 2016 to 31 December 2016 (the reporting period), where relevant the Annual Review provides information on historical aspects of the Narrabri Mine, longer term trends in environmental monitoring results and provides relevant information on activities to be undertaken during the ensuing reporting period, or beyond.

During the reporting period Modification 6 to PA 08_0144 was approved which allowed the mine to modify its reporting timeframes to align to a calendar year. As such, this report covers the period from 1 April 2016 to 31 December 2016 with the first full calendar year report to be prepared for 2017.

2.1 MINE CONTACTS

The key personnel responsible for operational and environmental management at the Narrabri Mine during the reporting period include:

- Steve Bow – General Manager, retains overall responsibility for all activities and performance at the mine. Contact: (02) 6794 4755.

- Gerald Linde – Mine Manager, retains statutory and mine management responsibility for all operational activities and safety performance at the mine. Contact: (02) 6794 4755.

- Owen Salisbury – Technical Services Manager, retains responsibility for technical aspects of the operation. Contact (02) 6794 4755.

- Steve Farrar – Environmental Superintendent, oversees day to day environmental performance across the site. Contact: (02) 6794 4755.

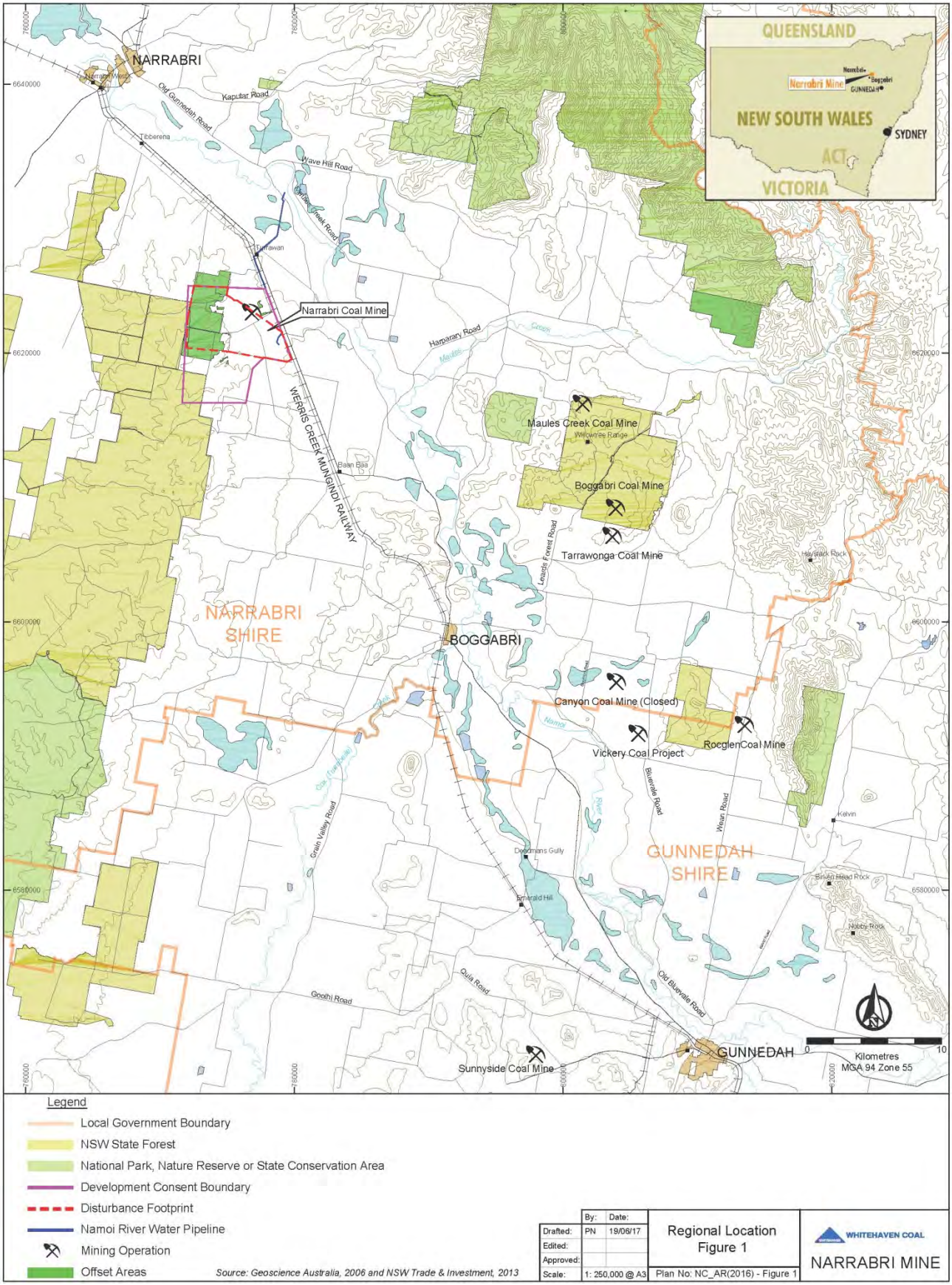


Figure 1: Project Locality Plan

3 APPROVALS

Table 5 provides a summary of the key licences, leases and approvals that have been obtained for the Narrabri Mine to enable the construction and operation of the mine.

Table 5: Licences, Leases and Approvals

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry	Comments
Division of Resources and Energy (DRE)	EL 6243	18 February 2015	20 May 2019	Approval for exploration. Renewed in 2015
Minister for Planning	PA 05_0102	13 November 2007	18 January 2029	PA for Stage 1. Surrender of the Stage 1 PA approved on 2 August 2011
DRE	ML 1609	18 January 2008	18 January 2029	Approval for mining
Environment Protection Authority (EPA)	Environment Protection Licence (EPL) 12789	20 February 2008	Nil – Anniversary date: 20 February	For mining operation >5,000,000 T (handled and produced)
Narrabri Shire Council (NSC)	Construction Certificate DP 816020 Inspection Report/Permit to Occupy No 2413	17 October 2008 6 August 2009	N/A	Stage 1 Mine Surface Facilities
DPI-Water	90CA811347 / WAL15922 90WA812891 / WAL20131 90AL807276 / WAL12833 90CA802130 / WAL6762 90CA802130 / WAL2671 90CA802130 / WAL2728 90CA802130 / WAL20152 90BL254679 / WA822539 90WA822539 90BL254481 - 90BL254487 90BL254658 - 90BL254663 90BL254701 90BL254958 - 90BL254967 90BL255167 - 90BL255173 90BL255216 - 90BL255218 90BL255769 – 90BL255772 90BL256060 – 90BL256064 90BL256289 90BL256293 90BL256344 90BL256346	Various	Various	GAB – Water supply (248ML) GW – Water supply (150ML) GW – Water supply (67ML) River – High Security (20ML) River (48ML) River (10ML) River (600ML) Mining (Low Security) (818ML) Mine De-gassing/De-Watering Groundwater Monitoring Purposes
Minister for Planning	PA 05_0102 MOD1	26 March 2010	18 January 2029	Notice of modification under Section 75W of the EP&A Act. PA surrendered, refer above.
Minister for Planning	PA 08_0144	26 July 2010	26 July 2031	PA for Stage 2

Issuing / Responsible Authority	Type of Lease, Licence, Approval	Date of Issue	Expiry	Comments
WorkCover NSW	Notification for explosives use and storage	5 August 2010	20 July 2020	Licence Number – XSTR100215
Narrabri Shire Council (NSC)	Construction Certificate DP 816020	23 September 2010	N/A	Stage 2 Mine Surface Facilities
Minister for Planning	PA 08_0144 MOD1	30 March 2011	26 July 2031	Notice of modification under Section 75W of the EP&A Act to update the subsidence management conditions.
	PA 08_0144 MOD2	21 December 2011	26 July 2031	Notice of modification under Section 75W of the EP&A Act to allow for a one-off road transport of coal to Tarrawonga Coal Mine.
	PA 08_0144 MOD4	22 September 2015	26 July 2031	Notice of modification under Section 75W of the EP&A Act for an expansion of the coal stockpiles.
	PA 08_0144 MOD5	9 December 2015	26 July 2031	Notice of modification under Section 75W of the EP&A Act to widen the longwall face and increase the annual production limit.
	PA 08_0144 MOD6	13 January 2017	26 July 2031	Notice of modification under Section 75W of the EP&A Act to vary the annual reporting timeframe.
DRE	MOP 2011-2017 Amendment C	11 August 2011	30 November 2017	Details mining and rehabilitation activities during the applicable period.

4 OPERATIONS SUMMARY

4.1 EXPLORATION ACTIVITIES

Exploration drilling was undertaken during the reporting period to further assist production planning and assess coal reserves within ML 1609/EL 6243. One exploration hole was completed during the reporting period.

4.2 CONSTRUCTION

During the reporting period an extension to the sites 66kV power line and clearing for the second ventilation shaft was completed. The installation of the second ventilation shaft is planned for completion during the 2017 reporting period.

4.3 MINING OPERATIONS

During the reporting period development extended into the main gate (MG) of longwall panel (LW) 108 and the mains. The longwall unit has previously extracted LW101 to LW105. At the end of the reporting period the longwall unit was extracting LW106.

Table 6 presents the production summary for the previous and current reporting periods and the anticipated production schedule for the next reporting period.

Table 6: Production Summary

Material	Approved limit	Previous reporting period (actual)	This reporting period (actual)*	Next Reporting period (forecast)
Waste Rock / Overburden	657,000 m^3 (2010 MOP, Table 3.8)	657,000	0	0
ROM Coal**	11 Million Tonnes CY (PA 08_0144 Sch. 2, Cond.6) > 5 Million Tonnes produced (EPL 12789)	8.19	5.59	8.8
Reject Material	N/A (Million Tonnes)	0.14	0.20	0.17
Saleable Product	> 5 Million Tonnes handled (EPL 12789)	8.03	5.44	7.8

* - Reporting period covers nine months from 1 April 2016 to 31 December 2016.
** - ROM Coal is total production at the mine site. The difference between ROM Coal and final product is related to changes in stockpile volumes at the mine.

4.4 OTHER OPERATIONS

4.4.1 Hours of Operation

The approved hours of operation are provided in Table 7.

Table 7: Hours of Operation

Activity	Hours / Days
Mining Operations	
Pit Bottom Area development	24 hours / 7 days
Underground mining	24 hours / 7 days
Gas drainage	24 hours / 7 days
Ventilation fan operation	24 hours / 7 days
Coal processing and handling	24 hours / 7 days
Rail loading and transportation	24 hours / 7 days

Activity	Hours / Days
Surface maintenance	24 hours / 7 days
CHPP reject disposal	24 hours / 7 days[1]
Raw materials / supply delivery	7:00am to 10:00pm / 7 days
1: Reject disposal activities will generally be restricted to 7:00am to 10:00pm, 7 days per week. However, it is possible that the proportion of reject material generated by the CHPP may exceed the predicted average 5% level for short periods. To account for these periods of elevated reject production, contingent hours of operation will be 24 hours / 7 days (when inversion conditions do not prevail).	

4.5 NEXT REPORTING PERIOD

4.5.1 Exploration

Exploration drilling will continue to be undertaken at the Narrabri Mine to further assess the coal reserves within the tenements. The focus of the ongoing exploration drilling is planned to include:

- An additional 39 exploration boreholes and two seismic lines to:
  - further investigate the JORC resource status within ML 1609;
  - further exploration within EL 6243; and
  - further delineation of outlying coal prospective areas.

Further details of the proposed drilling program are provided in the MOP.

4.5.2 Remaining Construction Activities

The construction of the second ventilation shaft will be completed during the next reporting period.

4.5.3 Mine Operations

The mine production rate for the next reporting period will be slightly higher than this year as there is only one longwall move planned during the period. The mine is planning to produce 8.8 Mt of ROM coal and approximately 0.17 Mt of coarse reject material during the next reporting period.

Vegetation clearing activities in mining areas over the next reporting period will be conducted in accordance with the MOP.

4.5.4 Mining Fleet Upgrades

During the next reporting period the mine will commence mining the 400m wide longwall panels. This will not require any additional infrastructure to be constructed at the mine. The mine will also add an additional continuous miner and associated equipment to the fleet to assist with equipment maintenance and development float.

5 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

The 2015-2016 Annual Review and subsequent regulatory site inspection identified the following actions. These are addressed within this document and also summarised in Table 8.

Table 8: Actions from the Previous Annual Review (2015-2016)

Action required from Previous Annual Review	Requested By	Action Taken by the Operator	Where discussed in Annual Review
Report on ponding above Longwall Panel 101 ('LW101') and Panel 104 ('LW104'), including the outcome of discussions with the NSW Office of Environment and Heritage.	DRE	Included in this AR.	Section 6.12
Seeding should be undertaken at the first available opportunity.	DRE	Included in this AR	Section 6.12
Rehabilitation of subsidence induced cracking in areas not easily accessible.	DRE	No areas undermined to date are not readily accessible	N/A
The Department accepts the proposed action plan (Table 23) to address these non-compliances. Please provide a status report is by 31 August 2016.	DP&E	Update provided 31 August 2016.	Complete
Please provide a schedule detailing the management plans and the estimated submission dates by 31 August 2016.	DP&E	Update provided 31 August 2016	Complete
Please provide detail of compensatory water supply for the reporting period. If this condition has not been triggered, please confirm this in the Annual Review.	DP&E	This condition is not yet triggered	N/A

6 ENVIRONMENTAL PERFORMANCE

The following sub-sections report on the environmental performance achieved during the reporting period and provides a summary of the environmental monitoring data compared to data predictions, trends and management measures. Environmental monitoring locations are illustrated on Figure 2.

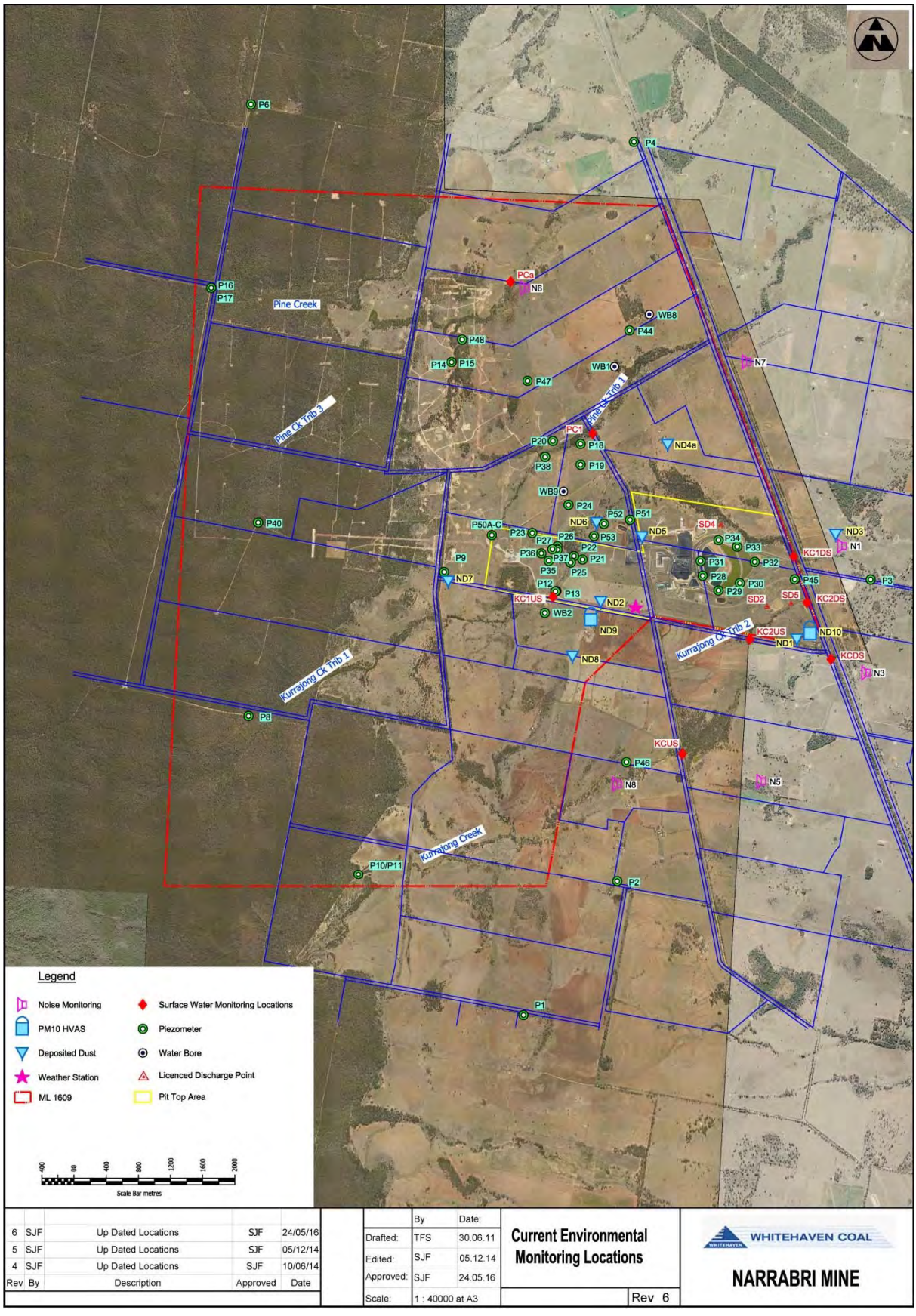


Figure 2: Current Environmental Monitoring Locations

6.1 NOISE

6.1.1 Environmental Management

Potential noise impacts associated with the Narrabri Mine are managed in accordance with the:

- Noise Criteria and Operating Conditions prescribed under Schedule 4, Conditions 1 to 5 of PA 08_0144;
- EPL 12789 Conditions L3, M7, R4 and E2; and
- the Narrabri Mine Noise Management Plan (NMP) approved by DP&E prepared to satisfy the requirements of PA 08_0144.

During the reporting period various controls were implemented to manage noise including:

- Prior to being brought onto site, or upon commissioning, all additional plant and equipment is required to exhibit sound power levels consistent with those levels specified in the Noise Management Plan (NMP);
- High frequency reversing alarms are not permitted on any equipment brought onto site. Rather, all reversing alarms should be of the broadband frequency type;
- Ensure specific noise attenuation is provided to surface drills when operating over LW1 to LW3 and LW124 to LW126 to achieve a sound power level of 109dB(A);
- The approved hours of operation are adhered to;
- Site personnel are required to pay due attention to site weather conditions and modify or stand down from operational activities if directed by mine management; and
- Monitoring of emitted noise levels is undertaken during mining operations to verify compliance with noise criteria and to assess the need, if any, for additional noise attenuation measures.

The Narrabri Mine noise monitoring network is illustrated on Figure 2 and includes:

- Continuous monitoring at three real-time monitoring units for management purposes; and
- Quarterly attended monitoring at three locations as described in the EPL (N5, N6 and N7) and monthly attended monitoring during winter at six locations as described in the NMP (N1, N3, N5, N6, N7 and N8).

6.1.2 Environmental Performance

Attended Monitoring

The NMP details the requirements for attended and real-time noise monitoring as described above. Attended noise monitoring sites are identified on Figure 2. Attended monitoring is completed by an independent consultant and is used to assess compliance with licence and approval limits for mine contributed noise. A summary of the noise monitoring results is outlined in Table 9 and Table 10 with additional details provided where results were recorded above the criteria at privately-owned residences where a private agreement is not in place.

Table 9: EPL Noise Monitoring Summary

Site (see Figure 2)	Mod. 5 Max. EA Predicted Levels (dB(A))	Criteria ($L_{Aeq(15\ minute)}$), dB(A))	Quarter 1 (Mine Contribution, dB(A))	Quarter 2 (Mine Contribution, dB(A))	Quarter 3 (Mine Contribution, dB(A))
N2	35	35	Inaudible	24	33
N5	31	35	33	**43**	33
N6	<30	35	21	33	33
N7	36	35	28	33	23
N8	35	35	26	Inaudible	32

Table 10: NMP Winter Months Noise Monitoring Summary

Site (see Figure 2)	Mod. 5 Max. EA Predicted Levels (dB(A))	Criteria ($L_{Aeq(15\ minute)}$), dB(A))	May 2016 (Mine Contribution, dB(A))	July 2016 (Mine Contribution, dB(A))	August 2016 (Mine Contribution, dB(A))
N2	35	35	<20	32	<20
N5	31	35	24	33	33
N6	<30	35	29	31	26
N7	36	35	33	32	24
N8	35	35	<20	29	29

On the 28th September 2016 there was an 8 dB exceedance of the $L_{Aeq(15minute)}$ criterion at monitoring location N5. An investigation indicated that mine hum and dozer tracks were the source of the mining related noise. The Narrabri Mine weather station indicated no inversion was present at the time (required by the mine's EPL to determine inversion conditions) however the noise consultants inversion monitoring (approved in the NMP) and the site's inversion tower both indicated an inversion was present meaning the exceedance was measured under non-complaint meteorological conditions. It should be noted that the mine has commenced negotiations for acquisition of the property.

The one exceedance recorded during the reporting period is below the four exceedances recorded during the previous reporting period. This indicates the success of the implementation of the noise management measures and the continued acquisition of properties close to the mine, also refer to Section 9.3.1.

Attended noise monitoring results are also assessed against the modifying factor corrections outlined in the 'Industrial Noise Policy' (INP). All results indicate that the noise recorded did not contain any tonal, impulsive or low frequency components as outlined in the INP.

Sound Power Testing

No Sound Power Level (SPL) testing of fixed and mobile plant has been undertaken during the reporting period. As this is a shortened period, testing of key mobile equipment will be undertaken during the next reporting period to ensure equipment used onsite can meet the SPL's identified in the

EA. The Narrabri Mine is currently working with the Original Equipment Manufacturer (OEM) and specialist consultants to investigate options for SPL reductions on the stockpile dozer fleet.

6.1.3 Proposed Improvement Measures

A number of improvement measures are proposed for the next reporting period including:

- Maintaining equipment exhausts and conducting noise testing of plant; and
- Continue to investigate options for reducing SPL's on the stockpile dozer fleet.

6.2 BLAST

As there has not been any surface or near-surface blasting at the site during the reporting period, no blast monitoring has been required or conducted.

6.3 AIR QUALITY

6.3.1 Environmental Management

The Narrabri Mine has the potential to impact on air quality at the mine. Air quality impacts at the mine are managed in accordance with the:

- Air quality criteria prescribed under Schedule 4, Condition 6 of the PA 08_0144;
- EPL 12789 Conditions O3, P1 and M2; and
- the Narrabri Mine Air Quality Management Plan (AQMP) prepared to satisfy the requirements of PA 08_0144.

Narrabri Mine employs a range of air pollution control measures including:

- Cleared trees and branches will be retained for use in stabilising disturbed areas once they are no longer required;
- Trigger Action Response Plans (TARPs) have been developed for the major dust generating activities onsite which currently includes: the coal processing area; surface drilling activities; and surface civil works;
- Strategically located water sprays will be operational on all continuous miners, the longwall unit and the breaker feeder to minimise dust creation underground;
- All conveyers will be fitted with appropriate cleaning and collection devices to minimise the amount of material falling from the return conveyer belts;
- The coal breaker is enclosed;
- All surface conveyors are partly enclosed to minimise dust lift-off;
- Clear definition of all the site roads and the restriction of vehicles and equipment to the roads;
- Progressive rehabilitation of areas of disturbance including topsoil and subsoil stockpiles;
- Routine application of water sprayed onto stockpiles and hardstand areas; and
- Construction of a perimeter amenity bund and windbreaks.

The Narrabri Mine air quality monitoring network is illustrated on Figure 2 and includes:

- PM_{10} levels are measured by two High Volume Air Sampler (HVAS) for a twenty-four hour period every six days. Total Suspended Particulate (TSP) matter is inferred at a ratio of 1:2 from the measured PM_{10} data; and
- a network of eight dust deposition gauges (DDGs), measuring deposited dust and particulates collected monthly.

A summary of the air quality monitoring results at the Narrabri Mine for the reporting period is provided below.

Table 11: Deposited Dust Monitoring Data Summary for the Reporting Period

Site (see Figure 2)	EPL ID No.	Property Name	Modification 5 EA Levels (g/m^2/month)	Annual Mean Total Insoluble Solids (g/m^2/month)	Annual Mean Ash (g/m^2/month)
ND1	-	Turrabaa	2.2	1.7	0.6
ND2	-	Claremont	1.9	1.9	1.0
ND3	3	Bow Hills	2.0	0.8	0.4
ND4	-	Matoppo	2.3	1.7	0.8
ND5	-	Willarah	2.9	2.5	1.1
ND6	-	Willarah	2.9	0.8	0.4
ND7	-	Claremont	1.9	2.1	1.2
ND8	-	Claremont	1.9	1.4	1.0

Table 11 indicates that all the monitoring locations are below the annual average criteria with only ND7 exceeding the Modification 5 EA predicted levels. This is due to ND7 being located adjacent to a gravel road as indicated by the ash content. As most of the properties surrounding the site are now mine owned, only ND3 is included for both offsite impacts in the Modification 5 EA and current monitoring, as outlined in Narrabri Mine's AQMP. The predicted dust levels as outlined in the EA under both scenarios has dust levels at ND3 increasing by 0.1 g/m^2/month above the back ground level of 1.9 g/m^2/month. The reporting period average for ND3 is 0.8 g/m^2/month and the long-term average is 1.5 g/m^2/month. The results indicate that the dust deposition levels for this reporting period and the long-term average are below the predicted levels. It should also be noted that a quarry is in operation on the property where ND3 is located, which may contribute to deposited dust on the site. Trends indicate that for areas still farmed peaks occur generally during the winter months associated with agricultural activities while areas not farmed indicate peaks during the hotter and drier months of summer.

Monitoring conducted at the Narrabri Mine HVAS's indicates that the PM_{10} annual averages remain well below the applicable criteria of 30 $\mu g/m^3$ at both units, i.e. ND9 and ND10. The PM_{10} 24 hour measurements were also below the applicable criteria of 50 $\mu g/m^3$ for the reporting period. The ND9 and ND10 HVAS PM_{10} monitoring results are illustrated in Figure 3 and Figure 4 below.

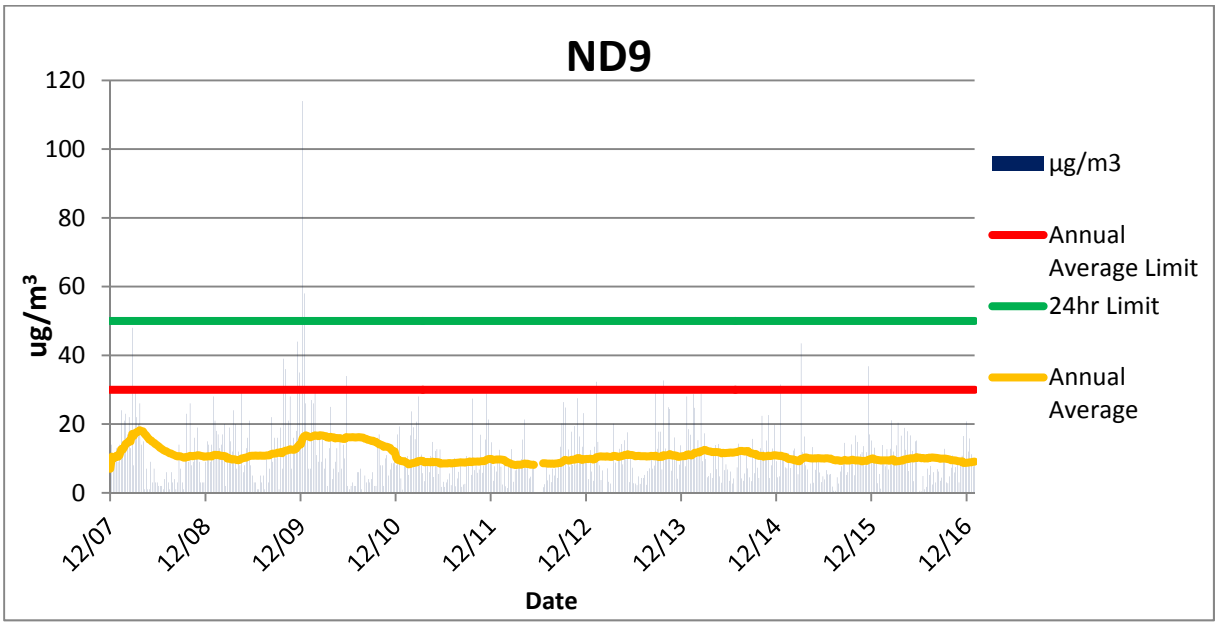


Figure 3: ND9 PM_{10} Results

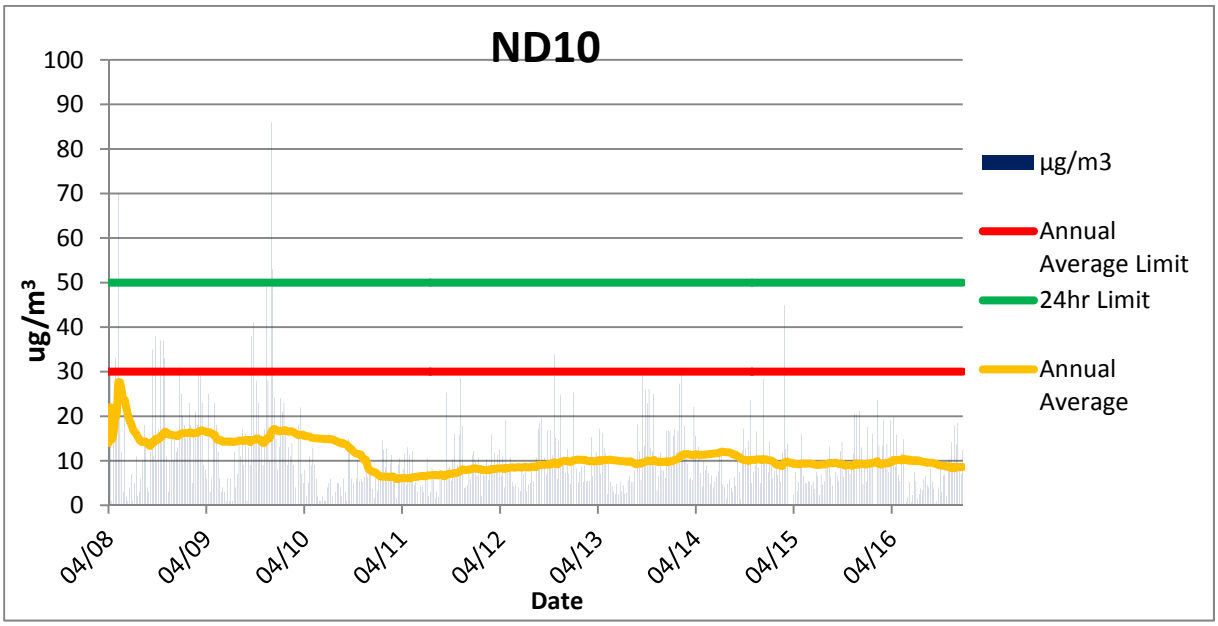


Figure 4: ND10 PM_{10} Results

Although PM_{10} is not monitored at the properties modelled in the EA, but on properties closer to mining operations as outlined in the Narrabri Mine AQMP, the average annual background level adopted for the Modification 5 EA is 11 µg/m^3. The highest annual average results for the Narrabri Mine monitoring program is 9.05 µg/m^3. In addition, the highest 24-hour concentration recorded during the reporting period was 20.8 µg/m^3. The highest predicted 24-hour level in the EA for residences further away from the mine then the monitored locations was 69.7 µg/m^3. No exceedances of the 24-hour criteria (i.e. 50 µg/m^3) occurred during the reporting period. Figure 3 and Figure 4 also indicate that the monitoring results are consistent with previous years, i.e. since 2011.

The results for the PM_{10} monitoring also confirm that the TSP criteria for the mine are well within the compliance limits. The DP&E have previously advised that Whitehaven's method for determining TSP

concentrations, i.e. multiplying PM_{10} concentrations by a factor of 2, is satisfactory. Based on the above, the annual average TSP concentrations of 18.1 µg/m^3 at ND9 and 17.2 µg/m^3 at ND10 are both below the 90 µg/m^3 annual average criteria and the annual average background concentration from the Modification 5 EA of 22 µg/m^3.

6.3.1.1 Meteorological Data

Meteorological monitoring is conducted onsite in accordance with Schedule 4, Condition 8 of PA 08_0144 at the Narrabri Mine meteorological station. Additional weather data is available from other monitoring locations for reference purposes. The location of the Narrabri Mine meteorological station is illustrated on Figure 2. Table 12 summarises the monthly meteorological conditions recorded at the Narrabri Mine station for the reporting period.

Table 12: Summary of Meteorological Conditions

Month	Measured Rain (mm)	Cumulative Rainfall (mm)	Rainfall Days (>1mm)	2m Temperature (°C)			Wind		Inversion Conditions
				Min	Mean	Max	Av. Speed (m/s)	Pred. Direction	% of night time period*
Apr 2016	5.4	5.4	2	9.4	21.5	34.1	2.3	SE	1
May 2016	37.6	43.0	5	1.5	15.3	28.2	1.7	SE	2
Jun 2016	122.6	165.6	11	0.2	11.5	20.8	2.7	NW, SE	2
Jul 2016	56.0	221.6	5	-0.5	11.0	24.1	2.2	NW, SE	2
Aug 2016	89.8	311.4	6	1.3	11.6	22.7	2.1	SE	12
Sep 2016	148.6	460.0	14	3.5	14.0	22.9	2.3	NW	9
Oct 2016	67.4	527.4	6	3.4	16.7	30.6	2.5	NW	2
Nov 2016	13.8	541.2	2	5.3	22.4	38.2	2.0	NW, W, SW	1
Dec 2016	11.8	553.0	4	10.8	27.2	41.7	2.2	NW	1

* - Inversion conditions as measured by the site weather station.

The total rainfall for the reporting period was 553.0 millimetres (mm). The total rainfall was above the historical average for the same period of 453.3 mm. The maximum rainfall was recorded during September 2016 (148.6 mm), which is significantly higher than the historical average of 41.9 mm. The months of April 2016, November 2016 and December 2016 were relatively dry in comparison to historical averages.

During the reporting period the minimum temperature was -0.5°C recorded in July 2016 and the maximum temperature was 41.7°C in December 2016. The temperature records are slightly above the historical averages and the wind patterns are consistent with previous reporting periods.

Measured winds were predominantly from the SE and NW throughout most of the year apart from November 2016 where westerly winds were dominant. Comparison with the wind roses from the 2015-2016 data indicate similar patterns which are broadly comparable to patterns observed from previous years.

6.3.2 Proposed Improvement Measures

No additional improvement measures are proposed during the next reporting period.

6.4 GREENHOUSE GAS

6.4.1 Environmental Management

Greenhouse Gas (GHG) emissions at the Narrabri Mine are managed in accordance with Schedule 4 Conditions 31 and 32 of PA 08_0144 and the Greenhouse Gas Minimisation Plan (GHGMP). The main sources of GHG emissions considered in the GHGMP are:

- Consumption of diesel fuel – Scope 1;
- Consumption of electricity – Scope 2;
- Pre-drainage gas – Scope 1;
- Goaf gas – Scope 1; and
- Ventilation exhaust gas – Scope 1.

6.4.2 Environmental Performance

The GHGMP estimated annual average Scope 1 and Scope 2 emissions 410,322 t CO_2-e. For the reporting period the mine produced an estimated total of 381,259 t CO_2-e. The annualised amount would equate to 476,573 t CO_2-e which is slightly increased when compared to the previous reporting period. The increase is in relation to the increased emissions calculated from the mines goaf drainage circuit, which may attributable to higher gas concentrations in the coal seam then has been previously encountered.

6.4.3 Proposed Improvement Measures

As the concentrations of methane in the ventilation and pre-drainage gas streams remain prohibitive for any beneficial use, no additional management measures are to be implemented during the next reporting period. Any additional mining fleet equipment will also include preventative and regular maintenance.

6.5 BIODIVERSITY

6.5.1 Environmental Management

Biodiversity was managed in accordance with:

- Schedule 5, Conditions 1 to 7 of PA 08_0144; and
- the Narrabri Mine Landscape Management Plan (LMP) and Biodiversity Offset Strategy (BOS) prepared to satisfy the requirements of PA 08_0144.

Various treatments were implemented during the reporting period to mitigate impacts of the Narrabri Mine including (but not limited to):

- Weed monitoring and inspections;
- Feral animal monitoring, inspections and control;
- Flora and Fauna monitoring; and
- Fuel load assessment.

6.5.2 Environmental Performance and BOMP Implementation

6.5.2.1 Mine Site Environmental Performance

Weed Management

Weed monitoring and management was undertaken across the mine site during the reporting period. This included treating areas for African Boxthorn, Prickly Pear and Mother-of-Millions

Feral Animals

Monitoring of the presence of feral animals was undertaken onsite. A targeted monitoring program for feral pigs was undertaken during the reporting period on the offset areas, refer below.

Annual Extraction Plan Monitoring

The results of annual monitoring undertaken during the reporting period, as required by the Extraction Plan, which includes the LMP, are summarised in Table 13 and Table 14.

Table 13: Biodiversity Management Plan 2016 Monitoring Results

Performance Measures	BMP Performance Criteria	2016 Assessment	Comment
Woodland vegetation (Inland Grey Box EEC) composition and health	Clearing does not exceed the allowable limit of the Project Approval	Compliant	
	Less than 10% change in floristic composition (relative to natural variation found in control areas)	Compliant	
	Less than 10% increase in exotic species numbers and cover	Compliant	Declared noxious weeds Lycium ferocissimum (African Boxthorn), Bryophyllum delagoense (Mother of Millions) and Opuntia stricta (Prickly Pear) continue to be present on site and require ongoing treatment as prescribed in the RMP. Of particular note is Prickly Pear in the Inland Grey Box Woodland plots. This species has been recorded continuously in plots 7, 8 and 11, as well as plots 2, 11 and 15, and its frequency in these latter plots has increased from 'uncommon' to 'common' from 2015 to 2016.
	No increase in feral animal presence	Compliant	
Riparian vegetation composition and health	Clearing does not exceed the allowable limit of the Project Approval	Compliant	
	Less than 10% change in floristic composition (relative to natural variation found in control areas)	Non-compliant	The native species diversity in the groundcover layer has been substantially impacted by subsidence related ponding/ inundation at Plot 16, and visibility/access was limited as the plot was wet at the time of survey. The permanent residual impacts as a result of undermining cannot be determined until this site dries out. Supplementary planting may be required in the future.
	Less than 10% increase in exotic species numbers and cover	Non-compliant	This criterion was exceeded at Plot 13. The combination of disturbance and heavy rainfall in the lead up the spring surveys

Performance Measures	BMP Performance Criteria	2016 Assessment	Comment
			may have provided good conditions for weeds to germinate. Declared noxious weeds African Boxthorn and Prickly Pear continue to be present on site and require ongoing treatment as prescribed in the RMP.
	No increase in feral animal presence	Compliant	
	Less than 20% increase in length of eroding creek	Refer to Land Management Monitoring Report for 2016	
Terrestrial fauna habitat for threatened species	Fauna populations do not experience adverse impacts	Non-compliant	Woodland monitoring plots MW1, MW2, MW3 and MW5 exceeded performance criteria in autumn, with a reduction in species diversity between 2015 and 2016. MW2 and MW5 also saw a reduction in species abundance. MW1 also exceeded performance criteria for species diversity in spring. Creekline monitoring plot MC2 exceeded the performance criteria in species number and abundance in winter.
	Fauna records decrease by greater than 10% (relative to natural variation found in control areas)		
Aquatic macro-invertebrate and macrophyte assemblages	No decline in aquatic habitat quality relatively to natural variation in control areas	Not monitored in 2016	

Table 14: Land Management Plan 2016 Monitoring Results

Performance Measures	Performance Criteria	2016 Assessment	Comment
Surface cracking			
Surface cracking inspection	Permanent cracks (which do not self-close within one month of longwall face passing) are remediated as soon as practicably possible (and safe to do so) Surface cracking is remediated to prevent erosion and slope instability issues within 6 months of each longwall pass	Compliant	Surface cracking evident over LW104; however, not as wide or deep as those that formed over LW101-LW103
Topographic form (Lidar)			
Landscape morphology	Subsidence across landscape does not exceed subsidence predictions for LW101-LW106	Not assessed in 2016.	

Performance Measures	Performance Criteria	2016 Assessment	Comment
Creeklines	No identifiable change in overall drainage pattern	Compliant	
Soil moisture and nutrient distribution (EM mapping)			
Soil moisture and nutrient distribution (EM mapping)	Identified areas of EM mapping change (greater than 1 standard deviation from the mean change) investigated in the field to determine the source of the change.	TBC	Results not available at the time of preparing this report.
Multi-spectral image analysis			
Groundcover (multi-spectral images – erosion and pasture cover)	Identified areas of NDVI change (greater than 1 standard deviation from the mean change) investigated in the field to determine the source of the change.	Compliant	Areas of NDVI attributed to land management, surface disturbance works and re-establishment of groundcover
Pasture			
Pasture biomass	Less than 20% reduction in pasture biomass in impact zones in comparison to control zones	Compliant	
Weed species	Weed species identified and managed according to the weed management measures provided in the Rehabilitation MP	Compliant	
Weed cover	Less than 10% increase in weed cover in impact zones in comparison to the control zone	Non-compliant	The performance criterion was exceeded in the pillar zones above LW102 and LW105. Heavy rainfall in the month preceding the survey period appears to have led to a proliferation of winter annual weed species and these exotic forbs were still present during the spring survey. It is anticipated that once these annuals die back, desirable pasture species cover will increase.
Creek stability and condition			

Performance Measures	Performance Criteria	2016 Assessment	Comment
Field survey of creek stability and condition	Less than 20% increase in creek erosion (bank and bed) in comparison to control Less than 20% increase in cross-sectional area in comparison to control cross-sectional area (unless stabilisation works have been undertaken)	Compliant	

Pre-Clearing and Clearing Surveys

During the reporting period the mine has undertaken clearing to facilitate surface gas drainage infrastructure works. The ecological works for the clearing consisted of the following activities;

- Threatened Flora Surveys;
- Fauna Pre-clearing Surveys;
- Clearance Supervision; and
- Post-felling inspections.

Prior to the commencement of any clearing activities the limits of clearing are surveyed and physically marked with flagging tape. Targeted threatened flora surveys were conducted prior to clearing activities commencing with all threatened flora identified during these surveys recorded and their locations mapped using hand held GPS units.

Fauna pre-clearance surveys were also conducted and consisted of identifying, marking and documenting suitable fauna habitat features. These features generally include nests, large woody debris and trees bearing hollows, which have the potential to support species such as bats, gliders, possums, reptiles and birds. All trees with habitat features are felled following a clearing protocol and is done in the presence of a qualified ecologist. All trees identified as having habitat features were recorded using a hand-held GPS unit

Fauna was encountered during clearance works undertaken during the reporting period, including species of birds, mammals and reptiles. Threatened species under the TCS Act and/or the EPBC Act were also encountered.

The following threatened fauna species were encountered during the reporting period clearing works:

- Grey-crowned Babbler (Eastern Subspecies) (*Pomatostomus temporalis temporalis*) – listed as Vulnerable under the TSC Act.

The following threatened flora species were encountered during the clearing works:

- Coolabah Bertya (*Bertya opponens*) – listed as vulnerable under the TSC Act and EPBC Act.
- *Tylophora linearis* – listed as vulnerable under the TCS Act and endangered under the EPBC Act.

Clearance works where threatened flora species were identified were relocated to avoid impact (in the case of the *Tylophora linearis*) or relocated to minimise impacts (in the case of Coolabah Bertya).

6.5.2.2 BOS Environmental Performance

The Narrabri Mine BOS commits to manage designated offset areas to achieve a 'like for like or better' and 'maintained or improved' biodiversity outcomes on the 1,243ha Kenna BOA (located offsite adjacent to the southern boundary of the Kaputar National Park) and the 422 ha Onsite (Rosevale) BOA (located within and adjacent to the east of the mining lease and to the west is Jack Creek State Forest, which is one of many reserves that form part of the "Pilliga Scrub").

Offset Security Management

WHC has substantially commenced the process towards long-term security of the BOAs in accordance with PA 08_0144. OEH (in correspondence dated 1st July 2016) outlined to WHC which BOA would be considered for transfer to Parks Estate which was followed up with site inspections by NPWS and OEH staff on 8th – 9th September and 29th November 2016. The process is currently with OEH to complete inter-agency notifications before further negotiations can continue. OEH (in correspondence dated 9th December 2016) indicated that for the portions of the BOA not being considered for transfer to Parks Estate can commence the Conservation Agreement application process. DP&E approved an extension of timing for commencing the mechanism for securing of offsets on 23 December 2016 to 30 June 2017.

Infrastructure Management

During the reporting period, no infrastructure management was undertaken for the BOA's in accordance with the BMP.

Seed Management

Four routine seed assessments were completed across the Kenna BOA in February, May, August and November 2016 designed to identify on a seasonal basis the life cycle stage and development of native plants to identify what, where, when and how to target appropriate resources to collect seed for future revegetation programs. The seed assessments resulted in timely and prioritised seed collection with the spatial information directly given to seed collection contractors to undertake the following overstorey seed collection works in accordance with standard industry practice outlined in the Florabank guidelines:

- March 2016 – WHC BOA's in the Maules Creek locality – *Eucalptus albens*, *Eucalyptus blakelyi*, *Eucalyptus melliodora* and *Eucalyptus populnea*.

As part of the WHC group wide revegetation planning a local revegetation provider was engaged in November 2016 with the relevant overstorey species collected above sent away to a reputable nursery for propagation ahead of the planned Autumn 2017 revegetation program for the Kenna BOA of Box Gum and non-EEC/CEEC Woodland. Targeted native understorey species were also collected during the reporting period.

Revegetation Management

In accordance with the BMP revegetation schedule focusing on cleared non-native grassland (former cultivation) and derived native grasslands Narrabri Mine organised 513ha of due diligence assessments of potential Box Gum and non-EEC/CEEC Woodland revegetation across the Kenna BOA investigating potential ecological constraints and heritage sites within areas required to be disturbed as part of the revegetation process. During the reporting period, revegetation ground preparation (.i.e dozer ripping three tynes wide to a depth >0.3m every 5m along the contour and lightly scarifying the soil surface to relieve compaction, improve permeability and infiltration to increase

sub-surface soil moisture as well improve soil seed bed to maximise soil-seed contact during sowing) was completed over 56ha of the Kenna BOA in October 2016. The wet weather during winter and early spring significantly delayed and impacted earthmoving machinery undertaking ground works. The ecology due diligence identified 36ha of natural regeneration revegetation not requiring additional active revegetation of the cleared non-native grassland and derived native grasslands. The understorey sowing and overstorey planting of the areas with ground prepared for revegetation will occur in 2017.

Heritage Management

During the reporting period an Aboriginal cultural heritage due diligence assessment of Kenna BOA identified five (5) sites/objects that required 315m of identification/demarcating fencing to be installed.

Habitat Management

During the reporting period no habitat augmentation was undertaken in accordance with the BMP.

Weed Management

Routine formal weed monitoring/inspections were undertaken across the Narrabri Mine BOA's in April, July, October and December 2016. The priority weeds for control were noted as general broadleaf weeds (noxious and environmental species) in areas proposed for revegetation as well as legacy noxious weeds inherited from previous owners management regimes such as Coolati Grass, Green Cestrum, African Box Thorn and Common Prickly Pear. The weed monitoring/inspections ensure that timely and prioritised weed control is undertaken on a seasonal basis with the spatial information directly given to spraying contractors to identify what, where, when and how to target appropriate resources across the BOA's for weed control.

During the reporting period, Narrabri Mine implemented a comprehensive weed control program across the Kenna BOA including 490.7ha treated between July and December 2016. The wet weather during winter and early spring resulted in significant areas of broadleaf weed requiring spraying. Only appropriately qualified and experienced weed contractors (AQF3 accreditation or higher for use of herbicide) were engaged to undertake the weed control works.

Feral Animals Management

Routine formal feral animal monitoring was conducted across the BOA's in March, June, October and December 2016. The adoption of a "monitor, measure and manage" approach to feral animal management will allow the mine to implement adaptive management in response to changes being measured through monitoring in feral animal abundance specific to the different geographical regions of the BOA's. Feral animal monitoring utilises the relevant methodologies for specific feral animals generally in accordance with the NSW DPI Monitoring Techniques for Vertebrate Pests so that a range of methods can be used such as transects/spotlighting, sandpads, cameras traps where practicable and relevant to specific offset areas/properties. Monitoring demonstrated that the feral animals in moderate to high abundance were the European Red Fox and Feral Pig. The feral animal monitoring ensures that timely and prioritised feral animal control is undertaken on a seasonal basis identifying what, where, when and how to target appropriate resources across the BOA's for feral animal management.

During the reporting period, Narrabri Mine implemented a comprehensive feral animal control program across the BOA's with fox baiting and pig trapping undertaken in May (no fox baits taken and no pigs trapped), July (no fox baits taken and 2 pigs trapped) and November 2016 (6 out of 26 fox baits taken

and 29 pigs trapped). The record wet weather during winter and early spring limited the success of control programs during this period. Only appropriately qualified and experienced feral animal contractors (appropriate feral animal management qualifications, NSW gun licence and pesticide accreditation where relevant) were engaged to undertake feral animal control works.

Soil & Erosion Management

During the reporting period, no specific treatment or soil erosion mitigation works were undertaken.

Grazing Management

During the reporting period, the Kenna BOA was stocked until the end of September 2016 when Narrabri Mine took management control of the property and subsequently grazing was excluded.

Bushfire Management

During the reporting period, Narrabri Mine organised for fuel load monitoring to be undertaken in October 2016 with the average fuel load rating for the Kenna BOA being Extreme and Onsite (Rosevale) BOA being Low in accordance with "Overall Fuel Assessment Guide" (July 2010). In accordance with the BMP, Narrabri Mine then prioritised resources targeting maintenance and upgrade of fire breaks and tracks across the Kenna BOA with 32.8km of fire breaks completed in December 2016.

Annual BOS Monitoring

Kenna

The 2016 monitoring surveys (Biodiversity Offset – Spring 2016 Monitoring Report, ELA 2017) within the Kenna Biodiversity Offset Area (BOA) identified 222 species of which 169 (76%) were native. No threatened species of plants were recorded in the surveys. Mean native flora species richness increased consistently in all Offset Management Zones (OMZs) for all years analysed (2014-2016) with a general trend for decreasing native richness from OMZ1 to OMZ4. Exotic flora species richness also increased consistently in all OMZs and years with a general increase in exotic species richness from OMZ1 to OMZ3, although OMZ4 had lower exotic richness than OMZs 2 and 3. The overall increase in exotic species richness is likely due to favourable growth conditions following high winter rainfall. These conditions favour the establishment of short lived annual exotics over natives. A complete flora species list is included as Appendix A and photo monitoring records are included as Appendix B as required by the BOS and the associated management plans.

During the 2016 monitoring survey 85 animal species, including 66 birds, 17 mammals, one reptiles and one frog were recorded within the Kenna BOA. This included two introduced mammals being the Rabbit and the Fox. Species richness and abundance/activity for all fauna groups considered showed no statistically significant variation between management zones within years or between years within management zones indicating that there is no spatial or temporal difference observable across the biodiversity offset area. A complete fauna species list is included as Appendix C as required by the BOS and the associated management plans.

One species of bat, Large-eared Pied Bat, which is listed under provisions of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) was recorded over the Kenna BOA.

Seven species of birds or bats listed as Vulnerable under the *Threatened Species Conservation Act 1995* (TSC Act) were recorded within the Kenna BOA, including Grey-crowned Babbler, Dusky Woodswallow, Large Eared Pied Bat, Little Pied Bat, Long-eared Bats, Yellow-bellied Sheatail Bat and the Eastern Cave Bat. Targeted surveys did not note the presence of the Superb Parrot.

Onsite

The 2016 monitoring surveys (Biodiversity Offset – Spring 2016 Monitoring Report, ELA 2017) within the Mine BOA identified 208 species of which 176 (85%) were native. One threatened species of plant, *Tylophora linearis*, was identified during he surveys. Mean native flora species richness increased consistently in all OMZs for all years analysed (2014-2016). Exotic flora species richness also increased consistently across OMZs and years with a trend for increase from OMZ1 to OMZ3. The increase in exotic species richness overall is likely due to favourable growth conditions following high winter rainfall. These conditions favour the establishment of short lived annual exotics over natives. Targeted surveys for *Bertya opponens* and *Pomaderris queenslandica* revealed populations in generally good health. A complete flora species list is included as Appendix A and photo monitoring records are included as Appendix B as required by the BOC and the associated management plans.

During the 2016 monitoring surveys 117 animal species, including 97 birds, 13 mammals, five reptiles and two frogs were recorded within the Mine BOA monitoring sites. This included six introduced mammals (Fox, Pig, Goat, Rabbit, Brown Hare and Wild Dog) and one domestic species (Sheep). Species richness and abundance/activity for most fauna groups showed no statistically significant variation between management zones within years or between years within management zones. Significant differences ($p<0.05$) were observed in pairwise comparisons of microchiropteran bat activity between OMZ3 in 2016 and all other OMZs in each year. This is likely due to exceptionally high call activity in OMZ3 in 2016 (739 calls of which 537 were useable), however, it is noted that the current sampling design has OMZ3 represented by a single site. A complete fauna species list is included as Appendix C as required by the BOC and the associated management plans.

Eight species listed under the TSC Act were observed or positively identified via ultrasonic recording analysis during surveys, including, Glossy Black-cockatoo, Grey-crowned Babbler, Speckled Warbler, Little Pied Bat, Varied Sitella, Long-eared Bats, Yellow-bellied Sheathtail-bat and Eastern Cave Bat.

Recommendations from the annual BOA monitoring (Biodiversity Offset – Spring 2016 Monitoring Report, ELA 2017) undertaken in accordance with the BOS include:

- a review of sampling design, particularly at the Mine BOA where fauna monitoring only assesses a single site in OMZ3, making robust statistical analyses difficult. There is an apparent over-abundance of sites in OMZ1, the 'control' sites, at both offset areas compared to the number of sites within the lower resilience OMZs which will be subject to management activities i.e. 'treatment' sites

BOA Management Activities

Management activities undertaken in both BOA's in the 12 months prior to the monitoring outlined above are summarised in Table 15.

Table 15: Management Activities undertaken on the BOA sites

Management Action	Kenna BOA	Mine BOA	Date(s) Undertaken
Weed Inspections	✓	✓	October 2015; April, July and October 2016
Weed Spraying (Coolatai and Green Cestrum)	✓		December 2015
Weed Spraying (African Box Thorn)	✓		July 2016

Management Action	Kenna BOA	Mine BOA	Date(s) Undertaken
Weed Spraying (Broadleaf and Green Cestrum)	✓		November 2016
Feral Animal Monitoring	✓	✓	September and December 2015; March, June and October 2016
Feral Animal Management (Fox baiting and Pig trapping)	✓	✓	May, July and November 2016
Feral Animal Management (Pig baiting)	✓	✓	October 2015
Fire Management (fuel load monitoring)	✓	✓	December 2015 and October 2016
Fire Management (fire break maintenance)	✓	✓	December 2016
Grazing Management (cessation of grazing)	✓	N/A	September 2016
Threatened Species Management (Fencing of *Tylopphora linearis* site)	✓		August 2016

6.5.3 Proposed Improvement Measures

- Continual weed control works onsite and in the offset areas for Green Cestrum, Coolatai Grass, African Boxthorn, prickly pear and other weeds.
- Quarterly weed inspections that will identify the spatial location of weeds, determine status (Weeds of National Significance, noxious and /or environmental), size of infestation and priority for control.
- Quarterly seed inspection programs of both onsite and offset areas including groundcover, shrub and canopy species to reflect seasonal conditions and growth stages of plants with seed collection also occurring at these times if available.
- Quarterly feral animal monitoring program to be modified during the next reporting period into a quarterly feral animal control program, e.g. the VPMP, as required with monitoring continued to be undertaken but focusing on reviewing the success and outcomes of the works undertaken. Feral animal monitoring will be reviewed annually to inform the resourcing and control program to be implemented.
- Review the monitoring requirements in the BOS.

6.6 ABORIGINAL CULTURAL HERITAGE

6.6.1 Environmental Management

Aboriginal Cultural Heritage is managed in accordance with the Aboriginal Cultural Heritage Management Plan (ACHMP), which was prepared to satisfy Schedule 4, Condition 23, and the Statement of Commitments (SoC) detailed in the PA 08_0144. The ACHMP was submitted for review to the Registered Aboriginal Parties (RAPs) during the reporting period however, it is yet to be finalised.

6.6.2 Environmental Performance

Soil Disturbance Monitoring

As required by the ACHMP, any soil disturbance work within 100m of a drainage line or in areas not already cleared for agriculture requires the presence of the RAPs to ensure no sites/objects of Aboriginal Cultural Heritage origin are disturbed by clearing activities. The mine has extended this to include all soil disturbance work until the ACHMP and site induction material are updated.

Archaeological Salvage Program

No sites were identified as requiring salvage during the reporting period.

Ongoing Consultation

Narrabri Mine maintains contact with representative of the RAPs in order to ensure appropriate engagement with the Aboriginal community prior to surface disturbance activity. This will continue throughout the life of the operation.

The ACHMP and the Extraction Plan – Heritage Management Plan (EP-HMP) were also provided to the RAPs for comment during the reporting period with an aim to finalise these plans during the next reporting period.

Previously Unidentified Sites

No previously unidentified sites were detected while undertaking soil disturbance works during the reporting period.

6.6.3 Proposed Improvement Measures

During the next reporting period the mine intends to finalise the revisions to the site ACHMP and EP-HMP.

6.7 HISTORIC HERITAGE

There are no items of historic heritage identified in the mining area and hence no specific management measures are required.

6.8 TRANSPORT

6.8.1 Environmental Management

Traffic impacts associated with the Narrabri Mine are managed in accordance with Schedule 4, Conditions 25 to 27 of the PA 08_0144.

6.8.2 Environmental Performance

The portion of Greylands Road that traverses the mining area has been purchased by the mine and is no longer accessible to the public. Inspections of the road are undertaken during active subsidence as required by the Extraction Plan. Scratch Road, in the western portion of the mining lease, has not been utilised to construct mining related infrastructure and as such no agreement has been developed with NSC for the use of this road.

The mine constructed the intersection to the mine in consultation with both NSC and Roads and Maritime Services (RMS). The mine has undertaken a review of the state of the intersection the mine will consult with the NSC and RMS with the aim of developing an agreement to maintain this intersection during the next reporting period.

6.8.3 Proposed Improvement Measures

Develop an agreement for the maintenance of the intersection as described above.

6.9 WASTE MANAGEMENT

Narrabri Mine aims to implement all reasonable and feasible measures to minimise waste and ensure it is appropriately stored, handled and disposed. Waste Materials at the mine are managed in accordance with:

- Schedule 4, Condition 33 of PA 08_0144;
- the Narrabri Mine Waste Management Plan (WasteMP) prepared to satisfy the requirements of PA 08_0144;
- the Pollution Incident Response Management Plan (PIRMP); and
- the legal and strategic framework for managing wastes in NSW.

Narrabri Mine waste streams include general waste, underground waste, oil & greases, recyclables (steel and paper/cardboard), drill cuttings and effluent.

6.9.1 Environmental Performance

Waste Streams

Inspections of waste management practices are carried out to ensure general, hydrocarbon and recyclable waste is segregated. Additional segregation of general waste occurs at the licenced contractor's facility to ensure the maximum amount of material can be recycled. Data on waste streams are collated using information provided by the licenced contractors. During the reporting period waste output increased with operational hours, workforce and mining fleet.

A total of approximately 1,250 tonnes (t) of general waste was removed during the reporting period of which approximately two-thirds was transported to the licenced contractors facility for further segregation. Approximately 26 tonnes of cardboard/paper and 108 tonnes of steel were recycled during the reporting period. The volumes identified above are slightly higher when annualised compared to the previous reporting period indicating the volume of wastes generated at the mine during full production. Approximately 24,300 L of used oils were collected and recycled during the reporting period by an authorised contractor, which is slightly higher than the previous reporting period.

Effluent from the sewage and ablutions facilities at the mine is managed through a Sewage Treatment Plant (STP) with a Continuous Extended Aeration Process. The plant is made up of a series of industrial plastic tanks. Each tank provides a separate function in order to treat the sewage for the required quality and quantity. The system processed on average 34,000 L per day during the reporting period.

Drilling cuttings from exploration, gas drainage and service borehole drilling activities is excavated from sumps and disposed of in the REA or consolidated with excavated soil to backfill the sump (where minor amounts of cuttings are present). An area at the REA has been established to allow excess water from the drill cuttings to decant off and then the cuttings are added to the REA to help consolidate material when emplacing reject from the CHPP.

No incidents relating to waste management practices occurred during the reporting period.

6.9.2 Proposed Improvement Measures

Narrabri Mine will continue to monitor wastes on a regular basis to effectively manage waste generated by the operation and maximise recycling efficiencies.

6.10 VISUAL & LIGHTING

6.10.1 Environmental Management

Visual amenity and lighting impacts associated with the Narrabri Mine are managed in accordance with Schedule 4, Conditions 28 and 29 of the PA 08_0144. Various onsite measures have been implemented during previous reporting periods to mitigate visual impacts of the mine including (but not limited to):

- construction of an amenity bund on the southern and western boundaries of the site to obscure views from the south and west;
- the train load-out bin, CHPP, secondary crusher and rotary breaker buildings are manufactured from a green ColorBond® type sheeting;
- use of directional lighting in lieu of general area lighting;
- consideration of fixed versus mobile lighting, locations and orientation;
- fixed lighting designed and procured in accordance with Australian Standard (AS) *4282 – 1997: Control of Obtrusive Effects of Outdoor Lighting* (AS4282); and
- visual lighting inspections as required.

6.10.2 Environmental Performance

No community complaints were received during the reporting period due to lighting impacts from the mine.

6.10.3 Proposed Improvement Measures

Management measures described above will continue to be implemented during the next reporting period.

6.11 BUSHFIRE

6.11.1 Environmental Management

Bushfire hazards and risks associated with the Narrabri Mine are managed in accordance with Schedule 5, Condition 4 of PA 08_0144, i.e. the Rehabilitation Management Plan (RMP) that forms part of the Landscape Management Plan (LMP). Various treatments have been implemented during the reporting period and previous periods to manage and control potential bushfire risks including:

- implementation of the Bushfire Prevention Standard and Bushfire Emergency Response Procedure;
- participation by Whitehaven Coal personnel in the Narrabri Rural Bushfire Brigade meetings;
- implementation of various bushfire hazard controls, including Hot Work areas/permits, the mine is a non-smoking site and maintenance of equipment/infrastructure;
- monitoring of fuel loads occurred in the Narrabri Mine offset area known as ‘Kenna”; and
- maintenance of the roads and tracks within the Narrabri Mine ML was undertaken prior to the bushfire season. Roads and tracks can act as firebreaks and help to facilitate access across the site.

6.11.2 Environmental Performance

No bushfires occurred adjacent to or within the Narrabri Mine ML 1609 area during the reporting period.

6.11.3 Proposed Improvement Measures

Management measures described above will continue to be implemented during the next reporting period being fuel load assessment, maintenance of access tracks, hot work permits and equipment/infrastructure maintenance.

6.12 MINE SUBSIDENCE

6.12.1 Environmental Management

During the reporting period mining in LW105 was completed during May 2016 and mining in LW106 had retreated 2,203m out of 2,878m. The extraction height averaged 4.3 m and the depth of cover ranged between 220m and 260m.

6.12.1.1 Subsidence Monitoring

Subsidence monitoring was conducted in accordance with approved Extraction Plan and Subsidence Management Plan (SMP) 10/9000 for longwall panels LW101 to LW106.

6.12.2 Environmental Performance

Electricity Transmission Lines

The 11kV power line that traverses LW101 to LW105 was decommissioned during the previous reporting period and as such, the Essential Energy Management Plan and its monitoring requirements are no longer in effect.

Telecommunications Infrastructure

No telecommunications infrastructure exists within the Extraction Plan area for LW101 to LW106.

Public Roads

The one public road within the mining area, known as Greylands Road, was purchased by the mine during the reporting period and is no longer accessible to the public. Repairs required for traffic-ability for mine personnel were undertaken as required.

Land Surface

Ponding occurred in LW106 during the reporting period however at the end of the period the ponding areas were dry due to pumping and hot dry weather experienced at the site over summer. No ploughing or seeding of the subsidence area was undertaken during the reporting period as the soil conditions were unfavourable.

Buildings and Other Structures

No buildings or sheds were undermined during the reporting period.

Water Storage Dams and Contour Banks

Various small farm dams and contour banks were undermined during the reporting period. Subsidence has not impacted on the function of the dams and should remediation works be required to the contour banks, Narrabri Mine will either reinstate them or remove a section to avoid water ponding.

Fences and gates

Various fences and gates were undermined during the reporting period. Narrabri Mine has excluded all stock from the active mining area by erecting a fence outside of the subsidence zone to the east of LW101. Any fences/gates required post-mining will be re-instated.

Mine Infrastructure

Pipelines connecting gas drainage wells were undermined during the reporting period however no impacts were recorded on this infrastructure. All gas drainage infrastructure in the active mining area is inspected and maintained to ensure subsidence does not adversely impact this equipment. Narrabri Mine also decommissions gas drainage infrastructure when it is no longer required.

The Personal Emergency Device (PED) cable was not undermined during the reporting period.

6.12.2.1 Comparison against Predictions

Table 16 outlines the predicted subsidence and the measured subsidence parameters at the end of the reporting period. For more details on the subsidence monitoring lines refer to the Whitehaven Coal website and the End of Panel Report for LW105.

Table 16: Subsidence Parameters – Predicted and Measured

Monitoring Line	Type	Maximum Total Subsidence (m)	Maximum Total Tilt (mm/m)	Maximum Total Tensile Strain (mm/m)	Maximum Total Compressive Strain (mm/m)
LW106 North	Observed	2.488	41.0	11.8	17.1
	Predicted	2.75	46	14	18

Based on Table 16, subsidence prediction exceedances did not occur during the reporting period. The results are summarised below:

- The maximum subsidence measurements for the LW106 North monitoring line was within the predicted range.
- The maximum tilt measurements were within the predicted range for LW106 North.
- The maximum tensile strain measurements were within the predicted range for LW106 North.
- The maximum compressive strain measurements were within the predicted range for LW106 North.

The centreline subsidence results indicate that the Garrawilla Volcanics and Basalt Sill have not reduced subsidence through spanning behaviour. The maximum subsidence is also considered closer to 63% of the average mining height of 4.3m. The subsidence predictions were updated during the reporting period as part of the development of the Extraction Plan for LW107 to LW110.

6.12.2.2 Incidents

No mine emergency response procedures were activated because of subsidence during the reporting period.

6.12.3 Proposed Improvement Measures

Ploughing and seeding of longwall areas will be undertaken when soil moisture conditions improve. Narrabri Mine has developed a Ponding Management Plan and OEH toured the ponding areas during

the reporting period and has provided feedback. The Ponding Management Plan will be finalised during the next reporting period.

7 WATER MANAGEMENT

7.1 WATER SUPPLY

A pipeline from the Namoi River is the main source of raw water supply for the Narrabri Mine. Table 17 summarises the water taken by the mine during the 2015/2016 financial year.

Table 17: Narrabri Mine Water Take

Water Licence #	Water Sharing Plan	Water Source and Management Zone	Entitlement	Passive Take / Inflows	Active Pumping by Narrabri Mine	Total
WAL 12833	Upper and Lower Namoi Groundwater Sources	Upper Namoi Zone 5 Namoi Valley (Gin's Leap to Narrabri) Groundwater Source	67	0	67	67
WAL 20131	Upper and Lower Namoi Groundwater Sources	Upper Namoi Zone 5 Namoi Valley (Gin's Leap to Narrabri) Groundwater Source	300	0	296	296
WAL15922	NSW Great Artesian Basin Groundwater Source	Southern Recharge Groundwater Source	322.4	0	0	0
WAL 29549	NSW Murray Darling Basin Porous Rock Groundwater Sources	Gunnedah – Oxley Basin MDB Groundwater Source	1,022.5	0	452	452
WAL 2671	Upper Namoi and Lower Namoi Regulated River Water Sources	Lower Namoi Regulated River Water Source	60	0	0	0
WAL 6762	Upper Namoi and Lower Namoi Regulated River Water Sources	Lower Namoi Regulated River Water Source	20	0	0	0
WAL 2728	Upper Namoi and Lower Namoi Regulated River Water Sources	Lower Namoi Regulated River Water Source	12.5	0	0	0
WAL 20152	Upper Namoi and Lower Namoi Regulated River Water Sources	Lower Namoi Regulated River Water Source	750	0	7	7

7.2 SURFACE WATER MANAGEMENT

7.2.1 Environmental Management

The Narrabri Mine water management system aims to ensure there are no adverse impacts on receiving water quality, to allow for early detection of any potential impacts and develop appropriate corrective actions. Potential impacts to surface water quality are managed in accordance with:

- Schedule 4, Conditions 10 to 17 of PA 08_0144;
- EPL 12789 Conditions P1, L1, L2 and M2; and
- the Narrabri Mine Water Management Plan (WMP) and the Extraction Plan – Water Management Plan (EP–WMP) prepared to satisfy the requirements of PA 08_0144.

During the reporting period various controls strategies were implemented to manage surface water quality including:

- Separation of clean water, i.e. surface water runoff where water quality is not affected by mining operations, by using diversion drains/contour banks;
- Collection of water from disturbed areas in sediment control dams, i.e. SD1-SD6;
- Containment of water potentially affected by coal or other substances, e.g. hydrocarbons, either from the underground operation or as runoff from the surface facilities/coal processing area, i.e. SB1-SB4;
- The use of appropriate erosion and sediment controls, including silt fences, rock checks and other measures as required;
- no uncontrolled discharge of mine water off-site;
- maintaining an up-to-date water balance to ensure on-site water demands are satisfied whilst minimising offsite water impacts; and
- regular sampling and inspections of the onsite and surrounding surface water system.

Surface water monitoring locations are illustrated on Figure 2. A summary of the surface water quality findings from the reporting period is provided below.

7.2.2 Environmental Performance

Surface Water Quality

Routine surface water monitoring is conducted around the site with surrounding ephemeral creeks sampled when flowing for pH, Electrical Conductivity (EC), Oil & Grease (O&G) and Total Suspended Solids (TSS). These creeks were sampled on seven occasions during the reporting period. The laboratory results for pH, EC and TSS, including trends, are detailed in Appendix D as required by the WMP. Generally, all results are within the designated range or trends are difficult to determine given the range of variability on the results including both upstream and downstream samples

No non-compliances relevant to surface water management were recorded during the reporting period. Surface water EC, pH and TSS trends for the EPL licenced discharge locations, i.e. SD2, SD4 and SD5, are provided in Appendix D as required by the WMP.

Onsite Water Quality

Narrabri Mine monitors 'saline water' defined in the WMP as water pumped from the underground workings. The water quality sampling of any 'saline water' conducted during the reporting period has been characterised as coal contact water and all results are shown in Appendix D as required by the WMP, refer to results for the 'Box Cut' sampling location. All saline water is contained onsite and either processed via a Water Conditioning Plant (WCP) or reused in operational areas of the mine. The subsequent brine produced from the WCP is stored in lined dams within the rail loop.

Wet Weather Discharge Monitoring

Above average rainfall was received during August and September 2016. One discharge event occurred from EPL discharge points SD2 and SD5 during the reporting period in September 2016. The

discharge was sampled in accordance with the requirements of EPL 12879, refer to Appendix D, with no exceedances recorded.

Subsidence Surface Water Impacts

Refer to Sections 6.5.2 and 6.12.2.

7.2.3 Proposed Improvement Measures

The surface water monitoring program and management measures described above will continue to be implemented during the next reporting period consistent with the approved WMP. During the next reporting period the WCP will be upgraded to facilitate the predicted groundwater inflows into the mine. In addition, storage dam (SD) 5 will be removed from the mine's water management system as highlighted in the Modification 5 EA and as approved by a variation to the site's EPL.

7.3 GROUNDWATER

7.3.1 Environmental Management

Groundwater at the Narrabri Mine is managed in accordance with the WMP prepared to satisfy the requirements of the PA 08_0144.

Currently groundwater monitoring is conducted at sites located within and surrounding the mine as illustrated on Figure 2 and as outlined in Table 18.

Table 18: Groundwater Monitoring Summary

Location	Parameters	Frequency
All Standpipes P1,P2, P3, P4, P5, P6,P7,P8, P9, P10, P11,P12, P13, P14, P15, P16,P17,P18, P19, P20, P28, P29, P30, P31, P32, P33, P34, P47, P50, P51, P52, P53, WB1, WB2, WB3a, WB3b, WB4, WB5a, WB5b, WB6a, WB6b, WB7 and WB8	Water level EC pH TDS Metals Anions and Cations	Quarterly (water level, pH and EC) Bi-annually (full water quality)
Vibrating Wire Piezometers P21,P22, P25 ,P26, P27 and P48	Water Level	Daily (Data Logger)
Multi-Level Vibrating Wire Piezometers P23, P24, P35, P36, P37, P38, P40, P44, P45 and P46	Water Level	Daily (Data Logger)
Mine water pumped into and out of the mine	EC pH TDS Metals Anion and Cations Discharge Rate	Daily (flow rate) Monthly (full water quality)

7.3.2 Environmental Performance

Annual Hydrogeological Review

An annual hydrogeological review was undertaken by Groundwater Exploration Services in February 2017 for the period 1 January 2016 to 1 January 2017. The results of the review are summarised below. Parameters recorded as part of the scheduled groundwater monitoring for this reporting period are provided in Appendix E as required by the WMP.

Groundwater Inflows

The 365 ML of total groundwater make into the Narrabri Mine workings with averaged monthly interval did not exceed the monthly averaged trigger level.

Groundwater Levels

Monitoring of the piezometer has not indicated a sustained drawdown greater than that predicted.

Groundwater Quality

No adverse changes to groundwater quality have been observed or reported, with no distinctive increase in salinity, no distinctive lowering of pH and no reduction in water quality with regards to dissolved metals or nutrients.

7.3.1 Proposed Improvement Measures

The groundwater model recalibration (Narrabri Mine Groundwater Data Analysis and Model Recalibration, Heritage Computing 2016), was finalised and provided to DP&E during the reporting period. In addition, as required by PA 08_0144, the brine water management review will also be submitted for agency review during the next reporting period. Groundwater monitoring program and management measures described above will continue to be implemented during the next reporting period.

7.4 SITE WATER BALANCE

Table 19 presents an estimate of the volume of stored water at the beginning and end of the reporting period.

Table 19: Stored Water

	Volumes Held (m^3)		Available Storage Capacity at the end of the Reporting Period (m^3)
	Start of Reporting Period	At end of Reporting Period	
Clean Water (in Storage Dams)	10,460	7,055	99,745
Dirty Water (in Sediment Basins)	3,850	29,270	78,230
Evaporation Ponds*	413,216	564,346	168,354
* = Additional 40ML of storage in containment bund in rail loop.			
Note: 1m^3 = 1,000L			

As noted above, approximately 286ML was dewatered from the mine. In addition, approximately 99ML was transferred from the Namoi River and Namoi Bore licenses for the mine. This indicates that the mine is still in water deficit. The revised Groundwater Assessment (Narrabri Mine Modification Groundwater Assessment, Heritage Computing 2015) predicts that the mine will be in water surplus, i.e. is producing more water than it requires for operation, around 2018.

8 REHABILITATION

The rehabilitation objectives for the Narrabri Mine are described in Schedule 5, Conditions 1 to 4 of PA 08_0144. The MOP summarises the key elements for rehabilitation as well as providing a description of activities and mine landforms.

8.1 REHABILITATION PERFORMANCE DURING THE REPORTING PERIOD

8.1.1 Status of Mining and Rehabilitation

The majority of cover crop establishment occurred during previous reporting periods in LW101 to LW102 and weather conditions were unfavourable to seed cover crops over LW103 to LW105 where natural regeneration has not occurred. Rehabilitation activities during this reporting period were therefore limited to filling in sumps associated with drilling activities and re-spreading topsoil/subsoil over drilling/access tracks, refer to Plans 3 to 5 and **Table 20**, below.

8.1.2 Post Rehabilitation Land Uses

The rehabilitation completion criteria will be consistent with the description in the Landscape Management Plan. The area in the west of ML 1609 will be returned to native woodland and the area in the east of the ML will be returned to the relevant land capability class.

8.1.3 Rehabilitation Performance Indicators

Table 20 summarises the rehabilitation status for the Narrabri Mine, also refer to Plans 3 to 5.

Table 20: Rehabilitation Status

Mine Area Type	Previous Reporting Period (Actual)	This Reporting Period (Actual)	Next Reporting Period 2017 (Forecast)
A. Total mine footprint	187	203	242
B. Total active disturbance	89	105	144
C. Land being prepared for rehabilitation	0	0	0
D. Land under active rehabilitation	109	144	152
E. Completed rehabilitation	4	39	44

8.1.4 Decommissioning and Demolition Activities

No decommissioning activities were undertaken during the reporting period outside of the reclaiming of gas drainage infrastructure, which is re-used where possible. Houses on mine-owned land that are no longer required or that have been affected by subsidence will be decommissioned during the next reporting period. Any decommissioning works will be undertaken in accordance with the relevant standards and NSC approvals.

8.1.5 Other Rehabilitation Activities

Rehabilitation activities associated with exploration activities have been undertaken during the reporting period. Where possible, exploration holes are located on previously disturbed land or in areas that will be required for the operation in the future. The extent of clearing is restricted to the

practical minimum area for each drill pad/access track and rehabilitated following completion if not required for the operation at a later date.

8.1.6 Departmental Sign-off of Rehabilitated Areas

Departmental sign-off has not been requested.

8.1.7 Variations in Activities against MOP/RMP

A MOP amendment was approved during the reporting period to allow for surface works to be completed while the new MOP developed under the updated DRE guidelines is finalised.

There were no other variations in activities undertaken at the mine to those proposed in the MOP.

8.1.8 Monitoring

Internal rehabilitation/revegetation monitoring undertaken to date has primarily been limited to inspections of roads/creeks impacted by subsidence, water management structures, soil stockpiles and seeded areas for evidence of instability/erosion or poor germination and borehole sealing. This process will continue over the life of the mine, with the extent and nature of activities undertaken being consistent with the relevant MOP, Extraction Plan, Landscape Management Plan and other relevant management plans prepared in satisfaction of PA 08_0144.

8.1.9 Trials, Research Projects and Initiatives

No rehabilitation trials or research were undertaken during the reporting period.

8.1.10 Key Issues to Achieving Successful Rehabilitation

The key issues to achieving successful rehabilitation include:

- Poor quality or lack of volume of topsoil;
- Loss or alteration to existing habitats due to subsidence, erosion, weeds and/or pests;
- Alteration of drainage lines due to subsidence;
- Contaminated land occurring onsite;
- Ongoing greenhouse gas emissions due to inadequate sealing of mine entries etc;
- Loss of agricultural resources due to mining disturbance; and
- Discharge of saline or contaminated water.

In cases where the performance is sub-optimal, additional management measures will be implemented (e.g. replanting, repairing landform and water management features, application of much/fertilisers, feral animal and weed control etc.).

8.1.11 Actions for the next reporting period

The rehabilitation actions for the next reporting period are detailed in the approved MOP, which covers the period to November 2017. Ploughing and seeding of areas over LW102-LW104 will occur during the next reporting period.

Rehabilitation of the REA is planned to commence during the next reporting period. A new MOP, to be finalised during the next reporting period, will determine the rehabilitation methodology for the REA, once approved by DRE.

8.1.12 Proposed Research and Rehabilitation for 2017

No rehabilitation research activities are planned during the next reporting period on the mine site.

9 COMMUNITY

Social impacts and opportunities associated with the Narrabri Mine are managed in accordance with PA 08_0144 and the SoC (Appendix 3 of PA 08_0144).

9.1 COMMUNITY ENGAGEMENT ACTIVITIES

In accordance with Schedule 6, Condition 9 of PA 08_0144, a Community Consultative Committee (CCC) has been formed and operating since 2008. The committee comprises representatives of NSC, Narrabri Mine and the community. Since its inception, the CCC has met quarterly. As this Annual Review covers nine months, the CCC met three times during the reporting period on 22 June 2016, 7 September 2016 and 14 December 2016.

Narrabri Mine representatives continue to maintain contact with neighbours near the mine site. These contacts not only provide a means of information dissemination, but also enable Narrabri Mine to ascertain and address any potential issues, which may arise from time to time. In addition, information relating to the mine is available: on the Whitehaven website; via the complaints hotline; as part of sponsorship of local community events and groups; and at meetings as required with neighbours and a range of stakeholders including government and non-government agencies.

9.2 COMMUNITY CONTRIBUTIONS & INITIATIVES

As well as attending functions, WHC and Narrabri Mine also contributed to the community by providing over $217,000 in financial support and sponsorship to various community events and initiatives throughout the community during the reporting period.

9.3 COMMUNITY COMPLAINTS

Narrabri Mine maintains a designated complaints line, with messages checked on a daily basis by site personnel. In the event of a complaint, details pertaining to the complainant, complaint and action taken are recorded on the complaints form.

During the reporting period, 25 complaints were made to the mine from five different complainants. Twelve of these complaints were received via the designated complaints line. A summary of the complaints (by category) received during the reporting period are detailed in Table 21. A Complaints Register summarising the complaints is also available on the Whitehaven Coal website.

Table 21: Summary of Community Complaints and Enquiries

Category	Reporting Period
Air Quality	13
Traffic	0
Surface Water	0
Visual Amenity	0
Noise / Vibration	14
Other	0
TOTAL	**27**

Note a single complaint may involve multiple categories

9.3.1 Complaint Trends

A total number of 27 complaints was received during 2016 which is higher than the previous reporting period but well down from a peak of 45 complaints received during 2014, refer to Figure 5. The mine

has implemented noise and dust management measures at the mine which has led to a drop in complaints from 2014 to 2016, particularly dust complaints form received from 2014 to 2016. It should also be noted that the number of complaints relating to noise is consistent for all years from 2013 indicating the increase in ROM production to 2016 is not affected the complaints trend.

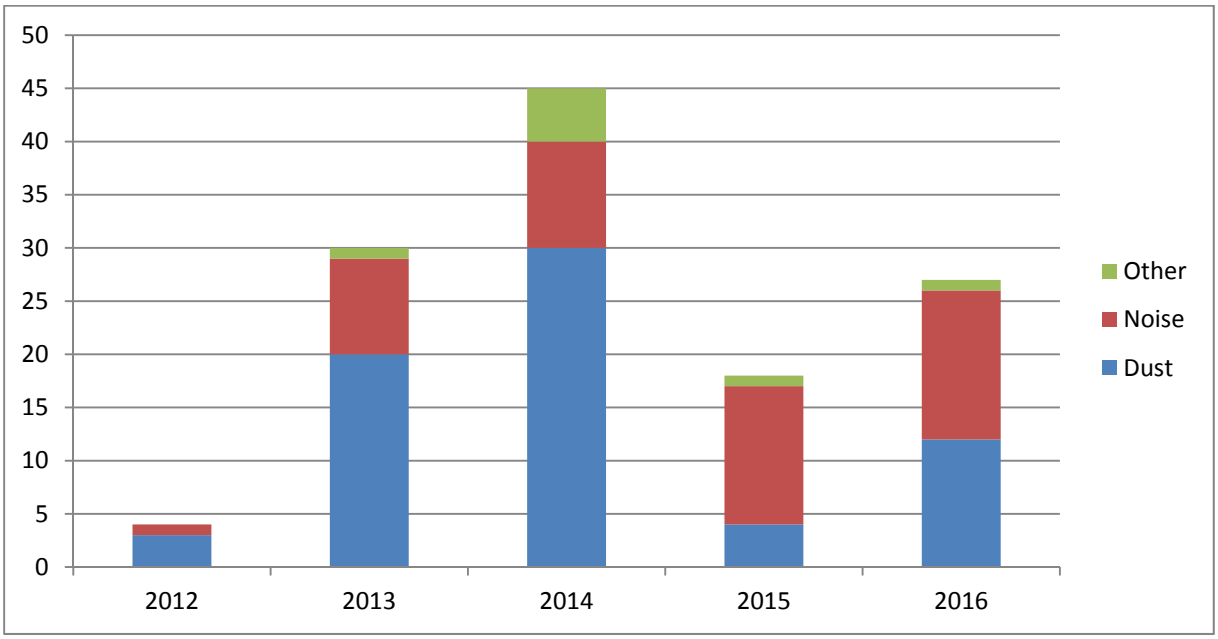


Figure 5: Complaints Trend

9.3.2 Actions & Proposed Improvements

Community complaints primarily related to air quality and noise concerns. Actions taken in response to complaints included a range of measures not limited to the following:

- Investigations into specific mining activities;
- Reviewing video footage or visual media where available;
- Reviewing real time monitoring data and operational activities;
- Analysis of meteorological data;
- Implemented corrective actions;
- Communicating learnings and issues to operational personnel; and
- Community Consultation.

Proposed improvements for the next reporting period in relation to noise include those items identified in Section 12.

10 INDEPENDENT AUDIT

10.1 INDEPENDENT ENVIRONMENTAL AUDIT

An Independent Environmental Audit (IEA) had commenced during the reporting period. The results of this latest audit will be included in the AR for the next reporting period. Table 22 below outlines the results of the previous IEA and how the outstanding actions are being addressed. In accordance with Schedule 6, Condition 7 of PA 08_0144 the next IEA will be commissioned by 13 September 2019.

Table 22: 2013 Independent Audit – Outstanding Actions

Condition/Plan	Proposed Action	Status
PA 08_0144 Schedule 4, Condition 25 The Proponent shall maintain the Mine Access Road Intersection with Kurrajong Creek Road and the Kamilaroi Highway in consultation with NSC and to the satisfaction of RMS.	Joint inspection undertaken during May 2017. Agreed to undertake annual inspections with RMS/NSC moving forward.	Complete
PA 08_0144 Schedule 6, Condition 2 The Proponent shall ensure that the management plans required under this approval are prepared in accordance with any relevant guidelines, and include: (h) a protocol for periodic review of the plan.	Whitehaven is implementing Group wide software that will allow for tracking management plan reviews. The implementation of this software has been delayed but is now undergoing commissioning and will be functioning during the next report period. Whitehaven has also implemented a monthly update for DP&E outlining management plan reviews pending and upcoming.	By 31 December 2017
PA 08_0144 Schedule 6, Condition 3 Within 3 months of the submission of an:… the Proponent shall review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Director-General.	Whitehaven is implementing Group wide software that will allow for tracking management plan reviews. The implementation of this software has been delayed but is now undergoing commissioning and will be functioning during the next report period. Whitehaven has also implemented a monthly update for DP&E outlining management plan reviews pending and upcoming.	By 31 December 2017

11 INCIDENTS AND NON-COMPLIANCES DURING THE REPORTING PERIOD

11.1 NON-COMPLIANCES

The compliance status of the Narrabri Mine against relevant approvals during the reporting period was assessed in Section 1 as at the end of the reporting period (i.e. 31 December 2016). Further details of any non-compliance and actions undertaken or proposed for the following reporting period is summarised in Table 23.

Table 23: Non-Compliance Details and Proposed Action Plan

Non - Compliance	Date / Location	Cause	Action Plan	Due Date
An increase of 10% or more in change in floristic composition occurred at Plot 16.	Spring Monitoring 2016	Plot 16 is affected by subsidence ponding, which was predicted to occur in this area. Supplementary planting may be required once creek has reached equilibrium.	Continue to monitor and manage ponding water levels.	Spring 2017.
An increase of 10% or more in weed cover was recorded at Plot 13.	Spring Monitoring 2016	A combination of disturbance and heavy rainfall may have provided good conditions for weeds to germinate.	Continue weed management as per RMP.	Spring 2017, i.e. prior to next monitoring round, but ongoing
Woodland monitoring plots MW1, MW2, MW3 and MW5 exceeded performance criteria in autumn, with a reduction in species diversity between 2015 and 2016. MW2 and MW5 also saw a reduction in species abundance. MW1 also exceeded performance criteria for species diversity in spring. Creekline monitoring plot MC2 exceeded the performance criteria in species number and abundance in winter.	Spring Monitoring 2016.	The reduction in richness is likely to be as a result of dry conditions and the groundlayer being in poor condition. Sites may also have experienced fluctuations in bird diversity and abundance as a result of the wetting and drying of ponding areas.	Re-assess next monitoring round.	Spring 2017.
An increase of 10% or more in weed cover was recorded at monitoring plots in the pillar zones above LW102 and LW105.	Spring Monitoring 2016	A combination of disturbance and heavy rainfall may have provided good conditions for weeds to germinate.	Continue weed management as per RMP.	Spring 2017, i.e. prior to next monitoring round, but ongoing
One noise exceedance was recorded during the reporting period. The relevant Government agencies were notified at the time as required by the NMP.	28th September 2016 - Oakleigh	Excessive noise from the mining operation.	Refer to Section 6.1.3. Note: the mine has commenced negotiations for acquisition of the affected property.	31 December 2017

Non - Compliance	Date / Location	Cause	Action Plan	Due Date
The Wild Dog is the only feral animal species that requires control across the site. The number of baits placed, the number of baits taken and any dead animals observed will be recorded. This will be undertaken for each baiting period as recommended by the local LHPA officer. This will be undertaken for the duration of the mining lease.	During the reporting period.	While feral animal control has occurred, wild dogs were not included as the most prolific feral animal onsite is the feral pig.	The mine has developed a VPMP, which is yet to go for consultation with surrounding landholders, that includes controls for wild dogs. The mine is also required to consider potential impacts to the Superb Parrot and as such, surface ground baiting is not permitted in the onsite BOA.	30 June 2017
The BOS requires a Vertebrate Pest Management Program (VPMP) to be developed. While feral animal control has been undertaken a formal VPMP has not been developed in consultation with surrounding landholders.	During reporting period.	While feral animal control has been undertaken and a VPMP has been developed, it is yet to be sent for consultation with surrounding landholders.	Consult surrounding landholders and finalise VPMP.	30 June 2017

11.2 REPORTABLE INCIDENTS OR EXCEEDANCES

Details of reportable monitoring exceedances or incidents are included below:

- Noise exceedance, as detailed in Section 6.1.2, was reported to the EPA and DP&E during the reporting period.

11.3 REGULATORY ACTIONS

No official cautions or warning letters, penalty notices or prosecution proceedings were issued to Narrabri Mine during the reporting period.

12 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

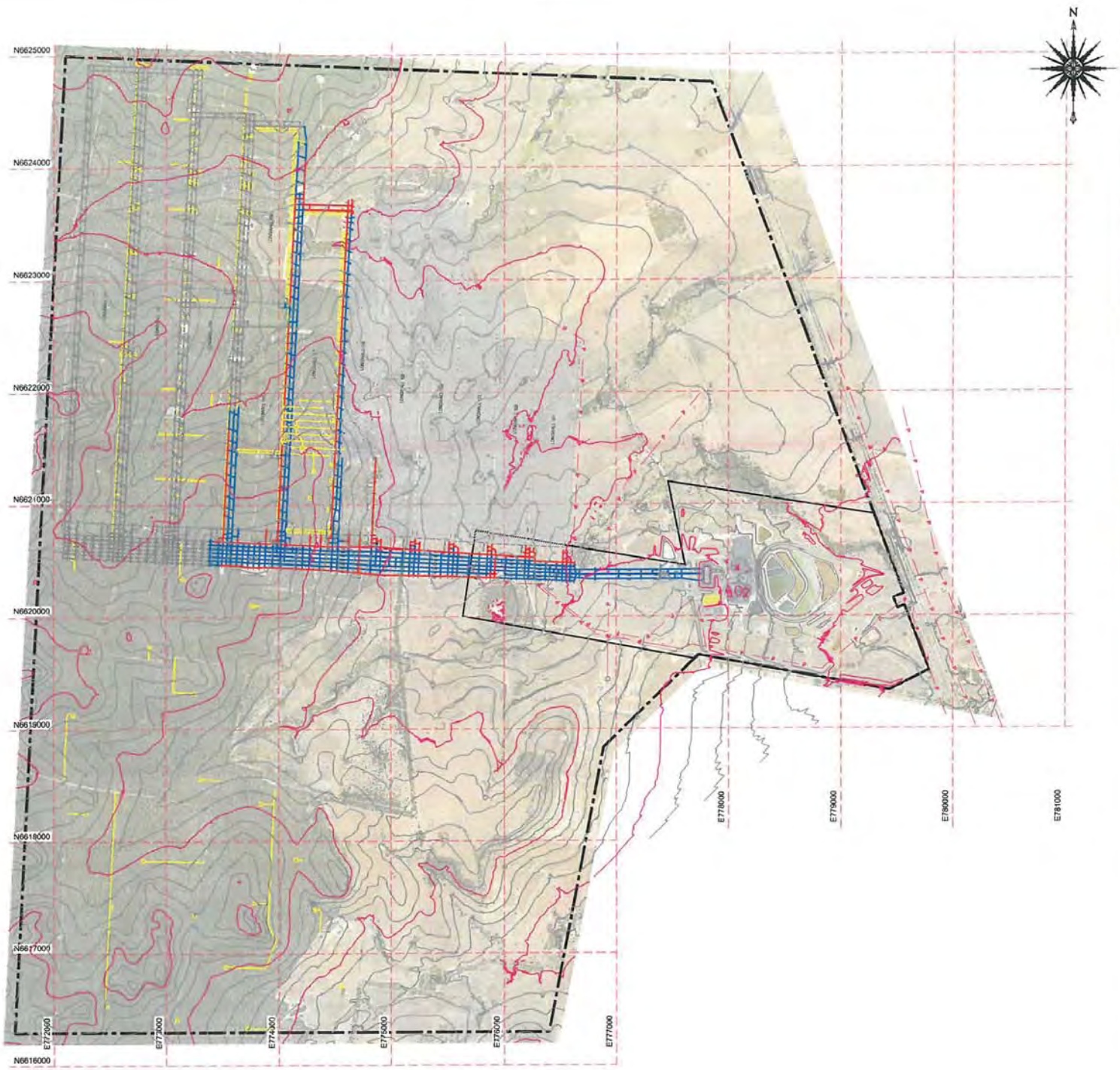
Activities to be completed in the next reporting period to improve the environmental or community performance of the Narrabri Mine, in addition to those separately identified in Section 11 include:

- Review and revision of various Environmental Management Plans;
- Ploughing and seeding of areas in the longwall mining area should conditions allow;
- Finalise and submit the IEA;
- Finalise the Brine Water Review;
- The understorey sowing and overstorey planting of the areas with ground prepared for revegetation will occur in 2017 at the Kenna BOA;
- Finalise new MOP; and
- Continued community liaison and engagement with local stakeholders.

NARRABRI MINE
2016 ANNUAL REVIEW
PLANS 3, 4 and 5

NARRABRI MINE

WHITEHAVEN COAL

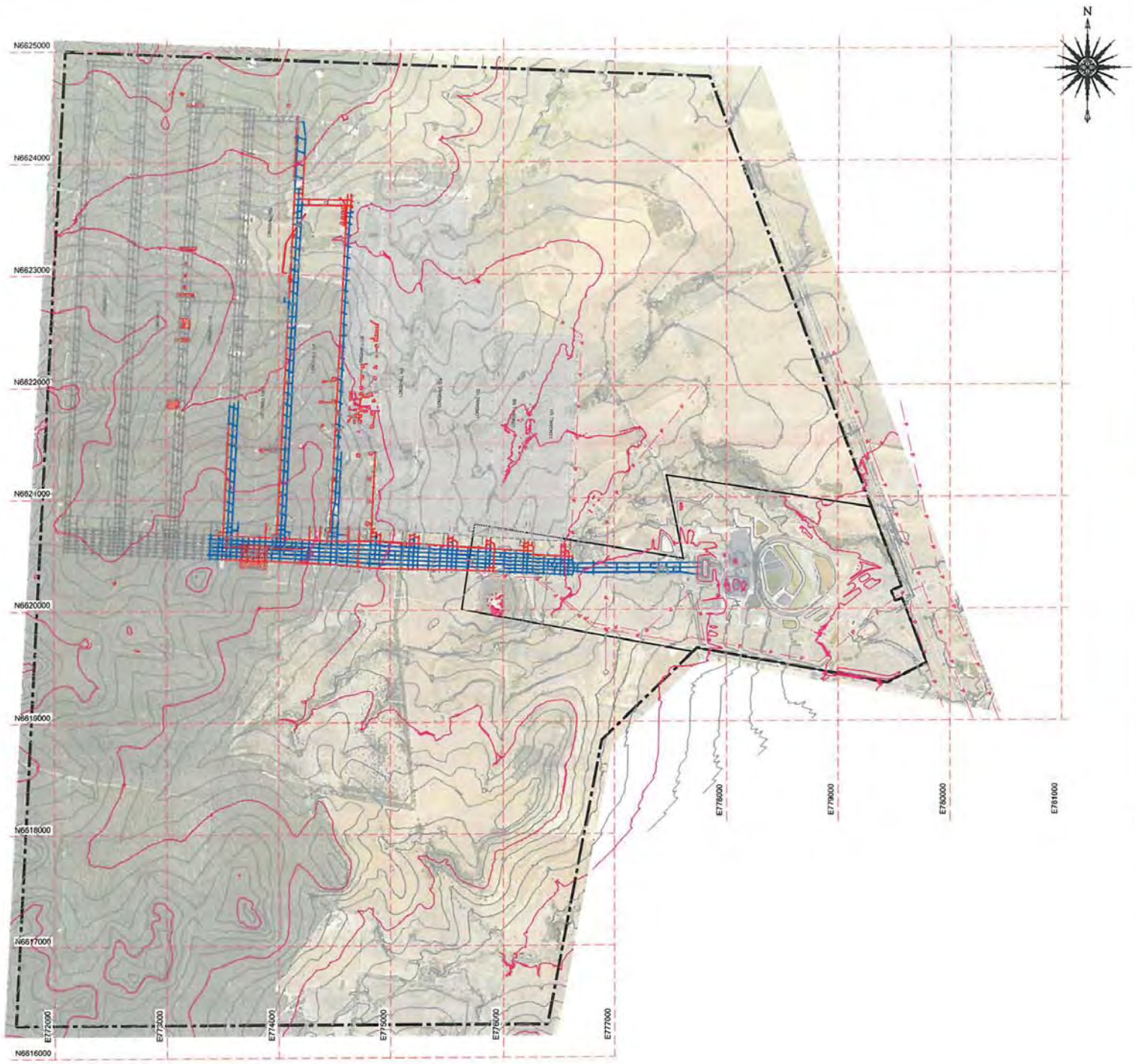


LEGEND

- Soil Stripping Area Prior to this AR
- Soil Stripping Area 2016 AR
- Proposed Soil Stripping Area 2017 AR
- Rehab Area Prior to this AR. Less then 10 deg slope
- Rehab Area Prior to this AR. 10 to 18 deg slope
- Rehab Area Prior to this AR. Greater then18 deg slope
- Rehab Area Prior to this AR 10 to 18 deg slope
- Rehab in progress area (Prior To This AEMR)
- Proposed Rehab Area_2017
- Rehabed Areas_2016 Less the 10 deg slope
- Rehab Areas in Progress_2016
- Mining Lease Boundary & Colliery Holding Boundary
- Mining Surface Lease
- Power Line
- Minor Contours 5m
- Major Contours 25m

AR PLAN 3
2017 PROPOSED LAND PREPARATION NARRABRI MINE
SCALE 1:12,500@A0

File Ref:	NC_AR(2016) - Plan 3
Surveyor:	Perry Naughton
Signature:	
Date:	21/02/2017



NARRABRI MINE

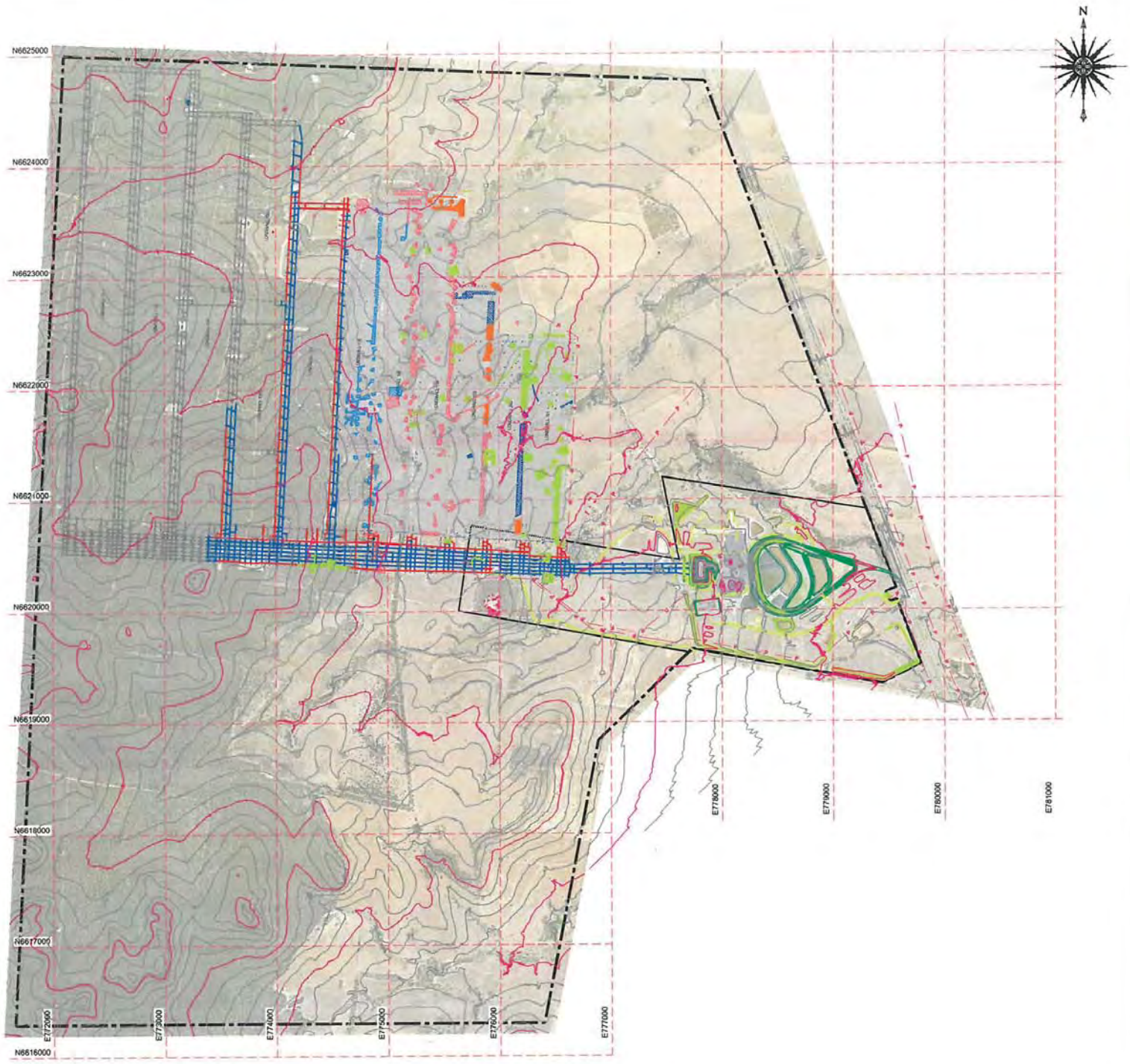
WHITEHAVEN COAL

LEGEND

- Soil Stripping Area Prior to this AR
- Soil Stripping Area 2016 AR
- Proposed Soil Stripping Area 2017 AR
- Rehab Area Prior to this AR. Less then 10 deg slope
- Rehab Area Prior to this AR. 10 to 18 deg slope
- Rehab Area Prior to this AR. Greater then18 deg slope
- Rehab Area Prior to this AR 10 to 18 deg slope
- Rehab in progress area (Prior To This AEMR)
- Proposed Rehab Area_2017
- Rehabed Areas_2016 Less the 10 deg slope
- Rehab Areas in Progress_2016
- Mining Lease Boundary & Colliery Holding Boundary
- Mining Surface Lease
- Power Line
- Minor Contours 5m
- Major Contours 25m

AR PLAN 4
2016 MINING ACTIVITES
NARRABRI MINE
SCALE : 1:12,500@A0

File Ref:	NC_AR(2016) - Plan 4
Surveyor:	Perry Naughton
Signature:	
Date:	21/02/2017



NARRABRI MINE

WHITEHAVEN COAL

LEGEND

- Soil Stripping Area Prior to this AR
- Soil Stripping Area 2016 AR
- Proposed Soil Stripping Area 2017 AR
- Rehab Area Prior to this AR. Less then 10 deg slope
- Rehab Area Prior to this AR. 10 to 18 deg slope
- Rehab Area Prior to this AR. Greater then18 deg slope
- Rehab Area Prior to this AR 10 to 18 deg slope
- Rehab in progress area (Prior To This AEMR)
- Proposed Rehab Area_2017
- Rehabed Areas_2016 Less the 10 deg slope
- Rehab Areas in Progress_2016
- Mining Lease Boundary & Colliery Holding Boundary
- Mining Surface Lease
- Power Line
- Minor Contours 5m
- Major Contours 25m

AR PLAN 5
CURRENT REHABILITATION &
PROPOSED REHABILITATION 2017
NARRABRI MINE
SCALE : 1:12,500 @ A0

File Ref:	NC_AR(2016) - Plan 5
Surveyor:	Perry Naughton
Signature:	
Date:	21/02/2017

Appendix A – *Flora Species List*

Table A1 Flora Species List Kenna BOA

Scientific name	Common name	Native/Exotic	S1	S1 Rep	S2 Rep	S3	S3 Rep	S4	S4 Rep	S5	S5 Rep	S6	S6 Rep	S7	S7 Rep	S8	S8 Rep	S9	S9 Rep	S10	S10 Rep	S11	S11 Rep
Abutilon oxycarpum	Straggly Lantern-bush	Native	X			X						X						X					
Abutilon sp.		Native						X								X							
Acacia decora		Native						X			X	X	X										
Acacia falcata		Native																		X			
Acacia sp		Native			X																		
Acacia triptera		Native																			X		
Alphitonia		Native																				X	
Alphitonia excelsa	Red Ash	Native			X																	X	
Alstonia		Native							X		X	X								X			
Alstonia constricta	Bitter Bark	Native														X							
Amyema sp		Native							X				X				X						
Anagallis arvensis	Scarlet Pimpernel	Exotic		X		X		X	X	X	X	X				X		X	X	X	X	X	X
Aotus sp		Native															X						
Aristida personata	Purple Wire-grass	Native			X									X			X	X	X				X
Aristida sp.		Native			X	X				X	X				X								
Arthropodium sp.		Native			X				X	X	X		X				X			X			X
Austrostipa aristiglumus		Native										X											
Austrostipa scabra	Speargrass	Native	X	X	X	X			X	X	X	X	X	X		X	X		X	X	X	X	X
Austrostipa sp		Native				X																	
Austrostipa verticillata	Slender Bamboo Grass	Native	X			X	X	X	X			X	X			X			X				
Beyeria viscosa		Native																				X	X
Bidens pilosa	Cobblers Pegs	Exotic											X							X		X	
Bidens subalternans	Great Beggar's Ticks	Exotic	X			X			X			X					X						
Boerhavia dominii		Native														X							
Boerhaviasp.		Native													X								
Bothriochloa decipiens	Red Grass	Native	X								X			X									
Bothriochloa macra		Native																X	X				
Bothriochloa sp.		Native															X						
Brachychiton populneus	Kurrajong	Native							X														
Breynia oblongifolia		Native			X				X														
Bromus catharticus	Prairie Grass	Exotic					X						X										
Bromus molliformis		Exotic	X	X			X								X								
Brunoniella australis	Blue Trumpet	Native									X						X						
Bulbine sp		Native												X						X		X	
Callitris glaucophylla	White Cypress Pine	Native	X	X	X		X		X	X	X	X	X				X			X	X	X	X
Calotis lappulacea	Yellow Burr-daisy	Native										X											
Carex appressa		Native																	X				
Carex inversa		Native	X			X		X	X	X	X	X	X	X	X	X	X	X					
Carthamus lanatus	Saffron Thistle	Exotic	X	X						X		X		X	X	X	X	X	X				
Caryophylaceae sp		Native			X									X								X	
Cassinia quinquefaria		Native			X					X													
Centaurea melitensis		Exotic	X	X			X		X	X	X	X	X	X	X	X	X						
Cerastium glomeratum		Exotic														X							
Cheilanthes distans	Bristly Cloak Fern	Native			X															X		X	X
Cheilanthes sieberi		Native		X	X				X											X		X	X
Chloris tunctata		Native								X													
Chondrilla juncea		Exotic																	X				
Chrysocephalum apiculatum	Yellow Buttons	Native								X													
Chrysocephalum semipapposum		Native			X					X									X				
Cirsium vulgare	Spear Thistle	Exotic									X				X								
Commelina sp		Native					X		X			X											

Scientific name	Common name	Native/Exotic	S1	S1 Rep	S2 Rep	S3	S3 Rep	S4	S4 Rep	S5	S5 Rep	S6	S6 Rep	S7	S7 Rep	S8	S8 Rep	S9	S9 Rep	S10	S10 Rep	S11	S11 Rep
Conyza bonariensis	Flaxleaf Fleabane	Exotic														X							
Conyza sp		Exotic	X			X	X	X	X		X	X	X										
Crassula sp.		Native										X				X							
Crinum flaccidum		Native							X											X			
Cyclospernum leptophyllus	Slender Celery	Exotic														X							
Cymbonotus lawsoniatus		Native								X													
Cymbopogon refractus	Barbed Wire Grass	Native								X	X			X		X	X	X	X	X	X	X	X
Cyperus gracilis	Slender Flat-sedge	Native								X	X								X				
Daucus glochidiatus	Native Carrot	Native			X	X	X	X	X		X	X					X			X	X	X	X
Desmodium brachypodum		Native	X		X	X											X		X				X
Desmodium varians	Slender Tick-trefoil	Native							X		X		X				X		X		X	X	
Dianella revoluta		Native																		X		X	
Dichanthium sericeum		Native								X	X								X				X
Dichelachne micrantha		Native		X					X		X						X	X		X	X	X	
Dichondra repens	Kidney Weed	Native	X		X	X		X	X	X	X		X				X				X	X	X
Dichondra sp. A		Native														X			X	X			
Digitaria ammophila		Native																X					
Digitaria breviglumis		Native							X														
Digitaria eriantha		Native																X					
Digitaria sp		Native			X			X															X
Dodonaea viscosa	Sticky Hop-bush	Native						X	X		X	X	X									X	
Dodonea viscosa		Native						X															
Echinopogon sp		Native								X													
Echium plantagineum	Paterson's Curse	Exotic							X					X				X					
Einadia hestata	Berry Saltbush	Native					X						X										
Einadia nutans	Climbing Saltbush	Native				X		X					X										
Eleocharis sp		Native										X											
Elymus scaber		Native		X		X		X	X					X									X
Enneapogon sp.		Native			X																	X	
Enteropogon acicularis		Native		X						X				X					X				
Eragrostis curvula	African Lovegrass	Exotic																X	X				
Eriochloa sp.		Native						X						X									
Erodium cicutarium		Exotic				X	X	X	X			X				X	X						
Eucalyptus albens	White Box	Native	X	X	X					X	X		X										
Eucalyptus blakelyi	Blakely's Red Gum	Native							X														
Eucalyptus crebra	Narrow-leaved Ironbark	Native	X	X	X		X	X	X	X	X	X					X						
Eucalyptus dealbata		Native																		X		X	X
Eucalyptus melanophloia	Silver-leaved Ironbark	Native																				X	X
Eucalyptus Microcarpa	Grey Box	Native							X														
Euchiton sphaericus		Native			X	X		X		X	X	X	X			X				X		X	X
Eulalia aurea		Native									X												
Fabaceae sp		Native																X	X				
Fimbristylis dichotoma		Native																		X			
Gahnia aspera	Rough Saw-sedge	Native															X						
Galium aparine	Goosegrass	Exotic			X	X			X														
Galium sp.		Native						X															
Geijera parvifolia	Wilga	Native	X			X	X	X	X		X		X										X
Geraniaceae		Native																			X		
Geranium solanderi	Native Geranium	Native				X			X														
Gerantiumaceae		Native		X																			
Glycine clandestina		Native	X				X			X							X					X	
Glycine tabacina		Native			X	X		X		X	X		X				X			X		X	X
Gonocarpus sp		Native			X																		

Scientific name	Common name	Native/Exotic	S1	S1 Rep	S2 Rep	S3	S3 Rep	S4	S4 Rep	S5	S5 Rep	S6	S6 Rep	S7	S7 Rep	S8	S8 Rep	S9	S9 Rep	S10	S10 Rep	S11	S11 Rep
Haloragis heterophylla		Native																		X			
Hedypnois rhagadioloides	Cretan Weed	Exotic	X				X		X	X			X			X							
Heliotropium amplexicaule		Exotic										X											
Hibbertia sp		Native																			X		
Hordeum leporinum		Exotic					X								X	X							
Hypericum gramineum		Native																		X	X		
Hypochaeris glabra	Smooth Catsear	Exotic						X		X							X			X			
Hypochaeris radicata	Catsear	Exotic		X			X											X					
Hypochaeris sp.		Exotic			X						X				X				X		X		
Juncus bufonius	Toad Rush	Native							X			X						X					
Juncus usitatus		Native								X	X												
Lachnagrostis filiformis		Native										X									X		
Lactuca serriola	Prickly Lettuce	Exotic	X		X	X	X	X	X		X	X	X	X	X	X	X					X	X
Lamiaceae sp.		Native							X							X							
Lamiaceae sp. 2		Native							X														
Lepidium africanum		Exotic	X	X		X		X		X	X		X			X							
Lepidium bonariense		Exotic										X					X						
Lepidium sp		Native	X	X			X	X	X	X	X												
Linaria sp		Exotic								X		X											
Lolium perenna	Perennial Ryegrass	Exotic	X					X	X			X	X					X					
Lolium rigida		Exotic																X					
Lolium sp.	Rye Grass	Exotic																	X				
Lomandra multiflora subsp multiflora	Many-flowered Mat-rush	Native																				X	
Lomandra sp		Native									X												X
Lycium ferocissimum	African Boxthorn	Exotic				X	X	X	X		X												
Maireana enchylaenoides	Wingless Bluebush	Native												X									
Maireana microphylla	Small-leaf Bluebush	Native						X				X				X							
Marsilea drummondi		Native						X															
Medicago sp		Exotic					X				X												
Melaleuca trichostachya		Native					X																
Melichrus urceolatus		Native																				X	
Mentha satureioides		Native															X						
Microlaena stipoides	Weeping Grass	Native				X	X		X								X			X			
Micromyrtussp.		Native																			X		
Microtis sp		Native																		X	X		
Misopates orontium		Exotic										X				X				X			
Murdannia graminea	Grass Lily	Native																		X			
Notolea microcarpa	Native Olive	Native				X		X												X			
Nyssanthes diffusa	Barbwire Weed	Native							X														
Nyssanthes sp.		Native														X							
Oncinocalyx betchei		Native															X						
Opuntia stricta	Common Prickly Pear	Exotic		X		X													X	X	X		X
Oxalis sp.		Native	X			X		X	X						X	X	X			X		X	X
Panicum effusum	Hairy Panic	Native																X	X				
Papaver sp		Exotic				X	X									X							
Parsonsia eucalyptophylla	Gargaloo	Native							X		X					X							
Parsonsia straminea		Native						X			X		X										
Paspalidium sp.		Native			X					X											X		
Petrorhagia nanteuilii	Proliferous Pink	Exotic	X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X		X	
Phyllanthus occidentalis		Native																				X	
Pimelea sp		Native				X			X								X			X	X	X	X
Pittosporum angustifolium	Weeping Pittosporum	Native						X															
Plantago debilis		Native						X					X										

Scientific name	Common name	Native/Exotic	S1	S1 Rep	S2 Rep	S3	S3 Rep	S4	S4 Rep	S5	S5 Rep	S6	S6 Rep	S7	S7 Rep	S8	S8 Rep	S9	S9 Rep	S10	S10 Rep	S11	S11 Rep
Poaceae sp		Native										X										X	
Polycarpon tetraphyllum	Four-leaved Allseed	Exotic										X											
Polygonum aviculare		Exotic														X							
Polypogon monspeliensis	Annual beardgrass	Exotic						X															
Pomaderris sp.		Native										X											
Psydrax sp		Native					X		X		X												
Rapistrum rugosum	Turnip Weed	Exotic					X																
Rostellularia adscendens		Native									X												
Rumex brownii	Swamp Dock	Native					X								X		X	X	X				
Rumex sp.		Native							X														
Rytidosperma longifolium	Long-leaved Wallaby Grass	Native	X		X					X	X											X	
Rytidosperma sp.	Wallaby Grass	Native		X							X						X			X			
Rytidosperma sp.1		Native						X					X										
Rytidosperma sp.2		Native						X															
Rytidospermum pallidum		Native			X																		X
Salvia reflexa		Exotic														X							
Sclerolaena birchii	Galvanised Burr	Native										X	X	X		X							
Senecio quadridentatus	Cotton Fireweed	Native																					X
Senecio sp.		Native															X						
Sida corrugata	Corrugated Sida	Native	X	X						X			X	X			X	X					
Sida cunninghamii	Ridged Sida	Native												X					X				
Sida rhombifolia		Exotic												X									
Sida sp		Native						X															
Sigesbeckia orientalis		Native				X	X	X					X							X	X		X
Sisymbrium sp.		Exotic	X									X	X		X	X							
Solanum esuriale	Quena	Native								X													
Sonchus oleraceus	Common Sowthistle	Exotic	X				X	X	X	X	X	X	X	X			X			X		X	
Spartothamnella juncea		Native				X																	
Sporobolus creber	Slender Rat's Tail Grass	Native																X	X	X			
Sporobolus elongatus		Native							X														
Stachys arvensis		Exotic															X						
Stackhousia sp.		Native			X																	X	
Stellaria media		Exotic				X		X	X		X												
Swainsona galegifolia		Native															X			X			
Taraxacum officinale		Exotic				X	X		X				X			X							
Trifolium arvense	Haresfoot Clover	Exotic	X	X		X	X	X	X	X	X	X	X	X		X	X	X	X	X			
Trifolium campestre	Hop Clover	Exotic	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X				
Trifolium sp		Exotic													X			X					
Trifolium sp 2		Exotic											X										
Triptodiscus pygmaeus		Native																		X			
Urtica incisa		Native					X	X															
Verbena gaudichaudii		Native																			X		
Verbena sp.		Native							X														
Vittadinia cuneata	Fuzzweed	Native								X			X								X		X
Vittadinia sp.		Native															X						
Vulpia sp.	Fescue	Exotic		X			X	X		X		X	X			X	X	X	X	X	X	X	X
Wahlenbergia communis	Tufted Bluebell	Native			X	X	X			X									X			X	X
Wahlenbergia sp		Native			X											X				X	X		
Xerochrysum bracteatum	Golden Everlasting	Native						X		X	X		X										

Table A2 Flora Species List Mine BOA

Scientific name	Common name	Native/Exotic	S12 Rep	S13	S13 Rep	S14	S14 Rep	S15	S15 Rep	S16	S16 Rep	S17	S17 Rep	S18	S18 Rep	S19	S19 Rep
Abutilon oxycarpum	Straggly Lantern-bush	Native														X	X
Abutilon sp.		Native	X	X													
Acacia burrowi		Native					X										
Acacia burrowii		Native												X			
Acacia deanei		Native	X				X		X		X					X	
Acacia gladiformis		Native									X						
Acacia ixophylla		Native					X										
Acacia leiocalyx		Native					X									X	X
Acacia penninervis		Native								X							
Acacia sp		Native								X							
Acacia sp.		Native					X			X							
Allocasuarina littoralis	Black She-oak	Native					X				X						
Alphitonia excelsa	Red Ash	Native										X					
Alstonia constricta	Bitter Bark	Native											X				
Alternanthera denticulata	Lesser Joyweed	Native				X											
Anagallis arvensis	Scarlet Pimpernel	Exotic			X	X		X	X	X							X
Ancistrachne uncinulata	Hooky Grass	Native	X	X													
Aristida caput-medusae	Many-headed Wiregrass	Native		X			X			X	X					X	X
Aristida contorta	Bunched Kerosene Grass	Native										X				X	X
Aristida personata	Purple Wire-grass	Native						X	X	X	X		X			X	X
Aristida sp.		Native			X												
Arthropodium sp.		Native		X													
Arundinella nepalensis	Reedgrass	Native		X													
Asteraceae sp.		Native															X
Austrostipa bigeniculata		Native														X	X
Austrostipa ramosissima	Stout Bamboo Grass	Native				X											
Austrostipa scabra	Speargrass	Native	X		X	X	X			X			X			X	
Austrostipa verticillata	Slender Bamboo Grass	Native	X		X	X				X			X			X	
Bidens pilosa	Cobblers Pegs	Exotic	X														
Bidens subalternans	Great Beggar's Ticks	Exotic	X														
Bossiaea sp.		Native															X
Bothriochloa decipiens	Red Grass	Native						X	X								
Bothriochloa sp.		Native				X											
Brachychiton populneus	Kurrajong	Native															X
Brachyscome ciliaris	Variable Daisy	Native										X	X			X	X
Briza minor	Shivery Grass	Native							X								
Bromus catharticus	Prairie Grass	Native	X														
Bromus moliformis	Soft Brome	Native						X									
Brunoniella australis	Blue Trumpet	Native			X		X									X	X
Bryophyllum delagoense	Mother-of-millions	Exotic	X	X	X												
Bulbine sp.		Native														X	X
Callitris endlicheri	Black Cypress Pine	Native												X			
Callitris glaucophylla	White Cypress Pine	Native									X						
Calotis cuneifolia	Purple Burr-daisy	Native				X	X			X	X	X	X			X	X
Calotis lappulacea	Yellow Burr-daisy	Native	X		X	X					X						
Calytrix tetragona		Native								X				X			
Capparis lasiantha	Nepine	Native		X													
Carduus pycnocephalus	Slender Thistle	Exotic		X		X											
Carthamus lanatus	Saffron Thistle	Exotic			X			X									
Cassinia arcuata	Sifton Bush	Native									X						
Casuarina cristata	Belah	Native							X								
Centaurea sp.		Exotic						X	X								

Scientific name	Common name	Native/Exotic	S12 Rep	S13	S13 Rep	S14	S14 Rep	S15	S15 Rep	S16	S16 Rep	S17	S17 Rep	S18	S18 Rep	S19	S19 Rep
Chamaesyce sp.		Native				X		X					X			X	
Cheilanthes siberi	Poison Rock Fern	Native					X	X	X	X	X	X	X			X	X
Chloris sp.		Native				X											
Chloris ventricosa	Plump Windmill Grass	Native		X													
Chrysocephalum apiculatum	Yellow Buttons	Native						X	X	X							
Chrysocephalum semipapposum		Native								X	X						
Cirsium vulgare	Spear Thistle	Exotic									X						
Clematis microphylla	Small-leaved Clematis	Native				X											
Conyza bonariensis	Flaxleaf Fleabane	Exotic	X				X						X			X	X
Corymbia trachyphloia	White Bloodwood	Native				X					X		X	X	X		
Crassula colorata		Native		X													
Crassula sp.		Native			X							X					X
Cyclospernum leptophyllus	Slender Celery	Exotic	X							X	X	X	X			X	
Cymbopogan refractus	Barbed Wire Grass	Native					X	X	X	X	X		X				X
Cyperaceae sp.		Native						X	X								
Cyperus gracilis	Slender Flat-sedge	Native			X												
Cyperus sp.		Native		X										X			
Cyperus vaginatus	Stiff Flat-sedge	Native			X			X									
Darwinia sp.		Native								X							
Daucas glochidiatus	Native Carrot	Native			X									X		X	
Daucus sp.		Native													X		
Denhamia cunninghamii		Native															X
Desmodium varians	Slender Tick-trefoil	Native	X				X										
Dianella longifolia	Blue Flax-lily	Native									X						
Dianella nervosa		Native					X				X						
Dianella revoluta		Native															X
Dianella sp.		Native	X			X											
Dichondra repens	Kidney Weed	Native	X	X	X		X										
Dichondra sp. A		Native						X								X	
Digitaria breviglunis		Native				X					X						
Digitiaria spp.		Native												X			
Dodonaea viscosa	Sticky Hop-bush	Native	X				X			X	X					X	
Echium plantagineum	Paterson's Curse	Exotic						X	X								
Einadia hestata	Berry Saltbush	Native	X		X					X						X	X
Einadia nutans	Climbing Saltbush	Native	X		X					X							
Einadia trigonus	Fishweed	Native	X		X											X	
Elymus scaber		Native	X														
Enteropogon acicularis		Native			X												
Eragrostis curvula	African Lovegrass	Exotic						X	X								
Eragrostis elongata	Clustered Lovegrass	Native				X											
Eragrostis setifolia	Bristly Love-grass	Native				X											
Eragrostis sp.		Native			X				X								
Eremophila debilis	Winter Apple	Native	X	X		X											
Eremophila mitchelii	Budda	Native				X											
Eremophila mitchelli	Budda	Native		X	X												
Eremophila sp.		Native				X											
Eriochloa pseudoacrotricha	Early Spring Grass	Native		X		X											
Eucalyptus blakelyii	Blakely's Red Gum	Native								X							
Eucalyptus dwyeri	Dwyer's Red Gum	Native									X		X				
Eucalyptus fibrosa	Red Ironbark	Native					X					X	X	X	X	X	X
Eucalyptus microcarpa	Grey Box	Native	X	X	X				X								
Euchiton sphaericus		Native			X	X	X				X		X				X
Gahnia aspera	Rough Saw-sedge	Native				X	X			X	X					X	X

Scientific name	Common name	Native/Exotic	S12 Rep	S13	S13 Rep	S14	S14 Rep	S15	S15 Rep	S16	S16 Rep	S17	S17 Rep	S18	S18 Rep	S19	S19 Rep
Galium aparine	Goosegrass	Exotic															X
Geijera parviflora	Wilga	Native	X	X	X				X							X	
Geranium solanderi	Native Geranium	Native		X												X	
Glandularia aristigera	Mayne's Pest	Exotic	X	X				X	X								
Glossocardia bidens	Cobbler's Tack	Native				X											X
Glycine clandestina		Native							X							X	
Glycine tabacina		Native	X		X	X			X								
Gonocarpus elatus		Native									X	X	X	X	X	X	X
Goodenia cycloptera		Native											X	X			
Goodenia ovata	Hop Goodenia	Native													X		
Goodenia rotunaifolia sp.		Native					X				X						
Grevillea floribunda	Seven Dwarfs Grevillea	Native									X						
Harmogia densifolia		Native				X											
Hedypnois rhagadioloides	Cretan Weed	Exotic	X					X			X						
Homoranthus falvescens		Native															X
Homoranthus sp.		Native									X		X				
Hordeum sp.	Barley Grass	Native			X												
Hyparrhenia hirta	Coolatai Grass	Native							X								
Hypochaeris glabra	Smooth Catsear	Native				X											
Hypochaeris radicata	Catsear	Exotic	X	X	X	X	X	X	X	X	X	X	X	X		X	X
Hypochaeris sp.		Exotic				X									X		
Indigofera australis	Australian Indigo	Native															X
Jasminum suavissium		Native	X								X						
Juncus bufonius	Toad Rush	Exotic						X	X								
Juncus sp.		Native							X								
Lachnagrostis filiformis		Native		X													
Lactuca saligna	Willow-leaved Lettuce	Exotic	X								X						X
Lactuca serriola	Prickly Lettuce	Exotic	X				X				X	X				X	X
Lepidium africanum		Exotic	X	X		X		X									
Lepidosperma laterale		Native									X						
Leptospermum parvifolium		Native				X											X
Leptospermum spp		Native															X
Liliaceae sp.		Exotic													X		
Lolium perenna	Perennial Ryegrass	Exotic						X	X				X				
Lolium sp.	Rye Grass	Exotic				X											
Lomandra confertifolia	Mat-rush	Native	X										X			X	X
Lomandra filiformis	Wattle Mat-rush	Native		X		X											
Lomandra longifolia	Spiny-headed Mat-rush	Native	X				X				X						
Lomandra multiflora subsp multiflora	Many-flowered Mat-rush	Native				X				X	X						X
*Lycium ferocissimum**	African Boxthorn	Exotic															X
Maireana microphylla	Small-leaf Bluebush	Native	X		X												
Medicago minima	Woolly Burr Medic	Exotic								X							
Melaleuca uncinata	Broombush	Native					X										
Melichrus erubescens	Ruby Urn Heath	Native					X			X			X		X		
Microlaena stipoides	Weeping Grass	Native	X				X			X	X	X	X			X	X
Microtis sp.		Native						X	X								
Myoporum montanum	Western Boobialla	Native														X	
Notelaea microcarpa var. *microcarpa*	Velvet Mock Olive	Native					X										
Nyssanthes diffusa	Barbwire Weed	Native				X											
Nyssanthes erecta		Native		X													
Opuntia Stricta	Common Prickly Pear	Exotic	X		X												
Oxalis perennans		Exotic	X				X				X		X			X	X
Oxalis sp.		Native	X			X				X						X	X

Scientific name	Common name	Native/Exotic	S12 Rep	S13	S13 Rep	S14	S14 Rep	S15	S15 Rep	S16	S16 Rep	S17	S17 Rep	S18	S18 Rep	S19	S19 Rep
Panicum buncei		Native					X										
Panicum effusum	Hairy Panic	Native										X					
Parsonsia eucalyptophylla	Gargaloo	Native					X										
Paspalidium sp.		Native	X				X			X						X	
Petrorhagia nanteuilii	Proliferous Pink	Exotic	X	X	X	X		X	X								
Phebalium squamulosum	Scaly Phebalium	Native													X		
Philotheca salsolifolia		Native													X		
Philydrum lanuginosum	Woolly Waterlily	Native		X													
Phyllanthus virgatus		Native	X	X	X	X	X				X						
Pittosporum angustifolium	Weeping Pittosporum	Native		X													
Plantago debilis		Native	X														
Pomaderris sp.		Native											X			X	X
Pomax sp.		Native												X			
Pomax umbellata		Native					X				X						
Poranthera microphylla		Native					X				X	X	X	X		X	X
Pseudognaphallum luteoalbum	Jersey Cudweed	Native		X													
Pterostylis sp.		Native					X										
Rapistrum rugosum	Turnip Weed	Native	X														
Rumex brownii	Swamp Dock	Native	X					X									
Rytidosperma sp.	Wallaby Grass	Native	**X**		X											X	
Senecio quadridentatus	Cotton Fireweed	Native										X					X
Senecio sp.		Native					X										
Sida corrugata	Corrugated Sida	Native			X		X										X
Sida cunninghamii	Ridged Sida	Native					X									X	X
Sida rhombifolia		Native	X														
Sida sp.		Native			X			X								X	
Silene sp.		Native							X								
Solanium elegaris		Native			X						X					X	X
Solanum esuriale	Quena	Native											X				
Solanum ferocissimum	Spiny Potato Bush	Native					X									X	X
Solanum parvifolium		Native	X		X											X	X
Solanum sp.		Native										X					
Soliva sessilis	Bindyi	Exotic			X												
Sonchus oleraceus	Common Sowthistle	Exotic	X		X		X	X		X	X		X			X	
Sporobolus elengatus		Native							X								
Stackhousia viminea		Native														X	
Thyridolepis mitchelliana	Mulga Mitchell Grass	Native			X		X			X	X		X				
Trifolium arvense	Haresfoot Clover	Exotic	X		X			X	X								
Trifolium campestre	Hop Clover	Exotic	X		X			X	X								X
Trifolium repens		Native							X								
Tylophora linearis		Native														X	
Verbena gaudichaudii		Native														X	X
Vittadinia cuneata	Fuzzweed	Native			X					X	X					X	
Vittadinia sp.		Native	X		X			X									
Vulpia sp.	Fescue	Exotic			X			X	X	X			X				
Wahlenbergia (bronze Leaf)		Native												X			
Wahlenbergia communis	Tufted Bluebell	Native					X	X	X		X	X	X	X			X
Xerochrysum bracteatum	Golden Everlasting	Native										X				X	

Appendix B – *Photo Monitoring Records*

Kenna BOA Site 1 2012

Kenna BOA Site 1 2015

Kenna BOA Site 1 2016

Kenna BOA Site 1 Rep 2012

Kenna BOA Site 1 Rep 2015

Kenna BOA Site 1 Rep 2016

Kenna BOA Site 2 2012

Kenna BOA Site 2 2015

Kenna BOA Site 2 2016

Kenna BOA Site 2 Rep 2012

Kenna BOA Site 2 Rep 2015

Kenna BOA Site 2 Rep 2016

Kenna BOA Site 3 2012

Kenna BOA Site 3 2015

Kenna BOA Site 3 2016

Kenna BOA Site 3 Rep 2012

Kenna BOA Site 3 Rep 2015

Kenna BOA Site 3 Rep 2016

Kenna BOA Site 4 2012

Kenna BOA Site 4 2015

Kenna BOA Site 4 2016

Kenna BOA Site 4 Rep 2012

Kenna BOA Site 4 Rep 2015

Kenna BOA Site 4 Rep 2016

Kenna BOA Site 5 2012

Kenna BOA Site 5 2015

Kenna BOA Site 5 2016

Kenna BOA Site 5 Rep 2012

Kenna BOA Site 5 Rep 2015

Kenna BOA Site 5 Rep 2016

Kenna BOA Site 6 2012

Kenna BOA Site 6 2015

Kenna BOA Site 6 2016

Kenna BOA Site 6 Rep 2012

Kenna BOA Site 6 Rep 2015

Kenna BOA Site 6 Rep 2016

Kenna BOA Site 7 2012

Kenna BOA Site 7 2015

Site photo missing

Kenna BOA Site 7 2016

Kenna BOA Site 7 Rep 2012

Kenna BOA Site 7 Rep 2015

Kenna BOA Site 7 Rep 2016

Kenna BOA Site 8 2012

Kenna BOA Site 8 2015

Kenna BOA Site 8 2016

Kenna BOA Site 8 Rep 2012

Kenna BOA Site 8 Rep 2015

Kenna BOA Site 8 Rep 2016

Kenna BOA Site 9 2012

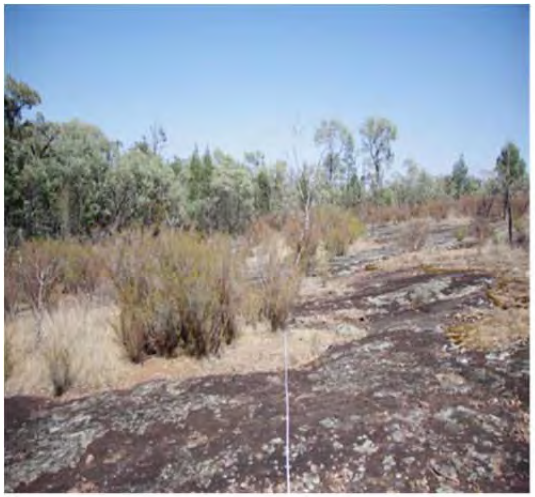
Kenna BOA Site 9 2015

Kenna BOA Site 9 2016

Kenna BOA Site 9 Rep 2012

Kenna BOA Site 9 Rep 2015

Kenna BOA Site 9 Rep 2016



Kenna BOA Site 10 2012

Kenna BOA Site 10 2015

Kenna BOA Site 10 2016

Kenna BOA Site 10 Rep 2012

Kenna BOA Site 10 Rep 2015

Kenna BOA Site 10 Rep 2016

Kenna BOA Site 11 2012

Kenna BOA Site 11 2015

Kenna BOA Site 11 2016

Kenna BOA Site 11 Rep 2012

Kenna BOA Site 11 Rep 2015

Kenna BOA Site 11 Rep 2016

Mine BOA Site 12 2012

Mine BOA Site 12 2015

Site unable to be located

Mine BOA Site 12 2016

Mine BOA Site 12 Rep 2012

Mine BOA Site 12 Rep 2015

Mine BOA Site 12 Rep 2016

Mine BOA Site 13 2012

Mine BOA Site 13 2015

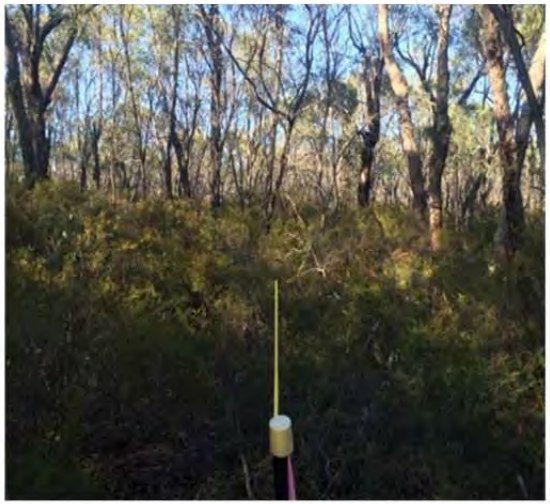
Mine BOA Site 13 2016

Mine BOA Site 13 Rep 2012

Mine BOA Site 13 Rep 2015

Mine BOA Site 13 Rep 2016

Mine BOA Site 14 2012



Mine BOA Site 14 2015

Mine BOA Site 14 2016

Mine BOA Site 14 Rep 2012

Mine BOA Site 14 Rep 2015

Mine BOA Site 14 Rep 2016

Mine BOA Site 15 2012

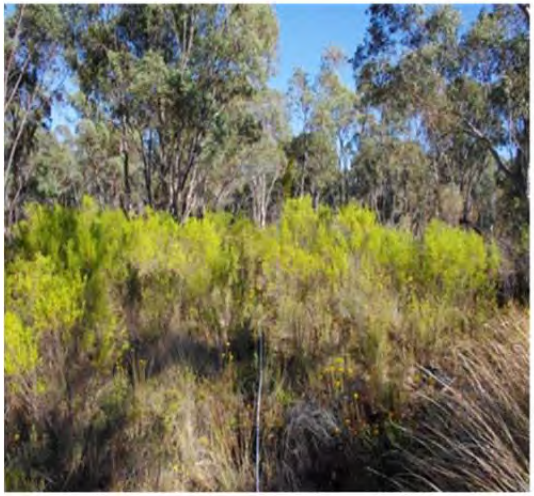
Mine BOA Site 15 2015

Mine BOA Site 15 2016

Mine BOA Site 15 Rep 2012

Mine BOA Site 15 Rep 2015

Mine BOA Site 15 Rep 2016



Mine BOA Site 16 2012

Mine BOA Site 16 2015

Mine BOA Site 16 2016

Mine BOA Site 16 Rep 2012

Mine BOA Site 16 Rep 2015

Mine BOA Site 16 Rep 2016

Mine BOA Site 17 2012

Mine BOA Site 17 2015

Mine BOA Site 17 2016

Mine BOA Site 17 Rep 2012

Mine BOA Site 17 Rep 2015

Mine BOA Site 17 Rep 2016

Mine BOA Site 18 2012

Mine BOA Site 18 2015

Mine BOA Site 18 2016

Mine BOA Site 18 Rep 2012

Mine BOA Site 18 Rep 2015

Mine BOA Site 18 Rep 2016

Mine BOA Site 19 2012

Mine BOA Site 19 2015

Mine BOA Site 19 2016

Mine BOA Site 19 Rep 2012

Mine BOA Site 19 Rep 2015

Mine BOA Site 19 Rep 2016

Appendix C – *Fauna Species List*

Table C1 Fauna Species List Kenna BOA

Scientific name	Common name	TSC Act	EPBC Act	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
Birds														
Acanthagenys rufogularis	Spiny-cheeked Honeyeater				1									
Acanthiza apicalis	Inland Thornbill				8									
Acanthiza chrysorrhoa	Yellow-rumped Thornbill						2						1	
Acanthiza nana	Yellow Thornbill												1	
Acanthiza pusilla	Brown Thornbil						4						2	
Acanthiza reguloides	Buff-rumped Thornbill						1			1			3	
Acridotheres tristis	Indian Mynah					2				2				
Anthus novaeseelandiae	Australasian Pipit			1		1								
Aprosmictus erythropterus	Red-winged Parrot			6				2	4					
Artamus cyanopterus	Dusky Woodswallow	V		2					2		2	2		
Artamus minor	Little Woodswallow										1	1		
Cacatua galerita	Sulphur-crested Cockatoo				1		1							
Chalcites basalis	Horsfield's Bronze-Cuckoo			1										
Chalcites osculans	Black-eared Cuckoo					1								
Chenonetta jubata	Wood Duck			2										
Cincloramphus mathewsi	Rufous Songlark			9		1	2	7	3	4	5	5	3	
Colluricincla harmonica	Grey Shrike-thrush					1		1					1	1
Coracina novaehollandiae	Black-faced Cuckoo-shrike			1		1								
Corvus coronoides	Australian Raven			1	2		4		1					1
Cracticus nigrogularis	Pied Butcherbird			1			1						1	2
Cracticus tibicen	Australian Magpie			2	1					1			1	
Cracticus torquatus	Grey Butcherbird							1	1					
Dicaeum hirundinaceum	Mistletoebird			1										
Eolophus roseicapillus	Galah					5	2	1		2				
Eopsaltria australis	Eastern Yellow Robin			2										
Geopelia striata	Peaceful Dove			2										
Gerygone fusca	Western Gerygone			1	1									
Grallina cyanoleuca	Magpie Lark			3	3	3		1	1					
Hirundo neoxena	Welcome Swallow									6				
Lalage sueurii	White-winged Triller				1				1					
Lichenostomus penicillatus	White-plumed Honeyeater			1				2	2					
Malurus cyaneus	Superb Fairy-wren				2	5	1	1			5	5	1	1
Malurus leucopterus	White-winged Fairy-wren					1								
Manorina melanocephala	Noisy Miner			3			2							
Microeca fascinans	Jacky Winter			1					1					
Myiagra inquieta	Restless Flycatcher								2		1	1		
Northiella haematogaster	Blue Bonnet							1						
Ocyphaps lophotes	Crested Pigeon			2		1	3	2	3					
Pachycephala rufiventris	Rufous Whistler				3		1						1	2
Cacomantis pallidus	Pallid Cuckoo						1		1					
Pardalotus striatus	Striated Pardalote												1	
Phaps chalcoptera	Common Bronzewing							1				1	1	1
Philemon corniculatus	Noisy Friarbird			2			1		2	1	1	1		
Platycercus eximius	Eastern Rosella					2	2		5					
Podargus stigoides	Tawny Frogmouth				1									
Pomatostomus temporalis	Grey-crowned Babbler	V				3			4					
Psephotus haematonotus	Red-rumped Parrot			6				6	7	4				
Rhipidura albiscapa	Grey Fantail			1										
Rhipidura leucophrys	Willie Wagtail			3	1	2	2	2	2	3	3	3	1	
Robin Eopsaltria	Easter Yellow Robin							1						
Sturnus vulgaris	Common Starling				1	14			1					

Scientific name	Common name	TSC Act	EPBC Act	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11
Strepera graculina	Pied Currawong													1
Struthidea cinerea	Apostlebird			1		25	6	15	8					
Tachybaptus novaehollandiae	Australasian Grebe			2										
Taeniopygia bichenovii	Double-barred Finch				4									
Todiramphus sanctus	Sacred Kingfisher								1					
Turnix varia	Painted Button-quail							1						
Vanellus miles	Masked Lapwing				1									
Aquila audax	Wedge-tailed Eagle								1					
Falco cenchroides	Nankeen Kestrel				1				2					
Ninox novaeseelandiae	Boobook							1						
Reptiles and Amphibians														
Morethia boulengeri	Boulenger's Snake-eyed Skink								1					
Limnodynastes tasmaniensis	Spotted Marsh Frog			>20	>20	>20	>20	>20	>20	>20			>20	>20
Litoria latopalmata	Broad-palmed rocket frog			1										
Mammals														
Austronomus australis	White-Striped Freetail Bat			1		3	1	7	4	1	17	1	17	3
Chalinolobus dwyeri	Large-eared Pied Bat	V	V					7	1	3			1	
Chalinolobus gouldii	Goulds Wattled Bat			27		8	3	88	97	3	32	1	24	
Chalinolobus morio	Chocolate Wattled Bat			8		30	5	7	46	3	3	2	4	
Chalinolobus picatus	Little Pied Bat	V				1		4	1		1			
Mormopterus (Ozimops) petersi (Species 3)	Inland Freetail Bat			4				56	90		9	2	4	
Mormopterus (Ozimops) planiceps (Species 4)	South-eastern Freetail Bat			12			1	41	55	9	102	4	99	3
Nyctophilus spp.	Long-eared Bat	V		4		3	7	13	7	5	11	5	18	1
Saccolaimus flaviventris	Yellow-bellied Sheathtail Bat	V		7			2	2	1		1		1	
Scotorepens balstoni	Inland Broad-nosed Bat			1				4	9	1	1	2	2	
Scotorepens greyii	Little Borad-nosed Bat					2	2	24	35		17	1	17	
Vespadelus troughtoni	Eastern Cave Bat	V		2		2		7	7		3	2	1	
Vespadelus vulturnus	Little Forest Bat			14		22		101	173	8	34	8	11	
Oryctolagus cuniculus	Rabbit					3								
Vulpes vulpes	Fox									1				
Macropus giganteus	Eastern Grey Kangaroo			7				5	4	4	3	1		
Trichosurus vulpecula	Brush Tailed Possum						1							

Table C2 Fauna Species List Mine BOA

Scientific name	Common name	TSC Act	EPBC Act	S12	S13	S14	S15	S16	S17	S18	S19
Birds											
Acanthagenys rufogularis	Spiny-cheeked Honeyeater			2				1			
Acanthiza apicalis	Inland Thornbill					2			4	6	
Acanthiza nana	Yellow Thornbill							6			
Acanthiza reguloides	Buff-rumped Thornbill								2		
Acanthiza uropygialis	Chestnut-rumped Thornbill								4		
Anas superciliosa	Pacific Black Duck				2						
Aprosmictus erythropterus	Red-winged Parrot						1				
Barnardius zonarius	Australian Ringneck						4	2			
Cacatua galerita	Sulphur-crested Cockatoo				2						
Cacomantis flabelliformis	Fan-tailed Cuckoo										1
Chalcites basalis	Horsfield's Bronze-Cuckoo							1		1	
Chalcites lucidus	Shining Bronze-Cuckoo							1			
Chenonetta jubata	Australian Wood Duck									1	
Chthonicola sagittata	Speckled Warbler							3	2	1	3
Colluricincla harmonica	Grey Shrike-thrush					3			1	3	1
Coracina novaehollandiae	Black-faced Cuckoo-shrike			1		1	1	1		2	1
Corcorax melanoramphos	White-winged Chough			6	8				6		14
Cormobates leucophaea	White-throated Treecreeper									4	1
Corvus coronoides	Australian Raven			1	6		1	1	2		2
Cracticus nigrogularis	Pied Butcherbird				1		4				
Cracticus tibicen	Australian Magpie			1	3		5	7			
Cracticus torquatus	Grey Butcherbird			2	2		1	2	2	2	2
Dacelo novaeguineae	Laughing Kookaburra						3	2			
Daphoenositta chrysoptera	Varied Sittella	V								2	
Dicaeum hirundinaceum	Mistletoebird			3		1	2	4	3		4
Eolophus roseicapillus	Galah			5	82		5			4	
Eopsaltria australis	Eastern Yellow Robin			1		2			2	3	1
Geopelia humeralis	Bar-shouldered Dove					1				1	
Gerygone fusca	Western Gerygone						1			1	
Grallina cyanoleuca	Magpie-lark			2	6		3				
Hylacola pyrrhopygia	Chestnut-rumped Heathwren									1	
Lichenostomus chrysops	Yellow-faced Honeyeater					1		2	2		
Lichenostomus leucotis	White-eared Honeyeater					7		2		3	
Malurus cyaneus	Superb Fairy-wren							3	6	2	
Malurus lamberti	Variegated Fairy-wren									4	
Manorina melanocephala	Noisy Miner			31	25		30	4			
Melithreptus brevirostris	Brown-headed Honeyeater							5		6	
Merops ornatus	Rainbow Bee-eater										2
Microeca fascinans	Jacky Winter							2			
Myiagra rubecula	Leaden Flycatcher									2	
Ocyphaps lophotes	Crested Pigeon			2	6		1				1
Oriolus sagittatus	Olive-backed Oriole					1			1	1	2
Pachycephala pectoralis	Golden Whistler								3		
Pachycephala rufiventris	Rufous Whistler					4		1	4	4	1
Pardalotus punctatus	Spotted Pardalote							1			1
Pardalotus striatus	Striated Pardalote			1			1	1			
Philemon citreogularis	Little Friarbird										1
Philemon corniculatus	Noisy Friarbird					1		3	3	3	7
Platycercus eximius	Eastern Rosella			6	4		3	1			1
Plectorhyncha lanceolata	Striped Honeyeater					1	1	3	1	2	3
Podargus strigoides	Tawny Frogmouth								1		

Scientific name	Common name	TSC Act	EPBC Act	S12	S13	S14	S15	S16	S17	S18	S19
Pomatostomus temporalis	Grey-crowned Babbler	V		4			14				
Psephotus haematonotus	Red-rumped Parrot				2						
Rhipidura albiscapa	Grey Fantail			1					2	4	
Rhipidura leucophrys	Willie Wagtail			1							
Scythrops novaehollandiae	Channel-billed Cuckoo				1						
Smicrornis brevirostris	Weebill					1			7	1	2
Strepera graculina	Pied Currawong						1	1			
Struthidea cinerea	Apostlebird			10	14		10		8		
Sturnus vulgaris	Common Starling				3						
Tachybaptus novaehollandiae	Australasian Grebe				2						
Taeniopygia bichenovii	Double-barred Finch								3		
Zosterops lateralis	Silvereye					2		2	2	8	
Reptiles and Amphibians											
Pogona barbata	Eastern Bearded Dragon								1		1
Heteronotia bynoei	Bynoe's Gecko					1					1
Varanus varius	Lace Monitor				1						
Cryptoblepharus sp.	Skink						1				
Lerista punctovittata	Eastern Robust Slider										1
Mammals											
Austronomus australis	White-striped Free-tailed Bat			3	2	7	7	6			9
Chalinolobus gouldii	Gould's Wattled Bat			2	24	154	167	38	1	3	27
Chalinolobus morio	Chocolate Wattled Bat			61	13	18	13	11	1	1	69
Chalinolobus picatus	Litlle Pied Bat	V					4				6
Mormopterus petersi	Inland Freetail Bat						30				1
Mormopterus planiceps	South-eastern Freetail Bat			3	10	10	31				12
Nyctophilus spp.	Long-eared Bat	V		2	3	10	6	11			30
Saccolaimus flaviventris	Yellow-bellied Sheathtail Bat	V			1	2	7	2		17	8
Scotorepens balstoni	Inland Broadnosed Bat						15				3
Scotorepens greyii	Little Broad-nosed Bat				3	1	81	2		1	45
Vespadelus troughtoni	Eastern Cave Bat	V			1	10	2				
Vespadelus vulturnus	Little Forest Bat			1	12	74	83	20			104
Macropus giganteus	Eastern Grey Kangaroo			1			1	1			1
Macropus rufogriseus	Red-necked Wallaby			1			1				
Sus scrofa	Feral Pig			1							
Capra hircus	Feral Goat									20+	

Appendix D – *Surface Water Data*

Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
	KCUS	31 July 2007	7.9	255	22		<10	
	KCDS	31 July 2007	8	205	163		15	
	KC2US	31 July 2007	6.7	75	84		18	
	KC2DS	31 July 2007	6.7	85	21		12	
	KC1US	31 July 2007	8.2	1300	15		<10	
	KC1DS	31 July 2007	6.9	430	39		<10	
31489.01	KC2US	23 September 2008	6.5	65	35	<2	-	
31489.02	KC1US	23 September 2008	8.0	65	320	<2	-	
31489.03	KCUS	23 September 2008	7.7	315	168	<2	-	
31489.04	KCDS	23 September 2008	7.2	230	150	<2	-	
31489.05	PC	23 September 2008	7.2	90	294	<2	-	
31489.06	PC1	23 September 2008	7.0	90	62	<2	-	
31489.07	KC1DS	23 September 2008	7.1	220	1280	<2	-	
31489.08	KC2DS	23 September 2008	7.2	165	444	<2	-	
32276.01	KCDS	15 December 2008	7.1	355	21	<2	-	
32276.02	KC2US	15 December 2008	6.9	95	8	<2	-	
32276.03	KCUS	15 December 2008	7.5	55	6	<2	-	
32276.04	PC	15 December 2008	7.2	125	12	<2	-	
32276.05	PC1	15 December 2008	6.9	255	23	<2	-	
32276.06	KC1DS	15 December 2008	8.2	315	42	<2	-	
32276.07	KC2DS	15 December 2008	7.4	185	289	<2	-	
32373.01	KC1US	29 December 2008	6.9	95	48	<2	-	
32373.02	KC2US	29 December 2008	6.8	90	17	<2	-	
32373.03	KCDS	29 December 2008	7.1	450	26	<2	-	
32815.01	KCUS	17 February 2009	7.2	280	123	<2	-	
32815.02	KC2US	17 February 2009	6.7	70	14	<2	-	
32815.03	KCDS	17 February 2009	6.9	180	132	<2	-	
32815.04	PC	17 February 2009	7.1	60	57	<2	-	
32815.05	PC1	17 February 2009	7.1	180	38	<2	-	
32815.06	KC1DS	17 February 2009	7.1	145	142	<2	-	
32815.07	KC2DS	17 February 2009	7.1	105	1130	<2	-	
ES0919730-001	KC2DS	29 December 2009	7.15	95	48	-	13	Oil & Grease not reported for any location due to incorrect sample bottle and insufficient sample. No site discharge - only adjacent creek samples
ES0919730-002	KCDS	29 December 2009	6.94	187	33	-	11	
ES0919730-003	KC2US	29 December 2009	6.67	86	4	-	16	
ES0919730-004	KC1US	29 December 2009	6.7	74	47	-	6	
ES0919730-005	KCUS	29 December 2009	7.05	305	52	-	9	
ES0919730-007	PC	29 December 2009	7.23	83	117	-	8	
ES0919730-008	KC1DS	29 December 2009	7.12	171	79	-	10	

Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1000146-001	KCUS	5 January 2010	7.24	804	2	<5	10	
ES1000146-002	KC1US	5 January 2010	7.42	126	8	<5	12	
ES1000146-003	KCDS	5 January 2010	7.41	456	2	<5	14	
ES1000146-004	SD5	5 January 2010	7.23	155	18	<5	8	Discharge
ES1000146-005	PC1	5 January 2010	7.3	174	7	<5	12	
ES1000146-006	PC	5 January 2010	7.38	121	8	<5	15	
ES1000146-007	KC1DS	5 January 2010	7.28	419	6	<5	10	
ES1000146-008	KC2DS	5 January 2010	7.47	178	22	<5	12	
ES1013938-001	PC1	14 July 2010	8.5	37	126	<5	13	
ES1013938-002	PC	14 July 2010	8.65	226	10	<5	9	
ES1013938-003	KC1DS	14 July 2010	8.01	552	27	-	13	
ES1013938-004	KC2DS	14 July 2010	7.92	211	142	<5	16	
ES1015034-001	KCUS	28 July 2010	8.18	72	130	<5	12	
ES1015034-002	PC	28 July 2010	7.95	170	151	<5	11	
ES1015034-003	PCI	28 July 2010	7.978	37	132	<5	9	
ES1015034-004	KC1DS	28 July 2010	7.77	36	90	<5	9	
ES1016053-001	KCUS	10 August 2010	7.45	33	296	<5	5	
ES1016053-002	KC1US	10 August 2010	7.65	169	2760	<5	10	
ES1016053-003	KC2US	10 August 2010	7.7	37	62	<5	12	
ES1016053-004	PC1	10 August 2010	7.54	43	1320	<5	6	
ES1016053-005	PC	10 August 2010	6.83	62	167	<5	7	
ES1016053-006	KC1DS	10 August 2010	6.8	64	380	<5	9	
ES1016053-007	KC2DS	10 August 2010	6.76	114	40	<5	17	
ES1016053-008	KCDS	10 August 2010	7.08	30	326	<5	4	
ES1016966-101	KCUS	23 August 2010	8.04	100	236	<5	9	
ES1016966-102	KC1US	23 August 2010	7.84	210	1600	<5	5	
ES1016966-103	KC2US	23 August 2010	8.05	58	48	<5	15	
ES1016966-104	KCDS	23 August 2010	7.97	50	122	<5	5	
ES1016966-105	SD5	23 August 2010	7.9	60	22	<5	11	No discharge. Sampled to determine sediment level.
ES1016966-106	PC1	23 August 2010	7.94	49	476	<5	7	
ES1016966-107	KC1DS	23 August 2010	7.37	193	146	<5	8	
ES1016966-108	KC2DS	23 August 2010	7.63	94	35	<5	15	
ES1016966-109	PC	23 August 2010	7.71	70	142	<5	10	

Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1018432-001	KCUS	10 September 2010	7.44	909	246	<5	8	
ES1018432-002	KC1US	10 September 2010	7.2	154	193	<5	10	
ES1018432-003	KC2US	10 September 2010	6.84	147	81	<5	11	
ES1018432-004	KCDS	10 September 2010	7.26	492	116	<5	10	
ES1018432-005	PC1	10 September 2010	7.18	65	176	<5	10	
ES1018432-006	PC	10 September 2010	7.21	159	26	<5	17	
ES1018432-007	KC1DS	10 September 2010	7.66	955	131	<5	12	
ES1018432-008	KC2DS	10 September 2010	7.25	133	84	<5	16	
ES1023281-001	KCUS	16 November 2010	7.83	866	162	10	12	
ES1023281-002	PC1	16 November 2010	7.27	98	260	9	9	
ES1023281-003	PC	16 November 2010	6.94	179	127	39	20	Elevated Oil and Grease
ES1024687-001	KC2US	30 November 2010	6.99	86	40	<5	14	
ES1024687-002	KCUS	30 November 2010	7.12	93	20	<5	15	
ES1024687-003	KC1US	30 November 2010	6.97	64	124	<5	10	
ES1024687-004	PC	30 November 2010	6.9	46	40	<10	14	
ES1024687-005	PC1	30 November 2010	7.42	101	136	<10	10	
ES1024687-006	KCDS	30 November 2010	7.11	191	191	<5	14	
ES1024687-007	KC1DS	30 November 2010	7.23	150	150	<5	15	
ES1024687-008	KC2DS	30 November 2010	7.2	101	101	<5	12	
ES1119821-001	PC1	9 September 2011	6.84	29	38	<5	10	
ES1119821-002	PC	9 September 2011	7.31	134	71	<5	13	
ES1119821-003	KC1DS	9 September 2011	7.58	209	66	<5	22	
ES1119821-004	KC2DS	9 September 2011	7.58	124	101	<5	15	
ES1121355-001	KC2US	29 September 2011	6.69	76	38	<5	14	
ES1121355-002	KCUS	29 September 2011	6.88	73	160	<5	10	
ES1121355-003	PC1	29 September 2011	7.08	87	255	<5	9	
ES1121355-004	PC	29 September 2011	6.89	63	198	<5	9	
ES1121355-005	KC1DS	29 September 2011	7.17	92	167	<5	9	
ES1121355-006	KCDS	29 September 2011	6.93	434	530	<5	38	
ES1121355-007	KC2DS	29 September 2011	7.41	134	36	<5	12	

Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1124936-001	KC2US	14 November 2011	7.24	94	30	<5	26	
ES1124936-002	PC1	14 November 2011	7.36	158	220	<5	14	
ES1124936-003	PC	14 November 2011	7.93	167	73	<5	8	
ES1124936-004	KC1DS	14 November 2011	7.6	157	104	<5	13	
ES1126001-001	KC2US	23 November 2011	6.74	32	66	<5	12	
ES1126001-002	KCUS	23 November 2011	6.89	38	788	<5	13	
ES1126001-003	KC1US	23 November 2011	7.47	112	144	<5	12	
ES1126001-004	PC1	23 November 2011	7.22	60	202	<5	9	
ES1126001-005	PC	23 November 2011	6.75	72	322	<5	14	
ES1126001-006	KC1DS	23 November 2011	7.09	75	372	<5	16	
ES1126001-007	KC2DS	23 November 2011	7.09	90	59	<5	20	
ES1126001-008	KCDS	23 November 2011	6.87	88	536	<5	16	
ES1126200-001	SD2	25 November 2011	7.24	83	42	<5	7	
ES1126200-002	SD5	25 November 2011	7.48	125	83	<5	6	
ES1126200-003	SB3	25 November 2011	8.54	663	478	<5	4	Sampled overflowing dam
ES1126200-004	KC2DS	25 November 2011	7.45	99	49	<5	6	
ES1126200-005	KC2US	25 November 2011	7.04	37	18	<5	6	
ES1126200-006	KC1US	25 November 2011	7.05	62	191	<5	7	
ES1126200-007	SD4	25 November 2011	7.52	131	166	<5	7	
ES1126200-008	KC1DS	25 November 2011	7.19	86	384	<5	4	
ES1127632-001	SD4	13 December 2011	7.69	200	48	<5	5	
ES1127632-002	SD2	13 December 2011	7.2	106	82	<5	8	
ES1127632-003	SD5	13 December 2011	7.62	148	24	<5	6	
ES1127632-004	KC2DS	13 December 2011	7.5	134	16	<5	7	
ES1127632-005	KCDS	13 December 2011	7.41	200	64	<5	10	
ES1127632-006	KC2US	13 December 2011	7.13	58	9	<5	8	
ES1127632-007	KCUS	13 December 2011	7.49	277	120	<5	11	
ES1127632-008	KC1US	13 December 2011	7.35	180	26	<5	11	
ES1127632-009	PCI	13 December 2011	7.54	113	60	<5	8	
ES1127632-010	PC	13 December 2011	7.38	168	12	<5	11	
ES1127632-011	KC1DS	13 December 2011	7.77	741	43	<5	10	

Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1202508-001	KC2DS	1 February 2012	7.58	143	52	<5	11	
ES1202508-002	KCDS	1 February 2012	7.56	544	30	<5	7	
ES1202508-003	KC2US	1 February 2012	7.11	58	41	<5	9	
ES1202508-004	KCUS	1 February 2012	7.51	750	397	<5	6	
ES1202508-005	KC1US	1 February 2012	7.75	172	83	<5	8	
ES1202508-006	PC1	1 February 2012	7.36	63	73	<5	5	
ES1202508-007	PC	1 February 2012	7.29	59	81	<5	5	
ES1202508-008	KC1DS	1 February 2012	7.83	216	58	<5	8	
ES1202508-009	SD2	1 February 2012	7.91	178	20	<5	6	
ES1202508-010	SD4	1 February 2012	7.9	212	247	<5	5	
ES1202508-011	SD5	1 February 2012	7.84	148	36	<5	7	
ES1202509-001	SB3	2 February 2012	8.29	415	215	<5	2	Sampled overflowing dam
ES1202509-002	PC1	2 February 2012	7.43	48	80	<10	3	
ES1202509-003	KC1US	2 February 2012	7.42	70	36	<10	7	
ES1202509-004	KCUS	2 February 2012	7.53	113	300	<10	6	
ES1202509-005	KC2US	2 February 2012	7.28	42	16	<5	4	
ES1202509-006	KCDS	2 February 2012	7.35	54	15	<5	7	
ES1202509-007	KC2DS	2 February 2012	7.75	126	26	<10	5	
ES1202509-008	KC1DS	2 February 2012	7.63	114	84	<10	5	
ES1202509-009	PC	2 February 2012	7.3	67	70	<10	5	
ES1214027-001	KC2US	4 June 2012	7.27	82	20	<5	23	
ES1214027-002	KCUS	4 June 2012	7.82	218	52	<5	13	
ES1214027-003	PC1	4 June 2012	7.51	97	96	<5	16	
ES1214027-004	PC	4 June 2012	7.18	95	48	<5	13	
ES1214027-005	KC1DS	4 June 2012	7.9	1270	8	<5	10	
ES1214027-006	KC2DS	4 June 2012	6.72	136	108	<5	17	
ES1217576-001	KC2US	12 July 2012	6.86	50	32	<5	15	
ES1217576-002	KCUS	12 July 2012	7.11	62	229	<5	13	
ES1217576-003	PC1	12 July 2012	7.43	71	53	<5	10	
ES1217576-004	PC	12 July 2012	7	47	142	<5	8	
ES1217576-005	KC1DS	12 July 2012	7.65	230	88	<5	14	
ES1217576-006	KC2DS	12 July 2012	7.12	85	108	<5	20	
ES1217576-007	SD5	12 July 2012	7.33	98	122	<5	16	
ES1217572-001	SD2	13 July 2012	7.83	205	20	<5	14	
ES1217572-002	KC1US	13 July 2012	7.52	221	133	<5	21	

Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1302189-001	KCDS	29 January 2013	6.82	387	65	<5	16	
ES1302189-002	KC2US	29 January 2013	6.68	89	7	<5	31	
ES1302189-003	KCUS	29 January 2013	7.09	426	72	<5	15	
ES1302189-004	PC1	29 January 2013	6.89	92	90	<5	18	
ES1302189-005	PC	29 January 2013	7.01	162	55	<5	17	
ES1302189-006	KC1DS	29 January 2013	7.09	162	23	<5	20	
ES1305016-001	KCUS	1 March 2013	7.13	195	750	<5	6	
ES1305016-002	KCDS	1 March 2013	6.83	89	322	<5	16	Disturbance along rail line, just flowing @ rail line
ES1305016-003	KC1US	1 March 2013	6.96	88	238	<5	11	
ES1305016-004	KC1DS	1 March 2013	7.15	206	322	<5	10	
ES1305016-005	KC2US	1 March 2013	6.76	45	36	<5	9	
ES1305016-006	KC2DS	1 March 2013	7.33	204	27	<5	17	
ES1305016-007	PCa	1 March 2013	6.83	55	358	<5	10	
ES1305016-008	PC1	1 March 2013	6.78	54	234	<5	8	
ES1406431-001	PCA	21 March 2014	6.58	16	82	<5	5	
ES1406431-002	PC1	21 March 2014	7.02	87	12	<5	14	
ES1406431-003	KC1DS	21 March 2014	7.32	286	53	<5	31	
ES1406546-001	KCUS	25 March 2014	7.25	90	503	<5	6	
ES1406546-002	KC1DS	25 March 2014	7.13	99	68	<5	10	
ES1406546-003	KC2US	25 March 2014	6.65	70	35	<5	12	
ES1406546-004	KC2DS	25 March 2014	6.46	72	22	<5	14	
ES1406546-005	PCa	25 March 2014	6.77	58	302	<5	8	
ES1406546-006	PC1	25 March 2014	7.29	99	122	<5	6	
ES1406686-001	PC1	26 March 2014	7.41	122	<5	<5	15	
ES1406686-002	PCA	26 March 2014	7.13	72	39	<5	14	
ES1406686-003	KC1DS	26 March 2014	7.85	254	<5	<5	20	
ES1406891-001	PCA	27 March 2014	7.23	82	43	<5	13	
ES1406891-002	PC1	27 March 2014	7.17	78	129	<5	7	
ES1406891-003	KCUS	27 March 2014	7.41	195	92	<5	8	
ES1406891-004	KCDS	27 March 2014	7.38	130	58	<5	8	
ES1406891-005	KC1US	27 March 2014	7.53	113	14	<5	16	
ES1406891-006	KC1DS	27 March 2014	7.47	98	100	<5	12	
ES1406891-007	KC2US	27 March 2014	7.27	65	8	<5	10	
ES1406891-008	KC2DS	27 March 2014	7.19	79	88	<5	13	
ES1407152-001	SD2	28 March 2014	7.21	103	26	<5	12	
ES1407152-002	SD5	28 March 2014	7.06	72	18	<5	10	

Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1419357-001	KC2DS	27 August 2014	6.8	50	28	<5	21	
ES1419357-002	KCDS	27 August 2014	7.11	203	113	<5	11	
ES1419357-003	KC2US	27 August 2014	6.91	52	42	<5	16	
ES1419357-004	KCUS	27 August 2014	7.14	353	98	<5	11	
ES1419357-005	PC1	27 August 2014	7.41	77	16	<5	12	
ES1419357-006	PC	27 August 2014	7.35	98	238	<5	12	
ES1419357-007	KC1DS	27 August 2014	7.48	116	56	<5	15	
ES1507956-001	KCUS	4 April 2015	7.32	123	298	<5	6	
ES1507956-002	KCDS	4 April 2015	7.31	115	312	<5	7	
ES1507956-003	KC1DS	4 April 2015	7.57	155	45	<5	11	
ES1507956-004	KC2US	4 April 2015	7.32	58	27	<5	8	
ES1507956-005	PC	4 April 2015	6.95	53	356	<5	6	
ES1507956-006	PC1	4 April 2015	7.68	120	37	<5	8	
ES1507950-001	KC2DS	7 April 2015	6.74	84	32	<5	24	
ES1507950-002	KCDS	7 April 2015	7.61	194	67	<5	8	
ES1507950-003	KC2US	7 April 2015	7.42	78	16	<5	8	
ES1507950-004	KCUS	7 April 2015	7.66	262	66	<5	7	
ES1507950-005	KC1US	7 April 2015	7.1	96	100	<5	8	
ES1507950-006	PC1	7 April 2015	7.54	127	28	<5	8	
ES1507950-007	PC	7 April 2015	7.05	63	301	<5	7	
ES1507950-008	KC1DS	7 April 2015	7.49	143	45	<5	11	
ES1520301-001	KC2DS	21 April 2015	7.09	142	12	<5	8	
ES1520301-002	KCDS	21 April 2015	7.55	291	20	<5	8	
ES1520301-003	KC2US	21 April 2015	6.86	34	26	<5	8	
ES1520301-004	KCUS	21 April 2015	7.38	430	769	<5	5	
ES1520301-005	PC1	21 April 2015	5.82	32	32	<5	5	
ES1520301-006	PC	21 April 2015	6.9	29	184	<5	3	
ES1520301-007	KC1DS	21 April 2015	7.66	160	26	<5	13	
ES1524347-001	KCUS	17 June 2015	7.19	72	337	<5	11	
ES1524347-002	KCDS	17 June 2015	7.84	432	32	5	7	
ES1524347-003	KC1DS	17 June 2015	7.69	194	20	<5	18	
ES1524347-004	KC2US	17 June 2015	7.12	48	8	<5	11	
ES1524347-005	KC2DS	17 June 2015	6.89	68	22	<5	17	
ES1524347-006	PC	17 June 2015	6.76	34	284	<5	5	
ES1524347-007	PC1	17 June 2015	7.86	122	68	7	7	

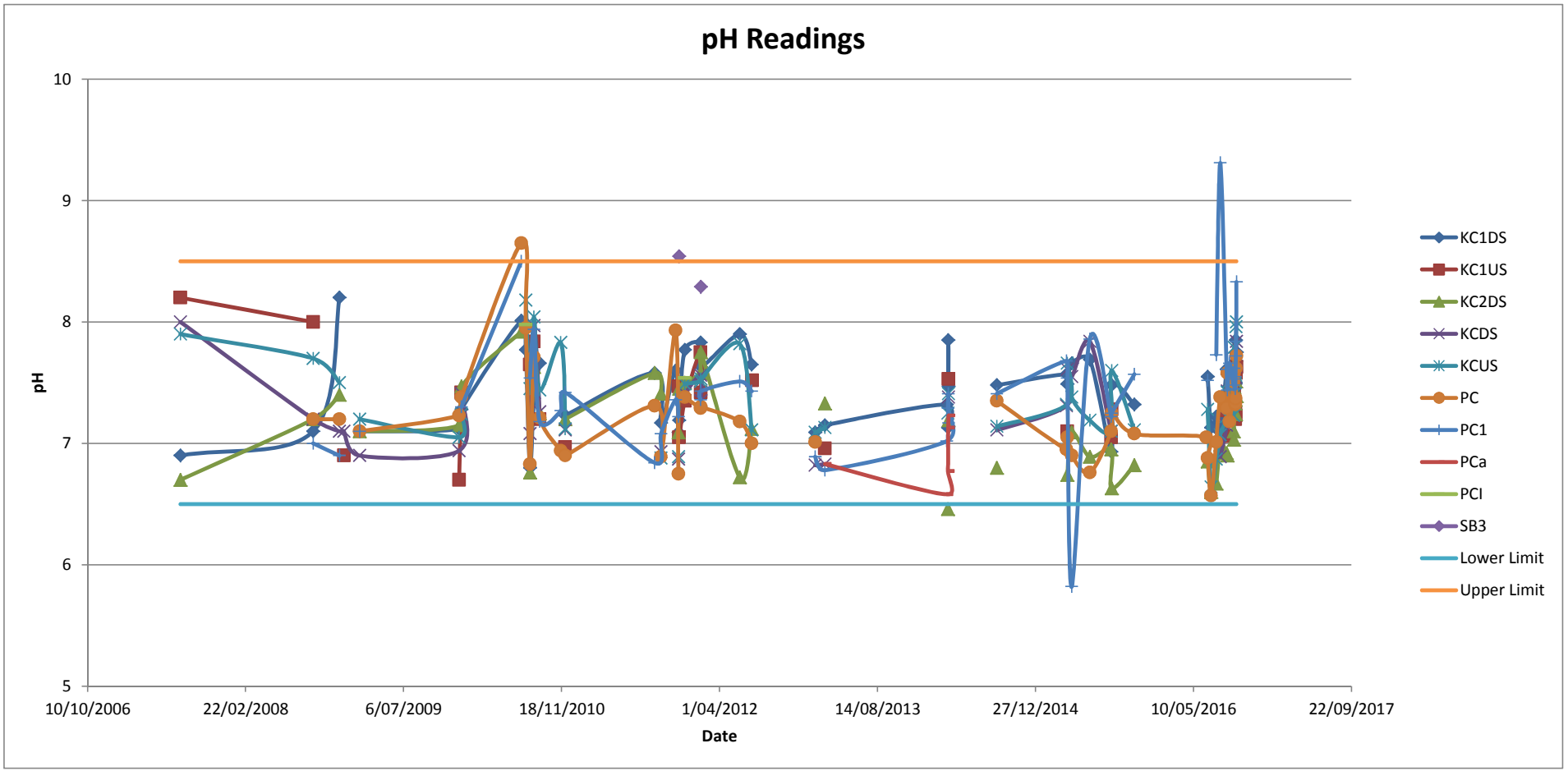
Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1529285-001	KC2DS	24 August 2015	6.95	66	13	5	16	
ES1529285-002	KCDS	24 August 2015	7.1	140	194	5	15	
ES1529285-003	KC2US	24 August 2015	7.01	73	24	8	12	
ES1529285-004	KCUS	24 August 2015	7.1	177	192	<5	15	
ES1529285-005	KC1US	24 August 2015	7.05	136	188	<5	11	
ES1529285-006	PC1	24 August 2015	7.22	101	30	<5	15	
ES1529285-007	PC	24 August 2015	7.1	131	70	11	16	
ES1529285-008	KC1DS	24 August 2015	6.93	140	63	21	14	
ES1529288-003	KC2DS	25 August 2015	6.63	77	29	10	20	
ES1529288-004	KCDS	25 August 2015	7.26	308	18	9	12	
ES1529288-005	KC2US	25 August 2015	7.21	100	14	11	18	
ES1529288-006	KCUS	25 August 2015	7.6	612	23	11	10	
ES1529288-007	KC1US	25 August 2015	7.28	149	33	11	9	
ES1529288-008	PC1	25 August 2015	7.25	185	15	14	10	
ES1529288-009	PC	25 August 2015	7.25	153	32	<5	13	
ES1529288-010	KC1DS	25 August 2015	7.48	233	29	13	11	
ES1535804-001	KCUS	5 November 2015	7.11	702	665	<5	10	
ES1535804-002	KC1DS	5 November 2015	7.32	121	80	6	14	
ES1535804-003	KC2US	5 November 2015	6.77	47	16	6	12	
ES1535804-004	KC2DS	5 November 2015	6.82	64	48	-	21	O&G bottle broken in transit
ES1535804-005	PC	5 November 2015	7.08	91	90	11	16	
ES1535804-006	PC1	5 November 2015	7.57	168	191	<5	13	
ES1613581-001	PC	20 June 2016	7.05	50	192	<5	8	
ES1613978-001	KC2DS	24 June 2016	6.85	49	12	<5	16	
ES1613978-002	KC2US	24 June 2016	6.87	50	82	<5	13	
ES1613978-003	KCUS	24 June 2016	7.28	70	92	<5	10	
ES1613978-004	PC1	24 June 2016	7.52	105	28	<5	1	
ES1613978-005	PC	24 June 2016	6.88	57	150	<5	6	
ES1613978-006	KC1DS	24 June 2016	7.55	160	63	<5	2	
ES1614765-001	KC2US	5 July 2016	6.49	36	128	<5	12	
ES1614765-002	KCUS	5 July 2016	6.64	47	134	8	12	
ES1614765-003	PC	5 July 2016	6.57	76	133	8	10	
ES1614765-004	KC1DS	5 July 2016	7.13	171	22	5	10	
ES1614765-005	KC2DS	5 July 2016	6.6	77	20	<5	23	

Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1616264-001	KC2DS	21 July 2016	6.67	57	20	<5	27	
ES1616264-002	KC2US	21 July 2016	6.75	54	39	12	19	
ES1616264-003	KCUS	21 July 2016	6.87	52	120	9	14	
ES1616264-004	PC1	21 July 2016	7.73	196	60	<5	16	
ES1616264-005	PC	21 July 2016	7.01	72	92	<5	13	
ES1616264-006	KC1DS	21 July 2016	7.22	124	52	<5	19	
ES1617224-001	KC2DS	3 August 2016	6.99	85	16	<5	24	
ES1617224-002	KC2US	3 August 2016	6.88	38	69	<5	10	
ES1617224-003	KCUS	3 August 2016	7.07	57	884	<5	7	
ES1617224-004	PC1	3 August 2016	9.31	533	361	<5	13	
ES1617224-005	PC	3 August 2016	7.38	70	158	<5	7	
ES1617224-006	KC1DS	3 August 2016	7.09	96	73	<5	12	
ES1617224-007	KCDS	3 August 2016	6.89	59	408	<5	6	
ES1618767-001	KC2DS	23 August 2016	6.92	51	17	<5	24	
ES1618767-002	KCDS	23 August 2016	7.15	239	20	<5	12	
ES1618767-003	KC2US	23 August 2016	7.05	48	14	<5	14	
ES1618767-004	KCUS	23 August 2016	7.22	454	28	<5	12	
ES1618767-005	KC1US	23 August 2016	7.27	88	24	<5	11	
ES1618767-006	PC1	23 August 2016	7.61	132	35	<5	10	
ES1618767-007	PC	23 August 2016	7.29	151	35	<5	14	
ES1618767-008	KC1DS	23 August 2016	7.61	183	31	<5	13	
ES1619011-001	KC2DS	25 August 2016	6.9	70	25	<5	23	
ES1619011-002	KCDS	25 August 2016	7.43	166	43	<5	17	
ES1619011-003	KC2US	25 August 2016	6.93	56	20	<5	10	
ES1619011-004	KCUS	25 August 2016	7.42	189	44	5	13	
ES1619011-005	KC1US	25 August 2016	7.06	87	21	<5	13	
ES1619011-006	PC1	25 August 2016	7.44	105	83	<5	10	
ES1619011-007	PC	25 August 2016	7.58	147	12	<5	14	
ES1619011-008	KC1DS	25 August 2016	7.57	127	38	<5	15	
ES1619492-001	KCUS	1 September 2016	7.51	458	22	<5	7	
ES1619492-002	PC1	1 September 2016	7.66	224	74	<5	<1	
ES1619492-003	PC	1 September 2016	7.18	161	16	<5	8	
ES1619492-004	KC1DS	1 September 2016	7.47	334	6	<5	6	

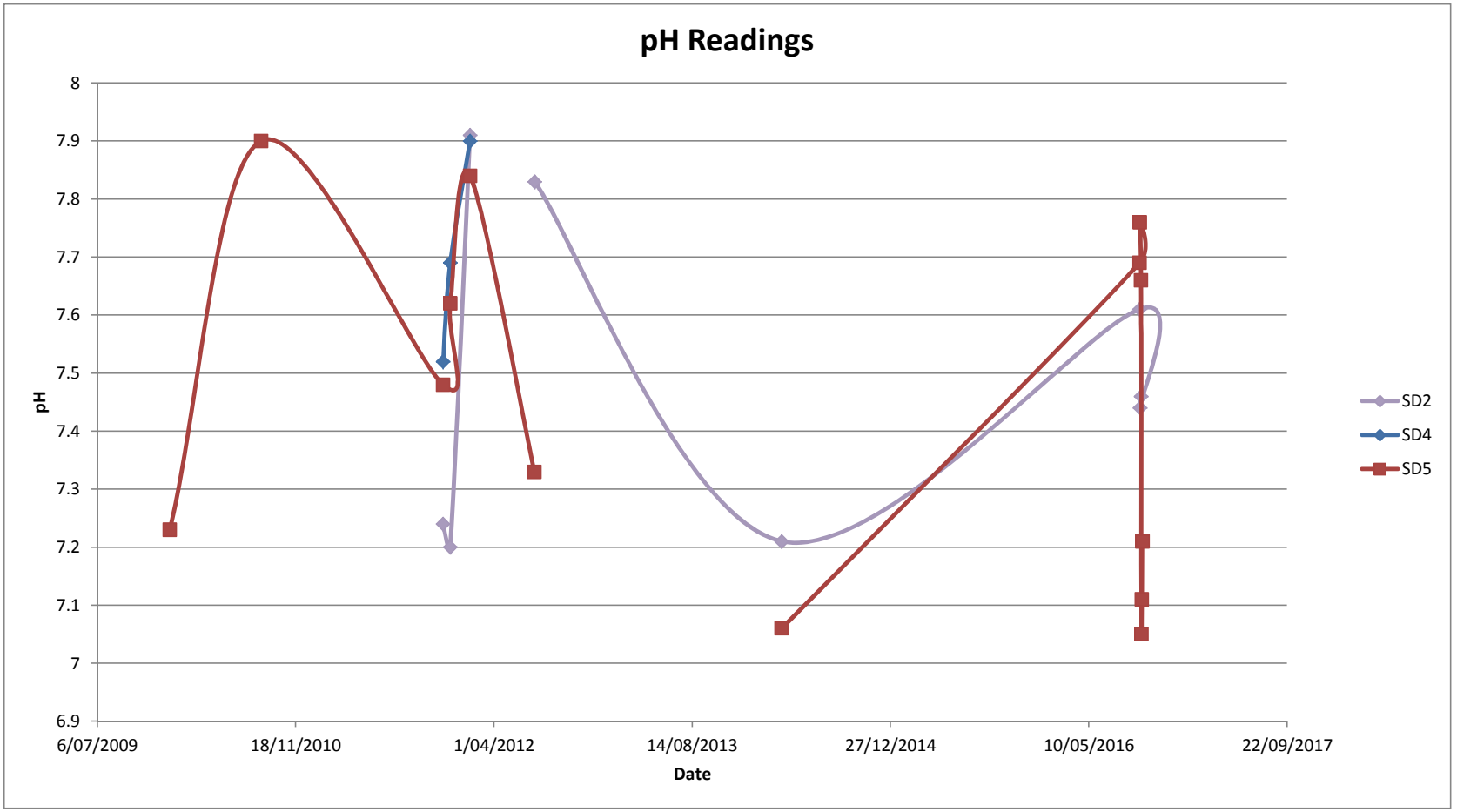
Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1620622-001	KC2DS	14 September 2016	7.1	52	16	<5	16	
ES1620622-002	KCDS	14 September 2016	7.39	125	181	7	12	
ES1620622-003	KC2US	14 September 2016	7.03	40	26	6	9	
ES1620622-004	KCUS	14 September 2016	7.23	93	209	<5	9	
ES1620622-005	KC1US	14 September 2016	7.27	92	62	7	12	
ES1620622-006	PC1	14 September 2016	7.48	98	196	<5	11	
ES1620622-007	PC	14 September 2016	7.51	110	23	6	12	
ES1620622-008	KC1DS	14 September 2016	7.47	114	115	<5	13	
ES1620748-001	KC2DS	15 September 2016	7.03	71	<5	<5	17	
ES1620748-002	KCDS	15 September 2016	7.5	146	54	<5	9	
ES1620748-003	KC2US	15 September 2016	7.29	56	11	<5	12	
ES1620748-004	KCUS	15 September 2016	7.57	155	69	<5	13	
ES1620748-005	KC1US	15 September 2016	7.41	124	34	<5	15	
ES1620748-006	PC1	15 September 2016	7.53	85	72	<5	10	
ES1620748-007	PC	15 September 2016	7.57	109	15	<5	11	
ES1620748-008	KC1DS	15 September 2016	7.45	147	34	<5	14	
ES1620748-009	SD2	15 September 2016	7.61	152	11	<5	13	
ES1620748-010	SD5	15 September 2016	7.69	155	5	<5	15	
ES1620986-001	KC2DS	16 September 2016	7.46	160	<5	<5	14	
ES1620986-002	KCDS	16 September 2016	7.58	340	6	<5	9	
ES1620986-003	KC2US	16 September 2016	7.37	77	<5	<5	14	
ES1620986-004	KCUS	16 September 2016	7.79	591	16	<5	10	
ES1620986-005	KC1US	16 September 2016	7.4	154	37	<5	11	
ES1620986-006	PC1	16 September 2016	7.62	99	35	<5	11	
ES1620986-007	PC	16 September 2016	7.59	126	17	<5	10	
ES1620986-008	KC1DS	16 September 2016	7.64	287	13	<5	7	
ES1620986-009	SD2	16 September 2016	7.44	183	12	<5	13	
ES1620986-010	SD5	16 September 2016	7.76	167	<5	<5	12	
ES1621113-001	SD5	19 September 2016	7.66	174	8	<5	12	
ES1621113-002	SD2	19 September 2016	7.46	170	<5	<5	11	
ES1621113-003	KC2DS	19 September 2016	7.33	164	191	<5	14	
ES1621113-004	KCDS	19 September 2016	7.55	406	10	<5	11	
ES1621113-005	KC2US	19 September 2016	6.64	82	<5	<5	12	
ES1621113-006	KCUS	19 September 2016	7.41	465	11	<5	11	
ES1621113-007	KC1US	19 September 2016	7.2	173	60	<5	12	
ES1621113-008	PC1	19 September 2016	7.45	108	45	<5	11	
ES1621113-009	PC	19 September 2016	7.32	120	<5	<5	6	
ES1621113-010	KC1DS	19 September 2016	7.49	250	20	<5	12	

Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1621114-001	KC2DS	20 September 2016	7.36	163	<5	<5	12	
ES1621114-002	SD5	20 September 2016	7.05	126	<5	<5	14	
ES1621114-003	KCDS	20 September 2016	7.54	471	7	<5	9	
ES1621114-004	KC2US	20 September 2016	6.68	82	<5	<5	11	
ES1621114-005	KCUS	20 September 2016	7.58	764	8	<5	9	
ES1621114-006	KC1US	20 September 2016	7.26	195	15	<5	11	
ES1621114-007	PC1	20 September 2016	7.55	109	33	<5	11	
ES1621114-008	PC	20 September 2016	7.33	124	6	<5	10	
ES1621114-009	KC1DS	20 September 2016	7.5	345	12	<5	10	
ES1621235-001	SD5	21 September 2016	7.11	118	21	<5	14	
ES1621235-002	KC2DS	21 September 2016	7.24	165	15	<5	13	
ES1621235-003	KCDS	21 September 2016	7.67	587	12	<5	8	
ES1621235-004	KC2US	21 September 2016	7.22	106	7	<5	12	
ES1621235-005	KCUS	21 September 2016	7.56	435	16	<5	10	
ES1621235-006	KC1US	21 September 2016	7.23	215	10	<5	11	
ES1621235-007	PC1	21 September 2016	7.72	146	94	<5	12	
ES1621235-008	PC	21 September 2016	7.37	145	14	<5	9	
ES1621235-009	KC1DS	21 September 2016	7.85	1100	11	<5	8	
ES1621367-001	KC2DS	22 September 2016	7.51	172	6	<5	12	
ES1621367-002	SD5	22 September 2016	7.21	126	9	<5	16	
ES1621367-003	KCDS	22 September 2016	7.69	810	8	<5	8	
ES1621367-004	KC2US	22 September 2016	7.51	119	<5	<5	11	
ES1621367-005	KCUS	22 September 2016	7.96	1220	<5	<5	8	
ES1621367-006	KC1US	22 September 2016	7.58	210	18	<5	11	
ES1621367-007	PC1	22 September 2016	7.84	107	18	<5	11	
ES1621367-008	PC	22 September 2016	7.62	140	9	<5	10	
ES1621367-009	KC1DS	22 September 2016	7.68	626	9	<5	9	
ES1621611-001	SD5	23 September 2016	7.21	125	10	<5	18	
ES1621611-002	KC2DS	23 September 2016	7.39	169	10	<5	14	
ES1621611-003	KCDS	23 September 2016	7.84	921	12	<5	9	
ES1621611-004	KC2US	23 September 2016	7.47	131	<5	<5	12	
ES1621611-005	KCUS	23 September 2016	8	1280	<5	<5	8	
ES1621611-006	KC1US	23 September 2016	7.63	255	10	<5	11	
ES1621611-007	PC1	23 September 2016	8.33	117	30	<5	13	
ES1621611-008	PC	23 September 2016	7.72	148	10	<5	10	
ES1621611-009	KC1DS	23 September 2016	7.75	580	6	<5	9	

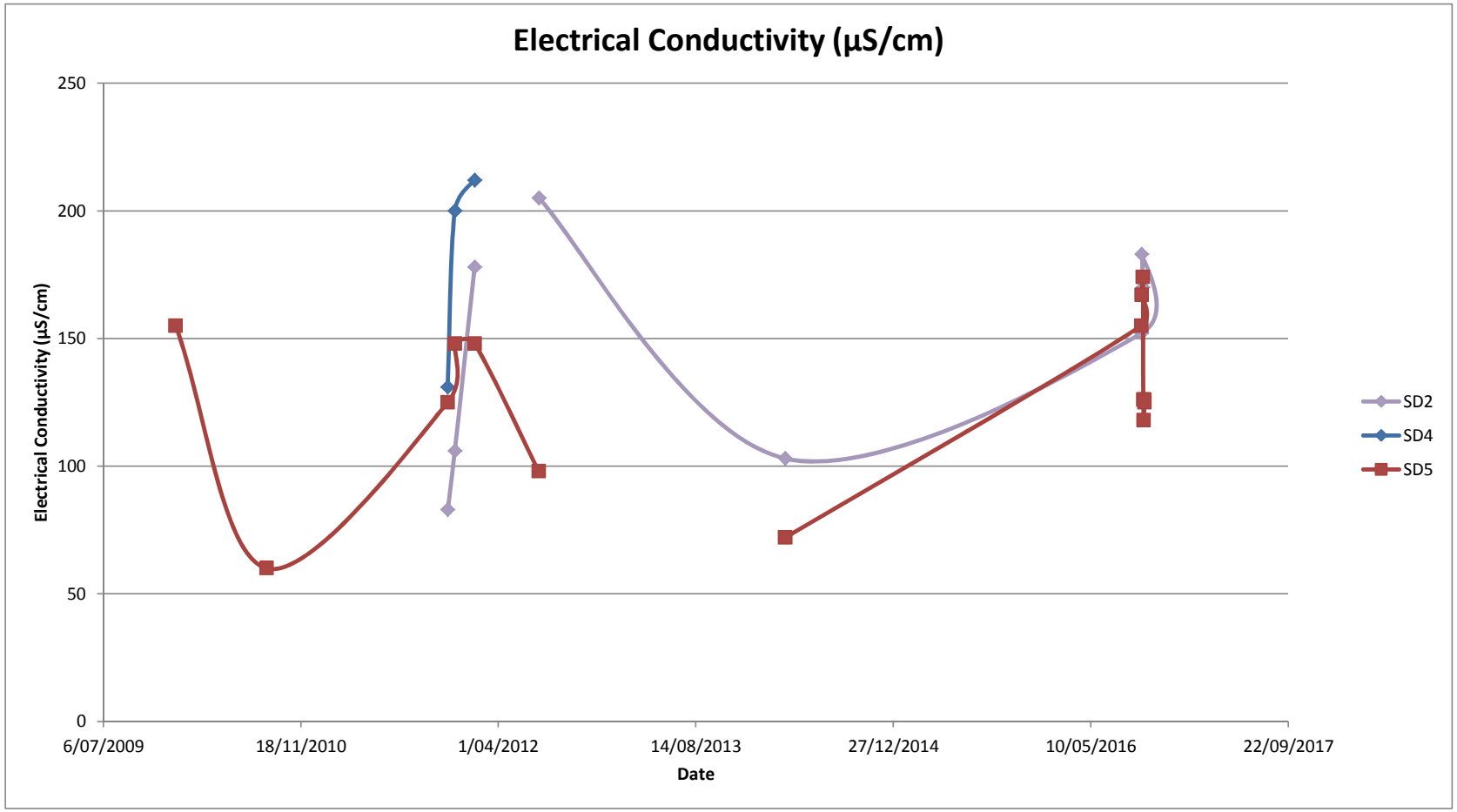
Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments



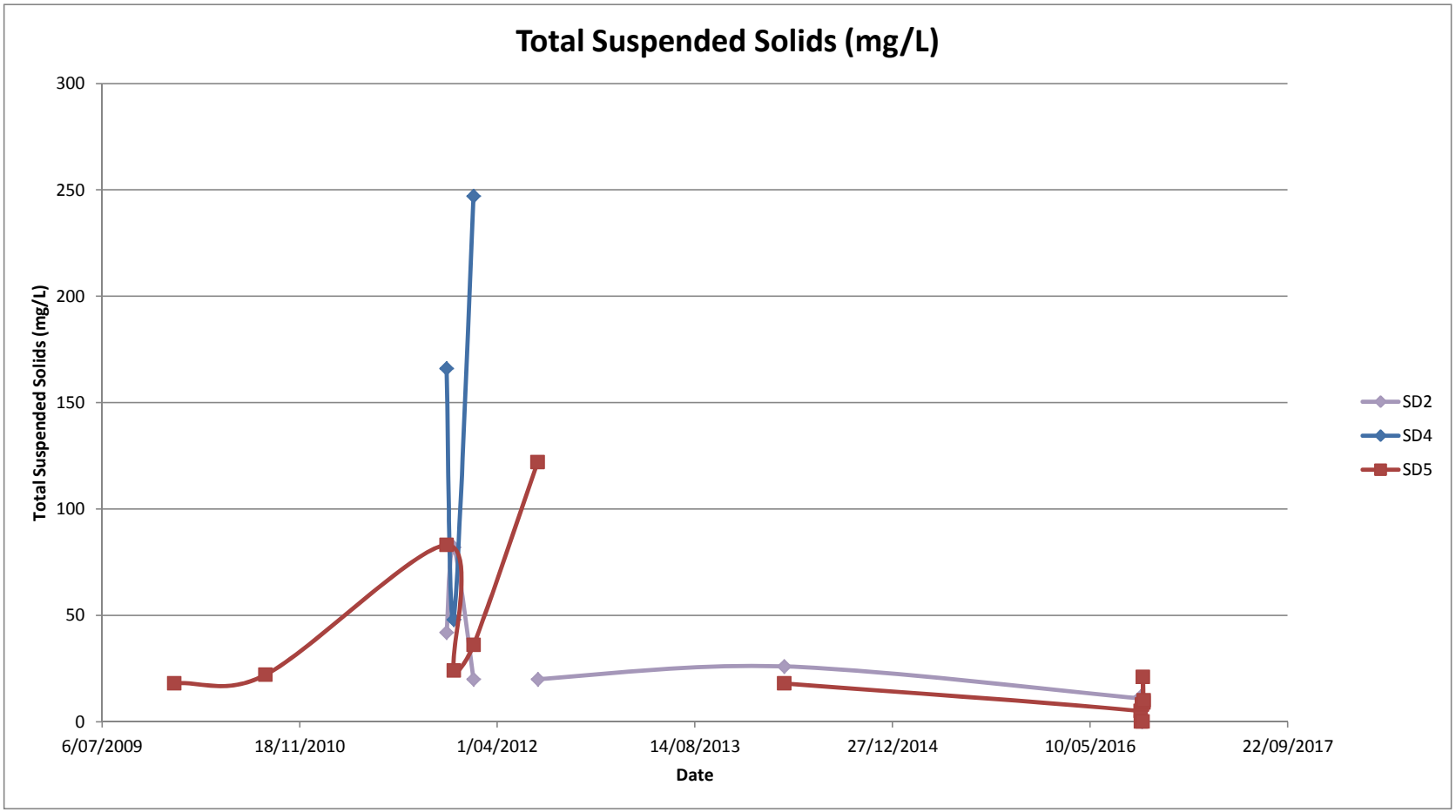
Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments



Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments



Sample No.	Sample Location	Date	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments



Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES0908566-001	11 June 2009	SD1	8.38	378	74	<5	8	
ES0908566-002	11 June 2009	SD2	8.15	254	89	<5	5	
ES0908566-003	11 June 2009	SD3	7.85	308	328	<5	11	
ES0908566-004	11 June 2009	SD4	8.27	421	262	<5	7	
ES0908566-005	11 June 2009	SD5	8.07	228	26	<5	16	
ES0908566-006	11 June 2009	SB1	8.23	1390	11	<5	3	
ES0912774-001	26 August 2009	SD1	9.54	363	8	<5	8	
ES0912774-002	26 August 2009	SD2	8.33	274	28	<5	4	
ES0912774-003	26 August 2009	SD3	7.97	326	141	<5	12	
ES0912774-004	26 August 2009	SD4	8.37	498	66	<5	6	
ES0912774-005	26 August 2009	SD5	8.25	256	24	<5	5	
ES0912774-006	26 August 2009	SB1	8.37	2020	21	<5	<1	
ES0918374-001	1 December 2009	SD1	8.66	722	68	<10	14	
ES0918374-002	1 December 2009	SD2	8.41	374	1870	<10	5	
ES0918374-003	1 December 2009	SD3	8.37	550	216	<10	7	
ES0918374-004	1 December 2009	SD4	9.3	1150	204	<10	10	
ES0918374-005	1 December 2009	SD5	8.68	417	52	<10	5	
ES0918374-006	1 December 2009	SB1	8.82	5250	26	<10	<1	
ES1004140-001	3 March 2010	SD1	8.29	326	44	<5	5	
ES1004140-002	3 March 2010	SD2	8.74	271	126	<5	6	
ES1004140-003	3 March 2010	SD3	8.14	286	326	<5	15	
ES1004140-004	3 March 2010	SD5	8.2	218	44	<5	6	
ES1004140-005	3 March 2010	SB1	8.2	947	480	<5	<2	
ES1009341-001	14 May 2010	SD1	8.78	381	16	<5	6	
ES1009341-002	12 May 2010	SD4	8.85	543	80	7	6	
ES1009341-003	12 May 2010	SD3	8.14	472	92	<5	10	
ES1009341-004	12 May 2010	SD5	8.62	261	36	8	8	
ES1009341-005	12 May 2010	SB1	9	607	100	<5	7	
ES1016572-001	17 August 2010	SD2	7.62	129	72	<5	8	
ES1016572-002	17 August 2010	SD3	7.84	247	299	<5	6	
ES1016572-003	17 August 2010	SD4	7.89	306	120	<5	6	
ES1016572-004	17 August 2010	A1	9.09	1390	36	<5	8	
ES1016572-005	17 August 2010	A2	8.73	541	82	<5	7	
ES1016572-006	17 August 2010	SB1	8.52	432	82	<5	3	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1025816-001	13 December 2010	SD2	7.5	157	107	<5	10	
ES1025816-002	13 December 2010	SD5	7.46	139	46	<5	10	
ES1025816-003	13 December 2010	SD4	7.88	290	146	<5	6	
ES1025816-004	13 December 2010	A1	9.25	1280	25	<5	9	
ES1025816-005	13 December 2010	A2	9.13	840	10	<5	7	
ES1025816-006	13 December 2010	SB1	9.02	583	75	<5	5	
ES1026094-001	16 December 2010	BOX CUT SUMP	8.37	1360	76	-	4	O&G not analysed, Total TPH analysed instead
ES1026094-002	16 December 2010	A1	9.18	1480	56	-	7	O&G not analysed, Total TPH analysed instead
ES1026094-003	16 December 2010	D	8.05	331	228	-	9	O&G not analysed, Total TPH analysed instead
ES1102986-001	10 February 2011	A1	9.16	1260	14	<5	12	
ES1102986-002	10 February 2011	A2	9.17	874	<5	<5	10	
ES1102986-003	10 February 2011	A3	9.19	11300	16	<5	35	
ES1102986-004	10 February 2011	SB1	9.73	2150	52	<5	56	
ES1102986-005	10 February 2011	SD5	8.6	199	54	<5	16	
ES1106761-001	30 March 2011	BOX CUT SUMP	8.41	2100	98	-	31	O&G not analysed, Total TPH analysed instead
ES1106761-002	30 March 2011	A1	9.18	1540	14	-	8	O&G not analysed, Total TPH analysed instead
ES1106761-003	30 March 2011	SB1	9.5	3240	26	-	51	O&G not analysed, Total TPH analysed instead
ES1106761-004	30 March 2011	DAM G OR D	8.98	281	20	-	8	O&G not analysed, Total TPH analysed instead
ES1108782-001	27 April 2011	BOX CUT SUMP	8.4	2250	108	-	6	O&G not analysed, Total TPH analysed instead
ES1108782-002	27 April 2011	A1	9.34	14200	50	-	<1	O&G not analysed, Total TPH analysed instead
ES1108782-003	27 April 2011	SB1	9.57	4300	74	-	31	O&G not analysed, Total TPH analysed instead
ES1108782-004	27 April 2011	DAM G or D	8.63	251	48	-	6	O&G not analysed, Total TPH analysed instead
ES1109299-001	4 May 2011	SD1	8.15	452	44	<5	14	
ES1109299-002	4 May 2011	SD2	7.86	247	13	<5	6	
ES1109299-003	4 May 2011	SD3	8.02	416	20	<5	5	
ES1109299-004	4 May 2011	SD5	7.78	301	20	<5	9	
ES1109299-005	4 May 2011	SB1	9.2	4320	88	<5	49	
ES1109832-001	11 May 2011	BOX CUT SUMP	7.61	2390	148	-	22	O&G not analysed, Total TPH analysed instead
ES1109832-002	11 May 2011	A1	9.16	1890	16	-	12	O&G not analysed, Total TPH analysed instead
ES1109832-003	11 May 2011	SB1	9.05	4510	114	-	65	O&G not analysed, Total TPH analysed instead
ES1109832-004	11 May 2011	DAM G OR D	9.46	249	33	-	7	O&G not analysed, Total TPH analysed instead
ES1111058-001	25 May 2011	BOX CUT SUMP	8.39	2560	102	-	42	O&G not analysed, Total TPH analysed instead
ES1111058-002	25 May 2011	A1	9.02	1950	14	-	10	O&G not analysed, Total TPH analysed instead
ES1111058-003	25 May 2011	SB1	9.48	2870	296	-	19	O&G not analysed, Total TPH analysed instead
ES1111058-004	25 May 2011	D	8.41	355	7	-	5	O&G not analysed, Total TPH analysed instead

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1112279-001	8 June 2011	BOX CUT SUMP	8.58	2520	190	-	11	O&G not analysed, Total TPH analysed instead
ES1112279-002	8 June 2011	A1	9	1930	11	-	10	O&G not analysed, Total TPH analysed instead
ES1112279-003	8 June 2011	SB1	9.55	2660	23	-	31	O&G not analysed, Total TPH analysed instead
ES1112279-004	8 June 2011	SD2	8.44	201	8	-	7	O&G not analysed, Total TPH analysed instead
ES1113370-001	21 June 2011	BOX CUT SUMP	8.64	2190	428	-	8	O&G not analysed, Total TPH analysed instead
ES1113370-002	21 June 2011	A1	8.89	2000	32	-	9	O&G not analysed, Total TPH analysed instead
ES1113370-003	21 June 2011	SB1	9.5	2620	27	-	32	O&G not analysed, Total TPH analysed instead
ES1113370-004	21 June 2011	D	8.53	350	16	-	5	O&G not analysed, Total TPH analysed instead
ES1114773-001	11 July 2011	BOX CUT SUMP	8.11	2880	336	-	5	O&G not analysed, Total TPH analysed instead
ES1114773-002	11 July 2011	A1	8.8	2080	21	-	10	O&G not analysed, Total TPH analysed instead
ES1114773-003	11 July 2011	SB1	9.42	2650	26	-	28	O&G not analysed, Total TPH analysed instead
ES1114773-004	11 July 2011	SD2	8.34	270	11	-	6	O&G not analysed, Total TPH analysed instead
ES1116217-001	27 July 2011	BOX CUT SUMP	8.21	3340	123	-	9	O&G not analysed, Total TPH analysed instead
ES1116217-002	27 July 2011	A1	8.86	2170	11	-	10	O&G not analysed, Total TPH analysed instead
ES1116217-003	27 July 2011	SB1	9.49	2740	38	-	38	O&G not analysed, Total TPH analysed instead
ES1116217-004	27 July 2011	D	8.63	404	14	-	6	O&G not analysed, Total TPH analysed instead
ES1118568-001	25 August 2011	SD1	8.31	565	122	<5	17	
ES1118568-002	25 August 2011	SD2	8.28	294	<5	<5	6	
ES1118568-003	25 August 2011	SD3	8.45	488	10	<5	5	
ES1118568-004	25 August 2011	SD4	8.56	889	59	<5	7	
ES1118568-005	25 August 2011	SD5	8.12	247	16	<5	8	
ES1118568-006	25 August 2011	SB1	9.5	2470	45	<5	36	
ES1119508-001	7 September 2011	BOX CUT SUMP	8.58	2430	128	-	9	O&G not analysed, Total TPH analysed instead
ES1119508-002	7 September 2011	A1	8.91	2280	28	-	10	O&G not analysed, Total TPH analysed instead
ES1119508-003	7 September 2011	SB1	9.45	2500	80	-	33	O&G not analysed, Total TPH analysed instead
ES1119508-004	7 September 2011	D	8.55	324	36	-	6	O&G not analysed, Total TPH analysed instead
ES1120633-001	21 September 2011	BOX CUT SUMP	8.64	2590	127	-	24	O&G not analysed, Total TPH analysed instead
ES1120633-002	21 September 2011	A1	8.9	2270	64	-	11	O&G not analysed, Total TPH analysed instead
ES1120633-003	21 September 2011	SB1	9.3	1570	466	-	12	O&G not analysed, Total TPH analysed instead
ES1120633-004	21 September 2011	DAM G or D	8.48	398	40	-	2	O&G not analysed, Total TPH analysed instead
ES1122998-001	20 October 2011	BOX CUT SUMP	8.39	2770	156	-	4	O&G not analysed, Total TPH analysed instead
ES1122998-002	20 October 2011	A1	8.72	2510	14	-	6	O&G not analysed, Total TPH analysed instead
ES1122998-003	20 October 2011	SB1	9.33	1560	79	-	13	O&G not analysed, Total TPH analysed instead
ES1122998-004	20 October 2011	D	8.56	355	22	-	6	O&G not analysed, Total TPH analysed instead

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1123998-001	2 November 2011	BOX CUT SUMP	8.41	4090	43	-	9	O&G not analysed, Total TPH analysed instead
ES1123998-002	2 November 2011	A1	8.8	2520	<5	-	6	O&G not analysed, Total TPH analysed instead
ES1123998-003	2 November 2011	SB1	9.48	2490	79	-	12	O&G not analysed, Total TPH analysed instead
ES1123998-004	2 November 2011	D	8.65	387	8	-	6	O&G not analysed, Total TPH analysed instead
ES1123998-005	2 November 2011	B1	8.91	619	<5	-	7	O&G not analysed, Total TPH analysed instead
ES1125416-001	17 November 2011	SD1	9.16	384	50	<5	12	
ES1125416-002	17 November 2011	SD2	8.21	278	31	<5	6	
ES1125416-003	17 November 2011	SD3	7.98	343	28	<5	10	
ES1125416-004	17 November 2011	SD4	8.09	446	132	<5	7	
ES1125416-005	17 November 2011	SD5	7.48	171	332	<5	9	
ES1125416-006	17 November 2011	SB1	9.26	1700	45	<5	6	
ES1126011-001	24 November 2011	BOX CUT SUMP	8.26	2740	336	-	34	O&G not analysed, Total TPH analysed instead
ES1126011-002	24 November 2011	A1	8.83	2390	34	-	6	O&G not analysed, Total TPH analysed instead
ES1126011-003	24 November 2011	D	8.55	392	10	-	6	O&G not analysed, Total TPH analysed instead
ES1127641-001	13 December 2011	BOX CUT SUMP	8.57	2020	94	-	8	O&G not analysed, Total TPH analysed instead
ES1127641-002	13 December 2011	A1	9	1930	30	-	5	O&G not analysed, Total TPH analysed instead
ES1127641-003	13 December 2011	SB1	8.7	605	154	-	<1	O&G not analysed, Total TPH analysed instead
ES1127641-004	13 December 2011	D	8.63	354	11	-	6	O&G not analysed, Total TPH analysed instead
ES1201147-001	18 January 2012	A1	9.06	2200	12	<5	6	
ES1201147-002	18 January 2012	A2	9.29	1900	30	<5	13	
ES1201147-003	18 January 2012	A3	9.77	4960	44	<5	26	
ES1201147-004	18 January 2012	B1	8.72	545	10	<5	<1	
ES1201147-005	18 January 2012	B2	9.06	13400	47	<5	16	
ES1201147-006	18 January 2012	C	9.3	610	90	<5	3	
ES1201147-007	18 January 2012	D	8.58	380	18	<5	2	
ES1201539-001	23 January 2012	SB1	9.15	2390	27	<5	3	
ES1201539-002	23 January 2012	SB2	8.16	364	8	-	7	
ES1201539-003	23 January 2012	SB3	8.77	995	28	<5	<1	
ES1201539-004	23 January 2012	SD1	8.09	295	30	<5	7	
ES1201539-005	23 January 2012	SD2	8.01	188	18	<5	5	
ES1201539-006	23 January 2012	SD3	8	235	42	<5	4	
ES1201539-007	23 January 2012	SD4	8.25	269	137	<5	4	
ES1201539-008	23 January 2012	SD5	7.75	168	16	<5	8	
ES1201539-009	23 January 2012	SD6	8.73	1470	2280	<5	8	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1204194-001	22 February 2012	A1	9.1	1900	21	<5	2	
ES1204194-002	22 February 2012	A2	9.2	1740	411	<5	7	
ES1204194-003	22 February 2012	A3	9.78	3450	538	<5	15	
ES1204194-004	22 February 2012	B1	8.7	496	300	<5	6	
ES1204194-005	22 February 2012	B2	9.16	12200	59	<5	13	
ES1204194-006	22 February 2012	C	9.29	389	35	<5	11	
ES1204194-007	22 February 2012	D	8.51	358	20	<5	4	
ES1204195-001	22 February 2012	SB1	8.7	718	185	<5	4	
ES1204195-002	22 February 2012	SB2	8.33	462	74	<5	5	
ES1204195-003	22 February 2012	SB3	8.61	596	269	<5	3	
ES1204195-004	22 February 2012	SD1	7.92	371	37	<5	7	
ES1204195-005	22 February 2012	SD2	8.03	195	52	<5	6	
ES1204195-006	22 February 2012	SD3	7.71	251	132	<5	6	
ES1204195-007	22 February 2012	SD4	7.81	272	32	<5	7	
ES1204195-008	22 February 2012	SD5	7.74	142	48	<5	10	
ES1204195-009	22 February 2012	SD6	8.66	911	392	<5	7	
ES1207056-001	22 March 2012	A1	9.01	1950	20	<5	5	
ES1207056-002	22 March 2012	A2	9.23	1880	14	<5	14	
ES1207056-003	22 March 2012	A3	9.74	3810	33	<5	27	
ES1207056-004	22 March 2012	B1	8.76	512	8	<5	6	
ES1207056-005	22 March 2012	B2	9.15	12600	173	<5	90	
ES1207056-006	22 March 2012	C	9.43	553	20	<5	20	
ES1207056-007	22 March 2012	D	8.62	367	16	<5	5	
ES1207061-003	22 March 2012	SB3	9.41	2330	272	<5	41	SB1 and SB2 not sampled as dams being upgraded
ES1207061-004	22 March 2012	SD1	8.84	415	11	<5	8	
ES1207061-005	22 March 2012	SD2	7.65	202	10	<5	8	
ES1207061-006	22 March 2012	SD3	7.95	275	16	<5	5	
ES1207061-007	22 March 2012	SD4	8.21	269	21	<5	4	
ES1207061-008	22 March 2012	SD5	7.98	154	10	<5	9	
ES1207061-009	22 March 2012	SD6	8.67	1090	332	<5	9	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1211544-001	9 May 2012	A1	9.11	2240	20	<5	2	
ES1211544-002	9 May 2012	A2	9.22	2210	10	<5	6	
ES1211544-003	9 May 2012	A3	9.73	4050	65	<5	8	
ES1211544-004	9 May 2012	B1	8.61	486	<5	<5	<1	
ES1211544-005	9 May 2012	B2	9.08	13100	71	<5	71	
ES1211544-006	9 May 2012	C	9.27	820	42	<5	15	
ES1211544-007	9 May 2012	D	8.55	408	20	<5	2	
ES1211544-008	9 May 2012	SB1	9.1	1870	56	<5	<1	SB2 not sampled as dam being upgraded
ES1211545-001	9 May 2012	SB3	9.42	4220	100	<5	42	
ES1211545-002	9 May 2012	SD1	8.64	448	16	<5	3	
ES1211545-003	9 May 2012	SD2	8.29	233	11	<5	4	
ES1211545-004	9 May 2012	SD3	8.39	336	21	<5	3	
ES1211545-005	9 May 2012	SD4	8.45	323	18	<5	3	
ES1211545-006	9 May 2012	SD5	8.09	206	8	<5	7	
ES1211545-007	9 May 2012	SD6	8.71	1280	932	<5	5	
ES1215409-001	20 June 2012	SB1	9.15	2390	67	<5	7	
ES1215409-002	20 June 2012	SB2	8.3	802	18	<5	23	
ES1215409-003	20 June 2012	SB3	9.14	2960	53	<5	44	
ES1215409-004	20 June 2012	SD1	8	348	8	<5	15	
ES1215409-005	20 June 2012	SD2	8.12	223	<5	<5	9	
ES1215409-006	20 June 2012	SD3	8	339	6	<5	10	
ES1215409-007	20 June 2012	SD4	8.49	331	5	<5	6	
ES1215409-008	20 June 2012	SD5	8.03	182	<5	<5	9	
ES1215409-009	20 June 2012	SD6	8.64	1100	44	<5	17	
ES1215547-001	21 June 2012	A1	9.04	2290	17	<5	11	
ES1215547-002	21 June 2012	A2	9.19	2450	10	<5	14	
ES1215547-003	21 June 2012	A3	9.71	3770	46	<5	43	
ES1215547-004	21 June 2012	B1	8.23	418	<5	<5	5	
ES1215547-005	21 June 2012	B2	9	12800	32	<5	<1	
ES1215547-006	21 June 2012	C	8.97	768	42	<5	16	
ES1215547-007	21 June 2012	D	8.57	385	8	<5	6	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1218051-001	23 July 2012	SB1	8.99	2020	58	<5	12	
ES1218051-002	23 July 2012	SB2	8.47	800	19	<5	12	
ES1218051-003	23 July 2012	SB3	9.1	1940	88	<5	34	
ES1218051-004	23 July 2012	SD1	8.15	279	5	<5	13	
ES1218051-005	23 July 2012	SD2	8.09	221	5	<5	9	
ES1218051-006	23 July 2012	SD3	7.59	388	<5	<5	6	
ES1218051-007	23 July 2012	SD4	8.25	363	<5	<5	6	
ES1218051-008	23 July 2012	SD5	8.21	176	<5	<5	9	
ES1218051-009	23 July 2012	SD6	8.6	955	39	<5	8	
ES1218050-001	23 July 2012	A1	8.97	2150	16	<5	12	
ES1218050-002	23 July 2012	A2	9.15	2900	10	<5	11	
ES1218050-003	23 July 2012	A3	9.68	3520	41	<5	32	
ES1218050-004	23 July 2012	B1	8.81	370	<5	<5	3	
ES1218050-005	23 July 2012	B2	8.96	12500	26	<5	14	
ES1218050-006	23 July 2012	C	8.87	640	<5	<5	14	
ES1218050-007	23 July 2012	D	8.55	386	<5	<5	4	
ES1218050-008	23 July 2012	B2 POINT 1	8.96	12300	34	<5	15	
ES1218050-009	23 July 2012	B2 POINT 2	8.96	12600	40	<5	14	
ES1220401-001	21 August 2012	A1	8.84	2280	15	<5	8	
ES1220401-002	21 August 2012	A2	9.08	3430	35	<5	2	
ES1220401-003	21 August 2012	A3	9.47	3760	63	<5	<1	
ES1220401-004	21 August 2012	B1	8.5	361	<5	<5	<1	
ES1220401-005	21 August 2012	B2 POINT 1	9.17	12200	28	<5	17	
ES1220401-006	21 August 2012	B2 POINT 2	8.92	12900	31	<5	17	
ES1220401-007	21 August 2012	C	9.23	942	42	<5	2	
ES1220401-008	21 August 2012	D	8.72	407	6	<5	3	
ES1220586-001	23 August 2012	SB1	9.01	3120	72	<5	<1	
ES1220586-002	23 August 2012	SB2	8.54	850	58	<5	<1	
ES1220586-003	23 August 2012	SB3	8.96	3350	50	<5	33	
ES1220586-004	23 August 2012	SD1	8.13	299	48	<5	3	
ES1220586-005	23 August 2012	SD2	8.15	228	12	<5	4	
ES1220586-006	23 August 2012	SD3	8.1	378	10	<5	3	
ES1220586-007	23 August 2012	SD4	8.54	396	31	<5	2	
ES1220586-008	23 August 2012	SD5	8.24	192	11	<5	6	
ES1220586-009	23 August 2012	SD6	8.69	1070	376	<5	4	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1222949-001	24 September 2012	A1	8.81	2940	9	<5	10	
ES1222949-002	24 September 2012	A2	9.03	4460	20	7	21	
ES1222949-003	24 September 2012	A3	8.73	7720	25	<5	24	
ES1222949-004	24 September 2012	B1	8.6	334	8	<5	2	
ES1222949-005	24 September 2012	B2 POINT 1	8.99	13200	<5	<5	14	
ES1222949-006	24 September 2012	B2 POINT 2	8.99	13400	16	<5	15	
ES1222949-007	24 September 2012	C	8.93	1560	252	<5	41	
ES1222949-008	24 September 2012	D	8.87	422	<5	<5	4	
ES1223081-001	25 September 2012	SB1	8.97	3400	13	<5	6	
ES1223081-002	25 September 2012	SB2	9.09	989	30	<5	12	
ES1223081-003	25 September 2012	SB3	9.1	6350	200	<5	63	
ES1223081-004	25 September 2012	SD1	8.83	343	16	<5	13	
ES1223081-005	25 September 2012	SD2	8.6	264	10	<5	8	
ES1223081-006	25 September 2012	SD3	7.94	488	10	<5	7	
ES1223081-007	25 September 2012	SD4	8.93	505	46	<5	7	
ES1223081-008	25 September 2012	SD5	7.97	226	66	<5	10	
ES1223081-009	25 September 2012	SD6	8.58	1170	160	<5	16	
ES1224704-001	16 October 2012	A1	8.86	3280	18	<5	<1	
ES1224704-002	16 October 2012	A2	9.04	4780	26	<5	25	
ES1224704-003	16 October 2012	A3	8.55	10300	24	<5	27	
ES1224704-004	16 October 2012	B1	8.72	322	<5	<5	<1	
ES1224704-005	16 October 2012	B2-POINT 1	9.09	12600	42	<5	27	
ES1224704-006	16 October 2012	B2-POINT 2	9.07	13600	35	<5	18	
ES1224704-007	16 October 2012	C	8.83	2760	406	<5	91	
ES1224704-008	16 October 2012	D	8.76	424	26	<5	<1	
ES1224703-001	16 October 2012	SB1	9.03	3760	59	<5	25	
ES1224703-002	16 October 2012	SB2	8.8	1070	32	<5	7	
ES1224703-003	16 October 2012	SB3	9.28	9020	220	<5	106	
ES1224703-004	16 October 2012	SD1	9.54	330	11	<5	13	
ES1224703-005	16 October 2012	SD2	8.01	263	72	<5	5	
ES1224703-006	16 October 2012	SD3	8.33	455	20	<5	7	
ES1224703-007	16 October 2012	SD4	9.22	721	167	<5	6	
ES1224703-008	16 October 2012	SD5	8.48	243	50	<5	6	
ES1224703-009	16 October 2012	SD6	8.81	1300	50	<5	<1	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1227721-001	21 November 2012	B1	8.73	322	<5	<5	3	
ES1227721-002	21 November 2012	B2 POINT 1	9.21	14500	20	<5	3	
ES1227721-003	21 November 2012	B2 POINT 2	9.2	14500	22	<5	7	
ES1228045-001	26 November 2012	A1	8.91	4190	35	<5	4	
ES1228045-002	26 November 2012	A2	9.06	6770	42	<5	30	
ES1228045-003	26 November 2012	A3	8.61	12300	20	<5	15	
ES1228136-001	27 November 2012	D	8.48	397	29	<5	5	
ES1228137-001	27 November 2012	SB1	9.18	4850	101	<5	14	
ES1228137-002	27 November 2012	SB2	9.48	1430	10	<5	13	
ES1228137-003	27 November 2012	SD1	8.51	435	26	<5	12	
ES1228137-004	27 November 2012	SD2	8.39	335	40	<5	8	
ES1228137-005	27 November 2012	SD3	8.67	546	14	<5	6	
ES1228137-006	27 November 2012	SD5	8.23	296	40	<5	10	
ES1228137-007	27 November 2012	SD6	8.89	1500	126	<5	11	
ES1229976-001	18 December 2012	A1	9.13	4940	38	<5	25	
ES1229976-002	18 December 2012	A2	9.05	9840	80	<5	49	
ES1229976-003	18 December 2012	A3	8.76	12100	43	<5	459	
ES1229976-004	18 December 2012	B1	8.58	345	5	<5	5	
ES1229976-005	18 December 2012	B2-POINT 1	9.24	13700	67	<5	17	
ES1229976-006	18 December 2012	B2-POINT 2	9.25	14500	64	<5	18	
ES1229976-008	18 December 2012	D	8.65	452	32	<5	27	
ES1229977-001	18 December 2012	SB1	9.29	3930	72	<5	27	
ES1229977-002	18 December 2012	SB2	9.46	1870	14	<5	23	
ES1229977-003	18 December 2012	SD1	9.15	462	29	<5	19	
ES1229977-004	18 December 2012	SD2	8.56	382	84	<5	10	
ES1229977-005	18 December 2012	SD3	8.52	573	65	<5	11	
ES1229977-006	18 December 2012	SD5	8.38	314	41	<5	14	
ES1229977-007	18 December 2012	SD6	8.91	1600	52	<5	26	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1301112-001	16 January 2013	A1	9.31	5330	50	56	15	
ES1301112-002	16 January 2013	A2	9.33	13800	44	<5	50	
ES1301112-003	16 January 2013	A3	8.89	13900	28	<5	18	
ES1301112-004	16 January 2013	B1	9.04	382	<5	<5	4	
ES1301112-005	16 January 2013	B2 - POINT 1	9.51	16000	71	<5	21	
ES1301112-006	16 January 2013	B2 - POINT 2	9.54	16200	63	<5	20	
ES1301112-007	16 January 2013	D	9.11	515	84	<5	9	
ES1303170-001	8 February 2013	SB1	9.03	2110	1210	<5	4	
ES1303170-002	8 February 2013	SB2	9.57	1250	736	<5	13	
ES1303170-003	8 February 2013	SB3	8.43	827	460	<5	3	
ES1303170-004	8 February 2013	SD1	7.59	175	146	<5	13	
ES1303170-005	8 February 2013	SD2	8.04	154	182	<5	9	
ES1303170-006	8 February 2013	SD3	7.86	338	28	<5	14	
ES1303170-007	8 February 2013	SD4	8.07	281	258	<5	8	
ES1303170-008	8 February 2013	SD5	7.58	125	20	<5	11	
ES1303170-009	8 February 2013	SD6	8.89	1220	768	<5	6	
ES1304586-001	27 February 2013	A1	9.09	4340	31	<5	12	
ES1304586-002	27 February 2013	A2	9.19	14600	49	<5	63	
ES1304586-003	27 February 2013	A3	8.99	13600	25	<5	18	
ES1304586-004	27 February 2013	B1	8.62	359	<5	<5	7	
ES1304586-005	27 February 2013	B2 - POINT 1	9.48	12400	101	<5	32	
ES1304586-006	27 February 2013	B2 - POINT 2	9.48	15400	117	<5	31	
ES1304586-007	27 February 2013	C	9.15	672	344	<5	13	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1304586-008	27 February 2013	D	8.67	434	24	<5	8	
ES1304712-001	28 February 2013	SB1	9.09	4870	24	<5	7	
ES1304712-002	28 February 2013	SB2	9.58	1400	8	<5	8	
ES1304712-003	28 February 2013	SB3	8.89	1720	1060	<5	3	
ES1304712-004	28 February 2013	SD1	7.83	258	14	<5	16	
ES1304712-005	28 February 2013	SD2	8.04	171	16	<5	10	
ES1304712-006	28 February 2013	SD3	8.01	288	26	<5	11	
ES1304712-007	28 February 2013	SD4	9.11	399	66	<5	8	
ES1304712-008	28 February 2013	SD5	7.96	161	103	<5	10	
ES1304712-009	28 February 2013	SD6	8.89	1240	500	<5	12	
ES1308252-001	9 April 2013	A1	8.87	4800	22	<5	21	
ES1308252-002	9 April 2013	A2	9.08	15600	48	<5	135	
ES1308252-003	9 April 2013	A3	9.04	14200	18	<5	163	
ES1308252-004	9 April 2013	B1	8.38	270	<5	<5	4	
ES1308252-005	9 April 2013	B2 - POINT 1	7.00	7370	34	<5	1200	
ES1308252-008	9 April 2013	B2 - POINT 2	9.47	15500	35	<5	42	
ES1308252-006	9 April 2013	C	9.32	1090	418	<5	30	
ES1308252-007	9 April 2013	D	8.55	367	18	<5	8	
ES1308403-001	10 April 2013	SB1	9.06	5450	13	<5	17	
ES1308403-002	10 April 2013	SB2	9.23	1300	66	<5	9	
ES1308403-003	10 April 2013	SB3	8.8	2360	129	<5	10	
ES1308403-004	10 April 2013	SD1	8.02	286	29	<5	10	
ES1308403-005	10 April 2013	SD2	8.01	194	41	<5	8	
ES1308403-006	10 April 2013	SD3	7.97	327	36	<5	9	
ES1308403-007	10 April 2013	SD4	8.33	372	32	<5	7	
ES1308403-008	10 April 2013	SD6	8.73	1150	448	<5	10	
ES1312071-001	27 May 2013	SB1	9.00	4730	10	<5	105	
ES1312071-002	27 May 2013	SB2	8.97	1420	6	<5	4	
ES1312071-003	27 May 2013	SD3	8.61	380	<5	<5	10	
ES1312071-004	27 May 2013	SD4	8.74	463	10	<5	8	
ES1312069-001	27 May 2013	A1	8.77	4280	20	<5	48	
ES1312069-002	27 May 2013	A2	8.89	16800	98	<5	53	
ES1312069-003	27 May 2013	A3	9.09	14900	26	<5	<1	
ES1312069-004	27 May 2013	B1	8.07	177	<5	<5	<1	
ES1312069-005	27 May 2013	B2	9.45	15200	34	<5	34	
ES1312069-006	27 May 2013	C	9.18	1450	860	<5	75	
ES1312069-007	27 May 2013	D	8.74	409	14	<5	8	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1312189-001	28 May 2013	SD1	8.01	350	23	<5	9	
ES1312189-002	28 May 2013	SD2	8.11	224	18	<5	10	
ES1312189-003	28 May 2013	SB3	8.97	3460	52	<5	18	
ES1312189-004	28 May 2013	SD5	7.98	200	<5	<5	11	
ES1312189-005	28 May 2013	SD6	8.73	1290	18	<5	45	
ES1314538-001	26 June 2013	SB1	8.99	4310	<5	<5	4	
ES1314538-002	26 June 2013	SB2	8.88	1200	<5	<5	11	
ES1314538-003	26 June 2013	SB3	9.01	2730	36	<5	14	
ES1314538-004	26 June 2013	SD3	8.45	370	<5	<5	8	
ES1314538-005	26 June 2013	SD4	8.75	603	7	<5	9	
ES1314538-006	26 June 2013	SD6	8.74	1170	37	<5	43	
ES1314537-001	26 June 2013	A1	8.7	4410	11	<5	6	
ES1314537-002	26 June 2013	A2	9.02	16400	68	<5	41	
ES1314537-003	26 June 2013	A3	9.23	14400	11	<5	52	
ES1314537-004	26 June 2013	B1	8.26	153	<5	<5	2	
ES1314537-005	26 June 2013	B2	9.56	14300	18	<5	33	
ES1314537-006	26 June 2013	C	8.87	920	275	<5	78	
ES1314537-007	26 June 2013	D	8.67	391	12	<5	10	
ES1314684-001	27 June 2013	SD1	8.24	344	8	<5	10	
ES1314684-002	27 June 2013	SD2	8.29	223	14	<5	8	
ES1314684-003	27 June 2013	SD5	8.01	199	8	<5	8	
ES1316995-001	29 July 2013	A1	8.84	5050	19	<5	11	
ES1316995-002	29 July 2013	A2	8.97	16300	58	<5	55	
ES1316995-003	29 July 2013	A3	9.22	14700	37	<5	23	
ES1316995-004	29 July 2013	B1	7.84	170	<5	<5	3	
ES1316995-005	29 July 2013	B2	9.56	13800	18	<5	33	
ES1316995-006	29 July 2013	C	8.93	953	319	<5	82	
ES1316995-007	29 July 2013	D	8.53	398	<5	<5	10	
ES1317064-001	30 July 2013	SB1	8.87	5130	18	<5	4	
ES1317064-002	30 July 2013	SB2	8.85	1170	<5	<5	10	
ES1317064-003	30 July 2013	SB3	9.07	2460	106	<5	10	
ES1317064-004	30 July 2013	SD1	8.33	367	12	<5	9	
ES1317064-005	30 July 2013	SD2	8.53	248	21	<5	10	
ES1317064-006	30 July 2013	SD3	8.96	380	6	<5	8	
ES1317064-007	30 July 2013	SD4	9.29	823	<5	<5	8	
ES1317064-008	30 July 2013	SD5	8.36	211	6	<5	11	
ES1317064-009	30 July 2013	SD6	8.74	1150	24	<5	38	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1318659-001	21 August 2013	A1	8.82	5530	15	<5	6	
ES1318659-002	21 August 2013	A2	9.32	16600	68	22	50	
ES1318659-003	21 August 2013	A3	9.34	14800	26	<5	834	
ES1318659-004	21 August 2013	B1	8.4	261	<5	<5	9	
ES1318659-005	21 August 2013	B2	9.82	13600	18	<5	21	
ES1318659-006	21 August 2013	C	8.88	1370	381	<5	128	
ES1318659-007	21 August 2013	D	8.47	441	8	<5	10	
ES1318754-001	22 August 2013	SB2	8.91	1160	<5	<5	10	
ES1318754-002	22 August 2013	SD1	8.87	359	6	<5	11	
ES1318754-003	22 August 2013	SD6	8.86	1180	43	<5	36	
ES1318754-004	22 August 2013	SD2	8.47	256	<5	<5	11	
ES1318754-005	22 August 2013	SB3	9.15	3180	14	<5	26	
ES1318754-007	22 August 2013	SD5	8.13	220	6	<5	12	
ES1318754-008	22 August 2013	SD4	9.6	843	9	<5	10	
ES1318754-009	22 August 2013	SB1	9.02	5870	31	<5	9	
ES1318754-010	22 August 2013	SD3	9.62	335	<5	<5	9	
ES1320728-004	18 September 2013	A1	8.94	5290	11	<5	4	
ES1320728-002	18 September 2013	A2	8.93	17300	63	<5	50	
ES1320728-006	18 September 2013	A3	9.17	15600	28	<5	20	
ES1320728-005	18 September 2013	B1	8.64	456	<5	<5	4	
ES1320728-001	18 September 2013	B2	9.48	13800	11	<5	18	
ES1320728-007	18 September 2013	C	9.12	2160	1440	<5	224	Almost empty
ES1320728-003	18 September 2013	D	8.7	604	8	<5	7	
ES1321341-001	26 September 2013	SB1	8.98	2250	122	<5	11	
ES1321341-002	26 September 2013	SB2	9.17	1260	<5	<5	26	
ES1321341-003	26 September 2013	SB3	9.26	5310	9	<5	246	
ES1321341-004	26 September 2013	SD1	9.2	327	28	<5	10	
ES1321341-005	26 September 2013	SD2	8.65	293	24	<5	7	
ES1321341-006	26 September 2013	SD3	9.76	348	11	<5	4	
ES1321341-007	26 September 2013	SD4	8.75	1020	13	<5	27	
ES1321341-008	26 September 2013	SD5	8.38	261	11	<5	14	
ES1321341-009	26 September 2013	SD6	8.85	1300	72	<5	55	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1322968-004	22 October 2013	A1	9.03	5870	33	<5	<1	
ES1322968-002	22 October 2013	A2	9.2	17600	56	<5	160	
ES1322968-006	22 October 2013	A3	9.45	20800	219	<5	120	Water level low
ES1322968-005	22 October 2013	B1	8.74	612	<5	<5	6	Water level low
ES1322968-001	22 October 2013	B2	9.6	13900	40	<5	121	
ES1322968-003	22 October 2013	D	8.35	770	35	<5	<1	
ES1323072-008	23 October 2013	SB1	9.13	6390	72	<5	3	
ES1323072-001	23 October 2013	SB2	9.46	1500	20	<5	15	
ES1323072-005	23 October 2013	SB3	9.38	7330	63	<5	52	
ES1323072-002	23 October 2013	SD1	8.63	420	25	<5	17	
ES1323072-004	23 October 2013	SD2	8.74	346	14	<5	11	
ES1323072-009	23 October 2013	SD3	9.42	383	36	<5	15	
ES1323072-007	23 October 2013	SD4	9.12	1370	44	<5	13	
ES1323072-006	23 October 2013	SD5	8.49	314	18	<5	14	
ES1323072-003	23 October 2013	SD6	8.81	1460	138	<5	15	
ES1325501-001	21 November 2013	A1	9.03	5850	40	<5	63	
ES1325501-002	21 November 2013	A2	9.29	18100	33	<5	440	
ES1325501-003	21 November 2013	A3	9.26	49700	43	<5	901	
ES1325501-004	21 November 2013	B1	8.71	748	<5	<5	<1	
ES1325501-005	21 November 2013	B2	9.7	13900	46	<5	186	
ES1325501-006	21 November 2013	D	8.36	800	21	<5	<1	
ES1325718-001	25 November 2013	SB1	9.08	4870	11	<5	17	
ES1325718-002	25 November 2013	SB2	9.2	1750	<5	<5	17	
ES1325718-003	25 November 2013	SB3	9.88	11500	25	<5	138	
ES1325718-004	25 November 2013	SD1	8.63	527	28	<5	23	
ES1325718-005	25 November 2013	SD2	8.76	358	14	<5	12	
ES1325718-006	25 November 2013	SD3	8.44	487	24	<5	16	
ES1325718-007	25 November 2013	SD4	8.7	1280	26	<5	13	
ES1325718-008	25 November 2013	SD5	8.5	367	6	<5	12	
ES1325718-009	25 November 2013	SD6	8.79	1570	28	<5	19	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1327337-001	12 December 2013	SB1	9.11	6620	38	<5	4	
ES1327337-002	12 December 2013	SB2	9.55	1910	5	<5	20	Water level low
ES1327337-003	12 December 2013	SB3	9.75	13200	6	<5	16	
ES1327337-004	12 December 2013	SD1	8.48	566	106	<5	38	Water level low
ES1327337-005	12 December 2013	SD2	8.74	407	48	<5	17	
ES1327337-006	12 December 2013	SD3	8.52	558	29	<5	21	
ES1327337-007	12 December 2013	SD4	8.91	1380	27	<5	17	Water level low
ES1327337-008	12 December 2013	SD5	9.22	365	7	<5	17	Water level low
ES1327337-009	12 December 2013	SD6	8.93	1660	12	<5	23	Water level low
ES1327336-001	12 December 2013	A1	9.33	6160	7	<5	6	
ES1327336-002	12 December 2013	A2	9.52	18100	226	9	16	
ES1327336-003	12 December 2013	A3	9.4	50800	25	<5	67	
ES1327336-004	12 December 2013	B1	8.93	1020	<5	<5	8	
ES1327336-005	12 December 2013	B2	9.56	14200	34	<5	<1	
ES1327336-006	12 December 2013	C	9.0	1650	78	<5	68	Water level low
ES1327336-007	12 December 2013	D	8.49	824	11	<5	6	
ES1328231-001	23 December 2013	A1	9.05	6130	28	<5	7	Additional sampling for WTP processing info
ES1328231-002	23 December 2013	A2	9.27	17600	103	<5	17	Additional sampling for WTP processing info
ES1328231-003	23 December 2013	B2	9.63	13900	145	<5	17	Additional sampling for WTP processing info
ES1401408-001	22 January 2014	A1	9.3	7120	22	<5	5	
ES1401408-002	22 January 2014	A2	9.37	18300	156	<5	<1	
ES1401408-003	22 January 2014	A3	9.3	29900	75	<5	328	
ES1401408-004	22 January 2014	B1	8.72	642	<5	<5	<1	
ES1401408-005	22 January 2014	B2	9.72	14600	23	<5	17	
ES1401408-006	22 January 2014	D	8.47	885	16	<5	<1	
ES1401528-001	23 January 2014	SB1	9.33	7440	21	<5	10	
ES1401528-002	23 January 2014	SB2	9.13	2800	293	<5	24	
ES1401528-004	23 January 2014	SD1	8.71	740	48	<5	39	Water level low
ES1401528-005	23 January 2014	SD2	8.54	388	42	<5	16	
ES1401528-006	23 January 2014	SD3	8.36	629	132	<5	29	
ES1401528-007	23 January 2014	SD4	8.87	2960	80	<5	23	
ES1401528-008	23 January 2014	SD5	8.46	577	65	<5	22	
ES1401528-009	23 January 2014	SD6	9.1	1950	146	<5	32	Water level low

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1402739-001	10 February 2014	SB1	9.39	10200	68	<5	17	Water level low
ES1402739-002	10 February 2014	SB2	9.38	4070	48	<5	27	Water level low
ES1402739-003	10 February 2014	SD1	9.27	957	45	<5	42	Water level low
ES1402739-004	10 February 2014	SD2	8.88	744	205	<5	20	Water level low
ES1402739-005	10 February 2014	SD3	8.48	1140	114	<5	28	Water level low
ES1402739-006	10 February 2014	SD4	8.75	6220	440	<5	43	Water level low
ES1402739-007	10 February 2014	SD5	8.64	778	98	<5	26	Water level low
ES1402739-008	10 February 2014	SD6	9.13	2320	72	<5	40	
ES1402847-001	11 February 2014	A1	9.28	7590	166	<5	16	
ES1402847-002	11 February 2014	A2	9.49	18600	74	<5	<1	
ES1402847-003	11 February 2014	A3	9.5	30500	54	<5	<1	
ES1402847-004	11 February 2014	B1	8.91	426	12	<5	<1	
ES1402847-005	11 February 2014	B2	9.87	15000	70	<5	<1	
ES1402847-006	11 February 2014	D	8.67	879	25	<5	<1	
ES1406048-001	19 March 2014	A1	9.14	7030	74	<5	30	
ES1406048-002	19 March 2014	A2	9.34	16800	70	<5	20	
ES1406048-003	19 March 2014	A3	9.34	29600	6	<5	34	
ES1406048-005	19 March 2014	B1	9.73	14200	12	<5	26	
ES1406048-004	19 March 2014	B2	8.86	284	24	<5	2	
ES1406048-006	19 March 2014	D	8.49	917	30	<5	4	
ES1406046-001	19 March 2014	SB1	9.27	3580	16	<5	4	
ES1406046-002	19 March 2014	SB2	9.04	4200	237	<5	37	
ES1406046-003	19 March 2014	SD1	8.62	1070	116	<5	81	
ES1406046-004	19 March 2014	SD2	8.94	934	457	<5	55	
ES1406046-005	19 March 2014	SD3	8.49	1350	526	<5	46	
ES1406046-006	19 March 2014	SD5	8.56	930	101	<5	48	
ES1406046-007	19 March 2014	SD6	9.02	2260	11	<5	72	
ES1408043-001	9 April 2014	SB1	8.98	2480	142	<5	6	
ES1408043-002	9 April 2014	SB2	8.78	1250	19	<5	<1	
ES1408043-003	9 April 2014	SB3	9.06	4640	19	<5	10	
ES1408043-004	9 April 2014	SD1	7.68	306	10	<5	14	
ES1408043-005	9 April 2014	SD2	7.8	185	11	<5	14	
ES1408043-006	9 April 2014	SD3	7.81	314	24	<5	18	
ES1408043-007	9 April 2014	SD4	7.92	370	10	<5	12	
ES1408043-008	9 April 2014	SD5	7.72	154	18	<5	12	
ES1408043-009	9 April 2014	SD6	9.01	1250	185	<5	17	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1408164-001	10 April 2014	A1	9.07	5040	14	<5	1	
ES1408164-002	10 April 2014	A2	9.38	13700	86	<5	44	
ES1408164-003	10 April 2014	A3	9.28	19400	522	58	159	
ES1408164-004	10 April 2014	B1	8.49	377	14	<5	4	
ES1408164-005	10 April 2014	B2	9.59	12800	120	<5	16	
ES1408164-006	10 April 2014	D	8.4	420	23	<5	9	
ES1410565-001	12 May 2014	A1	8.92	5710	22	<5	4	
ES1410565-002	12 May 2014	A2	9.38	15600	<5	<5	24	
ES1410565-003	12 May 2014	A3	9.38	23100	17	<5	42	
ES1410565-004	12 May 2014	B1	8.43	250	<5	<5	2	
ES1410565-005	12 May 2014	B2	9.75	13500	16	<5	21	
ES1410565-006	12 May 2014	D	8.33	444	<5	<5	6	
ES1410708-001	13 May 2014	SB1	8.99	5810	22	<5	10	
ES1410708-002	13 May 2014	SB2	9.19	1400	28	<5	14	
ES1410708-003	13 May 2014	SB3	9.19	7060	18	<5	15	
ES1410708-004	13 May 2014	SD1	8.22	410	9	<5	11	
ES1410708-005	13 May 2014	SD2	8.29	234	20	<5	10	
ES1410708-006	13 May 2014	SD3	8.14	377	14	<5	11	
ES1410708-007	13 May 2014	SD4	8.28	465	46	<5	9	
ES1410708-008	13 May 2014	SD5	8.11	222	22	<5	12	
ES1410708-009	13 May 2014	SD6	8.82	1330	66	<5	35	
ES1413953-001	24 June 2014	A1	8.74	6070	20	<5	5	
ES1413953-002	24 June 2014	A2	9.01	15600	20	<5	67	
ES1413953-003	24 June 2014	A3	9.22	18900	57	<5	88	
ES1413953-004	24 June 2014	B1	8.51	258	<5	<5	2	
ES1413953-005	24 June 2014	B2	9.50	12900	28	<5	81	
ES1413953-006	24 June 2014	C	9.45	20000	<5	<5	123	
ES1413953-007	24 June 2014	D	8.65	468	<5	<5	6	
ES1413954-001	24 June 2014	SB1	8.97	5810	10	<5	6	
ES1413954-002	24 June 2014	SB2	9.06	1260	11	<5	10	
ES1413954-003	24 June 2014	SB3	9.28	4700	14	<5	19	
ES1413954-004	24 June 2014	SD1	8.05	376	<5	<5	11	
ES1413954-005	24 June 2014	SD2	8.2	234	14	<5	8	
ES1413954-006	24 June 2014	SD3	8.19	346	<5	<5	12	
ES1413954-007	24 June 2014	SD4	8.37	639	<5	<5	8	
ES1413954-008	24 June 2014	SD5	8.18	227	<5	<5	11	
ES1413954-009	24 June 2014	SD6	8.8	1230	<5	<5	19	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1415997-001	21 July 2014	A1	8.8	6600	34	<5	5	
ES1415997-002	21 July 2014	A2	9.11	16000	34	<5	6	
ES1415997-003	21 July 2014	A3	9.32	20000	48	<5	1	
ES1415997-004	21 July 2014	B1	8.33	225	5	<5	<1	
ES1415997-005	21 July 2014	B2	9.56	13200	28	<5	29	
ES1415997-006	21 July 2014	C	9.43	18800	14	<5	65	
ES1415997-007	21 July 2014	D	8.63	507	<5	<5	<1	
ES1416084-001	22 July 2014	SB1	9	6840	14	<5	4	
ES1416084-002	22 July 2014	SB2	8.99	1400	<5	<5	9	
ES1416084-003	22 July 2014	SB3	9.31	5560	10	<5	28	
ES1416084-004	22 July 2014	SD1	8.46	417	12	<5	11	
ES1416084-005	22 July 2014	SD2	8.59	261	<5	<5	9	
ES1416084-006	22 July 2014	SD3	8.14	406	<5	<5	12	
ES1416084-007	22 July 2014	SD4	8.5	763	<5	<5	8	
ES1416084-008	22 July 2014	SD5	8.34	259	<5	<5	11	
ES1416084-009	22 July 2014	SD6	8.81	1400	<5	<5	33	
ES1417927-001	13 August 2014	A1	8.92	6970	13	<5	6	
ES1417927-002	13 August 2014	A2	9.23	17500	21	<5	39	
ES1417927-003	13 August 2014	A3	9.49	22900	28	<5	41	
ES1417927-004	13 August 2014	B1	8.7	336	<5	<5	<1	
ES1417927-005	13 August 2014	B2	9.80	14400	16	<5	22	
ES1417927-006	13 August 2014	C	9.66	20600	<5	<5	50	
ES1417927-007	13 August 2014	D	8.71	516	<5	<5	<1	
ES1418092-001	14 August 2014	SB1	8.97	7120	13	<5	11	
ES1418092-002	14 August 2014	SB2	9.09	1370	<5	<5	8	
ES1418092-003	14 August 2014	SB3	9.26	8580	<5	<5	57	
ES1418092-004	14 August 2014	SD1	8.24	429	10	<5	12	
ES1418092-005	14 August 2014	SD2	8.51	276	<5	<5	10	
ES1418092-006	14 August 2014	SD3	9.1	390	<5	<5	11	
ES1418092-007	14 August 2014	SD4	8.87	797	<5	<5	9	
ES1418092-008	14 August 2014	SD5	8.48	275	9	<5	14	
ES1418092-009	14 August 2014	SD6	8.81	1370	6	<5	38	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1421433-001	19 September 2014	A1	8.73	6440	8	6	6	
ES1421433-002	19 September 2014	A2	9.11	16700	870	5	5	
ES1421433-003	19 September 2014	A3	9.54	34500	54	48	48	
ES1421433-004	19 September 2014	B1	8.87	490	<5	<5	<5	
ES1421433-005	19 September 2014	B2	9.71	13700	49	<5	<5	
ES1421433-006	19 September 2014	C	9.45	21400	38	6	<1	
ES1421433-007	19 September 2014	D	8.58	555	<5	7	5	
ES1421434-001	19 September 2014	SB1	9.11	6800	13	6	<1	
ES1421434-002	19 September 2014	SB2	9.13	1300	<5	<5	8	
ES1421434-003	19 September 2014	SB3	9.23	4820	12	<5	18	
ES1421434-004	19 September 2014	SD1	8.06	322	8	<5	10	
ES1421434-005	19 September 2014	SD2	8.24	263	7	<5	8	
ES1421434-006	19 September 2014	SD3	8.28	364	6	7	11	
ES1421434-007	19 September 2014	SD4	8.85	754	<5	6	8	
ES1421434-008	19 September 2014	SD5	8.08	176	<5	<5	9	
ES1421434-009	19 September 2014	SD6	8.7	1280	12	<5	14	
ES1423149-001	21 October 2014	A1	8.88	6550	<5	<5	3	
ES1423149-002	21 October 2014	A2	9.56	18700	530	9	355	Pond low/strong odour
ES1423149-003	21 October 2014	A3	9.56	52900	739	<5	666	Pond low/strong odour
ES1423149-004	21 October 2014	B1	8.68	526	<5	<5	2	
ES1423149-005	21 October 2014	B2	9.74	14500	56	<5	<1	
ES1423149-006	21 October 2014	C	9.39	21400	28	<5	57	
ES1423149-007	21 October 2014	D	8.54	682	<5	<5	4	
ES1423569-001	24 October 2014	SB1	9.17	6570	41	<5	10	
ES1423569-002	24 October 2014	SB2	9.1	1390	7	<5	8	
ES1423569-003	24 October 2014	SB3	9.19	6860	137	<5	68	
ES1423569-004	24 October 2014	SD1	8.03	382	<5	<5	10	
ES1423569-005	24 October 2014	SD2	8.35	296	18	<5	10	
ES1423569-006	24 October 2014	SD3	8.27	406	6	<5	10	
ES1423569-007	24 October 2014	SD4	8.87	863	18	<5	11	
ES1423569-008	24 October 2014	SD5	8.25	226	14	<5	13	
ES1423569-009	24 October 2014	SD6	8.78	1380	45	<5	34	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1425611-001	19 November 2014	A1	9.09	6980	<5	<5	<1	
ES1425611-002	19 November 2014	A2	9.69	23200	2500	<5	1050	Could not filter sample, rotten odour, high EC
ES1425611-003	19 November 2014	A3	9.66	77200	288	7	399	Rotten odour, high EC
ES1425611-004	19 November 2014	B1	8.97	508	<5	<5	3	
ES1425611-005	19 November 2014	B2	9.79	16200	68	<5	19	
ES1425611-006	19 November 2014	C	9.55	23200	37	<5	32	High EC
ES1425611-007	19 November 2014	D	8.69	736	<5	<5	3	
ES1425870-001	20 November 2014	SB1	9.26	7790	62	<5	<1	
ES1425870-002	20 November 2014	SB2	9.23	1680	12	<5	9	
ES1425870-003	20 November 2014	SB3	9.45	11200	19	<5	73	
ES1425870-004	20 November 2014	SD3	9.15	429	24	<5	11	
ES1425870-005	20 November 2014	SD4	8.98	1130	18	<5	8	
ES1425870-006	20 November 2014	SD5	8.44	301	40	<5	9	
ES1425870-007	20 November 2014	SD6	8.94	1580	22	<5	12	
ES1426134-001	25 November 2014	SD1	8.37	476	11	<5	8	
ES1426134-002	25 November 2014	SD2	8.6	367	12	<5	6	
ES1427456-001	9 December 2014	A1	9.15	6950	25	<5	6	
ES1427456-002	9 December 2014	A2	9.99	17900	564	<5	6	Very low levels, unable to be field filtered
ES1427456-003	9 December 2014	A3	9.82	75800	2420	<5	8940	Very low levels, unable to be field filtered
ES1427456-004	9 December 2014	B1	8.72	505	20	<5	5	
ES1427456-005	9 December 2014	B2	9.89	16900	131	<5	521	
ES1427456-006	9 December 2014	C	9.43	23400	89	<5	1270	
ES1427456-007	9 December 2014	D	8.38	686	33	<5	4	
ES1427589-001	10 December 2014	SB1	9.26	4120	31	<5	<1	
ES1427589-002	10 December 2014	SB2	9.31	1790	28	<5	10	
ES1427589-003	10 December 2014	SB3	9.68	15300	68	<5	128	
ES1427589-004	10 December 2014	SD1	8.37	483	20	<5	12	
ES1427589-005	10 December 2014	SD2	8.66	370	17	<5	7	
ES1427589-006	10 December 2014	SD3	8.81	462	31	<5	12	
ES1427589-007	10 December 2014	SD4	9.28	1220	23	<5	10	
ES1427589-008	10 December 2014	SD5	8.56	336	21	<5	9	
ES1427589-009	10 December 2014	SD6	8.93	1610	16	<5	17	
ES1500920-001	15 January 2015	BOX CUT SUMP	8.77	7160	242	<5	<1	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1501810-001	27 January 2015	SB1	9.25	7980	48	7	<1	
ES1501810-002	27 January 2015	SB2	9.24	2320	31	6	12	
ES1501810-003	27 January 2015	SB3	9.74	21100	60	6	150	
ES1501810-004	27 January 2015	SD1	8.27	591	125	5	16	
ES1501810-005	27 January 2015	SD2	8.63	467	48	<5	8	
ES1501810-006	27 January 2015	SD3	9.21	553	31	6	15	
ES1501810-007	27 January 2015	SD4	8.93	1570	50	5	12	
ES1501810-008	27 January 2015	SD5	8.81	430	27	6	10	
ES1501810-009	27 January 2015	SD6	9.09	1920	14	<5	23	
ES1504572-001	23 February 2015	A1	9.15	8170	<5	<5	200	
ES1504572-002	23 February 2015	A2	9.73	9940	77	8	363	Water level very low
ES1504572-003	23 February 2015	A3	9.29	20300	17	<5	1820	
ES1504572-004	23 February 2015	B1	8.65	741	<5	<5	12	
ES1504572-005	23 February 2015	B2	9.94	23600	180	5	2360	
ES1504572-006	23 February 2015	C	9.57	26100	23	<5	2160	
ES1504572-007	23 February 2015	D	8.6	883	6	<5	4	
ES1504686-001	25 February 2015	SB1	9.1	8150	135	<5	8	
ES1504686-002	25 February 2015	SB2	9.42	2510	11	5	17	
ES1504686-003	25 February 2015	SB3	9.78	11200	322	<5	108	
ES1504686-004	25 February 2015	SD1	8.49	643	44	<5	15	Water level low
ES1504686-005	25 February 2015	SD2	8.85	472	31	<5	8	
ES1504686-006	25 February 2015	SD3	9.17	546	28	6	15	
ES1504686-007	25 February 2015	SD4	9.1	1650	39	<5	10	
ES1504686-008	25 February 2015	SD5	8.82	482	40	<5	8	
ES1504686-009	25 February 2015	SD6	9.1	1850	15	<5	21	
ES1505066-001	27 February 2015	BOX CUT	8.36	9020	283	<15	386	
ES1507239-001	26 March 2015	SB1	9.16	7800	265	11	134	
ES1507239-002	26 March 2015	SB2	9.77	2180	50	<5	9	
ES1507239-003	26 March 2015	SB3	9.95	12700	44	9	330	
ES1507239-004	26 March 2015	SD1	8.26	440	15	6	18	
ES1507239-005	26 March 2015	SD2	8.3	344	14	<5	16	
ES1507239-006	26 March 2015	SD3	8.74	520	26	<5	17	
ES1507239-007	26 March 2015	SD4	9.01	1500	89	<5	12	
ES1507239-008	26 March 2015	SD5	8.49	417	28	9	12	
ES1507239-009	26 March 2015	SD6	9.04	1910	67	6	32	
ES1507436-001	30 March 2015	BOX CUT	8.5	7010	3590	16	<1	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1507568-001	31 March 2015	A1	9.13	7450	5	<5	189	
ES1507568-002	31 March 2015	A2	9.73	7840	32	<5	740	
ES1507568-003	31 March 2015	A3	9.09	17000	61	<5	1700	
ES1507568-004	31 March 2015	B1	8.71	647	<5	<5	<1	
ES1507568-005	31 March 2015	B2	9.84	23900	36	<5	22	
ES1507568-006	31 March 2015	C	9.51	25500	28	<5	6	
ES1507568-007	31 March 2015	D	8.4	827	<5	<5	3	
ES1520294-001	22 April 2015	A1	9.04	6520	22	<5	<1	
ES1520294-002	22 April 2015	A2	9.24	6680	14	<5	6	
ES1520294-003	22 April 2015	A3	8.91	13800	72	<5	10	
ES1520294-004	22 April 2015	B1	8.64	680	6	<5	1	
ES1520294-005	22 April 2015	B2	10.10	16800	128	<5	100	
ES1520294-006	22 April 2015	C	9.70	23800	31	<5	40	
ES1520294-007	22 April 2015	D	8.55	652	6	5	<1	
ES1520408-001	23 April 2015	SB1	9.59	2530	88	5	7	
ES1520408-002	23 April 2015	SB2	9.72	1600	13	<5	13	
ES1520408-003	23 April 2015	SB3	9.44	2820	136	6	5	
ES1520408-004	23 April 2015	SD1	7.66	232	19	6	11	
ES1520408-005	23 April 2015	SD2	7.91	239	<5	<5	8	
ES1520408-006	23 April 2015	SD3	7.76	326	13	6	14	
ES1520408-007	23 April 2015	SD4	8.22	748	26	<5	10	
ES1520408-008	23 April 2015	SD5	7.72	183	16	<5	10	
ES1520408-009	23 April 2015	SD6	8.92	1420	46	<5	15	
ES1522286-001	19 May 2015	A1	9.25	6850	20	<5	3	
ES1522286-002	19 May 2015	A2	9.58	6890	31	<5	10	
ES1522286-003	19 May 2015	A3	9.06	14500	21	<5	1310	
ES1522286-004	19 May 2015	B1	8.60	619	<5	<5	6	
ES1522286-005	19 May 2015	B2	10.10	22400	139	<5	2530	Water level low
ES1522286-006	19 May 2015	C	9.72	15400	101	<5	1930	
ES1522286-007	19 May 2015	D	8.65	685	5	<5	7	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1522402-001	20 May 2015	SB1	9.1	7380	19	<5	<1	
ES1522402-002	20 May 2015	SB2	9.71	1650	<5	<5	14	
ES1522402-003	20 May 2015	SB3	9.66	4180	37	8	19	
ES1522402-004	20 May 2015	SD1	8.04	292	22	<5	12	
ES1522402-005	20 May 2015	SD2	9.36	249	6	<5	8	
ES1522402-006	20 May 2015	SD3	7.94	367	18	<5	17	
ES1522402-007	20 May 2015	SD4	8.63	903	10	11	10	
ES1522402-008	20 May 2015	SD5	8.35	236	35	<5	9	
ES1522402-009	20 May 2015	SD6	8.89	1510	7	<5	19	
ES1524645-001	23 June 2015	A1	9.05	6450	14	11	<1	
ES1524645-002	23 June 2015	A2	9.37	6760	32	10	20	
ES1524645-003	23 June 2015	A3	9.01	10200	380	5	52	
ES1524645-004	23 June 2015	B1	8.53	581	<5	<5	3	Small fish in pond
ES1524645-005	23 June 2015	B2	10.10	20800	63	<5	299	
ES1524645-006	23 June 2015	C	9.81	22200	38	6	274	
ES1524645-007	23 June 2015	D	8.38	674	<5	<5	4	
ES1524749-001	24 June 2015	SB1	8.93	6450	38	<5	<1	
ES1524749-002	24 June 2015	SB2	9.67	1470	6	10	14	
ES1524749-003	24 June 2015	SB3	9.46	3540	23	7	17	
ES1524749-004	24 June 2015	SD1	7.86	284	<5	<5	12	
ES1524749-005	24 June 2015	SD2	8.14	251	6	11	8	
ES1524749-006	24 June 2015	SD3	7.67	340	<5	<5	13	
ES1524749-007	24 June 2015	SD4	8.79	851	<5	12	7	
ES1524749-008	24 June 2015	SD5	7.99	216	<5	5	9	
ES1524749-009	24 June 2015	SD6	8.82	1370	6	5	18	
ES1524749-010	24 June 2015	BOX CUT	8.59	7560	4150	20	<1	
ES1527134-001	28 July 2015	SB1	9.09	6550	16	<5	<1	
ES1527134-002	28 July 2015	SB2	9.46	1490	<5	19	18	
ES1527134-003	28 July 2015	SB3	9.23	4040	132	7	36	
ES1527134-004	28 July 2015	SD1	8.02	311	22	6	8	
ES1527134-005	28 July 2015	SD2	8.19	267	5	<5	7	
ES1527134-006	28 July 2015	SD3	8.28	363	<5	16	10	
ES1527134-007	28 July 2015	SD4	9.07	952	<5	<5	10	
ES1527134-008	28 July 2015	SD5	8.25	242	<5	<5	7	
ES1527134-009	28 July 2015	SD6	8.77	1400	<5	<5	21	
ES1527134-011	28 July 2015	BOX CUT	8.73	7140	3860	18	<10	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1527330-001	30 July 2015	A1	9.13	6620	166	6	<1	
ES1527330-002	30 July 2015	A2	9.35	7090	32	9	8	
ES1527330-003	30 July 2015	A3	8.68	8850	5	<5	<1	
ES1527330-004	30 July 2015	B1	8.62	520	<5	<5	<1	
ES1527330-005	30 July 2015	B2	10.30	22200	86	9	74	
ES1527330-006	30 July 2015	C	9.85	23100	43	7	58	
ES1527330-007	30 July 2015	D	8.37	671	6	<5	2	
ES1529288-001	25 August 2015	SD5	6.77	115	57	10	19	
ES1529288-002	25 August 2015	SD2	7.12	98	13	8	15	
ES1529425-001	26 August 2015	SB1	9.33	2560	71	<5	<1	
ES1529425-002	26 August 2015	SB2	9.69	1230	<5	<5	15	
ES1529425-003	26 August 2015	SB3	9.34	3130	16	<5	5	
ES1529425-004	26 August 2015	SD1	7.79	179	31	<5	10	
ES1529425-005	26 August 2015	SD2	7.73	180	58	6	7	
ES1529425-006	26 August 2015	SD3	7.68	463	19	<5	38	
ES1529425-007	26 August 2015	SD4	8.43	485	38	<5	8	
ES1529425-008	26 August 2015	SD5	7.53	104	32	6	8	
ES1529425-009	26 August 2015	SD6	8.77	1220	47	<5	11	
ES1529425-010	26 August 2015	BOX CUT	8.76	5830	175	<5	<1	
ES1529580-001	27 August 2015	A1	9.27	6510	12	<5	221	
ES1529580-002	27 August 2015	A2	9.07	6560	39	<5	6	
ES1529580-003	27 August 2015	A3	8.96	7070	26	7	9	
ES1529580-004	27 August 2015	B1	8.41	435	<5	<5	<1	
ES1529580-005	27 August 2015	B2	10.20	21200	74	6	88	
ES1529580-006	27 August 2015	C	9.67	23600	45	6	55	
ES1529580-007	27 August 2015	D	8.48	590	<5	<5	5	
ES1531925-001	22 September 2015	A1	9.19	6510	7	9	7	
ES1531925-002	22 September 2015	A2	9.02	6830	30	8	5	
ES1531925-003	22 September 2015	A3	9.4	7230	9	6	4	
ES1531925-004	22 September 2015	B1	9.00	405	<5	<5	<1	
ES1531925-005	22 September 2015	B2	10.90	21500	126	<5	60	
ES1531925-006	22 September 2015	C	9.66	22200	14	<5	36	
ES1531925-007	22 September 2015	D	8.76	567	<5	<5	<1	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1532077-001	23 September 2015	SB1	9.16	6990	171	<5	29	
ES1532077-002	23 September 2015	SB2	9.54	1390	21	<5	20	
ES1532077-003	23 September 2015	SB3	9.32	3440	19	<5	18	
ES1532077-004	23 September 2015	SD1	8.22	220	8	<5	9	
ES1532077-005	23 September 2015	SD2	7.43	173	12	<5	9	
ES1532077-006	23 September 2015	SD3	8.39	334	<5	<5	9	
ES1532077-007	23 September 2015	SD4	9.01	668	5	<5	10	
ES1532077-008	23 September 2015	SD5	8.02	124	13	<5	8	
ES1532077-009	23 September 2015	SD6	8.87	1370	14	<5	15	
ES1532077-015	23 September 2015	BOX CUT	8.8	7520	708	<5	32	
ES1534739-001	27 October 2015	SB1	9.31	5860	63	8	2	
ES1534739-002	27 October 2015	SB2	9.55	1500	20	8	21	
ES1534739-003	27 October 2015	SB3	9.48	4770	40	7	27	
ES1534739-004	27 October 2015	SD1	8.13	282	45	10	9	
ES1534739-005	27 October 2015	SD2	8.23	198	23	11	9	
ES1534739-006	27 October 2015	SD3	8.65	384	8	9	9	
ES1534739-007	27 October 2015	SD4	9.69	750	5	10	12	
ES1534739-008	27 October 2015	SD5	8.14	169	27	<5	10	
ES1534739-009	27 October 2015	SD6	8.94	1500	43	9	25	
ES1534739-015	27 October 2015	BOX CUT	8.68	7180	920	27	1	
ES1537283-001	25 November 2015	SB1	9.3	8500	18	<5	<1	
ES1537283-002	25 November 2015	SB2	9.52	1420	<5	<5	18	
ES1537283-003	25 November 2015	SB3	9.49	4530	16	<5	18	
ES1537283-004	25 November 2015	SD1	8.06	297	5	<5	10	
ES1537283-005	25 November 2015	SD2	8.07	236	<5	<5	8	
ES1537283-006	25 November 2015	SD3	7.84	445	72	<5	10	
ES1537283-007	25 November 2015	SD4	8.92	684	30	<5	11	Dam level low, pump on
ES1537283-008	25 November 2015	SD5	8.24	172	62	<5	12	
ES1537283-009	25 November 2015	SD6	8.97	1350	<5	<5	11	
ES1537283-010	25 November 2015	BOX CUT	8.68	7580	1940	<5	<1	
ES1537409-001	26 November 2015	A1	9.26	7240	8	<5	10	
ES1537409-002	26 November 2015	A2	9.04	7860	90	<5	5	
ES1537409-003	26 November 2015	A3	9.22	9500	8	8	7	
ES1537409-004	26 November 2015	B1	8.66	551	6	11	6	
ES1537409-005	26 November 2015	B2	10.40	26600	271	10	92	
ES1537409-006	26 November 2015	C	9.74	23500	57	7	77	
ES1537409-007	26 November 2015	D	8.78	634	32	18	6	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1538530-001	9 December 2015	SB1	9.18	8580	272	<5	118	Earthworks nearby
ES1538530-002	9 December 2015	SB2	9.37	1560	<5	<5	25	
ES1538530-003	9 December 2015	SB3	9.43	5440	13	<5	27	
ES1538530-004	9 December 2015	SD1	8.08	341	<5	<5	12	
ES1538530-005	9 December 2015	SD2	8.35	257	<5	<5	11	
ES1538530-006	9 December 2015	SD3	8.45	459	7	<5	10	
ES1538530-007	9 December 2015	SD4	8.81	832	26	-	15	
ES1538530-008	9 December 2015	SD5	8.01	201	28	-	14	
ES1538530-009	9 December 2015	SD6	9.02	1510	21	<5	28	
ES1538530-010	9 December 2015	BOX CUT	8.64	7300	1830	<5	18	
ES1538584-001	10 December 2015	A1	9.22	7360	<5	28	6	
ES1538584-002	10 December 2015	A2	9.8	7710	124	10	12	
ES1538584-003	10 December 2015	A3	9.05	8760	117	7	11	
ES1538584-004	10 December 2015	B1	8.58	553	<5	<5	9	
ES1538584-005	10 December 2015	B2	10.40	29200	346	11	196	High EC, water level very low
ES1538584-006	10 December 2015	C	9.70	23900	73	6	58	High EC
ES1538584-007	10 December 2015	D	8.49	661	7	<5	7	
	13 January 2016	SB1	-	-	-	-	-	Only black mud, earthworks nearby
ES1600922-001	13 January 2016	SB2	8.97	1590	21	9	19	
ES1600922-002	13 January 2016	SB3	9.41	5370	16	<5	23	
ES1600922-003	13 January 2016	SD1	8.84	463	6	13	11	
ES1600922-004	13 January 2016	SD2	8.96	359	9	<5	8	
ES1600922-005	13 January 2016	SD3	8.45	474	14	<5	9	
ES1600922-006	13 January 2016	SD4	8.65	880	53	10	11	
ES1600922-007	13 January 2016	SD5	8.45	242	8	6	10	
ES1600922-008	13 January 2016	SD6	8.99	1500	9	7	23	
ES1600922-013	13 January 2016	BOX CUT	8.51	5290	2350	13	22	
ES1600970-001	14 January 2016	A1	9.22	7860	<5	<5	6	
ES1600970-002	14 January 2016	A2	9.1	7710	42	<5	9	
ES1600970-003	14 January 2016	A3	9.03	7940	34	<5	8	
ES1600970-004	14 January 2016	B1	8.65	619	<5	<5	5	
ES1600970-005	14 January 2016	B2	10.10	36000	230	<5	3840	
ES1600970-006	14 January 2016	C	9.50	24100	74	6	65	
ES1600970-007	14 January 2016	D	8.56	744	28	<5	7	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
-	17 February 2016	SB1	-	-	-	-	-	Dry
ES1603652-001	17 February 2016	SB2	9.5	4940	28	8	<1	
-	17 February 2016	SB3	-	-	-	-	-	Dry
ES1603652-002	17 February 2016	SD1	8.39	488	32	<5	10	
ES1603652-003	17 February 2016	SD2	8.38	340	32	<5	6	
ES1603652-004	17 February 2016	SD3	5.86	549	40	<5	8	
ES1603652-005	17 February 2016	SD4	8.75	1280	69	<5	5	
ES1603652-006	17 February 2016	SD5	8.41	312	31	<5	8	
ES1603652-007	17 February 2016	SD6	8.98	1640	18	<5	7	
ES1603652-008	17 February 2016	BOX CUT	8.67	8300	1410	13	<1	
ES1603857-001	18 February 2016	A1	9.41	8200	16	10	73	
ES1603857-002	18 February 2016	A2	9.16	8090	25	<5	48	
ES1603857-003	18 February 2016	A3	8.96	8420	47	<5	492	
ES1603857-004	18 February 2016	B1	8.70	688	<5	<5	1	
ES1603857-005	18 February 2016	B2	10.30	62300	50	13	7760	
ES1603857-006	18 February 2016	C	9.84	19900	71	<5	1480	
ES1603857-007	18 February 2016	D	8.54	771	28	12	7	
ES1605303-001	8 March 2016	A1	9.2	8540	<5	50	72	
ES1605303-002	8 March 2016	A2	9.04	8520	43	25	69	
ES1605303-003	8 March 2016	A3	9.3	8430	21	25	66	
ES1605303-004	8 March 2016	B1	8.80	668	5	11	4	
ES1605303-005	8 March 2016	B2	10.10	90100	156	24	1820	
ES1605303-006	8 March 2016	C	9.58	27500	40	27	221	
ES1605303-007	8 March 2016	D	9.05	888	44	16	4	
-	9 March 2016	SB1	-	-	-	-	-	Dry
ES1605414-001	9 March 2016	SB2	9.48	5600	60	23	37	
-	9 March 2016	SB3	-	-	-	-	-	Dry
ES1605414-002	9 March 2016	SD1	8.61	548	48	38	13	
ES1605414-003	9 March 2016	SD2	8.74	394	34	14	8	
ES1605414-004	9 March 2016	SD3	8.82	606	33	16	10	
ES1605414-005	9 March 2016	SD4	9.69	2470	167	11	43	Water level low
ES1605414-006	9 March 2016	SD5	8.5	364	28	12	10	
ES1605414-007	9 March 2016	SD6	9.15	1820	20	19	23	
ES1605414-008	9 March 2016	BOX CUT	8.73	5500	268	28	<1	
ES1607989-001	12 April 2016	A1	9.17	8300	<5	<5	14	
ES1607989-002	12 April 2016	A2	8.99	7870	68	<5	364	
ES1607989-003	12 April 2016	A3	8.9	7560	163	<5	393	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1607989-004	12 April 2016	B1	8.66	695	<5	<5	9	
-	12 April 2016	B2	-	-	-	-	-	Dry
ES1607989-005	12 April 2016	C	9.68	26900	103	11	12	High EC
ES1607989-006	12 April 2016	D	8.41	834	21	17	1	
-	13 April 2016	SB1	-	-	-	-	-	Dry
ES1608080-001	13 April 2016	SB2	9.48	5910	36	59	29	
-	13 April 2016	SB3	-	-	-	-	-	Dry
ES1608080-002	13 April 2016	SD1	8.78	589	26	98	20	
ES1608080-003	13 April 2016	SD2	8.88	456	28	76	11	
ES1607993-001	12 April 2016	SD3	8.69	650	28	<5	17	
-	13 April 2016	SD4	-	-	-	-	-	Dry
ES1608080-004	13 April 2016	SD5	8.66	402	27	<5	12	
ES1608080-005	13 April 2016	SD6	9.15	1940	19	37	34	
ES1607993-003	12 April 2016	BOX CUT	8.59	6280	518	<10	460	
ES1611129-001	23 May 2016	SD6	9.22	2080	23	<5	36	
ES1611129-002	23 May 2016	BOX CUT	8.9	8690	1930	<5	217	
ES1611233-001	24 May 2016	SB1	9.2	11400	12	<5	177	
ES1611233-002	24 May 2016	SB2	9.52	5910	40	<5	43	
-	24 May 2016	SB3	-	-	-	-	-	Dry
ES1611233-003	24 May 2016	SD1	8.6	622	233	<5	25	
ES1611233-004	24 May 2016	SD2	9.5	451	25	<5	15	
ES1611233-005	24 May 2016	SD3	8.69	722	20	<5	16	
-	24 May 2016	SD4	-	-	-	-	-	Dry
ES1611233-006	24 May 2016	SD5	9.1	405	16	<5	10	
ES1611332-001	25 May 2016	A1	9.22	7380	8	<5	4	
ES1611332-002	25 May 2016	A2	9.04	8450	12	<5	<1	
ES1611332-003	25 May 2016	A3	8.87	8910	22	<5	6	
ES1611332-004	25 May 2016	B1	8.64	604	<5	<5	<1	
-	25 May 2016	B2	-	-	-	-	-	Under construction
ES1611332-005	25 May 2016	C	9.89	27400	34	8	4	
ES1611332-006	25 May 2016	D	8.4	846	25	<5	3	
ES1613724-001	22 June 2016	A1	9.1	7730	7	<5	4	
ES1613724-002	22 June 2016	A2	9.4	8860	66	<5	6	
ES1613724-003	22 June 2016	A3	8.85	9380	12	<5	5	
ES1613724-004	22 June 2016	B1	8.69	577	22	<5	38	
	22 June 2016	B2	-	-	-	-	-	Under construction
ES1613724-005	22 June 2016	C	9.79	25700	45	6	581	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1613724-006	22 June 2016	D	8.59	795	12	<5	61	
ES1613734-003	22 June 2016	BOX CUT	8.85	8170	141	6	9	
ES1613766-001	23 June 2016	SB1	8.93	10600	67	7	698	
ES1613766-002	23 June 2016	SB2	9.48	4240	51	<5	30	
ES1613766-003	23 June 2016	SB3	8.98	2020	36	<5	13	
ES1613766-004	23 June 2016	SD1	8.06	412	23	<5	18	
ES1613766-005	23 June 2016	SD2	7.94	313	26	<5	10	
ES1613766-006	23 June 2016	SD3	8.55	574	15	<5	17	
ES1613766-007	23 June 2016	SD4	8.16	1130	24	10	9	
ES1613766-008	23 June 2016	SD5	7.11	82	72	<5	15	
ES1613766-009	23 June 2016	SD6	9.07	1760	62	<5	23	
ES1616076-001	21 July 2016	SB1	9.18	7960	176	19	136	
ES1616076-002	21 July 2016	SB2	9.2	1190	203	<5	38	
ES1616079-001	21 July 2016	A1	9.02	7910	26	<5	46	
ES1616079-002	21 July 2016	A2	8.93	7900	94	<5	8	
ES1616079-003	21 July 2016	A3	8.94	7440	130	<5	18	
ES1616079-004	21 July 2016	B1	8.48	522	8	<5	2	
	21 July 2016	B2	-	-	-	-	-	Under construction
ES1616079-005	21 July 2016	C	9.78	25400	72	<5	2100	
ES1616079-006	21 July 2016	D	8.31	745	7	<5	3	
ES1616331-001	25 July 2016	SD6	8.97	1340	151	<5	20	
ES1616331-002	25 July 2016	BOX CUT	8.54	9570	2710	<5	21	
ES1616390-001	26 July 2016	SB3	9.38	3560	10	<5	17	
ES1616390-002	26 July 2016	SD1	7.98	297	<5	<5	18	
ES1616390-003	26 July 2016	SD2	7.86	269	<5	<5	13	
ES1616390-004	26 July 2016	SD3	8.19	439	<5	<5	12	
ES1616390-005	26 July 2016	SD4	8.28	986	8	<5	10	
ES1616390-006	26 July 2016	SD5	7.89	156	13	<5	12	
ES1616390-007	26 July 2016	SB4	9.03	1160	7	<5	3	
ES1618785-001	24 August 2016	A1	9.25	7950	41	<20	20	
ES1618785-002	24 August 2016	A2	8.94	7540	148	<5	12	
ES1618785-003	24 August 2016	A3	8.85	7480	338	<5	17	
ES1618785-004	24 August 2016	B1	8.67	496	22	<5	3	
	24 August 2016	B2	-	-	-	-	-	Under construction
ES1618785-005	24 August 2016	C	9.85	23200	38	<5	2080	
ES1618785-006	24 August 2016	D	8.7	598	9	<5	<1	
ES1621640-001	26 September 2016	SD6	8.27	857	46	<5	18	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1621762-001	27 September 2016	SB1	9.08	6390	58	<5	14	
ES1621762-002	27 September 2016	SB2	9.26	2060	14	<5	15	
ES1621762-003	27 September 2016	SB3	9.23	4570	7	<5	13	
ES1621762-004	27 September 2016	SD1	8.11	478	<5	<5	16	
ES1621762-005	27 September 2016	SD2	7.65	181	<5	<5	14	
ES1621762-006	27 September 2016	SD3	7.68	1240	6	<5	16	
ES1621762-007	27 September 2016	SD4	8.28	587	6	<5	5	
ES1621762-008	27 September 2016	SD5	7.29	127	<5	<5	17	
ES1621762-009	27 September 2016	SB4	9.12	3240	5	<5	3	
ES1621762-013	27 September 2016	Box Cut (New)	8.5	8820	2500	<5	10	
ES1621893-001	28 September 2016	A1	9.12	7400	8	<5	6	
ES1621893-002	28 September 2016	A2	8.94	7260	33	<5	10	
ES1621893-003	28 September 2016	A3	8.79	8060	67	<5	11	
ES1621893-004	28 September 2016	B1	8.46	465	<5	<5	3	
ES1621893-005	28 September 2016	B2	9.03	6160	12	<5	8	
ES1621893-006	28 September 2016	C	9.83	22900	45	<5	41	
ES1621893-007	28 September 2016	D	8.29	494	45	<5	7	
ES1624027-001	24 October 2016	SD6	8.9	936	69	<5	24	
ES1624027-003	24 October 2016	SB3	9.6	5410	16	<5	17	
ES1624169-001	25 October 2016	SB1	9.7	6950	20	<5	9	
ES1624169-002	25 October 2016	SB2	9.8	2450	21	<5	16	
ES1624169-003	25 October 2016	SD2	7.8	205	22	<5	13	
ES1624169-004	25 October 2016	SD1	8.4	502	<5	<5	11	
ES1624169-005	25 October 2016	SD3	7.3	546	9	<5	12	
ES1624169-006	25 October 2016	SD4	8.9	803	10	<5	8	
ES1624169-007	25 October 2016	SD5	7.5	155	<5	<5	15	
ES1624169-008	25 October 2016	SB4	9.4	3210	9	<5	3	
ES1624169-013	25 October 2016	Box Cut	8.9	8780	1060	<5	136	
ES1624321-001	26 October 2016	A1	8.9	7440	16	<5	3	
ES1624321-002	26 October 2016	A2	8.95	7850	11	<5	6	
ES1624321-003	26 October 2016	A3	8.89	8040	32	<5	1	
ES1624321-004	26 October 2016	B1	8.57	508	<5	<5	4	
ES1624321-005	26 October 2016	B2	8.99	7150	20	<5	6	
ES1624321-006	26 October 2016	C	9.47	23700	56	<5	878	
ES1624321-007	26 October 2016	D	8.47	449	5	<5	6	
ES1626862-001	23 November 2016	SB1	9.15	9980	107	<5	41	
ES1626862-002	23 November 2016	SB2	9.38	2940	11	<5	15	

Sample No.	Date	Sample Location	pH	Electrical Conductivity (µS/cm)	Total Suspended Solids (mg/L)	Grease & Oil (mg/L)	Total Organic Carbon (TOC)	Comments
ES1626862-003	23 November 2016	SD3	8.51	520	8	<5	8	
ES1626862-004	23 November 2016	SD4	9.27	958	32	<5	9	
ES1626866-001	23 November 2016	A1	9.01	7780	13	<5	14	
ES1626866-002	23 November 2016	A2	8.92	7900	50	<5	10	
ES1626866-003	23 November 2016	A3	8.87	8150	13	<5	7	
ES1626866-004	23 November 2016	B1	8.56	490	<5	<5	4	
ES1626866-005	23 November 2016	B2	9.28	7430	30	<5	20	
ES1626866-006	23 November 2016	C	9.62	24200	50	<5	<1	
ES1626866-007	23 November 2016	D	8.62	414	14	<5	80	
ES1627003-001	24 November 2016	SB3	9.52	7750	10	<5	22	
ES1627003-002	24 November 2016	SD1	8.31	582	8	<5	10	
ES1627003-003	24 November 2016	SD2	8.2	233	186	<5	11	
ES1627003-004	24 November 2016	SD5	8.07	199	40	<5	14	
ES1627003-005	24 November 2016	SD6	8.79	1080	20	<5	16	
ES1627003-011	24 November 2016	Box Cut (New)	8.8	8870	138	<5	32	
ES1627003-012	24 November 2016	SB4	9.33	3580	13	<5	5	
ES1629327-001	19 December 2016	SB1	9.9	8890	12	20	5	
ES1629327-002	19 December 2016	SB2	9.8	3430	40	13	23	
ES1629327-003	19 December 2016	SB3	9.8	8020	16	<5	20	
ES1629327-005	19 December 2016	Box Cut (New)	9.2	10500	1050	13	99	
ES1629456-001	20 December 2016	SD1	8.4	661	31	<5	18	
ES1629456-002	20 December 2016	SD2	8.7	433	235	<5	15	
ES1629456-003	20 December 2016	SD3	8.9	552	40	<5	10	
ES1629456-004	20 December 2016	SD5	8.3	258	38	<5	16	
ES1629456-005	20 December 2016	SD6	9.2	1200	11	<5	19	
ES1629456-010	20 December 2016	SB4	9.9	3740	46	<5	6	
ES1629583-001	21 December 2016	A1	9.7	7970	7	<5	8	
ES1629583-002	21 December 2016	A2	9.3	8520	<5	<5	10	
ES1629583-003	21 December 2016	A3	9.7	8530	<5	<5	8	
ES1629583-004	21 December 2016	B1	8.6	522	<5	<5	8	
ES1629583-005	21 December 2016	B2	9.9	8130	22	<5	24	
ES1629583-006	21 December 2016	C	10.1	24000	70	7	212	
ES1629583-007	21 December 2016	D	8.7	436	17	<5	22	

Appendix E – *Groundwater Data*

						Field Parameters			Total Metals																	Major Cations					Major Anions												
Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) - mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Total Cations - meq/L	Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L	Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*								*1500*	*400*		*4000*
P1	NG1	1-Nov-07	1450	52.02	53.00																																						
		17-Dec-07		50.02	51.00																																						
Depth	50	23-Jan-08	1145	47.43	48.42																																						
Format.	Garrawilla	3-Mar-08	1230	46.53	47.51																																						
		2-Apr-08	1040	45.51	46.50																																						
		9-May-08	0826	44.25	45.23																																						
		2-Jun-08	1200	43.25	44.24																																						
		1-Jul-08	1150	42.00	42.98																																						
		11-Aug-08	1350	40.24	41.22																																						
		14-Aug-08	1047	40.15	41.13																																						
		19-Aug-08	0925	39.96	40.94																																						
		9-Sep-08	0830	42.82	43.80	7.6	470	20.8		0.008	0.684	0.003	0.0008	0.094	0.041	0.128	56.7	**0.516**	2.33	0.154	0.11	0.250	0.0001		3710	26	25	933	24	44.6	641	43	<1	<1	1190	1190	42.7	2.06	1.62				2380
		14-Nov-08	0956	45.86	46.84																																						
		3-Dec-08	1505	45.18	46.16																																						
		16-Feb-09	1255	42.24	43.22																																						
		11-Jun-09	1500							<0.001	0.237	<0.001	<0.0001	0.001	0.002	0.096	0.71	**0.198**	0.266	0.025	<0.1	0.235	<0.0001		3840	25	26	846	23	40.7	693	<10	<1	<1	1000	1000	39.6	1.33	0.24				2300
		17-Aug-09	0930	35.79	36.77	7.3	3920	23.5		0.009	0.954	0.002	0.0005	0.094	0.051	0.236	56.5	**0.24**	1.38	0.206	0.14	0.347	0.0002		4130	20	27	892	22	42.6	614	48.2	<1	<1	1120	1120	40.6	2.24	0.48				2520
		17-Nov-09	0920	42.30	43.28	7.21	2940	34.4		0.003	0.31	<0.001	0.0002	0.032	0.007	0.121	7.74	**0.236**	0.403	0.041	0.02	0.091	<0.0001		2370	7	20	471	13	22.8	346	40.4	<1	<1	624	624	23	0.57	0.35				1420
		24-Feb-10	1255	42.13	43.11																																						
		24-Jun-10	1515	37.00	37.98	7.44	4060	21		<0.001				<0.005		0.006	<0.05	0.002	0.009	0.003		0.036	<0.0001	7.5	3810	23	29	928	28	44.6	662	44.2	<1	<1	1080	1080	41.2	3.9		<0.01	1.8	1.8	
		3-Sep-10	1100	34.86	35.84	7.53	3830	22.1																																			
		9-Feb-11	1340	30.08	31.06	7.31	2960	28.4		<0.001				<0.005		0.019	<0.05	0.012	0.06	0.004		0.088	<0.0001	7.47	3770	19	22	792	22	37.8	680	39	<1	<1	957	957	39.1	1.78		<0.01	0.69	0.69	
		9-Jun-11	1340	27.49	28.47	7.35	3180	20.4																																			
		27-Sep-11	930	25.63	26.61	7.41	3520	20.8	0.03	<0.001	0.301	<0.001	<0.0001	<0.001	<0.001	0.024	0.24	0.036	0.207	0.008	<0.01	0.045	<0.0001	8.31	3970	20	26	916	25	43.6	716	38	<1	5	994	999	41	3.12	0.24	<0.01	0.02	0.02	2260
		4-Jan-12	1350	24.98	25.96	7.44	3255	24.1																																			
		28-Mar-12	1350	24.20	25.18	7.5	3130	22.7	0.07	<0.001	0.316	<0.001	<0.0001	<0.001	<0.001	0.013	0.12	0.026	0.002	0.01	<0.01	0.054	<0.0001	7.96	3870	25	30	913	25	44.1	716	46	<1	<1	1050	1050	42.1	2.2	0.01	<0.01	0.49	0.49	2230
		25-Jun-12	1340			No access																																					
		11-Sep-12	1415	20.55	21.53	7.64	3800	23.5	0.09	<0.001	0.328	<0.001	<0.0001	<0.001	<0.001	0.012	0.15	0.03	0.116	0.003	<0.01	0.029	<0.0001	8.05	3980	8	26	884	24	41.6	685	41	<1	<1	1090	1090	42	0.46	0.02	<0.01	0.46	0.46	2140
		06-Dec-12	1340	22.56	23.54	7.73	3670	22.7																																			
		03-Apr-13	1350			7.77	3920	23.4	0.07	<0.001	0.331	<0.001	0.0001	<0.001	<0.001	0.057	0.18	0.017	0.022	0.002	<0.01	0.115	<0.0001	7.79	4040	23	31	925	29	44.7	687	37	<1	<1	1030	1030	40.7	4.58	<0.01	<0.01	0.6	0.6	2230
		04-Jul-13	1020	21.92	22.90	7.7	3890	21.5																																			
		04-Sep-13				No access																																					
		04-Dec-13	1245	21.25	22.23	7.6	3680	24.1																																			
		06-Mar-14	1330	21.08	22.06	7.6	3660	23.6	0.09	<0.001	0.356	<0.001	<0.0001	0.004	<0.001	0.056	0.13	0.008	0.062	0.004	<0.01	0.067	<0.0001	7.9	3830	19	25	848	28	40.6	641	34	<1	<1	949	949	37.8	3.6	0.05	<0.01	0.43	0.43	1780
		11-Jun-14	1345	21.29	22.27	7.6	3570	20.2																																			
		30-Sep-14	933	20.76	21.74	7.4	3730	22.9	0.08	<0.001	0.462	<0.001	<0.0001	<0.001	<0.001	0.03	0.18	0.002	0.036	0.005	<0.01	0.092	<0.0001	7.92	3890	17	24	861	22	40.8	613	36	<1	<1	902	902	36.1	6.17	0.02	<0.01	0.53	0.53	2080
		03-Dec-14	1355	20.87	21.85	7.3	3680	21.8																																			
		12-Mar-15	900	20.45	21.43	7.5	3780	21.6	0.04	<0.001	0.388	<0.001	<0.0001	<0.001	<0.001	0.014	0.1	0.01	0.026	0.007	<0.01	0.059	<0.0001	8	3910	23	30	926	24	44.5	676	37	<1	<1	1100	1100	41.8	3.08	0.02	<0.01	0.71	0.71	1860
		05-Jun-15	1105	20.71	21.69	7.4	3690	21.4																																			
		10-Sep-15	1400	20.19	21.17	7.5	3740	22.9	0.02	<0.001	0.388	<0.001	<0.0001	<0.001	<0.001	0.007	0.06	<0.001	0.08	0.002	<0.01	0.037	<0.0001	7.83	3970	32	51	1010	23	50.3	722	34	<1	<1	1010	1010	41.2	9.86	0.43	<0.01	0.54	0.54	2180
		14-Dec-15	1415	20.64	21.62	7.5	3750	23																																			
		09-Mar-16	1355	20.64	21.62	7.6	3770	23.2	0.04	<0.001	0.397	<0.001	<0.0001	<0.0001	<0.001	0.019	0.06	0.002	0.326	0.005	<0.01	0.062	<0.0001	7.89	3960	24	26	840	23	40.5	654	38	<1	<1	1050	1050	40.2	0.26	0.28	<0.01	0.33	0.33	2000
		31-May-16	915	20.70	21.68	7.5	3810	21.1																																			
		28-Sep-16	1325	20.58	21.56	7.5	3630	21.9	0.06	0.001	0.436	<0.001	<0.0001	<0.001	<0.001	0.008	0.08	<0.001	0.326	0.004	<0.01	0.07	<0.0001	7.9	3760	24	23	820	21	39.3	635	28	<1	<1	1080	1080	40.1	1.02	0.45	<0.01	0.38	0.38	1930
		27-Oct-16	1215	20.86	21.84	7.5	3510	22.5																																			
		25-Nov-16	1120	21.16	22.14	7.6	3580	21.8																																			
		21-Dec-16	1300	21.32	22.3	7.6	3520	22.3																																			
							4028.5	33.05	0.069	0.00885	0.8902	0.002	0.000493	0.0909	0.0488	0.21875	51.624	0.2394	1.23345	0.18125	0.137	0.3302	0.0002	8.2838	4106	25	29.85	926.2	27.55	44.525	716	47.925	#NUM!	5	1114	1114	41.965	3.783	0.467	#NUM!	1.71675	1.71675	2498
							3920	24.1	0.09	0.001	0.462	0	0.0001	0.004	0	0.057	0.18	0.03	0.326	0.007	0	0.115	0	8.05	4040	32	51	1010	29	50.3	722	41	0	0	1100	1100	42	9.86	0.45	0	0.71	0.71	2230
P2	NG2	1-Nov-07	1420	30.58	31.50																																						
		17-Dec-07		29.58	30.50																																						
Depth	50	23-Jan-08	1120	28.97	29.90																																						
Format.	Napperby	3-Mar-08	1655	29.48	30.40																																						
		2-Apr-08	1100	29.46	30.38																																						
		9-May-08	0846	29.45	30.38																																						
		2-Jun-08	1224	29.46	30.39																																						
		1-Jul-08	1215	29.43	30.35																																						
		11-Aug-08	1435	29.44	30.36																																						
		14-Aug-08	1105	29.45	30.37																																						
		19-Aug-08	1055	29.45	30.37																																						
		9-Sep-08	1030	29.88	30.80	7.2	15700	20.8		0.010	1.40	0.004	0.0006	0.024	0.029	0.057	33.4	0.091	2.96	0.048	0.06	0.093	<0.0001		17100	189	453	4060	126	227	5650	366	<1	<1	2550	2550	218	1.97	4.52				**12900**
		14-Nov-08	1012	29.64	30.56																																						
		3-Dec-08	1445	29.51	30.43																																						
		16-Feb-09	1329	29.32	30.23																																						
		11-Jun-09	1500							0.004	0.613	<0.001	<0.0001	0.016	0.021	0.025	8.81	**0.124**	2.44	0.039	0.02	0.108	<0.0001		19300	184	397	3770	90	208	5790	181	<1	<1	2890	2890	225	3.83	3.31				**13400**
		17-Aug-09	1125	29.33	30.24	6.5	33100	25.3		0.004	0.896	<0.001	0.0001	0.026	0.024	0.057	7.47	0.032	2.37	0.057	0.02	0.064	0.0002		20300	250	585	3650	83	222	5720	247	<1	<1	3000	3000	226	1.12	2.47				**12800**
		17-Nov-09	1020	29.31	30.22	6.58	20400	32.4		0.041	8.41	0.008	0.0009	0.215	0.103	0.463	167	**0.152**	4.64	0.284	0.25	0.493	0.0002		18900	6	434	3630	78	196	5300	276	<1	393	2360	2750	210	3.51	2.88				**12800**
		24-Feb-10	1220	29.29	30.20																																						
		24-Jun-10	1415	29.19	30.10	6.62	19740	21	<0.01	0.003				<0.005		0.002	<0.05	0.012	1.53	0.035		0.098	<0.0001	6.92	17200	115	465	3320	108	191	5960	362	<1	<1	<1	<1	176	4.22		<0.01	0.2	0.2	
		3-Sep-10	0930	29.06	29.97	6.8	19650	21.5																																			
		8-Feb-11	1030	29.07	29.98	6.27	17090	25	0.01	0.005				<0.005		0.01	<0.05	0.002	1.64	0.017		0.013	<0.0001	6.45	20600	170	440	4520	91	244	6080	408	<1	<1	3380	3380	248	0.82		<0.01	<0.01	<0.01	
		08-Jun-11	1230	28.95	29.86	6.55	15990	20.7																																			
		26-Sep-11	1340	28.94	29.85	6.55	17150	22.7	0.6	0.014	0.474	0.001	0.0001	0.004	0.016	0.024	1.38	**0.135**	2.07	0.042	0.01	0.121	<0.0001	6.91	20500	157	432	4760	91	253	5880	344	<1	<1	2860	2860	230	4.65	3.1	<0.01	0.5	0.5	**12500**
		4-Jan-12	1310	28.79	29.70	6.43	17090	23.7																																			
		28-Mar-12	1320	28.29	29.2	6.85	15250	22.8	0.12	<0.001	0.437	<0.001	<0.0001	0.008	<0.001	0.016	0.66	**1.96**	0.019	0.018	<0.01	0.087	<0.0001	7.44	20000	170	452	4660	87	251	6190	393	<1	<1	3020	3020	243	1.49	2.54	<0.01	0.16	0.16	**13200**
		25-Jun-12	1320	28.73	29.64	6.71	17300	22.2																																			
		11-Sep-12	1350	28.21	29.12	6.53	17840	23.3	0.03	0.003	0.417	<0.001	<0.0001	0.001	0.007	0.014	0.66	0.004	1.84	0.016	<0.01	0.047	<0.0001	7.4	20400	160	426	4600	98	246	5820	385	<1	<1	3030	3030	233	2.67	0.19	<0.01	0.12	0.12	**12600**
		06-Dec-12	1300	28.71	29.62	6.51	18410	23.1																																			
		03-Apr-13	1320	28.59	29.5	6.94	18500	24.2	0.12	<0.001	0.374	<0.001	0.0001	0.006	0.008	0.027	0.64	0.024	1.8	0.025	<0.01	0.112	<0.0001	7.15	20400	184	475	4330	134	240	5580	331	<1	<1	2750	2750	219	4.5	2.9	<0.01	0.47	0.47	**12000**
		04-Jul-13	1045	28.63	29.54	6.91	18460	22																																			
		04-Sep-13	1330	28.69	29.6	6.92	18200	23	0.17	<0.010	0.331	<0.010	<0.0010	<0.010	<0.010	0.148	0.77	0.015	1.59	0.016	<0.10	0.163	<0.0001	7.15	20400	147	400	4290	107	230	5720	343	<1	<1	2950	2950	227	0.44	3.57	<0.01	0.66	0.66	**12800**
		04-Dec-13	1130	28.65	29.56	6.9	18340	22.4																																			
		07-Mar-14	925	28.65	29.56	6.9	18800	22.5	0.14	<0.001	0.429	<0.001	0.0002	0.015	0.005	0.061	0.58	0.006	1.92	0.018	<0.01	0.131	<0.0001	7.17	20800	189	449	4660	130	252	5160	357	<1	<1	2750	2750	208	9.63	2.74	<0.01	0.28	0.28	**12100**
		10-Jun-14	1420	28.27	29.18	6.9	19100	20.1																																			
		29-Sep-14	1405	28.72	29.63	6.9	18910	22.8	0.16	<0.001	0.42	<0.001	<0.0001	0.002	0.002	0.009	1.12	0.004	1.91	0.005	<0.01	0.046	<0.0001	7.16	20600	162	448	4240	123	232	5700	365	<1	<1	3080	3080	230	0.54	3.93	<0.01	0.12	0.12	**11200**
		04-Dec-14	900	28.72	29.63	6.9	18850	21.6																																			
		12-Mar-15	930	28.71	29.62	6.9	19230	22.9	0.18	<0.001	0.346	<0.001	<0.0001	0.005	0.002	0.024	1.43	0.015	1.64	0.012	<0.01	0.151	<0.0001	7.32	20300	162	418	4170	90	226	6000	305	<1	<1	2470	2470	225	0.24	2.66	<0.01	0.31	0.31	**12100**
		04-Jun-15	1300	28.66	29.57	6.8	19290	21.6																																			
		10-Sep-15	1320	28.75	29.66	6.7	19320	23.5	<0.10	<0.010	0.393	<0.010	<0.0010	<0.010	<0.010	<0.010	1.37	<0.010	1.7	<0.010	<0.10	0.169	<0.0001	6.9	20800	194	391	4180	85	226	6100	338	<1	<1	3880	3880	257	6.41	3.52	0.02	0.02	0.04	**12100**
		15-Dec-15	1230	28.83	29.74	6.9	19860	22.6																																			
		08-Mar-16	1350	28.96	29.87	7	19270	24.7	0.04	<0.001	0.354	<0.001	<0.0001	<0.001	0.001	0.024	0.62	0.002	1.58	0.014	<0.01	0.162	<0.0001	7.69	21000	134	328	3250	65	177	5450	373	<1	<1	2560	2560	213	9.26	1.67	0.1	0.23	0.33	**12000**
		01-Jun-16	900	28.85	29.76	6.9	17520	21.1																																			
		27-Sep-16	1015	28.76	29.67	6.8	17560	22.3	0.07	<0.001	0.399	<0.001	<0.0001	<0.001	<0.001	0.002	1.16	<0.001	1.9	0.006	<0.01	0.086	<0.0001	6.91	20500	168	425	3920	82	216	5060	255	<1	<1	3150	3150	211	1.14	2.72	0.06	0.08	0.14	**12800**
		26-Oct-16	1430	28.79	29.7	6.8	17650	22.3																																			
		25-Nov-16	1340	28.78	29.69	6.8	17420	22.1																																			
		19-Dec-16	1340	28.79	29.7	6.7	17910	22.8																																			
							30242.5	30.8025	0.576	0.03763	7.6586	0.007825	0.00086	0.1961	0.0971	0.4021	151.18	1.6888	4.31	0.24995	0.23275	0.4372	0.0002	7.401	20585	240.1	567	4745	105.45	252.7	6173.5	405.75	#NUM!	393	3335	3335	247.25	4.5855	3.289	#NUM!	0.485	0.485	13380
							19860	24.7	0.18	0.003	0.429	0	0.0002	0.015	0.008	0.148	1.43	0.024	1.92	0.025	0	0.169	0	7.69	21000	194	475	4660	134	252	6100	385	0	0	3880	3880	257	9.63	3.93	0.1	0.66	0.66	12800

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals																Major Cations					Total Cations - meq/L	Major Anions							Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
						pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L							
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*									*1500*	*400*		*4000*
P3	NG3	1-Nov-07	1530	9.92	10.85																																					
		17-Dec-07		10.07	11.00																																					
Depth	45	23-Jan-08	1400	9.32	10.25																																					
Format.	Pamboola	3-Mar-08	1640	9.87	10.80																																					
		2-Apr-08	1200	9.89	10.83																																					
		9-May-08	1002	9.90	10.83																																					
		2-Jun-08	1353	9.90	10.84																																					
		1-Jul-08	1345	9.91	10.84																																					
		11-Aug-08	1610	9.92	10.85																																					
		9-Sep-08	1300	9.77	10.70	7.07	1340	20.2		0.005	0.092	0.002	0.0002	0.004	0.006	0.002	0.76	0.030	0.496	0.014	<0.01	0.014	<0.0001		15800	331	504	3190	60	198	5250	**1230**	<1	<1	1310	1310	200	0.44	0.94				**11700**
		14-Nov-08	0930	9.89	10.83																																					
		1-Dec-08	1120	9.86	10.80																																					
		12-Jan-09	1223	9.86	10.80																																					
		9-Dec-09	0945	9.90	10.83	6.64	18620	25.8	0.02	<0.001				<0.005		0.004	<0.05	<0.001	0.348	0.025		0.016	<0.0001	6.82	14500	257	467	3440	51	202	5230	**1160**	<1	<1	1270	1270	197	1.24		0.02	<0.01	<0.01	
		24-Feb-10	0920	9.90	10.83																																					
		23-Jun-10	1205	9.92	10.85	6.3	18570	21	<0.01	0.003				<0.001		0.012	<0.05	0.003	0.358	0.014		0.069	<0.0001	6.68	13900	266	450	3490	53	203	5860	**1310**	<1	<1	1340	1340	219	3.79		<0.01	0.03	0.03	
		3-Sep-10	0915	9.89	10.82	6.57	17620	21.1																																			
		8-Feb-11	1200	9.90	10.83	6.48	14780	25.9	<0.01	0.003				<0.005		0.004	<0.05	<0.001	0.27	0.013		0.014	<0.0001	6.47	18800	300	0.27	3040	50	190	5100	**1120**	<1	<1	1240	1240	192	0.59		0.02	0.02	0.02	
		08-Jun-11	1240	9.89	10.82	6.55	14430	20.4																																			
		27-Sep-11	1020	9.88	10.81	6.51	16030	21.3	0.02	<0.001	0.125	<0.001	<0.0001	0.001	0.005	0.015	0.2	0.004	0.355	0.02	<0.01	0.071	<0.0001	7.7	19000	275	526	3760	44	222	5670	**1310**	<1	<1	1230	1230	212	2.26	0.35	<0.01	<0.01	<0.01	**12100**
		3-Jan-12	1050	8.85	9.78	6.56	15820	22.5																																			
		28-Mar-12	915	9.84	10.77	7.15	13220	22.4	0.11	0.001	0.116	<0.001	0.0001	0.001	<0.001	0.034	0.18	**0.242**	0.015	0.032	<0.01	0.167	<0.0001	7.42	18200	303	532	3900	48	230	5810	**1450**	<1	<1	1220	1220	218	2.5	<0.10	<0.01	0.38	0.38	**11300**
		25-Jun-12	915	9.87	10.8	6.82	18250	19.5																																			
		11-Sep-12	1010	9.84	10.77	6.7	15880	21.6	0.06	0.003	0.098	<0.001	0.0001	<0.001	0.003	0.041	0.17	0.004	0.304	0.015	<0.01	0.132	<0.0001	7.47	18400	290	540	3960	59	233	5910	**1250**	<1	<1	1440	1440	222	2.44	<0.10	<0.01	<0.01	<0.01	**12300**
		04-Dec-12	1115	9.85	10.78	6.82	15790	22																																			
		03-Apr-13	910	9.87	10.8	6.95	15800	20.2	0.88	<0.001	0.108	<0.001	0.0003	0.002	0.001	0.096	0.94	0.005	0.044	0.013	<0.01	0.308	<0.0001	7.22	18800	343	555	3620	70	222	5240	**1350**	<1	<1	1280	1280	202	4.83	0.04	<0.01	0.31	0.31	**11700**
		04-Jul-13	945	9.87	10.8	7.04	16920	20.6																																			
		03-Sep-13	900	9.87	10.8	7.05	16500	21.7	0.23	<0.001	0.101	<0.001	0.0003	<0.001	<0.001	0.219	1.48	0.011	0.045	0.01	<0.01	0.306	<0.0001	7.76	18700	285	530	3900	58	229	5600	**1200**	<1	<1	1230	1230	208	4.89	0.04	<0.01	0.36	0.36	**12000**
		02-Dec-13	920	9.81	10.74	7.1	17740	20.7																																			
		07-Mar-14	1025	9.83	10.76	7	17200	22	0.44	0.001	0.13	<0.001	0.0002	0.016	0.002	0.111	1.61	0.026	0.243	0.018	<0.01	0.307	<0.0001	7.19	18700	302	539	4180	71	243	5060	**1270**	<1	<1	1220	1220	194	11.3	<0.10	<0.01	0.44	0.44	**12300**
		10-Jun-14	915	9.86	10.79	6.9	17550	20.2																																			
		29-Sep-14	900	9.84	10.77	6.6	17380	21.1	0.03	<0.001	0.115	<0.001	0.0002	<0.001	0.004	0.057	0.08	0.004	0.288	0.013	<0.01	0.193	<0.0001	7.5	18700	188	482	2920	52	177	5380	**1340**	<1	<1	1120	1120	202	6.51	0.1	0.05	0.08	0.13	**11900**
		05-Dec-14	1135	9.85	10.78	6.8	17410	21.7																																			
		12-Mar-15	1050	9.81	10.74	6.9	17380	22.3	0.02	<0.001	0.088	<0.001	<0.0001	0.007	0.004	0.021	0.26	0.004	0.262	0.013	<0.01	0.196	<0.0001	7.46	18600	318	544	3690	49	222	5250	**1260**	<1	<1	1330	1330	201	5.06	0.11	<0.01	0.07	0.07	**11800**
		03-Jun-15	900	9.85	10.78	6.8	18010	20.6																																			
		08-Sep-15	910	9.77	10.7	6.9	17300	20.3	0.05	0.001	0.132	<0.001	<0.0001	<0.001	0.003	0.012	0.86	0.004	0.295	0.01	<0.01	0.285	<0.0001	7.54	18600	290	390	3000	47	178	4440	**1080**	<1	<1	1160	1160	171	2.09	0.19	<0.01	0.01	0.01	**12100**
		09-Dec-15	1200	9.82	10.75	7	18180	21.9																																			
		08-Mar-16	1220	9.80	10.73	7.1	17570	23.6	0.09	<0.001	0.091	<0.001	0.0001	<0.001	<0.001	0.068	0.3	0.004	0.115	0.01	<0.01	0.226	<0.0001	7.72	18900	285	451	3170	45	190	5270	**1390**	<1	<1	1130	1130	200	2.53	0.03	<0.01	0.82	0.82	**12600**
		02-Jun-16	1030	9.82	10.75	7.1	17340	20.2																																			
		27-Sep-16	1115	9.77	10.7	7.1	16670	22.8	0.09	<0.001	0.087	<0.001	0.0002	<0.001	<0.001	0.034	0.22	0.002	0.143	0.012	<0.01	0.242	<0.0001	7.58	18600	283	493	3330	42	201	4780	**1390**	<1	<1	1350	1350	191	2.5	<0.01	<0.01	0.63	0.63	**11800**
		27-Oct-16	1035	9.81	10.74	7.1	16590	22.5																																			
		25-Nov-16		9.75	10.68	7.1	16430	22.6																																			
		21-Dec-16	1115	9.74	10.67	7	16720	22.3																																			
							18610	25.88	0.1055	0.003	0.12478	#NUM!	0.0001	0.001	0.005	0.0321	0.1995	0.2301	0.3577	0.0313	#NUM!	0.1574	#NUM!	7.672	18980	302.7	531.4	3886	52.8	229.2	5855	1436	#NUM!	#NUM!	1333	1333	218.9	3.661	0.35	0.02	0.3625	0.3625	12080
							18250	23.6	0.88	0.003	0.1322	0	0.0003	0.016	0.004	0.219	1.61	0.026	0.304	0.018	0	0.308	0	7.76	18900	343	555	4180	71	243	5910	1390	0	0	1440	1440	222	11.3	0.19	0.05	0.82	0.82	12600
P4	NG4	1-Nov-07	1610	18.49	19.40																																					
		11-Dec-07		18.09	19.00																																					
Depth	30	17-Dec-07		18.09	19.00																																					
Format.	Napperby	23-Jan-08	1225	17.82	18.73																																					
		3-Mar-08	1505	18.3	19.21																																					
		2-Apr-08	1305	18.29	19.20																																					
		9-May-08	1110	18.26	19.17																																					
		2-Jun-08	1505	18.275	19.19																																					
		1-Jul-08	1448	18.24	19.15																																					
		11-Aug-08	1703	18.19	19.10																																					
		9-Sep-08	1400	17.99	18.9	6.7	1560	21.2		0.008	0.265	0.003	<0.0001	0.005	0.033	0.006	3.93	0.027	6.20	0.024	<0.01	0.013	<0.0001		17700	355	699	4550	124	276	7650	**1700**	<1	<1	1840	1840	288	2.10	1.70				**16800**
		14-Nov-08	0920	18.16	19.06																																					
		1-Dec-08	1315	18.12	19.02																																					
		12-Jan-09	1239	18.10	19.00																																					
		23-Feb-09	1045	18.06	18.96																																					
		9-Jun-09	1100	18.55	19.40	6.9	25600	20.8		0.003	0.165	<0.001	<0.0001	0.056	0.026	0.006	14.4	0.047	4.99	0.066	0.02	0.044	<0.0001		25200	288	640	5670	86	316	7850	**1470**	<1	<1	2220	2220	297	3.1	0.48				**16200**
		24-Aug-09	1310	18.11	18.99																																					
		18-Nov-09	1455	18.12	19.00	6.51	25700	25.1	0.04	0.004				<0.005		0.013	<0.05	0.009	3.61	0.043		0.053	<0.0001	6.73	23700	351	706	6200	115	348	8700	**1560**	<1	<1	1850	1820	314	5.04		<0.01	0.1	0.1	
		18-Feb-10	1100	17.88	18.76																																					
		22-Jun-10	1420	18.09	18.97	8.2	25700	22	<0.01	0.001				<0.005		0.006	0.09	0.001	3.19	0.024		0.032	<0.0001	6.71	23700	249	591	5070	98	284	8020	**1430**	<1	<1	2340	2340	303	3.22		<0.01	0.04	0.04	
		3-Sep-10	1130	17.98	18.86	6.69	24290	22.1																																			
		7-Feb-11	1430	17.97	18.85	6.94	19920	28.6	0.01	0.004				<0.001		0.015	<0.05	<0.001	3.19	0.009		0.029	<0.0001	6.42	25600	232	599	5580	103	306	8050	**1490**	<1	<1	2070	2070	299	1.1		<0.01	0.05	0.05	
		08-Jun-11	1350	17.93	18.81	6.80	19820	20.8																																			
		27-Sep-11	1050	17.91	18.79	6.70	22130	22.5	0.03	0.008	0.104	<0.001	<0.0001	0.001	0.02	0.01	0.17	0.01	2.61	0.027	<0.01	0.076	<0.0001	7.83	26600	179	661	5690	89	313	7730	**1690**	<1	<1	1970	1970	293	3.36	0.8	<0.01	0.1	0.1	**17200**
		3-Jan-12	1000	17.82	18.70	6.45	22910	23.4																																			
		22-Mar-12	1050	17.77	18.65	6.75	19830	23.6	0.48	<0.001	0.112	<0.001	<0.0001	0.003	0.02	0.048	0.58	0.012	2.97	0.028	<0.01	0.143	<0.0001	7.42	24800	240	592	5260	99	292	7590	**1780**	<1	<1	1990	1990	291	0.17	1.37	0.15	0.01	0.16	**17500**
		01-Jun-12	1100	17.87	18.75	6.69	17650	21.3																																			
		10-Sep-12	1150	17.88	18.76	6.4	24900	21.9	0.05	0.002	0.101	<0.001	<0.0001	0.002	0.018	0.019	1.24	0.004	2.47	0.017	<0.01	0.064	<0.0001	7.21	26400	219	593	5660	110	309	7510	**1670**	<1	<1	2380	2380	294	2.39	0.96	<0.01	0.3	0.3	**17100**
		04-Dec-12	1025	17.86	18.74	6.53	25500	23.1																																			
		07-Mar-13	1240	17.82	18.7	6.52	25400	24.8	**5.75**	0.006	1.39	<0.001	0.0002	0.018	0.023	0.072	23.3	0.05	4.49	0.026	0.03	0.133	<0.0001	6.79	26400	280	716	5420	131	312	7300	**1650**	<1	<1	2340	2340	287	4.15	3.78	0.02	0.67	0.69	**15500**
		03-Jul-13	1300	17.97	18.85	6.91	24860	21.8																																			
		03-Sep-13	930	18.02	18.9	6.97	23400	21.9	2.65	0.004	0.312	<0.001	0.0002	0.007	0.008	0.317	9.38	**0.13**	2.68	0.012	0.01	0.312	<0.0001	7.73	25900	262	695	5850	133	328	7700	**1680**	<1	<1	2170	2170	296	4.97	19.6	1.14	2.88	4.02	**10800**
		04-Dec-13	1100	17.94	18.82	6.9	24600	23.4																																			
		07-Mar-14	1055	17.97	18.85	6.9	25600	24.1	0.52	0.002	0.14	<0.001	0.0004	0.021	0.007	0.159	1.43	0.033	2.69	0.019	<0.01	0.318	<0.0001	7.15	26300	266	708	5980	151	336	6860	**1680**	<1	<1	2190	2190	272	10.4	5.21	<0.01	3.71	3.71	**17800**
		10-Jun-14	945	17.98	18.86	7	25450	20.5																																			
		29-Sep-14	920	17.92	18.8	6.8	25840	22	0.18	0.003	0.123	<0.001	0.0002	0.004	0.009	0.051	2.18	0.012	2.44	0.014	<0.01	0.17	<0.0001	7.28	26200	217	603	4330	108	252	7430	**1560**	<1	<1	2010	2010	282	5.77	6.15	<0.01	0.07	0.07	**16500**
		04-Dec-14	1250	17.94	18.82	6.9	25190	21.7																																			
		11-Mar-15	1245	17.86	18.74	6.6	23460	24.4	0.59	<0.010	0.166	<0.010	<0.0010	<0.010	0.013	0.03	2.65	0.025	2.58	0.014	<0.10	0.111	<0.0001	7.23	24400	223	553	4580	90	258	7540	**1620**	<1	<1	2170	2170	290	5.79	4.67	0.08	3.74	3.82	**15700**
		04-Jun-15	1400	17.91	18.79	6.7	23370	21.9																																			
		09-Sep-15	1035	17.76	18.64	6.6	25280	21.8	<0.10	<0.010	0.103	<0.010	<0.0010	<0.010	<0.010	<0.010	2.17	<0.010	1.87	<0.010	<0.10	0.084	<0.0001	7.19	26400	221	513	4200	81	238	5640	**1660**	<1	<1	2200	2200	238	0.06	3.48	<0.01	0.29	0.29	**16900**
		09-Dec-15	1135	17.75	18.63	6.5	25400	22.8																																			
		08-Mar-16	1150	17.73	18.61	7	23970	23.3	0.17	<0.010	0.153	<0.010	<0.0010	<0.010	<0.010	0.058	0.65	<0.010	2.38	0.011	<0.10	0.365	<0.0001	7.46	26000	242	593	4800	91	272	6930	**1860**	<1	<1	1890	1890	272	0.02	2.45	0.23	6.51	6.74	**17600**
		01-Jun-16	1220	17.68	18.56	7	23560	21.7																																			
		26-Sep-16	1430	17.55	18.43	6.9	24270	21.5	0.1	0.002	0.114	<0.001	0.0002	<0.001	0.012	0.029	0.43	0.008	2.55	0.016	<0.01	0.346	<0.0001	7.23	25800	276	670	5070	92	292	7400	**1560**	<1	<1	2390	2390	289	0.46	2.56	<0.01	0.53	0.53	**16800**
		26-Oct-16	1325	17.59	18.47	6.8	24120	21.9																																			
		23-Nov-16	1310	17.48	18.36	6.7	24050	23.1																																			
		19-Dec-16	1315	17.53	18.41	6.7	24140	23																																			
							25700	27.725	0.447	0.0076	0.16235	#NUM!	#NUM!	0.05335	0.0257	0.04388	13.364	0.0435	4.8175	0.06313	0.02	0.13463	#NUM!	7.789	26475	343.125	700.375	6136.25	113.5	344	8618.75	1768.75	#NUM!	#NUM!	2325	2325	312.625	4.83	1.3415	0.15	0.1	0.154	17485
							25840	24.8	5.75	0.006	1.39	0	0.0004	0.021	0.023	0.317	23.3	0.13	4.49	0.026	0.03	0.365	0	7.73	26400	280	716	5980	151	336	7700	1860	0	0	2390	2390	296	10.4	19.6	1.14	6.51	6.74	17800

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals																Major Cations						Major Anions													
						pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Total Cations - meq/L	Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L	Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*									*1500*	*400*		*4000*
P5	NG5	1-Nov-07	1620	29.06	30.00																																						
		11-Dec-07		29.06	30.00																																						
Depth	30	17-Dec-07		29.06	30.00																																						
Format.	Pamboola	23-Jan-08	1240	28.36	29.30																																						
		3-Mar-08	1455	27.97	28.91																																						
		2-Apr-08	1315	27.475	28.42																																						
		9-May-08	1120	26.92	27.86																																						
		2-Jun-08	1516	26.605	27.55																																						
		1-Jul-08	1500	26.26	27.20																																						
		14-Aug-08	1515	25.78	26.72																																						
		12-Sep-08	1015	26.56	27.5	7	1050	20.8		0.007	0.368	0.003	0.0002	0.004	0.019	0.007	2.01	0.081	1.92	0.051	<0.01	0.031	<0.0001		24600	456	494	3960	71	238	7300	719	<1	<1	1860	1860	258	4.16	2.03				**12700**
		14-Nov-08	0908	27.06	28																																						
		1-Dec-08	1109	26.81	27.75																																						
		12-Jan-09	1249	26.41	27.35																																						
		16-Feb-09	1356	25.79	26.72																																						
		9-Jun-09	1215	25.06	25.99	6.6	25800	20.4		0.014	0.985	0.001	0.0003	0.032	0.022	0.597	19.7	**0.336**	1.16	0.091	0.04	1.14	0.0002		25100	361	536	5700	63	312	8230	765	<1	<1	1920	1920	286	4.19	0.91				**15900**
		1-Dec-09	1245	24.68	25.62	6.74	25600	25.8	<0.01	0.001				0.009		0.095	<0.05	0.008	0.659	0.053		0.167	<0.0001	6.76	20800	381	577	5830	73	322	8480	739	<1	<1	1940	1940	294	4.54		0.26	6.42	6.68	
		18-Feb-10	1115	24.99	25.93																																						
		23-Jun-10	1305	23.58	24.52	6.74	26100	22	<0.01	<0.001				<0.001		0.007	<0.05	<0.001	0.402	0.029		0.055	<0.0001	6.77	18300	314	503	5550	74	300	9320	996	<1	<1	1900	1900	322	3.43		<0.01	8.45	8.45	
		3-Sep-10	1150	23.53	24.47	6.75	16840	22.5																																				
		9-Feb-11	1230	23.05	23.99	6.69	19520	26.3	0.03	0.006				0.006		0.16	<0.05	0.003	0.435	0.028		0.949	<0.0001	6.76	27200	359	570	3040	83	332	8610	**1070**	<1	<1	1970	1970	304	4.33		<0.01	5.32	5.32	
		31-May-11	1130	22.90	23.84	6.70	20750	21.7																																				
		27-Sep-11	1130	22.05	22.99	6.72	22880	23.4	0.07	0.006	0.214	0.001	0.0003	0.001	0.009	0.032	0.22	0.014	0.791	0.042	<0.01	0.095	<0.0001	7.71	27000	208	578	5980	72	320	8460	918	<1	<1	1830	1830	294	4.14	0.62	<0.01	1.33	1.33	**17400**
		3-Jan-12	1120	22.72	23.66	6.61	22600	24.1																																				
		22-Mar-12	1120	22.65	23.59	6.81	21700	24.3	0.46	<0.001	0.2	<0.001	0.0002	0.002	0.009	0.185	0.87	0.026	0.525	0.032	<0.01	0.375	<0.0001	7.54	26500	202	592	6210	91	331	8990	993	<1	<1	1930	1930	313	2.84	0.95	<0.01	0.11	0.11	**18700**
		01-Jun-12	1130	22.60	23.54	6.77	20600	22.1																																				
		10-Sep-12	1130	22.48	23.42	6.4	15630	22.8	0.14	0.001	0.159	<0.001	<0.0001	0.001	0.008	0.033	0.41	0.008	0.712	0.028	<0.01	0.064	<0.0001	7.35	27200	179	524	6030	92	317	8140	926	<1	<1	2160	2160	292	4.02	1.06	0.01	0.45	0.46	**17100**
		04-Dec-12	1000	22.57	23.51	6.47	26010	22.8																																				
		07-Mar-13	1300	22.66	23.6	6.58	26100	23.8	3.18	0.005	0.509	<0.001	0.0004	0.009	0.014	0.048	15.6	0.03	1.62	0.037	0.02	0.095	<0.0001	6.94	27500	283	593	5530	101	306	7900	896	<1	<1	2150	2150	284	3.64	1.86	0.03	0.06	0.09	**16700**
		03-Jul-13	1320	22.70	23.64	6.67	25800	22.1																																				
		04-Sep-13	1050	22.70	23.64	6.74	25100	23.6	0.35	<0.010	0.188	<0.010	<0.0010	<0.010	0.012	0.156	0.65	0.011	1.21	0.023	<0.10	0.246	<0.0001	7.36	27100	221	545	5820	106	312	8160	881	<1	<1	2110	2110	291	3.47	1.74	<0.01	0.53	0.53	**17300**
		02-Dec-13	1330	22.74	23.68	6.6	25200	23.7																																				
		07-Mar-14	1130	22.58	23.52	6.6	26800	23.6	0.68	0.002	0.26	<0.001	<0.0001	0.003	0.01	0.038	1.57	0.006	1.73	0.022	<0.01	0.05	<0.0001	7.03	27400	268	621	6690	133	359	7560	922	<1	<1	2170	2170	276	13.1	2.63	<0.01	0.03	0.03	**17300**
		10-Jun-14	1220	22.80	23.74	6.7	26500	21.8																																				
		25-Sep-14	1040	22.73	23.67	6.5	26750	21.8	0.44	0.003	0.251	<0.001	<0.0001	<0.001	0.014	0.013	0.94	0.003	1.98	0.024	<0.01	0.033	<0.0001	7.05	27300	239	574	5040	119	281	7900	944	<1	<1	2350	2350	289	1.43	2.38	<0.01	0.3	0.3	**17000**
		03-Dec-14	1135	22.75	23.69	6.6	25870	21.6																																				
		11-Mar-15	1310	22.60	23.54	6.6	26480	25.8	<0.10	<0.010	0.241	<0.010	<0.0010	<0.010	0.016	<0.010	<0.50	<0.010	2.06	0.03	<0.10	<0.050	<0.0001	7.25	27100	247	534	5340	84	291	8900	932	<1	<1	2340	2340	317	4.38	2.73	<0.01	0.1	0.1	**17200**
		03-Jun-15	1035	22.86	23.8	6.7	26120	19.8																																				
		10-Sep-15	1115	22.74	23.68	6.6	26830	22.7	<0.10	<0.010	0.189	<0.010	<0.0010	<0.010	0.01	<0.010	<0.50	<0.010	1.7	0.018	<0.10	0.07	<0.0001	6.97	27800	257	466	5230	78	281	8660	812	<1	<1	2190	2190	305	4.17	3.38	<0.01	<0.01	<0.01	**17000**
		09-Dec-15	1230	22.71	23.65	6.6	27340	22.6																																				
		09-Mar-16	1120	22.68	23.62	6.8	26310	24.1	0.52	0.002	0.236	<0.001	0.0001	0.001	0.008	0.073	1.26	0.007	1.78	0.018	<0.01	0.154	<0.0001	7.59	809	237	498	4910	82	268	7780	950	<1	<1	2160	2160	282	2.55	5.45	0.04	0.1	0.14	**16900**
		01-Jun-16	1240	22.67	23.61	6.7	25410	21.8																																				
		26-Sep-16	1400	22.81	23.75	6.6	25710	22.9	0.08	0.002	0.163	<0.001	<0.0001	<0.001	0.012	0.014	0.14	0.002	2.16	0.035	<0.01	0.093	<0.0001	7.3	27300	240	593	5420	81	299	8400	964	<1	<1	2320	2320	303	0.81	1.75	<0.01	0.64	0.64	**17500**
		26-Oct-16	1050	22.73	23.67	6.6	25610	23.1																																				
		23-Nov-16	1055	22.69	23.63	6.7	25440	22.9																																				
		19-Dec-16	1055	22.87	23.81	6.7	25270	23.4																																				
							26025	26.175	0.4405	0.0134	0.94645	0.001	0.0003	0.0297	0.0214	0.5455	18.759	0.305	1.11388	0.08625	0.04	1.11613	0.0002	7.693	27175	378.5	590.25	6181.25	90	331.875	9278.75	1060.75	#NUM!	#NUM!	1966.25	1966.25	320.875	4.51375	0.948	0.26	8.247	8.273	18635
							27340	25.8	3.18	0.005	0.509	0	0.0004	0.009	0.016	0.156	15.6	0.03	2.16	0.037	0.02	0.246	0	7.59	27800	283	621	6690	133	359	8900	964	0	0	2350	2350	317	13.1	5.45	0.04	0.64	0.64	17500
P6	NG6	1-Nov-07	1640	90.21	91.10																																						
		11-Dec-07		90.11	91.00																																						
Depth	90	17-Dec-07		90.11	91.00																																						
Format.	Pilliga Sand.	23-Jan-08	1315	89.37	90.26																																						
		3-Mar-08	1440	89.91	90.80																																						
		2-Apr-08	1330	89.93	90.82																																						
		9-May-08	1145	89.91	90.80																																						
		2-Jun-08	1533	89.92	90.81																																						
		1-Jul-08	1519	89.92	90.81																																						
		12-Aug-08	1055	89.86	90.75																																						
		10-Sep-08		89.11	90.00																																						
		14-Nov-08	1204	89.04	90.02																																						
		3-Dec-08	1336	89.05	90.03																																						
		23-Feb-09	1214	89.17	90.05																																						
		24-Aug-09	1400			Dry																																						
		17-Nov-09	1140			Dry																																						
		24-Feb-10	1035	89.82	90.71																																						
		24-Jun-10	1000			Dry																																						
		2-Sep-10	1400			Dry																																						
		9-Feb-11	1400			Dry																																						
		08-Jun-11	930	89.81	90.70	7.60	2320	18.5																																				
		26-Sep-11	930	89.97	90.86	Insufficient to sample																																						
		4-Jan-12	930	89.85	90.74	Insufficient to sample																																						
		28-Mar-12	1000	89.91	90.80	Insufficient to sample																																						
		25-Jun-12	1020			Insufficient to sample																																						
		11-Sep-12	1055			Dry																																						
		6-Dec-12	1040			Dry																																						
		3-Apr-13	1110			Dry																																						
		4-Jul-13	1325			Dry																																						
		3-Sep-13	1335			Dry																																						
		2-Dec-13	1115	90.43	91.32	Insufficient to sample																																						
		6-Mar-14	945			Dry																																						
		10-Jun-14	1015			Dry																																						
		29-Sep-14	950			Dry																																						
		3-Dec-14	1105			Dry																																						
		12-Mar-15	1115			Dry																																						
		4-Jun-15	1120			Dry																																						
		9-Sep-15	1100			Dry																																						
		9-Dec-15	920			Dry																																						
		8-Mar-16	915			Dry																																						
		1-Jun-16	1025			Dry																																						
		28-Sep-16	915			Dry																																						
		26-Oct-16	1120			Dry																																						
		23-Nov-16	1120			Dry																																						
		19-Dec-16	1120			Dry																																						

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals																Major Cations				Total Cations - meq/L	Major Anions							Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
						pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L							
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*								*1500*	*400*		*4000*
P7	NG7	1-Nov-07	1700	62.87	63.80																																					
		11-Dec-07		62.07	63.00																																					
Depth	90	17-Dec-07		62.07	63.00																																					
Format.	Pilliga Sand.	23-Jan-08	1335	90.47	91.40																																					
		3-Mar-08	1425	90.00	90.93																																					
		2-Apr-08	1400	91.07	92.00																																					
		9-May-08	1202	89.52	90.45																																					
		2-Jun-08	1553	92.07	93.00																																					
		1-Jul-08	1544	92.07	93.00																																					
		12-Aug-08	1135	91.07	92.00																																					
		10-Sep-08	1115	62.87	63.80	7.95	1170	20.5		<0.001	0.031	<0.001	<0.0001	0.005	0.003	0.006	0.79	**0.117**	0.095	0.005	<0.01	0.033	<0.0001		149	1	1	25	3	1.33	26	4	<1	<1	19	19	1.20		0.55				101
		14-Nov-08	1213	91.08	92.00																																					
		3-Dec-08	1350	91.08	92.00																																					
		23-Feb-09	1240	89.17	90.10																																					
		9-Jun-09	1425			Dry																																					
		24-Aug-09	1415	86.26	87.20	8.9	170	22.4		<0.001	0.064	<0.001	0.0002	0.007	0.004	0.016	2.72	0.022	0.074	0.012	<0.01	0.066	<0.0001		147	3	1	18	3	1.27	26.2	3.47	<1	<1	24	24	1.27		<0.01				107
		17-Nov-09	1230	62.84	63.78	5.52	212	25		<0.001	0.029	<0.001	0.0001	0.004	0.002	0.053	0.49	0.047	0.023	0.013	<0.01	0.173	<0.0001		160	2	1	19	3	1.11	27	3.09	<1	<1	22	22	1.27	-	<0.01				95
		24-Feb-10	1105	63.04	63.98																																					
		24-Jun-10	1110	62.99	63.93	7.96	222	20	0.02	<0.001				0.001		0.011	<0.05	0.021	0.016	0.008		0.114	<0.0001	6.6	169	3	3	36	4	2.07	33.5	4.28	<1	<1	45	45	1.93			<0.01	0.19	0.19	
		2-Sep-10	1350	62.86	63.80	6.81	202	23.9																																			
		9-Feb-11	1010	63.50	64.44	6.88	356	24.3	<0.01	<0.001				<0.005		0.03	<0.05	0.001	0.022	0.002		0.322	<0.0001	6.12	477	28	3	66	4	4.63	92	12	<1	<1	90	90	39.1			<0.01	0.26	0.26	
		08-Jun-11	1010	63.90	64.84	6.55	263	21.3																																			
		26-Sep-11	1015	62.90	63.84	6.65	245	22.3	0.82	0.005	0.052	<0.001	0.0002	0.004	0.003	0.036	0.89	0.07	0.028	0.028	<0.01	0.07	<0.0001	5.89	170	4	2	22	4	1.42	26	4	<1	<1	27	27	1.36		0.35	<0.01	0.24	0.24	104
		4-Jan-12	1010	88.59	89.53	6.38	148	22.3																																			
		28-Mar-12	1030	63.02	63.96	6.8	129	22.7	0.16	<0.001	0.032	<0.001	<0.0001	0.002	0.003	0.026	0.36	0.019	0.003	0.024	<0.01	0.087	<0.0001	6.23	152	1	2	24	4	1.36	25	4	<1	<1	35	35	1.49		0.14	<0.01	0.08	0.08	105
		25-Jun-12	1050	63.04	63.98	6.4	478	21.2																																			
		11-Sep-12	1115	62.96	63.9	6.36	225	23.5	0.64	<0.001	0.037	<0.001	<0.0001	0.003	0.002	0.006	0.89	0.005	0.031	0.003	<0.01	0.05	<0.0001	6.56	172	2	2	25	4	1.7	33	6	<1	<1	42	42	1.89	<0.01	<0.10	<0.01	0.09	0.09	118
		06-Dec-12	1110	62.96	63.9	6.48	467	24.8																																			
		03-Apr-13	1130	62.96	63.9	6.28	160	21.6	0.73	<0.001	0.046	<0.001	0.0002	0.004	0.003	0.028	1.43	0.026	0.047	0.003	<0.01	0.125	<0.0001	5.75	139	1	2	24	4	1.36	31	4	<1	<1	16	16	1.28		<0.01	<0.01	0.19	0.19	84
		04-Jul-13	1350	62.99	63.93	6.21	235	22																																			
		03-Sep-13	1310	63.06	64	5.72	168	22.7	2.05	<0.001	0.07	<0.001	<0.0001	0.005	0.004	0.065	3.32	0.026	0.087	0.005	<0.01	0.165	<0.0001	6.34	175	1	1	28	4	1.45	34	4	<1	<1	22	22	1.48		0.82	<0.01	0.16	0.16	148
		02-Dec-13	1210	63.02	63.96	5.7	154.7	21.3																																			
		06-Mar-14	1020	62.99	63.93	5.9	242	23	0.56	<0.001	0.036	<0.001	<0.0001	0.012	0.003	0.047	0.92	0.02	0.03	0.009	<0.01	0.12	<0.0001	6.07	221	2	2	31	3	1.69	41	10	<1	<1	26	26	1.88		0.04	<0.01	0.3	0.3	170
		10-Jun-14	1040	63.03	63.97	6.3	440	20.2																																			
		29-Sep-14	1020	63.04	63.98	6.4	257	22.7	1.07	0.001	0.047	<0.001	<0.0001	0.004	0.004	0.013	1.8	0.008	0.059	0.004	<0.01	0.056	<0.0001	6.03	162	<1	1	26	3	1.29	36	4	<1	<1	17	17	1.44		0.02	<0.01	0.2	0.2	101
		03-Dec-14	925	62.99	63.93	6.4	322	22.1																																			
		12-Mar-15	1130	63.21	64.15	7	302	24.1	1.23	<0.001	0.047	<0.001	<0.0001	0.006	0.003	0.01	2.01	0.009	0.05	0.006	<0.01	0.1	<0.0001	6.08	218	2	3	35	3	1.95	40	3	<1	<1	24	24	1.67		0.02	<0.01	0.13	0.13	120
		04-Jun-15	1140	63.03	63.97	7	346	23.5																																			
		09-Sep-15	1130	63.03	63.97	7	195	22.4	0.06	<0.001	0.028	<0.001	<0.0001	0.001	0.002	0.007	0.35	0.009	0.011	0.002	<0.01	0.048	<0.0001	5.97	170	3	3	30	3	1.78	27	6	<1	<1	22	22	1.33	----	0.05	<0.01	0.07	0.07	112
		09-Dec-15	950	63.03	63.97	6.9	153	21.6																																			
		08-Mar-16	945	63.08	64.02	6.1	173	22.1	0.06	<0.001	0.03	<0.001	<0.0001	0.001	0.002	0.015	0.09	0.001	0.007	0.002	<0.01	0.072	<0.0001	6.14	146	1	1	23	2	1.18	29	4	<1	<1	16	16	1.22	----	0.03	<0.01	0.14	0.14	100
		01-Jun-16	1050	62.10	63.04	6.1	256	20.3																																			
		28-Sep-16	1015	62.49	63.43	6	198	21.9	1.03	<0.001	0.048	<0.001	0.0002	0.007	0.002	0.184	1.85	**0.208**	0.06	0.007	<0.01	0.367	<0.0001	6.13	202	3	2	31	3	1.74	34	7	<1	<1	30	30	1.7	----	0.03	<0.01	0.24	0.24	120
		26-Oct-16	1150	63.04	63.98	6	288	21.9																																			
		23-Nov-16	1150	63.02	63.96	6.1	295	21.8																																			
		19-Dec-16	1150	62.99	63.93	6.1	310	22.2																																			
							986.85	24.8425	0.787	0.005	0.0631	#NUM!	0.0002	0.0067	0.0039	0.05088	2.5828	0.06713	0.06825	0.0275	#NUM!	0.30338	#NUM!	6.5723	438.625	25	3	62.25	4	4.31	84.6875	11.035	#NUM!	#NUM!	84.375	84.375	34.45375	#NUM!	0.34475	#NUM!	0.2585	0.2585	106.85
							478	24.8	2.05	0.001	0.07	0	0.0002	0.012	0.004	0.184	3.32	0.208	0.087	0.009	0	0.367	0	6.56	221	3	3	35	4	1.95	41	10	0	0	42	42	1.89	0	0.82	0	0.3	0.3	170
P8	NC-1105	3-Mar-08	1345	62.23	63.00																																					
		2-Apr-08	1415	50.52	51.29																																					
Depth	65	9-May-08	1220	50.59	51.36																																					
Format.	Purlawaugh	2-Jun-08	1608	62.23	63.00																																					
		1-Jul-08	1558	50.57	51.34																																					
		12-Aug-08	1230	50.62	51.39																																					
		19-Aug-08	1515	50.63	51.40																																					
		12-Sep-08	0830	50.53	51.30	7.85	1120	21.2		<0.001	0.057	<0.001	<0.0001	<0.001	<0.001	0.001	0.09	0.004	0.037	<0.001	<0.01	0.007	<0.0001		805	33	10	121	9	7.96	64	20	<1	<1	276	276	7.74	1.35	0.14				455
		14-Nov-08	1247	50.55	51.33																																					
		3-Dec-08	1414	50.44	51.22																																					
		23-Feb-09	1326	50.48	51.30																																					
		09-Jun-09	1445			SWL >50				0.003	0.192	<0.001	0.0002	0.004	0.004	0.382	3.62	**0.374**	0.364	0.016	<0.01	0.967	<0.0001		490	29	8	59	7	4.85	44	<10	<1	<1	171	171	4.66	1.99	<0.01				360
		24-Aug-09	1500	50.20	51.24	SWL only																																				
		17-Nov-09	1330	50.32	51.36	7.45	414	25.2		<0.001	0.121	<0.001	0.0001	<0.001	<0.001	0.014	0.52	0.019	0.117	0.005	<0.01	0.07	<0.0001		423	12	4	57	6	3.59	27.2	10.3	<1	<1	137	137	3.72	1.81	0.06				240
		24-Feb-10	1130	50.36	51.40																																					
		24-Jun-10	1200	50.29	51.33	7.85	390	19	<0.01	<0.001				<0.001		0.002	<0.05	<0.001	0.006	0.003		0.04	<0.0001	7.05	358	14	4	55	7	3.56	27.7	8.75	<1	<1	131	131	3.58	0.33		<0.01	0.03	0.03	
		2-Sep-10	1425	50.19	51.23	6.93	360	24																																			
		9-Feb-11	1120	50.44	51.48	7.1	355	23.6	<0.01	<0.001				<0.001		0.012	<0.05	0.001	0.029	0.001		0.096	<0.0001	6.65	387	22	5	55	6	4.06	28	12	<1	<1	151	151	4.06	0.08		<0.01	0.63	0.63	
		08-Jun-11	1110	50.17	51.21	7.05	327	19.5																																			
		26-Sep-11	1200	50.21	51.25	6.98	321	19.8	0.98	0.006	0.143	<0.001	<0.0001	0.001	0.002	0.026	1.56	0.067	0.51	0.005	<0.01	0.1	<0.0001	6.72	346	12	4	55	6	3.47	24	7	<1	<1	128	128	3.38	1.33	0.15	<0.01	0.06	0.06	213
		4-Jan-12	1130	50.20	51.24	6.76	298	22.5																																			
		28-Mar-12	1130	50.22	51.26	7.15	293	22.5	0.29	<0.001	0.118	<0.001	<0.0001	<0.001	<0.001	0.018	0.42	**0.23**	0.002	0.016	<0.01	0.067	<0.0001	7	341	15	5	48	7	3.43	26	6	<1	<1	122	122	3.3	1.92	0.17	<0.01	0.19	0.19	196
		25-Jun-12	1200	50.26	51.3	6.93	357	19.9																																			
		11-Sep-12	1230	50.21	51.25	6.87	308	22.8	0.15	<0.001	0.158	<0.001	<0.0001	<0.001	0.003	0.031	0.38	0.017	1.44	0.003	<0.01	0.134	<0.0001	7.23	335	12	5	50	8	3.39	28	6	<1	<1	122	122	3.35	0.53	0.2	<0.01	0.1	0.1	160
		06-Dec-12	1210	50.76	51.8	6.72	310	21.1																																			
		03-Apr-13	1220	50.16	51.2	6.89	362	21.2	0.2	<0.001	0.134	<0.001	<0.0001	0.001	0.001	0.036	0.59	0.021	0.346	0.003	<0.01	0.308	<0.0001	6.8	344	17	4	46	9	3.41	32	7	<1	<1	119	119	3.43	0.27	1.02	<0.01	0.06	0.06	184
		04-Jul-13	1415	50.13	51.17	6.92	378	20.6																																			
		03-Sep-13	1210	50.36	51.4	6.85	332	21.6	0.25	<0.001	0.109	<0.001	<0.0001	<0.001	0.002	0.051	0.69	0.02	0.996	0.003	<0.01	0.1	<0.0001	7.36	355	10	4	51	7	3.23	30	8	<1	<1	112	112	3.25	0.41	0.01	<0.01	0.16	0.16	217
		02-Dec-13	1240	50.23	51.27	6.7	357	20.9																																			
		06-Mar-14	1130	50.26	51.3	7.1	340	21.7	0.17	<0.001	0.065	<0.001	<0.0001	0.01	<0.001	0.081	0.24	0.008	0.059	0.005	<0.01	0.096	<0.0001	7.08	355	13	4	46	7	3.16	35	7	<1	<1	107	107	3.27	1.78	0.76	<0.01	0.41	0.41	199
		10-Jun-14	1140	50.26	51.3	7.2	370	19.6																																			
		29-Sep-14	1120	50.23	51.27	7	407	21.8	0.84	<0.001	0.232	<0.001	<0.0001	0.001	0.01	0.015	1.39	0.007	1.54	0.004	<0.01	0.063	<0.0001	7.23	567	18	6	108	12	6.4	45	10	<1	<1	194	194	5.35	8.84	0.6	<0.01	0.21	0.21	320
		03-Dec-14	1040	50.30	51.34	7	413	21.8																																			
		12-Mar-15	1230	50.30	51.34	7.2	675	23.4	0.51	<0.001	0.407	<0.001	<0.0001	<0.001	0.003	0.014	0.88	0.005	0.565	0.002	<0.01	0.04	<0.0001	7.47	671	18	5	120	10	6.79	49	11	<1	<1	271	271	7.03	1.78	0.35	<0.01	0.16	0.16	303
		04-Jun-15	1230	50.28	51.32	7.2	576	20.7																																			
		09-Sep-15	1130	50.31	51.35	7	427	22.3	0.19	<0.001	0.094	<0.001	<0.0001	<0.001	<0.001	0.006	0.49	0.002	0.115	<0.001	<0.01	0.073	<0.0001	7.21	409	26	13	69	6	5.52	42	10	<1	<1	129	129	3.97	16.3	0.07	<0.01	1.32	1.32	226
		09-Dec-15	1105	50.33	51.37	7	447	21.2																																			
		08-Mar-16	1105	50.34	51.38	6.7	459	21.9	0.81	<0.001	0.209	<0.001	<0.0001	0.001	0.004	0.028	2.57	0.01	0.855	0.003	<0.01	0.138	<0.0001	7.21	476	19	6	74	7	4.84	48	8	<1	<1	143	143	4.38	4.99	0.15	<0.01	0.4	0.4	283
		01-Jun-16	1150	50.37	51.41	6.9	488	19.8																																			
		28-Sep-16	1120	50.25	51.29	6.8	498	20.5	0.73	0.003	0.263	<0.001	<0.0001	0.002	0.005	0.035	3.34	0.017	0.904	0.019	<0.01	0.136	<0.0001	7.12	507	22	6	75	8	5.06	46	8	<1	<1	178	178	5.02	0.35	0.15	<0.01	0.62	0.62	252
		26-Oct-16	1255	50.29	51.33	7	558	21.8																																			
		23-Nov-16	1235	50.32	51.36	7	637	21.2																																			
		19-Dec-16	1240	50.33	51.37	7	587	21.7																																			
							978.8	24.96	0.96275	0.00593	0.18833	#NUM!	0.000198	0.003925	0.004	0.3375	3.4655	0.3596	0.49175	0.016	#NUM!	0.85863	#NUM!	7.0463	481.625	28.125	7.625	58.75	7	4.75125	42	11.83	#NUM!	#NUM!	168.5	168.5	4.585	1.98125	0.169	#NUM!	0.597	0.597	351
							675	23.4	0.84	0.003	0.407	0	0	0.01	0.01	0.081	3.34	0.021	1.54	0.019	0	0.308	0	7.47	671	26	13	120	12	6.79	49	11	0	0	271	271	7.03	16.3	1.02	0	1.32	1.32	320

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals																		Major Cations					Total Cations - meq/L	Major Anions							Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
						pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L							
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*		*1000*						*1000*										*1500*	*400*		*4000*
P9	GWB5S	3-Mar-08	1105	19.88	20.52																																						
		2-Apr-08	1135	19.88	20.52																																						
Depth	30	9-May-08	929	19.87	20.51																																						
Format.	Purlawaugh	2-Jun-08	1300	19.89	20.53																																						
		1-Jul-08	1255	19.86	20.50																																						
		14-Aug-08	1217	19.90	20.54																																						
		12-Sep-08	1230	19.66	20.30	6.8	1210	22.1		0.002	0.059	<0.001	0.0001	0.004	0.003	0.014	1.32	0.036	0.037	0.012	<0.01	0.042	<0.0001		451	30	12	43	5	4.51	42	24	<1	<1	139	139	4.46	0.52	0.13				295
		14-Nov-08	1103	19.80	20.44																																						
		01-Dec-08	1219	19.77	20.41																																						
		12-Jan-09	0930	19.79	20.43																																						
		23-Feb-09	0938	19.80	20.45																																						
		17-Aug-09	1430	19.70	20.51	6.7	22500	24		<0.001	0.077	<0.001	<0.0001	0.003	0.002	0.01	6.94	0.001	0.122	<0.005	<0.01	0.009	<0.0001		23000	402	635	3560	62	229	7150	**1830**	<1	<1	641	641	253	4.96	1.6				**16000**
		18-Nov-09	1120	19.64	20.45	6.61	22870	28.1	0.04	<0.001				<0.005		0.005	0.38	<0.001	0.127	0.004		<0.005	<0.0001	6.63	21200	249	535	3830	74	225	7260	**1720**	<1	<1	392	392	248	5.02		<0.01	<0.01	<0.01	
		17-Feb-10	1120	19.72	20.53																																						
		22-Jun-10	1150	19.80	20.61	6.58	23010	23	<0.01	<0.001				<0.005		0.004	4.86	<0.001	0.098	0.002		0.008	<0.0001	6.69	22000	329	493	4020	59	233	7240	**1570**	<1	<1	599	599	249	3.22		<0.01	<0.01	<0.01	
		2-Sep-10	1050	19.72	20.53	7.07	17050	23.7																																			
		7-Feb-11	1215	19.98	20.79	6.5	17180	25.7	0.02	0.003				<0.001		0.004	2.96	<0.001	0.102	0.002		0.006	<0.0001	6.4	22500	348	547	3830	61	230	7410	**1590**	<1	<1	604	604	254	4.86		<0.01	0.02	0.02	
		09-Jun-11	1115	20.11	20.92	6.55	17080	20.5																																			
		11-Oct-11	1220	18.66	19.47	6.40	15360	23.5	0.12	0.011	0.046	<0.001	<0.0001	0.01	0.001	0.012	6.14	0.021	0.182	0.003	<0.01	0.058	<0.0001	7.12	21000	354	534	4680	58	267	7310	**1550**	<1	<1	553	553	250	3.3	2.72	<0.01	0.52	0.52	**15400**
		8-Dec-11	1100	19.36	20.17	6.60	15670	23.1																																			
		04-Apr-12	1040	19.85	20.66	7.2	1133	24.7	0.61	0.003	0.046	<0.001	0.0001	0.002	0.006	0.03	1.22	**0.411**	0.008	0.041	<0.01	0.195	<0.0001	7.51	3350	74	60	585	22	34.6	828	212	<1	<1	257	257	32.9	2.55	27.2	0.7	2.48	3.18	1930
		31-May-12	1030	19.67	20.48	6.8	12970	21.7																																			
		29-Aug-12	1150	19.76	20.57	6.73	14420	22.6	0.32	<0.001	0.076	<0.001	0.0002	0.006	0.001	0.028	2.27	0.029	0.338	0.004	<0.01	0.218	<0.0001	7.42	19100	336	516	4460	71	255	6670	**1590**	<1	<1	681	681	235	4.1	10.4	0.04	4.28	4.32	**12400**
		04-Dec-12	1335	19.97	20.78	6.74	16220	23.4																																			
		07-Mar-13	1130	19.89	20.7	6.63	18400	23.3	0.06	<0.001	0.031	<0.001	0.0002	<0.001	<0.001	0.034	7.28	0.006	0.167	0.001	<0.01	0.072	<0.0001	6.92	21900	372	536	4260	68	250	6320	**1820**	<1	<1	649	649	229	4.28	1.67	0.04	0.71	0.75	**12900**
		03-Jul-13	1200	19.87	20.68	7.21	18960	21.7																																			
		03-Sep-13	1115	19.99	20.8	7.18	18900	23.5	1.46	0.002	0.095	<0.001	0.0005	0.012	0.002	0.324	5.51	**0.169**	0.257	0.01	<0.01	0.567	<0.0001	7.78	21300	340	501	4500	71	256	6500	**1700**	<1	<1	607	607	231	5.03	1.86	0.03	4.88	4.91	**14100**
		27-Nov-13	1220	20.16	20.97	6.9	19970	21.2																																			
		05-Mar-14	1215	19.80	20.61	6.9	19700	24.2	0.23	0.001	0.053	<0.001	0.0003	0.017	0.003	0.099	2.07	0.018	0.21	0.011	<0.01	0.364	<0.0001	7.28	21600	305	506	4720	69	264	6160	**1740**	<1	<1	641	641	223	8.43	0.88	0.04	0.66	0.7	**14400**
		11-Jun-14	1240	20.03	20.84	6.7	20330	21.6																																			
		29-Sep-14	1315	20.64	21.45	6.6	19510	22.9	0.02	<0.001	0.046	<0.001	<0.0001	<0.001	<0.001	<0.001	4.99	<0.001	0.188	0.003	<0.01	0.047	<0.0001	7.25	21700	282	451	3370	58	199	6480	**1620**	<1	<1	582	582	228	6.77	1.78	<0.01	0.07	0.07	**13400**
		04-Dec-14	1125	20.82	21.63	6.6	19380	21.9																																			
		13-Mar-15	1100	20.91	21.72	6.7	21190	23.7	1.13	0.002	0.09	<0.001	0.0002	0.014	0.002	0.073	5.34	0.028	0.17	0.011	<0.01	0.288	<0.0001	6.98	22000	355	475	4130	53	238	6860	**1810**	<1	<1	709	709	245	1.58	1.64	<0.01	0.44	0.44	**14000**
		03-Jun-15	1215	21.40	22.21	6.9	20160	21.5																																			
		08-Sep-15	1305	23.41	24.22	6.9	19870	22.1	0.59	<0.010	0.077	<0.010	<0.0010	<0.010	<0.010	<0.010	6.73	<0.010	0.151	<0.010	<0.10	0.055	<0.0001	7.55	21600	354	340	3190	45	186	5250	**1610**	<1	<1	677	677	195	2.53	1.91	<0.01	0.02	0.02	**14400**
		14-Dec-15	1050	24.01	24.82	7	19820	23.4																																			
		09-Mar-16	1145	24.32	25.13	7.2	20930	23.2	0.55	0.001	0.73	<0.0001	<0.0001	0.003	0.001	0.034	5.5	0.006	0.176	0.005	<0.01	0.114	<0.0001	7.51	22100	401	443	3710	50	219	6040	**1900**	<1	<1	770	770	225	1.41	1.9	0.04	<0.01	0.02	**14000**
		02-Jun-16	1130	24.89	25.7	7.2	20760	21.1																																			
		26-Sep-16	1100	24.87	25.68	7.1	18540	22.1	0.23	0.001	0.072	<0.001	<0.0001	0.001	<0.001	0.012	3.79	0.002	0.151	0.003	<0.01	0.126	<0.0001	7.47	21800	412	498	3850	48	230	6350	**1790**	<1	<1	812	812	233	0.53	1.54	<0.01	0.42	0.42	**14400**
		25-Oct-16	1050	25.12	25.93	7	18630	22.4																																			
		24-Nov-16	1055	24.95	25.76	7	18790	22.6																																			
		20-Dec-16	1040	25.08	25.89	7.1	18630	23.4																																			
							22975	27.5	0.57325	0.0106	0.07545	#NUM!	0.0001	0.00965	0.0058	0.02775	6.84	0.3915	0.17513	0.0373	#NUM!	0.1813	#NUM!	7.471	22937.5	396	624	4597.5	72.5	262.75	7397.5	1816.25	#NUM!	#NUM!	636.375	636.375	253.875	5.0125	25.976	0.7	2.382	3.047	15970
							21190	24.2	1.46	0.002	0.73	0	0.0005	0.017	0.003	0.324	7.28	0.169	0.338	0.011	0	0.567	0	7.78	22100	412	536	4720	71	264	6860	1900	0	0	812	812	245	8.43	10.4	0.04	4.88	4.91	14400

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals																	Major Cations					Total Cations - meq/L	Major Anions							Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
						pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L							
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*							*1000*								*1500*	*400*		*4000*
P10	NC-030D	3-Mar-08	1315	15.56	16.53																																					
		2-Apr-08	1425	15.64	16.61																																					
Depth	130	9-May-08	1230	15.88	16.85																																					
Format.	Napperby	2-Jun-08	1623	16.03	17.00																																					
		1-Jul-08	1610	15.13	16.10																																					
		14-Aug-08	1635	16.31	17.28																																					
		9-Sep-08	1700	20.03	21.00	7.92	1130	20.8		0.002	1.59	0.001	<0.0001	0.006	0.002	0.004	0.92	0.024	2.13	0.005	<0.01	0.023	<0.0001		6800	155	80	1490	30	79.9	2410	188	<1	<1	546	546	82.9	1.88	1.73				4170
		14-Nov-08	1301	53.36	54.33																																					
		3-Dec-08	1432	51.73	52.70																																					
		12-Jan-09	1130	47.89	48.86																																					
		23-Feb-09	1355	43.72	44.68																																					
		11-Jun-09	1540	31.95	32.93					<0.001	1.4	<0.001	<0.0001	0.002	0.003	0.034	0.15	0.027	1.57	0.015	<0.01	0.249	<0.0001		7610	134	74	1490	31	78.6	2160	40	<1	<1	774	774	77.1	0.9	<0.01				4370
		24-Aug-09	1530	44.98	45.96	SWL only																																				
		17-Nov-09	1400	41.83	42.81	7.4	8350	25.2		0.001	1.34	<0.001	<0.0001	0.002	<0.001	0.014	0.31	0.035	1.35	0.018	<0.01	0.12	<0.0001		3200	41	78	1550	30	76.8	2250	64.8	<1	<1	760	760	30.9	2.11	1.27				4610
		24-Feb-10	1150	39.10	40.08																																					
		24-Jun-10	1250	35.79	36.77	7.28	8160	23	<0.01	0.002				<0.005		<0.001	<0.05	0.013	1.46	0.005		0.021	<0.0001	7.39	7010	83	83	1560	32	79.7	2140	76.5	<1	<1	757	757	77.1	1.64		<0.01	0.02	0.02	
		3-Sep-10	0955	38.65	39.63	7.61	7750	21.2																																		
		9-Feb-11	1215	22.88	23.86	7.25	7020	27.2	<0.01	0.004				<0.005		0.002	<0.05	<0.001	3.29	0.004		0.01	<0.0001	6.91	9430	143	124	1790	29	95.9	2920	308	<1	<1	793	793	105	4.35		<0.01	0.26	0.26	
		08-Jun-11	1140	22.93	23.91	7.45	6240	19.8																																		
		26-Sep-11	1240	22.92	23.90	7.32	6390	22.3	0.62	0.01	1.03	<0.001	<0.0001	0.004	0.002	0.02	1.15	**0.106**	1.77	0.012	<0.01	0.183	<0.0001	7.53	7990	127	92	1420	29	76.4	2000	142	<1	<1	631	631	72	2.97	1.06	<0.01	0.28	0.28	**4250**
		4-Jan-12	1210	22.92	23.90	7.21	7154	23.5																																		
		28-Mar-12	1215	22.89	23.87	7.3	4060	22.6	0.17	<0.001	0.928	<0.001	<0.0001	<0.001	0.001	0.011	0.54	**1.52**	0.004	0.02	<0.01	0.101	<0.0001	7.87	5750	122	73	1160	24	63.2	1580	123	<1	<1	534	534	57.8	4.42	1.31	0.03	0.34	0.37	3290
		25-Jun-12	1230	22.96	23.94	7.45	6190	20.6																																		
		11-Sep-12	1300	22.81	23.79	7.34	6180	22.2	0.12	0.001	0.713	<0.001	<0.0001	<0.001	<0.001	0.016	0.3	0.004	1.29	0.003	<0.01	0.07	<0.0001	7.86	7280	111	87	1300	25	69.9	1700	159	<1	<1	684	684	64.9	3.65	1.24	0.01	0.1	0.11	3920
		06-Dec-12	1225	22.86	23.84	7.3	8360	22.3																																		
		03-Apr-13	1250	22.82	23.8	8.51	6680	24.2	0.52	<0.001	0.959	<0.001	0.0002	0.003	0.002	0.057	1.32	**0.11**	1.91	0.011	<0.01	0.344	<0.0001	7.67	7330	142	90	1420	32	77.1	1890	189	<1	<1	629	629	69.8	4.92	1.45	0.01	0.19	0.2	3970
		04-Jul-13	1140	22.86	23.84	7.66	5890	21.6																																		
		03-Sep-13	1415	23.72	24.7	7.62	7490	21.7	0.54	<0.001	0.8	<0.001	<0.0001	0.002	0.001	0.087	1.28	0.058	1.72	0.008	<0.01	0.296	<0.0001	8.02	7950	150	105	1480	34	81.4	2230	166	<1	<1	638	638	79.1	1.39	1.76	0.01	0.09	0.1	**4420**
		04-Dec-13	1200	22.78	23.76	7.6	7690	24.3																																		
		07-Mar-14	950	22.38	23.36	7.8	7910	22.4	0.33	<0.001	0.823	<0.001	<0.0001	0.016	<0.001	0.084	0.95	0.027	2.14	0.012	<0.01	0.196	<0.0001	7.61	8900	168	115	1780	34	96.1	2410	217	<1	<1	765	765	87.8	4.52	1.33	<0.01	0.18	0.18	**4900**
		10-Jun-14	1445	22.33	23.31	7.7	7850	21.4																																		
		29-Sep-14	1415	22.83	23.81	7.4	8520	21.7	0.06	<0.001	0.774	<0.001	<0.0001	0.001	<0.001	0.007	0.25	0.004	2.46	0.004	<0.01	0.204	<0.0001	7.77	7780	189	121	1360	30	ot Authorise	2790	347	<1	<1	724	724			1.4	<0.01	0.14	0.14	3880
		04-Dec-14	930	22.49	23.47	7.4	7980	21.6																																		
		12-Mar-15	1000	22.51	23.49	7.6	7040	23.6	0.11	<0.001	0.592	<0.001	<0.0001	0.001	<0.001	0.028	0.4	0.011	1.56	0.005	<0.01	0.093	<0.0001	7.98	7350	142	108	1460	25	80.1	1970	200	<1	<1	644	644	72.6	4.9	1.06	<0.01	0.28	0.28	3990
		04-Jun-15	1330	22.69	23.67	7.6	8080	21.3																																		
		09-Sep-15	1325	22.58	23.56	7.5	8700	21.6	0.33	<0.001	0.731	<0.001	<0.0001	<0.001	<0.001	0.018	0.8	0.009	2.42	0.004	<0.01	0.237	<0.0001	7.8	9350	179	106	1460	22	81.7	2090	247	<1	<1	777	777	79.6	1.28	1.44	<0.01	0.02	0.02	**5350**
		15-Dec-15	1300	22.34	23.32	7.5	8610	22.6																																		
		08-Mar-16	1320	21.51	22.49	7.8	7330	24.4	0.21	<0.001	0.598	<0.001	<0.0001	<0.001	<0.001	0.02	0.8	0.009	1.97	0.006	<0.01	0.174	<0.0001	7.99	8810	180	111	1480	21	83	2360	281	<1	<1	677	677	85.9	1.74	1.27	<0.01	0.07	0.07	**5070**
		01-Jun-16	925	22.49	23.47	7.8	7260	20.5																																		
		27-Sep-16			too wet																																					
		26-Oct-16	1355	22.46	23.44	7.4	7110	22.1	0.04	<0.001	0.627	<0.001	<0.0001	<0.001	<0.001	<0.001	0.19	<0.001	2.04	0.002	<0.01	0.024	<0.0001	7.88	5730	115	75	988	16	55.3	1430	119	<1	<1	533	533	53.5	1.68	1.38	<0.01	0.02	0.02	3230
		23-Nov-16	1400	22.70	23.68	7.5	7180	22.8																																		
		19-Dec-16	1405	21.26	22.24	7.6	7540	22.3																																		
							8312	26.8	0.60875	0.00955	1.3955	#NUM!	#NUM!	0.0039	0.003	0.0326	1.1043	1.3786	3.1	0.01975	#NUM!	0.24075	#NUM!	7.8445	9250	141.875	120	1761.25	31.875	93.875	2836.25	287.25	#NUM!	#NUM!	790.625	790.625	101.5125	4.41125	1.308	0.03	0.3355	0.36325	4592
							8700	24.4	0.54	0.001	0.959	0	0.0002	0.016	0.002	0.087	1.32	0.11	2.46	0.012	0	0.344	0	8.02	9350	189	121	1780	34	96.1	2790	347	0	0	777	777	87.8	4.92	1.76	0.01	0.28	0.28	5350
P11	NC-030S	3-Mar-08	1320	22.18	23.17																																					
		2-Apr-08	1430	22.14	23.13																																					
Depth	50	9-May-08	1232	22.26	23.25																																					
Format.	Napperby	2-Jun-08	1620	22.30	23.29																																					
		1-Jul-08	1612	22.33	23.32																																					
		12-Aug-08	1248	22.39	23.38																																					
		12-Sep-08	0730	22.91	23.90	8.23	980	17.6		0.004	0.162	<0.001	<0.0001	<0.001	0.089	0.004	0.81	0.006	2.98	0.159	<0.01	0.016	<0.0001		2490	89	40	341	4	22.7	581	16	<1	<1	248	248	21.7	2.24	0.04				1330
		14-Nov-08	1258	23.02	24.01																																					
		3-Dec-08	1430	23.01	24.00																																					
		12-Jan-09	1125	23.01	24.00																																					
		23-Feb-09	1400	22.98	23.95																																					
		11-Jun-09	1525	22.88	23.98					0.007	0.303	<0.001	0.0014	0.003	0.082	0.069	3.6	0.092	3.22	0.194	0.02	0.46	<0.0001		3230	122	54	495	6	32.2	878	<1	<1	<1	335	335	31.5	1.15	<0.01				1890
		24-Aug-09	1530	24.19	25.18	SWL only																																				
		17-Nov-09	1420	24.79	25.78	7.34	34900	25		0.005	0.303	<0.001	0.0004	0.001	0.09	0.048	0.57	0.056	2.43	0.215	<0.01	0.294	<0.0001		3200	64	48	493	6	28.7	863	10.2	<1	<1	320	320	30.9	3.68	<0.1				1870
		24-Feb-10	1150	24.30	25.29																																					
		24-Jun-10	1330	23.82	24.81	7.4	4360	20	<0.01	0.001				<0.005		0.001	0.14	0.011	3.16	0.256		0.033	<0.0001	7.34	3590	152	69	621	8	40.4	1130	7.32	<1	<1	382	382	39.6	1		<0.01	0.02	0.02	
		3-Sep-10	1005	28.06	29.05	7.61	3650	21.1																																		
		9-Feb-11	1240	27.40	28.39	7.05	3280	28.1	<0.01	0.002				<0.005		<0.001	0.33	0.006	5.17	0.3		0.025	<0.0001	6.82	4360	132	77	652	6	41.4	1250	7	<1	<1	329	329	41.9	0.54		<0.01	0.37	0.37	
		08-Jun-11	1200	30.85	31.84	7.10	3630	18.7																																		
		26-Sep-11	1310	30.56	31.55	7.04	3790	22.4	0.2	0.004	0.35	<0.001	0.0002	0.004	0.064	0.01	0.9	0.018	5.34	0.269	<0.01	0.058	<0.0001	7.22	4840	148	74	728	8	45.4	1210	19	<1	<1	327	327	41.1	4.95	0.27	<0.01	0.05	0.05	2710
		4-Jan-12	1240	30.21	31.20	6.93	4205	23.1																																		
		28-Mar-12	1245	28.96	29.95	7.25	3410	22.5	0.2	0.002	0.374	<0.001	<0.0001	0.044	<0.001	0.013	1.4	**4.85**	0.203	0.012	<0.01	0.066	<0.0001	7.57	4310	168	75	671	8	44	1210	14	<1	<1	290	290	40.2	4.43	0.24	<0.01	0.27	0.27	2590
		25-Jun-12	1250	26.12	27.11	7.27	4140	20.4																																		
		11-Sep-12	1320	22.90	23.89	7.22	4110	22.4	0.15	0.001	0.372	<0.001	<0.0001	<0.001	<0.001	0.056	0.041	0.76	0.07	4.66	0.23	<0.01	0.208	<0.0001	7.54	4640	150	82	717	8	45.6	1250	11	<1	<1	320	320	41.9	4.27	<0.10	<0.01	0.28	0.28	2760
		06-Dec-12	1235	20.64	21.63	7.12	4730	22																																		
		03-Apr-13	1300	18.61	19.6	7.43	4410	23.4	0.36	0.002	0.489	<0.001	0.0001	0.002	0.067	0.061	2.02	0.098	6.38	0.295	<0.01	0.335	<0.0001	7.46	4880	194	85	750	10	49.6	1410	11	<1	<1	271	271	45.4	4.36	0.15	<0.01	0.17	0.17	2940
		04-Jul-13	1120	18.93	19.92	7.64	4710	21.7																																		
		03-Sep-13	1400	17.51	18.5	7.38	4420	22.4	0.26	0.002	0.425	<0.001	0.0001	<0.001	0.044	0.111	1.2	0.036	4.86	0.213	<0.01	0.325	<0.0001	7.74	4890	183	88	735	9	48.6	1380	11	<1	<1	252	252	44.2	4.72	0.34	<0.01	0.1	0.1	2810
		04-Dec-13	1215	17.27	18.26	7.5	4680	23.9																																		
		07-Mar-14	1010	17.81	18.8	7.3	4970	22.3	0.32	0.002	0.407	<0.001	<0.0001	0.002	0.035	0.092	2.27	0.029	6	0.193	<0.01	0.179	<0.0001	7.19	5690	207	93	849	8	55.1	1570	5	<1	<1	225	225	48.9	5.99	0.22	<0.01	0.01	0.01	3750
		10-Jun-14	1435	17.85	18.84	7.3	4920	21.4																																		
		29-Sep-14	1425	18.18	19.17	7.1	5310	22.2	0.31	0.002	0.444	<0.001	<0.0001	0.002	0.029	0.058	1.64	0.02	6.55	0.186	<0.01	0.119	<0.0001	7.44	5690	176	82	635	7	43.3	1440	3	<1	<1	209	209	44.9	1.73	0.27	<0.01	0.04	0.04	3140
		04-Dec-14	945	18.59	19.58	7.2	5420	21.8																																		
		12-Mar-15	1020	18.76	19.75	7.5	6920	24.8	0.22	<0.001	0.346	<0.001	<0.0001	0.004	0.022	0.06	1.72	0.027	4.08	0.168	<0.01	0.138	<0.0001	7.75	4880	162	77	724	8	46.1	1410	23	<1	<1	271	271	45.7	0.49	0.5	<0.01	0.05	0.05	2600
		04-Jun-15	1340	19.22	20.21	7.4	4950	21.5																																		
		09-Sep-15	1345	19.55	20.54	7.4	4820	21.2	0.23	<0.001	0.386	<0.001	<0.0001	0.003	0.022	0.026	2.05	0.011	4.74	0.17	<0.01	0.124	<0.0001	7.62	5170	167	79	723	8	46.5	1280	17	<1	<1	258	258	41.6	5.53	0.53	<0.01	<0.01	<0.01	3230
		15-Dec-15	1312	19.90	20.89	7.5	4230	22.5																																		
		08-Mar-16	1250	20.23	21.22	7.4	4880	24.4	0.08	<0.001	0.365	<0.001	<0.0001	<0.001	0.02	0.021	1.6	0.005	5	0.164	<0.01	0.106	<0.0001	7.85	5130	180	84	766	8	49.4	1320	18	<1	<1	230	230	42.2	7.87	0.42	<0.01	<0.01	<0.01	3470
		01-Jun-16	945	20.42	21.41	7.5	4450	20.4																																		
		27-Sep-16			too wet																																					
		26-Oct-16	1410	20.74	21.73	7.4	4100	22.2	0.02	<0.001	0.293	<0.001	<0.0001	<0.001	0.009	0.002	1.8	<0.001	3.48	0.15	<0.01	0.023	<0.0001	7.72	3980	113	57	560	7	34.9	1080	39	<1	<1	289	289	37	3.04	0.52	<0.01	<0.01	<0.01	2500
		23-Nov-16	1420	21.08	22.07	7.5	3540	22.4																																		
		19-Dec-16	1425	21.47	22.46	7.5	3930	22.7																																		
							28792	27.48	0.2	0.00675	0.3722	#NUM!	0.00135	0.041	0.0896	0.0669	3.325	4.25525	5.31875	0.29613	0.02	0.43925	#NUM!	7.5528	4780	166	76.75	720.875	8	45.225	1245	18.5	#NUM!	#NUM!	376.125	376.125	41.8	4.885	0.26925	#NUM!	0.3625	0.3625	2701
							6920	24.8	0.36	0.002	0.489	0	0.0001	0.004	0.067	0.111	2.27	0.098	6.55	0.295	0	0.335	0	7.85	5690	207	93	849	10	55.1	1570	39	0	0	320	320	48.9	7.87	0.53	0	0.28	0.28	3750

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals																		Major Cations					Total Cations - meq/L	Major Anions								Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
						pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L							
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*							*1000*									*1500*	*400*		*4000*
P12	NC-098D	3-Mar-08	1135	36.70	37.51																																							
		2-Apr-08	1145	37.72	38.53																																							
Depth	90	9-May-08	0937	36.75	37.56																																							
Format.	Napperby	2-Jun-08	1312	36.78	37.59																																							
		1-Jul-08	1300	36.79	37.60																																							
		11-Aug-08		36.54	37.35																																							
		12-Sep-08	1130	36.49	37.30	6.8	1020	21.5		0.007	0.022	<0.001	<0.0001	0.002	0.008	0.002	0.67	0.132	0.053	0.002	<0.01	0.189	<0.0001		367	30	10	28	5	3.62	24	16	<1	<1	131	131	3.63	0.14	0.08				226
		14-Nov-08	1047	36.72	37.61																																							
		01-Dec-08	1200	36.67	37.56																																							
		12-Jan-09	0915	36.66	37.57																																							
		18-Feb-09	1233	36.72	37.52																																							
		17-Aug-09	1245	37.18	37.99	7.3	2540	23.8		0.006	0.163	<0.001	0.0004	0.005	0.211	0.008	3	0.009	3.37	0.218	<0.01	0.04	<0.0001		2530	82	49	453	6	28	370	8.67	<1	<1	864	864	27.9	0.1	0.09				1540
		11-Nov-09	1035	37.13	37.94	7.5	2790	33.8		0.013	0.12	<0.001	<0.0001	0.009	0.051	0.004	1.42	0.014	1.41	0.078	<0.01	0.044	<0.0001		2470	51	28	555	7	29.2	394	4.15	<1	<1	931	931	29.8	0.98	0.3				1660
		17-Feb-10	0945	37.13	37.94																																							
		22-Jun-10	1030	36.30	37.11	7.38	2150	23.6	<0.01	0.009				<0.005		<0.001	0.25	<0.001	1.02	0.027		<0.005	<0.0001	7.5	2970	47	25	774	8	38.3	426	1.72	<1	<1	1180	1180	35.6	3.55		<0.01	0.04	0.04	
		2-Sep-10	1035	36.33	37.14	7.56	2700	21.9																																				
		7-Feb-11	1030	36.43	37.24	7.32	2560	25.8	0.03	0.011				<0.001			<0.001	0.002	0.943	0.024		0.009	<0.0001	7.46	2880	48	29	703	10	35.6	431	1	<1	<1	1040	1040	33.1	3.66		<0.01	0.01	0.02	
		09-Jun-11	1000	36.67	37.48	7.45	2610	19.8																																				
		11-Oct-11	1045	36.74	37.55	7.50	2390	22.9	0.98	0.011	0.137	<0.001	<0.0001	0.003	0.005	0.038	2.17	0.02	1.13	0.028	<0.01	0.144	<0.0001	7.76	3170	40	24	732	8	36	442	9	<1	<1	1030	1030	33.2	3.97	0.51	<0.01	0.04	0.04	1870
		8-Dec-11	1010	36.71	37.52	7.50	2480	22.4																																				
		04-Apr-12	910	37.27	38.08	7.8	2550	23.2	0.64	0.011	0.129	<0.001	<0.0001	0.005	<0.001	0.023	1.56	**0.921**	0.016	0.009	<0.01	0.104	<0.0001	7.94	3080	36	28	790	9	38.7	479	11	<1	<1	1070	1070	35.1	4.8	0.58	0.02	0.22	0.24	1960
		31-May-12	915	37.38	38.19	7.51	2450	20.3																																				
		29-Aug-12	1040	37.43	38.24	7.68	2790	21.6	0.11	0.009	0.106	<0.001	<0.0001	<0.001	0.005	0.04	1.08	0.004	0.879	0.015	<0.01	0.202	<0.0001	7.98	3160	42	24	711	9	35.2	458	11	<1	<1	1170	1170	36.5	1.85	0.49	<0.01	0.07	0.07	1880
		04-Dec-12	1230	37.59	38.4	7.67	2870	24.1																																				
		07-Mar-13	1145	37.79	38.6	7.78	3020	24.1	0.06	0.01	0.105	<0.001	<0.0001	<0.001	0.006	0.009	0.92	0.005	0.839	0.013	<0.01	0.038	<0.0001	7.81	3230	32	23	751	9	36.4	416	11	<1	<1	1120	1120	34.3	2.84	0.37	0.02	0.11	0.13	1880
		03-Jul-13	1230	37.77	38.58	7.81	3060	23.2																																				
		03-Sep-13	1000	40.29	41.1	7.89	3290	22.1	0.28	0.011	0.118	<0.001	<0.0001	0.002	0.008	0.178	1.52	0.017	0.836	0.014	<0.01	0.088	<0.0001	8.09	3330	38	26	762	11	37.5	455	21	<1	<1	1140	1140	36	1.88	0.68	0.01	0.27	0.28	1780
		27-Nov-13	1300	40.63	41.44	7.9	3080	21.4																																				
		05-Mar-14	1300	41.40	42.21	7.9	3280	24.3	0.14	0.012	0.102	<0.001	<0.0001	0.013	0.01	0.058	0.9	0.009	0.801	0.016	<0.01	0.087	<0.0001	7.96	3350	39	23	932	10	44.6	436	24	<1	<1	1100	1100	34.8	12.4	0.51	0.03	0.06	0.09	1870
		11-Jun-14	1300	41.74	42.55	7.8	3340	20.9																																				
		29-Sep-14	1340	41.83	42.64	7.6	3040	22.1	0.09	0.013	0.104	<0.001	<0.0001	<0.001	0.007	0.009	1.09	0.006	0.748	0.013	<0.01	0.045	<0.0001	7.98	3190	25	16	550	9	26.7	417	15	<1	<1	994	994	31.9	8.94	0.62	0.02	0.05	0.07	2390
		04-Dec-14	1045	42.05	42.86	7.5	2970	21.7																																				
		13-Mar-15	1130	42.23	43.04	7.6	3220	25.4	0.17	0.012	0.093	<0.001	<0.0001	<0.001	0.006	0.012	1.05	0.001	0.576	0.015	<0.01	0.045	<0.0001	7.79	3260	42	35	864	10	42.8	431	17	<1	<1	1190	1190	36.3	8.2	0.76	<0.01	0.04	0.04	1660
		03-Jun-15	1310	42.30	43.11	7.7	3140	20.9																																				
		09-Sep-15	925	42.38	43.19	7.6	3110	21.1	0.33	0.016	0.096	<0.001	<0.0001	0.001	0.006	0.012	1.83	0.004	0.666	0.016	<0.01	0.059	<0.0001	8.01	3270	38	22	704	8	34.5	319	17	<1	<1	1120	1120	31.7	4.18	0.72	<0.01	<0.01	<0.01	1740
		14-Dec-15	940	42.50	43.31	7.6	3140	22.9																																				
		09-Mar-16	1240	42.46	43.27	7.7	3120	24.5	0.05	0.017	0.111	<0.001	<0.0001	<0.001	0.006	0.02	1.74	0.002	0.866	0.018	<0.01	0.038	<0.0001	7.98	3250	41	25	680	8	33.9	407	20	<1	<1	1140	1140	34.7	1.2	0.73	0.02	0.09	0.11	1780
		02-Jun-16	1055	42.57	43.38	7.7	3060	21.2																																				
		26-Sep-16	940	42.55	43.36	7.6	3030	22.1	0.68	0.014	0.088	<0.001	<0.0001	0.001	0.007	0.003	1.52	0.003	0.369	0.019	<0.01	0.064	<0.0001	7.96	3190	36	22	638	8	31.6	400	15	<1	<1	1240	1240	36.4	7.12	0.58	<0.01	<0.01	<0.01	1730
		25-Oct-16	920	42.59	43.4	7.6	3020	21.8																																				
		24-Nov-16	940	42.60	43.41	7.6	3040	21.6																																				
		20-Dec-16	915	42.60	43.41	7.6	3090	22.2																																				
							2767.5	31.8	0.963	0.01275	0.16105	#NUM!	0.0004	0.0087	0.203	0.03688	2.917	0.8309	3.125	0.2005	#NUM!	0.14	#NUM!	7.9265	3158.75	78.125	46.5	788	9.875	38.65	474.375	10.75	#NUM!	#NUM!	1166.25	1166.25	35.5375	4.69625	0.57475	0.02	0.2065	0.225	1953.25
							3240	25.4	0.68	0.017	0.118	0	0	0.013	0.01	0.178	1.83	0.017	0.879	0.019	0	0.202	0	8.09	3350	42	35	932	11	44.6	458	24	0	0	1240	1240	36.5	12.4	0.76	0.03	0.27	0.28	2390
P13	NC-098S	3-Mar-08	1140	8.51	9.38																																							
		2-Apr-08	1147	8.62	9.49																																							
Depth	30	9-May-08	0939	8.88	9.75																																							
Format.	Garrawilla	2-Jun-08	1308	9.00	9.88																																							
		1-Jul-08	1303	9.18	10.05																																							
		11-Aug-08		9.34	10.21																																							
		12-Sep-08	1045	9.43	10.30	7.1	1180	20.1		<0.001	0.153	<0.001	<0.0001	0.001	<0.001	0.001	0.11	0.007	0.134	0.002	<0.01	0.023	<0.0001		2040	50	89	253	7	21.0	279	30	<1	<1	556	556	19.6	3.47	0.24				1040
		14-Nov-08	1045	8.35	9.21																																							
		01-Dec-08	1202	8.48	9.34																																							
		12-Jan-09	0920	7.53	8.39																																							
		18-Feb-09	1241	7.35	8.23																																							
		17-Aug-09	1330	8.03	8.90	7.6	1540	24.3		<0.001	0.103	<0.001	<0.0001	0.003	0.002	0.002	1.51	0.002	0.064	0.004	<0.01	0.009	<0.0001		1760	50	100	204	3	19.6	272	50.7	<1	<1	551	551	19.7	0.34	<0.01				978
		11-Nov-09	1120	8.92	9.79	7.2	1310	27.5		0.001	0.125	<0.001	<0.0001	0.003	0.005	0.006	2.57	0.005	0.625	0.016	<0.01	0.015	<0.0001		1820	54	105	218	3	20.9	362	45.8	<1	<1	520	520	21.6	1.66	14.9				1110
		17-Feb-10	0950	8.06	8.93																																							
		22-Jun-10	0930	8.80	9.67	7.69	1923	21	<0.01	<0.001				<0.005		<0.001	<0.05	<0.001	<0.001	0.003		<0.005	<0.0001	7.47	1820	56	106	222	3	21.2	301	41.4	<1	<1	544	544	20.2	2.37		<0.01	2.77	2.77	
		2-Sep-10	1025	8.30	9.17	7.38	1668	22.4																																				
		7-Feb-11	1100	6.28	7.15	7.21	1615	24.5	0.03	<0.001				<0.001		<0.001	<0.05	<0.001	<0.001	0.001		<0.005	<0.0001	7.24	1480	70	86	191	2	19	283	54	<1	<1	512	512	19.3	0.97		0.02	1.95	1.97	
		09-Jun-11	1030	7.03	7.90	7.40	1492	18.7																																				
		11-Oct-11	1120	7.78	8.65	7.30	1336	21.4	0.31	0.004	0.072	<0.001	<0.0001	0.001	<0.001	0.02	0.41	0.004	0.033	0.004	0.01	0.051	<0.0001	7.7	1730	56	88	191	<1	18.4	250	38	<1	<1	455	455	16.9	3.98	0.13	<0.01	2.75	2.75	942
		8-Dec-11	1025	7.49	8.36	7.40	1202	21.2																																				
		04-Apr-12	930	5.19	6.06	7.7	1103	22.5	0.32	<0.001	0.067	<0.001	<0.0001	<0.001	<0.001	0.014	0.1	0.021	0.004	0.003	<0.01	0.063	<0.0001	7.82	1360	113	69	117	3	16.5	128	258	<1	<1	306	306	15.1	4.39	0.05	<0.01	1.48	1.48	922
		31-May-12	935	5.36	6.23	7.55	1195	20.1																																				
		29-Aug-12	1100	4.90	5.77	7.66	1268	21.6	0.12	<0.001	0.066	<0.001	0.0001	0.002	<0.001	0.035	0.35	0.004	0.027	0.006	<0.01	0.101	<0.0001	7.88	1330	106	63	97	2	14.7	121	276	<1	<1	310	310	15.4	2.02	0.05	<0.01	2.48	2.48	846
		04-Dec-12	1250	5.47	6.34	7.68	1258	21																																				
		07-Mar-13	1200	5.27	6.14	7.74	1290	22.4	0.02	<0.001	0.064	<0.001	<0.0001	<0.001	<0.001	0.008	<0.05	0.002	0.003	0.005	<0.01	0.022	<0.0001	7.76	1360	91	64	113	2	14.8	111	268	<1	<1	288	288	14.5	1.05	<0.01	<0.01	2.91	2.91	910
		03-Jul-13	1240	5.26	6.13	7.75	1292	21.6																																				
		03-Sep-13	1030	7.40	8.27	7.77	1360	21.5	0.09	<0.001	0.068	<0.001	<0.0001	<0.001	<0.001	0.039	0.25	0.004	0.04	0.008	<0.01	0.048	<0.0001	8.02	1430	93	66	139	2	16.2	126	263	<1	<1	298	298	15	3.8	0.02	<0.01	2.88	2.88	929
		27-Nov-13	1240	8.97	9.84	8.1	1813	20.7																																				
		05-Mar-14	1245	10.64	11.51	8.1	1420	24.1	0.52	0.002	0.07	<0.001	<0.0001	0.008	<0.001	0.06	1.35	0.02	0.066	0.013	<0.01	0.198	<0.0001	7.92	1500	81	59	188	1	17.1	135	266	<1	<1	310	310	15.5	4.76	0.04	<0.01	4.05	4.05	950
		11-Jun-14	1315	10.79	11.66	8	1500	20.6																																				
		29-Sep-14	1330	11.45	12.32	7.8	1522	21.9	0.05	<0.001	0.059	<0.001	<0.0001	<0.001	<0.001	0.014	0.1	0.001	0.017	0.01	<0.01	0.043	<0.0001	7.86	1480	81	61	145	2	15.4	143	295	<1	<1	335	335	16.9	4.5	0.02	<0.01	3.64	3.64	818
		04-Dec-14	1020	11.95	12.82	7.7	1497	21.6																																				
		13-Mar-15	1200	12.40	13.27	7.9	1592	25.7	0.41	0.001	0.079	<0.001	<0.0001	0.016	<0.001	0.019	0.63	0.003	0.022	0.017	<0.01	0.097	<0.0001	7.89	1620	93	71	239	3	21	165	273	<1	<1	339	339	17.1	10.1	0.05	<0.01	3.6	3.6	846
		03-Jun-15	1330	12.36	13.23	7.9	1487	20.5																																				
		09-Sep-15	945	11.77	12.64	7.8	1464	20.2	0.06	<0.001	0.069	<0.001	<0.0001	<0.001	<0.001	0.013	0.3	<0.001	0.013	0.007	<0.01	0.048	<0.0001	7.7	1520	86	82	173	3	18.6	150	294	<1	<1	274	274	15.8	8.15	0.04	<0.01	3.43	3.43	927
		14-Dec-15	1000	11.19	12.06	7.7	1476	22.1																																				
		09-Mar-16	1300	11.88	12.75	7.8	1568	22.6	<0.01	<0.001	0.069	<0.001	<0.0001	<0.001	<0.001	0.017	<0.05	<0.001	0.004	0.008	<0.01	0.052	<0.0001	7.84	1610	88	76	189	3	18.9	174	321	<1	<1	287	287	17.3	4.45	0.06	<0.01	3.61	3.61	1000
		02-Jun-16	1045	12.62	13.49	7.8	1423	20.6																																				
		26-Sep-16	1030	11.48	12.35	7.5	1376	21.1	0.21	<0.001	0.076	<0.001	<0.0001	<0.001	<0.001	0.012	0.45	0.003	0.034	0.007	<0.01	0.069	<0.0001	7.73	1400	99	79	118	2	16.6	106	336	<1	<1	264	264	15.3	4.27	0.02	<0.01	1.71	1.71	914
		25-Oct-16	945	10.89	11.76	7.4	1337	21																																				
		24-Nov-16	1000	10.45	11.32	7.3	1373	21.1																																				
		20-Dec-16	930	10.43	11.3	7.4	1375	21.8																																				
							1859.25	26.75	0.3195	0.00393	0.12335	#NUM!	#NUM!	0.003	0.0049	0.01955	2.4905	0.0198	0.58293	0.0145	0.01	0.0621	#NUM!	7.811	1820	107.625	105.875	221.5	3	21.1625	354.375	232.5	#NUM!	#NUM!	550.125	550.125	21.425	4.33875	14.1615	0.02	2.7685	2.7685	1100.1
							1813	25.7	0.52	0.002	0.079	0	0.0001	0.016	0	0.06	1.35	0.02	0.066	0.017	0	0.198	0	8.02	1620	106	82	239	3	21	174	336	0	0	339	339	17.3	10.1	0.06	0	4.05	4.05	1000

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals																Mercury (Hg) - mg/L	pH Lab	EC - Lab - µS/cm	Major Cations					Total Cations - meq/L	Major Anions							Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
						pH - Field	EC - Field - µS/cm	Temp - Field - °C	Aluminium (Al) mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L				Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L							
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*										*1500*	*400*		*4000*
P14	NC-100D	3-Mar-08																																									
		2-Apr-08																																									
Depth	78	9-May-08																																									
Format.	Napperby	2-Jun-08																																									
		1-Jul-08																																									
		11-Aug-08																																									
		12-Sep-08																																									
		14-Nov-08																																									
		3-Dec-08																																									
		12-Jan-09	0945	58.41	58.77																																							
		24-Aug-09	1240	57.32	57.68	12.6	9300	23.3		0.002	2.04	<0.001	<0.0001	0.04	0.003	0.06	2.04	0.018	0.051	0.027	<0.01	0.158	<0.0001		5430	656	<1	205	112	44.5	5.71	2.58	<1	<1	<1	<1	0.21	99	3.03				2480
		18-Nov-09	1200	59.48	59.84	12.35	9320	28.5	0.02	0.002				0.018		0.016	<0.5	<0.001	<0.001	0.011		<0.005	<0.0001	9.98	2520	574	<1	202	118	40.5	7.84	31.8	2140	50	<1	2190	44.6	4.88		0.06	0.06	0.13	
		24-Feb-10	0955	60.31	60.67																																						
		22-Jun-10	1325	60.18	60.54	11.95	8980	21	0.01	0.002				0.018		0.027	<0.05	<0.001	<0.001	0.018		<0.005	<0.0001	12.5	9070	562	<1	341	126	46.1	129	12.7	1960	78	<1	2040	44.6	1.64		0.06	0.06	0.12	
		2-Sep-10	1210	60.73	61.09	Insufficient to sample																																					
		7-Feb-11	1300	60.37	60.73	Insufficient to sample																																					
		08-Jun-11	1330	60.9	61.26	10.50	7480	21.1																																			
		11-Oct-11	1430	61.06	61.42	Insufficient to sample																																					
		8-Dec-11	1130	60.86	61.22	Insufficient to sample																																					
		4-Apr-12	1115	59.8	60.16	Insufficient to sample																																					
		31-May-12	1120			Insufficient to sample																																					
		29-Aug-12	1230			Insufficient to sample																																					
		10-Dec-12	1410			Insufficient to sample																																					
		3-Apr-13	1020			Dry																																					
		3-Jul-13	1120			Dry																																					
		3-Sep-13	1130			Dry																																					
		27-Nov-13	1210			Dry																																					
		5-Mar-14	1150			Dry																																					
		11-Jun-14	1200			Dry																																					
		29-Sep-14	1245			Dry																																					
		4-Dec-14	1155			Dry																																					
		12-Mar-15	1415			Dry																																					
		3-Jun-15	1155	60.13	60.49	12.7	9230	21.3																																			
		8-Sep-15	1250	60.96	61.32	Insufficient to sample																																					
		14-Dec-15	1110		19.84																																						
		10-Mar-16	1330			Dry																																					
		2-Jun-16				Dry																																					
		26-Sep-16				Dry																																					
		25-Oct-16				Dry																																					
		24-Nov-16				Dry																																					
		20-Dec-16				Dry																																					
P15	NC-100S	3-Mar-08																																									
		2-Apr-08																																									
Depth	30	9-May-08																																									
Format.	Garrawilla	2-Jun-08																																									
		1-Jul-08																																									
		11-Aug-08																																									
		12-Sep-08																																									
		14-Nov-08																																									
		3-Dec-08																																									
		12-Jan-09	0950	16.21	16.56																																							
		24-Aug-09	1215	16.16	16.47	6.8	16000	26.8		0.004	0.522	<0.001	0.0005	0.036	0.024	0.091	12.9	0.011	3.54	0.058	0.04	0.108	<0.0001		15300	193	286	2830	60	158	4340	928	<1	<1	1220	1220	166	2.56	3.34				**10400**
		18-Nov-09	1230	16.18	16.49	6.68	16320	29.3	<0.01	<0.001				<0.005		0.008	<0.05	<0.001	3.12	0.019		0.02	<0.0001	7.25	15200	87	284	3090	70	164	4490	971	<1	<1	788	788	162	0.39		<0.01	<0.01	<0.01	
		24-Feb-10	0955	16.23	16.54																																						
		22-Jun-10	1250	16.18	16.49	6.73	13990	22	<0.01	<0.001				<0.005		0.005	<0.05	<0.001	1.9	0.016		0.02	<0.0001	7.36	11500	182	234	2690	47	146	4110	**1020**	<1	<1	1080	1080	159	3.99		<0.01	0.04	0.04	
		2-Sep-10	1215	16.16	16.47	6.98	13550	23.8																																			
		7-Feb-11	1350	16.13	16.44	6.47	12520	27.1	0.01	0.002				<0.001		0.006	<0.05	<0.001	3.3	0.013		0.019	<0.0001	6.69	15800	214	300	2900	59	163	4860	910	<1	<1	1050	1050	177	4.13		<0.01	0.02	0.02	
		08-Jun-11	1310	16.13	16.44	6.65	10860	20.5																																			
		11-Oct-11	1440	16.00	16.31	6.70	9850	23.1	0.55	0.006	0.127	<0.001	<0.0001	0.003	0.007	0.009	0.8	0.006	1.93	0.015	<0.01	0.052	<0.0001	7.43	12400	185	220	2510	46	138	3840	874	<1	<1	950	950	146	2.78	3.62	<0.01	0.03	0.03	**8440**
		8-Dec-11	1140	16.10	16.41	6.90	9380	23.5																																			
		04-Apr-12	1130	15.95	16.26	7.2	1701	25.5	0.43	0.001	0.151	<0.001	<0.0001	0.002	0.002	0.03	1.04	0.094	0.007	0.019	<0.01	0.123	<0.0001	7.58	1730	36	28	331	11	18.8	240	28	<1	<1	541	541	18.2	1.64	0.74	<0.01	0.48	0.48	1040
		31-May-12	1110	16.00	16.31	7.08	1986	21.9																																			
		29-Aug-12	1220	15.89	16.2	7.26	1781	22.4	0.24	<0.001	0.127	<0.001	<0.0001	0.002	<0.001	0.109	0.44	0.015	0.024	0.005	<0.01	0.342	<0.0001	7.74	1780	38	28	342	13	19.4	258	36	<1	<1	600	600	20	1.57	0.06	<0.01	0.79	0.79	1010
		10-Dec-12	1420	15.99	16.3	7.32	1775	22.5																																			
		03-Apr-13	1040	15.99	16.3	7.92	1760	21	0.51	0.001	0.148	<0.001	0.0004	0.003	0.001	0.133	1.1	0.04	0.104	0.007	<0.01	0.381	<0.0001	7.85	1870	41	30	384	16	21.6	257	41	<1	<1	576	576	19.6	4.85	0.68	<0.01	0.79	0.79	1050
		03-Jul-13	1140	15.96	16.27	8.11	1947	20.6																																			
		03-Sep-13	1040	16.09	16.4	7.59	2780	22.4	0.44	<0.001	0.135	<0.001	<0.0001	0.002	<0.001	0.11	0.8	0.03	0.177	0.008	<0.01	0.193	<0.0001	8.05	2950	45	40	592	19	31.8	500	145	<1	<1	607	607	29.2	4.1	0.1	<0.01	1.72	1.72	1730
		27-Nov-13	1155	16.12	16.43	7.2	5980	23.3																																			
		05-Mar-14	1200	16.38	16.69	7.4	4250	23.8	1.22	0.002	0.157	<0.001	<0.0001	0.024	0.008	0.087	2.33	0.021	1.25	0.028	<0.01	0.171	<0.0001	7.74	4700	51	54	911	24	47.2	840	336	<1	<1	766	766	46	1.29	0.21	<0.01	0.87	0.87	2600
		11-Jun-14	1215	18.17	18.48	7.4	5110	21.1																																			
		29-Sep-14	1300	19.93	20.24	6.8	10310	22.7	0.26	0.004	0.204	<0.001	0.0002	0.001	0.011	0.008	1.09	<0.001	2.7	0.018	<0.01	0.096	<0.0001	7.4	14300	156	217	2260	56	125	3940	918	<1	<1	1030	1030	151	9.24	2.61	<0.01	0.11	0.11	**8020**
		04-Dec-14	1145	20.33	20.64	6.8	9720	21.9																																			
		12-Mar-15	1400	26.54	26.85	Insufficient to sample																																					
		03-Jun-15	1140	18.45	18.76	6.1	1215	21.1																																			
		08-Sep-15	1230	17.12	17.43	6.1	1063	21.9	**30.6**	0.074	0.54	0.006	0.0007	0.087	0.048	0.105	587	0.078	1.55	0.229	0.34	0.358	0.0016	6.34	1070	7	6	230	6	11	259	29	<1	<1	104	104	9.99	4.8	0.44	<0.01	0.17	0.17	992
		14-Dec-15	1120	28.29	28.6	Insufficient to sample																																					
		10-Mar-16	1335			Dry																																					
		02-Jun-16				Dry																																					
		26-Sep-16				Dry																																					
		25-Oct-16				Dry																																					
		24-Nov-16				Dry																																					
		20-Dec-16				Dry																																					
							16248	28.805	0.544	0.00585	0.50345	#NUM!	0.0005	0.03435	0.0232	0.08338	12.307	0.08985	3.51	0.05313	0.04	0.12113	#NUM!	7.565	15737.5	211.375	298.25	3066.25	68.75	163.875	4813.75	1013.875	#NUM!	#NUM!	1202.5	1202.5	175.625	4.1125	3.606	#NUM!	0.447	0.447	10302
							10310	23.8	30.6	0.074	0.54	0.006	0.0007	0.087	0.048	0.105	587	0.078	2.7	0.229	0.34	0.381	0.0016	6.05	14300	156	217	2260	56	125	3940	918	0	0	1030	1030	151	9.24	2.61	0	1.72	1.72	8020

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals																Major Cations				Total Cations - meq/L	Major Anions						Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
						pH - Field	EC - Field - µS/cm	Temp - Field - °C	Aluminium (Al) mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µS/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L							
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*									*1500*	*400*		*4000*
P16	NC-119D	3-Mar-08	1410	51.25	52.03																																				
		2-Apr-08	1345	51.24	52.02																																				
Depth	146	9-May-08	1152	51.21	51.99																																				
Format.	Garrawilla	2-Jun-08	1542	51.20	51.98																																				
		1-Jul-08	1525	51.12	51.90																																				
		12-Aug-08	1145	51.08	51.86																																				
		12-Sep-08	0930	50.52	51.30	7.45	1085	20.5		0.001	0.029	<0.001	<0.0001	0.002	<0.001	0.002	4.43	**0.394**	0.070	0.036	<0.01	0.204	<0.0001		132	5	1	14	3	1.05	22	<1	<1	<1	25	25	1.12		2.00				109
		14-Nov-08	1227	56.22	57.00																																				
		3-Dec-08	1400	55.22	56.00																																				
		12-Jan-09	1055	48.67	49.45																																				
		23-Feb-09	1250	48.45	49.24																																				
		9-Jun-09	1330	48.45	49.30	Bore pumped dry																																				
		24-Aug-09	1445	47.53	48.37	SWL only																																				
		17-Nov-09	1300	48.16	49.00	6.84	1605	24.1		<0.001	0.135	<0.001	<0.0001	0.001	<0.001	0.023	4.79	0.119	0.299	0.043	<0.01	1.21	<0.0001		1530	23	13	208	14	13.3	324	1.36	<1	<1	235	235	13.9	2.11	23.4				682
		24-Feb-10	1045	47.00	47.84																																				
		24-Jun-10	1015	47.46	48.30	7.53	1947	18	<0.01	<0.001				<0.005		0.003	0.33	0.002	0.389	0.016		0.085	<0.0001	7.01	1740	32	16	265	23	15	371	2.78	<1	<1	298	298	16.5	4.61		0.02	0.33	0.35	
		2-Sep-10	1345	46.77	47.61	6.78	2370	24.5																																		
		9-Feb-11	1040	47.50	48.34	6.73	2169	24	0.16	0.002				<0.005		0.01	0.5	0.031	0.515	0.006		0.063	<0.0001	6.67	2460	38	14	297	32	16.8	478	6	<1	<1	497	497	23.5	16.6		0.23	0.38	0.61	
		08-Jun-11	1030	46.96	47.80	6.85	2480	20.4																																		
		26-Sep-11	1100	47.03	47.87	6.85	2950	21.8	**6.22**	0.011	0.461	<0.001	0.0006	0.013	0.006	0.237	16	**2.11**	0.831	0.096	0.03	7.37	0.0004	7	3150	28	15	424	43	33.3	587	3	<1	<1	752	752	31.6	2.63	156	<0.01	0.46	0.46	1280
		4-Jan-12	1040	46.33	47.17	6.81	2825	24.1																																		
		28-Mar-12	1050	46.26	47.1				2.02	0.002	0.39	<0.001	0.0002	0.001	0.003	0.065	3.6	**0.407**	0.009	0.238	<0.01	1.34	<0.0001	7.33	4230	9	15	632	45	39.8	825	2	<1	<1	841	841	40.1	0.38	133	<0.01	0.06	0.06	1830
		25-Jun-12	1120	46.26	47.1	7.15	2500	20.3																																		
		11-Sep-12	1140	46.16	47	6.87	3620	23.7	1.8	0.002	0.417	<0.001	0.0002	0.005	<0.001	0.188	4.25	**0.382**	0.297	0.017	<0.01	3.03	0.0001	7.58	3790	27	14	609	37	38.4	719	13	<1	<1	769	769	35.9	3.36	119	<0.01	0.1	0.1	1480
		06-Dec-12	1125	46.25	47.09	7.2	2950	24.3																																		
		03-Apr-13	1150	46.06	46.9	7.1	3740	21.4	0.29	<0.001	0.346	<0.001	0.0001	0.002	0.001	0.078	2.42	0.072	0.269	0.009	<0.01	3.13	<0.0001	7.11	4010	27	13	688	46	33.5	761	4	<1	<1	772	772	37	4.93	125	<0.01	0.05	0.05	1650
		04-Jul-13	1300	46.17	47.01	6.97	3820	21.3																																		
		03-Sep-13	1240	46.26	47.1	7.02	3790	22.6	1.24	<0.001	0.328	<0.001	<0.0001	0.002	<0.001	0.091	3.07	**0.101**	0.315	0.006	<0.01	0.816	<0.0001	7.7	4110	22	12	660	45	31.9	735	<1	<1	<1	728	728	35.3	4.99	94.2	<0.01	0.03	0.03	1690
		02-Dec-13	1130	46.18	47.02	7.2	3780	21.9																																		
		06-Mar-14	1100	46.12	46.96	7.1	3870	22	0.94	0.002	0.331	<0.001	0.0002	0.037	0.002	**1.04**	3.28	**0.14**	0.32	0.027	<0.01	2.19	<0.0001	7.28	4120	28	14	687	45	33.6	775	9	<1	<1	731	731	36.6	4.4	123	<0.01	0.28	0.28	1780
		10-Jun-14	1100	46.18	47.02	7.1	3920	20.3																																		
		29-Sep-14	1045	46.12	46.96	7	3950	21.6	0.37	<0.001	0.362	<0.001	0.0002	0.003	0.002	0.045	2.77	0.023	0.344	0.013	<0.01	0.327	<0.0001	7.48	4130	20	11	480	37	23.7	768	<10	<1	<1	706	706	35.8	20.3	93.5	<0.01	0.04	0.04	1650
		03-Dec-14	950	46.60	47.44	7	3920	21.7																																		
		12-Mar-15	1150	47.37	48.21	7.1	3980	23.1	0.12	<0.001	0.275	<0.001	<0.0001	0.002	<0.001	0.01	2.13	0.006	0.253	0.005	<0.01	0.132	<0.0001	7.51	4080	32	17	693	40	34.2	782	2	<1	<1	825	825	38.6	6.11	126	0.01	0.06	0.07	1590
		04-Jun-15	1200	47.41	48.25	7.2	3940	22.6																																		
		09-Sep-15	1200	46.62	47.46	6.1	274	21.9	**16.9**	0.003	0.071	<0.001	<0.0001	0.016	0.004	0.094	19.8	**0.151**	0.186	0.026	0.03	1.35	<0.0001	6.13	244	4	2	37	6	2.13	46	6	<1	<1	37	37	2.16	----	3.33	0.01	0.81	0.82	184
		09-Dec-15	1020	47.76	48.6	6.1	421	20.8																																		
		08-Mar-16	1020	47.04	47.88	6.9	501	22.2	2.55	0.001	0.064	<0.001	0.0001	0.004	0.002	0.144	6.32	0.089	0.298	0.019	<0.01	4.35	<0.0001	6.97	501	6	3	67	7	3.64	74	1	<1	<1	93	93	3.97	4.32	14.7	0.1	0.87	0.97	290
		01-Jun-16	1110	47.19	48.03	6.9	582	20.7																																		
		28-Sep-16	1045	47.50	48.34	6.7	951	21	0.68	<0.001	0.066	<0.001	<0.0001	0.002	0.001	0.03	6.34	0.036	0.206	0.013	<0.01	0.863	<0.0001	6.91	1010	7	4	154	10	9.42	191	1	<1	<1	194	194	9.28	0.73	25	0.04	0.13	0.17	448
		26-Oct-16	1220	47.69	48.53	6.7	972	21.3																																		
		23-Nov-16	1210	47.91	48.75	6.7	980	21.5																																		
		19-Dec-16	1210	48.10	48.94	6.7	899	21.6																																		
							2928.125	24.43	6.01	0.01055	0.45745	#NUM!	0.00059	0.0124	0.0059	0.2198	14.879	1.9397	0.7994	0.2238	0.03	6.767	0.0004	7.306	4122	37.4	15.9	611.2	44.8	39.15	801.2	5.7	#NUM!	#NUM!	832.1	832.1	39.25	15.401	154.85	0.22475	0.454	0.59875	1802.5
							3980	24.3	16.9	0.003	0.417	0	0.0002	0.037	0.004	1.04	19.8	0.382	0.344	0.027	0.03	4.35	0.0001	7.7	4130	32	17	693	46	38.4	782	13	0	0	825	825	38.6	20.3	126	0.1	0.87	0.97	1780

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals																Major Cations					Total Cations - meq/L	Major Anions								Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
						pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L							
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*									*1500*	*400*		*4000*
P17	**NC-119S**	**3-Mar-08**	1405	55.98	56.56																																					
		2-Apr-08	1350	59.42	60.00																																					
Depth	**56**	**9-May-08**	1157	59.07	59.65																																					
Format.	**Purlawaugh**	**2-Jun-08**	1539	59.42	60.00																																					
		1-Jul-08	1527	43.42	44.00																																					
		12-Aug-08	1150	58.42	59.00																																					
		12-Sep-08		57.32	57.90																																					
		14-Nov-08	1233	57.42	58.00																																					
		3-Dec-08	1404	57.42	58.00																																					
		12-Jan-09	1100	58.42	59.00																																					
		23-Feb-09	1258	48.92	49.50																																					
		09-Jun-09	1345			Dry																																					
		24-Aug-09	1450			Dry																																					
		17-Nov-09	1320			Dry																																					
		24-Feb-10	1115			Dry																																					
		24-Jun-10	1025			Dry																																					
		2-Sep-10	1325			Dry																																					
		9-Feb-11	1050			Dry																																					
		08-Jun-11	1050			Dry																																					
		26-Sep-11	1120			Dry																																					
		4-Jan-12	1100			Dry																																					
		28-Mar-12	1100			7.2	2440	22.8																																				
		25-Jun-12	1140			Dry																																					
		11-Sep-12	1200			Dry																																					
		6-Dec-12	1140			Dry																																					
		3-Apr-13	1200			Dry																																					
		4-Jul-13	1245			Dry																																					
		3-Sep-13	1230			Dry																																					
		2-Dec-13	1145			Dry																																					
		6-Mar-14	1040			Dry																																					
		10-Jun-14	1115			Dry																																					
		29-Sep-14	1100			Dry																																					
		3-Dec-14	1000			Dry																																					
		12-Mar-15	1200			Dry																																					
		4-Jun-15	1210			Dry																																					
		9-Sep-15	1215			Dry																																					
		9-Dec-15	1035			Dry																																					
		8-Mar-16	1035			Dry																																					
		1-Jun-16	1125			Dry																																					
		28-Sep-16	1050			Dry																																					
		26-Oct-16	1230			Dry																																					
		23-Nov-16	1220			Dry																																					
		19-Dec-16	1220			Dry																																					
P18	**NC-122**	**3-Mar-08**	1530	13.40	14.24																																					
		2-Apr-08	1225	13.40	14.24																																					
Depth	**146**	**9-May-08**	1027	13.45	14.29																																					
Format.	**Hoskissons**	**2-Jun-08**	1425	13.53	14.37																																					
		1-Jul-08	1414	13.56	14.40																																					
		11-Aug-08	1650	13.66	14.50																																					
		11-Sep-08	1030	13.16	14.00	6.75	1410	22.9		0.003	0.817	<0.001	<0.0001	0.008	0.032	0.007	3.75	0.046	0.137	0.059	0.03	0.022	<0.0001		3650	30	27	824	38	40.6	80	38	<1	<1	1870	1870	40.5	0.04	2.61				2370
		14-Nov-08	1123	12.70	13.49																																					
		01-Dec-08	1251	12.79	13.58																																					
		12-Jan-09	1015	12.88	13.67																																					
		23-Feb-09	1003	13.00	13.80																																					
		09-Jun-09	0900	13.60	14.35	6.1	8750	20.7		0.002	1.98	<0.001	<0.0001	0.009	0.019	0.007	4.6	0.04	0.14	0.038	0.03	0.03	<0.0001		8250	66	70	1960	79	96.4	134	<1	<1	<1	5100	5100	106	4.62	4.74				**6720**
		24-Aug-09	1320	17.87	18.68	SWL only																																				
		18-Nov-09	1400	23.90	24.71	6.66	6180	27.5	0.2	0.009				0.009		0.03	3.44	0.042	0.306	0.091		0.694	<0.0001	7.03	6100	58	48	1450	63	71.7	110	18	<1	<1	3710	3710	77.6	3.99		0.02	0.06	0.08	
		17-Feb-10	1200	31.91	32.72																																					
		16-Mar-10	1610	33.34	34.15	SWL only																																					
		7-May-10	1500	33.89	34.70																																					
		23-Jun-10	0950	40.03	40.84	6.54	7490	18	0.04	0.003				0.004		0.002	0.08	0.002	0.784	0.06		0.13	<0.0001	6.75	6210	80	137	1370	37	75.8	861	91.2	<1	<1	2880	2880	83.7	4.99		<0.01	0.1	0.1	
		2-Sep-10	1130	41.38	42.19	6.65	4070	23.2																																		
		10-Feb-11	1200			Dry																																					
		08-Jun-11	1200			Dry																																					
		11-Oct-11	1240			Dry																																					
		8-Dec-11	1200			Dry																																					
		4-Apr-12	1150			Dry																																					
		31-May-12	1210			Dry																																					
		29-Aug-12	1300			Dry																																					
		10-Dec-12	1345			Dry																																					
		3-Apr-13	940			Dry																																					
		3-Jul-13	1050			Dry																																					
		4-Sep-13	1240			Dry																																					
		27-Nov-13	1110			Dry																																					
		5-Mar-14	1110			Dry																																					
		11-Jun-14	1100			Dry																																					
		29-Sep-14	1150			Dry																																					
		5-Dec-14	1130			Dry																																					
		11-Mar-15	1210			Dry																																					
		3-Jun-15	1050			Dry																																					
		8-Sep-15	1140			Dry																																					
		14-Dec-15	1200			Dry																																					
		10-Mar-16	1235			Dry																																					
		2-Jun-16	1200			Dry																																					
		26-Sep-16	1200			Dry																																					
		25-Oct-16	1125			Dry																																					
		24-Nov-16	1135			Dry																																					
		20-Dec-16	1125			Dry																																					

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals																Major Cations					Total Cations - meq/L	Major Anions							Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
						pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L							
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*									*1500*	*400*		*4000*
P19	**NC-123R**	**3-Mar-08**	1535	16.11	17.05																																					
		2-Apr-08	1230	16.10	17.05																																					
Depth	**187**	**9-May-08**	1033	16.11	17.05																																					
Format.	**Pamboola**	**2-Jun-08**	1432	16.30	17.24																																					
		1-Jul-08	1421	16.38	17.32																																					
		14-Aug-08	1335	16.34	17.29																																					
		17-Sep-08	1445	16.16	17.10	6.7	1340	23.2		0.001	1.26	<0.001	0.0001	0.018	0.043	0.005	3.19	0.015	0.728	0.320	<0.01	0.066	<0.0001		11000	99	141	1040	1400	97.6	1880	28	<1	<1	1880	1880	91.2	3.40	6.15				**6220**
		14-Nov-08	1130	19.19	20.18																																					
		01-Dec-08	1244	17.26	18.21																																					
		12-Jan-09	1025	16.87	17.82																																					
		23-Feb-09	1008	24.20	24.60																																					
		09-Jun-09	0930	23.50	23.90	7	5600	21.2		<0.001	0.275	<0.001	<0.0001	0.029	0.003	0.002	3.14	0.003	1.24	0.014	<0.01	0.039	<0.0001		5230	40	82	1030	18	54	1170	<20	<1	<1	1060	1060	54.2	0.16	3.83				2910
		24-Aug-09	1322	24.82	25.30	SWL only																																				
		18-Nov-09	1410	24.11	24.59	7.34	3690	23.8	<0.01	0.003				<0.005		0.002	0.12	<0.001	0.93	0.005		0.011	<0.0001	7.71	3050	28	45	551	19	29.6	624	22.1	<1	<1	663	663	31.3	2.9		<0.01	0.04	0.04	
		17-Feb-10	1210	23.75	24.23																																					
		23-Jun-10	1100	22.95	23.43	7.3	3970	20	0.01	0.003				0.002		<0.001	0.13	<0.001	1.09	0.007		0.008	<0.0001	7.28	3330	32	57	672	24	36.1	708	29.4	<1	<1	838	838	37.3	1.67		<0.01	<0.01	<0.01	
		2-Sep-10	1140	22.86	23.34	7.24	3120	22.9																																			
		10-Feb-11	1230	21.88	22.36	7.1	1714	26.4	0.01	0.003				0.006		0.003	0.09	<0.001	0.701	0.005		0.018	<0.0001	7.45	2900	25	39	501	22	26.9	581	26	<1	<1	587	587	28.6	3.23		0.06	9.43	<0.01	
		08-Jun-11	1210	21.47	21.95	7.30	2720	19.9																																			
		11-Oct-11	1300	21.20	21.68	7.30	3170	23.7	0.13	0.004	0.138	<0.001	<0.0001	0.002	0.002	0.012	0.62	0.003	1.06	0.007	<0.01	0.031	<0.0001	7.64	4060	29	55	709	23	37.4	819	22	<1	<1	706	706	37.7	0.38	41.2	2.75	7.22	9.97	2000
		8-Dec-11	1215	21.36	21.84	7.80	2490	23.3																																			
		04-Apr-12	1200	20.64	21.12	7.7	2150	25.8	0.29	0.002	0.084	<0.001	<0.0001	0.003	0.001	0.021	0.69	**0.515**	0.006	0.006	<0.01	0.175	<0.0001	7.87	2680	20	33	408	29	30.7	476	45	<1	<1	660	660	28.5	3.7	119	6.49	6.31	12.8	1150
		31-May-12	1200	20.71	21.19	7.31	2760	22.3																																			
		29-Aug-12	1250	20.63	21.11	7.45	2890	23.4	0.13	0.002	0.072	<0.001	<0.0001	0.003	0.002	0.066	0.38	0.008	0.601	0.005	<0.01	0.254	<0.0001	7.82	3120	21	34	411	31	32.6	512	53	<1	<1	764	764	30.8	2.84	110	11.1	6.4	17.5	1200
		10-Dec-12	1350	20.78	21.26	7.49	3500	23																																			
		03-Apr-13	1000	20.62	21.1	7.11	4920	21.8	0.73	0.002	0.212	<0.001	0.0002	0.003	0.003	0.147	1.73	0.011	1.06	0.008	<0.01	0.468	<0.0001	7.11	5150	42	74	835	40	45.5	846	<1	<1	<1	1310	1310	50	4.75	166	<0.01	0.03	0.03	2190
		03-Jul-13	1100	20.75	21.23	7.04	4660	21.8																																			
		04-Sep-13	1300	20.83	21.31	7.11	4760	23.5	0.09	0.002	0.243	<0.001	<0.0001	0.002	0.001	0.007	0.39	0.002	0.964	0.004	<0.01	0.038	<0.0001	7.58	5110	40	75	798	38	52.4	873	<1	<1	<1	1260	1260	49.8	2.54	121	<0.10	<0.10	<0.10	2240
		27-Nov-13	1120	21.01	21.49	7.1	4740	21.4																																			
		05-Mar-14	1120	20.94	21.42	7.4	4400	23.9	0.12	0.002	0.148	<0.001	<0.0001	0.007	0.002	0.059	0.38	0.006	0.829	0.005	<0.01	0.063	<0.0001	7.62	4890	37	60	909	33	47.2	797	47	<1	<1	1160	1160	46.6	0.53	149	0.46	0.4	0.86	2140
		11-Jun-14	1115	20.79	21.27	7.4	4190	21.3																																			
		29-Sep-14	1210	20.84	21.32	7.2	3960	22.6	0.16	0.003	0.136	<0.001	0.0002	0.002	0.003	0.023	0.52	0.004	0.817	0.005	<0.01	0.068	<0.0001	7.63	4570	36	68	758	41	41.4	769	45	<1	<1	968	968	42	0.7	94.6	2.24	9.56	11.8	1920
		05-Dec-14	1145	20.84	21.32	7	5070	22.3																																			
		11-Mar-15	1230	20.80	21.28	7.4	3760	23.6	0.66	0.003	0.116	<0.001	0.0001	0.002	0.003	0.014	0.82	0.004	0.767	0.005	<0.01	0.062	<0.0001	7.64	4530	30	65	643	33	35.7	825	38	<1	<1	1170	1170	47.4	14.2	116	0.51	2.81	3.32	2000
		03-Jun-15	1100	20.68	21.16	7.4	3940	20.8																																			
		08-Sep-15	1150	20.96	21.44	7.4	3930	22.9	0.05	0.001	0.114	<0.001	<0.0001	<0.001	0.001	0.005	0.21	0.001	0.654	0.002	<0.01	0.022	<0.0001	7.7	4070	44	69	646	29	36.7	577	33	<1	<1	887	887	34.7	2.81	110	2.45	0.93	3.38	1910
		14-Dec-15	1215	20.65	21.13	7.5	3530	22.3																																			
		10-Mar-16	1250	20.72	21.2	7.6	3460	23.5	0.16	0.002	0.093	<0.001	<0.0001	0.001	0.002	0.012	0.54	0.002	0.65	0.002	<0.01	0.05	<0.0001	7.66	3360	29	47	509	30	28.2	587	45	<1	<1	749	749	32.5	7.02	0.1	1.24	<0.01	0.9	1690
		02-Jun-16	1215	20.76	21.24	7.6	3490	21.8																																			
		26-Sep-16	1220	20.43	20.91	7.5	2690	22.5	0.36	0.002	0.059	<0.001	<0.0001	0.001	0.002	0.008	0.54	0.002	0.502	0.003	<0.01	0.051	<0.0001	7.72	2650	31	49	516	28	28.7	470	45	<1	<1	547	547	25.1	6.68	62.6	2.16	7.09	9.25	1340
		25-Oct-16	1140	20.58	21.06	7.4	3710	22.4																																			
		24-Nov-16	1145	20.80	21.28	7.5	2680	22.6																																			
		20-Dec-16	1135	20.79	21.27	7.6	2500	22.8																																			
							5192.5	26.25	0.278	0.0039	0.26815	#NUM!	#NUM!	0.0267	0.003	0.0201	2.8338	0.4894	1.22125	0.01313	#NUM!	0.158	#NUM!	7.854	5083.75	39	78.875	989.875	28.375	51.925	1126.125	43.44	#NUM!	#NUM!	1032.25	1032.25	52.1375	3.64125	115.11	6.303	9.26425	12.6585	2864.5
							5070	23.9	0.73	0.003	0.243	0	0.0002	0.007	0.003	0.147	1.73	0.011	1.06	0.008	0	0.468	0	7.82	5150	44	75	909	41	52.4	873	53	0	0	1310	1310	50	14.2	166	11.1	9.56	17.5	2240
P20	**NC-127**	**3-Mar-08**	1610	13.52	14.39																																					
		2-Apr-08	1235	13.52	14.39																																					
Depth	**162**	**9-May-08**	1039	13.62	14.49																																					
Format.	**Arkarula**	**2-Jun-08**	1420	13.68	14.55																																					
		1-Jul-08	1408	13.64	14.51																																					
		11-Aug-08	1640	13.70	14.57																																					
		9-Sep-08	1000	13.48	14.35	6.7	1140	19.6		<0.001	4.80	0.002	0.0003	0.003	0.001	0.005	1.57	0.004	0.035	0.014	<0.01	0.009	<0.0001		10500	62	68	2860	118	136	425	<1	<1	<1	5970	5970	131	1.83	10.3				**9630**
		14-Nov-08	1118	13.79	14.68																																					
		01-Dec-08	1257	13.88	14.77																																					
		12-Jan-09	1010	13.97	14.86																																					
		23-Feb-09	0920	14.06	14.95																																					
		09-Jun-09	1000	14.83	15.68	7.1	13600	21		<0.001	4.12	<0.001	0.0002	0.002	<0.001	0.004	0.4	0.001	0.014	0.003	<0.01	0.036	<0.0001		12500	74	80	3290	114	156	174	<10	<1	<1	8420	8420	173	5	9.14				**9910**
		24-Aug-09	1330	20.77	21.68	SWL only																																				
		18-Nov-09	1430	17.20	18.11	7.26	10210	26.1	<0.01	<0.001				<0.005		0.002	0.13	0.002	0.046	0.016		0.1	<0.0001	7.52	10300	8	120	2510	96	122	599	26.9	<1	<1	5960	5960	136	4.97		<0.01	0.01	0.01	
		17-Feb-10	1215	30.15	31.06																																					
		16-Mar-10	1555	37.69	38.60	SWL only																																					
		7-May-10	1515	41.79	42.70																																					
		23-Jun-10	1030	49.45	50.36	6.95	5830	20	<0.01	<0.001				0.003		0.001	<0.05	<0.001	0.185	0.043		0.226	<0.0001	6.73	4840	169	219	826	21	62.9	1400	107	<1	<1	799	799	57.7	4.29		<0.01	0.1	0.1	
		Cemented up - No longer monitored																																								
P28		**1-Jun-12**	1000		0.93	Dry																																					
		24-Jul-12	1130		0.93	Dry																																					
Depth	**25**	**2-Sep-12**	1240		0.93	Dry																																					
Format.	**Napperby**	**10-Dec-12**	1305		0.93	Dry																																					
		7-Mar-13	1035		0.93	Dry																																					
		3-Jul-13	945		0.93	Dry																																					
		4-Sep-13	1140		0.93	Dry																																					
		27-Nov-13	955		0.93	Dry																																					
		5-Mar-14	1020		0.93	Dry																																					
		11-Jun-14	945		0.93	Dry																																					
		30-Sep-14	1110		0.93	Dry																																					
		5-Dec-14	1020		0.93	Dry																																					
		11-Mar-15	1040		0.93	Dry																																					
		3-Jun-15	945		0.93	Dry																																					
		8-Sep-15	1025		0.93	Dry																																					
		14-Dec-15	1300		0.93	Dry																																					
		10-Mar-16	1010		0.93	Dry																																					
		31-May-16	1030		0.93	Dry																																					
		27-Sep-16	1240		0.93	Dry																																					
		25-Oct-16	1345		0.93	Dry																																					
		24-Nov-16	1330		0.93	Dry																																					
		20-Dec-16	1400		0.93	Dry																																					

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters: pH - Field	EC - Field - µs/cm	Temp - Field - °C	Total Metals: Aluminium (Al) - mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Major Cations: Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Total Cations - meq/L	Major Anions: Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L	Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*								*1500*	*400*		*4000*
P29		**1-Jun-12**	1010	8.10	9.03	8.02	11700	21.4																																			
		24-Jul-12	1150	8.05	8.98	7.53	9950	23.1	**15.6**	0.008	0.448	<0.001	0.0001	0.018	0.013	0.044	24.9	**0.775**	0.576	0.024	0.04	0.278	<0.0001	7.8	13100	67	196	2590	16	132	3780	717	1	<1	1090	1090	143	3.94	<0.10	<0.01	0.93	0.93	**8170**
Depth	**25**	**2-Sep-12**	1300	8.41	9.34	8.08	12440	22.7	2.34	0.002	0.259	<0.001	<0.0001	0.006	0.001	0.01	3.77	0.061	0.076	0.004	0.01	0.042	0.0002	7.83	14400	79	216	2690	16	139	4050	839	<1	<1	1100	1100	154	5	<0.01	<0.01	1.76	1.76	**8750**
Format.	**Napperby**	**10-Dec-12**	1315	8.04	8.97	7.69	10870	22.3																																			
		07-Mar-13	1050	8.05	8.98	7.7	11100	22.3	0.06	0.001	0.145	<0.001	<0.0001	0.002	<0.001	0.002	0.13	0.005	<0.001	<0.001	<0.01	0.012	<0.0001	7.73	14000	39	205	2720	16	138	3720	735	<1	<1	1130	1130	143	1.91	0.04	<0.01	0.44	0.44	**7800**
		3-Jul-13	1015	8.00	8.93	7.69	11530	20.8																																			
		04-Sep-13	1150	7.98	8.91	7.92	10800	22.4	0.71	0.002	0.188	<0.001	<0.0001	0.001	<0.001	0.054	1.76	0.031	0.032	0.002	<0.01	0.079	<0.0001	8.03	12400	60	178	2540	15	128	3370	632	<1	<1	1160	1160	131	1.14	0.05	0.24	0.28	0.52	**7470**
		27-Nov-13	920	7.83	8.76	8.5	16220	21.9																																			
		05-Mar-14	1040	7.78	8.71	7.9	9940	22.5	0.46	0.001	0.146	<0.001	<0.0001	0.004	<0.001	0.042	1.11	0.01	0.028	0.003	<0.01	0.069	<0.0001	7.97	10800	43	131	2410	12	118	2520	552	<1	<1	1240	1240	107	4.72	0.08	<0.01	0.42	0.42	**5920**
		11-Jun-14	1015	7.55	8.48	7.6	9200	20.3																																			
		30-Sep-14	1140	7.20	8.13	7.4	10710	22.7	0.42	0.002	0.136	<0.001	<0.0001	0.002	<0.001	0.014	1.1	0.011	0.037	0.007	<0.01	0.073	<0.0001	8.04	8690	31	95	1890	8	91.8	1590	428	<1	<1	1140	1140	76.5	9.02	0.04	<0.01	0.29	0.29	**4590**
		05-Dec-14	1040	6.85	7.78	8.1	5010	21.5																																			
		11-Mar-15	1110	6.54	7.47	8	3970	22.4	0.07	0.004	0.093	<0.001	<0.0001	<0.001	<0.001	0.006	0.3	0.008	0.005	0.002	<0.01	0.041	<0.0001	8.29	4120	14	29	1120	11	52.1	544	155	<1	<1	1460	1460	47.7	4.3	0.04	<0.01	0.6	0.6	2250
		03-Jun-15	1005	6.27	7.2	8	3830	20																																			
		08-Sep-15	1050	5.96	6.89	8.3	3650	20	0.06	0.002	0.074	<0.001	<0.0001	<0.001	<0.001	0.003	0.13	0.006	0.002	<0.001	<0.01	0.023	<0.0001	8.32	3780	10	23	948	5	43.8	405	125	<1	15	1220	1230	38.6	6.2	0.09	<0.01	0.59	0.59	2290
		14-Dec-15	1320	5.64	6.57	8.3	4150	22.9																																			
		10-Mar-16	1045	5.47	6.4	8.2	4460	21.6	0.05	0.002	0.085	<0.001	<0.0001	<0.001	<0.001	0.012	0.11	0.003	0.004	<0.001	<0.01	0.017	<0.0001	8.08	4710	13	30	959	4	44.9	851	136	<1	<1	1040	1040	47.6	2.94	5.7	<0.01	7.65	7.65	2800
		31-May-16	1030	5.45	6.38	7.9	4670	20.7																																			
		27-Sep-16	1255	5.08	6.01	8	4400	21.2	0.04	0.003	0.061	<0.001	<0.0001	<0.001	<0.001	0.002	0.07	0.007	0.002	<0.001	<0.01	0.02	<0.0001	8.54	4680	13	26	1010	4	46.8	758	126	<1	95	951	1040	44.8	2.18	<0.01	<0.01	8.35	8.35	2480
		25-Oct-16	1355	4.97	5.9	8.3	4430	21																																			
		24-Nov-16	1340	4.95	5.88	8.4	4530	21.1																																			
		20-Dec-16	1350	4.96	5.89	8.4	9690	21.3																																			
P30		**1-Jun-12**	1030		0.79	Dry																																					
		24-Jul-12	1200		0.79	Dry																																					
Depth	**15**	**2-Sep-12**	1315		0.79	Dry																																					
Format.	**Napperby**	**10-Dec-12**	1325		0.79	Dry																																					
		7-Mar-13	1100		0.79	Dry																																					
		3-Jul-13	1025		0.78	Dry																																					
		4-Sep-13	1200		0.78	Dry																																					
		27-Nov-13	900		0.78	Dry																																					
		5-Mar-14	1050		0.78	Dry																																					
		11-Jun-14	1030		0.78	Dry																																					
		30-Sep-14	1205		0.78	Dry																																					
		5-Dec-14	1050		0.78	Dry																																					
		11-Mar-15	1120		0.78	Dry																																					
		3-Jun-15	1015		0.78	Dry																																					
		8-Sep-15	1100		0.78	Dry																																					
		14-Dec-15	1330		0.78	Dry																																					
		10-Mar-16	1055		0.78	Dry																																					
		31-May-16	1055		0.78	Dry																																					
		27-Sep-16	1300		0.78	Dry																																					
		25-Oct-16	1405		0.78	Dry																																					
		24-Nov-16	1350		0.78	Dry																																					
		20-Dec-16	1335		0.78	Dry																																					
P31		**1-Jun-12**	950	15.59	16.52	7.06	7870	21.7																																			
		24-Jul-12	1110	15.57	16.50	7.38	6160	22.3	0.33	<0.001	0.232	<0.001	<0.0001	<0.001	<0.001	0.012	0.59	0.017	0.098	0.007	<0.01	0.07	<0.0001	7.61	8000	112	188	1380	16	81.5	1970	367	1	<1	854	854	80.3	0.73	0.08	<0.01	7.62	7.62	**4810**
Depth	**15**	**2-Sep-12**	1230	15.50	16.43	7.64	6670	21.6	0.78	<0.001	0.161	<0.001	<0.0001	0.001	<0.001	0.01	1.24	0.024	0.029	0.006	<0.01	0.052	<0.0001	7.76	7460	82	154	1320	14	74.5	1680	379	<1	<1	918	918	73.6	0.59	0.02	<0.01	10.2	10.2	**4250**
Format.	**Napperby**	**10-Dec-12**	1255	15.49	16.42	7.28	6960	22.9																																			
		07-Mar-13	1025	15.47	16.4	7.46	6980	22.7	0.11	<0.001	0.177	<0.001	0.0002	<0.001	<0.001	0.012	0.17	0.009	0.018	0.004	<0.01	0.052	<0.0001	7.5	7790	48	176	1420	16	79.1	1690	346	<1	<1	858	858	72	4.63	0.08	<0.01	11.1	11.1	**4430**
		3-Jul-13	935	15.52	16.43	7.38	7080	20.5																																			
		04-Sep-13	1130	15.58	16.49	7.45	7110	22.3	0.36	0.002	0.196	<0.001	0.0001	0.002	<0.001	0.153	0.77	0.009	0.037	0.003	<0.01	0.087	<0.0001	7.75	7730	100	183	1430	17	82.7	2000	331	<1	<1	862	862	80.5	1.3	0.05	<0.01	8.64	8.64	**4500**
		27-Nov-13	1005	15.43	16.34	7.2	7340	22																																			
		05-Mar-14	1010	15.49	16.4	7.4	6980	22.6	0.42	<0.001	0.15	<0.001	<0.0001	0.005	<0.001	0.032	0.72	0.005	0.022	0.004	<0.01	0.044	<0.0001	7.69	7570	98	178	1360	16	79.1	1780	329	<1	<1	851	851	74.1	3.27	<0.01	<0.01	9.41	9.41	**4020**
		11-Jun-14	930	15.55	16.46	7.2	7170	21.3																																			
		30-Sep-14	1045	15.57	16.48	7.2	6920	23.1	0.08	0.001	0.21	<0.001	<0.0001	<0.001	<0.001	0.005	0.13	0.002	0.016	0.003	<0.01	0.025	<0.0001	7.71	7430	92	176	1440	14	82.1	1470	340	<1	<1	770	770	63.9	12.4	0.03	<0.01	10	10	3620
		05-Dec-14	1005	15.42	16.33	7.2	7270	21.9																																			
		11-Mar-15	1020	15.54	16.45	7.3	7060	22.6	0.22	<0.001	0.222	<0.001	<0.0001	<0.001	<0.001	0.008	0.26	0.008	0.019	0.004	<0.01	0.143	<0.0001	7.76	7370	92	160	1220	12	71.1	1840	339	<1	<1	920	920	77.3	4.21	0.03	<0.01	9.71	9.71	3430
		03-Jun-15	935	15.76	16.67	7.2	7150	21.3																																			
		08-Sep-15	1010	15.68	16.59	7.2	7210	21.6	0.74	0.001	0.171	<0.001	<0.0001	<0.001	0.001	0.006	1.4	0.009	0.174	0.002	<0.01	0.07	<0.0001	7.78	7640	108	170	1260	13	74.5	1730	322	<1	<1	820	820	71.9	1.77	0.05	0.01	7.82	7.83	**4470**
		14-Dec-15	1255	15.50	16.41	7.3	7180	23.4																																			
		10-Mar-16	955	15.47	16.38	7.3	7060	22.5	0.57	<0.001	0.158	<0.001	<0.0001	<0.001	<0.001	0.04	0.98	0.018	0.037	0.002	<0.01	0.078	<0.0001	7.66	7540	90	155	1320	17	75.1	1730	343	<1	<1	867	867	73.3	1.21	1.7	<0.01	10	10	**4280**
		31-May-16	1020	15.58	16.49	7.3	7100	21.4																																			
		27-Sep-16	1235	15.39	16.3	7.3	6840	22.2	0.03	0.001	0.171	<0.001	<0.0001	<0.001	<0.001	0.003	0.06	<0.001	0.003	0.001	<0.01	0.024	<0.0001	7.7	7310	95	161	1280	12	74	1350	299	<1	<1	932	932	62.9	8.04	0.02	<0.01	9.78	9.78	3640
		25-Oct-16	1335	15.45	16.36	7.3	6776	22.1																																			
		24-Nov-16	1320	15.44	16.35	7.3	6840	21.3																																			
		20-Dec-16	1325	15.38	16.29	7.2	6750	22.5																																			

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters: pH - Field	EC - Field - µs/cm	Temp - Field - °C	Total Metals: Aluminium (Al) - mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Major Cations: Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Total Cations - meq/L	Major Anions: Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L	Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*								*1500*	*400*		*4000*
P32		**1-Jun-12**	1040	7.21	8.17	7.39	13050	21.2																																			
		24-Jul-12	1220	7.23	8.19	7.79	6710	22.9	4.71	0.003	0.064	<0.001	<0.0001	0.008	0.004	0.016	7.31	**0.207**	0.163	0.008	0.02	0.162	<0.0001	7.89	8480	10	67	1810	1	84.8	1560	**1020**	1	<1	981	981	84.8	0.08	0.1	<0.01	11.6	11.6	**5500**
Depth	**15**	**2-Sep-12**	1330	7.15	8.11	7.57	5590	24.2	0.09	<0.001	0.01	<0.001	<0.0001	<0.001	<0.001	0.006	0.19	0.003	0.003	<0.001	0.01	0.012	<0.0001	8.08	5940	4	32	1350	<1	61.6	927	828	<1	<1	1150	1150	66.4	3.81	<0.01	<0.01	7.22	7.22	3790
Format.	**Napperby**	**26-Nov-12**	1109	7.22	8.18	**Data Logger Installed**																																					
		10-Dec-12	1335	7.30	8.26	7.95	3620	23.4																																			
		07-Mar-13	1115	7.97	8.93	8.03	3620	22.9	0.09	<0.001	0.007	<0.001	<0.0001	0.002	<0.001	<0.001	0.12	0.002	0.001	<0.001	0.02	0.007	0.0002	8.08	3780	2	15	965	<1	43.3	376	411	<1	<1	1030	1030	39.7	4.24	<0.01	<0.01	2	2	2360
		13-May-13	1420	6.98	7.94																																						
		3-Jul-13	1030	6.98	7.94	8.27	2430	21.9																																			
		04-Sep-13	1210	7.02	7.98	8.26	2230	23.4	0.61	0.002	0.019	<0.001	<0.0001	0.003	<0.001	0.239	1.06	0.027	0.017	0.002	0.03	0.154	0.0001	8.38	2320	<1	4	632	<1	27.8	101	111	<1	19	972	991	25.1	5.07	0.01	<0.01	0.21	0.21	1460
		27-Nov-13	1025	7.99	8.95	8.6	2240	22.4																																			
		05-Mar-14	955	9.16	10.12	8.3	3190	22.4	3.62	0.002	0.057	<0.001	0.0012	0.018	0.006	0.226	6.18	0.028	0.247	0.015	0.03	0.876	0.0001	8.19	3280	1	10	737	1	33	251	330	<1	<1	1000	1000	33.9	1.51	0.16	0.07	0.85	0.92	1870
		11-Jun-14	1045	6.56	7.52	8.3	2490	21.2																																			
		30-Sep-14	1220	5.92	6.88	8.4	2560	23.4	0.23	0.003	0.011	<0.001	<0.0001	0.002	<0.001	0.011	0.29	0.009	0.008	0.003	0.02	0.026	<0.0001	8.49	2660	1	6	777	<1	34.3	189	221	<1	39	796	835	26.6	12.6	0.02	<0.01	1.68	1.68	1420
		05-Dec-14	1115	5.96	6.92	8.5	2540	22.3																																			
		11-Mar-15	1140	6.50	7.46	8.3	2030	23.8	0.16	0.003	0.013	<0.001	<0.0001	<0.001	<0.001	0.004	0.15	0.005	0.004	<0.001	0.04	0.023	<0.0001	8.48	2070	2	6	524	<1	23.4	123	114	<1	40	830	870	23.2	0.28	0.04	<0.01	0.41	0.41	1100
		03-Jun-15	1025	6.80	7.76	8.3	1807	21.3																																			
		08-Sep-15	1115	6.69	7.65	8.5	1658	22.2	0.13	0.004	0.009	<0.001	<0.0001	<0.001	<0.001	0.003	0.16	<0.001	0.003	<0.001	0.04	0.02	<0.0001	8.52	1720	1	4	470	<1	20.8	40	52	<1	42	763	805	18.3	6.4	0.04	<0.01	0.15	0.15	998
		14-Dec-15	1340	6.58	7.54	8.5	1672	23																																			
		10-Mar-16	1120	6.16	7.12	8.7	1688	23.2	0.09	0.004	0.008	<0.001	<0.0001	0.006	<0.001	0.008	0.16	<0.001	0.003	<0.001	0.04	0.015	<0.0001	8.49	1770	<1	4	466	<1	20.6	40	66	<1	36	803	839	19.3	3.28	5.2	<0.01	1.04	1.04	1030
		31-May-16	1105	8.15	9.11	8.9	1786	21.7																																			
		27-Sep-16	1330	6.07	7.03	8.7	1695	22.9	0.13	0.004	0.013	<0.001	<0.0001	<0.001	<0.001	0.019	0.17	0.002	0.005	0.003	0.04	0.026	0.0002	8.58	1770	<1	3	444	<1	19.6	47	72	<1	68	817	884	20.5	2.38	0.32	0.16	1.15	1.31	1000
		25-Oct-16	1255	5.71	6.67	8.7	1667	22.4																																			
		24-Nov-16	1250	5.57	6.53	8.7	1719	21.6																																			
		20-Dec-16	1250	5.71	6.67	8.7	1773	22.6																																			
P33		**1-Jun-12**	930		0.97	Dry																																					
		24-Jul-12	1045		0.97	Dry																																					
Depth	**15**	**2-Sep-12**	1340		0.97	Dry																																					
Format.	**Napperby**	**10-Dec-12**	1235		0.97	Dry																																					
		7-Mar-13	1000		0.97	Dry																																					
		3-Jul-13	910		0.97	Dry																																					
		4-Sep-13	1110		0.97	Dry																																					
		27-Nov-13	1045		0.97	Dry																																					
		5-Mar-14	930		0.97	Dry																																					
		11-Jun-14	900		0.97	Dry																																					
		30-Sep-14	1015		0.97	Dry																																					
		5-Dec-14	930		0.97	Dry																																					
		11-Mar-15	950		0.97	Dry																																					
		3-Jun-15	915		0.97	Dry																																					
		8-Sep-15	940		0.97	Dry																																					
		14-Dec-15	1235		0.97	Dry																																					
		10-Mar-16	925		0.97	Dry																																					
		31-May-16	1000		0.97	Dry																																					
		27-Sep-16	1205		0.97	Dry																																					
		25-Oct-16	1305		0.97	Dry																																					
		24-Nov-16	1300		0.97	Dry																																					
		20-Dec-16	1300		0.97	Dry																																					
P34		**1-Jun-12**	940		0.95	Dry																																					
		24-Jul-12	1050		0.95	Dry																																					
Depth	**15**	**2-Sep-12**	1350		0.95	Dry																																					
Format.	**Napperby**	**10-Dec-12**	1245		0.95	Dry																																					
		7-Mar-13	1010		0.95	Dry																																					
		3-Jul-13	920		0.95	Dry																																					
		4-Sep-13	1120		0.95	Dry																																					
		27-Nov-13	1055		0.95	Dry																																					
		5-Mar-14	940		0.95	Dry																																					
		11-Jun-14	915		0.95	Dry																																					
		30-Sep-14	1030		0.95	Dry																																					
		5-Dec-14	945		0.95	Dry																																					
		11-Mar-15	1000		0.95	Dry																																					
		3-Jun-15	925		0.95	Dry																																					
		8-Sep-15	955		0.95	Dry																																					
		14-Dec-15	1245		0.95	Dry																																					
		10-Mar-16	935		0.95	Dry																																					
		31-May-16	1010		0.95	Dry																																					
		27-Sep-16	1215		0.95	Dry																																					
		25-Oct-16	1315		0.95	Dry																																					
		24-Nov-16	1310		0.95	Dry																																					
		20-Dec-16	1310		0.95	Dry																																					
P47		**18-Jun-12**		24.00																																							
		17-Oct-12	1350	24.15	25.17																																						
Depth	**30.5**	**31-Oct-12**	1400	24.12	25.14																																						
Format.	**Garrawilla**	**14-Nov-12**	1215	24.11	25.13				Data Logger Installed 14 November 2012																																		
		13-May-13	1530	23.91	24.93																																						
		11-Jul-13	1510	23.90	24.92																																						
		1-Aug-13	1205	23.85	24.87																																						
		04-Sep-13	1400	23.88	24.9	7.18	5310	23.7	**18.7**	0.006	0.28	0.001	0.0003	0.111	0.056	0.292	32.3	0.034	0.53	0.183	0.09	0.463	<0.0001	7.64	5880	30	121	1250	44	67	902	334	<1	<1	1430	1430	61	4.64	0.15	<0.01	0.02	0.02	3550
		27-Nov-13	1140	23.85	24.87	7.1	5380	23.6																																			
		05-Mar-14	1140	23.82	24.84	7.1	5280	23.7	2.18	0.002	0.066	<0.001	<0.0001	0.021	0.01	0.04	6.09	0.004	0.162	0.039	0.01	0.066	<0.0001	7.43	5770	28	112	1080	43	58.7	845	341	<1	<1	1430	1430	59.5	0.73	0.97	<0.01	0.02	0.02	3470
		11-Jun-14	1145	23.92	24.94	7	5350	21.6																																			
		29-Sep-14	1230	23.90	24.92	6.9	5940	22.7	0.91	<0.001	0.061	<0.001	<0.0001	0.005	0.002	0.008	4.36	0.002	0.119	0.01	<0.01	0.039	<0.0001	7.68	6610	29	111	1030	43	56.5	1010	373	<1	<1	1390	1390	64	6.3	1.43	<0.01	0.21	0.21	3290
		04-Dec-14	1220	23.89	24.91	6.9	5890	21.9																																			
		12-Mar-15	1345	23.78	24.8	7	5360	23.7	1.65	<0.001	0.115	<0.001	<0.0001	0.01	0.01	0.026	5.97	0.004	0.17	0.039	0.01	0.098	<0.0001	7.5	5660	32	122	1180	38	63.9	858	353	<1	<1	1530	1530	62.1	1.4	0.09	<0.01	0.02	0.02	2770
		03-Jun-15	1120	23.90	24.92	7	5980	21.7																																			
		08-Sep-15	1200	23.88	24.9	7.1	5890	22.8	**5.7**	0.002	0.095	<0.001	<0.0001	0.031	0.011	0.027	9.33	0.007	0.16	0.036	0.03	0.075	<0.0001	7.69	6200	34	111	1100	37	59.6	800	330	<1	<1	1450	1450	58.4	0.99	0.59	<0.01	0.03	0.03	3940
		14-Dec-15	1140	23.85	24.87	7.2	6010	23.1																																			
		10-Mar-16	1315	23.85	24.87	7.2	5470	25	**16.4**	0.003	0.267	<0.001	0.0002	0.095	0.041	0.116	31	0.018	0.453	0.153	0.08	0.28	<0.0001	7.38	5810	29	113	1110	35	59.9	901	358	<1	<1	1410	1410	61	0.96	0.5	<0.01	0.02	0.02	3880
		02-Jun-16	1150	23.86	24.88	7.1	5420	22.1																																			
		28-Sep-16	1415	23.81	24.83	7.1	5510	22.9	0.16	0.001	0.053	<0.001	<0.0001	<0.001	0.002	0.002	2.38	<0.001	0.084	0.006	<0.01	0.062	<0.0001	7.56	6140	34	113	1240	37	65.9	937	349	<1	<1	1640	1640	66.5	0.48	0.3	<0.01	0.01	0.01	3410
		27-Oct-16	1115	23.95	24.97	7.1	5380	22.5																																			
		24-Nov-16	1120	23.84	24.86	7.1	5360	22																																			
		20-Dec-16	1105	23.81	24.83	7	5410	22.9																																			

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals																Major Cations					Total Cations - meq/L	Major Anions							Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
						pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L							
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*										*1500*	*400*		*4000*
P39A		**2-Jun-16**	1005	6.56	7.56	7.5	3340	20.1																																			
		26-Sep-16			too wet																																						
Depth	**80**	**27-Oct-16**	1010	5.88	6.88	7.8	3440	21.2	0.12	0.002	0.071	<0.001	<0.0001	<0.001	<0.001	0.001	0.5	<0.001	0.209	0.004	<0.01	0.033	<0.0001	7.84	3730	58	58	687	12	37.8	803	55	<1	<1	620	620	36.2	2.26	0.08	<0.01	<0.01	<0.01	1840
Format.	**Watermark**	**25-Nov-16**	1010	5.90	6.9	7.5	3510	20.5																																			
		21-Dec-16	1040	5.86	6.86	7.5	3660	21.9																																			
P39B		**2-Jun-16**	950	6.22	7.12	8.1	5850	20.2																																			
		26-Sep-16			too wet																																						
Depth	**32**	**27-Oct-16**	950	6.13	7.03	7.8	5890	21.3	0.04	<0.001	0.025	<0.001	<0.0001	0.006	<0.001	0.001	0.05	<0.001	0.012	<0.001	<0.01	0.078	<0.0001	8.17	6520	84	135	1150	12	65.6	1320	568	<1	<1	577	577	60.6	3.99	<0.01	<0.01	0.31	0.31	3840
Format.	**Alluvium**	**25-Nov-16**	950	6.27	7.17	7.9	6100	20.7																																			
		21-Dec-16	1025	6.20	7.1	7.9	6160	22																																			
P43		**2-Jun-16**	925	49.40	50.35	8.2	9940	21.8																																			
		26-Sep-16			too wet																																						
Depth	**65**	**27-Oct-16**	925	22.06	23.01	7.2	10470	22.7	0.06	<0.001	0.179	<0.001	<0.0001	<0.001	<0.001	0.006	0.12	<0.001	0.808	0.004	<0.01	0.056	<0.0001	7.95	11500	122	207	2060	35	114	3360	383	<1	<1	821	821	119	2.38	0.06	<0.01	0.04	0.04	**6670**
Format.	**Watermark**	**25-Nov-16**	920	20.09	21.04	7.2	10660	22.8																																			
		21-Dec-16	1000	18.78	19.73	7.3	10530	23.9																																			
P51		**29-Jan-15**	1320	4.68	5.26	7.6	15600	23.4	0.02	0.003	0.264	0.057	**0.0166**	<0.001	<0.001	0.016	<0.05	<0.001	0.055	0.003	0.49	0.063	0.0003	7.77	17000	50	346	3310	12		5280	814							0.12	<0.01	0.05	0.05	**7880**
		11-Mar-15	1200	4.60	5.18	7.6	16920	25.4	**29.4**	0.01	0.615	0.002	0.0007	0.031	0.014	0.07	17.7	0.054	1.65	0.027	0.08	0.223	0.0002	7.91	18000	39	455	3880	9	208	5840	933	<1	<1	964	964	203	1.18	0.04	<0.01	0.16	0.16	**11100**
Depth	**17**	**3-Jun-15**	1040	4.59	5.17	7.6	16670	23.2																																			
Format.	**Napperby**	**08-Sep-15**	1130	4.64	5.22	7.7	17140	23	0.11	0.004	0.083	<0.001	<0.0001	<0.001	<0.001	0.013	0.14	0.001	0.012	0.002	<0.01	0.112	0.0002	8.09	18200	41	308	2960	10	156	4490	851	<1	<1	842	842	161	1.53	0.04	<0.01	0.47	0.47	**11200**
		15-Dec-15	945	4.88	5.46	7.7	18280	22.9																																			
		10-Mar-16	1150	5.36	5.94	8	17290	25.4	0.09	0.002	0.092	<0.001	<0.0001	<0.001	<0.001	0.033	0.14	<0.001	0.021	0.006	<0.01	0.193	<0.0001	8.07	18800	49	366	3230	10	173	5760	954	<1	<1	893	893	200	7.22	1.2	<0.01	0.84	0.84	**12000**
		02-Jun-16	1230	5.00	5.58	7.9	16830	21.8																																			
		26-Sep-16	1245	4.92	5.5	7.9	17550	22.7	0.07	0.002	0.077	<0.001	<0.0001	<0.001	0.001	0.002	0.09	<0.001	0.097	<0.001	0.01	0.013	<0.0001	7.95	19800	51	453	3700	13	201	6110	843	<1	<1	933	933	208	1.84	0.16	0.02	0.04	0.06	**11600**
		25-Oct-16	1200	4.95	5.53	7.7	17510	22.4																																			
		24-Nov-16	1200	4.93	5.51	7.8	16240	21.8																																			
		20-Dec-16	1150	4.86	5.44	7.8	16780	22.8																																			
P52		**15-Dec-15**	1100	7.47	8.02	7.1	2480	22.8	**40.5**	0.022	0.802	0.004	0.0004	0.17	0.091	0.292	66.7	0.072	1.56	0.224	0.14	0.322	0.0002	7.56	2490	104	144	245	6	27.8	455	126	<1	<1	578	578	27	1.53	0.34	0.01	3.08	3.09	2030
		10-Mar-16	1210	7.75	8.3	7.2	2540	24.1	0.35	<0.001	0.131	<0.001	<0.0001	0.001	0.004	0.015	0.46	0.001	0.091	0.014	<0.01	0.05	<0.0001	7.62	2540	98	126	250	6	26.3	434	125	<1	<1	604	604	26.9	1.19	0.6	<0.01	1.73	1.73	1500
Depth	**24**	**2-Jun-16**	1245	7.99	8.54	7.2	2610	20.3																																			
Format.	**Napperby**	**27-Sep-16**	1355	4.59	5.14	7.4	1951	23	0.05	0.003	0.178	<0.001	<0.0001	<0.001	0.004	<0.001	0.08	<0.001	0.258	0.014	<0.01	0.024	<0.0001	7.95	2080	89	100	205	7	21.8	287	78	<1	<1	627	627	22.2	1.11	0.09	<0.01	0.7	0.7	1060
		25-Oct-16	1215	5.41	5.96	7.6	2020	21.7																																			
		24-Nov-16	1215	5.77	6.32	7.7	2180	21.6																																			
		20-Dec-16	1205	6.09	6.64	7.7	2170	22.2																																			
P53		**15-Dec-15**	1145	9.73	10.23	7.7	1060	23.3	**23.2**	0.002	0.285	<0.001	<0.0001	0.086	0.026	0.038	35.8	0.004	0.543	0.083	0.08	0.115	<0.0001	7.98	1100	54	58	121	4	12.8	116	25	<1	<1	387	387	11.5	5.35	0.12	<0.01	0.06	0.06	763
		10-Mar-16	1230	10.04	10.54	7.8	1052	23.3	0.44	<0.001	0.146	<0.001	<0.0001	0.002	<0.001	0.008	0.65	<0.001	0.068	0.002	<0.01	0.018	<0.0001	8.02	1080	49	50	174	5	14.2	112	25	<1	<1	399	399	11.6	10	0.7	<0.01	0.14	0.14	603
Depth	**24**	**2-Jun-16**	1300	10.27	10.77	7.7	1045	20.1																																			
Format.	**Garrawilla**	**27-Sep-16**	1415	7.57	8.07	7.7	963	23.2	0.03	<0.001	0.136	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.05	<0.001	0.078	<0.001	<0.01	0.016	<0.0001	8.02	980	45	42	157	4	12.6	52	14	<1	<1	481	481	11.4	5.23	0.04	<0.01	0.12	0.12	494
		25-Oct-16	1235	8.05	8.55	7.7	971	22.2																																			
		24-Nov-16	1230	8.14	8.64	7.7	1012	21.8																																			
		20-Dec-16	1220	8.39	8.89	7.8	1107	22.4																																			

						Field Parameters			Total Metals																	Major Cations					Major Anions												
Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) - mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Total Cations - meq/L	Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L	Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*								*1500*	*400*		*4000*
VPW		16-Apr-13	1230			7.24	12000	27.8	0.05	0.002	4.71	<0.001	<0.0001	0.002	0.002	0.008	1.14	<0.001	0.027	0.002	<0.01	0.205	<0.0001	7.9	13200	37	66	4100	146	189	193	<1	<1	<1	8670	8670	179	2.84	12.3	<0.10	<0.10	<0.10	**9230**
		3-Jul-13	1000			7.43	12630	11.6																																			
		04-Sep-13	1220			7.38	12800	23.2	<0.10	<0.010	7.74	<0.010	<0.0010	<0.010	<0.010	0.018	0.87	<0.010	0.027	<0.010	<0.10	<0.052	<0.0001	7.83	14100	28	55	4120	146	189	216	<1	<1	<1	9650	9650	199	2.65	12.4	<0.01	<0.01	<0.01	**10500**
		27-Nov-13	940			7.2	12780	22.5																																			
		05-Mar-14	1030			7	11200	24.6	0.09	0.002	5.05	<0.001	<0.0001	<0.001	<0.001	0.018	0.44	<0.001	0.032	0.003	<0.01	0.167	<0.0001	7.72	12100	37	66	4040	124	186	187	<1	<1	<1	7380	7380	153	9.8	9.34	<0.01	0.06	0.06	**8210**
		11-Jun-14	1000			7.1	13210	13.2																																			
		30-Sep-14	1120			7.1	12880	25.5	0.01	0.006	5.23	<0.001	<0.0001	0.001	0.009	<0.001	0.39	<0.001	0.017	0.016	<0.01	0.013	<0.0001	7.78	13600	46	68	4330	127	199	184	<10	<1	<1	9830	9830	202	0.59	12.1	<0.10	<0.10	<0.10	**8760**
		05-Dec-14	1035			7	12400	26.7																																			
		11-Mar-15	1050			7	12890	25.8	0.1	0.01	8.81	<0.001	0.0002	0.004	0.004	0.01	0.85	<0.001	0.033	0.008	<0.01	0.074	<0.0001	7.58	13500	63	84	4160	121	194	172	<1	<1	<1	7780	7780	160	9.47	12.2	<0.01	0.01	0.01	**8340**
		03-Jun-15	955			7	13840	10.7																																			
		08-Sep-15	1035			7	14010	15.5	0.15	<0.010	7.6	<0.010	<0.0010	<0.010	<0.010	<0.010	1.19	<0.010	0.019	<0.010	<0.10	<0.050	<0.0001	7.17	14400	110	119	4520	169	216	160	<5	<1	<1	10100	10100	206	2.28	15	0.05	<0.01	0.05	**10300**
		14-Dec-15	1310			7.4	13860	34.2																																			
		10-Mar-16	1025			7.6	12440	28	0.13	<0.010	5.27	<0.010	<0.0010	<0.010	<0.010	<0.010	0.11	<0.010	<0.010	<0.010	<0.10	<0.052	<0.0001	7.41	13400	58	82	4100	128	191	185	<10	<1	<1	8750	8750	180	2.95	2	0.53	2.24	2.77	**7580**
		31-May-16	1120			Tap removed																																					
		27-Sep-16	1145			7.4	12840	22.8	0.07	0.029	8.67	<0.001	<0.0001	0.011	0.013	0.04	3.13	<0.001	0.028	0.036	<0.01	0.045	<0.0001	7.41	14400	121	94	4130	140	197	178	<1	<1	<1	10400	10400	213	3.92	15.2	<0.10	<0.10	<0.10	**9060**
		27-Oct-16	1100			7.2	12550	25.7																																			
		24-Nov-16	1240			7.2	12230	26.6																																			
		20-Dec-16	1235			7.4	13270	31.5																																			
Mayfield Spring Top		28-Sep-16	1350	No flow		8.8	156	23.9	2.23	0.002	0.086	<0.001	<0.0001	0.002	0.002	0.007	2.17	0.001	0.108	0.006	<0.01	0.015	<0.0001	7.8	158	12	5	10	12	1.75	6	4	<1	<1	64	64	1.53	----	0.07	<0.01	0.03	0.03	140
Depth	0	27-Oct-16	1235	No flow		9	188	24.7																																			
Merrilong Dam		25-Nov-16	1325	No flow		7.6	2480	24.5	0.28	<0.001	0.278	<0.001	<0.0001	<0.001	0.001	<0.001	1.11	<0.001	0.634	0.008	<0.01	0.009	<0.0001	7.72	2510	36	70	372	9	24	672	70	<1	<1	152	152	23.4	1.09	<0.01	<0.01	<0.01	<0.01	1490
		21-Dec-16	1220	Flow <1m/s		7.7	2960	28																																			
Mayfield Spring Btm		28-Sep-16	1340	No flow		8.3	150	22.3	1.79	<0.001	0.054	<0.001	<0.0001	0.002	<0.001	0.002	2	<0.001	0.059	0.006	<0.01	0.007	<0.0001	7.64	152	10	5	10	11	1.63	6	6	<1	<1	62	62	1.53	----	0.07	<0.01	0.06	0.06	112
		27-Oct-16	1250	No flow		8.7	182	23																																			
Depth	0																																										
WB1		14-Aug-08	1445	8.34	9.00																																						
Depth	Unknown	12-Sep-08	1330	8.34	9.00	7.9	1060	23.5		0.005	3.96	0.002	0.0003	0.001	<0.001	0.002	0.64	0.002	0.015	<0.001	<0.01	0.091	<0.0001		14200	102	209	3740	204	190	53	3	<1	<1	8700	8700	175	4.06	11.9				**8510**
Format.	Unknown	14-Nov-08	1139	8.46	9.12																																						
		01-Dec-08	1303	8.46	9.12																																						
WB2		11-Aug-08	1515	9.22	9.41																																						
		11-Sep-08	0930	8.81	9.00	7.2	1010	20.7		<0.001	0.033	<0.001	<0.0001	<0.001	<0.001	0.001	<0.05	<0.001	0.003	0.002	<0.01	<0.005	<0.0001		239	12	6	32	1	2.53	16	6	<1	<1	101	101	2.61		0.06				153
Depth	Unknown	14-Nov-08	1056	6.12	6.31																																						
Format.	Garrawilla	01-Dec-08	1212	6.30	6.49																																						
		18-Feb-09	1250	4.41	4.60																																						
		11-Jun-09	1500							<0.001	0.087	<0.001	<0.0001	<0.001	<0.001	0.106	0.3	0.002	0.02	0.001	<0.01	0.067	<0.0001		1130	64	57	83	2	11.6	156	17	<1	<1	340	340	11.5	0.21	<0.01				628
		17-Aug-09	1345	6.34	6.72	7.4	1150	18.5		<0.001	0.093	<0.001	<0.0001	<0.001	<0.001	0.003	0.06	<0.001	0.002	<0.001	<0.01	<0.005	<0.0001		1210	71	60	74	4	11.8	227	34.3	<1	<1	248	248	12.1	1.27	<0.01				744
		11-Nov-09	1200	8.18	8.56	7.3	1200	28.1		0.002	0.202	0.003	0.0007	0.021	0.008	0.064	16.8	0.012	0.203	0.02	0.03	0.058	<0.0001		1130	62	53	63	6	10.4	217	29.5	<1	<1	194	194	10.6	1.11	<0.01				1200
		17-Feb-10	1000	5.72	6.10																																						
		22-Jun-10	1105	7.02	7.40	7.83	1158	17	0.01	<0.001				<0.001		0.009	<0.05	<0.001	0.001	<0.001		<0.05	<0.0001	7.5	1080	61	53	60	6	10.2	197	27.6	<1	<1	215	215	10.4	1.24		<0.01	3.04	3.04	
		02-Sep-10	1045	5.41	5.79	7.53	1304	22.4																																			
		07-Feb-11	1120	3.22	3.60	7.2	855	24.5	0.11	<0.001				<0.001		0.012	0.06	<0.001	0.084	0.002		0.025	<0.0001	7.46	500	28	22	46	7	5.39	57	13	<1	<1	182	182	5.5	1.08		0.02	0.7	0.72	
		09-Jun-11	1050	7.92	8.30																																						
		11-Oct-11	1150	9.18	9.56	7.1	1654	23.9	2.38	0.004	0.132	<0.001	0.0001	<0.001	<0.001	0.166	0.48	0.008	0.078	0.007	<0.01	0.303	<0.0001	7.54	2350	137	115	137	1	22.3	495	62	<1	<1	359	359	22.4	0.31	0.24	0.12	4.1	4.22	1210
		8-Dec-11	1040			7.2	1160	24.6																																			
		04-Apr-12	1000			7	882	31.2	0.06	<0.001	0.108	<0.001	<0.0001	<0.001	<0.001	0.025	0.06	0.01	0.005	0.005	<0.01	0.192	<0.0001	7.54	1080	70	53	81	2	11.4	182	28	<1	<1	265	265	11	1.86	0.06	0.02	0.57	0.59	616
		31-May-12	1010			7.23	1105	19.4																																			
		29-Aug-12	1125			6.95	613	22.3	1.02	<0.001	0.109	<0.001	<0.0001	<0.001	<0.001	0.07	0.58	0.014	0.038	0.005	<0.01	0.547	<0.0001	7.44	609	36	22	47	3	5.73	112	13	<1	<1	123	123	5.89	1.37	0.01	0.03	1.09	1.12	340
		04-Dec-12	1310			7.26	1513	27.3																																			
		07-Mar-13	1215			7.15	1580	26.2	0.99	<0.001	0.12	<0.001	<0.0001	<0.001	<0.001	0.087	0.06	0.011	0.014	0.004	<0.01	0.604	<0.0001	7.18	1730	111	90	113	2	17.9	340	42	<1	<1	336	336	17.2	2.1	0.02	<0.01	0.4	0.4	1030
		03-Jul-13	1215			7.34	1410	18.3																																			
		03-Sep-13	1050			7.33	2140	24.3	0.28	<0.001	0.125	<0.001	<0.0001	<0.001	<0.001	0.069	<0.05	0.004	0.008	0.004	<0.01	0.34	<0.0001	7.74	2140	138	118	134	2	22.5	455	60	<1	<1	355	355	21.2	2.99	0.04	0.07	4.07	4.14	1360
		27-Nov-13	1320			7	2370	28.2																																			
		05-Mar-14	1320			6.9	2410	27.3	0.06	0.001	0.115	<0.001	<0.0001	<0.001	<0.001	0.019	<0.05	0.001	0.001	0.002	<0.01	0.02	<0.0001	7.36	2540	164	139	188	1	27.8	508	82	<1	<1	444	444	25.4	4.48	0.02	<0.01	7.27	7.27	1710
		11-Jun-14	1330			7.1	2260	18.5																																			
		29-Sep-14	1350			7	2530	22.1	1.66	<0.001	0.132	<0.001	<0.0001	<0.001	<0.001	0.102	<0.05	0.005	0.023	0.005	<0.01	0.362	<0.0001	7.56	2160	118	110	99	2	19.3	464	60	<1	<1	311	311	20.6	3.13	0.03	0.08	3.5	3.58	1140
		04-Dec-14	1100			7	2460	22																																			
		13-Mar-15	1235			6.7	2830	27.3	0.03	<0.001	0.13	<0.001	<0.0001	<0.001	<0.001	0.015	<0.05	<0.001	<0.001	<0.001	<0.01	0.021	<0.0001	7.03	2850	175	155	167	2	28.8	639	83	<1	<1	496	496	29.7	1.46	0.04	<0.01	7.18	7.18	1620
		03-Jun-15	1340			7	2760	13.9																																			
		09-Sep-15	1000			7	2260	16.8	**5.53**	<0.001	0.111	<0.001	<0.0001	0.002	<0.001	0.182	0.2	0.015	0.02	0.007	<0.01	0.791	<0.0001	7.48	2350	141	129	136	2	23.6	474	74	<1	<1	396	396	22.8	1.72	0.04	<0.01	1.87	1.87	1620
		14-Dec-15	1010			No sample - no pressure @ pump																																					
		09-Mar-16	1325			7.1	2370	29.1	0.39	<0.001	0.125	<0.001	<0.0001	<0.001	<0.001	0.132	5.5	0.011	0.022	0.008	<0.01	0.521	<0.0001	7.37	2520	164	140	145	1	26	520	84	<1	<1	412	412	24.6	2.75	0.14	<0.01	4.67	4.67	1550
		31-May-16	1200			6.9	2760	16.9																																			
		26-Sep-16	1030			7	2640	17.9	1.1	<0.001	0.123	<0.001	0.0003	<0.001	<0.001	0.214	0.08	0.002	0.008	0.02	<0.01	1.34	<0.0001	7.61	2820	170	136	144	2	26	617	98	<1	<1	457	457	28.6	4.73	0.02	<0.01	4.11	4.11	1940
		25-Oct-16	1005			7	2640	21.1																																			
		24-Nov-16	1020			7.2	2660	21.4																																			
		20-Dec-16	945			7.2	2640	26.5																																			
							1575.25	30.5025	2.20975	0.00395	0.195	0.003	0.000685	0.021	0.008	0.157	14.76	0.01185	0.18515	0.0187	0.03	0.2919	#NUM!	7.54	2179	127.1	106.75	128.9	6.85	20.725	454.8	57.845	#NUM!	#NUM!	356.15	356.15	20.855	1.7715	0.2355	0.115	4.0205	4.1315	1209
							2830	29.1	5.53	0.001	0.132	0	0.0003	0.002	0	0.214	5.5	0.015	0.038	0.02	0	1.34	0	7.74	2850	175	155	188	3	28.8	639	98	0	0	496	496	29.7	4.73	0.14	0.08	7.27	7.27	1940
WB3a		11-Sep-08	1230	8.09	8.60	7.7	1050	20.1		<0.001	0.179	<0.001	<0.0001	<0.001	<0.001	0.002	0.34	0.002	0.259	0.002	<0.01	0.009	<0.0001		703	39	20	78	4	7.11	54	10	<1	<1	268	268	7.08	0.10	0.26				431
		14-Nov-08	0856	8.14	8.65																																						
Depth	Unknown	01-Dec-08	1055	8.14	8.65																																						
Format.	Alluvium	12-Jan-09	1301	7.94	8.45																																						
		01-Dec-09	1310	8.21	8.72																																						
		18-Feb-10	1205	8.11	8.62																																						
		23-Jun-10	1315	8.19	8.70																																						
		03-Sep-10	1210	8.03	8.54	7.29	919	22.5																																			
		09-Feb-11	1300	7.55	8.06																																						
		31-May-11	1155	7.41	7.92																																						
		27-Sep-11	1200	7.50	8.01																																						
		3-Jan-12	1150	6.79	7.30																																						
		22-Mar-12	1200	5.65	6.16																																						
		1-Jun-12	1200	6.21	6.72																																						
		10-Sep-12	1050	6.41	6.92																																						
		4-Dec-12	930	6.64	7.15																																						
		7-Mar-13	1325	6.21	6.72																																						
		3-Jul-13	1340	6.99	7.50																																						
		4-Sep-13	1020	7.33	7.84																																						
		4-Dec-13	1000	7.56	8.07																																						
		7-Mar-14	1210	7.49	8.00																																						
		10-Jun-14	1250	7.42	7.93																																						
		25-Sep-14	1120	7.66	8.17																																						
		3-Dec-14	1210	7.84	8.35																																						
		11-Mar-15	1330	8.04	8.55																																						
		5-Jun-15	1015	8.07	8.58																																						
		10-Sep-15	1040	7.88	8.39																																						
		9-Dec-15	1305	8.14	8.65																																						
		9-Mar-16	1000	8.32	8.83																																						

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals															Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Major Cations				Total Cations - meq/L	Major Anions						Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
						pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L				Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L							
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*									*1500*	*400*		*4000*
		1-Jun-16	1310	8.34	8.85																																				
		26-Sep-16	1315	7.71	8.22																																				
		26-Oct-16	1010	7.74	8.25																																				
		23-Nov-16	1010	7.72	8.23																																				
		19-Dec-16	1020	7.71	8.22																																				
WB3b		**11-Sep-08**	1245	7.99	8.50	7.6	1250	19.8		<0.001	0.175	<0.001	<0.0001	<0.001	<0.001	0.002	0.31	0.001	0.255	0.001	<0.01	0.007	<0.0001		706	38	20	77	4	7.01	52	10	<1	<1	268	268	7.02	0.17	0.18				415
		14-Nov-08	0854	8.05	8.56																																				
Depth	**Unknown**	**01-Dec-08**	1057	7.99	8.50																																				
Format.	**Alluvium**	**12-Jan-09**	1303	7.84	8.33																																				
		01-Dec-09	1310	8.20	8.71																																				
		18-Feb-10	1210	8.05	8.56																																				
		23-Jun-10	1320	8.10	8.61																																				
		03-Sep-10	1215	7.88	8.39	7.38	693	22.7																																		
		09-Feb-11	1310	7.20	7.71																																				
		31-May-11	1200	7.33	7.84																																				
		27-Sep-11	1210	7.45	7.96																																				
		3-Jan-12	1200	6.73	7.24																																				
		22-Mar-12	1220	5.61	6.12																																				
		1-Jun-12	1210	6.17	6.68																																				
		10-Sep-12	1100	6.34	6.85																																				
		4-Dec-12	935	6.57	7.08																																				
		7-Mar-13	1330	6.24	6.75																																				
		3-Jul-13	1350	6.92	7.43																																				
		4-Sep-13	1005	7.24	7.75																																				
		4-Dec-13	1010	7.85	8.36																																				
		7-Mar-14	1220	7.40	7.91																																				
		10-Jun-14	1300	7.34	7.85																																				
		25-Sep-14	1130	7.99	8.50																																				
		3-Dec-14	1220	7.73	8.24																																				

						Field Parameters			Total Metals																	Major Cations					Major Anions												
Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) - mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Total Cations - meq/L	Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L	Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*								*1500*	*400*		*4000*
		11-Mar-15	1340	8.07	8.58																																						
		5-Jun-15	1005	8.28	8.79																																						
		10-Sep-15	1030	7.77	8.28																																						
		9-Dec-15	1315	8.28	8.79																																						
		9-Mar-16	1010	8.55	9.06																																						
		1-Jun-16	1320	8.21	8.72																																						
		26-Sep-16	1320	7.92	8.43																																						
		26-Oct-16	1015	7.57	8.08																																						
		23-Nov-16	1020	7.56	8.07																																						
		19-Dec-16	1010	7.59	8.10																																						
WB4		**12-Sep-08**	1430	8.35	8.90	7.3	1120	19.8		<0.001	0.042	<0.001	<0.0001	<0.001	<0.001	0.002	<0.05	<0.001	0.003	0.002	<0.01	0.006	<0.0001		1040	61	35	116	1	11.0	93	30	<1	<1	360	360	10.4	2.39	0.06				461
		14-Nov-08	0902	8.30	8.85																																						
Depth	**Unknown**	**12-Jan-09**	1258	8.25	8.80																																						
Format.	**Alluvium**	**01-Dec-09**	1305	8.38	8.93																																						
		18-Feb-10	1220	8.41	8.96																																						
		23-Jun-10	1310	8.41	8.96																																						
		03-Sep-10	1155	9.40	9.95	7.35	2174	21.8																																			
		09-Feb-11	1245	8.20	8.75																																						
		31-May-11	1145	8.04	8.59																																						
		27-Sep-11	1150	8.01	8.56																																						
		3-Jan-12	1140	7.98	8.53																																						
		22-Mar-12	1140	7.63	8.18																																						
		1-Jun-12	1145	7.42	7.97																																						
		10-Sep-12	1110	7.24	7.79																																						
		4-Dec-12	945	7.21	7.76																																						
		7-Mar-13	1315	6.98	7.53																																						
		3-Jul-13	1330	6.93	7.48																																						
		4-Sep-13	1035	7.35	7.90																																						
		4-Dec-13	1030	7.47	8.02																																						
		7-Mar-14	1150	7.54	8.09																																						
		10-Jun-14	1240	7.59	8.14																																						
		25-Sep-14	1100	7.67	8.22																																						
		3-Dec-14	1150	7.71	8.26																																						
		11-Mar-15	1320	7.84	8.39																																						
		5-Jun-15	1025	7.92	8.47																																						
		10-Sep-15	1050	8.00	8.55																																						
		9-Dec-15	1250	8.04	8.59																																						
		9-Mar-16	1050	8.09	8.64																																						
		1-Jun-16	1255	8.17	8.72																																						
		26-Sep-16	1335	8.20	8.75																																						
		26-Oct-16	1030	8.18	8.73																																						
		23-Nov-16	1040	8.16	8.71																																						
		19-Dec-16	1035	8.13	8.68																																						
WB5a		**12-Sep-08**	1430	9.98	11.10	7.5	1200	21		<0.001	0.026	<0.001	<0.0001	<0.001	<0.001	0.004	0.1	0.006	0.033	<0.001	<0.01	0.008	<0.0001		510	36	18	32	2	4.66	29	28	<1	<1	160	160	4.59	0.72	0.05				281
		14-Nov-08	0832	10.29	11.41																																						
Depth	**Unknown**	**01-Dec-08**	1035	10.15	11.27																																						
Format.	**Alluvium**	**12-Jan-09**	1319	9.89	11.01																																						
		01-Dec-09	1345	10.38	11.50																																						
		18-Feb-10	1245	10.35	11.47																																						
		23-Jun-10	1350	10.38	11.50																																						
		03-Sep-10	1330	9.71	10.83																																						
		09-Feb-11	1034																																								
		31-May-11	1230	9.48	10.60																																						
		27-Sep-11	1250	9.50	10.62																																						
		3-Jan-12	1250	8.52	9.64																																						
		22-Mar-12	1310	8.30	9.42																																						
		1-Jun-12	1245	8.50	9.62																																						
		10-Sep-12	1030	8.39	9.51																																						
		4-Dec-12	900	8.47	9.59																																						
		7-Mar-13	1350	7.15	8.27																																						
		3-Jul-13	1425	8.92	10.04																																						
		4-Sep-13	930	8.97	10.09																																						
		4-Dec-13	930	9.01	10.13																																						
		7-Mar-14	1330	9.18	10.30																																						
		10-Jun-14	1330	9.56	10.68																																						
		25-Sep-14	1200	9.22	10.34																																						
		3-Dec-14	1300	9.28	10.40																																						
		11-Mar-15	1400	9.66	10.78																																						
		5-Jun-15	935	9.66	10.78																																						
		10-Sep-15	950	9.42	10.54																																						
		9-Dec-15	1350	9.59	10.71																																						
		9-Mar-16	920	10.02	11.14																																						
		1-Jun-16	1400	10.08	11.20																																						
		27-Sep-16	920	8.89	10.01																																						
		26-Oct-16	925	9.20	10.32																																						
		23-Nov-16	930	9.18	10.30																																						
		19-Dec-16	935	9.18	10.30																																						

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals															Mercury (Hg) - mg/L	pH Lab	EC - Lab - µS/cm	Major Cations					Total Cations - meq/L	Major Anions							Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
						pH - Field	EC - Field - µS/cm	Temp - Field - °C	Aluminium (Al) mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L				Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L		Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L							
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*					*1000*											*1500*	*400*		*4000*
WB5b		**12-Sep-08**	1430	10.08	11.20	7.6	1150	21		<0.001	0.028	<0.001	<0.001	<0.001	<0.001	0.003	<0.05	0.006	0.031	0.001	<0.01	0.007	<0.0001		505	35	17	31	2	4.56	28	28	<1	<1	166	166	4.68	1.39	0.05				278
		14-Nov-08	0833	10.43	11.55																																					
Depth	**Unknown**	**01-Dec-08**	1037	10.15	11.27																																					
Format.	**Alluvium**	**12-Jan-09**	1321	10.21	11.33																																					
		01-Dec-09	1345	10.78	11.90																																					
		18-Feb-10	1250	10.69	11.81																																					
		23-Jun-10	1355	10.36	11.48																																					
		09-Feb-11	1350																																							
		31-May-11	1240	9.50	10.62																																					
		27-Sep-11	1300	9.84	10.96																																					
		3-Jan-12	1300	9.07	10.19																																					
		22-Mar-12	1320	8.44	9.56																																					
		1-Jun-12	1300	8.45	9.57																																					
		10-Sep-12	1035	8.37	9.49																																					
		4-Dec-12	905	8.94	10.06																																					
		7-Mar-13	1355	7.50	8.62																																					
		3-Jul-13	1430	8.85	9.97																																					
		4-Sep-13	920	9.00	10.12																																					
		4-Dec-13	940	8.88	10.00																																					
		7-Mar-14	1335	9.75	10.87																																					
		10-Jun-14	1340	9.59	10.71																																					
		25-Sep-14	1210	9.56	10.68																																					
		3-Dec-14	1310	9.70	10.82																																					
		11-Mar-15	1410	10.11	11.23																																					
		5-Jun-15	930	9.78	10.90																																					
		10-Sep-15	940	9.47	10.59																																					
		9-Dec-15	1400	9.94	11.06																																					
		9-Mar-16	930	10.55	11.67																																					
		1-Jun-16	1410	10.41	11.53																																					
		27-Sep-16	930	9.28	10.40																																					
		26-Oct-16	935	9.31	10.43																																					
		23-Nov-16	940	9.50	10.62																																					
		19-Dec-16	925	9.59	10.71																																					
WB6a		**12-Sep-08**	1530	13.93	14.80	6.8	1120	20.4		<0.001	0.050	<0.001	<0.0001	<0.001	<0.001	0.008	0.22	0.029	0.302	0.002	<0.01	0.022	<0.0001		706	45	22	77	3	7.48	33	21	<1	<1	294	294	7.24	1.55	0.09				389
		12-Sep-08	1530	13.93	14.80	6.8	1120	20.4		<0.001	0.052	<0.001	<0.0001	<0.001	<0.001	0.005	0.29	0.014	0.419	0.004	<0.01	0.017	<0.0001		981	58	36	74	3	9.13	89	53	<1	<1	266	266	8.94	1.04	0.87				525
Depth	**Unknown**	**14-Nov-08**	0823	14.31	15.19																																					
Format.	**Alluvium**	**01-Dec-08**	1030	14.29	15.17																																					
		12-Jan-09	1326	14.24	15.12																																					
		01-Dec-09	1400	14.38	15.22																																					
		18-Feb-10	1310	14.31	15.15																																					
		03-Sep-10	1345	14.31	15.15																																					
		09-Feb-11	1400	11.68	12.52																																					
		31-May-11	1250	11.41	12.25																																					
		27-Sep-11	1320	11.36	12.20																																					
		3-Jan-12	1320	11.29	12.13																																					
		22-Mar-12	1340	11.09	11.93																																					
		1-Jun-12	1320	10.59	11.43																																					
		10-Sep-12	930	10.35	11.19																																					
		4-Dec-12	1355	10.96	11.80																																					
		7-Mar-13	1410	11.57	12.41																																					
		3-Jul-13	1440	10.87	11.71																																					
		4-Sep-13	845	10.86	11.70																																					
		4-Dec-13	900	11.20	12.04																																					
		7-Mar-14	1350	14.91	15.75																																					
		10-Jun-14	1350	11.41	12.25																																					
		25-Sep-14	1230	11.10	11.94																																					
		3-Dec-14	1325	11.50	12.34																																					
		11-Mar-15	1420	11.57	12.41																																					
		5-Jun-15	915	11.67	12.51																																					
		10-Sep-15	925	11.42	12.26																																					
		9-Dec-15	1410	11.59	12.43																																					
		9-Mar-16	850	11.59	12.43																																					
		1-Jun-16	1425	11.61	12.45																																					
		27-Sep-16	850	11.58	12.42																																					
		26-Oct-16	910	11.50	12.34																																					
		23-Nov-16	900	11.53	12.37																																					
		19-Dec-16	900	11.55	12.39																																					

Site ID	Piezometer / Water Bore	Date	Time	Depth to Water - mbgl	Depth to Stand - mbtoc	Field Parameters			Total Metals																Major Cations						Major Anions														
						pH - Field	EC - Field - µs/cm	Temp - Field - °C	Aluminium (Al) - mg/L	Arsenic (As) - mg/L	Barium (Ba) - mg/L	Beryllium (Be) - mg/L	Cadmium (Cd) - mg/L	Chromium (Cr) - mg/L	Cobalt (Co) - mg/L	Copper (Cu) - mg/L	Iron (Fe) - mg/L	Lead (Pb) - mg/L	Manganese (Mn) - mg/L	Nickel (Ni) - mg/L	Vanadium (V) - mg/L	Zinc (Zn) - mg/L	Mercury (Hg) - mg/L	pH Lab	EC - Lab - µs/cm	Calcium (Ca) - mg/L	Magnesium (Mg) - mg/L	Sodium (Na) - mg/L	Potassium (K) - mg/L	Total Cations - meq/L	Chloride (Cl) - mg/L	Sulfate (SO4) - mg/L	Hydroxide Alkalinity as CaCO3 - mg/L	Carbonate Alkalinity as CaCO3 - mg/L	Bicarbonate Alkalinity as CaCO3 - mg/L	Alkalinity - mg/L	Total Anions - meq/L	Ionic Balance	Ammonia as Nitrogen (N)	Nitrite as N - mg/L	Nitrate as N - mg/L	NOX as N - mg/L	Total Dissolved Solids
ANZECC Guideline - stock drinking water									*5*	*0.5*			*0.01*	*1*	*1*	*1*		*0.1*		*1*		*20*	*0.002*			*1000*						*1000*										*1500*	*400*		*4000*
WB6b		**12-Sep-08**	1530	11.33	12.20	7.2	1080	20.7		<0.001	0.052	<0.001	<0.0001	<0.001	<0.001	0.007	0.28	0.028	0.297	0.006	<0.01	0.050	<0.0001		781	45	22	83	3	7.78	35	21	<1	<1	305	305	7.52	1.62	0.09					405
		14-Nov-08	0825	12.21	13.09																																						
Depth	Unknown	**01-Dec-08**	1032	11.21	12.09																																						
Format.	Alluvium	**12-Jan-09**	1328	17.89	18.77																																						
		01-Dec-09	1400	19.70	20.54																																						
		18-Feb-10	1315	13.94	14.78																																						
		03-Sep-10	1350	11.09	11.93																																						
		09-Feb-11	1410	20.34	21.18																																						
		31-May-11	1300	10.98	11.82																																						
		27-Sep-11	1330	18.55	19.39																																						
		3-Jan-12	1330	16.81	17.65																																						
		22-Mar-12	1350	9.98	10.82																																						
		1-Jun-12	1335	9.74	10.58																																						
		10-Sep-12	940	14.80	15.64																																						
		4-Dec-12	1400	19.32	20.16																																						
		7-Mar-13	1415	10.96	11.80																																						
		3-Jul-13	1445	9.96	10.80																																						
		4-Sep-13	900	15.40	16.24																																						
		4-Dec-13	915	10.48	11.32																																						
		7-Mar-14	1400	13.30	14.14																																						
		10-Jun-14	1400	9.56	10.40																																						
		25-Sep-14	1240	10.51	11.35																																						
		3-Dec-14	1335	16.02	16.86																																						
		11-Mar-15	1430	16.19	17.03																																						
		5-Jun-15	910	10.43	11.27																																						
		10-Sep-15	915	10.60	11.44																																						
		9-Dec-15	1420	17.14	17.98																																						
		9-Mar-16	900	14.88	15.72																																						
		1-Jun-16	1435	15.13	15.97																																						
		27-Sep-16	900	10.59	11.43																																						
		26-Oct-16	900	10.93	11.77																																						
		23-Nov-16	915	16.02	16.86																																						
		19-Dec-16	910	15.97	16.81																																						
WB7		**11-Sep-08**	1330			6.9	1175	20.5		<0.001	0.006	<0.001	<0.0001	<0.001	<0.001	0.013	<0.05	<0.001	<0.001	<0.001	<0.01	0.040	<0.0001		765	33	18	92	2	7.16	60	23	<1	<1	250	250	7.16	0.06	0.04					410
		14-Nov-08	0841	4.11	4.99																																						
Depth	Unknown	**01-Dec-08**	1045	2.27	3.15																																						
Format.	Alluvium	**12-Jan-09**	1315	4.30	5.18																																						
		25-Aug-09	1500							<0.001	0.006	<0.001	<0.0001	<0.001	<0.001	0.049	<0.05	0.006	0.002	<0.001	<0.01	0.044	<0.0001		633	26	14	80	2		47.4	23	<1	<1	224	224			<0.01					348
		01-Dec-09	1330	4.79		8.18	1002	23.3	0.05	0.005				<0.001		0.013	0.32	<0.001	0.038	0.004		<0.005	<0.0001	7.91	848	12	7	164	1	8.35	65.2	32	<1	<1	272	272	8.05	1.82		0.02	1.45	1.48	
		18-Feb-10	1240	4.64																																							
		23-Jun-10	1340		4.81	8.2	796	21	<0.01	<0.001				<0.001		0.01	<0.05	<0.001	<0.001	<0.001		0.007	<0.0001	7.22	621	29	16	93	2	6.89	51	17.8	<1	<1	250	250	6.81	0.59		<0.01	0.31	0.31	
		03-Sep-10	1305		1.93	7.39	625	22.3																																			
		08-Feb-11	1330		2.12	7.36	964	27.3	0.02	<0.001				<0.005		0.023	<0.05	<0.001	<0.001	<0.001		0.012	<0.001	7.2	766	41	24	125	2	9.52	65	33	<1	<1	345	345	9.41	0.52		<0.01	0.43	0.43	
		31-May-11	1215	3.01	3.01	7.55	613	14.8																																			
		27-Sep-11	1240	2.85	2.85	7.61	701	22.3	<0.01	<0.001	0.007	<0.001	<0.0001	<0.001	<0.001	0.016	0.2	0.002	0.004	<0.001	<0.01	0.009	<0.0001	7.95	740	30	17	105	2	7.51	61	25	<1	<1	260	260	7.44	0.5	<0.01	<0.01	0.35	0.35	402
		3-Jan-12	1230	1.90	1.90	7.52	732	25.7																																			
		22-Mar-12	1250	3.09	3.09	7.45	722	24.2	<0.01	0.007	0.011	<0.001	<0.0001	<0.001	<0.001	0.016	1.14	0.006	0.163	0.002	<0.01	0.012	<0.0001	7.69	654	24	14	112	3	7.3	60	23	<1	<1	245	245	7.07	1.58	0.14	<0.01	<0.01	<0.01	490
		01-Jun-12	1230	3.76	3.76	7.55	704	16.1																																			
		10-Sep-12	1015	1.14	1.14	7.27	597	17.5	0.01	<0.001	0.008	<0.001	<0.0001	<0.001	<0.001	0.008	<0.05	<0.001	0.027	<0.001	<0.01	0.005	<0.0001	7.65	636	23	12	98	2	6.45	56	20	<1	<1	234	234	6.67	1.72	<0.01	<0.01	0.05	0.05	362
		04-Dec-12	920	3.12	3.12																																						
		07-Mar-13	1340	1.7	1.7	7.4	673	25.2	<0.01	<0.001	0.009	<0.001	<0.0001	<0.001	<0.001	0.064	0.16	0.042	0.01	<0.001	<0.01	0.015	<0.0001	7.3	693	34	17	90	2	7.06	54	18	<1	<1	255	255	6.99	0.46	<0.01	<0.01	0.51	0.51	398
		03-Jul-13	1410	2.87	2.87	7.47	668	13.4																																			
		04-Sep-13	945	3.34	3.34	7.1	688	17.1	0.02	<0.001	0.012	<0.001	<0.0001	<0.001	<0.001	0.022	0.87	0.002	0.306	0.002	<0.01	0.021	<0.0001	7.63	715	32	18	102	2	7.57	58	26	<1	<1	254	254	7.27	1.97	<0.01	<0.01	0.06	0.06	387
		02-Dec-13	1415	3.15	3.15	9.2	992	19.2																																			
		07-Mar-14	1320	2.62	2.62	7.7	846	26.2	<0.01	<0.001	0.01	<0.001	<0.0001	<0.001	<0.001	0.014	<0.05	<0.001	0.002	<0.001	<0.01	0.008	<0.0001	7.46	821	38	21	107	2	8.33	75	28	<1	<1	268	268	8.05	1.66	0.01	<0.01	1.85	1.85	491
		10-Jun-14	1315	4.62	4.62	7.9	740	15																																			
		25-Sep-14	1150	3.71	3.71	7.7	704	18.1	0.02	<0.001	0.009	<0.001	<0.0001	<0.001	<0.001	0.011	<0.05	<0.001	0.012	0.002	<0.01	0.012	<0.0001	7.53	708	28	17	92	2	6.85	61	28	<1	<1	222	222	6.74	0.78	0.01	<0.01	0.52	0.52	393
		03-Dec-14	1245	2.79	2.79	7.6	702	19.6																																			
		11-Mar-15	1350	2.65	2.65	7.8	1010	24.7	<0.01	<0.001	0.011	<0.001	<0.0001	<0.001	<0.001	0.013	<0.05	<0.001	0.005	0.001	<0.01	0.026	<0.0001	7.6	810	42	25	114	2	9.16	64	46	<1	<1	292	292	8.6	3.16	0.03	<0.01	1.76	1.76	426
		05-Jun-15	950	2.38	2.38	7.3	694	9.1																																			
		10-Sep-15	1010	1.74	1.74	7	642	14	<0.01	<0.001	0.009	<0.001	<0.0001	<0.001	<0.001	0.011	0.13	0.002	0.042	0.002	<0.01	0.024	<0.0001	7.46	657	29	17	95	2	7.03	53	22	<1	<1	230	230	6.55	3.52	0.03	<0.01	0.07	0.07	410
		09-Dec-15	1355	2.51	2.51	7.1	875	24.7																																			
		09-Mar-16	1040	3.87	3.87	7.1	825	26.7	<0.01	<0.001	0.01	<0.001	<0.0001	<0.001	<0.001	0.073	1.68	<0.001	1.78	<0.001	<0.01	0.009	<0.0001	7.59	809	41	20	111	2	8.57	60	37	<1	<1	283	283	8.12	2.7	0.06	<0.01	0.03	0.03	439
		01-Jun-16	1345	3.69	3.69	7.5	794	16.3																																			
		27-Sep-16	950	2.35	2.35	7.5	760	15.1	<0.01	<0.001	0.005	<0.001	<0.0001	<0.001	<0.001	<0.001	3.29	<0.001	0.196	<0.001	<0.01	<0.005	<0.0001	7.8	739	34	20	104	1	7.89	54	20	<1	<1	283	283	7.59	1.89	<0.01	<0.01	<0.01	<0.01	390
		26-Oct-16	950	1.39	1.39																																						
		23-Nov-16	950	2.77	2.77	7.1	642	24.1																																			
		19-Dec-16	955	2.9	2.9	7.1	735	22.9																																			
							1136.075	26.94	0.04925	0.00695	0.0108	#NUM!	#NUM!	#NUM!	#NUM!	0.04575	1.099	0.006	0.15363	0.00395	#NUM!	0.0408	#NUM!	7.946	837.75	39.625	23.125	159.125	2.875	9.403	65.175	32.875	#NUM!	#NUM!	335.875	335.875	9.274	1.796	0.14	0.02	1.3735	1.40125	485.6
							1010	26.7	0.02	0	0.012	0	0	0	0	0.073	3.29	0.042	1.78	0.002	0	0.026	0	7.8	821	42	25	114	2	9.16	75	46	0	0	292	292	8.6	3.52	0.06	0	1.85	1.85	491
WB8		**12-Sep-08**																																										
		14-Nov-08																																										
WB9	NC-008	**1-Dec-08**	1235	19.2	19.67																																						

Denotes dissolved metals