

Compliance Assessment Report

CAR_NRW0037181

Permit number	XP3830UR	Operator name	The First Milk Cheese Company Ltd
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Site name	Haverfordwest Creamery
Site address	Pembroke Road, Merlins Bridge, Haverfordwest, Pembrokeshire SA61 1JN
Type of assessment	Report / Data review

Date of assessment	30/11/2020	Time in	N/A	Time out	N/A
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Parts of permit assessed	1 Management; 2 Operations; 3 Emissions & Monitoring; 4 Information
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NRW Lead officer	Douglas Cowie	Accompanied by	N/A
Report sent to – Name and position	Colin Reed Senior SHE Manager	Date	22/01/2021

1. Summary of our findings (full details in section 4)

Part of permitted activity assessed (use action criteria below)	Assessment result	Permit condition
A1 Specified by permit	Assessed or assessed in part (A)	1.1.1 2.4.1
C2 General management – Management system and operating procedures	Assessed or assessed in part, no evidence of non-compliance found. Action Only (X)	2.3.1
E3 Emissions – Surface water	Assessed or assessed in part (A)	3.1.1 3.2.1
G1 Monitoring and records, maintenance and reporting – Monitoring of emissions and environment	Assessed or assessed in part (A)	2.3.1 3.5.1
G2 Monitoring and records, maintenance and reporting – Records of activity, site diary/journal/events	Assessed or assessed in part (A)	4.1.1 4.1.2

Part of permitted activity assessed (use action criteria below)	Assessment result	Permit condition
G4 Monitoring and records, maintenance and reporting – Reporting and notification to Natural Resources Wales	Assessed or assessed in part, no evidence of non-compliance found. Action Only (X)	4.2.1 4.2.2 4.2.3

Result types are explained in more detail in the 'Important Information' section below.

Total number of non-compliances recorded
0

2. What action is required?

Criteria	Action needed	Complete by
C2	Action 37181/01: First Milk to consolidate the farm pack templates and examples using a consistent file format. The Manure Management Plan should follow a consistent format which satisfies the requirements outlined in CoGAP. The farm pack should clearly link to the agreed operating techniques listed in the permit.	01/04/21
C2	Action 37181/02: First Milk should review the relevant operating techniques submitted within the original V003 (2013) permit application to ensure they accurately capture what the company currently has in place for the nutrient offset scheme. The documentation must show clear links to the farm pack templates and procedures currently in use. Updated techniques and supporting documents should be prepared in time for the permit review, to allow any necessary changes and corrections to be made.	01/04/21
C2	Action 37181/03: First Milk to update NRW by 1 March 2021 with progress against Actions 01 and 02 identified in this report.	01/03/21
G4	Action 37181/04: First Milk to submit the annual nutrient offset summary report for the period Dec 2019 – Nov 2020 to NRW by 1 March 2021, unless otherwise agreed with the regulating officer.	01/03/21
C2	Action 37181/05: The operator and scheme contractor should ensure the Farmscoper software and scheme methodology is capable of accommodating the change in the nitrogen monitoring requirements (Ammonium > Total N) triggered by the revised BAT Conclusions.	01/04/21

Action criteria codes are listed in the 'Important information' section below.

3. What will happen next?

Any non-compliance we have identified and recorded on this form is an offence. It can result in criminal prosecutions and/or suspension or revocation of your permit.

No non-compliances have been identified in this report.

4. Details of our assessment

Site description

The First Milk Cheese Company Ltd operates a milk processing and cheese production facility at Haverfordwest Creamery, Merlins Bridge, Haverfordwest. The company is a subsidiary of First Milk Ltd, the UK's largest dairy farmer co-operative. The facility is permitted as an installation under Section 6.8 (The Treatment of Animal and Vegetable Matter and Food Industries) of the Environmental Permitting Regulations (EPR).

Milk from approximately 300 local farms is pasteurised and processed at the installation to produce cheese and dairy products. The permitted installation includes an integrated effluent treatment plant (ETP) which discharges to the Western Cleddau. An agreed nutrient 'off-set' scheme mitigates the creamery's treated effluent discharge through a combination of nutrient management measures at (scheme member) dairy farms.

Nutrient offset scheme - background

Effluent generated by Haverfordwest Creamery was originally accepted at the nearby Sewage Treatment Works for treatment, prior to being discharged to the Western Cleddau estuary. This arrangement ended in 2014 due to increasing and competing demands on the local sewerage system and its treatment capacity.

First Milk's solution was to construct a new £5.4m effluent treatment plant (ETP) on land adjacent to the creamery. The new ETP required a substantial variation to the installation permit (issued in July 2013) and full planning permission. The plant is designed to treat all condensate and effluent from the installation and has a maximum capacity of 2500m³/day. The ETP was brought fully online in 2015/16 and discharges its treated effluent to the Western Cleddau.

The Pembrokeshire Marine Special Area of Conservation (SAC) extends into the Cleddau estuary and is a sensitive marine and estuarine habitat. Prior to the ETP's construction, concerns were raised that the SAC was not achieving 'favourable condition' status due to nutrient loading – particularly nitrogen and phosphorus – from terrestrial sources into the Cleddau estuary. The status of the SAC combined with the loss of sewage treatment capacity presented a difficult planning and permitting situation for First Milk, NRW and its predecessor bodies and partner organisations such as Pembrokeshire County Council.

An innovative approach was conceived and followed to address these nutrient loading and habitat concerns. A scheme was developed and agreed in partnership with First Milk which involves pursuing a range of diffuse pollution reduction measures at a group of dairy farms which supply the creamery with milk. The combined reduction or 'savings' in nutrient and sediment loads from the scheme member farms must offset the loads discharged into the Cleddau from the Creamery's effluent treatment plant.

The agreed scheme is administered and delivered by First Milk and its chosen specialist agricultural contractor, and is reflected within the installation permit to ensure transparency and auditability. The diffuse pollution reduction measures are agreed with each member farm and are subject to an annual programme of audits carried out by the specialist

contractor. There is an expectation that detailed farm records are kept as evidence showing that the pollution reduction measures are being delivered.

First Milk is required to submit an annual report summarising the package of measures being taken at member farms, comparing this with the performance of the creamery's effluent plant and most importantly demonstrating that nutrient offset is being achieved.

NRW may periodically audit the scheme to retain confidence in the reported offset figures, and to validate that the farm pollution reduction measures are being delivered.

In recent years there has been sustained interest in the use of nutrient offsetting as a concept and/or technique for dealing with water pollution issues. This is reflected in ongoing conversations taking place from a local to an international level between governments, regulators and stakeholders.

Nutrient offset scheme - review

The First Milk offset scheme has been in place since 2015. The scheme has evolved since its inception and the number of member farms has increased from 24 to 33. ADAS currently deliver the on-farm elements of the scheme on behalf of First Milk.

Delivery of the scheme follows an operator-led, self-auditing approach which requires robust supporting evidence to demonstrate that nutrient offset has been achieved. The agreed diffuse pollution prevention measures are entered into a computer software tool (Farmscoper) which models the potential impact on the losses of nutrients and sediments to watercourses. Farmscoper is designed for use with different farming systems and can tailor its output according to specific farm data. The data is ultimately used to calculate potential nutrient savings for each measure, which can then be compared with the nutrient loads from the effluent treatment plant.

NRW may occasionally verify the on-farm component of the scheme by inspecting the evidence packs and viewing diffuse pollution prevention measures in place at a sample of member farms. This is normally accomplished by visiting the farm with ADAS and/or First Milk personnel present. This approach complements permit compliance assessments which are routinely carried out for the Creamery and its effluent treatment plant.

The Farmscoper tool measures nitrates as Nitrate-N. Nitrogen emissions from the installation permit are currently expressed differently using ammonium-nitrogen (NH_4^+). ADAS and First Milk argue that a conversion factor between ammonium and Nitrate-N is unnecessary as there is a direct correlation between the nitrogen values, and the Farmscoper software takes this into account.

At the time of writing, nutrient offset for nitrogen, phosphorus and solids has been achieved each year since the scheme's inception. Phosphorus has consistently proved to be the most challenging parameter for First Milk and its member farms. Throughout the lifetime of the scheme there has been an increase in scheme (farm) membership, which should help First Milk maintain compliance with the offset objectives. Some member farms are located outside the Cleddau catchment area and while these may not 'count' towards mitigating the

effect of the ETP discharge, their agreed pollution prevention measures will still deliver reductions in nutrient loading and diffuse pollution within West Wales.

Another factor which could positively influence nutrient offset in the future is the tightening of environmental standards for effluent discharges from permitted installations (see below).

The supporting evidence necessary to prove that nutrient offset measures are being taken at member farms - and to demonstrate compliance with the scheme objectives – is recorded using proforma and templates included within a ‘farm pack’. These documents have evolved over the scheme’s lifetime but have now been refined into an agreed format.

Scheme limitations

There are certain limitations and specific considerations attached to the First Milk scheme:

- Key drivers behind the inception of this scheme were to avert the potential closure of the Creamery and the associated loss of employment, and to comply with the requirements of the EC Habitats Directive in respect of the Pembrokeshire Marine SAC designation. The scheme was not motivated by a desire to trial the concept of nutrient offsetting as a supplementary technique or even as alternative to the established environmental permitting regime for effluent discharges.
- The scheme has a defined primary objective which is to ensure the nutrient loading from Haverfordwest Creamery into the environment is consistently offset by a reduction in diffuse nutrient inputs from nearby agriculture. The wider applicability and/or transferability of the scheme’s scope and methodology may be constrained by this.
- Ownership of the scheme – and responsibility for compliance with its objectives – rests with First Milk, with periodic validation by the regulator (NRW).
- The scheme relies heavily on the voluntary and continued participation of sufficient numbers of farms.
- The scheme has not been designed to ensure compliance with other regulatory standards which may apply at member farms e.g. slurry storage regulations, Nitrate Vulnerable Zones. It may however promote good practice and encourage compliance with other statutory requirements.
- The scheme does not insist on other statutory notifications which may be necessary at member farms e.g. 14-day notification of an increase in slurry storage capacity.

EPR installation permit requirements

Compliance for the offset scheme is currently assessed using the following components of installation permit XP3830UR:

Permit condition 2.3.1(a) requires the operator to follow the agreed operating techniques outlined in Schedule 1 Table S1.2 of the installation permit. This includes the nutrient offset scheme scope, content and supporting documentation.

Permit condition 4.2.3 and Schedule 4 Table S4.3 confirm an annual reporting requirement in respect of nitrates, suspended solids and phosphates reduced from the farm nutrient

efficiency (offset) scheme. The annual nutrient offset summary report and Form Performance 1 are currently used to meet this requirement.

Table S1.4 Pre-operational measures for future development

Reference	Operation	Pre-operational measures	Status
POC 1	Effluent treatment plant	The Operator shall provide to Natural Resources Wales details of the soil investigation undertaken as part of the borehole survey for the effluent treatment plant and the associated pipeline. This information will form part of the site condition report submitted as part of the variation application EPR/XP3830UR/V003.	Complete
POC 2	Effluent treatment plant	The Operator shall submit a report, for agreement with Natural Resources Wales, detailing the mitigation measures to be adopted by the farms linked to the proposed scheme. The report will consist of, but not be limited to, the following requirements: 1) Scheme scope and methodology. 2) Organogram detailing roles and responsibilities. 3) Details of the participating farms. 4) Details of the measures to be employed at the farms. 5) Methodology of how a baseline will be set to enable comparison. 6) Timeframe for implementation. 7) How reductions will be measured / monitored at each farm. 8) Frequency of review to confirm the status /summary of the measures implemented on each farm (to demonstrate continued compliance) 9) List of guidance to be utilised to calculate or measure the off-set. 10) Contingency measures. For example if a farm leaves the scheme. 11) Collation and reporting of information. The scheme must ensure that pollution reductions at farms within the scheme will equal, or be greater than, the amount of nutrients discharged by the effluent plant to the Cleddau Catchment.	Ongoing

Scheme member farm packs and their list of agreed offset measures are maintained and administered by ADAS on behalf of First Milk. The annual summary report is submitted to the regulator by First Milk. These records combine to fulfil the requirements outlined within POC2.

Table S1.3 Improvement programme requirements

Reference	Requirement	Date
IC1	On agreement of pre-operational condition 2 (POC2) the Operator will provide a progress report based on the agreed mitigation report.	Complete

Improvement Condition (IC)1 requires a progress report based on the agreed mitigation report. At the time of writing this 'summary' report is submitted annually to the regulator between January and April each year.

An approach for future nutrient offset scheme reporting is outlined below. There is an opportunity to update and improve the installation permit within the ongoing review of Best Available Techniques (BAT) for Food, Drink & Milk installations which commenced in 2020.

Compliance assessment

The annual summary report has been submitted to the regulator each year since the scheme's inception.

The evolution and continued development of the scheme has precluded a full assessment of the farm pack component until now, however in November 2020 the operator submitted proforma templates and examples at the request of the regulating officer.

POC2

The annual summary report (see below) partially satisfies POC2 and contains information which follows the order of requirements outlined within the condition.

The farm pack information is comprised of the following records:

1. Nutrient losses report
2. Field list
3. Field record sheet
4. Farm map
5. Farm details
6. Nutrient Management Plan
7. Action Plans
8. ADAS reference workbook
9. Mitigation method baseline calculations
10. ADAS mitigation method guide
11. Manure Management Plan
12. Application of fertilisers, soil conditioners, manures and slurry
13. Technical updates
14. Advice & guidance

Working templates and examples of records 1 – 10 & 12 have been submitted to the regulator. Some templates have been retained from the original farm pack produced in 2015, others appear to have been updated over the life of the scheme.

Supporting information is incomplete for item 11 (Manure Management Plan [MMP]). This should follow a consistent format that satisfies the criteria outlined in Welsh Government's Code of Good Agricultural Practice (CoGAP). The format could follow an MMP template produced by First Milk or its chosen scheme contractor, provided that it meets the required criteria.

It is recognised that records 13 & 14 may exist in various forms and may be conveyed differently to member farms depending on the timing of ADAS audits and visits. The operator is expected to demonstrate evidence of this if requested by the regulator.

NRW is satisfied that most of the farm pack information listed above has been presented in an accessible format and can be made available for inspection if requested. The pack itself appears to be fragmented into different documents and has been presented to the regulator in various electronic formats. Some supporting information was incomplete at the time of inspection (record 11).

The farm pack could benefit from consolidation into fewer documents using a consistent set of templates and file format, which would aid the transparency and auditability of the scheme now and in the future. This exercise may also contribute to the review of operating techniques outlined below.

Action 37181/01: First Milk to consolidate the farm pack templates and examples using a consistent file format. The Manure Management Plan should follow a consistent format which satisfies the requirements outlined in CoGAP. The farm pack should clearly link to the agreed operating techniques listed in the permit.

IC1

NRW has received a copy of the annual summary report dated 4 February 2020 which covers the period December 2018 – November 2019. The report is in an accessible format and it contains information which follows the order of requirements outlined in POC2. The requirements of IC1 have therefore been satisfied.

Operating techniques

First Milk's agreed operating techniques are only partially assessed within this intervention.

Schedule 1 Table S1.2 of the installation permit refers to documentation submitted in support of the 2013 permit application, within which the original scope and methodology of the nutrient offset scheme was outline and agreed with NRW. This material should now be reviewed to ensure it accurately and comprehensively reflects the scheme. In particular, Section O ('Nitrate Management Plans for First Milk farmers') within the original 2013 permit application should be reviewed as the information appears to be outdated:

1. Participating scheme member farms – update required
2. Nutrient offset data (projected data was originally used, and actual data is now available)
3. Evidence and Management KPIs. There should be clear links to the agreed farm pack proforma/templates
4. Partner delivery organisations – update required
5. Reductions in nutrient losses / nutrient savings – this should now be quantifiable using actual data

This review could be done in preparation for the imminent permit review against the revised and published Best Available Techniques (BAT) for Food, Drink & Milk installations. Any changes can then be incorporated into the installation permit as part of a variation (V006). The timescale for the permit review has not been formally set, however the information gathering phase is already under way and the review is expected to commence by April 2021.

Action 37181/02: First Milk should review the relevant operating techniques submitted within the original V003 (2013) permit application to ensure they accurately capture what the company currently has in place for the nutrient offset scheme. The documentation must show clear links to the farm pack templates and procedures currently in use. Updated techniques and supporting documents should be prepared in time for the permit review, to allow any necessary changes and corrections to be reflected in the permit.

Consolidating the farm pack templates into a single working document (which links to the agreed operating techniques) may aid this exercise.

NRW is prepared to work with the operator while the operating techniques relevant to the scheme are reviewed and updated, however we expect this to be progressed in a timely manner which allows the permit to be updated within variation V006.

Action 37181/03: First Milk to update NRW by 1 March 2021 with progress against Actions 01 and 02 identified in this report.

Reporting

The operator has consistently submitted the necessary reporting forms and reports to meet the requirements of permit condition 4.2.3. Concurrent submission of the nutrient offset summary report with Form Performance 1 is not always possible by 31 January each year due to the much greater level of detail & data needed for the summary report. Therefore, this reporting requirement needs to be harmonised and formally agreed with the operator as part of impending permit review. This exercise may also allow POC2 and IC1 to be marked as completed within the permit.

NRW will now consider if Section 4 (Reporting) and/or Schedule 4 of the installation permit should be corrected or amended in respect of this nutrient offset reporting requirement. Our decision will be communicated to the operator as part of the permit review.

In the meantime, it is still necessary to submit annual reports for the '2020' period. The operator is expected to submit the annual performance report in the normal manner using Form Performance1. For the nutrient offset summary report, the operator is required to take the following action:

Action 37181/04: First Milk to submit the annual nutrient offset summary report for the period Dec 2019 – Nov 2020 to NRW by 1 March 2021, unless otherwise agreed with the regulating officer.

Other considerations and forward look

Please note that this assessment focuses on installation permit compliance and it does not include an 'on-farm' validation of the agreed offset scheme methodology and records. Validation is normally completed by NRW staff who routinely visit farms and other agricultural premises. The outcomes from these visits are recorded separately.

In **CAR_NRW0034632** we outlined an impending change in the monitoring approach for nitrogen emissions to water from permitted installations. Specifically, the introduction of a Total Nitrogen (N) limit for the final effluent discharge in place of the current permitted

emission limit value for ammonia. The operator has already been advised to consider additional Total N sampling and analysis to benchmark performance against the relevant Total N BAT-Associated Emission Level (BAT-AEL).

The nutrient offset scheme methodology needs to take this change in nitrogen monitoring into account. Theoretically, the imposition of a Total N limit should still allow comparison with the modelled nitrate savings at scheme member farms.

Action 37181/05: The operator and scheme contractor should ensure the Farmscoper software and scheme methodology is capable of accommodating the change in the nitrogen monitoring requirements (Ammonium > Total N) triggered by the revised BAT Conclusions.

The permitted emission limit for phosphorus is also changing and becoming more stringent. Measured as Total P, the tightening of this standard should not present any direct difficulties for the scheme as in theory the phosphate offset target should become easier to achieve. The imposition of this challenging BAT-AEL will require close attention to effluent treatment plant performance and permit compliance.

Sediment offset has not previously presented any concerns, and in a similar vein to Total P the final effluent emission limit for suspended solids is tightening as a result of the revised BAT conclusions.

It is anticipated that the First Milk nutrient offset scheme will continue to attract interest from other entities seeking to utilise the concept to deal with diffuse water pollution issues. It is generally felt that the scheme has been successful, however it was conceived to deal with specific economic, social and environmental challenges.

It is recommended that the scheme is reviewed at regular intervals to ensure it remains effective and fit for purpose, and it works for its member farms as much as for the site operator and the environmental regulator. The frequency at which the scheme is reviewed should be discussed and agreed with the operator.

END OF ASSESSMENT

If you have any queries about this report, or to discuss completion of any actions, please contact the NRW Officer named above.

Important information

Legal status of this report

Your permit is issued to you under the Environmental Permitting Regulations. You have a responsibility to comply with the conditions of your permit and prevent pollution/harm of the environment. You must also ensure that you comply with any other relevant legislation that may apply to your site's operations.

This report explains the findings of our assessment and any action you are required to take. We categorise non-compliance using our guidance for assessing non-compliance at regulated sites.

When we find potential non-compliance/s we will normally give you advice on how to maintain compliance.

To correct non-compliance, we may:

- require you to take specific actions
- issue a notice
- review the conditions of your permit.

Any advice and guidance we give will be without prejudice to any other enforcement response that we consider may be required.

Assessment results and non-compliance categories (used in section 1):

Assessment result	Description
Assessed (A)	Assessed or assessed in part, no evidence of non-compliance found in the aspects assessed.
Action only (X)	Action only relating to the activity assessment
Ongoing (O)	Ongoing non-compliance, not scored

Non-compliance category	Description
C1 Major	Potential to have a major, serious, persistent and/or extensive impact or effect on the environment, people and/or property
C2 Significant	Potential to have a significant impact or effect on the environment, people and/or property
C3 Minor	Potential to have a minor or minimal impact or effect on the environment, people and/or property
C4 No environmental impact	Non-compliance at a regulated site that cannot foreseeably have any impact on the environment, people and/or property

Full list of Industry and Waste action criteria (used in section 1 and 2):

A: Permitted activities

- A1 Specified by permit

B: Infrastructure

- B1 Infrastructure – Engineering for prevention and control of emissions
- B2 Infrastructure – Closure and decommissioning
- B3 Infrastructure – Site drainage engineering (clean and foul)
- B4 Infrastructure – Containment of stored materials
- B5 Infrastructure – Plant and equipment

C: General management

- C1 General management – Staff competency/training
- C2 General management – Management system and operating procedures
- C3 General management – Materials acceptance
- C4 General management – Storage, handling, labelling and segregation

D: Incident management

- D1 Incident management – Site security
- D2 Incident management – Accidents, emergency and incident planning

E: Emissions

- E1 Emissions – Air
- E2 Emissions – Land and groundwater
- E3 Emissions – Surface water
- E4 Emissions – Sewer
- E5 Emissions – Waste

F: Amenity

- F1 Amenity – Odour
- F2 Amenity – Noise
- F3 Amenity – Dust/fibres/particulates and litter
- F4 Amenity – Pests/birds and scavengers
- F5 Amenity – Deposits on road

G: Monitoring and records, maintenance and reporting

- G1 Monitoring and records, maintenance and reporting – Monitoring of emissions and environment
- G2 Monitoring and records, maintenance and reporting – Records of activity, site diary/journal/events
- G3 Monitoring and records, maintenance and reporting – Maintenance records
- G4 Monitoring and records, maintenance and reporting – Reporting and notification to Natural Resources Wales

H: Resources efficiency

- H1 Resource efficiency – Efficient use of raw materials
- H2 Resource efficiency – Energy efficiency

Enforcement response

Any permit condition non-compliance is an offence and we may take legal action against you. Action we take can include prosecution, serving a notice on you and/or suspension or revocation of your permit. See our Enforcement and Sanctions Guidance for further information.

Data protection notice

You should make sure that anyone named in this report knows that the information it contains will be processed by Natural Resources Wales to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s).

We may also use and/or disclose the report in connection with:

- offering or providing you with our literature or services relating to environmental matters
- consulting with the public, public bodies and other organisations (e.g. Health and Safety Executive, local authorities) on environmental issues
- carrying out statistical analysis, research and development on environmental issues
- providing public register information to enquirers
- investigating possible breaches of environmental law
- assessing customer service satisfaction and improving our service
- Freedom of Information Act or Environmental Information Regulations requests.

We may also pass it on to our agents or representatives to do these things on our behalf.

Disclosure of information – this report will be available to view on-line

If you think this report contains commercially confidential information that should not be placed on our public register, you must contact your local Natural Resources Wales office within **fifteen working days** of receiving this report, using the contact details in the accompanying email or letter. You must give a full explanation of why it should not be added to our public register, including specifying which information is commercially confidential. We will assess your request and respond to you within 20 working days to let you know if we agree to your request.

What do I do if I disagree with the report or have a complaint?

If you disagree with this compliance assessment report, you should contact the lead officer without delay to discuss your concerns.

If you are unable to resolve the issue with the lead officer or their line manager you should contact our Customer Contact team on 0300 065 3000 (Monday to Friday 08:00 – 18:00), or email enquiries@naturalresourceswales.gov.uk for details of how to raise your dispute further through our Complaints and Commendations procedure.

If you are dissatisfied with our response, you can contact the Public Services Ombudsman for Wales by phone on 0300 7900203 or by email at ask@ombudsman.wales

Welsh Language Standards

We are committed to establishing Natural Resources Wales as a naturally bilingual organisation. We will provide compliance reports in your preferred language.