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

**REPORT TO:** Wayne Chapman  
Lot 6 Great Western Highway, Wallerawang NSW 2

**REPORT ON:** Groundwater Sample  
Nov-22

**REPORT NO:** 2400-7253-05

**SAMPLED BY:** L.Pyne

**REPORTED BY:** T.MacPhee

**REPORT DATE:** 18/11/2022

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', is written over a horizontal line.

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**  
**WALKER QUARRIES ANALYSIS AND TESTING REPORT**

	Units			
Date of Sample		18/11/2022		
REPORT NO:		2400-7253-05		
ALS Sydney Report No.		ES2242155		
Site Reference		GW1	GW2	GW3
Sampled by		L. Pyne		
General Comments/ Observations		Cloudy	Cloudy	Cloudy
Standing Water Level	m	79.42	28.61	25.19
Total Volume Purged	L	3.0	3.0	3.0
pH	pH Unit	6.4	6.4	6.5
Electrical Conductivity	µS/cm	165	171	495
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	84	284	76
Total Alkalinity as CaCO <sub>3</sub>	mg/L	84	284	76
Sulfate (Turbidimetric) as SO <sub>4</sub>				
Sulfate as SO <sub>4</sub> - Turbidimetric	mg/L	4	20	4
Chloride by Discrete Analyser				
Chloride	mg/L	2	6	2
Dissolved Major Cations				
Calcium	mg/L	12	92	14
Magnesium	mg/L	3	6	3
Sodium	mg/L	14	17	14
Potassium	mg/L	<1	3	1



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

	Units			
Date of Sample		19/08/2021		
REPORT NO:		2400-7253-05		
ALS Sydney Report No.		ES2242155		
Site Reference		GW1	GW2	GW3
Sampled by		L. Pyne		
Dissolved Metals by ICP-MS				
Arsenic	mg/L	<0.001	0.001	<0.001
Cadmium	mg/L	0.0002	<0.0001	<0.0001
Chromium	mg/L	<0.001	0.002	<0.001
Copper	mg/L	0.002	0.011	0.002
Lead	mg/L	<0.001	<0.001	<0.001
Nickel	mg/L	0.008	0.012	0.008
Zinc	mg/L	0.082	0.600	0.097
Dissolved Mercury by FIMS				
Mercury	mg/L	<0.0001	<0.0001	<0.0001
EN055: Ionic Balance				
Total Anions	meq/L	1.82	6.26	1.66
Total Cations	meq/L	1.45	5.9	1.58
Ionic Balance	%	----	2.95	----



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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: 2400-7253-05  
ALS Sydney Report No. ES2242155

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