Statement of Agricultural Benefit – Noyadd Farm, Dderw & Glan-Elan

Applicant: Severn Trent Water Ltd, 2 St John's Street, Coventry, CV1 2LZ
Permit: SR2010 No4: mobile plant for land-spreading
Permit number: EPR/HB3503LF

Agricultural benefit statement is prepared by:

Mr Robert Tucker
FACTS: FE/5758
Phone number: 07947 218456
Email: rob.tucker@re-organics.com

Farm addresses:

Noyadd Farm, Rhayader, Powys, LD6 5HH
Dderw, Cwmdauddwr, Rhayader, Powys, LD6 5EY
Glan-Elan, Rhayader, Powys, LD6 5HG

Waste to be applied:

Waste Code	Waste Description	Physical Form	Waste Producer
19 09 02	Sludges from water clarification	Solid and stackable	Severn Trent Water – Elan Valley water treatment works

Rates of application are detailed in Table 1

Application:

- These silage and grazing grass fields will be spread subject to ground conditions being suitable and when there is a significant crop nutrient requirement (i.e. early spring, after a silage cut, in advance of periods of grazing). The waste will be spread in either one application to a field, or split into two applications to a field up to the maximum application rate listed. The timing of the spreading will be either March – May 2026 in advance of cutting, following a silage cut May – August 2026 or in advance of periods of grazing March 2026 – September 2026. Field 30E will only be spread from April – July 2026 as parts of the field are classed as potential low, medium and high flood risk from the River Wye (high flood risk area of field buffered with no spread area).
- Spreading of the waste will be carried out in accordance with the Code of Good Agricultural Practice, The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021 and in accordance with the requirements of the deployment and Environmental Permitting Regulations.
- NRW will be informed at least 48 hours prior to any spreading commencing and no spreading will occur within 48 hours of forecasted heavy rainfall.
- The waste will be stored in field heaps (as marked on maps and listed in LPD1 form) when required and then spread onto the fields with low trajectory rear discharge muck spreaders.

Benefits from waste application:

- The analysis and nutrient content of the waste is shown in the waste analysis attachments.
- The waste is a source of nitrogen, phosphate, potash and sulphur. The waste can be beneficially used to replace a proportion of bagged mineral fertiliser.
- Sulphur: The crop requirements are between 40-60kg SO_3/ha. The amount of available sulphur supplied by the sludge will be 2kg SO_3/ha.
- Organic Matter: the addition of organic matter to the soil will help improve soil structural stability, biological activity, water and nutrient holding capacity i.e. resistance to drought, and reduction of localised flooding, reduced leaching of nutrients, and improved workability in soil.
- The recommended maximum application rates are shown in Table 1 and have been made on a field by field basis using The Nutrient Management Guide (RB209).

Table 1: Field, Soil & Cropping Details, Fertiliser Recommendations and Application Rates

					Nitrogen		Phosphate			Potash			Magnesium	
Field Ref.	**Soil Type**	**Spreadable Area (ha)**	**Previous Crop**	**Next Crop**	**SNS**	**N Required (kg/ha)**	**P Index**	**P_2O_5 Required (kg/ha)**	**Crop Use (Offtake) (kg/ha)**	**K Index**	**K_2O Required (kg/ha)**	**Crop Use (Offtake) (kg/ha)**	**Mg Index**	**MgO Required (kg/ha)**
Dderw														
01 TM DF	Medium soils	2.20	Grazing grass	Grazing grass	Moderate	130	1	50	#10	1	30	#9	2	0
02 TM DF	Medium soils	2.30	Grazing grass	Grazing grass	Moderate	130	1	50	#10	1	30	#9	2	0
03 TM DF	Medium soils	2.00	Grazing grass	Grazing grass	Moderate	130	2	20	#10	1	30	#9	2	0
04 TM DF	Medium soils	1.80	1 cut grass silage + grazing	1 cut grass silage + grazing	Moderate	140	2	40	39	0	200	138	2	0
05 TM DF	Medium soils	1.90	1 cut grass silage + grazing	1 cut grass silage + grazing	Moderate	140	1	70	39	0	200	138	2	0
06 TM DF	Medium soils	2.50	1 cut grass silage + grazing	1 cut grass silage + grazing	Moderate	140	0	100	39	0	200	138	2	0
08 TM DF	Medium soils	3.00	Grazing grass	Grazing grass	Moderate	130	0	80	#10	1	30	#9	2	0
Noyadd Farm														
30E	Medium soils	2.70	1 cut grass silage + grazing	1 cut grass silage + grazing	Moderate	140	1	70	39	0	200	138	2	0
6481 + 6895	Medium soils	1.60	1 cut grass silage + grazing	1 cut grass silage + grazing	Moderate	140	1	70	39	1	170	138	2	0
7788	Medium soils	1.85	Grazing grass	Grazing grass	Moderate	130	1	50	#10	2-	0	#9	2	0
8978	Medium soils	1.40	Grazing grass	Grazing grass	Moderate	130	0	80	#10	1	30	#9	2	0
9291	Medium soils	1.35	1 cut grass silage + grazing	1 cut grass silage + grazing	Moderate	140	1	70	39	2-	140	138	2	0
Glan-Elan														
04 TM NGE	Medium soils	2.00	1 cut grass silage + grazing	1 cut grass silage + grazing	Moderate	140	1	70	39	0	200	138	2	0
05 TM NGE	Medium soils	1.60	1 cut grass silage + grazing	1 cut grass silage + grazing	Moderate	140	1	70	39	1	170	138	2	0
06 TM NGE	Medium soils	1.50	1 cut grass silage + grazing	1 cut grass silage + grazing	Moderate	140	1	70	39	1	170	138	2	0
10 TM NGE	Medium soils	3.40	1 cut grass silage + grazing	1 cut grass silage + grazing	Moderate	140	0	100	39	2-	140	138	2	0
11 TM NGE	Medium soils	3.40	1 cut grass silage + grazing	1 cut grass silage + grazing	Moderate	140	1	70	39	1	170	138	2	0
TOTAL		**36.50**												

Nutrient requirements based on:
Grass 1 cut silage (23t FW/ha at 1st cut), silage 25% DM, totalling 1.7kg/t P_2O_5 and 6.0kg/t K_2O removed in offtake + grazing
Grazing grass 35t/ha FW/ha over season, fresh grass (15-20% DM), totalling 1.4kg/t P_2O_5 and 4.8kg/t K_2O removed in offtake
For grazing this calculation assumes approximately 80% of the P_2O_5 and 95% of the K_2O is recycled in field by the animal through its dung and urine
Target annual DM yield 7-9t/ha

	Severn Trent Water Elan Valley - water clarification sludge cake					
Field Ref.	**N Applied - Waste (kg/ha)**	**P_2O_5 Applied - Waste (kg/ha)**	**K_2O Applied - Waste (kg/ha)**	**MgO Applied - Waste (kg/ha)**	**Application Rate (t/ha)**	**Total Tonnes**
Dderw						
01 TM DF	**6	**5	**1	*59	25	55
02 TM DF	**6	**5	**1	*59	25	58
03 TM DF	**5	*19	**1	*49	21	42
04 TM DF	**6	*23	**1	*59	25	45
05 TM DF	**6	**5	**1	*59	25	47
06 TM DF	**6	**5	**1	*59	25	63
08 TM DF	**6	**5	**1	*59	25	75
Noyadd Farm						
30E	**6	**5	**1	*59	25	68
6481 + 6895	**6	**5	**1	*59	25	40
7788	**6	**5	*7	*59	25	46
8978	**6	**5	**1	*59	25	35
9291	**6	**5	*7	*59	25	34
Glan-Elan						
04 TM NGE	**6	**5	**1	*59	25	50
05 TM NGE	**6	**5	**1	*59	25	40
06 TM NGE	**6	**5	**1	*59	25	37
10 TM NGE	**6	**5	*7	*59	25	85
11 TM NGE	**6	**5	**1	*59	25	85
TOTAL						**905**

* Total nutrient content of waste used on P, K or Mg index 2 or above
** Available nutrient content of waste used on P, K or Mg index 0 or 1
The assumed availability of total nutrients in the sludge are N 10%, P_2O_5 20%, K_2O 20%, MgO 20%, SO_3 10%

Materials applied in previous 12 months:

The fields within this deployment application have received the rates (t/ha) of materials as in 'Table 4 - Previous Land Treatment' within the previous 12 months.

It's considered that the nutrients supplied by these applications were for the requirements of the previous crops and the material within this deployment will be applied for the next crops.

Nutrients supplied by application:

Rates of application (t/ha)	Nitrogen kg/ha		Phosphate (P_2O_5) kg/ha		Potash (K_2O) kg/ha		Magnesium (MgO) kg/ha		Sulphur (SO_3) kg/ha	
	Total	Available	Total	Available	Total	Available	Total	Available	Total	Available
STW Elan Valley water clarification sludge cake @ 21t/ha	49	5	19	4	6	1	49	10	19	2
STW Elan Valley water clarification sludge cake @ 25t/ha	59	6	23	5	7	1	59	12	22	2
Estimated Availability	10%		20%		20%		20%		10%	

Potential negative impacts from this application and mitigation measures planned:

Waste composition & receiving soils

- Potentially Toxic Elements: The supplied concentrations at the proposed application rate are lower than the maximum permissible levels detailed in the Sludge (Use in Agriculture) Regulations for biosolids applied to agriculture, which is believed to be a suitable comparison for wastes applied to agricultural land.
- This works uses iron-based coagulants to condition the water. Sludge will only be spread on fields with a soil pH of 5.5 or above.
- The pH of the receiving soils ranges from pH 5.8 to 6.6.
- Physical contaminants: The wastes are produced by managed processes. The sludges do not contain physical contaminants.
- Receiving soils are below the limits set for permanent grassland & temporary grassland soils under the Sludge (Use in Agriculture) Regulations.
- Soils have been sampled to 7.5cm depth for permanent grass fields & to 15cm depth for temporary grass fields with a 'half cheese' corer soil sampler walking a 'W' pattern across each field collecting approx. 25 sub samples per field.

Operations

The fields in this deployment have been designated as 'high risk' following site checks on the proximity to surrounding protected areas (e.g. SSSIs) and groundwater source protection zones with a number of SSSIs, SACs and a SPA within 500 metres of the fields (identified on maps & in the site-specific risk assessment). On the basis of 'high risk' the proposed operation will be subject to a site-specific risk assessment for deploying mobile plant under a SR2010 No.4. The potential risks associated with the application of waste on this deployment have been identified as;

- Potential run-off after application: The wastes will be applied following the Codes of Good Agricultural Practice. The maximum application rate for the fields will not exceed either 21 or 25t/ha as per Table 1.
- Handling: All handling of the wastes will be done in accordance to current regulations and relevant mitigation strategies will be adopted.
- The waste is considered to have no noticeable odour.
- Spillages: all spillages will be reported immediately to NRW.
- No waste will be spread within 10m of any ditch, pond or surface water, within 50m of any spring, well, borehole, or reservoir that supplies water for human consumption or farm dairies.
- Waste will be securely stored as stated above for future application or spread on delivery. Operators will aim to empty spreading equipment before the end of each working day to avoid overnight storage of waste in machinery.

- Regular servicing of all machinery is conducted and spreading equipment is annually calibrated. To prevent waste being held in faulty machinery replacement spreading equipment will be available.
- Spreading machinery will travel over the field in a direction which will most easily allow the machinery to turn within the boundaries of the field. Any spreading equipment will be turned off prior to turning at the end of each run.
- Machinery turns will be routed to avoid rutting and wheel slip. The turns will not be executed on any buffer strips.
- There will be sufficient trained staff available to ensure that the operation continues throughout operational hours (i.e. there will be sufficient cover for illness, holiday etc.).
- Weather conditions will be monitored prior to spreading.
- There is a low risk of dust during loading and spreading if the exposed surface layer of material in stockpile has dried over a period of hot, dry conditions. Wind speed and direction will be assessed and spreading will occur when there is no or little wind, and when it's not in the direction of sensitive receptors.
- Rights of way have been marked on the spread risk maps. 2 metres no spread buffers will be applied to footpaths in fields 6481 + 6895, 8978 & 10 TM NGE.
- Consideration for the public and local residential receptors will be taken into account.

Signed: Robert Tucker	**Date:** 12/11/2025