

### Certificate of Analysis E24-00-1196

<b>Client:</b>	Lismore City Council	<b>Laboratory:</b>	Environmental Analysis Laboratory
<b>Contact:</b>	Commercial Services Compliance	<b>Contact:</b>	EAL Customer Service Team
<b>Address:</b>	Att: Accounts Payable, PO Box 23a, LISMORE, NSW 2480, Australia	<b>Address:</b>	PO Box 157, East Lismore NSW 2480 Australia
<b>Telephone:</b>		<b>Telephone:</b>	(02) 6620 3678
<b>Email:</b>	c	<b>Email:</b>	eal@scu.edu.au

<b>Customer reference:</b>	Q24/48 Water&Waste Sampling-LWF FY24/25	<b>Request ID:</b>	EAL/E24-00-1196
<b>Number of samples:</b>	2	<b>Report ID:</b>	E24-00-1196_EALP3_1
<b>Date samples received:</b>	21 November 2024	<b>Issue date:</b>	16 December 2024

<b>Authorised by:</b>	Alex Smith
<b>Position:</b>	Senior Technical Officer



**Comments:** EAL is a NATA accredited laboratory (14960), accredited for compliance with ISO/IEC 17025 - Testing.

## Certificate of Analysis

Request ID: EAL/E24-00-1196 Report ID: E24-00-1196\_EALP3\_1 Issue date: 16 December 2024

				Client Sample ID:	LD	TWP
				Sample Date:	20 November 2024	20 November 2024
				Sampled By:	TS	TS
				EAL Sample ID:	E24-00-1196-0001	E24-00-1196-0002
Parameter	Unit	Method Reference	LOR	---	---	---
pH	---	APHA 4500-H+ B	---	7.37	7.83	7.83
Electrical Conductivity	dS/m	APHA 2510-B	<0.01	1.03	1.24	1.24
Total Dissolved Salts (Calculation EC x 680)	mg/L	APHA 2510-B	<7	701	843	843
Total Alkalinity	mg CaCO <sub>3</sub> /L	** APHA 2320	<1	298	288	288
Chemical Oxygen Demand	mg/L	** APHA 5220-D	<1	410	170	170
Sodium	mg/L	Total Available - APHA 3125 ICPMS	<0.5	109	123	123
Potassium	mg/L	Total Available - APHA 3125 ICPMS	<0.5	50.7	52.9	52.9
Calcium	mg/L	Total Available - APHA 3125 ICPMS	<0.5	96.2	37.1	37.1
Magnesium	mg/L	Total Available - APHA 3125 ICPMS	<0.5	24.3	17.8	17.8
Chloride	mg/L	Total Available - APHA 3125 ICPMS	<10	110	110	110
Sulfate	mg/L SO <sub>4</sub>	Total Available - APHA 3125 ICPMS	<9	77.5	42.4	42.4
Chloride/Sulfate Ratio	---	Total Available - APHA 3125 ICPMS	---	1.4	2.6	2.6
Arsenic	mg/L	Total Available - APHA 3125 ICPMS	<0.001	0.007	0.005	0.005
Manganese	mg/L	Total Available - APHA 3125 ICPMS	<0.001	0.652	0.417	0.417
Nitrate	mg/L N	APHA 4500 NO <sub>3</sub> -F	<0.005	< 0.005	< 0.005	< 0.005
Ammonia	mg/L N	APHA 4500 NH <sub>3</sub> -H	<0.005	0.050	1.91	1.91
Total Nitrogen	mg/L N	Inhouse W4	<0.01	27.1	10.7	10.7
Total Phosphorus	mg/L P	Inhouse W4	<0.01	2.15	1.95	1.95
Fluoride	mg/L	** Ion Selective Electrode	<0.1	0.42	0.50	0.50
Faecal Coliforms	cfu/100 mL	APHA 9222-D	<1	260000	6700000000	6700000000
Dissolved Organic Carbon	mg/L	** APHA 5310-B	<1	51.6	70.7	70.7
SGS Report No.	µg/L	** Subcontracted SGS Laboratories Australia	---	SE274746	SE274746	SE274746
Hexachlorobenzene (HCB)	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Alpha BHC	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Heptachlor	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Aldrin	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Beta BHC	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Delta BHC	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Gamma Chlordane	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Dieldrin	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Endrin	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1

## Certificate of Analysis

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				Sample Date:	20 November 2024	20 November 2024
				Sampled By:	TS	TS
				EAL Sample ID:	E24-00-1196-0001	E24-00-1196-0002
Parameter	Unit	Method Reference	LOR	---	---	---
Beta Endosulfan	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
p,p'-DDD	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Methoxychlor	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Endrin ketone	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Mirex	µg/L	** Subcontracted SGS Laboratories Australia	<0.1	<0.1	<0.1	<0.1
Total OC	µg/L	** Subcontracted SGS Laboratories Australia	<1	<1	<1	<1
SGS Report No.	---	** Subcontracted SGS Laboratories Australia	---	SE274746	SE274746	---
Dichlorvos	µg/L	** Subcontracted SGS Laboratories Australia	<0.5	<0.5	<0.5	<0.5
Dimethoate	µg/L	** Subcontracted SGS Laboratories Australia	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	µg/L	** Subcontracted SGS Laboratories Australia	<0.5	<0.5	<0.5	<0.5
Fenitrothion	µg/L	** Subcontracted SGS Laboratories Australia	---	<0.2	<0.2	<0.2
Malathion	µg/L	** Subcontracted SGS Laboratories Australia	---	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	** Subcontracted SGS Laboratories Australia	<0.2	<0.2	<0.2	<0.2
Parathion ethyl (Parathion)	µg/L	** Subcontracted SGS Laboratories Australia	<0.2	<0.2	<0.2	<0.2
Bromophos ethyl	µg/L	** Subcontracted SGS Laboratories Australia	<0.2	<0.2	<0.2	<0.2
Methidathion	µg/L	** Subcontracted SGS Laboratories Australia	<0.5	<0.5	<0.5	<0.5
Ethion	µg/L	** Subcontracted SGS Laboratories Australia	<0.2	<0.2	<0.2	<0.2
Azinphos methyl	µg/L	** Subcontracted SGS Laboratories Australia	---	<0.2	<0.2	<0.2

**Notes:**

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- .. denotes not requested, no data/information or no guidelines available.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (available on request or at scu.edu.au/eal).
- Analysis conducted between sample arrival date and reporting date.
- This report is not to be reproduced except in full.
- Results only relate to the item tested.
- Analysis performed according to APHA. 2017. Standard Methods for the Examination of Water & Wastewater, 23rd Edition. Except where stated otherwise.
- Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
- 1:3 Nitric/HCl digest analysed in accordance with APHA 3125 ICPMS.
- For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.

## Certificate of Analysis

Request ID: EAL/E24-00-1196 Report ID: E24-00-1196\_EALP3\_1 Issue date: 16 December 2024

- mg/L = ppm

### Certificate of Analysis E24-00-1197

<b>Client:</b>	Lismore City Council	<b>Laboratory:</b>	Environmental Analysis Laboratory
<b>Contact:</b>	Commercial Services Compliance	<b>Contact:</b>	EAL Customer Service Team
<b>Address:</b>	Att: Accounts Payable, PO Box 23a, LISMORE, NSW 2480, Australia	<b>Address:</b>	PO Box 157, East Lismore NSW 2480 Australia
<b>Telephone:</b>	02 6625 0500	<b>Telephone:</b>	(02) 6620 3678
<b>Email:</b>	cscompliance@lismore.nsw.gov.au	<b>Email:</b>	eal@scu.edu.au

<b>Customer reference:</b>	Q24/48 Water&Waste Sampling-LWF FY24/25	<b>Request ID:</b>	EAL/E24-00-1197
<b>Number of samples:</b>	5	<b>Report ID:</b>	E24-00-1197_EALP3_1
<b>Date samples received:</b>	21 November 2024	<b>Issue date:</b>	10 December 2024

<b>Authorised by:</b>	Alex Smith
<b>Position:</b>	Senior Technical Officer



**Comments:** EAL is a NATA accredited laboratory (14960), accredited for compliance with ISO/IEC 17025 - Testing.

## Certificate of Analysis

Request ID: EAL/E24-00-1197 Report ID: E24-00-1197\_EALP3\_1 Issue date: 10 December 2024

				Client Sample ID:	MCS01	MCS02	MCS03	MCS04	MCS05
				Sample Date:	20 November 2024	20 November 2024	20 November 2024	20 November 2024	20 November 2024
				Sampled By:	TS	TS	TS	TS	TS
				EAL Sample ID:	E24-00-1197-0001	E24-00-1197-0002	E24-00-1197-0003	E24-00-1197-0004	E24-00-1197-0005
Parameter	Unit	Method Reference	LOR	---	---	---	---	---	---
pH	---	APHA 4500-H+ B	---	7.10	7.37	7.08	6.99	7.00	
Electrical Conductivity	dS/m	APHA 2510-B	<0.01	0.176	0.353	0.223	0.191	0.194	
Total Dissolved Salts (Calculation EC x 680)	mg/L	APHA 2510-B	<7	120	240	152	130	132	
Dissolved Oxygen	mg/L	** APHA 4500-O-G (Onsite method preferable)	<1	6.95	7.40	6.33	6.28	6.62	
Temperature	Celsius	** Inhouse W40	---	21.1	22.8	21.2	20.7	21.3	
Redox Potential	mV	Redox	---	206	233	224	237	237	
Turbidity	NTU	APHA 2130	<1	69	15	60	72	91	
Total Suspended Solids	mg/L	GFC equiv. filter - APHA 2540-D	<1	38	15	38	52	73	
Biochemical Oxygen Demand (BOD5)	mg/L	APHA 5210-B	<1	1.75	2.40	3.05	2.53	2.98	
Total Nitrogen	mg/L N	Inhouse W4	<0.01	1.08	3.33	1.84	1.60	1.78	
Total Phosphorus	mg/L P	Inhouse W4	<0.01	0.224	0.700	0.382	0.377	0.433	
Nitrate	mg/L N	APHA 4500 NO3-F	<0.005	0.031	1.86	0.405	0.114	< 0.005	
Nitrite	mg/L N	APHA 4500 NO2-I	<0.005	0.016	0.055	0.027	0.020	0.014	
Ammonia	mg/L N	APHA 4500 NH3-H	<0.005	0.037	0.595	0.066	0.016	< 0.005	
Faecal Coliforms	cfu/100 mL	APHA 9222-D	<1	7100	390	4400	4100	5700	
Dissolved Organic Carbon	mg/L	** APHA 5310-B	<1	13.3	6.27	11.7	12.5	12.5	
SGS Report No.	---	** Subcontracted SGS Laboratories Australia	---	SE274746	SE274746	SE274746	SE274746	SE274746	
TRH C6-C9	µg/L	** Subcontracted SGS Laboratories Australia	---	<40	<40	<40	<40	<40	
Benzene (F0)	µg/L	** Subcontracted SGS Laboratories Australia	---	<0.5	<0.5	<0.5	<0.5	<0.5	
TRH C6-C10	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	<50	<50	
TRH C6-C10 minus BTEX (F1)	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	<50	<50	
LLTRH C10-C14	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	<50	<50	
LLTRH C15-C28	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	<100	<100	<100	100	
LLTRH C29-C36	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	<50	52	
LLTRH >C10-C16	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	<50	<50	
LLTRH >C16-C34 (F3)	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	<100	<100	<100	140	
LLTRH >C34-C40 (F4)	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	<100	<100	<100	<100	
TRH Sum C10-C36	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	<100	<100	<100	180	
LLTRH C37-C40	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	<100	<100	<100	<100	
Benzene	µg/L	** Subcontracted SGS Laboratories Australia	---	<0.5	<0.5	<0.5	<0.5	<0.5	
Toluene	µg/L	** Subcontracted SGS Laboratories Australia	---	<0.5	5.6	1	<0.5	<0.5	
Ethylbenzene	µg/L	** Subcontracted SGS Laboratories Australia	---	<0.5	<0.5	<0.5	<0.5	<0.5	
m/p-xylene	µg/L	** Subcontracted SGS Laboratories Australia	---	<1	<1	<1	<1	<1	
o-xylene	µg/L	** Subcontracted SGS Laboratories Australia	---	<0.5	<0.5	<0.5	<0.5	<0.5	
Total Xylenes	µg/L	** Subcontracted SGS Laboratories Australia	---	<1.5	<1.5	<1.5	<1.5	<1.5	
Total BTEX	µg/L	** Subcontracted SGS Laboratories Australia	---	<3	6	<3	<3	<3	
Napthalene (VOC)	µg/L	** Subcontracted SGS Laboratories Australia	---	<0.5	<0.5	<0.5	<0.5	<0.5	

## Certificate of Analysis

Request ID: EAL/E24-00-1197 Report ID: E24-00-1197\_EALP3\_1 Issue date: 10 December 2024

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- Analysis performed according to APHA. 2017. Standard Methods for the Examination of Water & Wastewater, 23rd Edition. Except where stated otherwise.
- Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
- 1:3 Nitric/HCl digest analysed in accordance with APHA 3125 ICPMS.
- For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
- mg/L = ppm

## RESULTS OF WATER ANALYSIS

5 samples supplied by Lismore City Council on 28/08/2024. Lab Job No. R8210.

Samples submitted by Commercial Services Compliance. Your Job: PO 101426 - TP 23/102 - Lismore Facility 23/24.

PO Box 23A LISMORE NSW 2480

Parameter	Methods reference	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
		MCS01 28.8.24	MCS02 28.8.24	MCS03 28.8.24	MCS04 28.8.24	MCS05 28.8.24
	Job No.	R8210/1	R8210/2	R8210/3	R8210/4	R8210/5
pH	Onsite	7.05	7.60	7.29	7.20	7.22
Conductivity (EC) (dS/m)	Onsite	0.321	0.504	0.463	0.373	0.451
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	218	343	315	254	307
Temperature (-C)	Onsite	21.1	22.7	22.4	21.7	21.3
Redox Potential (mV)	Onsite	231	246	247	253	256
Total Suspended Solids (mg/L)	GFC equiv. filter - APHA 2540-D	25.0	11.0	49.0	89.0	54.0
Turbidity (ntu)	Onsite	30.9	10.6	47.8	83.0	63.1
Dissolved Oxygen (mg/L O <sub>2</sub> )	Onsite	5.84	6.91	5.93	5.66	4.88
Biochemical Oxygen Demand <sub>5</sub> (mg/L O <sub>2</sub> )	APHA 5210-B	<1	3.60	8.45	9.60	7.70
Total Phosphorus (mg/L P)	In house method W4	0.120	0.293	0.570	0.663	0.534
Total Nitrogen (mg/L N)	In house method W4	0.368	1.87	2.41	2.35	2.53
Total Kjeldahl Nitrogen (mg/L N)	** Calculation: TN - NO <sub>x</sub>	0.347	1.16	1.82	1.99	1.79
Nitrate (mg/L N)	APHA 4500 NO <sub>3</sub> -F	0.021	0.667	0.466	0.277	0.591
Ammonia (mg/L N)	APHA 4500 NH <sub>3</sub> -H	0.091	0.243	0.554	0.447	0.770
Faecal Coliforms (cfu/100 ml)	** APHA 9222-D	70	<10	1,650	1,890	260
Dissolved Organic Carbon (mg/L C)	APHA 5310-B	6.41	7.22	7.31	6.95	7.27
<b>BTEX</b>						
Benzene (µg/L)	Subcontracted: SGS report SE 270286	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene (µg/L)	Subcontracted: SGS report SE 270286	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene (µg/L)	Subcontracted: SGS report SE 270286	<0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene (µg/L)	Subcontracted: SGS report SE 270286	<1	<1	<1	<1	<1
o-xylene (µg/L)	Subcontracted: SGS report SE 270286	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes (µg/L)	Subcontracted: SGS report SE 270286	<1.5	<1.5	<1.5	<1.5	<1.5
Total BTEX (µg/L)	Subcontracted: SGS report SE 270286	<3	<3	<3	<3	<3
Naphthalene (VOC) (µg/L)	Subcontracted: SGS report SE 270286	<0.5	<0.5	<0.5	<0.5	<0.5
<b>Total Recoverable Hydrocarbons (TRH)</b>						
TRH C6-C9 (µg/L)	Subcontracted: SGS report SE 270286	<40	<40	<40	<40	<40
Benzene (F0) (µg/L)	Subcontracted: SGS report SE 270286	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10 (µg/L)	Subcontracted: SGS report SE 270286	<50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1) (µg/L)	Subcontracted: SGS report SE 270286	<50	<50	<50	<50	<50
LLTRH C10-C14 (µg/L)	Subcontracted: SGS report SE 270286	<50	<50	<50	<50	<50
LLTRH C15-C28 (µg/L)	Subcontracted: SGS report SE 270286	100	150	120	130	130
LLTRH C29-C36 (µg/L)	Subcontracted: SGS report SE 270286	<50	55	50	60	61
LLTRH >C10-C16 (µg/L)	Subcontracted: SGS report SE 270286	<50	62	<50	<50	<50
LLTRH >C16-C34 (F3) (µg/L)	Subcontracted: SGS report SE 270286	120	180	140	160	160
LLTRH >C34-C40 (F4) (µg/L)	Subcontracted: SGS report SE 270286	<100	<100	<100	<100	<100
TRH Sum C10-C36 (µg/L)	Subcontracted: SGS report SE 270286	180	210	170	190	190
LLTRH C37-C40 (µg/L)	Subcontracted: SGS report SE 270286	<100	<100	<100	<100	<100

### Notes:

- Total metals - samples digested with nitric acid; Total available (acid soluble/ extractable) metals - samples acidified with nitric acid to <2pH;  
Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
- Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
- 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
- For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
- Analysis performed according to APHA (2012) 'Standard Methods for the Examination of Water & Wastewater', 22nd Edition, except where stated otherwise.
- Analysis conducted between sample arrival date and reporting date.
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- Results relate only to the samples tested.
- This report was issued on 6/09/2024.





RESULTS OF WATER ANALYSIS

15 samples supplied by Lismore City Council on 29/05/2024, Lab Job No. R4777. Samples submitted by Commercial Services Compliance, Your Job: PO 101428 -TP 23102-Lismore Waste Facility FY23

PO Box 234 LISMORE NSW 2480

Table with 16 columns: Parameter, Methods reference, Sample 1 (MW01), Sample 2 (MW02), Sample 3 (MW09), Sample 4 (MW11), Sample 5 (MW12), Sample 6 (MW13), Sample 7 (MW15), Sample 8 (MW16), Sample 9 (MW18), Sample 10 (MW19), Sample 11 (MW20), Sample 12 (MW21), Sample 13 (MW22), Sample 14 (MW23), Sample 15 (MW25). Rows include pH, Conductivity (EC) (dS/m), Total Dissolved Solids (mg/L), Redox Potential (mV), Standing Water Level (m), Total Alkalinity (mg/L CaCO3 equivalent), Dissolved Oxygen (mg/L O2), Biochemical Oxygen Demand (mg/L O2), Total Phosphorus (mg/L P), Total Nitrogen (mg/L N), Nitrate (mg/L N), Ammonia (mg/L N), Temperature (C), Sodium (mg/L), Potassium (mg/L), Calcium (mg/L), Magnesium (mg/L), Chloride Absorption Ratio (SAR), Sulfate (mg/L SO4 2-), Chloride/Sulfate Ratio, Fluoride (mg/L), Faecal Coliforms (cfu/100 ml), Dissolved Organic Carbon (mg/L), Arsenic (mg/L), Iron (mg/L), Manganese (mg/L), Total Phenolics (mg/L), Pesticide analysis screen, Hexachlorobenzene (HCB) (ug/L), Alpha BHC (ug/L), Lindane (gamma BHC) (ug/L), Heptachlor (ug/L), Aldrin (ug/L), Beta BHC (ug/L), Dieldrin (ug/L), Endrin (ug/L), p,p'-DDE (ug/L), p,p'-DDD (ug/L), p,p'-DDT (ug/L), Beta Endosulfan (ug/L), p,p'-DDD (ug/L), p,p'-DDT (ug/L), Endosulfan sulphate (ug/L), Endrin aldehyde (ug/L), Methoxychlor (ug/L), Endrin ketone (ug/L), Isodrin (ug/L), Mixex (ug/L), Total OC (ug/L), Dichlorvos (ug/L), Dinitrotoxin (ug/L), Diazinon (Dimetylate) (ug/L), Fenitrothion (ug/L), Melathion (ug/L), Chlorpyrifos (Chlorpyrifos Ethyl) (ug/L), Parathion-ethyl (Parathion) (ug/L), Bromophos Ethyl (ug/L), Methidathion (ug/L), Ethion (ug/L), Azinphos-methyl (ug/L), BTEX (Benzene, Toluene, Ethylbenzene, m,p-xylene, o-xylene), Total Xylenes, Total BTEX, Naphthalene (VOC), Total Recoverable Hydrocarbons (TRH) (TRH C6-C8, Benzene (F0), TRH C6-C10, TRH C6-C10 minus BTEX (F1), LLTRH C10-C14, LLTRH C15-C28, LLTRH C29-C38, LLTRH C10-C16, LLTRH C16-C24 (F3), LLTRH C24-C40 (F4), TRH Sum C10-C36, LLTRH C37-C40).

- Notes:
1. Total metals - samples digested with nitric acid; Total available (acid soluble/extractable) metals - samples acidified with nitric acid to pH <2.
2. Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis.
3. Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
4. For conductivity 1 dS/m = 1 mg/cm = 1000 µS/cm.
5. Analysis performed according to APHA (2017) 'Standard Methods for the Examination of Water & Wastewater', 23rd Edition, except where stated otherwise.
6. Analysis conducted between sample arrival date and reporting date.
7. \*\* NATA accreditation does not cover the performance of this service.
8. ... Denotes not requested.
9. This report is not to be reproduced except in full.
10. All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal or on request).
11. Results relate only to the samples tested.
12. This report was issued on 4/07/2024 and replaces the report issued on 14/06/2024, Ca, Mg, K, Na and SAR added.



## RESULTS OF WATER ANALYSIS

5 samples supplied by Lismore City Council on 27/05/2024. Lab Job No. R4681.  
 Samples submitted by CS Compliance. Your Job: PO 101426-TP 23/102-Lismore Waste Facility FY23  
 USE Commercial Services Compliance LISMORE NSW 2480

Parameter	Methods reference	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
		MCS01 27/05/24	MCS02 27/05/24	MCS03 27/05/24	MCS04 27/05/24	MCS05 27/05/24
Job No.		R4681/1	R4681/2	R4681/3	R4681/4	R4681/5
pH	APHA 4500-H <sup>+</sup> -B	6.87	7.07	7.11	7.06	7.11
Conductivity (EC) (dS/m)	APHA 2510-B	0.208	0.268	0.289	0.276	0.300
Total Dissolved Solids (mg/L)	** Calculation using EC x 0.80	141	182	197	188	204
Redox Potential (mV)	Onsite	250	220	241	250	254
Total Suspended Solids (mg/L)	GFC equiv. filter - APHA 2540-D	17	38	35	46	45
Turbidity (NTU)	APHA 2130	29.9	33.9	31.9	39.5	46.0
Total Alkalinity (mg/L CaCO <sub>3</sub> equivalent)	** Total Alkalinity - APHA 2320	52	66	70	68	70
Dissolved Oxygen (mg/L O <sub>2</sub> )	** APHA 4500-O-G (Oxide method preferable)	6.79	6.88	6.63	6.18	6.02
Biochemical Oxygen Demand (mg/L O <sub>2</sub> )	APHA 5210-B	1.68	4.64	4.73	5.01	3.37
Total Phosphorus (mg/L P)	In house method W4	0.116	0.383	0.372	0.390	0.388
Total Nitrogen (mg/L N)	In house method W4	0.388	2.37	2.51	2.29	2.62
Total Kjeldahl Nitrogen (mg/L N)	** Calculation: TN - NO <sub>x</sub>	0.341	1.14	1.34	0.445	1.32
Nitrate (mg/L N)	APHA 4500-NO <sub>3</sub> -F	0.047	1.17	1.10	1.77	1.20
Ammonia (mg/L N)	APHA 4500-NH <sub>2</sub> -H	<0.005	0.193	0.167	0.216	0.271
Temperature (°C)	data supplied by client	18	19	18	17	18
Sodium (mg/L)	APHA 3125 ICPMS <sup>TM</sup> 182	23.5	34.6	36.4	34.0	36.5
Potassium (mg/L)	APHA 3125 ICPMS <sup>TM</sup> 182	0.730	4.40	5.20	4.51	5.15
Calcium (mg/L)	APHA 3125 ICPMS <sup>TM</sup> 182	10.2	14.1	15.1	14.2	14.7
Magnesium (mg/L)	APHA 3125 ICPMS <sup>TM</sup> 182	7.16	6.65	7.02	6.79	6.84
Sodium Absorption Ratio (SAR)	** By calculation	1.38	1.90	1.94	1.86	1.97
Chloride (mg/L)	APHA 3125 ICPMS <sup>TM</sup> 182	33.5	38.9	41.6	41.9	38.7
Sulfate (mg/L SO <sub>4</sub> <sup>2-</sup> )	APHA 3125 ICPMS <sup>TM</sup> 182	<9	9.59	<9	<9	9.15
Chloride/Sulfate Ratio	** Calculation	..	4.05	..	..	4.23
Fluoride (mg/L)	** APHA 4500-F-D	0.090	0.090	0.090	0.090	0.090
Faecal Coliforms (cfu/100 ml)	APHA 9222-D	270	850	580	720	360
Dissolved Organic Carbon (mg/L)	APHA 5310-B	4.57	4.83	5.06	4.72	5.15
Iron (mg/L)	Total Available - APHA 3125 ICPMS <sup>TM</sup> 182	2.11	1.10	1.44	1.50	1.46
Manganese (mg/L)	Total Available - APHA 3125 ICPMS <sup>TM</sup> 182	0.041	0.058	0.076	0.101	0.137
<b>BTEX</b>						
Benzene (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene (µg/L)	Subcontracted SGS report SE 265977	<1	<1	<1	<1	<1
o-xylene (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes (µg/L)	Subcontracted SGS report SE 265977	<1.5	<1.5	<1.5	<1.5	<1.5
Total BTEX (µg/L)	Subcontracted SGS report SE 265977	<3	<3	<3	<3	<3
Naphthalene (VOC) (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
<b>Total Recoverable Hydrocarbons (TRH)</b>						
TRH C6-C9 (µg/L)	Subcontracted SGS report SE 265977	<40	<40	<40	<40	<40
Benzene (F9) (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10 (µg/L)	Subcontracted SGS report SE 265977	<50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1) (µg/L)	Subcontracted SGS report SE 265977	<50	<50	<50	<50	<50
LLTR C10-C14 (µg/L)	Subcontracted SGS report SE 265977	<50	<50	<50	<50	<50
LLTR C15-C28 (µg/L)	Subcontracted SGS report SE 265977	<100	100.0	<100	<100	<100
LLTR C29-C36 (µg/L)	Subcontracted SGS report SE 265977	<50	<50	<50	<50	<50
LLTR >C10-C16 (µg/L)	Subcontracted SGS report SE 265977	<50	<50	<50	<50	<50
LLTR >C16-C24 (F3) (µg/L)	Subcontracted SGS report SE 265977	<100	100.0	<100	<100	<100
LLTR >C24-C40 (F4) (µg/L)	Subcontracted SGS report SE 265977	<100	<100	<100	<100	<100
TRH Sum C10-C36 (µg/L)	Subcontracted SGS report SE 265977	<100	150.0	<100	<100	<100
LLTR C37-C40 (µg/L)	Subcontracted SGS report SE 265977	<100	<100	<100	<100	<100
<b>Phenol (µg/L)</b>						
Phenol (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
2-methyl phenol (o-cresol) (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
3/4-methyl phenol (m/p-cresol) (µg/L)	Subcontracted SGS report SE 265977	<1	<1	<1	<1	<1
2-chlorophenol (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dimethylphenol (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-dichlorophenol (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dichlorophenol (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-trichlorophenol (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitrophenol (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
4-nitrophenol (µg/L)	Subcontracted SGS report SE 265977	<1	<1	<1	<1	<1
2,4,5-trichlorophenol (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol (µg/L)	Subcontracted SGS report SE 265977	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dinitrophenol (µg/L)	Subcontracted SGS report SE 265977	<2	<2	<2	<2	<2

**Notes:**

- Total metals - samples digested with nitric acid; Total available (acid soluble/ extractable) metals - samples acidified with nitric acid to pH <2.  
Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
- Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
- 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
- For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
- Analysis performed according to APHA (2017) 'Standard Methods for the Examination of Water & Wastewater', 23rd Edition, except where stated otherwise.
- Analysis conducted between sample arrival date and reporting date.
- \*\* NATA accreditation does not cover the performance of this service.
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- This report is not to be reproduced except in full.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer [scu.edu.au/eal](http://scu.edu.au/eal) or on request).
- Results relate only to the samples tested.
- This report was re-issued on 16/08/2024 and replaces the report issued on 11/06/2024. TRH\_Phenol units added.



## RESULTS OF LEACHATE ANALYSIS

2 samples supplied by Lismore City Council on 27/05/2024. Lab Job No. R4682.  
 Samples submitted by CS Compliance . Your Job: PO 101426 -TP 23/102 -Lismore Waste Facility FY23

USE Commercial Services Compliance LISMORE NSW 2480

Parameter	Methods reference	Sample 1	Sample 2
		LD 27/05/24	TWP 27/05/24
	Job No.	R4682/1	R4682/2
pH	APHA 4500-H <sup>+</sup> -B	9.22	7.84
Conductivity (EC) (dS/m)	APHA 2510-B	0.618	1.06
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	420	721
Total Alkalinity (mg/L CaCO <sub>3</sub> equivalent)	** Total Alkalinity - APHA 2320	179	403
Chemical Oxygen Demand (mg/L O <sub>2</sub> )	** APHA 5220-D	118	114
Total Phosphorus (mg/L P)	In house method W4	0.476	1.28
Total Nitrogen (mg/L N)	In house method W4	5.33	11.9
Nitrate (mg/L N)	APHA 4500 NO <sub>3</sub> <sup>-</sup> -F	<0.005	0.042
Ammonia (mg/L N)	APHA 4500 NH <sub>3</sub> -H	0.014	7.74
Sodium (mg/L)	APHA 3125 ICPMS <sup>7006 152</sup>	69.0	97.0
Potassium (mg/L)	APHA 3125 ICPMS <sup>7006 152</sup>	33.8	47.6
Calcium (mg/L)	APHA 3125 ICPMS <sup>7006 152</sup>	29.9	72.5
Magnesium (mg/L)	APHA 3125 ICPMS <sup>7006 152</sup>	15.6	22.6
Sodium Absorption Ratio (SAR)	** By calculation	2.55	2.55
Sulfate (mg/L)	APHA 3125 ICPMS <sup>7006 152</sup>	39.9	43.8
Chloride (mg/L)	APHA 3125 ICPMS <sup>7006 152</sup>	69.6	94.3
Fluoride (mg/L)	** APHA 4500-F-D	0.110	0.110
Faecal Coliforms (cfu/100 ml)	APHA 9222-D	2,800	47,000
Dissolved Organic Carbon (mg/L)	APHA 5310-B	17.3	26.8
Arsenic (mg/L)	Total Available - APHA 3125 ICPMS <sup>7006 152</sup>	0.002	0.003
<b>Pesticide analysis screen</b> <sup>*see notes</sup>			
Hexachlorobenzene (HCB) (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Alpha BHC (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Lindane (gamma BHC) (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Heptachlor (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Aldrin (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Beta BHC (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Delta BHC (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Heptachlor epoxide (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
o,p'-DDE (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Alpha Endosulfan (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Gamma Chlordane (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Alpha Chlordane (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
trans-Nonachlor (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
p,p'-DDE (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Dieldrin (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Endrin (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
o,p'-DDD (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
o,p'-DDT (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Beta Endosulfan (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
p,p'-DDD (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
p,p'-DDT (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Endosulfan sulphate (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Endrin aldehyde (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Methoxychlor (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Endrin ketone (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Isodrin (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Mirex (µg/L)	Subcontracted: SGS report SE 265976	<0.1	<0.1
Total OC (µg/L)	Subcontracted: SGS report SE 265976	<1	<1
Total OC (µg/L)	Subcontracted: SGS report SE 265976	<1	<1
Dichlorvos (µg/L)	Subcontracted: SGS report SE 265976	<0.5	<0.5
Dimethoate (µg/L)	Subcontracted: SGS report SE 265976	<0.5	<0.5
Diazinon (Dimpylate) (µg/L)	Subcontracted: SGS report SE 265976	<0.5	<0.5
Fenitrothion (µg/L)	Subcontracted: SGS report SE 265976	<0.2	<0.2
Malathion (µg/L)	Subcontracted: SGS report SE 265976	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl) (µg/L)	Subcontracted: SGS report SE 265976	<0.2	<0.2
Parathion-ethyl (Parathion) (µg/L)	Subcontracted: SGS report SE 265976	<0.2	<0.2
Bromophos Ethyl (µg/L)	Subcontracted: SGS report SE 265976	<0.2	<0.2
Methidathion (µg/L)	Subcontracted: SGS report SE 265976	<0.5	<0.5
Ethion (µg/L)	Subcontracted: SGS report SE 265976	<0.2	<0.2
Azinphos-methyl (µg/L)	Subcontracted: SGS report SE 265976	<0.2	<0.2

### Notes:

- Total metals - samples digested with nitric acid; Total available (acid soluble/ extractable) metals - samples acidified with nitric acid to pH <2; Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
- Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
- 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
- For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
- Analysis performed according to APHA (2017) 'Standard Methods for the Examination of Water & Wastewater', 23rd Edition, except where stated otherwise.
- Analysis conducted between sample arrival date and reporting date.
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- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal or on request).
- Results relate only to the samples tested.
- This report was re-issued on 1/08/2024 and replaces the report issued on 11/06/2024. Chloride and Sulfate data added.



## RESULTS OF WATER ANALYSIS

5 samples supplied by Lismore City Council on 27/02/2024. Lab Job No. R1071.

Samples submitted by Accounts Payable. Your Job: PO 101426 -TP 23/102 -Lismore Waste Facility FY 23.

PO Box 23a LISMORE NSW 2480

Parameter	Methods reference	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5
		MCS01	MCS02	MCS03	MCS04	MCS05
	Job No.	R1071/1	R1071/2	R1071/3	R1071/4	R1071/5
pH	APHA 4500-H <sup>+</sup> -B	7.06	7.82	7.45	7.25	7.19
Conductivity (EC) (dS/m)	APHA 2510-B	0.249	0.541	0.446	0.379	0.380
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	169	368	303	258	258
Temperature (°C)	Onsite	27.2	28.4	27.7	26.6	27.6
Redox Potential (mV)	Onsite	197	226	236	231	244
Total Suspended Solids (mg/L)	GFC equiv. filter - APHA 2540-D	15	67	32	45	62
Turbidity (ntu)	APHA 2130	18.5	36.3	32.9	35.5	73.5
Dissolved Oxygen (mg/L O <sub>2</sub> )	Onsite	4.4	6.8	6.0	5.3	4.3
Biochemical Oxygen Demand <sub>5</sub> (mg/L O <sub>2</sub> )	APHA 5210-B	<1	14.0	5.9	6.4	6.2
Total Phosphorus (mg/L P)	In house method W4	0.17	0.51	0.43	0.57	0.63
Total Nitrogen (mg/L N)	In house method W4	0.60	5.39	3.78	3.54	3.54
Total Kjeldahl Nitrogen (mg/L N)	** Calculation: TN – NO <sub>x</sub>	0.59	1.91	1.18	1.50	1.49
Nitrate (mg/L N)	APHA 4500 NO <sub>3</sub> -F	0.013	3.25	2.42	1.89	1.91
Ammonia (mg/L N)	APHA 4500 NH <sub>3</sub> -H	0.065	0.219	0.212	0.194	0.264
Faecal Coliforms (cfu/100 ml)	** APHA 9222-D	13,000	92,000	26,000	9,000	15,000
Dissolved Organic Carbon (mg/L C)	APHA 5310-B	10.6	6.47	7.60	8.54	8.85
<b>BTEX</b>						
Benzene (µg/L)	Subcontracted: SGS report SE 261354	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene (µg/L)	Subcontracted: SGS report SE 261354	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene (µg/L)	Subcontracted: SGS report SE 261354	<0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene (µg/L)	Subcontracted: SGS report SE 261354	<1	<1	<1	<1	<1
o-xylene (µg/L)	Subcontracted: SGS report SE 261354	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes (µg/L)	Subcontracted: SGS report SE 261354	<1.5	<1.5	<1.5	<1.5	<1.5
Total BTEX (µg/L)	Subcontracted: SGS report SE 261354	<3	<3	<3	<3	<3
Naphthalene (VOC) (µg/L)	Subcontracted: SGS report SE 261354	<0.5	<0.5	<0.5	<0.5	<0.5
<b>Total Recoverable Hydrocarbons (TRH)</b>						
TRH C6-C9 (µg/L)	Subcontracted: SGS report SE 261354	<40	<40	<40	<40	<40
Benzene (F0) (µg/L)	Subcontracted: SGS report SE 261354	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10 (µg/L)	Subcontracted: SGS report SE 261354	<50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1) (µg/L)	Subcontracted: SGS report SE 261354	<50	<50	<50	<50	<50
LLTRH C10-C14 (µg/L)	Subcontracted: SGS report SE 261354	<50	<50	<50	<50	<50
LLTRH C15-C28 (µg/L)	Subcontracted: SGS report SE 261354	<100	<100	<100	<100	<100
LLTRH C29-C36 (µg/L)	Subcontracted: SGS report SE 261354	<50	<50	<50	<50	<50
LLTRH >C10-C16 (µg/L)	Subcontracted: SGS report SE 261354	<50	<50	<50	<50	<50
LLTRH >C16-C34 (F3) (µg/L)	Subcontracted: SGS report SE 261354	<100	<100	<100	<100	<100
LLTRH >C34-C40 (F4) (µg/L)	Subcontracted: SGS report SE 261354	<100	<100	<100	<100	<100
TRH Sum C10-C36 (µg/L)	Subcontracted: SGS report SE 261354	<100	<100	<100	<100	<100
LLTRH C37-C40 (µg/L)	Subcontracted: SGS report SE 261354	<100	<100	<100	<100	<100

### Notes:

- Total metals - samples digested with nitric acid; Total available (acid soluble/ extractable) metals - samples acidified with nitric acid to <2pH;  
Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
- Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
- 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
- For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
- Analysis performed according to APHA (2012) 'Standard Methods for the Examination of Water & Wastewater', 22nd Edition, except where stated otherwise.
- Analysis conducted between sample arrival date and reporting date.
- \*\* NATA accreditation does not cover the performance of this service.
- ... Denotes not requested.
- This report is not to be reproduced except in full.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer SCU.edu.au/eal or on request).
- Results relate only to the samples tested.
- This report was issued on 11/03/2024.



## RESULTS OF LEACHATE ANALYSIS

2 samples supplied by Lismore City Council on 27/02/2024. Lab Job No. R1070.

Samples submitted by Commercial Services Compliance. Your Job: PO 101426 -TP 23/102 -Lismore Waste Facility FY 23

PO Box 23A LISMORE NSW 2480

Parameter	Methods reference	Sample 1	Sample 2
		LD	TWP
	<i>Job No.</i>	<i>R1070/1</i>	<i>R1070/2</i>
pH	APHA 4500-H <sup>+</sup> -B	9.14	7.42
Conductivity (EC) (dS/m)	APHA 2510-B	0.951	0.903
Total Dissolved Salts (mg/L)	** Calculation using EC x 680	647	614
Total Alkalinity (mg/L CaCO <sub>3</sub> equivalent)	** Total Alkalinity - APHA 2320	268	327
Chemical Oxygen Demand (mg/L O <sub>2</sub> )	** APHA 5220-D	140	120
Total Phosphorus (mg/L P)	In house method W4	0.87	1.65
Total Nitrogen (mg/L N)	In house method W4	12.0	10.7
Total Kjeldahl Nitrogen (mg/L N)	** Calculation: TN – NO <sub>x</sub>	11.9	10.7
Nitrate (mg/L N)	APHA 4500 NO <sub>3</sub> <sup>-</sup> -F	<0.005	<0.005
Ammonia (mg/L N)	APHA 4500 NH <sub>3</sub> -H	0.474	4.78
Sodium (mg/L)	APHA 3125 ICPMS <sup>note 1&amp;2</sup>	124	87.8
Potassium (mg/L)	APHA 3125 ICPMS <sup>note 1&amp;2</sup>	53.0	39.7
Calcium (mg/L)	APHA 3125 ICPMS <sup>note 1&amp;2</sup>	19.9	57.6
Magnesium (mg/L)	APHA 3125 ICPMS <sup>note 1&amp;2</sup>	14.4	14.7
Sodium Absorption Ratio (SAR)	** By calculation	5.16	2.67
Chloride (mg/L)	APHA 3125 ICPMS <sup>note 1&amp;2</sup>	138	95.0
Sulfate (mg/L SO <sub>4</sub> <sup>2-</sup> )	APHA 3125 ICPMS <sup>note 1&amp;2</sup>	40.0	56.1
Chloride/Sulfate Ratio	** Calculation	3.43	1.70
Fluoride (mg/L)	** APHA 4500-F-D	0.14	0.60
Faecal Coliforms (cfu/100 ml)	APHA 9222-D	7,000	78,000,000
Dissolved Organic Carbon (mg/L)	APHA 5310-B	41.3	42.5
Arsenic (mg/L)	Total Available - APHA 3125 ICPMS <sup>note 1&amp;2</sup>	0.004	0.005

### Notes:

- Total metals - samples digested with nitric acid; Total available (acid soluble/ extractable) metals - samples acidified with nitric acid to pH <2;  
Dissolved metals - samples filtered through 0.45µm cellulose acetate and then acidified with nitric acid prior to analysis
- Metals and salts analysed by Inductively Coupled Plasma - Mass Spectrometry (ICP-MS).
- 1 mg/L (milligram per litre) = 1 ppm (part per million) = 1000 µg/L (micrograms per litre) = 1000 ppb (part per billion).
- For conductivity 1 dS/m = 1 mS/cm = 1000 µS/cm.
- Analysis performed according to APHA (2017) 'Standard Methods for the Examination of Water & Wastewater', 23rd Edition, except where stated otherwise.
- Analysis conducted between sample arrival date and reporting date.
- \*\* NATA accreditation does not cover the performance of this service.
- ... Denotes not requested.
- This report is not to be reproduced except in full.
- All services undertaken by EAL are covered by the EAL Laboratory Services Terms and Conditions (refer scu.edu.au/eal or on request).
- Results relate only to the samples tested.
- This report was issued on 6/03/2024.



### Certificate of Analysis E24-00-1113

<b>Client:</b>	Lismore City Council	<b>Laboratory:</b>	Environmental Analysis Laboratory
<b>Contact:</b>	Commercial Services Compliance	<b>Contact:</b>	EAL Customer Service Team
<b>Address:</b>	Att: Accounts Payable, PO Box 23a, LISMORE, NSW 2480, Australia	<b>Address:</b>	PO Box 157, East Lismore NSW 2480 Australia
<b>Telephone:</b>		<b>Telephone:</b>	(02) 6620 3678
<b>Email:</b>		<b>Email:</b>	eal@scu.edu.au

<b>Customer reference:</b>	Q24/48 Water & Waste Sampling	<b>Request ID:</b>	EAL/E24-00-1113
<b>Number of samples:</b>	16	<b>Report ID:</b>	E24-00-1113_EALP3_1
<b>Date samples received:</b>	19 November 2024	<b>Issue date:</b>	02 December 2024

<b>Authorised by:</b>	Alex Smith
<b>Position:</b>	Senior Technical Officer



Accreditation No. 14960

**Comments:** EAL is a NATA accredited laboratory (14960), accredited for compliance with ISO/IEC 17025 - Testing.

## Certificate of Analysis

Request ID: EAL/E24-00-1113 Report ID: E24-00-1113\_EALP3\_1 Issue date: 02 December 2024

				Client Sample ID:	MW01	MW02	MW09	MW11	MW12
				EAL Sample ID:	E24-00-1113-0001	E24-00-1113-0002	E24-00-1113-0003	E24-00-1113-0004	E24-00-1113-0005
Parameter	Unit	Method Reference	LOR						
pH	---	APHA 4500-H+ B	---	---	6.24	6.56	6.78	6.58	11.16
Electrical Conductivity	dS/m	APHA 2510-B	<0.01	---	0.259	3.78	0.584	8.50	5.08
Total Dissolved Salts (Calculation EC x 680)	mg/L	APHA 2510-B	<7	---	176	2572	397	5782	3454
Dissolved Oxygen	mg/L	** APHA 4500-O-G (Onsite method preferable)	<1	---	2.51	2.85	3.79	1.64	2.23
Temperature	Celsius	** Inhouse W40	---	---	20.6	23.4	21.3	20.7	20.8
Redox Potential	---	Redox	---	---	235	252	233	-14	-102
Biochemical Oxygen Demand (BOD5)	mg/L	APHA 5210-B	<1	---	1.80	3.50	< 1	3.35	2.75
Nitrate	mg/L N	APHA 4500 NO3-F	<0.005	---	0.643	0.051	0.053	< 0.005	0.311
Nitrite	mg/L N	APHA 4500 NO2-I	<0.005	---	0.050	0.050	0.050	0.050	0.050
Ammonia	mg/L N	APHA 4500 NH3-H	<0.005	---	0.050	0.050	0.050	4.92	23.4
Total Nitrogen	mg/L N	Inhouse W4	<0.01	---	1.15	0.908	0.431	3.26	42.1
Total Phosphorus	mg/L P	Inhouse W4	<0.01	---	0.246	0.122	0.344	1.23	0.029
Dissolved Organic Carbon	mg/L	** APHA 5310-B	<1	---	2.22	12.8	2.16	<10.0	<10.0
SGS Report No.	---	** Subcontracted SGS Laboratories Australia	---	---	SE274568	SE274568	SE274568	SE274568	SE274568
TRH C6-C9	µg/L	** Subcontracted SGS Laboratories Australia	---	---	<40	<40	<40	<40	<40
Benzene (F0)	µg/L	** Subcontracted SGS Laboratories Australia	---	---	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10	µg/L	** Subcontracted SGS Laboratories Australia	---	---	<50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	** Subcontracted SGS Laboratories Australia	---	---	<50	<50	<50	<50	<50
LLTRH C10-C14	µg/L	** Subcontracted SGS Laboratories Australia	---	---	<50	88	<50	<50	<50
LLTRH C15-C28	µg/L	** Subcontracted SGS Laboratories Australia	---	---	<100	460	<100	150	120
LLTRH C29-C36	µg/L	** Subcontracted SGS Laboratories Australia	---	---	<50	<50	<50	<50	<50
LLTRH >C10-C16	µg/L	** Subcontracted SGS Laboratories Australia	---	---	<50	180	<50	<50	62
LLTRH >C16-C34 (F3)	µg/L	** Subcontracted SGS Laboratories Australia	---	---	<100	390	<100	170	130
LLTRH >C34-C40 (F4)	µg/L	** Subcontracted SGS Laboratories Australia	---	---	<100	<100	<100	<100	<100
TRH Sum C10-C36	µg/L	** Subcontracted SGS Laboratories Australia	---	---	<100	570	<100	210	200
LLTRH C37-C40	µg/L	** Subcontracted SGS Laboratories Australia	---	---	<100	<100	<100	<100	<100
GW Level	---	Ground Water Level	---	---	2.09	0.00	2.24	1.34	0.73
Turbidity	NTU	APHA 2130	<1	---	30	1.1	190	280	5.4

				Client Sample ID:	MW13	MW15	MW16	MW17	MW18
				EAL Sample ID:	E24-00-1113-0006	E24-00-1113-0007	E24-00-1113-0008	E24-00-1113-0009	E24-00-1113-0010
Parameter	Unit	Method Reference	LOR						
pH	---	APHA 4500-H+ B	---	---	6.91	6.48	8.64	8.49	7.13
Electrical Conductivity	dS/m	APHA 2510-B	<0.01	---	4.74	8.74	1.00	0.643	2.22
Total Dissolved Salts (Calculation EC x 680)	mg/L	APHA 2510-B	<7	---	3225	5945	681	437	1510
Dissolved Oxygen	mg/L	** APHA 4500-O-G (Onsite method preferable)	<1	---	2.22	3.06	3.17	2.77	2.62
Temperature	Celsius	** Inhouse W40	---	---	19.9	20.6	22.3	24.2	22.0
Redox Potential	---	Redox	---	---	-16	11	40	75	102
Biochemical Oxygen Demand (BOD5)	mg/L	APHA 5210-B	<1	---	3.50	5.10	< 1	6.20	1.00
Nitrate	mg/L N	APHA 4500 NO3-F	<0.005	---	0.210	0.018	< 0.005	2.50	0.060
Nitrite	mg/L N	APHA 4500 NO2-I	<0.005	---	0.050	0.050	0.050	0.660	0.068
Ammonia	mg/L N	APHA 4500 NH3-H	<0.005	---	3.16	4.30	0.300	0.195	0.143
Total Nitrogen	mg/L N	Inhouse W4	<0.01	---	3.03	4.03	0.518	4.09	0.349

## Certificate of Analysis

Request ID: EAL/E24-00-1113 Report ID: E24-00-1113\_EALP3\_1 Issue date: 02 December 2024

				Client Sample ID:	MW13	MW15	MW16	MW17	MW18
				EAL Sample ID:	E24-00-1113-0006	E24-00-1113-0007	E24-00-1113-0008	E24-00-1113-0009	E24-00-1113-0010
Parameter	Unit	Method Reference	LOR						
Total Phosphorus	mg/L P	Inhouse W4	<0.01	---	0.842	0.281	0.235	0.159	0.463
Dissolved Organic Carbon	mg/L	** APHA 5310-B	<1	11.0	14.8	3.45	9.20	1.99	
SGS Report No.	---	** Subcontracted SGS Laboratories Australia	---	SE274568	SE274568	SE274568	SE274568	SE274568	SE274568
TRH C6-C9	µg/L	** Subcontracted SGS Laboratories Australia	---	<40	<40	<40	<40	<40	<40
Benzene (F0)	µg/L	** Subcontracted SGS Laboratories Australia	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	<50	<50	<50
LLTRH C10-C14	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	<50	<50	<50
LLTRH C15-C28	µg/L	** Subcontracted SGS Laboratories Australia	---	130	180	<100	<100	340	
LLTRH C29-C36	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	70	<50	<50	540	
LLTRH >C10-C16	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	<50	<50	<50
LLTRH >C16-C34 (F3)	µg/L	** Subcontracted SGS Laboratories Australia	---	140	220	<100	<100	730	
LLTRH >C34-C40 (F4)	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	<100	<100	<100	270	
TRH Sum C10-C36	µg/L	** Subcontracted SGS Laboratories Australia	---	190	260	<100	<100	890	
LLTRH C37-C40	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	<100	<100	<100	130	
GW Level	---	Ground Water Level	---	1.26	2.52	1.94	1.64	3.08	
Turbidity	NTU	APHA 2130	<1	95	310	2.5	24	57	

				Client Sample ID:	MW19	MW20	MW21	MW22	MW23
				EAL Sample ID:	E24-00-1113-0011	E24-00-1113-0012	E24-00-1113-0013	E24-00-1113-0014	E24-00-1113-0015
Parameter	Unit	Method Reference	LOR						
pH	---	APHA 4500-H+ B	---	6.44	6.36	6.23	6.45	7.20	
Electrical Conductivity	dS/m	APHA 2510-B	<0.01	0.132	3.83	3.66	11.3	3.45	
Total Dissolved Salts (Calculation EC x 680)	mg/L	APHA 2510-B	<7	90	2607	2490	7670	2345	
Dissolved Oxygen	mg/L	** APHA 4500-O-G (Onsite method preferable)	<1	2.69	2.17	3.33	2.71	2.68	
Temperature	Celsius	** Inhouse W40	---	21.6	20.5	20.6	21.8	21.7	
Redox Potential	---	Redox	---	92	55	75	22	33	
Biochemical Oxygen Demand (BOD5)	mg/L	APHA 5210-B	<1	1.35	3.70	5.65	2.45	6.90	
Nitrate	mg/L N	APHA 4500 NO3-F	<0.005	0.038	< 0.005	< 0.005	0.013	0.056	
Nitrite	mg/L N	APHA 4500 NO2-I	<0.005	0.061	0.070	0.062	0.050	0.056	
Ammonia	mg/L N	APHA 4500 NH3-H	<0.005	0.052	6.15	6.63	2.71	3.38	
Total Nitrogen	mg/L N	Inhouse W4	<0.01	1.00	4.60	5.92	2.41	3.37	
Total Phosphorus	mg/L P	Inhouse W4	<0.01	0.304	1.87	1.44	0.601	1.89	
Dissolved Organic Carbon	mg/L	** APHA 5310-B	<1	13.3	3.11	2.01	25.3	4.65	
SGS Report No.	---	** Subcontracted SGS Laboratories Australia	---	SE274568	SE274568	SE274568	SE274568	SE274568	SE274568
TRH C6-C9	µg/L	** Subcontracted SGS Laboratories Australia	---	<40	<40	<40	<40	<40	<40
Benzene (F0)	µg/L	** Subcontracted SGS Laboratories Australia	---	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	<50	<50	<50
LLTRH C10-C14	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	<50	<50	<50



## Certificate of Analysis

Request ID: EAL/E24-00-1113 Report ID: E24-00-1113\_EALP3\_1 Issue date: 02 December 2024

				Client Sample ID:	MW19	MW20	MW21	MW22	MW23
				EAL Sample ID:	E24-00-1113-0011	E24-00-1113-0012	E24-00-1113-0013	E24-00-1113-0014	E24-00-1113-0015
Parameter	Unit	Method Reference	LOR						
LLTRH C15-C28	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	<100	<100	230	<100	
LLTRH C29-C36	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	110	<50	
LLTRH >C10-C16	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	<50	<50	<50	<50	
LLTRH >C16-C34 (F3)	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	<100	<100	290	<100	
LLTRH >C34-C40 (F4)	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	<100	<100	<100	<100	
TRH Sum C10-C36	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	<100	<100	350	<100	
LLTRH C37-C40	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	<100	<100	<100	<100	
GW Level	---	Ground Water Level	---	2.87	1.17	0.82	3.05	3.93	
Turbidity	NTU	APHA 2130	<1	23	720	16	470	12	

				Client Sample ID:	MW25
				EAL Sample ID:	E24-00-1113-0016
Parameter	Unit	Method Reference	LOR		
pH	---	APHA 4500-H+ B	---	6.66	
Electrical Conductivity	dS/m	APHA 2510-B	<0.01	3.68	
Total Dissolved Salts (Calculation EC x 680)	mg/L	APHA 2510-B	<7	2499	
Dissolved Oxygen	mg/L	** APHA 4500-O-G (Onsite method preferable)	<1	2.26	
Temperature	Celsius	** Inhouse W40	---	22.0	
Redox Potential	---	Redox	---	60	
Biochemical Oxygen Demand (BOD5)	mg/L	APHA 5210-B	<1	1.00	
Nitrate	mg/L N	APHA 4500 NO3-F	<0.005	< 0.005	
Nitrite	mg/L N	APHA 4500 NO2-I	<0.005	0.050	
Ammonia	mg/L N	APHA 4500 NH3-H	<0.005	0.050	
Total Nitrogen	mg/L N	Inhouse W4	<0.01	6.65	
Total Phosphorus	mg/L P	Inhouse W4	<0.01	1.21	
Dissolved Organic Carbon	mg/L	** APHA 5310-B	<1	2.59	
SGS Report No.	---	** Subcontracted SGS Laboratories Australia	---	SE274568	
TRH C6-C9	µg/L	** Subcontracted SGS Laboratories Australia	---	<40	
Benzene (F0)	µg/L	** Subcontracted SGS Laboratories Australia	---	<0.5	
TRH C6-C10	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	
TRH C6-C10 minus BTEX (F1)	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	
LLTRH C10-C14	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	
LLTRH C15-C28	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	
LLTRH C29-C36	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	
LLTRH >C10-C16	µg/L	** Subcontracted SGS Laboratories Australia	---	<50	
LLTRH >C16-C34 (F3)	µg/L	** Subcontracted SGS Laboratories Australia	---	110	
LLTRH >C34-C40 (F4)	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	
TRH Sum C10-C36	µg/L	** Subcontracted SGS Laboratories Australia	---	140	
LLTRH C37-C40	µg/L	** Subcontracted SGS Laboratories Australia	---	<100	
GW Level	---	Ground Water Level	---	3.60	

### Certificate of Analysis

Request ID: EAL/E24-00-1113 Report ID: E24-00-1113\_EALP3\_1 Issue date: 02 December 2024

			Client Sample ID:	MW25
			EAL Sample ID:	E24-00-1113-0016
Parameter	Unit	Method Reference	LOR	---
Turbidity	NTU	APHA 2130	<1	4.4