



CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

Proposal: Slurry Lagoon at Henton Farm

Client: SWN Waters & Son

Address: Cross Farm, Goldcliff, Newport, NP18 2AT

26/02/2026



ADAS GENERAL NOTES

Project No.: 1011720

Title: Construction Environmental Management Plan: Slurry Lagoon at Henton Farm

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Status: Final

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1 INTRODUCTION AND BACKGROUND

A new earth banked slurry lagoon is proposed at Henton Farm to replace the existing lagoons. This will provide additional storage capacity for the farm and reduce the risk of pollution to ground and surface water.

Henton Farm is operated in conjunction with Cross Farm as an owner-occupied dairy unit with a herd of approximately 120 cows averaging 9,000 litres milk yield. Having recently acquired Henton Farm the business proposes to relocate the milking facilities and dairy cow housing from Cross Farm to Henton Farm. On completion of the proposed slurry lagoon, the existing lagoons at Henton Farm will be decommissioned and reinstated to agricultural land.

All calculations are based on a six and a half month storage period to ensure compliance with the Control of Agricultural Pollution Regulations, as well as providing a contingency for storage in exceptional weather conditions.

The creation of the new slurry lagoon will in no way facilitate or result in any increase to the numbers of livestock on the farm and will improve the present scenario, allowing for slurry to be managed appropriately and in compliance with current legislation. It is considered that neither nitrate nor phosphate loads will be increased within the catchment area, consequently reducing the risk of pollution and environmental harm.

This Construction Environmental Management Plan details the method of works that will be adopted to minimise or avoid environmental or ecological impact.

2 SITE INFORMATION

2.1 Site location

The holding extents to 188 hectares across both Cross and Henton Farms which are located next door to each other. The land surrounds both farmsteads of traditional and modern agricultural buildings associated with the dairy business and are used for cattle housing.

The proposed site is situated approximately 1.5 kilometres northwest of the village of Goldcliff and is set within the existing farmyard surrounded by agricultural land.

Lagoon location: NP18 2AT, ST 43611 90305.

2.2 Calculations and Design

The calculations below outline the capacity requirements for the proposed earth banked lagoon.

All measurements stated should be taken as approximate. Any figures quoted are based on information provided during the visit and have not been confirmed by any measurements.

2.2.1 Rainfall

Annual rainfall in the area is approximately 1,025mm according to AHDB Slurry Wizard. The five-month winter rainfall (Oct – Feb) according to DataMapWales is 507mm.

To provide 6.5 months storage rainfall over this period is assumed to be 659mm.

2.2.2 Slurry Production from Livestock

Table 1: Slurry Production from Livestock

Livestock Type	Number	Excreta per head per month	% collected as slurry	Slurry production 6.5 months
Dairy Cow 6000 – 9000 litre milk yield	120	1.92 m ³	100%	1,498 m ³
Total livestock slurry production				1,498 m³

Table 2: Additional volume to be stored

Description	Area	Volume 6.5 months
Parlour Washings (0.9m ³ /head/month)	120 cows in-milk	702 m ³
Rainfall on slurry yards	456 m ²	301 m ³
Total		1,003 m³

Table 3: Existing slurry storage

Description	Capacity
Existing earth banked lagoon (to be infilled)	836 m ³
Total existing slurry storage (to be retained)	0 m³

Table 4: Assessment of slurry storage shortfall

	Slurry production 6.5 months
Livestock Slurry	1,498 m ³
Additional volume stored	1,003 m ³
Total Production	2,501 m³
Existing slurry storage capacity	0 m ³
Shortfall	2,501 m³

3 PROPOSED DEVELOPMENT

A 3,500m³ lagoon (excluding freeboard) is recommended as this will provide 6.5 months storage capacity for the farm, when including rainfall on the store.

A slurry lagoon with a capacity of 3,500m³ will require an excavation of approximately 50m by 30m with a total depth of 4.5m. The lagoon capacity takes into account the 750mm freeboard requirement and 6.5 months rainfall on the store.

Any land drains encountered during the construction will be traced and stripped out where they run within 10m of the excavation, and the resultant trench backfilled with compacted clay. Any functional drains will be re-routed at least 10m from the site.

The lagoon will be formed using a cut and fill design, by removing soil from the base and re-compacting into embankments, in accordance with CIRIA C759 and British Standard 5502, as shown in Figure 1. Topsoil will be replaced over the excavated subsoil on the external embankments and a safety fence (according to HSE AIS 9) erected around the perimeter.

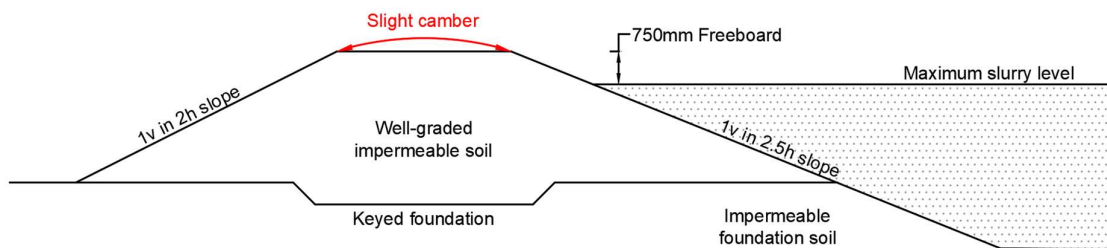


Figure 1 Construction In situ using impermeable soils

Natural Resources Wales will be informed at least 14 days before construction begins.

The main works are proposed to start in summer 2026 for a duration of approximately four weeks. The timing of the works is planned to allow the proposed lagoon to be ready for the winter storage period. The proposed timetable is subject to weather conditions and planning consent.

This report is accompanied by the following drawings, which form part of the supporting documentation for this planning application:

- 01 Location Plan
- 02 Site Plan (Existing)
- 03 Site Plan (Proposed)
- 04 Layout Plan
- 05 Cross Section

4 SITE INVESTIGATION

4.1 Site geology and soil association

1:50,000 scale British Geological Survey¹ information records the bedrock geology for the site as Mercia Mudstone. The 1:250,000 scale national soil map² shows the soil association for the site as NEWCHURCH 2, an association of deep stoneless mainly calcareous clayey soils.

4.2 Trial pit log

Soil testing was carried out in accordance with the protocol laid out in BS 5930:2015+A1:2020, to assess the proposed area for suitability for earth banked lagoon construction. Trial pits were dug as part of the site investigation works at Henton Farm on 19th November 2025.

Trial pits were dug using a JCB 4CX excavator at the perimeter points of the proposed lagoon area.

The trial pits illustrated distinct layers through the soil profile, as illustrated in Figure 4. All five trial pits were largely consistent across the site. The profile can be described as:

0 - 0.25m	Dark greyish brown, slightly mottled stoneless silty clay.
0.25 - 0.8m	Greyish brown, mottled, stoneless silty clay.
0.8 – 3.0m	Brown, mottled, stoneless silty clay.
3.0 – 3.5m	Blue grey, stoneless clay.
Below 3.5m	Mudstone

4.3 Soil sample results

A composite sample was taken for testing in accordance with BS 1377-2:1990. The soil sample results are shown in Table 1.

Table 1: Soil analysis requirements and results

	Henton Farm results	CIRIA 759 recommendation
Clay content	23%	Recommended 20 - 30%
Soil permeability	1.2×10^{-10} m/s	Not to exceed 1×10^{-9} m/s

Full results and approved certification are attached in Appendix 2: Soil testing results and certification. The laboratory results confirm the soil is suitable to form an impermeable earth banked lagoon.

4.4 Comments on site investigation

The ground conditions encountered along with the soil analysis, present no constraints to the construction of an earth-banked lagoon, and overall, the proposed design is considered feasible provided it is constructed in accordance with CIRIA C759 guidance.

¹ British Geological Survey 2026. *Geology Viewer*. Available: www.geologyviewer.bgs.ac.uk

² Cranfield University 2026. *The Soils Guide*. Available: www.landis.org.uk.

Figure 2: Trial pit photographs



5 ENVIRONMENTAL RISK MANAGEMENT AND MITIGATION

The proposed works require excavation and several potential environmental risks must be considered. Appropriate mitigation measures will be implemented as required, supported by an emergency response procedure. The Contractor is responsible for determining which measures are necessary based on site-specific conditions, including proximity to sensitive habitats.

5.1 Site Clearance (Pre- and Post-Construction)

5.1.1 Vegetation Clearance

- Use clean, decontaminated equipment and materials to prevent the spread of invasive species or diseases.
- Undertake vegetation clearance outside the bird-nesting season. Where works occur between March and August, pre-works checks must be completed to avoid disturbance to active nests, including Schedule 1 species.
- Carry out checks for amphibians and reptiles prior to grassland/scrub removal.
- As no buildings or old/damaged trees require removal, impacts on bat roosts and foraging habitats are minimal.
- Protect mature trees by considering root zones and canopy spread when planning access routes and material storage.

5.1.2 Final Site Clearance and Waste Management

- Dispose of surplus materials in accordance with Waste Regulations. Provide facilities for removal of all waste and litter from the works and temporary works areas.
- Reuse inert materials (e.g. soil) on site where suitable, such as for landscaping.
- Remove all remaining waste to appropriately licensed facilities.

5.2 Measures During Construction

5.2.1 General Controls

- Minimise the works footprint and maintain a buffer from watercourse edges.
- Limit vehicle access to designated trackways.
- Prevent contamination of soils and water by ensuring no discharge of fuels or washings. Implement protection measures such as bunded trays, spill kits, and regular equipment checks.
- Maintain welfare facilities; store and dispose of sewage and washings appropriately.
- Ensure imported materials are free from invasive species and harmful contaminants.
- Manage groundworks to prevent sediment runoff: work during suitable weather, place spoil away from watercourses, limit vegetation removal, and remove excess spoil as required.
- Reinstatement soil profiles (topsoil/subsoil) promptly to encourage vegetation recovery.

5.2.2 Dust Management

- Employ Best Practicable Means (BPM) in accordance with HSE EH44 and HSE Report 73/1995 to minimise dust emissions. Note that dust may constitute a statutory nuisance under EPA 1990 Section 79(e).
- Sheeted loads for vehicles transporting dusty materials.
- Damp down unsurfaced tracks as necessary.
- Locate stockpiles away from boundaries; damp down during dry weather.

- Cover or seal long-term stockpiles, where required.

5.2.3 Environmental Incidents and Emergency Response

- The Site Manager will implement the emergency contingency plan and coordinate response actions.
- Maintain emergency equipment on site, including absorbents, pumps, and disposal containers.
- Clean up small spills immediately using absorbent materials; dispose of contaminated materials appropriately.
- Report significant spills to Natural Resources Wales, providing location and access information.
- Manage sediment risks by retaining vegetated buffer strips and installing measures such as silt fencing or straw bales where necessary.
- Monitor weather forecasts; move plant, equipment, and hazardous materials if flooding risk increases.

5.2.4 Protective Fencing and Site Security

- Agree access routes and works zones in advance. Install temporary warning signs or exclusion barriers where required.
- Secure the site and compound with appropriate fencing, lighting, or security personnel to prevent vandalism, pollution incidents, or wildlife disturbance.

5.2.5 Biosecurity

- Apply the Check, Clean, Dry protocol to all plant, machinery, vehicles, clothing, and equipment before entry to, and exit from the site.

5.2.6 Tree and Hedgerow Protection

- Protect all trees and hedgerows using Root Protection Areas in accordance with BS 5837:2012, and marked by Heras fencing prior to works.
- Prohibit storage of materials at the base of trees, hedgerows, or other sensitive habitats.

6 RESPONSIBLE PERSONS AND LINES OF COMMUNICATION

The Contractor must prepare an environmental method statement outlining the controls for dust, air and light emissions, fuel use and storage, hazardous materials, and procedures for spill response. Effective housekeeping practices must be implemented to prevent the accumulation of waste and reduce environmental risk.

The Contractor is responsible for all pollution-prevention measures, site security, and the actions of any subcontractors, and must obtain all necessary consents, licences and permissions required under relevant environmental legislation. They are also accountable for the correct handling and disposal of any contaminated or hazardous materials encountered or imported during the works, and must maintain full preparedness for accidents or emergency events.

This Construction Environmental Management Plan (CEMP) will be issued to the Site Manager prior to commencement of works, with copies retained on site for reference and inspection. The Site Manager is responsible for ensuring full compliance with the CEMP and associated method statements during daily operations, and for reviewing the effectiveness of mitigation measures throughout the works to ensure continued adherence to legal, planning and contractual requirements.

APPENDIX 1: SOIL TESTING RESULTS AND CERTIFICATION



S.W.N. Waters & Sons
Cross Farm
Goldcliff
Newport
Gwent
NP18 2AT

Date: 12 January 2026
Test Report Ref: TR 1184200

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Contract: Henton Farm - Proposed Lagoon

LABORATORY TEST REPORT

TEST REQUIREMENTS:

To determine the Coefficient of Permeability under constant head conditions in a Triaxial Cell in accordance with
BS 1377: Part 6 : 1990 : Clause 6.

SAMPLE DETAILS:

Certificate of sampling received:	No
Laboratory Ref. No:	S139685
Client Ref. No:	Soil
Date and Time of Sampling:	19/11/2025
Date of Receipt at Lab:	11/12/2025
Date of Start of Test:	22/12/2026
Sampling Location:	ST3 5292 83793
Name of Source:	Natural Ground
Method of Sampling:	Trial Pit
Sampled By:	Client (Test results apply to sample as received)
Tested By:	CH
Material Description:	Soil
Target Specification:	N/A

RESULTS:

See attached

This test report shall not be reproduced, except in full, without the written approval of Celtest Company Limited.

These results relate only to the items tested.

Comments: None	Report checked and approved by:  Izabella Kantor CS Team
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Trefelin Bangor Gwynedd LL57 4LH Tel: + 44 (0)1248 355269 Email: postmaster@celtest.com Website: www.celtest.com

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TEST RESULTS

Sample condition: Undisturbed

Method of Remoulding (If applicable): N/A

Specimen Details:	Initial:	Final:
Diameter:	101.8 mm	N/A
Height:	98.2 mm	N/A
Moisture Content:	33 %	27 %
Bulk density:	1.86 Mg/m ³	1.92 Mg/m ³
Dry density:	1.40 Mg/m ³	1.52 Mg/m ³

Saturation stage: Performed in accordance with clause 5.4.3 - Saturation by increments of cell pressure and back pressure.

Initial pore pressure coefficient,B:	0.94
Final pore pressure coefficient,B:	1.00
Duration of stage:	1 days

Consolidation stage:

Effective pressure:	100 kPa
Duration of stage:	6 days

Permeability stage:

Pressure difference across specimen:	20 kPa
Mean effective stress:	90 kPa
Duration of stage	2 days
Coefficient of Permeability (k_v) at 20°C =	1.2×10^{-10} m/s

S.W.N. Waters & Sons
Cross Farm
Goldcliff
Newport
Gwent
NP18 2AT

Date: 09 January 2026
Test Report Ref: TR 1184198

Page 1 of 2

Contract: Henton Farm - Proposed Lagoon

LABORATORY TEST REPORT

TEST REQUIREMENTS:

To determine the Particle Size Distribution (PSD) of a soil sample-
washing and sieving method in accordance with **BS1377-Part2-1990 Clause 9.2**
Sedimentation by pipette method to **BS 1377: Part 2: 1990: clause 9.4.**

SAMPLE DETAILS:

Certificate of sampling received:	No
Laboratory Ref. No:	S139685
Client Ref. No:	Soil
Date and Time of Sampling:	19/11/2025
Date of Receipt at Lab:	11/12/2025
Date of Start of Test:	07/01/2026
Sampling Location:	ST3 5292 83793
Name of Source:	Natural Ground
Method of Sampling:	Trial Pit
Sampled By:	Client (Test results apply to sample as received)
Tested By:	OHJ
Material Description:	Soil
Target Specification:	N/A

RESULTS:

SEE ATTACHED

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These results relate only to the items tested.

Comments: None	Report checked and approved by:  Izabella Kantor CS Team
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MATERIAL DESCRIPTION

Soil

Method of pre-treatment:		N/A			
Sieve Size mm	% Passing	Sieve Size mm	% Passing	Cobbles	0.0
				Gravel	0.1
200	100	2.0	100	Sand	2.9
125	100	0.600	99	Silt	74.0
100	100	0.212	99	Clay	23.0
90	100	0.063	97.0		
75	100	0.020	63.5		
63	100	0.006	31.7		
50	100	0.002	23.0		
37.5	100				
28	100				
20	100				
14	100				
10	100				
6.3	100				
5.0	100				

