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493 Old Inverell Road

(P.O. Box 4690) Armidale NSW 2350

Director: Dr Robert Patterson CPSS, CPAg, FIEAust

Soil Scientists and Environmental Engineers



Quality Assurance and Quality Control by Approved Methods

Analysis of Water Sample - Armidale Saleyards - FEBRUARY 2022

Client Armidale Regional Council, PO Box 75A Armidale NSW

Water Samples collected 10th March 2022 Analysis completed 10th March 2022

Source of water - two licensed piezometers Samples collected by Dr Robert Patterson

Report Date 10th March 2022

RESULTS - EPA identification 2 (Closest to truck wash bay)

Parameter	NOV 2020	FEB 2021	MAY 2021	AUG 2021	NOV 2021	MAR 2022	Average**	Units	Method
Date of Sample	28/11	28/2	7/6	30/8	30/11	10/3			
Electrical conductivity	1.86	1.95	1.21	1.23	1.17	1.031	1.83	dS m ⁻¹	APHA: 2510 B
Nitrate - N	0.28	n.t.	n.t.	n.t.	<0.01	n.t.	0.23	mg L ⁻¹	APHA: 4500 NO ₃
Orthophosphate-P	0.21	n.t.	n.t.	n.t.	<0.01	n.t.	0.27	mg L ⁻¹	APHA: 4500
Standing water level	3.3	2.6	2.2	0.95	0.35	0.5	2.71	m	below ground level
Total nitrogen (TN)	1.4	n.t.	n.t.	n.t.	4.5	n.t.	0.59	mg L ⁻¹	APHA: 4500 N _{org} + Nitrate-N
Total phosphorus (TP)	0.21	n.t.	n.t.	n.t.	0.2	n.t.	0.54	mg L ⁻¹	APHA 4500 P E
pH	7.29	7.18	7.58	7.43	7.32	7.37	7.28		APHA: 4500 H ⁺ B

(** average all data)

RESULTS - EPA identification 3 (To north of #2)

Parameter	NOV 2020	FEB 2021	MAY 2021	AUG 2021	NOV 2021	MAR 2022	Average**	Units	Method
Date of Sample	28/11	28/2	7/6	31/8	31/11	10/3			
Electrical conductivity	3.67	3.73	2.97	1.48	1.44	0.870	3.31	dS m ⁻¹	APHA: 2510 B
Nitrate - N	0.29	n.t.	n.t.	n.t.	0.246	n.t.	0.30	mg L ⁻¹	APHA: 4500 NO ₃
Orthophosphate-P	0.14	n.t.	n.t.	n.t.	0.356	n.t.	0.33	mg L ⁻¹	APHA: 4500
Standing Water level	3.5	3.3	2.9	2.2	1.75	1.80	3.15	m	below ground level
Total nitrogen (TN)	1.8	n.t.	n.t.	n.t.	1.50	n.t.	0.75	mg L ⁻¹	APHA: 4500 N _{org} +
Total phosphorus	0.27	n.t.	n.t.	n.t.	0.34	n.t.	0.49	mg L ⁻¹	APHA 4500 P E
pH	7.63	7.48	7.92	7.91	7.92	7.97	7.62		APHA: 4500 H ⁺ B

(** average all data)

n.d.n = measured but reading below detection level

Reference: APHA. 2005. Standard Methods for the Examination of Water and Wastewater. 21st Edition

General comments. ** averages are long term averages of all data since May '06 to present



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Analysis of Water Sample - Armidale Saleyards - MAY 2022

Client Armidale Regional Council, PO Box 75A Armidale NSW

Water Samples collected 25th May 2022 Analysis completed 25th May 2022

Source of water - two licensed piezometers Samples collected by Dr Robert Patterson

Report Date 26th May 2022

RESULTS - EPA identification 2 (Closest to truck wash bay)

Parameter	FEB 2021	MAY 2021	AUG 2021	NOV 2021	MAR 2022	APR 2022	Average**	Units	Method
Date of Sample	28/2	7/6	30/8	30/11	10/3	25/5			
Electrical conductivity	1.95	1.21	1.23	1.17	1.031	1.135	1.81	dS m ⁻¹	APHA: 2510 B
Nitrate - N	n.t.	n.t.	n.t.	<0.01	n.t.	n.t.	0.23	mg L ⁻¹	APHA: 4500 NO ₃
Orthophosphate-P	n.t.	n.t.	n.t.	<0.01	n.t.	n.t.	0.27	mg L ⁻¹	APHA: 4500
Standing water level	2.6	2.2	0.95	0.35	0.5	0.5	2.67	m	below ground level
Total nitrogen (TN)	n.t.	n.t.	n.t.	4.5	n.t.	n.t.	0.59	mg L ⁻¹	APHA: 4500 N _{org} + Nitrate-N
Total phosphorus (TP)	n.t.	n.t.	n.t.	0.2	n.t.	n.t.	0.54	mg L ⁻¹	APHA 4500 P E
pH	7.18	7.58	7.43	7.32	7.37	7.84	7.29		APHA: 4500 H ⁺ B

(** average all data)

RESULTS - EPA identification 3 (To north of #2)

Parameter	FEB 2021	MAY 2021	AUG 2021	NOV 2021	MAR 2022	APR 2022	Average**	Units	Method
Date of Sample	28/2	7/6	31/8	31/11	10/3	25/5			
Electrical conductivity	3.73	2.97	1.48	1.44	0.870	1.137	3.27	dS m ⁻¹	APHA: 2510 B
Nitrate - N	n.t.	n.t.	n.t.	0.246	n.t.	n.t.	0.30	mg L ⁻¹	APHA: 4500 NO ₃
Orthophosphate-P	n.t.	n.t.	n.t.	0.356	n.t.	n.t.	0.33	mg L ⁻¹	APHA: 4500
Standing Water level	3.3	2.9	2.2	1.75	1.80	1.9	3.13	m	below ground level
Total nitrogen (TN)	n.t.	n.t.	n.t.	1.50	n.t.	n.t.	0.75	mg L ⁻¹	APHA: 4500 N _{org} +
Total phosphorus	n.t.	n.t.	n.t.	0.34	n.t.	n.t.	0.49	mg L ⁻¹	APHA 4500 P E
pH	7.48	7.92	7.91	7.92	7.97	7.80	7.62		APHA: 4500 H ⁺ B

(** average all data)

n.t. = measured but reading below detection level

Reference: APHA. 2005. Standard Methods for the Examination of Water and Wastewater. 21st Edition

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Analysis of Water Sample - Armidale Saleyards - AUG 2022

Client Armidale Regional Council, PO Box 75A Armidale NSW

Water Samples collected 15th August 2022 Analysis completed 15th August 2022

Source of water - two licensed piezometers Samples collected by Dr Robert Patterson

Report Date 15th August 2022

RESULTS - EPA identification 2 (Closest to truck wash bay)

Parameter	MAY 2021	AUG 2021	NOV 2021	MAR 2022	MAY 2022	AUG 2022	Average**	Units	Method
Date of Sample	7/6	30/8	30/11	10/3	25/5	15/8			
Electrical conductivity	1.21	1.23	1.17	1.031	1.135	1.834	1.81	dS m ⁻¹	APHA: 2510 B
Nitrate - N	n.t.	n.t.	<0.01	n.t.	n.t.	n.t.	0.23	mg L ⁻¹	APHA: 4500 NO ₃
Orthophosphate-P	n.t.	n.t.	<0.01	n.t.	n.t.	n.t.	0.27	mg L ⁻¹	APHA: 4500
Standing water level	2.2	0.95	0.35	0.5	0.5	0.0.1	2.63	m	below ground level
Total nitrogen (TN)	n.t.	n.t.	4.5	n.t.	n.t.	n.t.	0.59	mg L ⁻¹	APHA: 4500 N _{org} + Nitrate-N
Total phosphorus (TP)	n.t.	n.t.	0.2	n.t.	n.t.	n.t.	0.54	mg L ⁻¹	APHA 4500 P E
pH	7.58	7.43	7.32	7.37	7.84	7.18	7.29		APHA: 4500 H ⁺ B

(** average all data)

RESULTS - EPA identification 3 (To north of #2)

Parameter	MAY 2021	AUG 2021	NOV 2021	MAR 2022	MAY 2022	AUG 2022	Average**	Units	Method
Date of Sample	7/6	31/8	31/11	10/3	25/5	15/8			
Electrical conductivity	2.97	1.48	1.44	0.870	1.137	1.66	3.25	dS m ⁻¹	APHA: 2510 B
Nitrate - N	n.t.	n.t.	0.246	n.t.	n.t.	n.t.	0.30	mg L ⁻¹	APHA: 4500 NO ₃
Orthophosphate-P	n.t.	n.t.	0.356	n.t.	n.t.	n.t.	0.33	mg L ⁻¹	APHA: 4500
Standing Water level	2.9	2.2	1.75	1.80	1.9	1.45	3.10	m	below ground level
Total nitrogen (TN)	n.t.	n.t.	1.50	n.t.	n.t.	n.t.	0.75	mg L ⁻¹	APHA: 4500 N _{org} +
Total phosphorus	n.t.	n.t.	0.34	n.t.	n.t.	n.t.	0.49	mg L ⁻¹	APHA 4500 P E
pH	7.92	7.91	7.92	7.97	7.80	7.92	7.62		APHA: 4500 H ⁺ B

(** average all data)

<0.1 measured but reading below detection level

Reference: APHA. 2005. Standard Methods for the Examination of Water and Wastewater. 21st Edition

General comments. ** averages are long term averages of all data since May '06 to present



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Analysis of Water Sample - Armidale Saleyards - NOVEMBER 2022

Client Armidale Regional Council, PO Box 75A Armidale NSW

Water Samples collected 2nd December 2022 Analysis completed 3rd December 2022

Source of water - two licensed piezometers Samples collected by Dr Robert Patterson

Report Date 3rd December 2022

RESULTS - EPA identification 2 (Closest to truck wash bay)

Parameter	AUG 2021	NOV 2021	MAR 2022	MAY 2022	AUG 2022	NOV 2022	Average**	Units	Method
Date of Sample	30/8	30/11	10/3	25/5	15/8	2/12			
Electrical conductivity	1.23	1.17	1.031	1.135	1.834	1.826	1.82	dS m ⁻¹	APHA: 2510 B
Nitrate - N	n.t.	<0.01	n.t.	n.t.	n.t.	0.38	0.26	mg L ⁻¹	APHA: 4500 NO ₃
Orthophosphate-P	n.t.	<0.01	n.t.	n.t.	n.t.	<0.01	0.27	mg L ⁻¹	APHA: 4500
Standing water level	0.95	0.35	0.5	0.5	0.0.1	0.15	2.59	m	below ground level
Total nitrogen (TN)	n.t.	4.5	n.t.	n.t.	n.t.	0.7	0.59	mg L ⁻¹	APHA: 4500 N _{org} + Nitrate-N
Total phosphorus (TP)	n.t.	0.2	n.t.	n.t.	n.t.	0.04	0.83	mg L ⁻¹	APHA 4500 P E
pH	7.43	7.32	7.37	7.84	7.18	7.74	7.30		APHA: 4500 H ⁺ B

(** average all data)

RESULTS - EPA identification 3 (To north of #2)

Parameter	AUG 2021	NOV 2021	MAR 2022	MAY 2022	AUG 2022	NOV 2022	Average**	Units	Method
Date of Sample	31/8	31/11	10/3	25/5	15/8	2/12			
Electrical conductivity	1.48	1.44	0.870	1.137	1.66	1.33	3.22	dS m ⁻¹	APHA: 2510 B
Nitrate - N	n.t.	0.246	n.t.	n.t.	n.t.	0.43	0.30	mg L ⁻¹	APHA: 4500 NO ₃
Orthophosphate-P	n.t.	0.356	n.t.	n.t.	n.t.	<0.01	0.62	mg L ⁻¹	APHA: 4500
Standing Water level	2.2	1.75	1.80	1.9	1.45	1.50	3.07	m	below ground level
Total nitrogen (TN)	n.t.	1.50	n.t.	n.t.	n.t.	4.70	0.86	mg L ⁻¹	APHA: 4500 N _{org} +
Total phosphorus	n.t.	0.34	n.t.	n.t.	n.t.	0.14	0.48	mg L ⁻¹	APHA 4500 P E
pH	7.91	7.92	7.97	7.80	7.92	7.92	7.63		APHA: 4500 H ⁺ B

(** average all data)

<0.x = measured but reading below detection level

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