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**ALS Coal Division**  
**WALKER QUARRIES ANALYSIS AND TESTING REPORT**

**REPORT TO:** Wayne Chapman  
Lot 6 Great Western Highway, Wallerawang NSW 2845

**REPORT ON:** Groundwater Sample  
Sep-23

**REPORT NO:** 2400-7303-03 Amended 01

**SAMPLED BY:** L. Pyne & S. Carter

**REPORTED BY:** T. MacPhee

**REPORT DATE:** 3/10/2023

These reported results only relate to the items sampled and tested

**Sampling and Analysis performed by:** ACIRL Lithgow NSW NATA Accreditation No. 15784, Site No. 11436 in accordance with **AS** Standards listed on Page 4.

A handwritten signature in black ink, appearing to read 'Adriana Hernandez'.

Adriana Hernandez  
Environmental Project/Quality Officer– Lithgow NSW



Accredited for compliance with ISO 17025 - Testing  
Accreditation Number 15784

right solutions.  
right partner.



**ALS Coal Division**  
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**Amendment History**

<b>Amend No</b>	<b>Date</b>	<b>Description of Amendment</b>	<b>Editor</b>	<b>Approved By</b>
01	9/10/2023	Sampling date page 4 amended	AH	AH



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	Units			
Date of Sample		19/09/2023/ 21/09/2023		
REPORT NO:		2400-7303-03 Amended 01		
ALS Sydney Report No.		ES2332900		
Site Reference		GW1	GW2	GW3
Sampled by		L.Pyne & S.Carter		
General Comments/ Observations		Clear	Clear	Clear
Standing Water Level	m	77.86	23.12	19.46
Total Volume Purged	L	3.0	3.0	3.0
pH	pH Unit	7.1	6.6	6.1
Electrical Conductivity	µS/cm	665	776	383
Alkalinity by PC Titrator				
Hydroxide Alkalinity as CaCO <sub>3</sub>	mg/L	<1	<1	<1
Carbonate Alkalinity as CaCO <sub>3</sub>	mg/L	<1	<1	<1
Bicarbonate Alkalinity as CaCO <sub>3</sub>	mg/L	265	302	130
Total Alkalinity as CaCO <sub>3</sub>	mg/L	265	302	130
Sulfate (Turbidimetric) as SO <sub>4</sub>				
Sulfate as SO <sub>4</sub> - Turbidimetric	mg/L	32	71	10
Chloride by Discrete Analyser				
Chloride	mg/L	20	15	21
Dissolved Major Cations				
Calcium	mg/L	69	94	34
Magnesium	mg/L	6	10	9
Sodium	mg/L	63	43	25
Potassium	mg/L	6	4	2



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ALS Sydney Report No.		ES2332900		
Site Reference		GW1	GW2	GW3
Sampled by		L.Pyne & S.Carter		
Dissolved Metals by ICP-MS				
Arsenic	mg/L	0.002	0.001	0.001
Cadmium	mg/L	<0.0001	<0.0001	<0.0001
Chromium	mg/L	0.00	0.004	0.00
Copper	mg/L	0.002	0.006	0.005
Lead	mg/L	<0.001	<0.001	<0.001
Nickel	mg/L	0.004	0.021	0.027
Zinc	mg/L	0.009	0.316	0.117
Dissolved Mercury by FIMS				
Mercury	mg/L	<0.0001	<0.0001	<0.0001
EN055: Ionic Balance				
Total Anions	meq/L	6.52	7.94	3.4
Total Cations	meq/L	6.83	7.49	3.58
Ionic Balance	%	2.29	2.91	2.55



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**METHODS OF ANALYSIS**

Tests for results issued in this report have been carried out at the following NATA accredited laboratories in accordance with the methods as detailed below:-

TEST	METHOD	ACIRL Lithgow NATA Accreditation #11436	Measure of Uncertainty
Electrical Conductivity uS/cm	CBM-E006	APHA 2510 B	2.0%
pH value	CBM-E005	APHA 4500 H	0.10 pH Units

The remaining analysis performed at ALS Environmental, 277-289 Woodpark Rd, Smithfield, NSW 2164.

Low yielding bores have been purged to dryness, otherwise bores purged to constant Electrical Conductivity

REPORT NO: 2400-7303-03 Amended 01  
ALS Sydney Report No. ES2332900

Samples were analysed in accordance with the following Australian Standards or equivalent:

Australian Standards	Description
AS/NZS 5667.1	Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples
ISO 5667-3	Part 3: Preservation and handling of water samples
AS/NZS 5667.11	Part 11: Guidance on sampling of ground waters