

# Sample Analysis Report

<b>Sampling Point No -</b> 79186	<b>Location -</b> CEFN DRYSCOED WTW SLUDGE TANKE
<b>Date Sampled -</b> 01-Feb-19	<b>Time Taken -</b> 11:29
<b>Originator -</b> SEWAGE	<b>Purpose -</b> EQO/DIRECTIVE COMPLIANCE
<b>Laboratory -</b> GLASLYN	<b>Lab Ref No -</b> S 6260959
<b>Sampler -</b> EXTA	<b>No Results -</b> 20
<b>Type -</b>	

## Sample Results

Code	Determinand Name	Units	Result	Limit
238	Magnesium	MG/KG	828	
288	ALUMINIUM (DRY WT)	MG/KG	196000	
357	ARSENIC (DRY WT)	MG/KG	LT 8.2	
4620	pH	PH UNITS	6.6	
7774	WTW MERCURY TOTAL	MG/KG	LT 0.55	
8241	LOSS ON IGNITION	%	53.5	
9233	Ammoniacal nitrogen	MG/KG	292	
9234	Sulphur	MG/KG	13200	
9271	Cadmium	MG/KG	0.49	
9272	CHROMIUM TOTAL	MG/KG	5.3	
9273	Copper	MG/KG	38.7	
9275	Nickel	MG/KG	33.8	
9276	LEAD TOTAL	MG/KG	LT 6.2	
9277	ZINC TOTAL	MG/KG	209	
9278	IRON TOTAL	MG/KG	3700	
9281	% Dry solids	%	3.69	
9282	% Minerals	%	46.5	
9283	% K (dry weight)	%	0.012	
9284	% P (dry weight)	%	0.11	
9285	% N (dry weight)	%	1.05	

## DCWW Cefn Dryskoed

### Analysis of WTW Liquid

Date: 01.02.19

Lab report no. 6260959

Application rate (t/ha) 250  
Application rate (t/acre) 100.0  
pH 6.6  
Dry solids (%) 3.7  
Organic matter (%)  
Conductivity (µS/cm)

### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	1.05	%	0.39	96.9	0.01	2.7
Ammonium-N	292	mg/kg	0.01	2.7		
Phosphorus (P)	1100	mg/kg	0.04	10.1		
Phosphate (P <sub>2</sub> O <sub>5</sub> )			0.09	23.1	0.0	4.6
Potassium (K)	120	mg/kg	0.00	1.1		
Potash (K <sub>2</sub> O)			0.01	1.3	0.0	0.3
Magnesium (Mg)	828	mg/kg	0.03	7.6		
Magnesium (MgO)			0.05	12.2	0.0	2.4
Sulphur (S)	13200	mg/kg	0.49	121.8		
Sulphur (SO <sub>3</sub> )			1.22	304.4	0.1	30.4
Calcium (Ca)		mg/kg	0.0	0.0		
Sodium (Na)		mg/kg	0.00	0.0		

### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	209.0	mg/kg	7.7	1.93	15.00
Copper	39	mg/kg	1.43	0.36	7.50
Nickel	33.8	mg/kg	1.25	0.31	3.00
Lead	6.2	mg/kg	0.23	0.06	15.00
Cadmium	0.49	mg/kg	0.02	0.00	0.15
Chromium	5.3	mg/kg	0.20	0.05	15.00
Mercury	0.6	mg/kg	0.02	0.01	0.10
Arsenic	8.2	mg/kg	0.30	0.08	0.70
Selenium		mg/kg	0.00	0.00	0.15
Molybdenum		mg/kg	0.00	0.00	0.20
Fluoride		mg/kg	0.00	0.00	20.00
Other Elements					
Aluminium	196000.0	mg/kg	7232.40	1808.10	
Iron	3700.00	mg/kg	136.53	34.13	

To convert from kg/tonne to units/ton multiply by 2

To convert from kg/ha to units/acre multiply by 0.8

# Sample Analysis Report

<b>Sampling Point No -</b>	300992	<b>Location -</b>	COURT FARM WTW SLUDGE TANKERING
<b>Date Sampled -</b>	01-Feb-19	<b>Time Taken -</b>	11:23
<b>Originator -</b>	SEWAGE	<b>Purpose -</b>	EQO/DIRECTIVE COMPLIANCE
<b>Laboratory -</b>	GLASLYN	<b>Lab Ref No -</b>	S 6260934
<b>Sampler -</b>	EXTA	<b>No Results -</b>	20
<b>Type -</b>			

## Sample Results

Code	Determinand Name	Units	Result	Limit
238	Magnesium	MG/KG	1720	
288	ALUMINIUM (DRY WT)	MG/KG	5500	
357	ARSENIC (DRY WT)	MG/KG	19	
4620	pH	PH UNITS	7.5	
7774	WTW MERCURY TOTAL	MG/KG	LT 0.24	
8241	LOSS ON IGNITION	%	22.1	
9233	Ammoniacal nitrogen	MG/KG	63	
9234	Sulphur	MG/KG	1150	
9271	Cadmium	MG/KG	0.32	
9272	CHROMIUM TOTAL	MG/KG	16.4	
9273	Copper	MG/KG	LT 7.8	
9275	Nickel	MG/KG	41.2	
9276	LEAD TOTAL	MG/KG	21.9	
9277	ZINC TOTAL	MG/KG	193	
9278	IRON TOTAL	MG/KG	461000	
9281	% Dry solids	%	21.1	
9282	% Minerals	%	77.9	
9283	% K (dry weight)	%	0.057	
9284	% P (dry weight)	%	0.16	
9285	% N (dry weight)	%	0.69	

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LT - Less Than      GT - Greater Than

Comments -

Signed -

28 June 2019

## DCWW Court Farm

### Analysis of WTW Sludge

Date: 01.02.19

Lab report no. 6260934

Application rate (t/ha)                      50  
 Application rate (t/acre)                  20.0  
 pH    7.5  
 Dry solids (%)                                21.1  
 Organic matter (%)  
 Conductivity (µS/cm)

#### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.69	%	1.46	72.8	0.01	0.7
Ammonium-N	63	mg/kg	0.01	0.7		
Phosphorus (P)	1600	mg/kg	0.34	16.9		
Phosphate (P <sub>2</sub> O <sub>5</sub> )			0.77	38.5	0.2	7.7
Potassium (K)	570	mg/kg	0.12	6.0		
Potash (K <sub>2</sub> O)			0.14	7.2	0.0	1.4
Magnesium (Mg)	1720	mg/kg	0.36	18.1		
Magnesium (MgO)			0.58	29.0	0.1	5.8
Sulphur (S)	1150	mg/kg	0.24	12.1		
Sulphur (SO <sub>3</sub> )			0.61	30.3	0.1	3.0
Calcium (Ca)		mg/kg	0.0	0.0		
Sodium (Na)		mg/kg	0.00	0.0		

#### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	193.0	mg/kg	40.7	2.04	15.00
Copper	8	mg/kg	1.65	0.08	7.50
Nickel	41.2	mg/kg	8.69	0.43	3.00
Lead	21.9	mg/kg	4.62	0.23	15.00
Cadmium	0.32	mg/kg	0.07	0.00	0.15
Chromium	16.4	mg/kg	3.46	0.17	15.00
Mercury	0.2	mg/kg	0.05	0.00	0.10
Arsenic	19.0	mg/kg	4.01	0.20	0.70
Selenium		mg/kg	0.00	0.00	0.15
Molybdenum		mg/kg	0.00	0.00	0.20
Fluoride		mg/kg	0.00	0.00	20.00
Other Elements					
Aluminium	5500.0	mg/kg	1160.50	58.03	
Iron	461000.00	mg/kg	97271.00	4863.55	

To convert from kg/tonne to units/ton multiply by 2

To convert from kg/ha to units/acre multiply by 0.8

## DCWW Court Farm

### Analysis of WTW Sludge

Date: 01.02.19

Lab report no. 6260934

Application rate (t/ha)	171
Application rate (t/acre)	68.4
pH	7.5
Dry solids (%)	21.1
Organic matter (%)	
Conductivity (µS/cm)	

#### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.69	%	1.46	249.0	0.01	2.3
Ammonium-N	63	mg/kg	0.01	2.3		
Phosphorus (P)	1600	mg/kg	0.34	57.7		
Phosphate (P <sub>2</sub> O <sub>5</sub> )			0.77	131.6	0.2	26.3
Potassium (K)	570	mg/kg	0.12	20.6		
Potash (K <sub>2</sub> O)			0.14	24.7	0.0	4.9
Magnesium (Mg)	1720	mg/kg	0.36	62.1		
Magnesium (MgO)			0.58	99.3	0.1	19.9
Sulphur (S)	1150	mg/kg	0.24	41.5		
Sulphur (SO <sub>3</sub> )			0.61	103.7	0.1	10.4
Calcium (Ca)		mg/kg	0.0	0.0		
Sodium (Na)		mg/kg	0.00	0.0		

#### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	193.0	mg/kg	40.7	6.96	15.00
Copper	8	mg/kg	1.65	0.28	7.50
Nickel	41.2	mg/kg	8.69	1.49	3.00
Lead	21.9	mg/kg	4.62	0.79	15.00
Cadmium	0.32	mg/kg	0.07	0.01	0.15
Chromium	16.4	mg/kg	3.46	0.59	15.00
Mercury	0.2	mg/kg	0.05	0.01	0.10
Arsenic	19.0	mg/kg	4.01	0.69	0.70
Selenium		mg/kg	0.00	0.00	0.15
Molybdenum		mg/kg	0.00	0.00	0.20
Fluoride		mg/kg	0.00	0.00	20.00
Other Elements					
Aluminium	5500.0	mg/kg	1160.50	198.45	
Iron	461000.00	mg/kg	97271.00	16633.34	

To convert from kg/tonne to units/ton multiply by 2

To convert from kg/ha to units/acre multiply by 0.8

# Sample Analysis Report

<b>Sampling Point No -</b>	79114	<b>Location -</b>	CRAY WTW SLUDGE TANKERING POINT
<b>Date Sampled -</b>	31-Jan-19	<b>Time Taken -</b>	11:36
<b>Originator -</b>	SEWAGE	<b>Purpose -</b>	EQO/DIRECTIVE COMPLIANCE
<b>Laboratory -</b>	GLASLYN	<b>Lab Ref No -</b>	S 6261004
<b>Sampler -</b>	EXTA	<b>No Results -</b>	20
<b>Type -</b>			

## Sample Results

Code	Determinand Name	Units	Result	Limit
238	Magnesium	MG/KG	333	
288	ALUMINIUM (DRY WT)	MG/KG	2640	
357	ARSENIC (DRY WT)	MG/KG	43.7	
4620	pH	PH UNITS	5.5	
7774	WTW MERCURY TOTAL	MG/KG	LT 0.72	
8241	LOSS ON IGNITION	%	37.5	
9233	Ammoniacal nitrogen	MG/KG	LT 217	
9234	Sulphur	MG/KG	5090	
9271	Cadmium	MG/KG	0.76	
9272	CHROMIUM TOTAL	MG/KG	10.4	
9273	Copper	MG/KG	LT 7.8	
9275	Nickel	MG/KG	35.1	
9276	LEAD TOTAL	MG/KG	15.7	
9277	ZINC TOTAL	MG/KG	367	
9278	IRON TOTAL	MG/KG	495000	
9281	% Dry solids	%	2.8	
9282	% Minerals	%	62.5	
9283	% K (dry weight)	%	LT 0.0087	
9284	% P (dry weight)	%	0.065	
9285	% N (dry weight)	%	0.61	

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**LT - Less Than      GT - Greater Than**

**Comments -**

**Signed -**

**05 July 2019**



## DCWW Crai

### Analysis of WTW Liquid

Date: 31.01.19

Lab report no. 6261004

Application rate (t/ha) 250  
Application rate (t/acre) 100.0  
pH 5.5  
Dry solids (%) 2.8  
Organic matter (%)  
Conductivity (µS/cm)

### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.61	%	0.17	42.7	0.01	1.5
Ammonium-N	217	mg/kg	0.01	1.5		
Phosphorus (P)	650	mg/kg	0.02	4.6		
Phosphate (P <sub>2</sub> O <sub>5</sub> )			0.04	10.4	0.0	2.1
Potassium (K)	87	mg/kg	0.00	0.6		
Potash (K <sub>2</sub> O)			0.00	0.7	0.0	0.1
Magnesium (Mg)	333	mg/kg	0.01	2.3		
Magnesium (MgO)			0.01	3.7	0.0	0.7
Sulphur (S)	5090	mg/kg	0.14	35.6		
Sulphur (SO <sub>3</sub> )			0.36	89.1	0.0	8.9
Calcium (Ca)		mg/kg	0.0	0.0		
Sodium (Na)		mg/kg	0.00	0.0		

### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	367.0	mg/kg	10.3	2.57	15.00
Copper	7.8	mg/kg	0.22	0.05	7.50
Nickel	35.1	mg/kg	0.98	0.25	3.00
Lead	15.7	mg/kg	0.44	0.11	15.00
Cadmium	0.76	mg/kg	0.02	0.01	0.15
Chromium	10.4	mg/kg	0.29	0.07	15.00
Mercury	0.7	mg/kg	0.02	0.01	0.10
Arsenic	43.7	mg/kg	1.22	0.31	0.70
Selenium		mg/kg	0.00	0.00	0.15
Molybdenum		mg/kg	0.00	0.00	0.20
Fluoride		mg/kg	0.00	0.00	20.00
Other Elements					
Aluminium	2640.0	mg/kg	73.92	18.48	
Iron	495000.00	mg/kg	13860.00	3465.00	

To convert from kg/tonne to units/ton multiply by 2

To convert from kg/ha to units/acre multiply by 0.8

# Sample Analysis Report

<b>Sampling Point No -</b>	79114	<b>Location -</b>	CRAY WTW SLUDGE TANKERING POINT
<b>Date Sampled -</b>	01-Feb-19	<b>Time Taken -</b>	11:37
<b>Originator -</b>	SEWAGE	<b>Purpose -</b>	EQO/DIRECTIVE COMPLIANCE
<b>Laboratory -</b>	GLASLYN	<b>Lab Ref No -</b>	S 6261010
<b>Sampler -</b>	EXTA	<b>No Results -</b>	20
<b>Type -</b>			

## Sample Results

Code	Determinand Name	Units	Result	Limit
238	Magnesium	MG/KG	249	
288	ALUMINIUM (DRY WT)	MG/KG	2550	
357	ARSENIC (DRY WT)	MG/KG	40.1	
4620	pH	PH UNITS	5.7	
7774	WTW MERCURY TOTAL	MG/KG	LT 0.33	
8241	LOSS ON IGNITION	%	38.5	
9233	Ammoniacal nitrogen	MG/KG	LT 39.7	
9234	Sulphur	MG/KG	6920	
9271	Cadmium	MG/KG	0.62	
9272	CHROMIUM TOTAL	MG/KG	13.3	
9273	Copper	MG/KG	LT 7.8	
9275	Nickel	MG/KG	12.4	
9276	LEAD TOTAL	MG/KG	19.2	
9277	ZINC TOTAL	MG/KG	147	
9278	IRON TOTAL	MG/KG	473000	
9281	% Dry solids	%	15.4	
9282	% Minerals	%	61.5	
9283	% K (dry weight)	%	LT 0.0087	
9284	% P (dry weight)	%	0.078	
9285	% N (dry weight)	%	0.79	

## DCWW Crai

### Analysis of WTW Sludge

Date: 01.02.19

Lab report no. 6261010

Application rate (t/ha) 114  
Application rate (t/acre) 45.6  
pH 5.7  
Dry solids (%) 15.4  
Organic matter (%)  
Conductivity (µS/cm)

#### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.79	%	1.22	138.7	0.01	0.7
Ammonium-N	39.7	mg/kg	0.01	0.7		
Phosphorus (P)	780	mg/kg	0.12	13.7		
Phosphate (P <sub>2</sub> O <sub>5</sub> )			0.27	31.2	0.1	6.2
Potassium (K)	87	mg/kg	0.01	1.5		
Potash (K <sub>2</sub> O)			0.02	1.8	0.0	0.4
Magnesium (Mg)	249	mg/kg	0.04	4.4		
Magnesium (MgO)			0.06	7.0	0.0	1.4
Sulphur (S)	6920	mg/kg	1.07	121.5		
Sulphur (SO <sub>3</sub> )			2.66	303.7	0.3	30.4
Calcium (Ca)		mg/kg	0.0	0.0		
Sodium (Na)		mg/kg	0.00	0.0		

#### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	147.0	mg/kg	22.6	2.58	15.00
Copper	7.8	mg/kg	1.20	0.14	7.50
Nickel	12.4	mg/kg	1.91	0.22	3.00
Lead	19.2	mg/kg	2.96	0.34	15.00
Cadmium	0.62	mg/kg	0.10	0.01	0.15
Chromium	13.3	mg/kg	2.05	0.23	15.00
Mercury	0.33	mg/kg	0.05	0.01	0.10
Arsenic	40.1	mg/kg	6.18	0.70	0.70
Selenium		mg/kg	0.00	0.00	0.15
Molybdenum		mg/kg	0.00	0.00	0.20
Fluoride		mg/kg	0.00	0.00	20.00
Other Elements					
Aluminium	2550.0	mg/kg	392.70	44.77	
Iron	473000.00	mg/kg	72842.00	8303.99	

To convert from kg/tonne to units/ton multiply by 2

To convert from kg/ha to units/acre multiply by 0.8

# Sample Analysis Report

<b>Sampling Point No -</b>	303551	<b>Location -</b>	HIRWAUN WTW SLUDGE TANKERING PO
<b>Date Sampled -</b>	15-Nov-18	<b>Time Taken -</b>	08:28
<b>Originator -</b>	SEWAGE	<b>Purpose -</b>	EQO/DIRECTIVE COMPLIANCE
<b>Laboratory -</b>	GLASLYN	<b>Lab Ref No -</b>	S 6193138
<b>Sampler -</b>	EXTA	<b>No Results -</b>	20
<b>Type -</b>			

## Sample Results

Code	Determinand Name	Units	Result	Limit
238	Magnesium	MG/KG	417	
288	ALUMINIUM (DRY WT)	MG/KG	2720	
357	ARSENIC (DRY WT)	MG/KG	41.4	
4620	pH	PH UNITS	6.7	
7774	WTW MERCURY TOTAL	MG/KG	LT 0.78	
8241	LOSS ON IGNITION	%	32.7	
9233	Ammoniacal nitrogen	MG/KG	LT 236	
9234	Sulphur	MG/KG	4170	
9271	Cadmium	MG/KG	0.46	
9272	CHROMIUM TOTAL	MG/KG	LT 4.3	
9273	Copper	MG/KG	23.4	
9275	Nickel	MG/KG	17.2	
9276	LEAD TOTAL	MG/KG	25	
9277	ZINC TOTAL	MG/KG	141	
9278	IRON TOTAL	MG/KG	430000	
9281	% Dry solids	%	2.59	
9282	% Minerals	%	67.3	
9283	% K (dry weight)	%	0.03	
9284	% P (dry weight)	%	0.04	
9285	% N (dry weight)	%	0.83	

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**LT - Less Than      GT - Greater Than**

**Comments -**

**Signed -**

**05 July 2019**

## DCWW Hirwaun

### Analysis of WTW Liquid

Date: 15.11.18

Lab report no. 6193138

Application rate (t/ha) 250  
Application rate (t/acre) 100.0  
pH 6.7  
Dry solids (%) 2.6  
Organic matter (%)  
Conductivity (µS/cm)

### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.83	%	0.21	53.7	0.01	1.5
Ammonium-N	236	mg/kg	0.01	1.5		
Phosphorus (P)	400	mg/kg	0.01	2.6		
Phosphate (P <sub>2</sub> O <sub>5</sub> )			0.02	5.9	0.0	1.2
Potassium (K)	300	mg/kg	0.01	1.9		
Potash (K <sub>2</sub> O)			0.01	2.3	0.0	0.5
Magnesium (Mg)	417	mg/kg	0.01	2.7		
Magnesium (MgO)			0.02	4.3	0.0	0.9
Sulphur (S)	4170	mg/kg	0.11	27.0		
Sulphur (SO <sub>3</sub> )			0.27	67.5	0.0	6.8
Calcium (Ca)		mg/kg	0.0	0.0		
Sodium (Na)		mg/kg	0.00	0.0		

### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	141.0	mg/kg	3.7	0.91	15.00
Copper	23	mg/kg	0.61	0.15	7.50
Nickel	17.2	mg/kg	0.45	0.11	3.00
Lead	25.0	mg/kg	0.65	0.16	15.00
Cadmium	0.46	mg/kg	0.01	0.00	0.15
Chromium	4.3	mg/kg	0.11	0.03	15.00
Mercury	0.8	mg/kg	0.02	0.01	0.10
Arsenic	41.4	mg/kg	1.07	0.27	0.70
Selenium		mg/kg	0.00	0.00	0.15
Molybdenum		mg/kg	0.00	0.00	0.20
Fluoride		mg/kg	0.00	0.00	20.00
Other Elements					
Aluminium	2720.0	mg/kg	70.45	17.61	
Iron	430000.00	mg/kg	11137.00	2784.25	

To convert from kg/tonne to units/ton multiply by 2

To convert from kg/ha to units/acre multiply by 0.8

# Sample Analysis Report

<b>Sampling Point No -</b>	360173	<b>Location -</b>	LLYSWEN WTW SLUDGE TANKERING POI
<b>Date Sampled -</b>	10-Jul-19	<b>Time Taken -</b>	13:39
<b>Originator -</b>	SEWAGE	<b>Purpose -</b>	EQO/DIRECTIVE COMPLIANCE
<b>Laboratory -</b>	GLASLYN	<b>Lab Ref No -</b>	S 6412179
<b>Sampler -</b>	EXTA	<b>No Results -</b>	21
<b>Type -</b>			

## Sample Results

Code	Determinand Name	Units	Result	Limit
238	Magnesium	MG/KG	50	
288	ALUMINIUM (DRY WT)	MG/KG	37900	
357	ARSENIC (DRY WT)	MG/KG	9.5	
403	Manganese	MG/L	360	
4620	pH	PH UNITS	6.7	
7774	WTW MERCURY TOTAL	MG/KG	LT 0.17	
8241	LOSS ON IGNITION	%	11.1	
9233	Ammoniacal nitrogen	MG/KG	LT 51.2	
9234	Sulphur	MG/KG	1580	
9271	Cadmium	MG/KG	LT 0.11	
9272	CHROMIUM TOTAL	MG/KG	LT 4.3	
9273	Copper	MG/KG	LT 7.8	
9275	Nickel	MG/KG	LT 5.1	
9276	LEAD TOTAL	MG/KG	LT 6.2	
9277	ZINC TOTAL	MG/KG	81.7	
9278	IRON TOTAL	MG/KG	1250	
9281	% Dry solids	%	11.9	
9282	% Minerals	%	88.9	
9283	% K (dry weight)	%	LT 0.0087	
9284	% P (dry weight)	%	0.032	
9285	% N (dry weight)	%	0.27	

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**LT - Less Than      GT - Greater Than**

**Comments -**

**Signed -**

**06 August 2019**



## DCWW Llysven

### Analysis of WTW Effluent

Date: 10.07.19

Lab report no. 6412179

Application rate (t/ha) 250  
Application rate (t/acre) 100.0  
pH 6.7  
Dry solids (%) 11.9  
Organic matter (%)  
Conductivity (µS/cm)

### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	0.27	%	0.32	80.3	0.01	1.5
Ammonium-N	51.2	mg/kg	0.01	1.5		
Phosphorus (P)	320	mg/kg	0.04	9.5		
Phosphate (P <sub>2</sub> O <sub>5</sub> )			0.09	21.7	0.0	4.3
Potassium (K)	87	mg/kg	0.01	2.6		
Potash (K <sub>2</sub> O)			0.01	3.1	0.0	0.6
Magnesium (Mg)	50	mg/kg	0.01	1.5		
Magnesium (MgO)			0.01	2.4	0.0	0.5
Sulphur (S)	1580	mg/kg	0.19	47.0		
Sulphur (SO <sub>3</sub> )			0.47	117.5	0.0	11.8
Calcium (Ca)		mg/kg	0.0	0.0		
Sodium (Na)		mg/kg	0.00	0.0		

### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	81.7	mg/kg	9.7	2.43	15.00
Copper	7.8	mg/kg	0.93	0.23	7.50
Nickel	5.1	mg/kg	0.61	0.15	3.00
Lead	6.2	mg/kg	0.74	0.18	15.00
Cadmium	0.11	mg/kg	0.01	0.00	0.15
Chromium	4.3	mg/kg	0.51	0.13	15.00
Mercury	0.17	mg/kg	0.02	0.01	0.10
Arsenic	9.5	mg/kg	1.13	0.28	0.70
Selenium		mg/kg	0.00	0.00	0.15
Molybdenum		mg/kg	0.00	0.00	0.20
Fluoride		mg/kg	0.00	0.00	20.00
Other Elements					
Aluminium	37900.0	mg/kg	4510.10	1127.53	
Iron	1250.00	mg/kg	148.75	37.19	

To convert from kg/tonne to units/ton multiply by 2

To convert from kg/ha to units/acre multiply by 0.8

# Sample Analysis Report

<b>Sampling Point No -</b>	300991	<b>Location -</b>	PONTSTICILL WTW SLUDGE TANKERING
<b>Date Sampled -</b>	02-Jul-19	<b>Time Taken -</b>	15:58
<b>Originator -</b>	SEWAGE	<b>Purpose -</b>	EQO/DIRECTIVE COMPLIANCE
<b>Laboratory -</b>	GLASLYN	<b>Lab Ref No -</b>	S 6403658
<b>Sampler -</b>	EXTA	<b>No Results -</b>	21
<b>Type -</b>			

## Sample Results

Code	Determinand Name	Units	Result	Limit
238	Magnesium	MG/KG	768	
288	ALUMINIUM (DRY WT)	MG/KG	159000	
357	ARSENIC (DRY WT)	MG/KG	69.8	
403	Manganese	MG/L	2730	
4620	pH	PH UNITS	6.9	
7774	WTW MERCURY TOTAL	MG/KG	0.27	
8241	LOSS ON IGNITION	%	54.9	
9233	Ammoniacal nitrogen	MG/KG	319	
9234	Sulphur	MG/KG	6670	
9271	Cadmium	MG/KG	0.99	
9272	CHROMIUM TOTAL	MG/KG	7.3	
9273	Copper	MG/KG	40	
9275	Nickel	MG/KG	14.5	
9276	LEAD TOTAL	MG/KG	LT 6.2	
9277	ZINC TOTAL	MG/KG	86.1	
9278	IRON TOTAL	MG/KG	7950	
9281	% Dry solids	%	8.11	
9282	% Minerals	%	45.1	
9283	% K (dry weight)	%	0.037	
9284	% P (dry weight)	%	0.15	
9285	% N (dry weight)	%	1.15	

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**LT - Less Than      GT - Greater Than**

**Comments -**

**Signed -**

**19 July 2019**

## DCWW Pontsticill

### Analysis of WTW Effluent

Date: 02.07.19

Lab report no. 6403658

Application rate (t/ha) 124  
Application rate (t/acre) 49.6  
pH 6.9  
Dry solids (%) 8.1  
Organic matter (%)  
Conductivity (µS/cm)

### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	1.15	%	0.93	115.6	0.03	3.2
Ammonium-N	319	mg/kg	0.03	3.2		
Phosphorus (P)	1500	mg/kg	0.12	15.1		
Phosphate (P <sub>2</sub> O <sub>5</sub> )			0.28	34.4	0.1	6.9
Potassium (K)	370	mg/kg	0.03	3.7		
Potash (K <sub>2</sub> O)			0.04	4.5	0.0	0.9
Magnesium (Mg)	768	mg/kg	0.06	7.7		
Magnesium (MgO)			0.10	12.4	0.0	2.5
Sulphur (S)	6670	mg/kg	0.54	67.1		
Sulphur (SO <sub>3</sub> )			1.35	167.7	0.1	16.8
Calcium (Ca)		mg/kg	0.0	0.0		
Sodium (Na)		mg/kg	0.00	0.0		

### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	86.1	mg/kg	7.0	0.87	15.00
Copper	40	mg/kg	3.24	0.40	7.50
Nickel	14.5	mg/kg	1.18	0.15	3.00
Lead	6.2	mg/kg	0.50	0.06	15.00
Cadmium	0.99	mg/kg	0.08	0.01	0.15
Chromium	7.3	mg/kg	0.59	0.07	15.00
Mercury	0.27	mg/kg	0.02	0.00	0.10
Arsenic	69.8	mg/kg	5.66	0.70	0.70
Selenium		mg/kg	0.00	0.00	0.15
Molybdenum		mg/kg	0.00	0.00	0.20
Fluoride		mg/kg	0.00	0.00	20.00
Other Elements					
Aluminium	159000.0	mg/kg	12894.90	1598.97	
Iron	7950.00	mg/kg	644.75	79.95	

To convert from kg/tonne to units/ton multiply by 2

To convert from kg/ha to units/acre multiply by 0.8

# Sample Analysis Report

<b>Sampling Point No -</b>	300991	<b>Location -</b>	PONTSTICILL WTW SLUDGE TANKERING
<b>Date Sampled -</b>	02-Jul-19	<b>Time Taken -</b>	15:43
<b>Originator -</b>	SEWAGE	<b>Purpose -</b>	EQO/DIRECTIVE COMPLIANCE
<b>Laboratory -</b>	GLASLYN	<b>Lab Ref No -</b>	S 6403644
<b>Sampler -</b>	EXTA	<b>No Results -</b>	21
<b>Type -</b>			

## Sample Results

Code	Determinand Name	Units	Result	Limit
238	Magnesium	MG/KG	694	
288	ALUMINIUM (DRY WT)	MG/KG	168000	
357	ARSENIC (DRY WT)	MG/KG	70.9	
403	Manganese	MG/L	2920	
4620	pH	PH UNITS	7	
7774	WTW MERCURY TOTAL	MG/KG	LT 0.31	
8241	LOSS ON IGNITION	%	54.3	
9233	Ammoniacal nitrogen	MG/KG	97	
9234	Sulphur	MG/KG	6690	
9271	Cadmium	MG/KG	0.88	
9272	CHROMIUM TOTAL	MG/KG	6.6	
9273	Copper	MG/KG	39.1	
9275	Nickel	MG/KG	14	
9276	LEAD TOTAL	MG/KG	LT 6.2	
9277	ZINC TOTAL	MG/KG	80.4	
9278	IRON TOTAL	MG/KG	7940	
9281	% Dry solids	%	16.3	
9282	% Minerals	%	45.7	
9283	% K (dry weight)	%	0.03	
9284	% P (dry weight)	%	0.15	
9285	% N (dry weight)	%	1.11	

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LT - Less Than      GT - Greater Than

Comments -

Signed -

22 July 2019

## DCWW Pontsticill

### Analysis of WTW Sludge

Date: 02.07.19

Lab report no. 6403644

Application rate (t/ha)                      60  
 Application rate (t/acre)                    24.0  
 pH    7.0  
 Dry solids (%)                                  16.3  
 Organic matter (%)  
 Conductivity (µS/cm)

#### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	1.11	%	1.81	108.6	0.02	0.9
Ammonium-N	97	mg/kg	0.02	0.9		
Phosphorus (P)	1500	mg/kg	0.24	14.7		
Phosphate (P <sub>2</sub> O <sub>5</sub> )			0.56	33.4	0.1	6.7
Potassium (K)	300	mg/kg	0.05	2.9		
Potash (K <sub>2</sub> O)			0.06	3.5	0.0	0.7
Magnesium (Mg)	694	mg/kg	0.11	6.8		
Magnesium (MgO)			0.18	10.9	0.0	2.2
Sulphur (S)	6690	mg/kg	1.09	65.4		
Sulphur (SO <sub>3</sub> )			2.73	163.6	0.3	16.4
Calcium (Ca)		mg/kg	0.0	0.0		
Sodium (Na)		mg/kg	0.00	0.0		

#### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	80.4	mg/kg	13.1	0.79	15.00
Copper	39	mg/kg	6.37	0.38	7.50
Nickel	14.0	mg/kg	2.28	0.14	3.00
Lead	6.2	mg/kg	1.01	0.06	15.00
Cadmium	0.88	mg/kg	0.14	0.01	0.15
Chromium	6.6	mg/kg	1.08	0.06	15.00
Mercury	0.3	mg/kg	0.05	0.00	0.10
Arsenic	70.9	mg/kg	11.56	0.69	0.70
Selenium		mg/kg	0.00	0.00	0.15
Molybdenum		mg/kg	0.00	0.00	0.20
Fluoride		mg/kg	0.00	0.00	20.00
Other Elements					
Aluminium	168000.0	mg/kg	27384.00	1643.04	
Iron	7940.00	mg/kg	1294.22	77.65	

To convert from kg/tonne to units/ton multiply by 2

To convert from kg/ha to units/acre multiply by 0.8



# Sample Analysis Report

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<b>Sampling Point No -</b>	363244	<b>Location -</b>	TALYBONT WTW SLUDGE TANKERING P
<b>Date Sampled -</b>	10-Jul-19	<b>Time Taken -</b>	13:37
<b>Originator -</b>	SEWAGE	<b>Purpose -</b>	EQO/DIRECTIVE COMPLIANCE
<b>Laboratory -</b>	GLASLYN	<b>Lab Ref No -</b>	S 6412175
<b>Sampler -</b>	EXTA	<b>No Results -</b>	21
<b>Type -</b>			

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## Sample Results

Code	Determinand Name	Units	Result	Limit
238	Magnesium	MG/KG	540	
288	ALUMINIUM (DRY WT)	MG/KG	154200	
357	ARSENIC (DRY WT)	MG/KG	46	
403	Manganese	MG/L	1140	
4620	pH	PH UNITS	6.2	
7774	WTW MERCURY TOTAL	MG/KG	LT 0.34	
8241	LOSS ON IGNITION	%	47.5	
9233	Ammoniacal nitrogen	MG/KG	264	
9234	Sulphur	MG/KG	6620	
9271	Cadmium	MG/KG	0.41	
9272	CHROMIUM TOTAL	MG/KG	6.9	
9273	Copper	MG/KG	33.5	
9275	Nickel	MG/KG	9	
9276	LEAD TOTAL	MG/KG	LT 6.2	
9277	ZINC TOTAL	MG/KG	155	
9278	IRON TOTAL	MG/KG	7280	
9281	% Dry solids	%	5.94	
9282	% Minerals	%	52.5	
9283	% K (dry weight)	%	0.044	
9284	% P (dry weight)	%	0.16	
9285	% N (dry weight)	%	1.09	



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**LT - Less Than      GT - Greater Than**

**Comments -**

**Signed -**

**06 August 2019**

## DCWW Talybont

### Analysis of WTW Sludge

Date: 10.07.19

Lab report no. 6412175

Application rate (t/ha) 250  
Application rate (t/acre) 100.0  
pH 6.2  
Dry solids (%) 5.9  
Organic matter (%)  
Conductivity (µS/cm)

#### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	1.09	%	0.65	161.9	0.02	3.9
Ammonium-N	264	mg/kg	0.02	3.9		
Phosphorus (P)	1600	mg/kg	0.10	23.8		
Phosphate (P <sub>2</sub> O <sub>5</sub> )			0.22	54.2	0.0	10.8
Potassium (K)	440	mg/kg	0.03	6.5		
Potash (K <sub>2</sub> O)			0.03	7.8	0.0	1.6
Magnesium (Mg)	540	mg/kg	0.03	8.0		
Magnesium (MgO)			0.05	12.8	0.0	2.6
Sulphur (S)	6620	mg/kg	0.39	98.3		
Sulphur (SO <sub>3</sub> )			0.98	245.8	0.1	24.6
Calcium (Ca)		mg/kg	0.0	0.0		
Sodium (Na)		mg/kg	0.00	0.0		

#### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	155.0	mg/kg	9.2	2.30	15.00
Copper	34	mg/kg	1.99	0.50	7.50
Nickel	9.0	mg/kg	0.53	0.13	3.00
Lead	6.2	mg/kg	0.37	0.09	15.00
Cadmium	0.41	mg/kg	0.02	0.01	0.15
Chromium	6.9	mg/kg	0.41	0.10	15.00
Mercury	0.34	mg/kg	0.02	0.01	0.10
Arsenic	46.0	mg/kg	2.73	0.68	0.70
Selenium		mg/kg	0.00	0.00	0.15
Molybdenum		mg/kg	0.00	0.00	0.20
Fluoride		mg/kg	0.00	0.00	20.00
Other Elements					
Aluminium	154200.0	mg/kg	9159.48	2289.87	
Iron	7280.00	mg/kg	432.43	108.11	

To convert from kg/tonne to units/ton multiply by 2

To convert from kg/ha to units/acre multiply by 0.8

## DCWW Talybont

### Analysis of WTW Sludge

Date: 10.07.19

Lab report no. 6412175

Application rate (t/ha)	180
Application rate (t/acre)	72.0
pH	6.2
Dry solids (%)	5.9
Organic matter (%)	
Conductivity (µS/cm)	

#### NUTRIENT CONTENT

TOTALS	result	units	Total		Available	
			(kg/tonne)	( kg/ha)	(kg/tonne)	( kg/ha)
Nitrogen (N)	1.09	%	0.65	116.5	0.02	2.8
Ammonium-N	264	mg/kg	0.02	2.8		
Phosphorus (P)	1600	mg/kg	0.10	17.1		
Phosphate (P <sub>2</sub> O <sub>5</sub> )			0.22	39.0	0.0	7.8
Potassium (K)	440	mg/kg	0.03	4.7		
Potash (K <sub>2</sub> O)			0.03	5.6	0.0	1.1
Magnesium (Mg)	540	mg/kg	0.03	5.8		
Magnesium (MgO)			0.05	9.2	0.0	1.8
Sulphur (S)	6620	mg/kg	0.39	70.8		
Sulphur (SO <sub>3</sub> )			0.98	177.0	0.1	17.7
Calcium (Ca)		mg/kg	0.0	0.0		
Sodium (Na)		mg/kg	0.00	0.0		

#### POTENTIALLY TOXIC ELEMENTS

TOTALS	result	units	Amount		Limit
			(g/tonne)	(kg/ha)	(kg/ha/yr)
Zinc	155.0	mg/kg	9.2	1.66	15.00
Copper	34	mg/kg	1.99	0.36	7.50
Nickel	9.0	mg/kg	0.53	0.10	3.00
Lead	6.2	mg/kg	0.37	0.07	15.00
Cadmium	0.41	mg/kg	0.02	0.00	0.15
Chromium	6.9	mg/kg	0.41	0.07	15.00
Mercury	0.34	mg/kg	0.02	0.00	0.10
Arsenic	46.0	mg/kg	2.73	0.49	0.70
Selenium		mg/kg	0.00	0.00	0.15
Molybdenum		mg/kg	0.00	0.00	0.20
Fluoride		mg/kg	0.00	0.00	20.00
Other Elements					
Aluminium	154200.0	mg/kg	9159.48	1648.71	
Iron	7280.00	mg/kg	432.43	77.84	

To convert from kg/tonne to units/ton multiply by 2

To convert from kg/ha to units/acre multiply by 0.8