SR2010No4 Mobile Plant for Land-spreading Deployment Application

Hafod Farm, Ferwig, Cardigan, Ceredigion, SA43 1PU
&
Pwllglas, Sarnau, Llandysul, Ceredigion, SA44 6QR

Applicant:

Stepside Agri Contractors (Gwbert Road, Cardigan, SA43 1PH)

Permit Number: EPR/AB3891CX

Date: 22/04/2020

Application for an environmental permit: Part LPD1 – Application for a deployment

Use this form for deployments for the landspreading of waste where the operator holds a permit for any of the following standard rules:

- SR2010No4 Mobile plant for landspreading (land treatment resulting in agricultural or ecological benefit);
- SR2010No5 Use of mobile plant for land reclamation, restoration or improvement of land;
- SR2010No6 Mobile plant for landspreading of sewage sludge; or a
- Bespoke mobile plant permit for landspreading or land reclamation.

Please check that this is the latest version of the form available from our website.

Please read through this form and the guidance notes that come with it. All relevant guidance documents can be found on our website.

Where you see the term 'document reference' on the form, give the document references and send the documents with the application form when you've completed it.

Contents

1 About the permit

1a Discussions before your application

If you have had discussions with us before your application, give us the case reference or details on a separate sheet.

Case or document reference	

1b Permit number

Permit number this application relates to	EPR/AB3891CX

1c What type of permit do you want to deploy under? (Please tick)

SR2010No4 Mobile plant for landspreading (land treatment resulting in agricultural or ecological benefit)	☒
SR2010No5 Use of mobile plant for land reclamation, restoration or improvement of land	☐
SR2010No6 Mobile plant for landspreading of sewage sludge	☐
Bespoke mobile plant permit for landspreading or reclamation, restoration or improvement of land	☐

2 About you

Please give us details of the permit holder. For companies, the details must match Companies House.

Organisation name (if relevant)	Stepside Agri	
Title	Mr	
First name	Daniel	
Last name	James	
Address	Stepside Farm	

	Gwbert Road
	Cardigan
Postcode	SA43 1PH
Telephone - mobile	07966521386
Telephone - office	01239621354
Email address	enquiries@stepside.biz

If you are applying as an organisation of individuals, every partner needs to give us their details, including their title. If necessary, continue on a separate sheet and tell us the reference you have given the sheet.

Document reference	

3 Contact details

Who can we talk to about your application? This can be someone acting as a consultant or 'agent' for you.

Title	Mr	
First name	David	
Last name	Powell	
Telephone - mobile	07968 496178	
Telephone - office		
Email address	dave.purlon@gmail.com	

4 About the deployment

4a Multiple deployments for one area of land

You may spread more than 10 waste streams on the same area of land, provided you submit additional fully completed deployment forms listing the additional wastes. Your benefit statement must take into account the total benefit to the land of all wastes to be spread.

Is this deployment one of a batch (multiple deployments) for the same area of land?

No ☒ *Go to section 4b*

Yes ☐ How many deployments are in the batch?

4b Nominated competent person

4b1 Give us details of the nominated competent person. This is the person who will be responsible for compliance with the permit for this deployment. See the guidance notes on LPD1 for further details.

Title	Mr	
First name	David	
Last name	Powell	

Telephone - mobile	07968 496178
Telephone - office	
Email address	dave.purlon@gmail.com

4b2 What evidence are you using to show the nominated competent person has suitable technical skills and knowledge to manage the activity?

An approved technical scheme ☒ *Go to section 4b3*

Documented in-house training ☐ You must provide evidence – see below.

You must provide evidence to show the documented in-house training meets the requirements set out in technical guidance. See the guidance notes on LPD1 for further details and give us the document reference.

Document reference _____ *Go to section 4c*

4b3 Which approved scheme are you using to show you have the suitable technical skills and knowledge to manage your facility?

CIWM / WAMITAB ☒

ESA / EU ☐

4b4 Tick to confirm you've included all original *and* continuing competence evidence. ☒

4c Which risk band does the activity fall within?

Please complete Table 1 below to indicate which risk band your activity falls within. This is a combination of waste types and proximity to sensitive receptors.

Once you have selected the risk band your activity falls within, the form guidance tells you what additional information you need to send with the application.

The risk banding affects the fee you need to send with your deployment application. See section 6.

Table 1 – risk band

Permit type	**Lower risk location** - Not in an SPZ 2, and/or - Over 500 meters from: • European site, and/or • Ramsar, and/or • SSSI	**High risk location** - In a Source Protection Zone 2, and/or - 500 meters or less from: • European site, and/or • Ramsar, and/or • SSSI **You *must* submit a site specific risk assessment.**
SR2010No4 List A wastes (Lower risk)	Low risk deployment ☐	Medium risk (2) deployment ☐
SR2010No4 List B wastes (Higher risk)	Medium risk (1) deployment ☐	High risk deployment ☒
SR2010No5 (Any waste listed)	Medium risk (1) deployment ☐	High risk deployment ☐
SR2010No6 (Any waste listed)	Medium risk (1) deployment ☐	High risk deployment ☐

Bespoke mobile plant permit	Low risk deployment ☐	Medium risk deployment ☐	High risk deployment ☐

4d Additional information on sensitive receptors

Is the deployment within an SPZ 2 and/or 500m of a European site, Ramsar or SSSI, or being made under a bespoke permit?

No ☐

Yes ☒ You must submit a site specific risk assessment (see question 4e).

4e Site specific risk assessment

Your site specific risk assessment must show how you intend to prevent any harm to any SPZ 2, European site, Ramsar or SSSI. For more information on risk-assessment please see the accompanying guidance to LPD1 and Technical Guidance Note 'TGN 8.01'.

Please tick a box below to indicate which type of risk-assessment you have submitted.

I have attached a site-specific risk-assessment as the deployment is within and SPZ 2 and/or 500m of a European site, Ramsar or SSSI. I have also addressed risks to other receptors in the risk assessment ☒

I am not within an SPZ 2 and/or 500 m of a European site, Ramsar or SSSI but have addressed risks to other receptors in my benefit statement. ☐

I am deploying under a bespoke permit and have attached a site-specific risk assessment (regardless of location). ☐

4f About the waste

Please list all the individual waste streams you want to spread/use under this deployment, in Table 2 below. We've included an example to help you.

Please note: You can only spread/use 10 waste types per deployment.

Table 2 – waste types

	List of Waste code (6 digit)	**Waste description**	**Physical form**	**Waste producer**	**Total amount being spread/used** (tonnes)
e.g.	03 03 05	De-inked paper	Sludge	Smith's Newsprint	500
1	02 05 02	Sludge from dairy waste treatment	Liquid sludge	Dairy Partners – Newcastle Emlyn	5,000
2	02 05 02	Sludge from dairy waste treatment	Liquid sludge	Volac – Felinfach	5,144
3					
4					
5					
6					
7					
8					
9					
10					
				Total tonnage	Max. 5,144

4g About the land you want to treat

4g1 Please give details of the main address of the land to be treated.

Address	Hafod Farm
	Ferwig
	Cardigan
	Ceredigion
Postcode	SA43 1PU
National grid reference (12 digit)	SN 18094 50342

4g2 What type of land do you want to treat?

Agricultural land ☒ Please give your County/ Parish/ Holding number 55/226/0027

Non-agricultural land ☐

4h The parcels of land you want to treat

Please list all the individual areas (parcels) of land you want to include this deployment, in Table 3 below.

Please note: the total area to be treated must not be more than 50 hectares.

Table 3 – parcels of land

	Field name/ number/ reference	**Grid reference - centre of field** (12 digit)	**Waste types to be spread/used** (List of Waste code) Separate using commas.	**Size** (hectares)
1	**Please see continuaton sheet: Table 3 – Details of land to be treated**			
2				
3				
4				
5				
6				
7				
8				
9				
10				
			Total hectares	50.00

4i Is the permit holder the owner or occupier of the land you want to spread on/treat?

Yes ☐ *Go to section 4k*

No ☒ You must give us details of the land owner or occupier, below.

Organisation name (if relevant)		
Title	Mr	

First name	Morris
Last name	Davies
Address	Hafod Farm
	Ferwig
	Cardigan
	Ceredigion
Postcode	SA43 1PU
Telephone - mobile	**07974 102696**
Telephone - office	
Email address	

If there is more than one owner or occupant for the area covered by this deployment, you must give us details of each. Please continue on a separate sheet and tell us the reference you have given the sheet.

Document reference	Farm Details

4j Do you have the consent of the owner or occupier to carry out the activity?

Yes ☒ *Go to section 4k*

No ☐ You must tell us why you think you can carry out the activity without the consent of the occupier. Please give an explanation in the box, below. Continue on a separate sheet if needed.

Explanation

4k Previous land treatment

Has any of the land listed in Table 3 been treated with other wastes, sewage sludge, slurries or manures etc. in the last 12 months?

No ☐ *Go to section 4l*

Yes ☒ You must give us details in Table 4 below *and* account for them in your benefit statement.

Table 4 – previous land treatment

	Field name/ number/ reference	**Describe the waste spread** (in last 12 months)	**Person/ company who spread the waste**	**Quantity spread per hectare** (in tonnes)	**Deployment/ other reference** (if known)
e.g.	East field	Digested sewage sludge cake	Eastern Waters	20	PAN 000000

1	Crug Fm 8295	**Water treatment sludge**	**ByProduct Recovery Ltd**	126	PAN 005015
2	Crug Fm 1594	**Water treatment sludge**	**ByProduct Recovery Ltd**	136	PAN 005015
3	Crug Fm 3498	**Water treatment sludge**	**ByProduct Recovery Ltd**	43	PAN 005015
4	Crug Fm 2312	**Water treatment sludge**	**ByProduct Recovery Ltd**	73	PAN 005015
5	Crug Fm 4526	**Water treatment sludge**	**ByProduct Recovery Ltd**	113	PAN 005015
6	Crug Fm 5412	**Water treatment sludge**	**ByProduct Recovery Ltd**	146	PAN 005015
7	Crug Fm 5994	**Water treatment sludge**	**ByProduct Recovery Ltd**	127	PAN 005015
8	Crug Fm 7025	**Water treatment sludge**	**ByProduct Recovery Ltd**	47	PAN 005015
9	Crug Fm 8232	**Water treatment sludge**	**ByProduct Recovery Ltd**	58	PAN 005015
10					

4l Waste storage

Are you proposing to store waste in connection with this deployment?

No ☐ *Go to section 5*

Yes ☒ You must give us details in Table 5 below.

Table 5 – waste storage details

	Grid reference (12 digit)	**Waste type being stored** (6 digit List of Waste code)	**Storage method**	**Quantity stored at any one time** (in tonnes)
1	SN 18153 50376	02 05 02	Liquid storage lagoon	1100
2	SN 32351 51206	02 05 02	Field Nurse Tank	150
3				
4				
5				
6				
7				
8				
9				
10				

5 Payment

5a Tick an option below to show how you will pay for the application.

Electronic transfer (for example, BACS) ☒ *Go to section 5b*

Cheque ☐ *Go to section 5c*

Postal order	☐	*Go to section 5d*
Credit or debit card	☐	*Go to section 5e*

5b Paying by electronic transfer

If you choose to pay by electronic transfer use the following information to make your payment.

Company name:	Natural Resources Wales
Company address:	Income Dept., PO BOX 663, Cardiff, CF24 0TP
Bank:	RBS
Address:	National Westminster Bank Plc, 2 ½ Devonshire Square, London, EC2M 4BA
Sort code:	60-70-80
Account number:	10014438

Reference number

You can use any reference number but we prefer the number to be 'EPDEP' followed by the first five letters of your organisation name followed by a four-digit number.

For example, for a company named Joe Bloggs Ltd, the reference number might be EPDEPJOEBL0001. (Remember you can use any four-digit number at the end.)

The reference number you will provide will appear on our bank statements so we can check your payment. We may need to contact your bank to make sure the reference number is quoted correctly.

You should also email your payment details and payment reference number to banking.team@naturalresourceswales.gov.uk / banking.team@cyfoethnaturiolcymru.gov.uk or fax it to 0300 065 3001 and enter it in the space provided below.

BACS reference	EPDEPSTEPS0041
Amount paid	£1,018

Making payments from outside the UK

These details have changed. If you are making your payment from outside the United Kingdom (which must be received in sterling), our IBAN number is GB70 NWBK6070 8010 0144 38 and our SWIFT/BIC number is NWBKGB2L.

If you do not quote your payment reference number, there may be a delay in processing your payment and application.

5c Paying by cheque or postal order

You should make cheques or postal orders payable to Natural Resources Wales and they should be marked 'A/c Payee'. We will not accept post-dated cheques (cheques with a future date written on them).

Cheque/ postal order number	
Amount paid	

5d Paying by credit or debit card

If you are paying by credit or debit card, please fill in the separate form CC1.

You can download this from our Website or you can ask for one of our customer service providers to send one by post. We will destroy your card details once we have processed your payment. We can accept payments by Visa, MasterCard or Maestro UK card only.

6 Supporting documents

You must provide all relevant documents to support your application. The information we need depends on the type of deployment application you're making. If you don't provide us with all the information we need, we won't be able to assess your proposal and the application may be rejected.

Better quality deployments result in shorter processing times. If we don't need to come back to you for more information, we'll be able to give you a decision quicker.

6a What supporting evidence do you need to send?

Are you applying to spread/use waste under a SR2010 No4 standard rule set permit?

Yes ☒ Complete the checklist in Table 6 *and* Table 7 *Go to section 6b*

No ☐ Complete the checklist in Table 7 only. *Go to section 6c*

6b Checklist for deployments under SR2010 No4 only

Complete the checklist in Table 6, below. Tick to confirm you've completed the action.

Table 6	
Do the grid references (for fields and storage areas) match the map locations?	☒
Are the grid references in the correct format i.e. AB 12345 67890?	☒
Have details of previous land treatment been provided?	☒
Have you included a location map?	☒
Does the map include all the relevant features as set out in the guidance?	☒
Have you included a waste analysis?	☒
Is the waste analysis for each waste less than 12 months old?	☒
Does the waste analysis include pH, Nitrogen (N), Phosphorus (P), Potassium (K), % dry matter and Potentially Toxic Elements (PTE's)?	☒
Have you included a soil analysis?	☒
Is the soil analysis less for each field than 4 years old?	☒
Does the soil analysis provide the soil pH, Potassium (K), Phosphorus (P), Magnesium (Mg) and PTEs if they are high in the waste?	☒
Have the soil indices for P, K and Mg for each field been provided?	☒
Have you included a Certificate of Agricultural Benefit?	☒
Has the proposed cropping regime been stated?	☒
Has the waste application rate been stated?	☒
Has the timing of application been stated and is it appropriate for the cropping regime?	☒
Has the intended method of waste application been stated?	☒
Have the total nutrients supplied by the waste been stated and have they been provided in oxide format?	☒
Has the nutrient requirement for the proposed crop been provided?	☒
Has the soil nitrogen supply (SNS) for each field been provided?	☒
If the land has been treated with other wastes, sewage sludge, slurries manures etc. in the last 12 months, has relevant information been provided?	☒
If more than one waste stream is to be applied to the land; has the benefit for each individual waste stream been demonstrated?	☒
Have you included a site specific risk assessment? (where relevant)	☒
Does the Site Specific Risk Assessment; consider all potential receptors, identify all risks from the activity, and include information on all measures you'll use to minimise or mitigate the impact and why they're suitable.	☒

6c Checklist for all types of deployment application.

Complete the checklist in Table 7, below. Tick to confirm you've completed the action.

Table 7

Item	Complete	Your document reference/ description
Location map (required for all deployments)	☒	
Benefit statement (required for all deployments)	☒	
Waste analysis (required for all deployments)	☒	
Receiving soil analysis (required for all deployments)	☒	
Site-specific risk assessment (in accordance with 4e)	☒	
Any other additional information	N/A	Farm Details
	N/A	Table 3: Details of land to be treated
	N/A	
	N/A	

7 The data Protection Act 1998

We, the Natural Resources Body for Wales (hereafter "Natural Resources Wales"), will process the information you provide so that we can:

- deal with your application;
- make sure you keep to the conditions of the licence, permit or registration;
- process renewals; and
- keep the public registers up to date.

We may also process or release the information to:

- offer you documents or services relating to environmental matters;
- consult the public, public organisations and other organisations (for example, the Health and Safety Executive, local authorities, the emergency services, the Department for Environment, Food and Rural Affairs) on environmental issues;
- carry out research and development work on environmental issues;
- provide information from the public register to anyone who asks;
- prevent anyone from breaking environmental law, investigate cases where environmental law may have been broken, and take any action that is needed;
- assess whether customers are satisfied with our service, and to improve our service; and
- respond to requests for information under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004 (if the Data Protection Act allows).

We may pass the information on to our agents or representatives to do these things for us.

8 Confidentiality and national security

We will normally put all the information in your application on a public register of environmental information. However, we may not include certain information in the public register if this is in the interests of national security, or because the information is confidential.

You can ask for information to be made confidential by ticking the box below and enclosing a letter with your application giving your reasons. If we agree with your request, we will tell you and not include the information in the public register. If we do not agree with your request, we will let you know how to appeal against our decision, or you can withdraw your application.

Please treat the information in my application as confidential. ☐

You can tell the Secretary of State that you believe including information on a public register would not be in the interests of national security. You must enclose a letter with your application telling us that you have told the Welsh Ministers and you must still include the information in your application. We will not include the information in the public register unless the Welsh Ministers decides that it should be included.

Only tick the box below if you are certain that you wish to claim confidentiality or national security for your application. This may delay your application.

I attach a letter stating that I have written to the Welsh Ministers explaining why my information should not be included on the public register for national security reasons ☐

9 Declaration

You must read this section before making the declaration and sending your form to us.

A relevant person should make the declaration. You must be a relevant person or have the authority of a relevant person to sign this application on their behalf.

Relevant people means each applicant, and in the case of a company, a director, manager, company secretary or any similar officer or employee listed on current appointments in Companies House. In the case of a Limited Liability Partnership (LLP), it includes any partner. If the permit holder is an organisation of individuals, each individual (or individual trustee) must complete the declaration.

To simplify and speed up the application process we recommend that the declaration is filled in by an officer of a company or one of the partners in a Limited Liability Partnership (LLP).

If you wish a manager, employee or consultant etc. to sign the declaration on behalf of a relevant person, we will need written confirmation from a relevant person; that is, an officer of the company, a partner in the LLP or the individual, confirming that the person has the authority to fill in the declaration.

If you are joint permit holders you should each fill in your own declaration. We have provided a separate sheet for this.

Where the operator is the subject of any insolvency procedure, the declaration must be filled in by the official receiver/appointed insolvency practitioner.

9a Are you signing the form on *behalf of* a relevant person?

If you are *not* a relevant person, but want to sign the application on their behalf, you must include confirmation that you can do this.

I have included written confirmation from a relevant person to confirm I can sign on their behalf. ☒

9b Does your deployment application relate to a standard facility permit?

If your deployment application is being made in relation to a standard facility permit (SRP), you also need to confirm that you are able to meet all relevant criteria of the standard rule set/sets under which you are applying.

I confirm that my activity/activities will fully meet the rules of the permit deployment I have applied for. ☒

9c Sign to confirm you understand the declaration.

If you knowingly or recklessly make a statement which is false or misleading to help you get an environmental permit (for yourself or another person), you are committing an offence under the Environmental Permitting (England and Wales) Regulations 2016.

I declare that the information in this application is true to the best of my knowledge and belief. I understand that this application may be refused or approval withdrawn if I give false or incomplete information.

I understand that if I knowingly or recklessly make a false or misleading statement:

- **I may be prosecuted; and**
- **if convicted, I may have to pay a fine and/or go to prison.**

By signing below, you are confirming that you understand and agree with the declaration above.

Title	Mr	
First name	David	

Last name	Powell
On behalf of (if relevant)	Mr Daniel James
Today's date (DD/MM/YYYY)	22/04/2020

STEPSIDE
AGRI CONTRACTORS
TEL: 01239 621354 MOB: 07966 521386

Farm details for Hafod Farm & Pwllglas farm deployment application

Mr. Morris Davies
Hafod Farm
Ferwig
Cardigan
Ceredigion
SA43 1PU

Grid Reference: SN 18094 50342

Mobile: 07974 102696

Holding number: 55/226/0027

……

Mr. James Cowan
Pwllglas
Sarnau
Llandysul
Ceredigion
SA44 6QR

Grid reference: SN 31513 51310

Mobile: 07885 576926

Holding number: 55/211/0053

TABLE 3 Details of land to be treated

Field ref.	Spreadable Area (hectares)	Grid reference (centre of fields)	Waste type(s) to be spread (LoW)
Hafod Farm - land at Crug Farm			
8295	5.30	SN 16822 50937	02 05 02
1594	4.70	SN 17135 50953	02 05 02
2312	2.60	SN 17239 51116	02 05 02
3498	4.90	SN 17351 50971	02 05 02
4526	4.10	SN 17453 51260	02 05 02
5412	4.10	SN 17542 51112	02 05 02
5994	5.70	SN 17607 50931	02 05 02
7025	3.20	SN 17697 51249	02 05 02
8232	2.60	SN 17839 51280	02 05 02
Blaencwmpridd - land at Pwll Glas			
0454	9.90	SN 32017 51519	02 05 02
2934	2.90	SN 32292 51327	02 05 02
TOTAL	**50.00**		

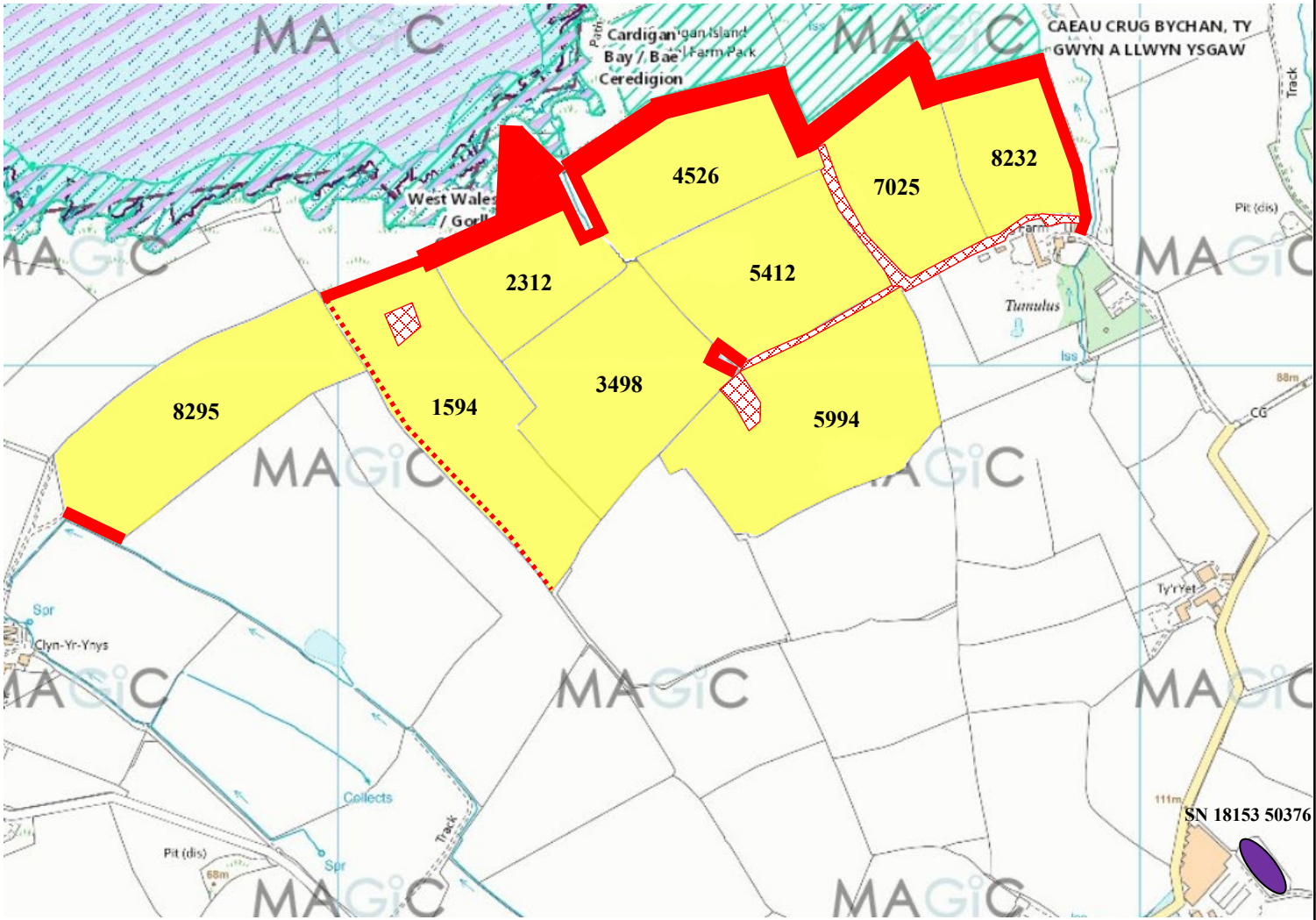
Map Key

	Non-Spreadable Section of Field
	No spread area (10m to Watercourses, 20m to SSSI / SAC)
	Suitable for Spreading
	Store
	Water Course (10 Metres Buffer)
	Foot Path (5 Metres Buffer on Either Side)
	Spring, Well or Bore Hole (50 Metres Buffer)
	Other Features
	Nurse Tank
	SSSI
	SAC

Farmer: Morris Davies
Map Grid Ref: SN 17449 50973
Farm ID: Hafod Farm (Crug)
Farm Post Code: SA43 1PU

Hafod Farm (Crug) – Location Map

N



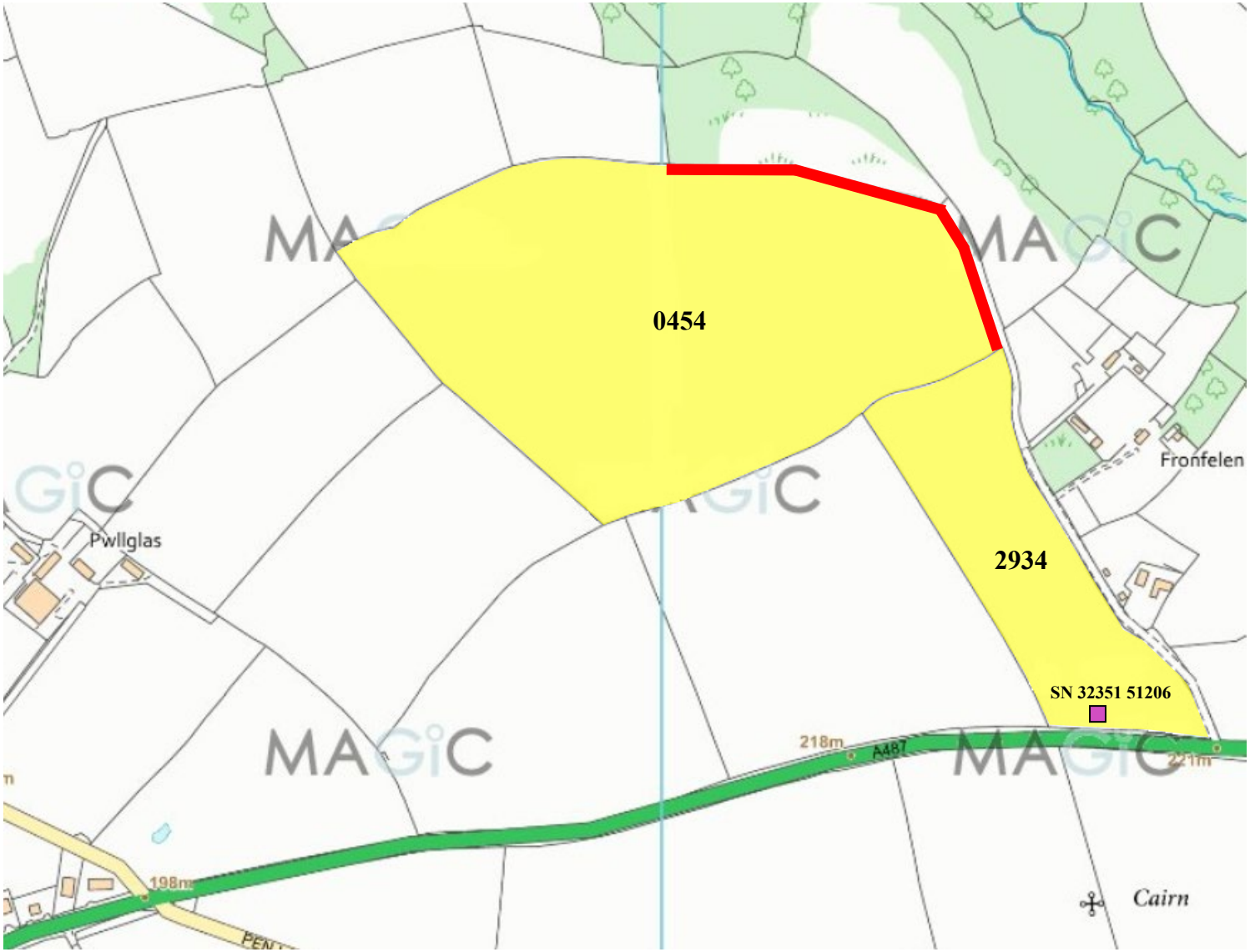
Map Key

	Non-Spreadable Section of Field
	No spread area (10 Metres Buffer to Watercourses)
	Suitable for Spreading
	Store
	Water Course (10 Metres Buffer)
	Foot Path (5 Metres Buffer on Either Side)
	Spring, Well or Bore Hole (50 Metres Buffer)
	Other Features
	Nurse Tank

Farmer: J H Cowan & Sons
Map Grid Ref: SN 31957 51368
Farm ID: Blaencwmpridd (land at Pwllglas)
Farm Post Code: SA44 6JP

Blaencwmpridd - Land at Pwllglas – Location Map

N



Statement of Agricultural Benefit – Hafod Farm & Pwllglas

STEPSIDE AGRI CONTRACTORS
TEL: 01239 621354 MOB: 07966 521386

Applicant: Stepside Agri Contractors
Permit: SR2010 No4: mobile plant for land-spreading
Permit Number: EPR/AB3891CX

Person with Technical Expertise:

Mr David Powell
FACTS: FE/2981
WAMITAB CCC No: 5157880
Phone number: 07968 496178
Email: dave.purlon@gmail.com

Farm Addresses:

Hafod Farm, Ferwig, Cardigan, Ceredigion, SA43 1PU - Holding No. 55/226/0027
Pwllglas, Sarnau, Llandysul, Ceredigion, SA44 6QR - Holding No. 55/211/0053

Wastes to be applied:

Waste Code	Waste Description	Physical Form	Waste Producer
02 05 02	Waste from the dairy products industry – sludges from on-site effluent treatment	Liquid	Dairy Partners, Newcastle Emlyn
02 05 02	Waste from the dairy products industry – sludges from on-site effluent treatment	Liquid	Volac, Felinfach

Rates of application are detailed in Table 1

Application:

- The 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). Spreading of these grass fields will be split into multiple applications throughout the season and the total of all applications will not exceed the max application rate per field as listed in table 1.
- Spreading of the waste will be carried out in accordance with the Code of Good Agricultural Practice ("Protecting our Water, Soil and Air. Defra, 2009) 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 rainfall.
- The waste will be either directly spread onto the fields with shallow injection equipment assuming ground conditions are suitable at the time of waste receipt or for Hafod Farm stored in a liquid storage lagoon for future application when conditions are suitable and there is requirement for application. Should the ground or weather conditions mean it's unsuitable for spreading then contingency field storage in nurse tanks may also be required. These potential locations are also detailed on the attached field maps and within the LPD1 form.
- The maximum application rate for each field will be split into multiple applications and will not exceed 50t/ha in any one application to a field.
- **Waste will not be stored or spread in combination (i.e. one waste stream per field).**

Benefits from waste application:

- The analysis and nutrient content of the wastes are shown in the waste analysis attachments.
- The wastes are a source of nitrogen, phosphate, potassium, magnesium, sulphur, sodium, calcium and organic matter. The wastes can be beneficially used to replace a proportion of bagged mineral fertiliser.
- At the proposed application rates for each of the wastes in this deployment the amount of total magnesium supplied by the wastes is 2 - 21kg MgO/ha.
- The risk of sulphur deficiency has been estimated as 'High' based on the soil texture and expected winter rainfall (RB209). The crop requirements are 40kg SO_3/ha before each cut of grass silage. The amount of available sulphur supplied by the wastes is 2 - 9kg SO_3/ha
- The addition of sodium will improve the palatability of grass and is important in the diet for livestock health. The crop requirements for the fields are up to 140kg Na_2O /ha.
- 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).

Materials applied in previous 12 months:

The Hafod Farm fields have received the rates (t/ha) of water treatment sludge as in table 4 of the LPD1 form under ByProduct Recovery Ltd deployment PAN 005015 within the previous 12 months.

It's considered that the nutrients applied from these applications will have been used up by the previous crops before the material within this deployment is applied for the next crops.

Nutrients supplied by this 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
Dairy Partners @ 100 t/ha	10	2	2	1	9	7	2	0	9	2
Volac @ 56 t/ha	28	6	65	39	57	45	9	1	18	4
Volac @ 69 t/ha	35	7	80	48	70	56	11	1	22	4
Volac @ 136 t/ha	68	14	158	95	137	110	21	2	44	9
Estimated Availability	20%		60%		80%		10%		20%	

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)
Hafod Farm														
8295	Medium soils	5.30	Grass 3 cuts silage	Grass 3 cuts silage	Moderate	250	2	80	80	3	90	282	3	0
1594	Medium soils	4.70	Grass 3 cuts silage	Grass 3 cuts silage	Moderate	250	2	80	80	3	90	282	3	0
2312	Medium soils	2.60	Grass 3 cuts silage	Grass 3 cuts silage	Moderate	250	2	80	80	3	90	282	3	0
3498	Medium soils	4.90	Grass 3 cuts silage	Grass 3 cuts silage	Moderate	250	2	80	80	3	90	282	3	0
4526	Medium soils	4.10	Grass 3 cuts silage	Grass 3 cuts silage	Moderate	250	1	110	80	2+	190	282	3	0
5412	Medium soils	4.10	Grass 3 cuts silage	Grass 3 cuts silage	Moderate	250	2	80	80	2+	190	282	3	0
5994	Medium soils	5.70	Grass 3 cuts silage	Grass 3 cuts silage	Moderate	250	1	110	80	2-	280	282	3	0
7025	Medium soils	3.20	Grass 2 cuts silage & grazing	Grass 2 cuts silage & grazing	Moderate	205	1	95	65	1	270	228	3	0
8232	Medium soils	2.60	Grass 2 cuts silage & grazing	Grass 2 cuts silage & grazing	Moderate	205	3	20	65	2-	230	228	3	0
Pwll Glas														
0454	Medium soils	9.90	Grass 2 cuts silage & grazing	Grass 2 cuts silage & grazing	Moderate	205	1	95	65	0	320	228	2	0
2934	Medium soils	2.90	Grass 2 cuts silage & grazing	Grass 2 cuts silage & grazing	Moderate	205	0	125	65	0	320	228	2	0
TOTAL		**50.00**												

Nutrient requirements based on:
Grass 3 cuts silage (23t FW/ha at 1st cut, 15t FW/ha at 2nd cut, 9t FW/ha at 3rd cut), silage 25% DM, totalling 1.7kg/t P_2O_5 and 6.0kg/t K_2O removed in offtake
Grass 2 cuts silage (23t FW/ha at 1st cut, 15t FW/ha at 2nd cut), silage 25% DM, totalling 1.7kg/t P_2O_5 and 6.0kg/t K_2O removed in offtake + grazing
Expected DM yields of grass 9-12t/ha

	Dairy Partners, Newcastle Emlyn - Liquid Waste						Volac, Felinfach - Liquid Waste					
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	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
Hafod Farm												
8295	**2	*2	*9	*2	100	530	**7	*80	*70	*11	69	366
1594	**2	*2	*9	*2	100	470	**7	*80	*70	*11	69	324
2312	**2	*2	*9	*2	100	260	**7	*80	*70	*11	69	179
3498	**2	*2	*9	*2	100	490	**7	*80	*70	*11	69	338
4526	**2	**1	*9	*2	100	410	**14	**95	*137	*21	136	558
5412	**2	*2	*9	*2	100	410	**7	*80	*70	*11	69	283
5994	**2	**1	*9	*2	100	570	**14	**95	*137	*21	136	775
7025	**2	**1	**7	*2	100	320	**14	**95	**110	*21	136	435
8232	**2	*2	*9	*2	100	260	**6	*65	*57	*9	56	146
Pwll Glas												
0454	**2	**1	**7	*2	100	990	**14	**95	**110	*21	136	1346
2934	**2	**1	**7	*2	100	290	**14	**95	**110	*21	136	394
TOTAL						**5000**						**5144**

Waste will NOT be spread or stored in combination (i.e. one waste stream per field)

* 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 wastes are N 20%, P_2O_5 60%, K_2O 80%, MgO 10%, SO_3 20%

Potential negative impacts from this application and mitigation measures planned:

Waste Composition & Receiving Soils

- Potentially Toxic Elements: The supplied concentrations at the proposed application rates are all significantly lower than the maximum permissible levels detailed in the Sludge (Use in Agriculture) Regulations for biosolids applied to agricultural land, which is believed to be a suitable comparison for wastes applied to agricultural land.
- Physical contaminants: The wastes are produced by managed processes. The sludges do not contain physical contaminants.
- Waste pH: The wastes are acidic in nature. The acidic nature is most probably associated with the presence of food based organic acids. Acidic food-based wastes are routinely applied to agricultural land without adverse effects on crop health, or significant decreases in soil pH. Use of the Dairy Partners and Volac waste streams will be carefully monitored, through low rates of individual application across the growing season and close monitoring of crop health, for any adverse signs resulting from acidity around roots.
- Receiving soils are below the limits set for grassland soils under the Sludge (Use in Agriculture) Regulations.

Operations

The fields in this deployment have been designated as 'higher risk' following site checks on the proximity to surrounding protected areas (e.g. SSSIs) and groundwater source protection zones. Cardigan Bay SAC, West Wales Marine SAC, Aberarth – Carreg Wylan SSSI & Caeau Crug Bychan SSSI are within 500m of the Hafod Farm fields. On the basis of 'higher 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 fields are level or gently sloping and the wastes will be applied following the Codes of Good Agricultural Practice. The maximum application rate for each field will be split into multiple applications throughout the growing season and will not exceed 50t/ha in any one application to a field.
- Odour may potentially be emitted from the spreading of waste – to mitigate odour generation all handling of waste will be done in accordance to current regulations and relevant mitigation strategies will be adopted e.g. waste will be sub-surface injected or incorporated. If any odour complaints are received, further odour mitigation methods will be implemented.
- 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 spread on delivery (or securely stored as stated above). 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 and/or lifted out of the soil 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.).
- Consideration for the public and local residential receptors will be taken before and during application.

Signed: David Powell	**Date:** 20/04/2020

Site Specific Risk Assessment

Risk assessment for proposed land-spreading activity – Hafod Farm, Cardigan & Pwllglas, Llandysul

Risk assessment carried out by: D J Powell Date: April 2020

Data				Judgement				Action	
Receptor What is at risk? What do I wish to protect?	*Source* The agent or process with potential to cause harm	*Harm* The harmful consequences if things go wrong	*Pathway* How the receptor might come into contact with the source	*Probability of exposure* How likely is this contact?	*Consequence* Severity of the consequences if this occurs	*Magnitude of risk* The overall magnitude of the risk	*Justification for magnitude* Basis of my judgement	*Risk management* How I can best manage the risk to reduce the magnitude	*Residual risk* Magnitude of the risk after management
Surface water – ditches, watercourses and ponds	Nutrients, organic matter and solids	Surface water pollution	Direct application to surface water, underdrainage and run off	Low	High	Medium	No spread areas, buffer zones in place and sub surface injection.	Comply with COGAP, Sludge Regs and EPR. Spreading to be only undertaken when conditions are suitable. No spreading areas enforced as per plans attached to application.	Low
Groundwater /Soils	Nutrients and PTES	Groundwater pollution and excessive nutrient build up	Over-application to land	Low	High	Low	The materials have low PTEs to be applied at proposed rates as detailed in application. The materials are low in available nitrogen. Phosphate applied is equal to or less than crop recommendations.	Appropriate rate and timing of application. Comply with COGAP, EPR and Sludge Regs. Carry out soil analysis of all fields regularly. Grass fields sub surface injected. No spreading within 50m of a spring, borehole or well.	Low
Humans and animals	Spreading activities – physical	Harm to humans or animals	Trespass, accidental contact Footpaths in Hafod Farm (Crug) fields 1594, 2312 & 4526 and bordering Pwllglas fields 0454 & 2934	Low	Medium	Low	Agricultural areas with limited public access.	Application during appropriate conditions & awareness of access issues. No spreading in fields when footpath is in use.	Low
Soils	Physical damage to soil structure	Damage to soil structure and poor subsequent crop yields	Delivery and spreading activity	Low	Medium	Low	Delivery and spreading to be undertaken under appropriate ground conditions using low ground pressure equipment.	Comply with COGAP and Cross Compliance Criteria. Apply only in suitable conditions.	Low

Risk Assessment continued

Data				Judgement				Action	
Receptor What is at risk? What do I wish to protect?	*Source* The agent or process with potential to cause harm	*Harm* The harmful consequences if things go wrong	*Pathway* How the receptor might come into contact with the source	*Probability of exposure* How likely is this contact?	*Consequence* Severity of the consequences if this occurs	*Magnitude of risk* The overall magnitude of the risk	*Justification for magnitude* Basis of my judgement	*Risk management* How I can best manage the risk to reduce the magnitude	*Residual risk* Magnitude of the risk after management
Soils	PTE addition	Build-up of PTEs.	Spreading activity	Low	Medium	Low	Low levels of PTEs in wastes.	Comply with COGAP, Cross Compliance and Sludge Regs. Apply at specified rates. Soils sampled regularly.	Low
Soils	Nutrient build up	Reduced yield quality and quantity of subsequent crops, nutrient leaching, runoff to sensitive receptors & surface water	Spreading activity, over application	Low	Medium	Low	Wastes applied at specified rates. The materials are low in available nitrogen. Phosphate applied is equal to or less than crop recommendations.	Apply according to RB209 recommendations and COGAP. Application rates in agricultural benefit statement not to be exceeded. Carry out soil analysis of all fields regularly.	Low
Air	Odour during stockpiling and spreading activities	Odour issues and complaints	Airborne compounds	Medium	Medium	Medium	Nearby residents often sensitive to odour.	Sub surface injection on grass fields. Prevailing wind direction will be monitored.	Low
Air	Dust during spreading	Dust complaints	Dust during windy conditions	Low	Low	Low	Materials have low potential for dust.	Assess wind speed and direction before spreading and proximity to surrounding receptors. Spread when conditions are suitable.	Low
Air/People	Noise	Noise complaints	Noise from delivery, and spreading	Low	Low to Medium	Low	Agricultural machinery in agricultural areas.	Avoid sensitive spreading periods where possible e.g. bank holidays and weekends. Delivery during daylight hours where possible	Low
Hedgerows and trees	Physical damage from spreading equipment	Ecological + landscape	Physical damage from spreading equipment	Low	Low	Low	Experienced operators employed & instructed to take care around trees	Leave a 2.0m minimum buffer zone adjacent to trees, shrubs and hedges.	Low

Data				Judgement				Action	
Receptor What is at risk? What do I wish to protect?	*Source* The agent or process with potential to cause harm	*Harm* The harmful consequences if things go wrong	*Pathway* How the receptor might come into contact with the source	*Probability of exposure* How likely is this contact?	*Consequence* Severity of the consequences if this occurs	*Magnitude of risk* The overall magnitude of the risk	*Justification for magnitude* Basis of my judgement	*Risk management* How I can best manage the risk to reduce the magnitude	*Residual risk* Magnitude of the risk after management
Aberarth-Carreg Wylan SSSI	Deterioration of site through contamination, nutrient enrichment, habitat loss, smothering	Harm to protected site through contamination, nutrient enrichment, disturbance etc.	Spreading activity, airbourne compounds, flooding, nutrient run off or leaching	Low	Medium	Medium	20m no spread areas in Hafod Farm fields close to or bordering SSSI. No spreading areas to watercourses. Sub surface injection of material for grass fields and spreading at appropriate timings.	Assess wind speed and direction before spreading and proximity to surrounding receptors when spreading all fields but the Hafod Farm fields in particular in relation to this SSSI. Spread when conditions are suitable with no or little wind and when the potential of any gusts is not in the direction of the SSSI. Material sub surface injected for grass fields. 10m no spread areas enforced to watercourses, Min 20m no spread buffer to SSSI. Ensure field conditions are appropriate for spreading.	Low
Local human population and local environment	Flooding of site	If waste is washed off site, it may contaminate buildings / gardens / natural habitats downstream.	Flood waters	Low	Medium	Medium	Spreading undertaken only on fields at appropriate timings.	No spreading in periods where heavy rain is forecast or if land is waterlogged. Spreading operator to employ 10m no spreading areas as per attached plans to watercourses.	Low

Data				Judgement				Action	
Receptor What is at risk? What do I wish to protect?	*Source* The agent or process with potential to cause harm	*Harm* The harmful consequences if things go wrong	*Pathway* How the receptor might come into contact with the source	*Probability of exposure* How likely is this contact?	*Consequence* Severity of the consequences if this occurs	*Magnitude of risk* The overall magnitude of the risk	*Justification for magnitude* Basis of my judgement	*Risk management* How I can best manage the risk to reduce the magnitude	*Residual risk* Magnitude of the risk after management
Caeau Crug Bychan SSSI	Deterioration of site through contamination, nutrient enrichment, habitat loss, smothering	Harm to protected site through contamination, nutrient enrichment, disturbance etc.	Spreading activity, airbourne compounds, flooding, nutrient run off or leaching	Low	Medium	Medium	20m no spread areas in Hafod Farm fields 4526, 7025 & 8232 bordering SSSI. No spreading areas to watercourses. Sub surface injection of material for grass fields and spreading at appropriate timings.	Assess wind speed and direction before spreading and proximity to surrounding receptors when spreading all fields but the Hafod Farm fields 4526, 7025 & 8232 in particular in relation to this SSSI. Spread when conditions are suitable with no or little wind and when the potential of any gusts is not in the direction of the SSSI. Material sub surface injected for grass fields. 10m no spread areas enforced to watercourses, Min 20m no spread buffer to SSSI. Ensure field conditions are appropriate for spreading.	Low
Local human population and local environment	Flooding of site	If waste is washed off site, it may contaminate buildings / gardens / natural habitats downstream.	Flood waters	Low	Medium	Medium	Spreading undertaken only on fields at appropriate timings.	No spreading in periods where heavy rain is forecast or if land is waterlogged. Spreading operator to employ 10m no spreading areas as per attached plans to watercourses.	Low

Data				Judgement				Action	
Receptor What is at risk? What do I wish to protect?	*Source* The agent or process with potential to cause harm	*Harm* The harmful consequences if things go wrong	*Pathway* How the receptor might come into contact with the source	*Probability of exposure* How likely is this contact?	*Consequence* Severity of the consequences if this occurs	*Magnitude of risk* The overall magnitude of the risk	*Justification for magnitude* Basis of my judgement	*Risk management* How I can best manage the risk to reduce the magnitude	*Residual risk* Magnitude of the risk after management
Cardigan Bay SAC (- in particular the bottlenose dolphin)	Deterioration of site through contamination, nutrient enrichment, habitat loss, smothering	Harm to protected site through contamination, nutrient enrichment, disturbance etc. Impact on the habitats of the bottlenose dolphin and other habitats	Spreading activity, airbourne compounds, flooding, nutrient run off or leaching	Low	Medium	Medium	20m no spread areas in Hafod Farm fields close to SAC. No spreading areas to watercourses. Sub surface injection of material for grass fields and spreading at appropriate timings.	Assess wind speed and direction before spreading and proximity to surrounding receptors when spreading all fields but the Hafod Farm fields in particular in relation to this SAC. Spread when conditions are suitable with no or little wind and when the potential of any gusts is not in the direction of the SAC. Material sub surface injected for grass fields. 10m no spread areas enforced to watercourses, Min 20m no spread buffer in fields closest to SAC. Ensure field conditions are appropriate for spreading.	Low

Data				Judgement				Action	
Receptor What is at risk? What do I wish to protect?	*Source* The agent or process with potential to cause harm	*Harm* The harmful consequences if things go wrong	*Pathway* How the receptor might come into contact with the source	*Probability of exposure* How likely is this contact?	*Consequence* Severity of the consequences if this occurs	*Magnitude of risk* The overall magnitude of the risk	*Justification for magnitude* Basis of my judgement	*Risk management* How I can best manage the risk to reduce the magnitude	*Residual risk* Magnitude of the risk after management
West Wales Marine SAC (- in particular the European Protected Species - the harbour porpoise)	Deterioration of site through contamination, nutrient enrichment, habitat loss, smothering	Harm to protected site through contamination, nutrient enrichment, disturbance etc. Impact on the habitats of the harbour porpoise and other habitats	Spreading activity, airbourne compounds, flooding, nutrient run off or leaching	Low	Medium	Medium	20m no spread areas in Hafod Farm fields close to SAC. No spreading areas to watercourses. Sub surface injection of material for grass fields and spreading at appropriate timings.	Assess wind speed and direction before spreading and proximity to surrounding receptors when spreading all fields but the Hafod Farm fields in particular in relation to this SAC. Spread when conditions are suitable with no or little wind and when the potential of any gusts is not in the direction of the SAC. Material sub surface injected for grass fields. 10m no spread areas enforced to watercourses, Min 20m no spread buffer in fields closest to SAC. Ensure field conditions are appropriate for spreading.	Low

Continuing Competence Certificate

This certificate confirms that

David Powell

Has met the relevant requirements of the Continuing Competence scheme for the following award(s) which will remain current for two years from 13/01/2020

AD	Anaerobic Digestion
LS	Land Spreading

Expiry Date: 13/01/2022

Verification date: 03/01/2020

Authorised:

WAMITAB Chief Executive Officer

Learner ID: 21046

Certificate No.: 5157880

Date of Issue: 13/01/2020

CIWM Chief Executive Officer

The Chartered Institution of Wastes Management

00133014

DAIRY PARTNERS

Analysis of Liquid Waste

Report No: 65692
Date: 13/08/19

Application rate (t/ha)	**100.0**
Application rate (t/acre)	**40**
pH	**5.32**
Dry solids (%)	**0.36**
Organic Matter(%)	**0.12**

NUTRIENT CONTENT

			Total		Readily Available	
TOTALS	**result**	**units**	**(kg/t)**	**(kg/ha)**	**(kg/t)**	**(kg/ha)**
Nitrogen (N)	0.01	%	0.1	10	0.0	2
Ammonium-N	50	mg/kg	0.1	5		
Phosphorus (P)	10.5	mg/kg	0.0	1		
Phosphate (P_2O_5)			0.024	2	0.0	1
Potassium (K)	77.8	mg/kg	0.1	8		
Potash (K_2O)			0.1	9	0.1	7
Magnesium (Mg)	10	mg/kg	0.0	1		
Magnesium (MgO)			0.0	2	0.0	0
Sulphur (S)	35.4	mg/kg	0.0	4		
Sulphur (SO_3)			0.1	9	0.0	2

POTENTIALLY TOXIC ELEMENTS

			Rate		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	0.50	mg/kg	0.50	0.05	15.00
Copper	0.20	mg/kg	0.20	0.02	7.50
Nickel	0.20	mg/kg	0.20	0.02	3.00
Lead	0.50	mg/kg	0.50	0.05	15.00
Cadmium	0.01	mg/kg	0.01	0.00	0.15
Chromium	0.20	mg/kg	0.20	0.02	15.00
Mercury	0.05	mg/kg	0.05	0.01	0.10

All results expressed on sample as received. The nitrogen, magnesium, zinc, copper, nickel, lead, cadmium, chromium and mercury concentrations are less than the minimum level of detection, consequently, the calculated values will be less than those shown

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

DAIRY PARTNERS LTD

EFFLUENT

EFFLUENT

Sample Reference :

DAIRY PARTNERS EFF

Sample Matrix : EFFLUENT

Laboratory References	
Report Number	65692
Sample Number	85558

Date Received	13-AUG-2019
Date Reported	21-AUG-2019

The sample submitted was of adequate size to complete all analysis requested.

The sample will be kept under refrigeration for at least 3 weeks.

ANALYTICAL RESULTS *on 'as received' basis.*

Determinand	Value	Units
Oven Dry Solids	0.360	%
E Coli [Fresh]	31000	cfu/g
Conductivity 1:6	707	uS/cm
Total Kjeldahl Nitrogen	<0.01	% w/w
Nitrate Nitrogen	54.0	mg/kg
Ammonium Nitrogen	<50	mg/kg
Total Phosphorus (P)	10.5	mg/kg
Total Potassium (K)	77.8	mg/kg
Total Magnesium (Mg)	<10	mg/kg
Total Copper (Cu)	<0.2	mg/kg

Released by ..... *Myles Nicholson* ..... Date ..... *21/08/19* .....

NRM Coopers Bridge, Braziers Lane, Bracknell, Berkshire RG42 6NS
Tel: +44 (0) 1344 886338 **Fax:** +44 (0) 1344 890972 **Email:** enquiries@nrm.uk.com **www**.nrm.uk.com

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DAIRY PARTNERS LTD

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Sample Reference :

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Sample Matrix : EFFLUENT

Laboratory References	
Report Number	65692
Sample Number	85558

Date Received	13-AUG-2019
Date Reported	21-AUG-2019

The sample submitted was of adequate size to complete all analysis requested.

The sample will be kept under refrigeration for at least 3 weeks.

ANALYTICAL RESULTS *on 'as received' basis.*

Determinand	Value	Units
Total Zinc (Zn)	<0.5	mg/kg
Total Sulphur (S)	35.4	mg/kg
Total Calcium (Ca)	41.1	mg/kg
Total Lead (Pb)	<0.5	mg/kg
Total Cadmium (Cd)	<0.01	mg/kg
Total Mercury (Hg)	<0.05	mg/kg
Total Nickel (Ni)	<0.2	mg/kg
Total Chromium (Cr)	<0.2	mg/kg
Total Sodium (Na)	850	mg/kg
pH 1:6 [Fresh]	5.32	

Released by ..... *Myles Nicholson* ..... Date ..... *21/08/19* .....

NRM Coopers Bridge, Braziers Lane, Bracknell, Berkshire RG42 6NS
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DAIRY PARTNERS LTD

EFFLUENT

EFFLUENT

Sample Reference :

DAIRY PARTNERS EFF

Sample Matrix : EFFLUENT

Laboratory References	
Report Number	65692
Sample Number	85558

Date Received	13-AUG-2019
Date Reported	21-AUG-2019

The sample submitted was of adequate size to complete all analysis requested.

The sample will be kept under refrigeration for at least 3 weeks.

ANALYTICAL RESULTS *on 'as received' basis.*

Determinand	Value	Units
Organic Matter LOI	0.12	% w/w
Coliforms [fresh]	440000	cfu/g
Oils,Fats and Grease	<200	mg/kg
Salmonella spp [fresh]	Negative	in 25g
EC [Neat]	3789	uS/cm

Released by *Myles Nicholson* Date *21/08/19*

NRM Coopers Bridge, Braziers Lane, Bracknell, Berkshire RG42 6NS
Tel: +44 (0) 1344 886338 **Fax:** +44 (0) 1344 890972 **Email:** enquiries@nrm.uk.com **www**.nrm.uk.com

VOLAC FELINFACH

Analysis of Sludge

Lab Ref: 53284
Date: 25/04/19

Application rate (t/ha)	**56.0**
Application rate (t/acre)	**23**
pH	**4.78**
Dry solids (%)	**1.82**
Organic Matter(%)	**1.22**

NUTRIENT CONTENT

			Total		Readily Available	
TOTALS	**result**	**units**	**(kg/t)**	**(kg/ha)**	**(kg/t)**	**(kg/ha)**
Nitrogen (N)	0.05	%	0.5	28	0.1	6
Ammonium-N	107	mg/kg	0.1	6		
Phosphorus (P)	507	mg/kg	0.5	28		
Phosphate (P_2O_5)			1.2	65	0.7	39
Potassium (K)	842	mg/kg	0.8	47		
Potash (K_2O)			1.0	57	0.8	45
Magnesium (Mg)	92.3	mg/kg	0.1	5		
Magnesium (MgO)			0.2	9	0.0	1
Sulphur (S)	130	mg/kg	0.1	7		
Sulphur (SO_3)			0.3	18	0.1	4

POTENTIALLY TOXIC ELEMENTS

			Rate		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	1.24	mg/kg	1.24	0.07	15.00
Copper	0.20	mg/kg	0.2	0.01	7.50
Nickel	0.20	mg/kg	0.2	0.01	3.00
Lead	0.50	mg/kg	0.5	0.03	15.00
Cadmium	0.01	mg/kg	0.01	0.00	0.15
Chromium	0.30	mg/kg	0.3	0.02	15.00
Mercury	0.05	mg/kg	0.05	0.00	0.10

All results expressed on sample as received. The lead, copper, cadmium, nickel and mercury concentrations are less than the minimum level of detection, consequently, the calculated values will be less than those shown

VOLAC FELINFACH

Analysis of Sludge

Lab Ref: 53284
Date: 25/04/19

Application rate (t/ha)	**69.0**
Application rate (t/acre)	**28**
pH	**4.78**
Dry solids (%)	**1.82**
Organic Matter(%)	**1.22**

NUTRIENT CONTENT

			Total		Readily Available	
TOTALS	**result**	**units**	**(kg/t)**	**(kg/ha)**	**(kg/t)**	**(kg/ha)**
Nitrogen (N)	0.05	%	0.5	35	0.1	7
Ammonium-N	107	mg/kg	0.1	7		
Phosphorus (P)	507	mg/kg	0.5	35		
Phosphate (P_2O_5)			1.2	80	0.7	48
Potassium (K)	842	mg/kg	0.8	58		
Potash (K_2O)			1.0	70	0.8	56
Magnesium (Mg)	92.3	mg/kg	0.1	6		
Magnesium (MgO)			0.2	11	0.0	1
Sulphur (S)	130	mg/kg	0.1	9		
Sulphur (SO_3)			0.3	22	0.1	4

POTENTIALLY TOXIC ELEMENTS

			Rate		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	1.24	mg/kg	1.24	0.09	15.00
Copper	0.20	mg/kg	0.2	0.01	7.50
Nickel	0.20	mg/kg	0.2	0.01	3.00
Lead	0.50	mg/kg	0.5	0.03	15.00
Cadmium	0.01	mg/kg	0.01	0.00	0.15
Chromium	0.30	mg/kg	0.3	0.02	15.00
Mercury	0.05	mg/kg	0.05	0.00	0.10

All results expressed on sample as received. The lead, copper, cadmium, nickel and mercury concentrations are less than the minimum level of detection, consequently, the calculated values will be less than those shown

VOLAC FELINFACH

Analysis of Sludge

Lab Ref: 53284
Date: 25/04/19

Application rate (t/ha)	**136.0**
Application rate (t/acre)	**55**
pH	**4.78**
Dry solids (%)	**1.82**
Organic Matter(%)	**1.22**

NUTRIENT CONTENT

			Total		Readily Available	
TOTALS	**result**	**units**	**(kg/t)**	**(kg/ha)**	**(kg/t)**	**(kg/ha)**
Nitrogen (N)	0.05	%	0.5	68	0.1	14
Ammonium-N	107	mg/kg	0.1	15		
Phosphorus (P)	507	mg/kg	0.5	69		
Phosphate (P_2O_5)			1.2	158	0.7	95
Potassium (K)	842	mg/kg	0.8	115		
Potash (K_2O)			1.0	137	0.8	110
Magnesium (Mg)	92.3	mg/kg	0.1	13		
Magnesium (MgO)			0.2	21	0.0	2
Sulphur (S)	130	mg/kg	0.1	18		
Sulphur (SO_3)			0.3	44	0.1	9

POTENTIALLY TOXIC ELEMENTS

			Rate		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	1.24	mg/kg	1.24	0.17	15.00
Copper	0.20	mg/kg	0.2	0.03	7.50
Nickel	0.20	mg/kg	0.2	0.03	3.00
Lead	0.50	mg/kg	0.5	0.07	15.00
Cadmium	0.01	mg/kg	0.01	0.00	0.15
Chromium	0.30	mg/kg	0.3	0.04	15.00
Mercury	0.05	mg/kg	0.05	0.01	0.10

All results expressed on sample as received. The lead, copper, cadmium, nickel and mercury concentrations are less than the minimum level of detection, consequently, the calculated values will be less than those shown

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

VOLAC FELINFACH

EFFLUENT ANALYSIS RESULTS (Metric Units)

Sample Reference : EFFLUENT 001A

Sample Matrix : EFFLUENT

The sample submitted was of adequate size to complete all analysis requested.

The sample will be kept under refrigeration for at least 3 weeks.

Laboratory References	
Report Number	53284
Sample Number	81788

Date Received	25-APR-2019
Date Reported	03-MAY-2019

ANALYTICAL RESULTS *on 'as received' basis.*

Determinand on a fresh weight basis	Units	Result	Amount per fresh tonne or m3	Amount applied at an equivalent total Nitrogen application of 250 kg N/ha	Units
pH 1:6 [Fresh]		4.78			
Oven Dry Solids	%	1.82	18.20	9100	kg DM
Total Nitrogen	% w/w	0.050	0.50	250	kg N
Ammonium Nitrogen	mg/kg	107	0.11	53.50	kg NH4-N
Nitrate Nitrogen	mg/kg	<10	< 0.01		kg NO3-N
Total Phosphorus (P)	mg/kg	507	1.16	580.52	kg P2O5
Total Potassium (K)	mg/kg	842	1.01	505.20	kg K2O
Total Magnesium (Mg)	mg/kg	92.3	0.15	76.61	kg MgO
Total Sulphur (S)	mg/kg	130	0.32	162.50	kg SO3
Total Copper (Cu)	mg/kg	<0.2	< 0.01		kg Cu
Total Zinc (Zn)	mg/kg	1.24	< 0.01		kg Zn
Total Sodium (Na)	mg/kg	588	0.79	396.31	kg Na2O
Total Calcium (Ca)	mg/kg	562	0.56	281.00	kg Ca
Equivalent field application rate		——	1.00	500.00	tonnes or m3 / ha

The above equivalent field application rate for total nitrogen of 250 kg/ha has been provided purely for guidance purposes only. Organic manures should be used in accordance with the Defra Code of Good Agricultural Practice and where required within the specific regulatory guidance for the spreading of that material to land. To get the most benefit from your organic manures it is recommended that you follow the principles as set out in Defra's Fertiliser Manual (RB209) or as directed by a FACTS qualified adviser.

Released by *Katie Dunn* Date *03/05/19*

NRM Coopers Bridge, Braziers Lane, Bracknell, Berkshire RG42 6NS
Tel: +44 (0) 1344 886338 **Fax:** +44 (0) 1344 890972 **Email:** enquiries@nrm.uk.com **www**.nrm.uk.com

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

VOLAC FELINFACH

EFFLUENT ANALYSIS RESULTS (Metric Units)

Sample Reference : EFFLUENT 001A

Sample Matrix : EFFLUENT

The sample submitted was of adequate size to complete all analysis requested.

The sample will be kept under refrigeration for at least 3 weeks.

Laboratory References	
Report Number	53284
Sample Number	81788

Date Received	25-APR-2019
Date Reported	03-MAY-2019

ANALYTICAL RESULTS *on 'as received' basis.*

Determinand on a fresh weight basis	Units	Result
E Coli [Fresh]	cfu/g	320
Conductivity 1:6	uS/cm	1331
Total Lead (Pb)	mg/kg	<0.5
Total Cadmium (Cd)	mg/kg	<0.01
Total Mercury (Hg)	mg/kg	<0.05
Total Nickel (Ni)	mg/kg	<0.2
Total Chromium (Cr)	mg/kg	0.303
Organic Matter LOI	% w/w	1.22
Coliforms [fresh]	cfu/g	50
Oils,Fats and Grease	mg/kg	<200
Salmonella spp [fresh]		Negative
EC [Neat]	uS/cm	6852

Released by *Katie Dunn* Date *03/05/19*

NRM Coopers Bridge, Braziers Lane, Bracknell, Berkshire RG42 6NS
Tel: +44 (0) 1344 886338 **Fax:** +44 (0) 1344 890972 **Email:** enquiries@nrm.uk.com **www**.nrm.uk.com

How does your sample analysis compare with the 'standard' figures for organic manures?

Farmyard Manure	Dry Matter (% DM)	Total Nitrogen (Kg N/t)	Total Phosphate (Kg P2O5/t)	Total Potash (Kg K2O/t)	Total Sulphur (Kg SO3/t)	Total Magnesium (Kg MgO/t)
Cattle FYM	25	6.0	3.2	9.4	2.4	1.8
Pig FYM	25	7.0	6.0	8.0	3.4	1.8
Sheep FYM	25	7.0	3.2	8.0	4.0	2.8
Duck FYM	25	6.5	5.5	7.5	2.6	2.4
Horse FYM	25	5.0	5.0	6.0	1.6	1.5
Goat FYM	40	9.5	4.5	12.0	2.8	1.8

Notes: The 'standard' phosphate & potash availability figures to the next crop grown from Defra's Fertiliser Manual are 60% & 90% respectively.

Poultry Manure	Dry Matter (% DM)	Total Nitrogen (Kg N/t)	Total Phosphate (Kg P2O5/t)	Total Potash (Kg K2O/t)	Total Sulphur (Kg SO3/t)	Total Magnesium (Kg MgO/t)
	20	9.4	8.0	8.5	3.0	2.7
	40	19.0	12.0	15.0	5.6	4.3
	60	28.0	17.0	21.0	8.2	5.9
	80	37.0	21.0	27.0	11.0	7.5

Notes: The 'standard' phosphate & potash availability figures to the next crop grown from Defra's Fertiliser Manual are 60% & 90% respectively.

Cattle & Pig Slurries	Dry Matter (% DM)	Total Nitrogen (Kg N/m3)	Total Phosphate (Kg P2O5/m3)	Total Potash (Kg K2O/m3)	Total Sulphur (Kg SO3/m3)	Total Magnesium (Kg MgO/m3)
Cattle slurry	6.0	2.6	1.2	2.5	0.7	0.6
Dirty water (from cattle)	0.5	0.5	0.1	1.0	0.1	0.1
Separated cattle slurries						
- strainer box liquid	1.5	1.5	0.3	1.5	ND	ND
- weeping wall liquid	3.0	2.0	0.5	2.3	ND	ND
- mechanically separated liquid	4.0	3.0	1.2	2.8	ND	ND
- solid portion after separation	20.0	4.0	2.0	3.3	ND	ND
Pig slurry	4.0	3.6	1.5	2.2	0.7	0.7
Separated pig slurry - liquid	3.0	3.6	1.1	2.0	ND	ND
Separated pig slurry - solid	20.0	5.0	3.7	2.0	ND	ND

Notes: ND = no data.
The 'standard' phosphate & potash availability figures to the next crop grown from Defra's Fertiliser Manual are 50% & 90% respectively (50% & 100% for dirty water).

Biosolids	Dry Matter (% DM)	Total Nitrogen (Kg N/t)	Total Phosphate (Kg P2O5/t)	Total Potash (Kg K2O/t)	Total Sulphur (Kg SO3/t)	Total Magnesium (Kg MgO/t)
Digested cake	25	11.0	11.0	0.6	8.2	1.6
Thermally dried	95	40.0	55.0	2.0	23.0	6.0
Lime stablised	25	8.5	7.0	0.8	7.4	2.4
Composted	40	11.0	10.0	3.0	6.1	2.0

Notes: The 'standard' phosphate & potash availability figures to the next crop grown from Defra's Fertiliser Manual are 50% & 90% respectively.

Other Organic Manures	Dry Matter	Total Nitrogen	Total Phosphate	Total Potash	Total Sulphur	Total Magnesium
Composts	(% DM)	(Kg N/t)	(Kg P2O5/t)	(Kg K2O/t)	(Kg SO3/t)	(Kg MgO/t)
Green compost	60	7.5	3.0	6.8	3.4	3.4
Green/food compost	60	11.0	4.9	8.0	5.1	3.4
Mushroom compost	35	6.0	5.0	9.0	ND	ND
Digestates						
Food-based whole	4.1	4.8	1.1	2.4	0.7	0.2
Food-based separated liquor	3.8	4.5	1.0	2.8	1.0	0.2
Food-based separated fibre	27.0	8.9	10.2	3.0	4.0	2.2
Farm-sourced whole	5.5	3.6	1.7	4.0	0.8	0.6
Farm-sourced separated liquor	3.0	1.9	0.6	2.5	<0.1	0.4
Farm-sourced separated fibre	24.0	5.6	4.7	6.0	1.2	1.8
Paper Crumble						
Chemically / physically treated	40	2.0	0.4	0.2	0.6	1.4
Biologically treated	30	7.5	3.8	0.4	2.4	1.0
Water Treatment Cake						
Water treatment cake	25	2.4	3.4	0.4	5.5	0.8
Food industry 'wastes'	(% DM)	(Kg N/m3)	(Kg P2O5/m3)	(Kg K2O/m3)	(Kg SO3/m3)	(Kg MgO/m3)
Dairy waste	4	1.0	0.8	0.2	ND	ND
Soft drinks waste	4	0.3	0.2	Trace	ND	ND
Brewing waste	7	2.0	0.8	0.2	ND	ND
General food waste	5	1.6	0.7	0.2	ND	ND

Notes: ND = no data.

The 'standard' figures for the above organic manures have been taken from Defra's Fertiliser Manual 2017 (RB209) 9th edition and the corresponding PLANET version 3 software. Further information on fertiliser recommendations for organic manures can be obtained from the Fertiliser Manual or from a FACTS qualified adviser.

ANALYTICAL REPORT

Report Number	**90891-20**	**V850**	**STEPSIDE AGRI**	**Client**	**M DAVIES**
Date Received	**06-MAR-2020**		**STEPSIDE FARM**		**HAFOD FARM**
Date Reported	**10-MAR-2020**		**GWBERT ROAD**		**FERWIG**
Project	**SOIL**		**CARDIGAN**		**CARDIGAN**
Reference	**M DAVIES**		**SA43 1PH**		
Order Number					

Laboratory Reference		**SOIL472514**	**SOIL472515**	**SOIL472516**	**SOIL472517**	**SOIL472518**	**SOIL472519**	**SOIL472520**	**SOIL472521**	**SOIL472522**
Sample Reference		**CRUG FARM-8232**	**CRUG FARM-7025**	**CRUG FARM-4526**	**CRUG FARM-5412**	**CRUG FARM-5994**	**CRUG FARM-2312**	**CRUG FARM-3498**	**CRUG FARM-1594**	**CRUG FARM-8295**
Determinand	**Unit**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
pH water [1:2.5]		5.8	6.3	6.6	6.7	6.1	6.8	7.0	6.3	7.0
Available Phosphorus (Index)	mg/l	26.0 (3)	15.2 (1)	13.6 (1)	21.2 (2)	14.2 (1)	19.4 (2)	25.0 (2)	18.4 (2)	25.0 (2)
Available Potassium (Index)	mg/l	133 (2-)	91.0 (1)	221 (2+)	219 (2+)	158 (2-)	287 (3)	368 (3)	243 (3)	374 (3)
Available Magnesium (Index)	mg/l	105 (3)	122 (3)	128 (3)	107 (3)	103 (3)	130 (3)	121 (3)	132 (3)	138 (3)
Total Copper	mg/kg	11.5	13.0	12.2	12.3	9.2	15.4	9.9	11.3	11.5
Total Zinc	mg/kg	52.2	61.2	58.6	57.7	53.8	71.2	61.3	69.8	65.5
Total Lead	mg/kg	16.5	17.2	16.9	15.8	16.3	19.3	15.6	19.1	16.8
Total Arsenic	mg/kg	10.3	11.0	12.0	11.8	10.0	14.8	10.1	12.8	10.3
Total Cadmium	mg/kg	0.19	0.22	0.25	0.20	0.22	0.27	0.19	0.22	0.21
Total Nickel	mg/kg	14.9	17.0	18.3	18.6	19.7	22.9	18.1	21.9	18.9
Total Chromium	mg/kg	24.4	27.8	29.7	28.1	30.5	33.0	27.0	34.7	29.6
Total Mercury	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total Selenium	mg/kg	0.35	0.31	0.34	0.28	0.27	0.38	0.28	0.30	0.30
Total Molybdenum	mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1
Fluoride	mg/kg	17.6	18.6	25.9	21.3	14.9	28.1	16.8	21.5	19.4

Notes

Analysis Notes

The sample submitted was of adequate size to complete all analysis requested.
The results as reported relate only to the item(s) submitted for testing.
The results are presented on a dry matter basis unless otherwise stipulated.

ANALYTICAL NOTES

Report Number	**90891-20**	**V850**	**STEPSIDE AGRI**	**Client**	**M DAVIES**
Date Received	**06-MAR-2020**		**STEPSIDE FARM**		**HAFOD FARM**
Date Reported	**10-MAR-2020**		**GWBERT ROAD**		**FERWIG**
Project	**SOIL**		**CARDIGAN**		**CARDIGAN**
Reference	**M DAVIES**		**SA43 1PH**		
Order Number					

Notes

Reported by

Myles Nicholson

Natural Resource Management, a trading division of Cawood Scientific Ltd.
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ANALYTICAL REPORT

Report Number	**93515-20**	**V850**	**STEPSIDE AGRI**	**Client**	**MR J H COWAN AND SON**
Date Received	**25-MAR-2020**		**STEPSIDE FARM**		**LAND AT PWLLGLAS**
Date Reported	**27-MAR-2020**		**GWBERT ROAD**		
Project	**SOIL**		**CARDIGAN**		
Reference	**MR J H COWAN AND SON**		**SA43 1PH**		
Order Number					

Laboratory Reference		**SOIL474601**	**SOIL474602**	**SOIL474603**	**SOIL474604**	**SOIL474605**	**SOIL474606**	**SOIL474607**	**SOIL474608**	**SOIL474609**	**SOIL474610**
Sample Reference		**PWLLGLAS 2934**	**PWLLGLAS 0454**	**PWLLGLAS 8336**	**PWLLGLAS 6842**	**PWLLGLAS 5823**	**PWLLGLAS 6561**	**PWLLGLAS 5577**	**PWLLGLAS 4765**	**PWLLGLAS 5458**	**PWLLGLAS 4083**
Determinand	**Unit**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
pH water [1:2.5]		5.7	6.0								
Available Phosphorus (Index)	mg/l	8.0 (0)	11.4 (1)								
Available Potassium (Index)	mg/l	54.8 (0)	40.7 (0)								
Available Magnesium (Index)	mg/l	60.0 (2)	91.8 (2)								
Total Copper	mg/kg	12.3	13.0								
Total Zinc	mg/kg	50.9	51.3								
Total Lead	mg/kg	17.0	18.2								
Total Arsenic	mg/kg	12.2	13.2								
Total Cadmium	mg/kg	0.20	0.24								
Total Nickel	mg/kg	17.1	15.6								
Total Chromium	mg/kg	35.8	29.7								
Total Mercury	mg/kg	<0.2	<0.2								
Total Selenium	mg/kg	0.76	0.77								
Total Molybdenum	mg/kg	1.4	1.6								
Fluoride	mg/kg	32.9	27.3								

Notes

Analysis Notes

The sample submitted was of adequate size to complete all analysis requested.
The results as reported relate only to the item(s) submitted for testing.
The results are presented on a dry matter basis unless otherwise stipulated.

ANALYTICAL NOTES

Report Number	**93515-20**	**V850**	**STEPSIDE AGRI**	**Client**	**MR J H COWAN AND SON**
Date Received	**25-MAR-2020**		**STEPSIDE FARM**		**LAND AT PWLLGLAS**
Date Reported	**27-MAR-2020**		**GWBERT ROAD**		
Project	**SOIL**		**CARDIGAN**		
Reference	**MR J H COWAN AND SON**		**SA43 1PH**		
Order Number					

Notes	
Reported by	*Myles Nicholson* Natural Resource Management, a trading division of Cawood Scientific Ltd. Coopers Bridge, Braziers Lane, Bracknell, Berkshire, RG42 6NS Tel: 01344 886338 Fax: 01344 890972 email: enquiries@nrm.uk.com