SR2010No4 Mobile Plant for Land-spreading Deployment Application

Rhosygadair Fawr - Land at Pantgwyn Farm

Applicant:

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

Permit Number: EPR/AB3891CX

Date: 12/08/2020

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	4920
2	02 05 02	Sludge from dairy waste treatment	Liquid Sludge	Volac – Felinfach	2460
3					N.B. Maximums for single waste stream
4					
5					
6					
7					
8					
9					
10					
				Total tonnage	Max. 4920

4g About the land you want to treat

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

Address	Rhosygadair Fawr Farm
	Land at Pantgwyn Farm
	Cardigan
	Ceredigion
Postcode	SA43 2ND
National grid reference (12 digit)	SN 23967 46084

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

Agricultural land ☒ Please give your County/ Parish/ Holding number 55/220/0009

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 continuation sheet: Table 3 Details of land to be treated			
2				
3				
4				
5				
6				
7				
8				
9				
10				
			Total hectares	49.20

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	Phillip	

Last name	Reed
Address	**Rhosygadair Fawr Farm**
	Blaenannerch
	Cardigan
	Ceredigion
Postcode	SA43 1SW
Telephone - mobile	07971 533090
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

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	2	**Sludge from dairy waste treatment**	**Stepside Agri**	97	PAN-006533

2	4	Sludge from dairy waste treatment	Stepside Agri	87	PAN-006533
3	5	Sludge from dairy waste treatment	Stepside Agri	65	PAN-006533
4	6	Sludge from dairy waste treatment	Stepside Agri	50	PAN-006533
5	7	Sludge from dairy waste treatment	Stepside Agri	100	PAN-006533
6	9	Sludge from dairy waste treatment	Stepside Agri	42	PAN-006533
7	10	Sludge from dairy waste treatment	Stepside Agri	86	PAN-006533
8					
9					
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 24008 46147	02 05 02	Nurse tank	120
2	SN 23687 46032	02 05 02	Nurse tank	120
3	SN 23801 46016	02 05 02	Nurse tank	120
4	SN 23357 45420	02 05 02	Nurse tank	120
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	EPDEPSTEPS0051
Amount paid	£798

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	Table 3 Details of land to be treated
	N/A	
	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)	11/08/2020

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

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)
1	10.00	SN 23970 46310	02 05 02
2	7.30	SN 23740 46230	02 05 02
4	2.70	SN 23303 46030	02 05 02
5	5.30	SN23777 45850	02 05 02
6	1.60	SN 23308 45876	02 05 02
7	6.00	SN 23550 45910	02 05 02
9	10.00	SN 23480 45630	02 05 02
10	6.30	SN 23270 45560	02 05 02
TOTAL	**49.20**		

STEPSIDE
AGRI CONTRACTORS
TEL: 01239 621354 MOB: 07966 521386

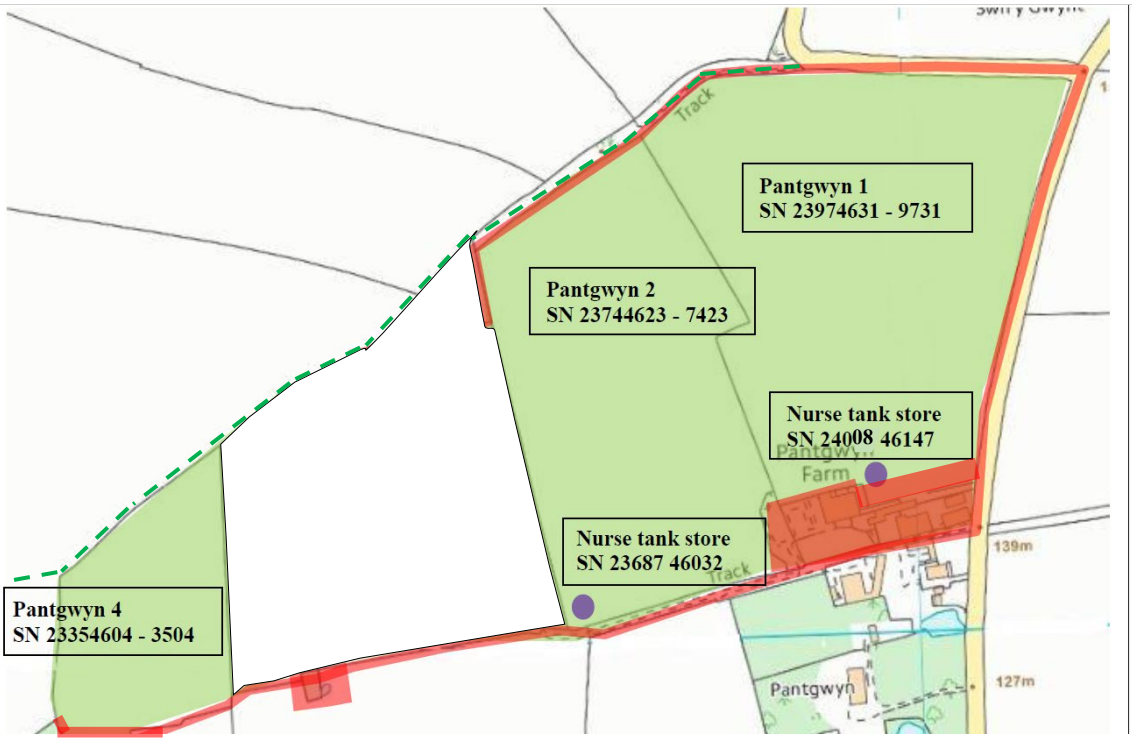
Pantgwyn Farm
Location of Fields

Farm	Client
Rhosygadair Fawr farm, Blaenannerch SA43 1SW Land at Pantgwyn Farm Cardigan SA43 2ND	Volac
Map reference: SN 23967 46084	
File Ref:	Drawing no:	Scale:1:11000

Key

Non-spreading | Spreading | Store | Footpath

N



STEPSIDE
AGRI CONTRACTORS
TEL: 01239 621354 MOB: 07966 521386

Pantgwyn Farm
Location of Fields

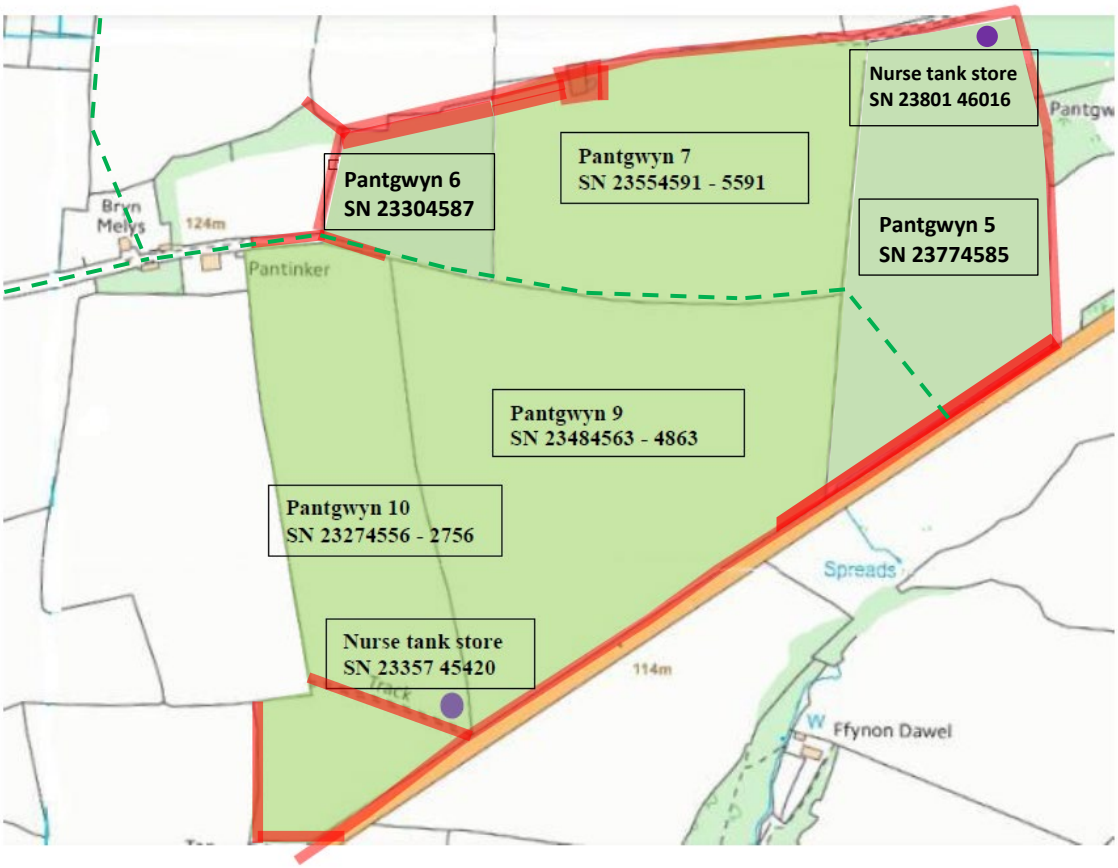
Farm	Client
Rhosygadair Fawr farm, Blaenannerch SA43 1SW Land at Pantgwyn Farm Cardigan SA43 2ND	Volac
Map reference: SN 23967 46084	

File Ref:		Drawing no:		Scale:1:11000

Key

Non-spreading | Spreading | Store | Footpath

N



Statement of Agricultural Benefit – Rhosygadair Fawr – land at Pantgwyn Farm

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:
Rhosygadair Fawr – land at Pantgwyn Farm, Cardigan, Ceredigion, SA43 2ND - Holding No. 55/220/0009

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

Application:

- The fields will be spread in spring 2021 immediately prior to cultivations and planting of the spring wheat crops. The waste will be incorporated into the soil.
- 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 heavy rainfall.
- The waste will be spread onto the fields with a trailing hose applicator (dribble bar) assuming ground conditions are suitable at the time of waste receipt and incorporated into the soil. Should the ground or weather conditions mean it's unsuitable for spreading then contingency storage in nurse tanks may also be required. These potential locations are detailed on the field maps and within the LPD1 form.
- The maximum application rate for each field will be split into two applications for the Dairy Partners liquid sludge 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 & calcium. 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 2-6 kg 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 50 kg SO_3/ha. The amount of available sulphur supplied by the wastes at the proposed maximum application rates is 2 kg SO_3/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 following fields received Dairy Partners sludge from dairy waste treatment in the previous 12 months under PAN-006533:

Pantgwyn field 2 – 97 t/ha, field 4 – 87 t/ha, field 5 – 65 t/ha, field 6 – 50 t/ha, field 7 – 100 t/ha, field 10 – 86 t/ha

Pantgwyn field 9 received 42 t/ha of Volac, Felinfach sludge from dairy waste treatment in the previous 12 months under PAN-006533.

It's considered that the nutrients supplied by these applications will have been utilised by 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 liquid sludge @ 100 t/ha	10	2	2	1	9	7	2	0	9	2
Volac liquid sludge @ 50 t/ha	30	6	31	19	72	58	6	1	8	2
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)**
1	Medium soils	10.00	Spring barley	Spring wheat	1	180	4	0	51	3	0	72	2	0
2	Medium soils	7.30	Spring barley	Spring wheat	1	180	4	0	51	2+	40	72	2	0
4	Medium soils	2.70	Forage rape	Spring wheat	1	180	2	50	51	2-	70	72	2	0
5	Medium soils	5.30	Spring barley	Spring wheat	1	180	3	0	51	2-	70	72	1	0
6	Medium soils	1.60	Forage rape	Spring wheat	1	180	2	50	51	2+	40	72	2	0
7	Medium soils	6.00	Fodder beet	Spring wheat	1	180	4	0	51	2+	40	72	2	0
9	Medium soils	10.00	Forage rape	Spring wheat	1	180	5	0	51	3	0	72	2	0
10	Medium soils	6.30	Spring barley	Spring wheat	1	180	4	0	51	2-	70	72	2	0
TOTAL		**49.20**												

Nutrient requirements based on: Spring wheat 6t/ha straw removed

	Dairy Partners, Newcastle Emlyn - liquid sludge						Volac, Felinfach - liquid sludge					
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**
1	**2	*2	*9	*2	100	1000	**6	*31	*72	*6	50	500
2	**2	*2	*9	*2	100	730	**6	*31	*72	*6	50	365
4	**2	*2	*9	*2	100	270	**6	*31	*72	*6	50	135
5	**2	*2	*9	**0	100	530	**6	*31	*72	**1	50	265
6	**2	*2	*9	*2	100	160	**6	*31	*72	*6	50	80
7	**2	*2	*9	*2	100	600	**6	*31	*72	*6	50	300
9	**2	*2	*9	*2	100	1000	**6	*31	*72	*6	50	500
10	**2	*2	*9	*2	100	630	**6	*31	*72	*6	50	315
TOTAL						**4920**						**2460**

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 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 & 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 arable soils under the Sludge (Use in Agriculture) Regulations.

Operations

The fields in this deployment have been designated as 'medium risk' following site checks on the proximity to surrounding protected areas (e.g. SSSIs) and groundwater source protection zones. On the basis of 'medium risk' the proposed operation will be subject to the generic 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 each field will be split into two applications for the Dairy Partners liquid sludge 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 with current regulations and relevant mitigation strategies will be adopted e.g. waste will be soil 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.).
- Rights of way have been marked on the spread risk maps. Spreading will be carried out at times of low use & waste will be rapidly incorporated. Where a footpath crosses within the field spread area, it's noted that the material will be spread & rapidly soil incorporated with the footpath reinstated.
- Weather conditions will be monitored prior to spreading with wind speed and direction assessed.
- Consideration for the public and local residential receptors will be taken before and during application.

Signed: David Powell	**Date:** 11/08/2020

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
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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* .....

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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
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	

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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*

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VOLAC, FELINFACH

Analysis of Liquid Waste

Report No: 99545
Date: 28/05/2020

Application rate (t/ha)	**50.0**
Application rate (t/acre)	**20.2**
pH	**6.47**
Dry solids (%)	**1.04**
Organic Matter(%)	**0.36**

NUTRIENT CONTENT

			Total		Readily Available	
TOTALS	**result**	**units**	**(kg/t)**	**(kg/ha)**	**(kg/t)**	**(kg/ha)**
Nitrogen (N)	0.06	%	0.6	30	0.1	6
Ammonium-N	519	mg/kg	0.5	26		
Phosphorus (P)	275	mg/kg	0.3	14		
Phosphate (P_2O_5)			0.6	31	0.4	19
Potassium (K)	1199	mg/kg	1.2	60		
Potash (K_2O)			1.4	72	1.2	58
Magnesium (Mg)	73.4	mg/kg	0.1	4		
Magnesium (MgO)			0.1	6	0.0	1
Sulphur (S)	62	mg/kg	0.1	3		
Sulphur (SO_3)			0.2	8	0.0	2

POTENTIALLY TOXIC ELEMENTS

			Rate		Limit
TOTALS	**result**	**units**	**(g/tonne)**	**(kg/ha)**	**(kg/ha/yr)**
Zinc	3.33	mg/kg	3.33	0.17	15.00
Copper	0.20	mg/kg	0.20	0.01	7.50
Nickel	0.20	mg/kg	0.20	0.01	3.00
Lead	0.50	mg/kg	0.50	0.03	15.00
Cadmium	0.01	mg/kg	0.01	0.00	0.15
Chromium	0.20	mg/kg	0.20	0.01	15.00
Mercury	0.05	mg/kg	0.05	0.00	0.10

All results expressed on sample as received. The 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

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V850

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STEPSIDE AGRI

EFFLUENT

EFFLUENT

Sample Reference :

VOLAC-EFFLUENT

Sample Matrix : EFFLUENT

Laboratory References	
Report Number	99545
Sample Number	96050

Date Received	28-MAY-2020
Date Reported	04-JUN-2020

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	1.04	%
E Coli [Fresh]	370	cfu/g
Conductivity 1:6	2030	uS/cm
Total Kjeldahl Nitrogen	0.06	% w/w
Nitrate Nitrogen	<10	mg/kg
Ammonium Nitrogen	519	mg/kg
Total Phosphorus (P)	275	mg/kg
Total Potassium (K)	1199	mg/kg
Total Magnesium (Mg)	73.4	mg/kg
Total Copper (Cu)	<0.2	mg/kg

Released by ..... *Myles Nicholson* ..... Date ..... *04/06/20* .....

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STEPSIDE AGRI

EFFLUENT

EFFLUENT

Sample Reference :

VOLAC-EFFLUENT

Sample Matrix : EFFLUENT

Laboratory References	
Report Number	99545
Sample Number	96050

Date Received	28-MAY-2020
Date Reported	04-JUN-2020

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)	3.33	mg/kg
Total Sulphur (S)	62.0	mg/kg
Total Calcium (Ca)	373	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)	969	mg/kg
pH 1:6 [Fresh]	6.47	

Released by *Myles Nicholson* Date *04/06/20*

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STEPSIDE AGRI

EFFLUENT

EFFLUENT

Sample Reference :

VOLAC-EFFLUENT

Sample Matrix : EFFLUENT

Laboratory References	
Report Number	99545
Sample Number	96050

Date Received	28-MAY-2020
Date Reported	04-JUN-2020

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	0.36	% w/w
Coliforms [fresh]	1500	cfu/g
Oils,Fats and Grease	1080	mg/kg
Salmonella spp [fresh]	Negative	in 25g
EC [Neat]	10470	uS/cm

Released by ..... *Myles Nicholson* ..... Date ..... *04/06/20* .....

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 1

STEPSIDE AGRI
STEPSIDE FARM
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SA43 1PH

V850

Please quote above code for all enquiries

MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

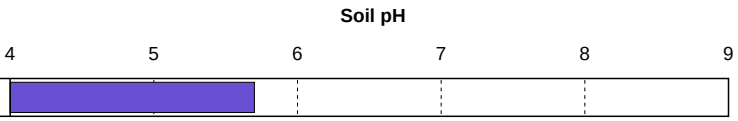
Date Received	16-JUL-2018
Date Reported	20-JUL-2018

Laboratory References

Report Number	19781
Sample Number	394688

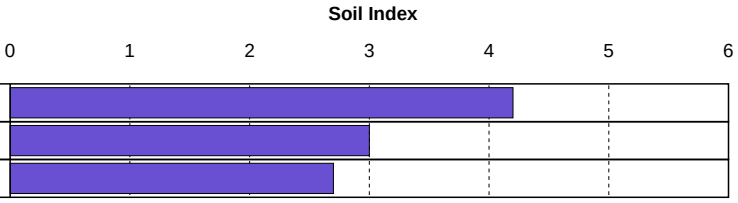
ANALYTICAL RESULTS *on 'dry matter' basis.*

pH (1)



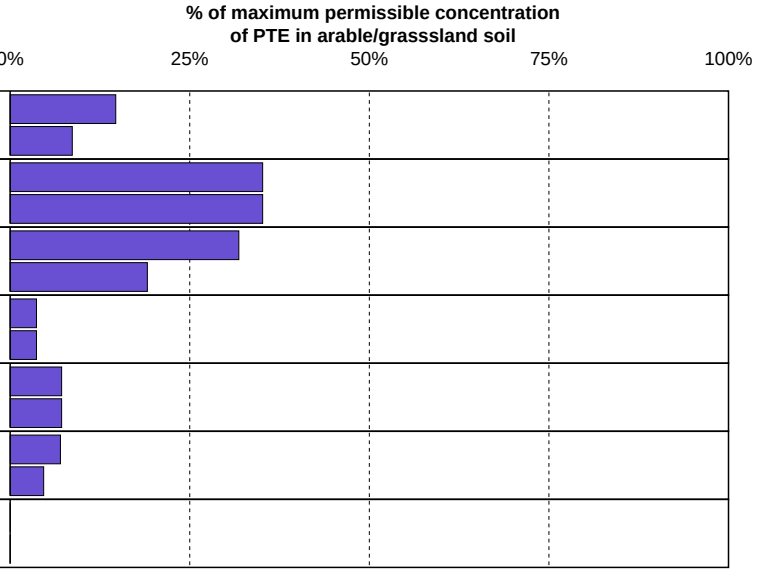
Determinand	Result
Soil pH	5.7

Soil Nutrients (1)



Determinand	Result mg/litre	Soil Index
Soil Phosphorus as P	51.2	4
Soil Potassium as K	253	3
Soil Magnesium as Mg	87.1	2

Potentially Toxic Elements (2)



Determinand	Result mg/kg		Maximum mg/kg
Total Copper as Cu	14.7	Arable	100
		Grassland	170
Total Zinc as Zn	70.3	Arable	200
		Grassland	200
Total Nickel as Ni	19.1	Arable	60
		Grassland	100
Total Cadmium as Cd	0.11	Arable	3
		Grassland	3
Total Lead as Pb	21.5	Arable	300
		Grassland	300
Total Chromium as Cr	28.0	Arable	400
		Grassland	600
Total Mercury as Hg	<0.2	Arable	1
		Grassland	1.5

(1) Recommendations for liming and fertiliser should be obtained from Defra's Fertiliser Manual (RB209). The analytical methods used are as described in Defra's RB427.

(2) Concentration of Potentially Toxic Elements (PTE, commonly referred to as 'heavy metals') are in mg/kg dry soil. The maximum and the percentage of this maximum permissible concentration of PTE in soil are derived from the values in Defra's Code of Practice for Agricultural Use of Sewage Sludge (England & Wales) 1996. If applying organic manures to this soil it is important to ensure the soil is managed with a pH no less than 5.0, and that the PTE maximum values are not exceeded following the application. For soil where the pH value is less than 5.2, a FACTS Qualified Adviser should be consulted. Further details are provided in the Sludge Code.

Released by *Darren Whitbread* Date *20/07/18*

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 1

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Please quote above code for all enquiries

MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

Date Received	16-JUL-2018
Date Reported	20-JUL-2018

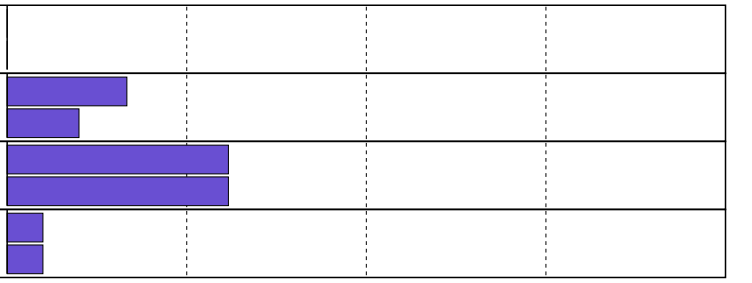
Laboratory References

Report Number	19781
Sample Number	394688

ANALYTICAL RESULTS *on 'dry matter' basis.*

Potentially Toxic Elements (2)

Determinand	Result mg/kg		Maximum mg/kg
Total Molybdenum as Mo	<1	Arable	4
		Grassland	4
Total Selenium as Se	0.50	Arable	3
		Grassland	5
Total Arsenic as As	15.4	Arable	50
		Grassland	50
Fluoride as Fl	24.9	Arable	500
		Grassland	500



(1) Recommendations for liming and fertiliser should be obtained from Defra's Fertiliser Manual (RB209). The analytical methods used are as described in Defra's RB427.

(2) Concentration of Potentially Toxic Elements (PTE, commonly referred to as 'heavy metals') are in mg/kg dry soil. The maximum and the percentage of this maximum permissible concentration of PTE in soil are derived from the values in Defra's Code of Practice for Agricultural Use of Sewage Sludge (England & Wales) 1996. If applying organic manures to this soil it is important to ensure the soil is managed with a pH no less than 5.0, and that the PTE maximum values are not exceeded following the application. For soil where the pH value is less than 5.2, a FACTS Qualified Adviser should be consulted. Further details are provided in the Sludge Code.

Released by ..... *Darren Whitbread* ..... Date ..... *20/07/18* .....

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 2

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

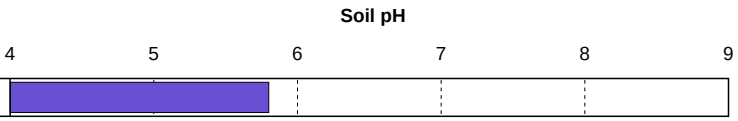
Date Received	16-JUL-2018
Date Reported	20-JUL-2018

Laboratory References

Report Number	19781
Sample Number	394689

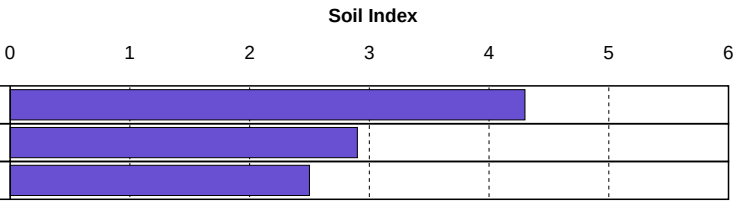
ANALYTICAL RESULTS *on 'dry matter' basis.*

pH (1)



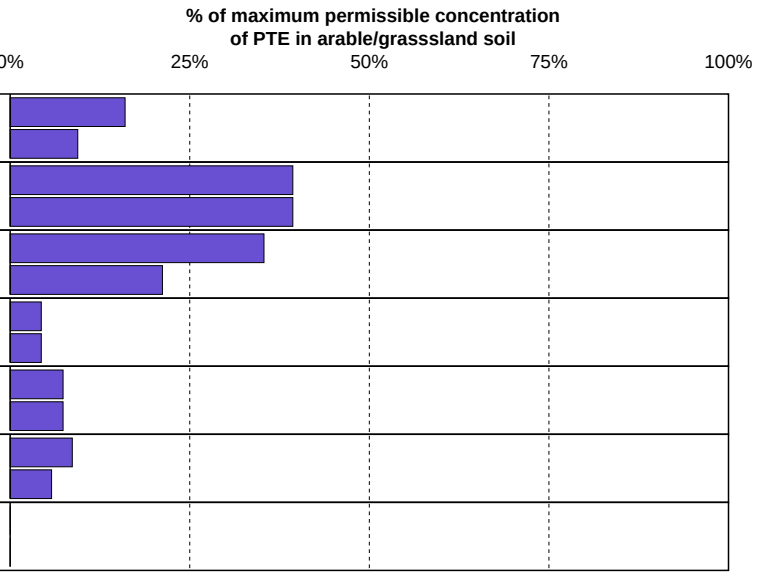
Determinand	Result
Soil pH	5.8

Soil Nutrients (1)



Determinand	Result mg/litre	Soil Index
Soil Phosphorus as P	54.6	4
Soil Potassium as K	237	2+
Soil Magnesium as Mg	77.2	2

Potentially Toxic Elements (2)



Determinand	Result mg/kg		Maximum mg/kg
Total Copper as Cu	16.0	Arable	100
		Grassland	170
Total Zinc as Zn	78.7	Arable	200
		Grassland	200
Total Nickel as Ni	21.2	Arable	60
		Grassland	100
Total Cadmium as Cd	0.13	Arable	3
		Grassland	3
Total Lead as Pb	22.1	Arable	300
		Grassland	300
Total Chromium as Cr	34.6	Arable	400
		Grassland	600
Total Mercury as Hg	<0.2	Arable	1
		Grassland	1.5

(1) Recommendations for liming and fertiliser should be obtained from Defra's Fertiliser Manual (RB209). The analytical methods used are as described in Defra's RB427.

(2) Concentration of Potentially Toxic Elements (PTE, commonly referred to as 'heavy metals') are in mg/kg dry soil. The maximum and the percentage of this maximum permissible concentration of PTE in soil are derived from the values in Defra's Code of Practice for Agricultural Use of Sewage Sludge (England & Wales) 1996. If applying organic manures to this soil it is important to ensure the soil is managed with a pH no less than 5.0, and that the PTE maximum values are not exceeded following the application. For soil where the pH value is less than 5.2, a FACTS Qualified Adviser should be consulted. Further details are provided in the Sludge Code.

Released by *Darren Whitbread* Date *20/07/18*

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 2

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

Date Received	16-JUL-2018
Date Reported	20-JUL-2018

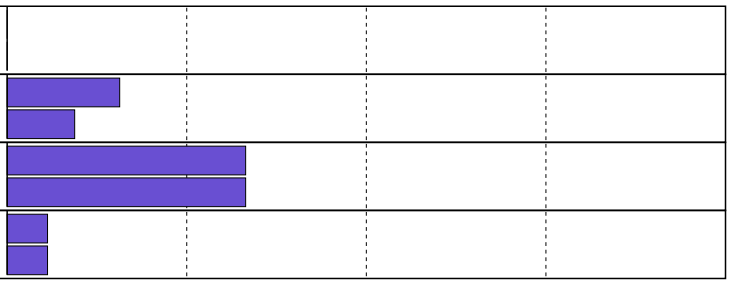
Laboratory References

Report Number	19781
Sample Number	394689

ANALYTICAL RESULTS *on 'dry matter' basis.*

Potentially Toxic Elements (2)

Determinand	Result mg/kg		Maximum mg/kg
Total Molybdenum as Mo	<1	Arable	4
		Grassland	4
Total Selenium as Se	0.47	Arable	3
		Grassland	5
Total Arsenic as As	16.6	Arable	50
		Grassland	50
Fluoride as Fl	28.1	Arable	500
		Grassland	500



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(2) Concentration of Potentially Toxic Elements (PTE, commonly referred to as 'heavy metals') are in mg/kg dry soil. The maximum and the percentage of this maximum permissible concentration of PTE in soil are derived from the values in Defra's Code of Practice for Agricultural Use of Sewage Sludge (England & Wales) 1996. If applying organic manures to this soil it is important to ensure the soil is managed with a pH no less than 5.0, and that the PTE maximum values are not exceeded following the application. For soil where the pH value is less than 5.2, a FACTS Qualified Adviser should be consulted. Further details are provided in the Sludge Code.

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 4

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

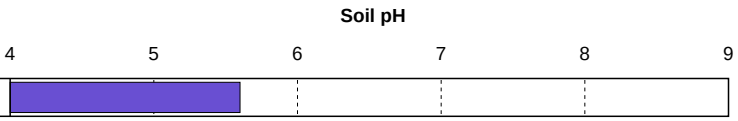
Date Received	16-JUL-2018
Date Reported	20-JUL-2018

Laboratory References

Report Number	19781
Sample Number	394691

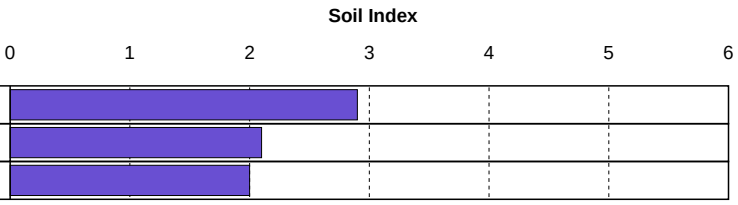
ANALYTICAL RESULTS *on 'dry matter' basis.*

pH (1)



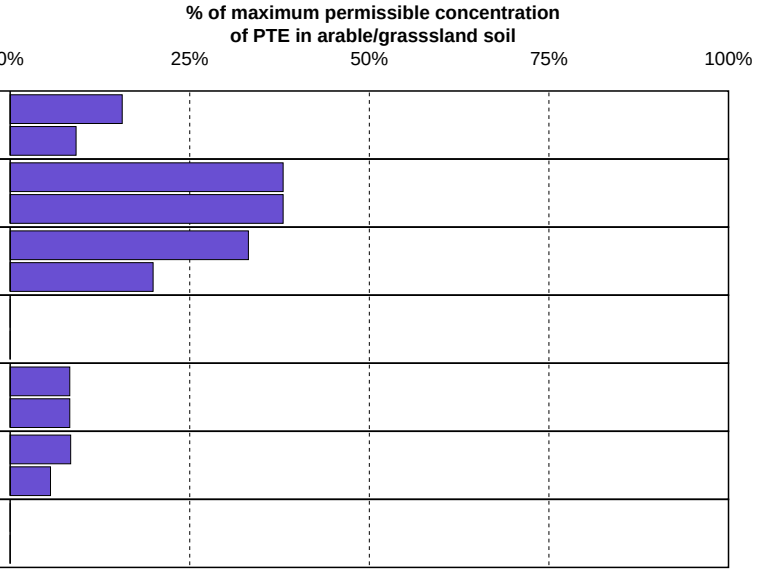
Determinand	Result
Soil pH	5.6

Soil Nutrients (1)



Determinand	Result mg/litre	Soil Index
Soil Phosphorus as P	25.4	2
Soil Potassium as K	141	2-
Soil Magnesium as Mg	54.9	2

Potentially Toxic Elements (2)



Determinand	Result mg/kg		Maximum mg/kg
Total Copper as Cu	15.6	Arable	100
		Grassland	170
Total Zinc as Zn	76.0	Arable	200
		Grassland	200
Total Nickel as Ni	19.9	Arable	60
		Grassland	100
Total Cadmium as Cd	<0.1	Arable	3
		Grassland	3
Total Lead as Pb	24.9	Arable	300
		Grassland	300
Total Chromium as Cr	33.7	Arable	400
		Grassland	600
Total Mercury as Hg	<0.2	Arable	1
		Grassland	1.5

(1) Recommendations for liming and fertiliser should be obtained from Defra's Fertiliser Manual (RB209). The analytical methods used are as described in Defra's RB427.

(2) Concentration of Potentially Toxic Elements (PTE, commonly referred to as 'heavy metals') are in mg/kg dry soil. The maximum and the percentage of this maximum permissible concentration of PTE in soil are derived from the values in Defra's Code of Practice for Agricultural Use of Sewage Sludge (England & Wales) 1996. If applying organic manures to this soil it is important to ensure the soil is managed with a pH no less than 5.0, and that the PTE maximum values are not exceeded following the application. For soil where the pH value is less than 5.2, a FACTS Qualified Adviser should be consulted. Further details are provided in the Sludge Code.

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 4

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

Date Received	16-JUL-2018
Date Reported	20-JUL-2018

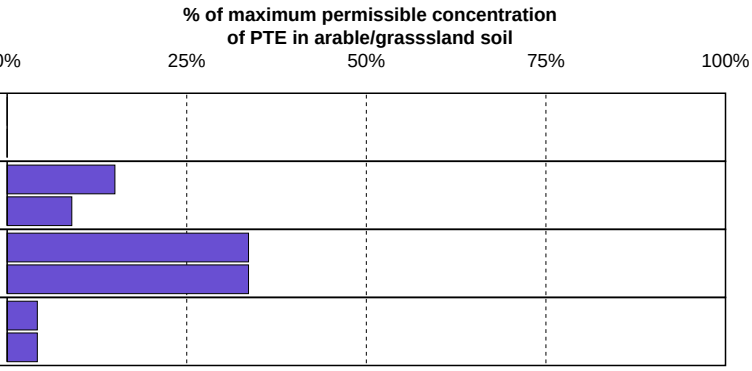
Laboratory References

Report Number	19781
Sample Number	394691

ANALYTICAL RESULTS *on 'dry matter' basis.*

Potentially Toxic Elements (2)

Determinand	Result mg/kg		Maximum mg/kg
Total Molybdenum as Mo	<1	Arable	4
		Grassland	4
Total Selenium as Se	0.45	Arable	3
		Grassland	5
Total Arsenic as As	16.8	Arable	50
		Grassland	50
Fluoride as Fl	21.0	Arable	500
		Grassland	500



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(2) Concentration of Potentially Toxic Elements (PTE, commonly referred to as 'heavy metals') are in mg/kg dry soil. The maximum and the percentage of this maximum permissible concentration of PTE in soil are derived from the values in Defra's Code of Practice for Agricultural Use of Sewage Sludge (England & Wales) 1996. If applying organic manures to this soil it is important to ensure the soil is managed with a pH no less than 5.0, and that the PTE maximum values are not exceeded following the application. For soil where the pH value is less than 5.2, a FACTS Qualified Adviser should be consulted. Further details are provided in the Sludge Code.

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 7

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

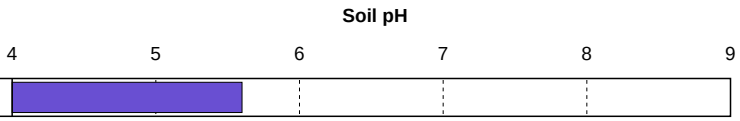
Date Received	16-JUL-2018
Date Reported	20-JUL-2018

Laboratory References

Report Number	19781
Sample Number	394694

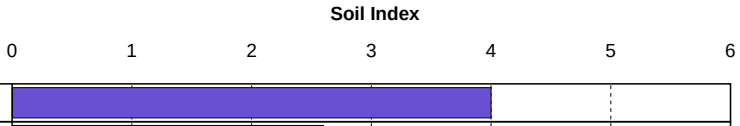
ANALYTICAL RESULTS *on 'dry matter' basis.*

pH (1)



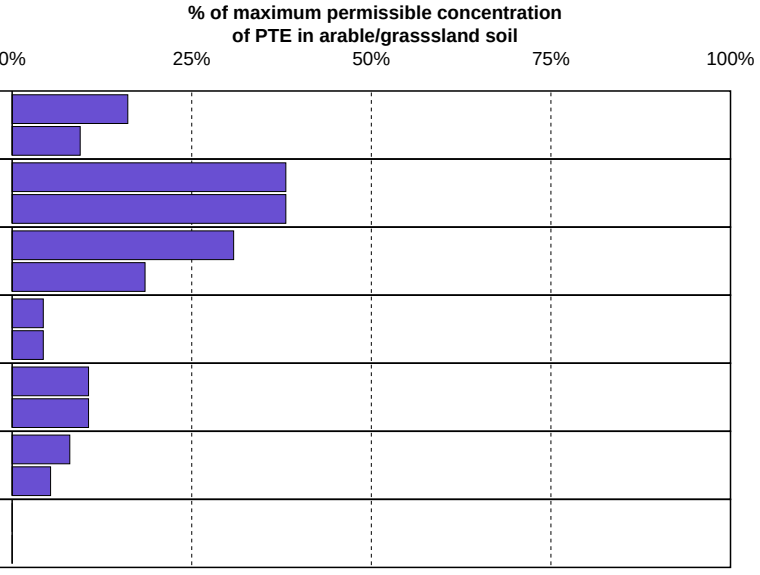
Determinand	Result
Soil pH	5.6

Soil Nutrients (1)



Determinand	Result mg/litre	Soil Index
Soil Phosphorus as P	48.4	4
Soil Potassium as K	202	2+
Soil Magnesium as Mg	59.5	2

Potentially Toxic Elements (2)



Determinand	Result mg/kg		Maximum mg/kg
Total Copper as Cu	16.1	Arable	100
		Grassland	170
Total Zinc as Zn	76.2	Arable	200
		Grassland	200
Total Nickel as Ni	18.5	Arable	60
		Grassland	100
Total Cadmium as Cd	0.13	Arable	3
		Grassland	3
Total Lead as Pb	31.9	Arable	300
		Grassland	300
Total Chromium as Cr	32.1	Arable	400
		Grassland	600
Total Mercury as Hg	<0.2	Arable	1
		Grassland	1.5

(1) Recommendations for liming and fertiliser should be obtained from Defra's Fertiliser Manual (RB209). The analytical methods used are as described in Defra's RB427.

(2) Concentration of Potentially Toxic Elements (PTE, commonly referred to as 'heavy metals') are in mg/kg dry soil. The maximum and the percentage of this maximum permissible concentration of PTE in soil are derived from the values in Defra's Code of Practice for Agricultural Use of Sewage Sludge (England & Wales) 1996. If applying organic manures to this soil it is important to ensure the soil is managed with a pH no less than 5.0, and that the PTE maximum values are not exceeded following the application. For soil where the pH value is less than 5.2, a FACTS Qualified Adviser should be consulted. Further details are provided in the Sludge Code.

Released by Darren Whitbread Date 20/07/18

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 7

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

Date Received	16-JUL-2018
Date Reported	20-JUL-2018

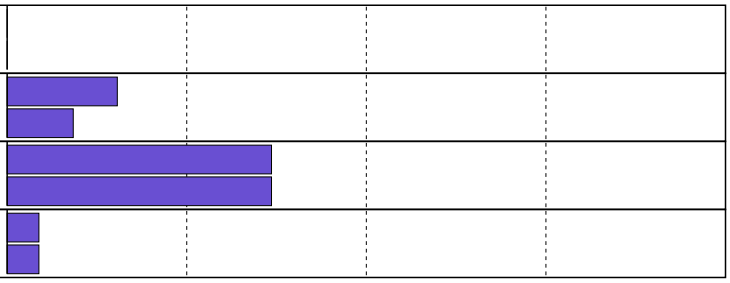
Laboratory References

Report Number	19781
Sample Number	394694

ANALYTICAL RESULTS *on 'dry matter' basis.*

Potentially Toxic Elements (2)

Determinand	Result mg/kg		Maximum mg/kg
Total Molybdenum as Mo	<1	Arable	4
		Grassland	4
Total Selenium as Se	0.46	Arable	3
		Grassland	5
Total Arsenic as As	18.4	Arable	50
		Grassland	50
Fluoride as Fl	22.1	Arable	500
		Grassland	500



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(2) Concentration of Potentially Toxic Elements (PTE, commonly referred to as 'heavy metals') are in mg/kg dry soil. The maximum and the percentage of this maximum permissible concentration of PTE in soil are derived from the values in Defra's Code of Practice for Agricultural Use of Sewage Sludge (England & Wales) 1996. If applying organic manures to this soil it is important to ensure the soil is managed with a pH no less than 5.0, and that the PTE maximum values are not exceeded following the application. For soil where the pH value is less than 5.2, a FACTS Qualified Adviser should be consulted. Further details are provided in the Sludge Code.

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 9

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

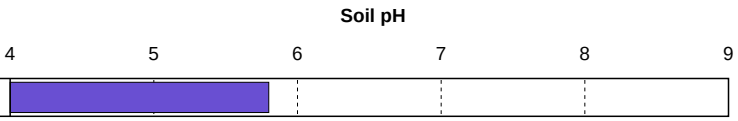
Date Received	16-JUL-2018
Date Reported	20-JUL-2018

Laboratory References

Report Number	19781
Sample Number	394696

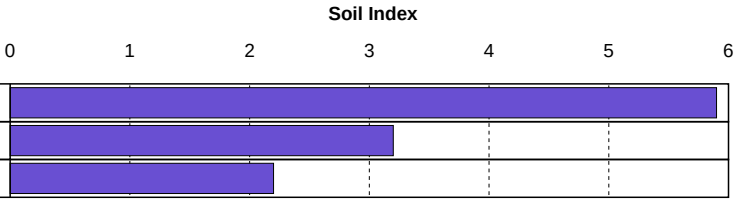
ANALYTICAL RESULTS *on 'dry matter' basis.*

pH (1)



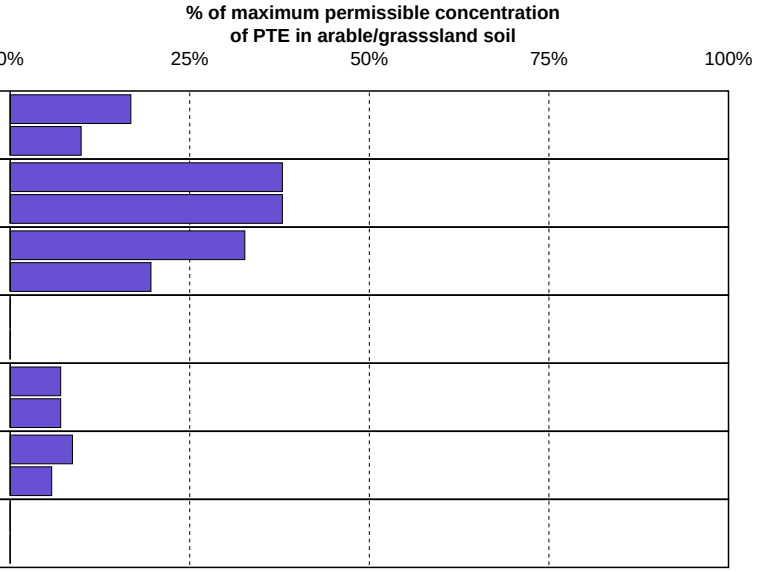
Determinand	Result
Soil pH	5.8

Soil Nutrients (1)



Determinand	Result mg/litre	Soil Index
Soil Phosphorus as P	98.0	5
Soil Potassium as K	284	3
Soil Magnesium as Mg	61.1	2

Potentially Toxic Elements (2)



Determinand	Result mg/kg		Maximum mg/kg
Total Copper as Cu	16.8	Arable	100
		Grassland	170
Total Zinc as Zn	75.8	Arable	200
		Grassland	200
Total Nickel as Ni	19.6	Arable	60
		Grassland	100
Total Cadmium as Cd	<0.1	Arable	3
		Grassland	3
Total Lead as Pb	21.1	Arable	300
		Grassland	300
Total Chromium as Cr	34.7	Arable	400
		Grassland	600
Total Mercury as Hg	<0.2	Arable	1
		Grassland	1.5

(1) Recommendations for liming and fertiliser should be obtained from Defra's Fertiliser Manual (RB209). The analytical methods used are as described in Defra's RB427.

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 9

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

Date Received	16-JUL-2018
Date Reported	20-JUL-2018

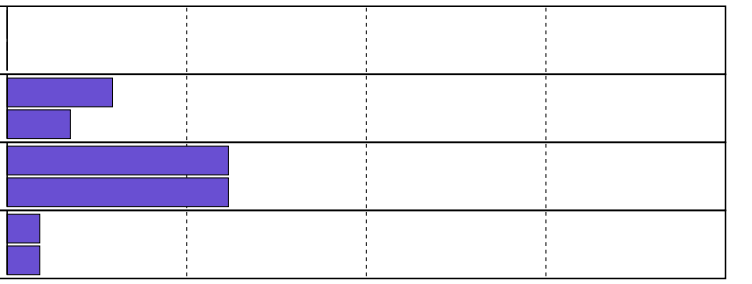
Laboratory References

Report Number	19781
Sample Number	394696

ANALYTICAL RESULTS *on 'dry matter' basis.*

Potentially Toxic Elements (2)

Determinand	Result mg/kg		Maximum mg/kg
Total Molybdenum as Mo	<1	Arable	4
		Grassland	4
Total Selenium as Se	0.44	Arable	3
		Grassland	5
Total Arsenic as As	15.4	Arable	50
		Grassland	50
Fluoride as Fl	22.7	Arable	500
		Grassland	500



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(2) Concentration of Potentially Toxic Elements (PTE, commonly referred to as 'heavy metals') are in mg/kg dry soil. The maximum and the percentage of this maximum permissible concentration of PTE in soil are derived from the values in Defra's Code of Practice for Agricultural Use of Sewage Sludge (England & Wales) 1996. If applying organic manures to this soil it is important to ensure the soil is managed with a pH no less than 5.0, and that the PTE maximum values are not exceeded following the application. For soil where the pH value is less than 5.2, a FACTS Qualified Adviser should be consulted. Further details are provided in the Sludge Code.

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 10

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

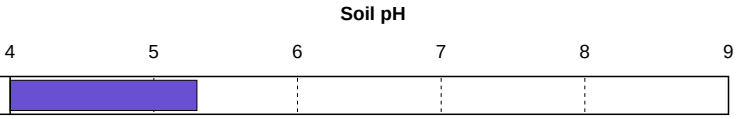
Date Received	16-JUL-2018
Date Reported	20-JUL-2018

Laboratory References

Report Number	19781
Sample Number	394697

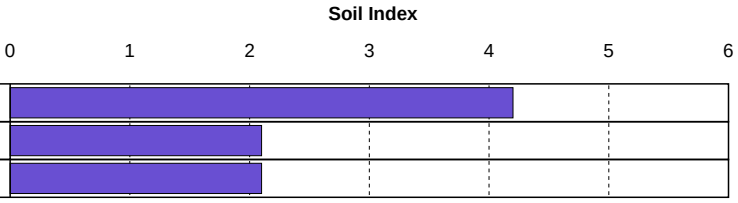
ANALYTICAL RESULTS *on 'dry matter' basis.*

pH (1)



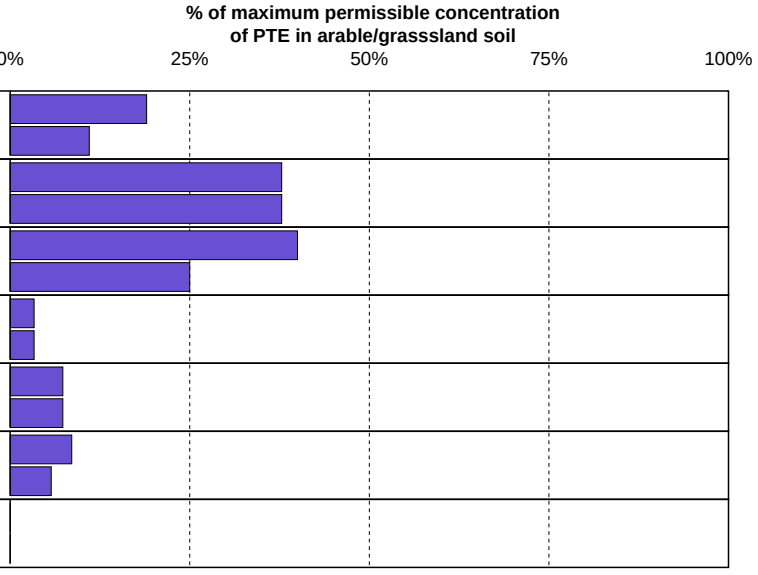
Determinand	Result
Soil pH	5.3

Soil Nutrients (1)



Determinand	Result mg/litre	Soil Index
Soil Phosphorus as P	51.8	4
Soil Potassium as K	141	2-
Soil Magnesium as Mg	57.3	2

Potentially Toxic Elements (2)



Determinand	Result mg/kg		Maximum mg/kg
Total Copper as Cu	15.2	Arable	80
		Grassland	138
Total Zinc as Zn	75.6	Arable	200
		Grassland	200
Total Nickel as Ni	20.0	Arable	50
		Grassland	80
Total Cadmium as Cd	0.10	Arable	3
		Grassland	3
Total Lead as Pb	22.0	Arable	300
		Grassland	300
Total Chromium as Cr	34.3	Arable	400
		Grassland	600
Total Mercury as Hg	<0.2	Arable	1
		Grassland	1.5

(1) Recommendations for liming and fertiliser should be obtained from Defra's Fertiliser Manual (RB209). The analytical methods used are as described in Defra's RB427.

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 10

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

Date Received	16-JUL-2018
Date Reported	20-JUL-2018

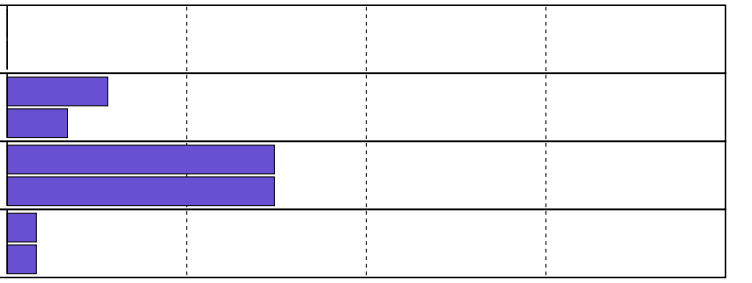
Laboratory References

Report Number	19781
Sample Number	394697

ANALYTICAL RESULTS *on 'dry matter' basis.*

Potentially Toxic Elements (2)

Determinand	Result mg/kg		Maximum mg/kg
Total Molybdenum as Mo	<1	Arable	4
		Grassland	4
Total Selenium as Se	0.42	Arable	3
		Grassland	5
Total Arsenic as As	18.6	Arable	50
		Grassland	50
Fluoride as Fl	20.3	Arable	500
		Grassland	500



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Released by ..... *Darren Whitbread* ..... Date ..... *20/07/18* .....

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 5

STEPSIDE AGRI
STEPSIDE FARM
GWBERT ROAD
CARDIGAN
SA43 1PH

V850

Please quote above code for all enquiries

MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

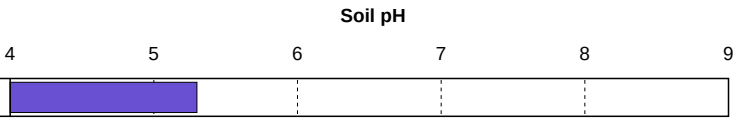
Date Received	16-JUL-2018
Date Reported	20-JUL-2018

Laboratory References

Report Number	19781
Sample Number	394692

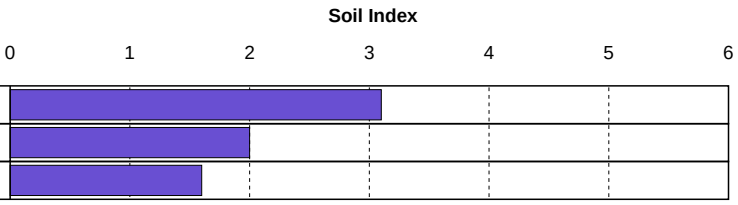
ANALYTICAL RESULTS *on 'dry matter' basis.*

pH (1)



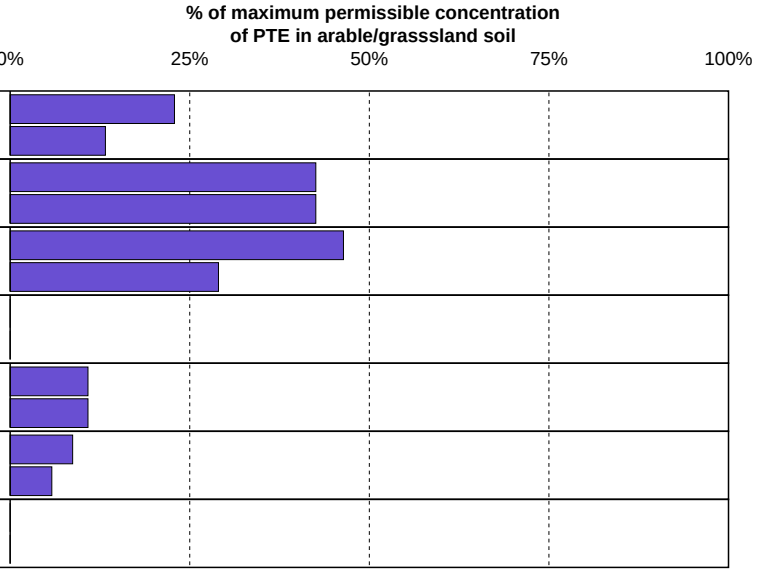
Determinand	Result
Soil pH	5.3

Soil Nutrients (1)



Determinand	Result mg/litre	Soil Index
Soil Phosphorus as P	27.8	3
Soil Potassium as K	122	2-
Soil Magnesium as Mg	41.6	1

Potentially Toxic Elements (2)



Determinand	Result mg/kg		Maximum mg/kg
Total Copper as Cu	18.3	Arable	80
		Grassland	138
Total Zinc as Zn	85.1	Arable	200
		Grassland	200
Total Nickel as Ni	23.2	Arable	50
		Grassland	80
Total Cadmium as Cd	<0.1	Arable	3
		Grassland	3
Total Lead as Pb	32.5	Arable	300
		Grassland	300
Total Chromium as Cr	34.8	Arable	400
		Grassland	600
Total Mercury as Hg	<0.2	Arable	1
		Grassland	1.5

(1) Recommendations for liming and fertiliser should be obtained from Defra's Fertiliser Manual (RB209). The analytical methods used are as described in Defra's RB427.

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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 5

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SOIL

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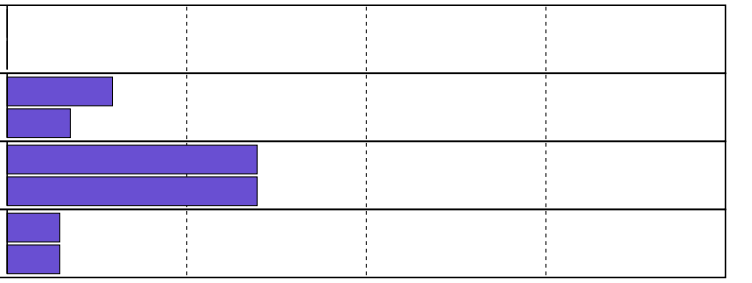
Laboratory References

Report Number	19781
Sample Number	394692

ANALYTICAL RESULTS *on 'dry matter' basis.*

Potentially Toxic Elements (2)

Determinand	Result mg/kg		Maximum mg/kg
Total Molybdenum as Mo	<1	Arable	4
		Grassland	4
Total Selenium as Se	0.44	Arable	3
		Grassland	5
Total Arsenic as As	17.4	Arable	50
		Grassland	50
Fluoride as Fl	36.6	Arable	500
		Grassland	500



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SOIL CHEMICAL ANALYSIS REPORT FOR FIELD - PANTGWYN 6

STEPSIDE AGRI
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GWBERT ROAD
CARDIGAN
SA43 1PH

V850

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MR P REED
RHOSYGADIAR FARM
LAND AT PANTGWYN FARM

SOIL

Date Received	16-JUL-2018
Date Reported	20-JUL-2018

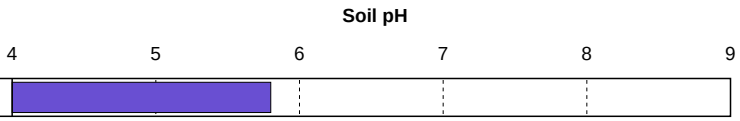
Laboratory References

Report Number	19781
Sample Number	394693

ANALYTICAL RESULTS *on 'dry matter' basis.*

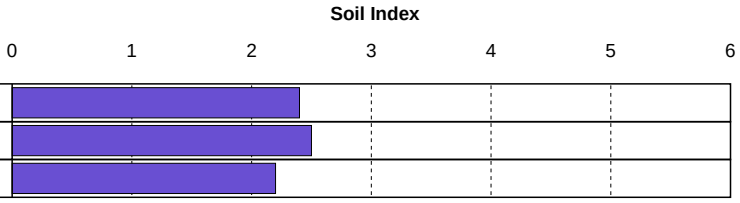
pH (1)

Determinand	Result
Soil pH	5.8



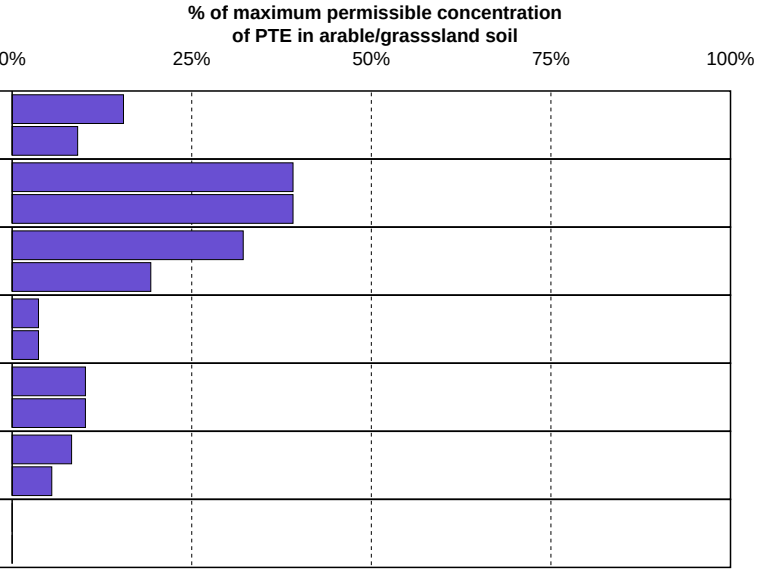
Soil Nutrients (1)

Determinand	Result mg/litre	Soil Index
Soil Phosphorus as P	19.8	2
Soil Potassium as K	186	2+
Soil Magnesium as Mg	63.8	2



Potentially Toxic Elements (2)

Determinand	Result mg/kg		Maximum mg/kg
Total Copper as Cu	15.5	Arable	100
		Grassland	170
Total Zinc as Zn	78.2	Arable	200
		Grassland	200
Total Nickel as Ni	19.3	Arable	60
		Grassland	100
Total Cadmium as Cd	0.11	Arable	3
		Grassland	3
Total Lead as Pb	30.6	Arable	300
		Grassland	300
Total Chromium as Cr	33.1	Arable	400
		Grassland	600
Total Mercury as Hg	<0.2	Arable	1
		Grassland	1.5



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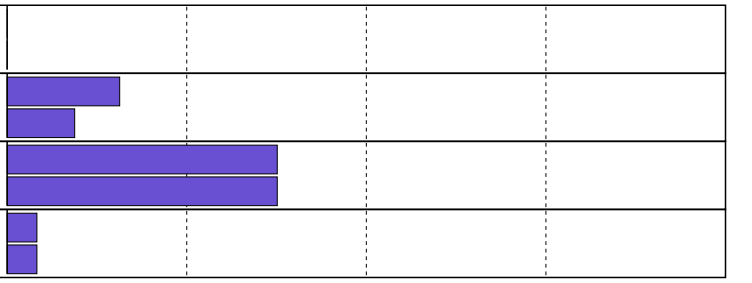
Potentially Toxic Elements (2)

Determinand	Result mg/kg		Maximum mg/kg
Total Molybdenum as Mo	<1	Arable	4
		Grassland	4
Total Selenium as Se	0.47	Arable	3
		Grassland	5
Total Arsenic as As	18.8	Arable	50
		Grassland	50
Fluoride as Fl	20.7	Arable	500
		Grassland	500



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