



Inverell Landfill

Sampling Point: All Monitoring Points Licence Period 19 November 2014 to 18 November 2015 http://www.environment.nsw.gov.au/prpoeoapp/detail.aspx?instid=7463&id=7463&option=licence&searchrange=licence&range=POEO&licence&prp=no&status=Issued	EPL No. 7463 Licensee: Inverell Shire Council 144 Otho Street, Inverell Monitoring Frequency - Quarterly
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Date Sampled 24-Feb-15	
Date Reported 7-Apr-15	

Sampling Notes:

The laboratory and field analysis results indicate that landfill leachate does not appear to be impacting groundwater at the monitoring locations. All groundwater monitoring bores were sampled, however the leachate dam was dry this round, so no sample was collected. Groundwater from the up gradient monitoring well BH1 exceeded the established threshold levels for nitrate (at 82 mg/L) and the L/N ratio (29.28).

The continuing elevated nitrate and sulphate levels detected in monitoring well BH1 is not associated with any other landfill leachate indicators. Bores down gradient of the landfill did not have these characteristics. As this monitoring well is situated up gradient of the landfill, the elevated level of nitrate could be representative of an outside regional/local influence such as agriculture.

Sampling point	BH1	BH2a	BH2b	BH3a	BH3b	BD1	BH4	BH5	LP1
EPA Identification Numbers	6	7	8	9	10	-	11	12	1
pH (field)	6.82	6.78	6.9	6.81	7.02	-	6.84	6.75	7.75
Conductivity	1,395	3,240	3,500	2,039	1,415	-	3,700	419	846
Standing Water Level	12.62	4.93	6.48	6.8	12.81	-	13	10.8	-
pH (lab)	7.2	7.4	7.2	7.2	7.2	7.2	7.2	7.3	7.5
TDS	780	1890	2100	1190	870	880	2160	280	445
BOD	3	3	2	2	2	<2	<2	2	28
TOC	3	9	7	4	1	1	7	2	46
Total Phenols	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron	0.01	0.01	0.01	0.02	0.03	0.02	<0.01	0.02	0.03
Manganese	0.08	0.37	0.01	0.19	0.2	0.22	0.96	0.06	1
Sodium	61	315	400	125	115	120	210	50	33
Calcium	110	95	66	110	110	115	175	42	52
Potassium	3.4	3.8	4.1	4	5.8	6	4.4	3	25
Magnesium	110	245	255	160	79	80	300	14	47
Ammonia	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.9
Chloride	13	350	370	160	20	20	650	7	32
Fluoride	0.14	0.24	0.19	0.11	<0.1	<0.1	0.14	<0.1	0.19
Nitrate	64	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	2.7	<0.1
Sulfate	28	3	4	4	9	9	19	11	16
Bicarbonate	935	1780	1920	1220	1010	1040	1510	305	445
Phosphate	0.12	0.15	0.18	<0.1	<0.1	<0.1	<0.1	0.12	1
Nitrite	0.23	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Table notes:

1. All measurements are in mg/L unless stated otherwise;
2. BD1 = blind field duplicate of BH3b;
3. TDS = Total Dissolved Solids; and
4. BOD = Biological Oxygen Demand; and
5. TOC = Total Organic Carbon.
6. Values with < are below the limit of reporting (LOR)



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licence&prp=no&status=Issued						Monitoring Frequency - Quarterly			
Date Sampled	19-May-15								
Date Reported	26-Jun-15								
Sampling Notes:									
The laboratory and field analysis results indicate that landfill leachate does not appear to be impacting groundwater at the monitoring locations. All groundwater monitoring bores were sampled, however the leachate dam was dry this round, so no sample was collected. Groundwater from the up gradient monitoring well BH1 exceeded the established threshold levels for nitrate (at 82 mg/L) and the L/N ratio (29.28). The continuing elevated nitrate and sulphate levels detected in monitoring well BH1 is not associated with any other landfill leachate indicators. Bores down gradient of the landfill did not have these characteristics. As this monitoring well is situated up gradient of the landfill, the elevated level of nitrate could be representative of an outside regional/local influence such as agriculture.									
Sampling point	BH1	BH2a	BH2b	BH3a	BH3b	BD1	BH4	BH5	LP1
EPA Identification Numbers	6	7	8	9	10	-	11	12	1
pH (field)	7.12	7.01	7.11	7.12	7.4	-	6.96	7.66	8.36
Conductivity	1,423	3,250	3,540	2,158	1,599	-	3,470	420	1309
Standing Water Level	12.95	4.8	6	6.57	12.81	-	13.11	10.85	-
pH (lab)	7.6	7.4	7.4	7.4	7.9	8	7.2	7.8	8
TDS	760	1870	2080	1200	850	860	1890	300	740
BOD	<2	<2	<2	<2	<2	<2	<2	<2	3
TOC	2	9	7	9	3	3	7	2	22
Total Phenols	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron	0.03	0.02	0.01	<0.01	0.03	0.02	0.84	0.02	0.02
Manganese	0.06	0.42	0.02	0.17	0.27	0.25	1	0.04	0.15
Sodium	39	325	420	145	125	130	160	57	74
Calcium	105	92	64	110	95	93	170	40	91
Potassium	2	1.2	1.7	1.4	3.8	37	1.9	2.1	18
Magnesium	110	250	255	165	81	84	290	14	78
Ammonia	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2
Chloride	12	370	375	165	22	24	570	6	100
Fluoride	0.13	0.22	0.17	0.11	<0.1	<0.1	0.14	<0.1	0.2
Nitrate	65	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7	<0.1
Sulfate	26	3	4	3	10	10	14	11	32
Bicarbonate	915	1730	1920	1250	995	1010	1420	310	690
Phosphate	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.83
Nitrite	0.26	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen	-	-	-	-	-	-	-	-	0.2

Table notes:

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144 Otho Street, Inverell

Monitoring Frequency - Quarterly

Date Sampled 25-Aug-17

Date Reported 15-Sep-15

Sampling Notes:

The laboratory and field analysis results indicate that landfill leachate does not appear to be impacting groundwater at the monitoring locations.

All groundwater monitoring bores were sampled, however the leachate dam was dry this round, so no sample was collected.

Groundwater from the up gradient monitoring well BH1 exceeded the established threshold levels for nitrate (at 82 mg/L) and the L/N ratio (29.28).

The continuing elevated nitrate and sulphate levels detected in monitoring well BH1 is not associated with any other landfill leachate indicators. Bores down gradient of the landfill did not have these characteristics. As this monitoring well is situated up gradient of the landfill, the elevated level of nitrate could be representative of an outside regional/local influence such as agriculture.

Sampling point	BH1	BH2a	BH2b	BH3a	BH3b	BD1	BH4	BH5	LP1	LP2
EPA Identification Numbers	6	7	8	9	10	-	11	12	1	
pH (field)	6.9	6.92	7.02	6.93	6.99	-	6.78	6.75	7.7	7.9
Conductivity	1,400	3,040	3,380	1,979	1,370	-	3,130	1438	556	523
Standing Water Level	12.97	4.795	6.265	6.41	12.815	-	12.795	4.13	-	-
pH (lab)	7	7.1	7.1	7	7.1	7.1	7.1	7.1	7.5	7.1
TDS	850	2010	2190	1210	805	830	2030	960	370	310
BOD	<2	<2	<2	<2	<2	<2	<2	<2	10	5
TOC	2	8	7	4	9	10	8	7	20	10
Total Phenols	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron	0.08	0.05	0.03	0.04	0.03	0.02	0.21	0.03	0.05	0.03
Manganese	0.05	0.43	<0.01	0.21	0.09	0.11	0.97	0.01	0.06	0.03
Sodium	38	340	415	135	100	110	160	65	33	33
Calcium	120	88	66	110	110	120	180	150	42	34
Potassium	2	1.2	1.5	1.3	3.9	3.9	1.9	2.8	11	0.7
Magnesium	125	260	275	175	77	76	300	71	39	36
Ammonia	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.66	<0.1
Chloride	16	350	370	160	21	21	560	26	46	110
Fluoride	0.1	0.19	0.16	<0.1	<0.1	<0.1	0.12	<0.1	0.13	0.38
Nitrate	89	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	220	3.9	2.5
Sulfate	28	3	4	2	9	9	13	90	24	2
Bicarbonate	1040	1900	2060	1290	970	1020	1540	635	325	190
Phosphate	<0.1	<0.1	0.12	<0.1	<0.1	<0.1	<0.1	<0.1	0.46	<0.1
Nitrite	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.66	<0.1
Total Kjeldahl Nitrogen	-	-	-	-	-	-	-	-	2.8	1.5

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licence&prp=no&status=Issued						Monitoring Frequency - Quarterly			
Date Sampled	18-Nov-15								
Date Reported	17-Dec-15								
Sampling Notes:									
The laboratory and field analysis results indicate that landfill leachate does not appear to be impacting groundwater at the monitoring locations. All groundwater monitoring bores were sampled, however the leachate dam was dry this round, so no sample was collected. Groundwater from the up gradient monitoring well BH1 exceeded the established threshold levels for nitrate (at 82 mg/L) and the L/N ratio (29.28). The continuing elevated nitrate and sulphate levels detected in monitoring well BH1 is not associated with any other landfill leachate indicators. Bores down gradient of the landfill did not have these characteristics. As this monitoring well is situated up gradient of the landfill, the elevated level of nitrate could be representative of an outside regional/local influence such as agriculture.									
Sampling point	BH1	BH2a	BH2b	BH3a	BH3b	BD1	BH4	BH5	LP1
EPA Identification Numbers	6	7	8	9	10	-	11	12	1
pH (field)	6.76	6.68	7.09	6.93	6.49	-	6.72	6.87	7.73
Conductivity	1,493	3,320	3,550	2,262	1,535	-	1,469	1608	1370
Standing Water Level	12.73	2.96	4.28	6.35	12.79	-	9.15	4.6	-
pH (lab)	7.1	7	7.1	7.2	7.2	7.3	7.2	7.2	7.7
TDS	870	1930	2220	1210	810	795	725	1000	720
BOD	<2	<2	<2	<2	<2	<2-	<2	<2	5
TOC	4	9	6	6	18	20	5	7	31
Total Phenols	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Iron	0.04	0.05	0.02	0.04	0.02	0.01	0.02	0.02	0.07
Manganese	0.03	0.33	<0.01	0.21	0.04	0.04	0.03	0.02	0.62
Sodium	52	310	455	120	105	100	28	61	66
Calcium	115	100	51	120	110	110	100	130	89
Potassium	2	1.8	1.9	1.6	4.5	4.4	2.8	3.1	71
Magnesium	110	260	260	170	80	78	115	89	71
Ammonia	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chloride	16	410	365	170	22	22	20	21	120
Fluoride	0.11	0.18	0.17	<0.1	<0.1	<0.1	0.11	<0.1	0.17
Nitrate	67	<0.1	<0.1	<0.1	<0.1	<0.1	15	210	<0.1
Sulfate	25	4	4	2	10	10	17	190	56
Bicarbonate	935	1680	2120	1230	965	940	885	520	565
Phosphate	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.26	<0.1	<0.1

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