

## DCWW

### Analysis of Bala sludge

Date: 28/04/2025

Sample no. 8358319

Application rate (t/ha) 250  
Application rate (t/acre) 100.0  
pH 6.9  
Dry solids (%) 2.4  
Organic matter (%) 50.8

\*Alum sludge

#### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	1.17	%	0.28	69.9	0.01	1.5
Ammonium-N	256	mg/kg	0.01	1.5		
Phosphorus (P)	0.05	%	0.01	3.0		
Phosphate (P2O5)			0.03	6.7	0.0	3.4
Potassium (K)	0.01	%	0.00	0.5		
Potash (K2O)			0.00	0.6	0.0	0.6
Magnesium (Mg)	1820	mg/kg	0.04	10.9		
Magnesium (MgO)			0.07	17.4	0.0	4.3
Sulphur (S)	4670	mg/kg	0.11	27.9		
Sulphur (SO <sub>2</sub> )			0.28	69.8	0.0	7.0
Calcium (Ca)		mg/kg	0.0	0.0		

#### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	162.0	mg/kg	3.9	0.97	15.00
Copper	26.0	mg/kg	0.62	0.16	7.50
Nickel	3.6	mg/kg	0.09	0.02	3.00
Lead	5.4	mg/kg	0.13	0.03	15.00
Cadmium	0.51	mg/kg	0.01	0.00	0.15
Chromium	2.8	mg/kg	0.07	0.02	15.00
Mercury	1.7	mg/kg	0.04	0.01	0.10
Arsenic	12.5	mg/kg	0.30	0.07	0.70
Aluminium	181000	mg/kg	4326	1081.5	
Iron	6200	mg/kg	148	37.0	

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**DCWW****Analysis of Cefni sludge**

Date: 28/04/2025

Sample no.8358329

\*Alum sludge

Application rate (t/ha) 250  
Application rate (t/acre) 100.0  
pH 6.7  
Dry solids (%) 3.3  
Organic matter (%) 44.7

**NUTRIENT CONTENT**

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.93	%	0.31	77.8	0.01	1.5
Ammonium-N	182	mg/kg	0.01	1.5		
Phosphorus (P)	0.36	%	0.12	29.7		
Phosphate (P2O5)			0.27	67.8	0.1	33.9
Potassium (K)	0.01	%	0.00	0.8		
Potash (K2O)			0.00	1.0	0.0	0.9
Magnesium (Mg)	930	mg/kg	0.03	7.7		
Magnesium (MgO)			0.05	12.4	0.0	3.1
Sulphur (S)	12700	mg/kg	0.42	105.7		
Sulphur (SO <sub>2</sub> )			1.06	264.3	0.1	26.4
Calcium (Ca)		mg/kg	0.0	0.0		

**POTENTIALLY TOXIC ELEMENTS**

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	85.7	mg/kg	2.9	0.71	15.00
Copper	27.1	mg/kg	0.90	0.23	7.50
Nickel	9.0	mg/kg	0.30	0.07	3.00
Lead	3.9	mg/kg	0.13	0.03	15.00
Cadmium	0.32	mg/kg	0.01	0.00	0.15
Chromium	2.1	mg/kg	0.07	0.02	15.00
Mercury	1.2	mg/kg	0.04	0.01	0.10
Arsenic	10.7	mg/kg	0.36	0.09	0.70
Aluminium	215000	mg/kg	7160	1789.9	
Iron	3550	mg/kg	118	29.6	

**DCWW**

**Analysis of Bryn Cowlyd sludge**

Date: 28/04/2025

Sample no. 8358325

Application rate (t/ha) 250  
Application rate (t/acre) 100.0  
pH 5.9  
Dry solids (%) 2.3  
Organic matter (%) 29.6

\*Ferric sludge

**NUTRIENT CONTENT**

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.66	%	0.15	38.7	0.01	1.5
Ammonium-N	262	mg/kg	0.01	1.5		
Phosphorus (P)	0.03	%	0.01	1.8		
Phosphate (P2O5)			0.02	4.0	0.0	2.0
Potassium (K)	0.02	%	0.00	1.2		
Potash (K2O)			0.01	1.4	0.0	1.3
Magnesium (Mg)	369	mg/kg	0.01	2.1		
Magnesium (MgO)			0.01	3.4	0.0	0.9
Sulphur (S)	4180	mg/kg	0.10	24.3		
Sulphur (SO <sub>2</sub> )			0.24	60.9	0.0	6.1
Calcium (Ca)		mg/kg	0.0	0.0		

**POTENTIALLY TOXIC ELEMENTS**

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	168.0	mg/kg	3.9	0.98	15.00
Copper	5.0	mg/kg	0.12	0.03	7.50
Nickel	37.2	mg/kg	0.87	0.22	3.00
Lead	13.0	mg/kg	0.30	0.08	15.00
Cadmium	0.73	mg/kg	0.02	0.00	0.15
Chromium	2.9	mg/kg	0.07	0.02	15.00
Mercury	1.7	mg/kg	0.04	0.01	0.10
Arsenic	13.1	mg/kg	0.31	0.08	0.70
Aluminium	3720	mg/kg	87	21.7	
Iron	460000	mg/kg	10718	2679.5	

## DCWW

### Analysis of Cwellyn sludge

Date: 28/04/2025

Sample no. 8358333

Application rate (t/ha) 250  
Application rate (t/acre) 100.0  
pH 6.6  
Dry solids (%) 3.0  
Organic matter (%) 44.8

\*Alum sludge

#### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.95	%	0.29	71.3	0.01	1.5
Ammonium-N	203	mg/kg	0.01	1.5		
Phosphorus (P)	0.32	%	0.10	24.0		
Phosphate (P2O5)			0.22	54.7	0.1	27.4
Potassium (K)	0.01	%	0.00	0.7		
Potash (K2O)			0.00	0.8	0.0	0.7
Magnesium (Mg)	970	mg/kg	0.03	7.3		
Magnesium (MgO)			0.05	11.6	0.0	2.9
Sulphur (S)	12400	mg/kg	0.37	93.0		
Sulphur (SO <sub>2</sub> )			0.93	232.5	0.1	23.3
Calcium (Ca)		mg/kg	0.0	0.0		

#### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	138.0	mg/kg	4.1	1.04	15.00
Copper	27.9	mg/kg	0.84	0.21	7.50
Nickel	5.5	mg/kg	0.17	0.04	3.00
Lead	4.4	mg/kg	0.13	0.03	15.00
Cadmium	0.34	mg/kg	0.01	0.00	0.15
Chromium	2.3	mg/kg	0.07	0.02	15.00
Mercury	1.4	mg/kg	0.04	0.01	0.10
Arsenic	10.8	mg/kg	0.32	0.08	0.70
Aluminium	252000	mg/kg	7560	1890.0	
Iron	3570	mg/kg	107	26.8	

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**DCWW****Analysis of Dolbenmaen sludge**

Date: 28/04/2025

Sample no. 8358305

\*Alum sludge

Application rate (t/ha)	250
Application rate (t/acre)	100.0
pH	6.8
Dry solids (%)	2.6
Organic matter (%)	34.3

**NUTRIENT CONTENT**

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.72	%	0.19	46.3	0.01	1.8
Ammonium-N	278	mg/kg	0.01	1.8		
Phosphorus (P)	0.24	%	0.06	15.7		
Phosphate (P <sub>2</sub> O <sub>5</sub> )			0.14	35.7	0.1	17.9
Potassium (K)	0.01	%	0.00	0.6		
Potash (K <sub>2</sub> O)			0.00	0.7	0.0	0.6
Magnesium (Mg)	187	mg/kg	0.00	1.2		
Magnesium (MgO)			0.01	1.9	0.0	0.5
Sulphur (S)	16600	mg/kg	0.43	107.1		
Sulphur (SO <sub>2</sub> )			1.07	267.7	0.1	26.8
Calcium (Ca)		mg/kg	0.0	0.0		

**POTENTIALLY TOXIC ELEMENTS**

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	349.0	mg/kg	9.0	2.25	15.00
Copper	22.1	mg/kg	0.57	0.14	7.50
Nickel	3.3	mg/kg	0.09	0.02	3.00
Lead	5.0	mg/kg	0.13	0.03	15.00
Cadmium	0.96	mg/kg	0.02	0.01	0.15
Chromium	2.6	mg/kg	0.07	0.02	15.00
Mercury	1.5	mg/kg	0.04	0.01	0.10
Arsenic	14.6	mg/kg	0.38	0.09	0.70
Aluminium	313000	mg/kg	8075	2018.9	
Iron	4960	mg/kg	128	32.0	

## DCWW

### Analysis of Gwastadgoed sludge

Date: 28/04/2025

Sample no.8358307

  \*Ferric sludge

Application rate (t/ha)	250
Application rate (t/acre)	100.0
pH	5.6
Dry solids (%)	6.0
Organic matter (%)	16.3

#### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.32	%	0.19	47.5	0.01	1.5
Ammonium-N	102	mg/kg	0.01	1.5		
Phosphorus (P)	0.17	%	0.10	25.2		
Phosphate (P2O5)			0.23	57.4	0.1	28.7
Potassium (K)	0.01	%	0.01	1.5		
Potash (K2O)			0.01	1.8	0.0	1.6
Magnesium (Mg)	320	mg/kg	0.02	4.8		
Magnesium (MgO)			0.03	7.7	0.0	1.9
Sulphur (S)	10800	mg/kg	0.65	161.7		
Sulphur (SO <sub>2</sub> )			1.62	404.3	0.2	40.4
Calcium (Ca)		mg/kg	0.0	0.0		

#### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	163.0	mg/kg	9.8	2.44	15.00
Copper	2.0	mg/kg	0.12	0.03	7.50
Nickel	61.5	mg/kg	3.68	0.92	3.00
Lead	26.1	mg/kg	1.56	0.39	15.00
Cadmium	0.30	mg/kg	0.02	0.00	0.15
Chromium	1.2	mg/kg	0.07	0.02	15.00
Mercury	0.7	mg/kg	0.04	0.01	0.10
Arsenic	15.2	mg/kg	0.91	0.23	0.70
Aluminium	3230	mg/kg	193	48.4	
Iron	519000	mg/kg	31088	7772.0	



## DCWW

### Analysis of Mynydd Llandegai sludge

Date: 28/04/2025

Sample no. 8358331

Application rate (t/ha)	250
Application rate (t/acre)	100.0
pH	6.8
Dry solids (%)	3.4
Organic matter (%)	44.8

\*Alum sludge

#### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.90	%	0.31	77.3	0.01	1.5
Ammonium-N	178	mg/kg	0.01	1.5		
Phosphorus (P)	0.34	%	0.12	29.0		
Phosphate (P2O5)			0.26	66.1	0.1	33.0
Potassium (K)	0.01	%	0.00	0.7		
Potash (K2O)			0.00	0.9	0.0	0.8
Magnesium (Mg)	992	mg/kg	0.03	8.5		
Magnesium (MgO)			0.05	13.6	0.0	3.4
Sulphur (S)	11800	mg/kg	0.40	101.2		
Sulphur (SO <sub>3</sub> )			1.01	253.0	0.1	25.3
Calcium (Ca)		mg/kg	0.0	0.0		

#### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	105.0	mg/kg	3.6	0.90	15.00
Copper	27.2	mg/kg	0.93	0.23	7.50
Nickel	8.5	mg/kg	0.29	0.07	3.00
Lead	3.8	mg/kg	0.13	0.03	15.00
Cadmium	0.27	mg/kg	0.01	0.00	0.15
Chromium	2.0	mg/kg	0.07	0.02	15.00
Mercury	1.2	mg/kg	0.04	0.01	0.10
Arsenic	9.1	mg/kg	0.31	0.08	0.70
Aluminium	183000	mg/kg	6277	1569.2	
Iron	3260	mg/kg	112	28.0	

**DCWW**

**Analysis of Penybont sludge**

Date: 28/04/2025

Sample no. 8358303

Application rate (t/ha)                    250  
 Application rate (t/acre)                100.0  
 pH    6.8  
 Dry solids (%)                                2.7  
 Organic matter (%)                         30.8

\*Alum sludge

**NUTRIENT CONTENT**

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.86	%	0.23	57.5	0.01	1.5
Ammonium-N	227	mg/kg	0.01	1.5		
Phosphorus (P)	0.55	%	0.15	36.6		
Phosphate (P2O5)			0.33	83.4	0.2	41.7
Potassium (K)	0.02	%	0.01	1.3		
Potash (K2O)			0.01	1.6	0.0	1.4
Magnesium (Mg)	1070	mg/kg	0.03	7.2		
Magnesium (MgO)			0.05	11.5	0.0	2.9
Sulphur (S)	13000	mg/kg	0.35	87.1		
Sulphur (SO <sub>2</sub> )			0.87	217.8	0.1	21.8
Calcium (Ca)		mg/kg	0.0	0.0		

**POTENTIALLY TOXIC ELEMENTS**

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	99.7	mg/kg	2.7	0.67	15.00
Copper	34.7	mg/kg	0.93	0.23	7.50
Nickel	7.9	mg/kg	0.21	0.05	3.00
Lead	4.8	mg/kg	0.13	0.03	15.00
Cadmium	0.35	mg/kg	0.01	0.00	0.15
Chromium	4.6	mg/kg	0.12	0.03	15.00
Mercury	1.5	mg/kg	0.04	0.01	0.10
Arsenic	47.7	mg/kg	1.28	0.32	0.70
Aluminium	217000	mg/kg	5816	1453.9	
Iron	9250	mg/kg	248	62.0	

**DCWW**

**Analysis of Rhiwgoch sludge**

Date: 28/04/2025

Sample no. 8358297

Application rate (t/ha)                    250  
Application rate (t/acre)                100.0  
pH    6.2  
Dry solids (%)                                4.4  
Organic matter (%)                         30.9

\*Ferric sludge

**NUTRIENT CONTENT**

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.62	%	0.27	67.8	0.01	1.5
Ammonium-N	139	mg/kg	0.01	1.5		
Phosphorus (P)	0.29	%	0.13	31.6		
Phosphate (P2O5)			0.29	72.0	0.1	36.0
Potassium (K)	0.01	%	0.00	1.1		
Potash (K2O)			0.01	1.3	0.0	1.2
Magnesium (Mg)	437	mg/kg	0.02	4.8		
Magnesium (MgO)			0.03	7.7	0.0	1.9
Sulphur (S)	3100	mg/kg	0.14	34.1		
Sulphur (SO <sub>2</sub> )			0.34	85.3	0.0	8.5
Calcium (Ca)		mg/kg	0.0	0.0		

**POTENTIALLY TOXIC ELEMENTS**

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	299.0	mg/kg	13.2	3.29	15.00
Copper	16.7	mg/kg	0.73	0.18	7.50
Nickel	15.9	mg/kg	0.70	0.17	3.00
Lead	27.7	mg/kg	1.22	0.30	15.00
Cadmium	0.87	mg/kg	0.04	0.01	0.15
Chromium	14.7	mg/kg	0.65	0.16	15.00
Mercury	0.9	mg/kg	0.04	0.01	0.10
Arsenic	11.5	mg/kg	0.51	0.13	0.70
Aluminium	5030	mg/kg	221	55.3	
Iron	464000	mg/kg	20416	5104.0	