



**FARMING**  
connect  
cyswllt  
**FFERMIO**

|                                  |                                              |
|----------------------------------|----------------------------------------------|
| Trading name:                    | RB Jones & Son                               |
| Full business address of client: | Llwynobin<br>Montgomery<br>Powys<br>SY15 6JA |
| BAS number:                      |                                              |
| Name of adviser:                 | Marc Jones                                   |
| QC                               | Aled Roberts                                 |
| Company name:                    | ADAS                                         |
| Category:                        | Technical - Manure Management Plan           |
| Date:                            | 09/03/2018                                   |

**Description of work:** Manure Management Plan for planning application for a new 32,000 poultry unit.

**Format of report:** Written report

**Individual or group:** Individual

**Completion date:** 09/03/2018

Mae Marc Jones wedi'u cymeradwyo i ddarparu y wasanaeth cyngori ar ran Cyswllt Ffermio  
*Marc Jones has been approved to deliver the Advisory Service on behalf of Farming Connect*

Mae Marc Jones wedi'u cymeradwyo i ddarparu y hyfforddiant ar ran Cyswllt Ffermio *Marc Jones has been approved to deliver training on behalf of Farming Connect*

Mae Cyswllt Ffermio yn gynllun o fewn Cymunedau Gwledig Llywodraeth Cymru - Rhaglen Datblygu Gwledig 2014-2020, sy'n canolbwyntio buddsoddiad sylweddol gan Lywodraeth Cymru a'r UE i adfywio cymunedau gwledig a darparu cefnogaeth ar gyfer amaethyddiaeth a choedwigaeth yng Nghymru.

Darperir Rhaglen Trosglwyddo Gwybodaeth Cyswllt Ffermio a'r Gwasanaeth Cyngori gan Menter a Busnes. Mae Lantra Cymru yn arwain ar ddarparu Rhaglen Ddysgu a Datblygu Cydol Oes Cyswllt Ffermio.

Farming Connect is a scheme within the Welsh Government Rural Communities - Rural Development Programme 2014-2020, which is focusing significant investment from Welsh Government and the EU to revitalise rural communities and provide support for agriculture and forestry in Wales.

The Farming Connect Knowledge Transfer Programme and Advisory Service is delivered by Menter a Busnes. Lantra Wales leads on the delivery of the Farming Connect Lifelong Learning and Development Programme.

## CONTENTS

|                                                               |    |
|---------------------------------------------------------------|----|
| 1. Scope and purpose of the Plan.....                         | 1  |
| 2. Farm Details.....                                          | 2  |
| 3. Slurry & manure application.....                           | 3  |
| 4. Storage capacity & slurry production.....                  | 4  |
| 5. Action plan.....                                           | 6  |
| 6. sources of additional information .....                    | 6  |
| Appendix 1 - LAND AVAILABLE FOR SPREADING MANURES .....       | 7  |
| Appendix 2 - RISK MAPS FOR MANURE AND SLURRY APPLICATION..... | 8  |
| Appendix 3 - LETTER FOR CONTINGENCY PLANING .....             | 13 |

## **1. SCOPE AND PURPOSE OF THE PLAN**

The purpose of this report is to create and offer manure management guidance on the proposed new 32,000 layer poultry unit and to produce a manure management plan for the farm business. This report aims to show that there is sufficient land available for safely spreading manures at Llwynobin, and that the nitrogen applied from such manures falls under the maximum application of 250kg/ha per annum under the Code of Good Agricultural Practice.

This report has been produced from figures obtained from Mr Jones and observations made during the visit. It confirms the advice given during the visit and supplements this with general advice on pollution risks.

**Advice and recommendations are based on information provided by the client. All reasonable efforts have been taken on the part of ADAS to verify the information is correct. Any actions that affect the tenure of the business or anyone with an interest in the business should be discussed with the appropriate professional adviser before taking material steps in their implementation. Rainfall data has been taken from the publication 'Cost Effective Slurry Storage Strategies on Dairy Farms' by Dairy Co.**

## **2. FARM DETAILS**

Currently Llwynobin and Black Hall farms are run in partnership between Richard Jones and his parents Margaret and Robert Jones. Richard is the main decision maker for the business and lives at Llwynobin with his wife Sarah and their four children Olivier (18), Rhodri (17), Robert (16) and Elen (15). The two farms amount to 186 hectares (460 acres) in total. Llwynobin is rented from Powis Estate on a generation tenancy while Black Hall farm is owned.

Both farms are currently in the Glastir Entry agri-environment scheme until December 2019. Therefore this manure plan has taken account of the required prescriptions when spreading manure.

The farms currently have a flock of 32,000 free range layers on the farm and the proposal is to double this number to 64,000 birds. The farm also has a spring calving suckler herd of 50 Limousin suckler cows which produce store cattle for sale at 11-13 months of age. The farm also runs a flock of 600 Charollais cross Texel breeding ewes which produce finished lamb and 150 ewe lamb replacements. The cattle are housed for 6 months during the winter period on cubicles and straw bedding while the sheep are housed for approximately 2 months at lambing time.

The farms cropping includes 76 acres of 1<sup>st</sup> cut silage, 68 acres of spring barley, 15 acres of winter barley, 10 acres of swedes, 25 acres of stubble turnips and 10 to 15 acres of reseeded.

### **Short & Long Term Goals**

The partnership are proposing to maintain their current beef and sheep farming system but they aim to expand their poultry operation from 32,000 layers to 64,000 layers.

This will be done by expanding the current poultry unit. They also aim to put a tiered conveyor system into the buildings. This will ensure that the new setup is efficient and profitable. The new shed will help to increase both the cashflow and profitability of the business and make it more sustainable in the long term. It will also ensure that the farm will be profitable enough for sons Rhodri and Robert to farm at home in the future.

### 3. SLURRY & MANURE APPLICATION

Under the Good Code of Agricultural and Environmental practice you are not to spread more than 250Kg/ha of total nitrogen per annum from livestock manures. The area of spreadable ground is shown in Appendix 1.

The amount of manure produced from the proposed level of stock and the Nitrogen content of this manure over the housed period is summarised below:-

#### Total N Applied From Manure

| Stock               | Number | Total N produced per day (kg) | Days Housed | Total N Produced | Area Required (Ha) |
|---------------------|--------|-------------------------------|-------------|------------------|--------------------|
| Free Range Layers   | 64,000 | 0.0015068                     | 365         | 35199            | 140.80             |
| Suckler Cow         | 50     | 0.227                         | 151         | 1717             | 6.87               |
| Bulls               | 2      | 0.132                         | 151         | 40               | 0.16               |
| Cattle 13-25 months | 10     | 0.137                         | 151         | 207              | 0.83               |
| Cattle 3-13 months  | 48     | 0.090                         | 151         | 655              | 2.62               |
| Sheep               | 600    | 0.004                         | 60          | 138              | 0.55               |
| Ewe Lambs           | 150    | 0.033                         | 60          | 297              | 1.19               |
| TOTAL               |        |                               |             | 38253            | 153.01             |

*Notes – Suckler cows (over 500kg).*

This table shows that 153.01 ha of ground are required to spread manure under current legislation. **Appendix 1 shows an available spreading area of 164.49 ha (406.45 acres).** Therefore the farm falls within the 250kg/ha farm limit.

It is anticipated that any manure and dirty water will be spread during the growing season this will enable the farm to make full use of the available nutrients.

Any farmyard manure produced on the farm will be stored in sheds prior to it being spread on fields. It is important to adhere to the following regulations when spreading manure:

- Do not spread within 10m of a surface water or land drain
- Do not spread within 50m of a spring or borehole
- Do not spread on land that is likely to become waterlogged
- Do not spread on land likely to flood
- If any field heaps are required do not store manure on any single position for more than 12 successive months

The risk map at appendix 2 shows the areas where organic manures can be spread together with the areas which are not spreadable, with appendix 1 showing the total spreadable area on the farm.

### Exported & Imported Manure

Currently no manure or slurry is exported or imported to the farm.

**Records** of imports and exports will need to be maintained as evidence of compliance with this requirement, and should include as a minimum, the type of organic manure exported, volume, and date of movement and name/address of recipient.

It is proposed that as a contingency plan, poultry manure can be exported to a farmer in the vicinity if the manure store is full due to weather conditions not allowing the spreading of the manure.

## 4. STORAGE CAPACITY & SLURRY PRODUCTION

### **Rainfall**

An accurate rainfall figure has been obtained from the Dairy Co Publication 'Cost Effective Slurry Strategies for Dairy Farms'. This publication takes rainfall figures based from phone number area codes. For the farm in question the nearest area code is 01686 (Newtown). It is estimated that over a 4 month period from the 1<sup>st</sup> of October to the 1<sup>st</sup> of February the **maximum rainfall will amount to 372mm.**

| Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-------|
| 97  | 72  | 76  | 58  | 66  | 54  | 51  | 68  | 76  | 82  | 92  | 101 | 893   |

### **Slurry and Manure Storage Requirements**

All of the slurry produced from the cattle is stored in a concrete slurry store prior to being spread, while any farmyard manure will be spread from the sheds during the spring.

The current cattle slurry store measures: Height 2m x Width 16.5m x Length 35m. Assuming a 30cm free board and an allowance for surface rainwater the current total storage capacity of the store amounts to: **981.75 cubic metres or 215,985 gallons.**

It has been calculated that the volume of slurry generated over the 4 month winter period to meet SAFFO regulations is 272 m<sup>3</sup> (59,840 gallons). This is shown in the table below:

| Type of Livestock | Number | No of Days Slurry Collected | Daily Excreta Volume (l) | Volume Produced (M <sup>3</sup> ) |
|-------------------|--------|-----------------------------|--------------------------|-----------------------------------|
| Suckler Cows      | 50     | 121                         | 45                       | 272                               |
| TOTAL             |        |                             |                          | 272                               |

### **Poultry Manure Store**

A new 12.19 x 18.29 x 2 metre concrete panel building with roof constructed in accordance with SSAFO regulations would hold the manure from both the old and new poultry sheds for a total of 22 weeks or 5 months in total.

The manure from the multi-tier poultry sheds is typically dry matter with an approximate moisture content of 35%.

All manure produced within the poultry sheds will be removed every 4 days and either directly spread upon the land at Blackhall or stored within the new manure store.

The manure will be removed from the poultry sheds via a manure belt into a parked trailer (sheeted unless being filled/emptied). The manure will be transported directly from the poultry shed into the new manure store with all the manure being dry and stackable.

No movement or turning of the manure will occur until the manure is being spread onto land.

As a contingency the manure within the new store will be covered with tightly secured polythene sheeting to minimise emissions at times when the intensity of the odour would cause a statutory nuisance.

### **Dirty Yard Areas**

The current cattle dirty yards measure (35m x 11.67m, 20m x 10m, 8.33m x 13.33m, 16.5m x 35m) 1,297 m<sup>2</sup>. If rainfall was being collected from this area over the 5 month winter period a total of 483 m<sup>3</sup> (106,260 gallons) would be collected based on an estimated 520mm of rainfall (Dairy Co data). This is shown in more detail in the table below:

| Location   | Area M <sup>2</sup> | Rainfall (mm) 5 Months | Total (M <sup>3</sup> ) |
|------------|---------------------|------------------------|-------------------------|
| Dirty Yard | 1297                | 372                    | 482                     |
|            |                     | <b>TOTAL</b>           | <b>482</b>              |

### **Total Storage Requirements**

Therefore total storage requirements over the 4 month period would amount to **755m<sup>3</sup> or 223,080 gallons.**

Structures built before 1991 which have not been substantially modified or enlarged are deemed to be exempt from the requirements of the SSAFO regulations, provided that NRW do not consider them to pose an unacceptable risk of pollution.

As no changes or alterations are due to take place with the cattle slurry facilities the farm is fully compliant with the regulations.

### **Wash Water & Disease Outbreaks**

A sealed underground 20,000 litre tank will also be installed to contain possible contaminated water after a disease outbreak. This tank will contain all of the wash water from the buildings after the disease outbreak. A specialist licensed contractor will then be used to dispose of the contaminated waste.

## **5. ACTION PLAN**

- Apply for planning permission for the proposed new structure.
- All the structures should meet the standard BB5502.
- The development control section of the Local Authority will have to consent to the proposal and you need to discuss this with them as soon as possible
- There are no current issues with the current slurry and dirty water infrastructure.

## **6. SOURCES OF ADDITIONAL INFORMATION**

“Best Farming Practices: Profiting from a good environment” – Environment Agency (0845 933 3111).

Protecting our Air, Water and Soil a Code of Good Agriculture Practice; Defra 2009.

Defra The Fertiliser Manual (RB209, 2010, 8<sup>th</sup> Edition) available electronically from the Defra web site. (<http://archive.defra.gov.uk/foodfarm/landmanage/land-soil/nutrient/documents/rb209-rev-100609.pdf>)

PLANET – fertiliser planning software (available free from ADAS 0845 6023864).

Making Better Use of Livestock Manures. Booklets available from ADAS.

## APPENDIX 1 - LAND AVAILABLE FOR SPREADING MANURES

### Black Hall

| Sheet No | Field No     | Field Area (Ha) | No Spread Area (ha) |
|----------|--------------|-----------------|---------------------|
| SO2094   | 2499         | 5.85            | 0.5                 |
| SO2094   | 0701         | 0.91            | 0.91                |
| SO2094   | 2210         | 1.15            | 1.15                |
| SO2094   | 4516         | 0.4             | 0.4                 |
| SO2094   | 4915         | 0.1             | 0                   |
| SO2094   | 2716         | 0.91            | 0.91                |
| SO2094   | 2722         | 1.11            | 1.11                |
| SO2094   | 1622         | 4.46            | 1.5                 |
| SO2094   | 0351         | 1.52            | 1.52                |
| SO2094   | 1148         | 6.77            | 0.3                 |
| SO2094   | 2957         | 9               | 0.4                 |
| SO2094   | 5949         | 9.33            | 1                   |
| SO2094   | 4619         | 0.83            | 1.18                |
| SO2094   | 4032         | 0.18            | 0.18                |
| SO2094   | 4427         | 2.3             | 2.3                 |
| SO2094   | 6422         | 5.97            | 0.5                 |
| SO2093   | 4596         | 4.3             | 0.2                 |
| SO2093   | 5578         | 4.72            | 0                   |
| SO2093   | 6893         | 6.18            | 0.95                |
| SO2093   | 6973         | 0.08            | 0.08                |
| SO2093   | 8378         | 0.1             | 0.1                 |
| SO2093   | 7455         | 3.94            | 0                   |
| SO2093   | 8658         | 4.36            | 0                   |
| SO2093   | 9963         | 5.06            | 0                   |
|          | <b>Total</b> | <b>79.53</b>    | <b>15.19</b>        |

Llwynobin

| Sheet No | Field No     | Field Area (Ha) | No Spread Area (ha) |
|----------|--------------|-----------------|---------------------|
| S02294   | 5096         | 6.01            | 0                   |
| S02295   | 7476         | 8.08            | 0.2                 |
| S02295   | 9181         | 3.26            | 0                   |
| S02295   | 6251         | 7.13            | 0                   |
| S02295   | 8251         | 6.03            | 0                   |
| S02295   | 9554         | 0.51            | 0                   |
| S02295   | 9539         | 1.27            | 1.27                |
| S02295   | 9130         | 0.45            | 0.45                |
| S02295   | 8531         | 0.36            | 0.36                |
| S02295   | 7328         | 0.63            | 0.63                |
| S02295   | 6327         | 0.14            | 0.14                |
| S02295   | 4345         | 4.51            | 0                   |
| S02295   | 5533         | 1.52            | 0.125               |
| S02295   | 3725         | 5.71            | 0.5                 |
| S02295   | 3608         | 0.92            | 0.15                |
| S02295   | 5618         | 4.05            | 0.28                |
| S02295   | 7621         | 1.1             | 0                   |
| S02295   | 7705         | 6.2             | 0                   |
| S02296   | 5403         | 4.28            | 0                   |
| S02395   | 0234         | 0.48            | 0.125               |
| S02395   | 0139         | 0.41            | 0.41                |
| S02395   | 0146         | 0.2             | 0.2                 |
| S02395   | 0223         | 5.93            | 0.25                |
| S02395   | 0905         | 6.79            | 0                   |
| S02395   | 0466         | 3.81            | 0                   |
| S02395   | 2555         | 3.92            | 0.2                 |
| S02395   | 2736         | 4.79            | 0.8                 |
| S02395   | 5351         | 3.59            | 0.3                 |
| S02395   | 4223         | 8.18            | 0                   |
| S02395   | 7033         | 6.28            | 0                   |
|          | <b>TOTAL</b> | <b>106.54</b>   | <b>6.39</b>         |

## APPENDIX 2 - RISK MAPS FOR MANURE AND SLURRY APPLICATION

### MAP KEY

A Manure Management Plan has been produced. In addition to identifying no-spread areas, high risk areas and those areas of the farm that are suitable for applications of manures for most of the year, the plan also assesses the amount of land available to take the manures produced. The map is colour coded: -

Red = **No-spread areas**, e.g. yards; within 10 metres of a watercourse or 50 metres of a borehole, spring or well used for drinking or parlour washings.

Orange = **Very High Risk**. Fields at risk of flooding; sandy or shallow soil over fissured rock; fields where drains have been installed during the past 12 months; poorly drained or waterlogged land; severely compacted soils, etc.

Yellow = **High Risk**. Land sloping towards watercourses; imperfectly drained land.

Green = **Moderate to Slight Risk**. Remainder of land upon which manures are applied and which has not been subsoiled or mole ploughed within the past 12 months.

White = Areas not used for operational reasons.

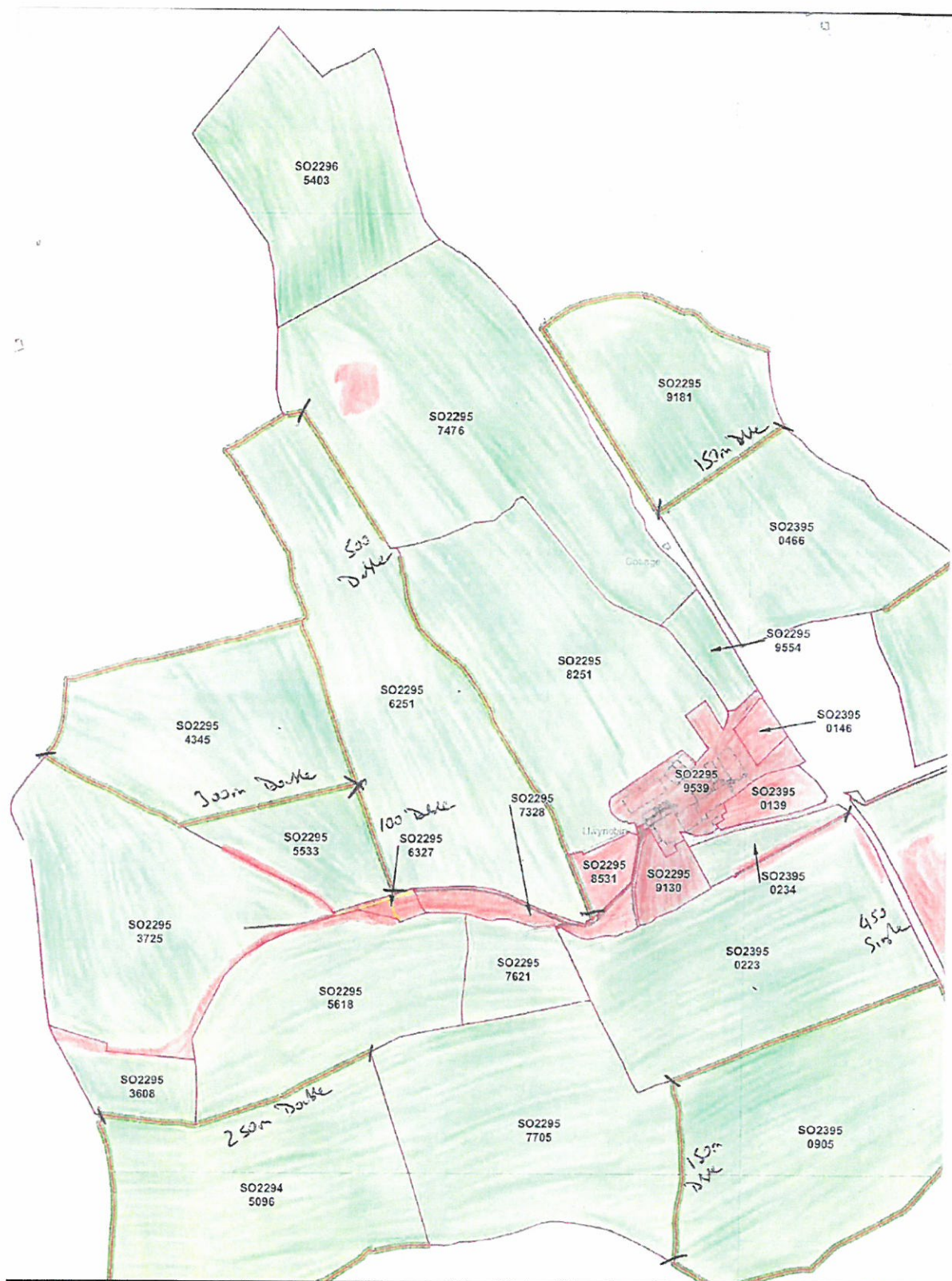
### Run-off Risk Assessment Table for Sloping Ground

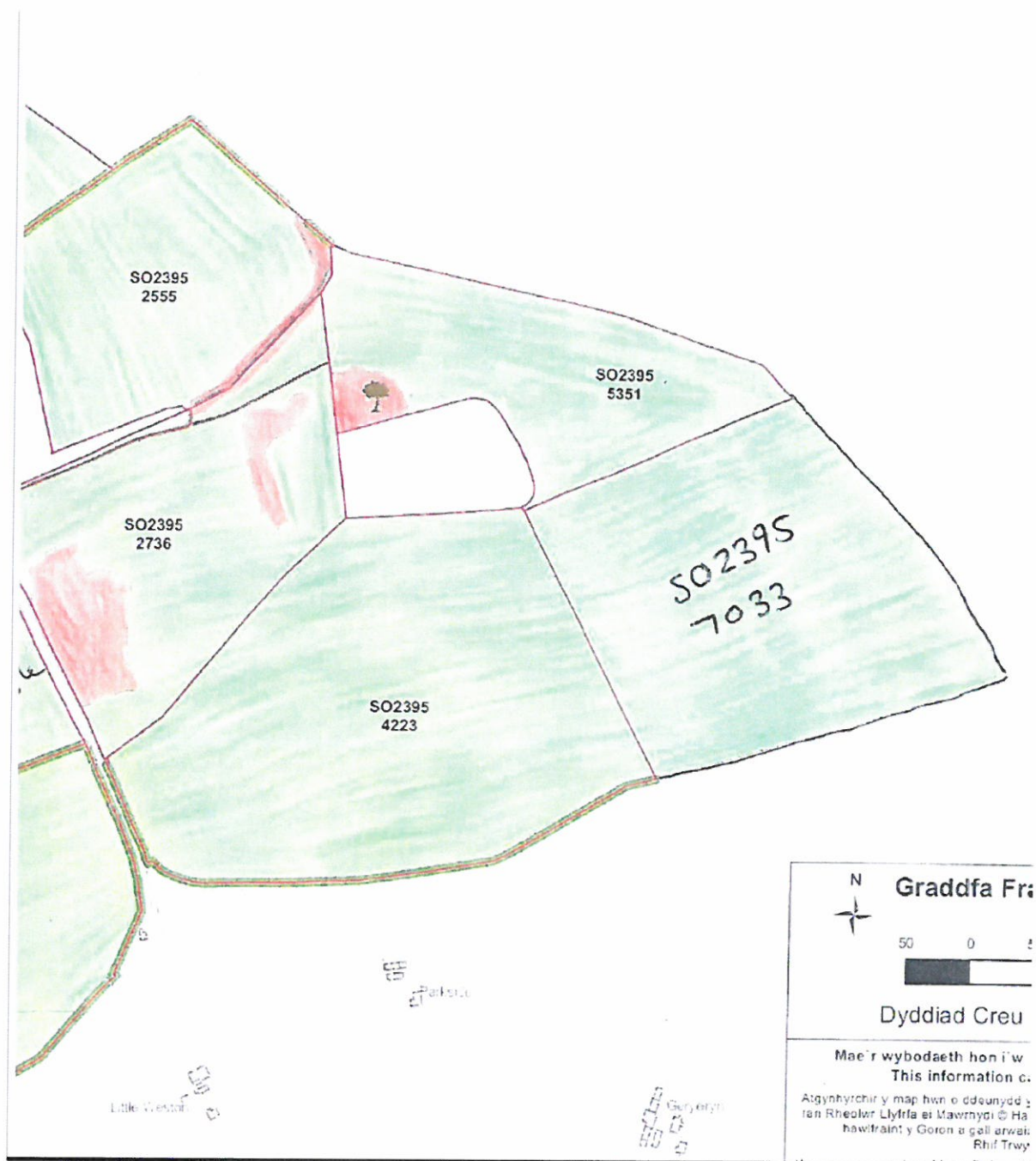
| Soil Textures                                                                        | Steep Slopes<br>>7°  | Moderate Slopes<br>3° - 7° | Gentle Slopes<br>2° - 3° | Level Ground<br><2° |
|--------------------------------------------------------------------------------------|----------------------|----------------------------|--------------------------|---------------------|
| Sand<br>Loamy Sand<br>Sandy Loam<br>Sandy Silt Loam<br>Silt Loam                     | Very High<br>(High)* | High<br>(Moderate)*        | Moderate<br>(Lower)*     | Slight              |
| Silty Clay Loam                                                                      | High<br>(Moderate)*  | Moderate                   | Lower                    | Slight              |
| Other Mineral<br>Soils                                                               | Lower                | Slight                     | Slight                   | Slight              |
| *Where average annual rainfall is less than 800mm the risk class in brackets applies |                      |                            |                          |                     |

### Soil Type

Soil types across both Blackhall and Llwynobin are a mixture of silty clay loams and clay loam soils which would be classed as High or Moderate to Lower risk, and colour coded Yellow and Green. The ground is steep in places, so at times of the year manure should not be spread when the soils are at field capacity. However spreading at these times of year would not be physically possible due to the size and weight of the machinery involved and their ability to maintain traction.







### **APPENDIX 3 – LETTER FOR CONTINGENCY PALNNING**

D. T. A. & J. J. Williams,  
Upper Balbro Farm,  
Abermule,  
Montgomery,  
Powys,  
SY15 6LD.

29<sup>th</sup> January 2018

To whom it may concern

This is to confirm that we, D. T. A. & J. J. Williams who farm at Upper Balbro Farm, Abermule (holding No.: 52/124/0030), agree to take in any excess poultry manure produced from R. B. Jones & Son, Black Hall, Llandyssil, Montgomery.

We confirm that we have excess ground to spread manure within the current legislation and code for good agricultural practice and that we also have adequate storage for any manures imported during the winter months. We also confirm that the ground is owned by ourselves and that we have full control for agricultural purposes of that ground.

Yours faithfully,



D. T. A. & J. J. Williams