

Environmental Report for 2017

Permit Site: Headland Agrochemicals Ltd, Pentre, Flintshire. CH5 2DH

Permit No. EPR/FP3031CW

Written By: Carl Rowe

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Requirement

Section 4.2.2 – A Report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31st January (or other date agreed in writing by Natural Resources Wales) each year. The report(s) shall include as a minimum:

(a) A review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data.

Headland Agrochemicals are committed to legal compliance and the continuous improvement of our environmental performance, as part of our overall goal of implementing the principles of sustainable development in all areas of our work. Our aim is to ensure that environmental objectives are integrated into relevant business objectives in a cost-effective manner.

We recognise that many of our activities have an impact on the environment and we aim to conduct our business and operations to reflect best environmental practice.

Headland Agrochemicals Ltd is committed to the prevention of pollution, compliance with environmental legislation and the continual improvement of its environmental performance through the implementation of its Environmental Management System.

In 2017, Headland Agrochemicals manufactured 10,320,472 litres of product, compared to 9,357,792 litres in 2016, which is a 10.28% increase based on the previous year's results.

Headland Agrochemicals Ltd continues to conclude that our significant environmental aspects are the natural resources and energy we use, the chemicals we handle, use and store and finally the waste we generate. This report focuses on these following items.

Energy & Natural Resources

- In 2017 Headland used 360340 KWH of grid electricity for most site operations, this was further supplemented using 2 diesel generators which produced a further 200103 KWH, therefore a total of 560443KWH of Electricity was used on site in 2017. Although more Grid Electricity was used in 2017 than 2016, the overall electricity usage was lower than 2016 by 2132 KWH or 0.0038% considering that the site had a 10% increase in production levels. During 2017 Site Management decided to use more of the grid

electricity than the diesel generator electricity due to the grid electricity having a lower carbon emission rating (basing this off The Department for Business, Energy and Industrial Strategy 2017 Greenhouse gas reporting conversion factors).

Improvements made to reduce the site's use of electricity in 2017 included continuation of the installation of LED Lighting into the Manufacturing, Amenities, Laboratory and Office Areas. Not only does this provide better lighting conditions for staff, improvement to site security and reduction of likelihood of ignition sources but also removes old technology lighting which have high electrical usage.

Future sustainability of electrical usage on site continues to be a focus. In late 2016 Headland Agrochemicals Ltd applied for a significant quantity of CAPEX within the 2017 budget to remove the site diesel generators and replace with an electrical sub-station for its supply of further grid electricity. CAPEX was approved in 2017 and in late 2017 work started on construction of the new Electric Sub-Station on site with the aim for this project to be completed within the first half of 2018 at which point the site will remove the current diesel generators. With Grid Electricity becoming ever more greener and having lower carbon emissions this will enable the site to look to reduce carbon emissions rate by the removal of diesel generated electricity on site. Other improvements include a new energy efficient Air Compressor was purchased in late 2017, this will be installed in 2018 thereby further reducing electrical energy usage on site.

- LPG Gas usage at the end of 2017 stood at 207244 KWH, LPG (Propane) was used on site only for the fuel for Fork Lift Truck movements.
- Compared with 170471 KWH LPG usage in 2016 this is an increase by 17.8%

LPG Usage is only for the transportation requirements on site. On investigation of the increased use of LPG, it was found that Operations released all short-term hire FLT's at the end of June, however due to the production season significantly being extended 2 Fork Lift Trucks were brought back in to use during August to cope with demand and were still in use at the end of the 2017.

- In 2017 the site used 4727 cubic metres of town's water for the manufacture of its products and domestic use.
- This is an increase of 404 cubic metres or 9.3% on 2016 data where 4323 cubic metres was recorded.

The largest part of the increase in water usage is due to the added production quantities as water is the site's main ingredient of its products. Work continues looking for water savings including continued effort of re-using filling line washings back into the process to take the place of water. Other Engineering Improvements have been made in terms of installation of hard piped water lines around the factory thereby reducing flexible water hoses and connections which previously have led to several leaks on site.

- CO₂ generation from Total Energy Usage in 2017 (inclusive of Office heating and Van use)

The CO₂ emissions recorded by Headland at the end of 2017 stood at 265.569 tonnes of CO₂. This compared to the 253.15 tonnes reported from 2016 usage. The site therefore seen an increase of 4.7%. The amount of CO₂ kgs per litre produced was recorded in 2016 at 0.0245 and the result for 2017 stood at 0.0257.

On understanding this increase, it was found that a 5.2 tonne increase was created by the generation of electricity and a near 8 tonnes increase of carbon emission has been created by the extra LPG usage on site.

Chemical Handling, Storage and Use

Releases to Air

The site continues to use the environmental emission abatement equipment in the form of the nitric acid scrubber system (A006), for the manufacture of Manganese Dinitrate production from Mixer 3 in the New Formulation Department. The sampling of the scrubber was carried out by ESG as previous years and was carried out on 26th April 2017. ESG continue to use the monitoring methods US EPA M7D for Nitric Acid Mist, BS EN 14792 for oxides of Nitrogen, BS EN 14790 for water and BS EN ISO16911-1 for Velocity

The sampling was carried out on 26th April 2017 when the production of Manganese Dinitrate (Headland Jett) in Mixer 3 was being carried out. The scrubber was fully operational and the results from the sampling were:

94 mg/m³ of Nitric Acid Mist, 18 mg/m³ of Oxides of Nitrogen and 1.5% Moisture. These results are well within the 200 mg/m³ of Oxides of Nitrogen Limits set out within the Site's Bespoke Environmental Permit

Loss of Containment

To prevent and reduce releases of dangerous for the environment material on and off site, ALL Headland Agrochemicals Ltd staff are made aware of the importance of protecting the environment. The site continues investing in terms of CAPEX to reduce all aspects of loss of containment on site.

In 2017 CAPEX was approved to continue with joint sealant of the Filling Areas with a triple layer sealant as per other key storage locations on site. Other work that was carried out in 2017 included installation of vehicle and pedestrian ramps within the Herbicide and Filling Areas to maintain containment within the factory should an incidental LOC event occur.

Design standards for improvement to Tertiary Bunding has continued with ERM who Headland are currently working with to review the site's Flood and Spill mapping.

From a non-engineering aspect, refresher and new training sessions were carried out by employees on Spill Kits and Spill Prevention with a full Chemical Spill Training Course including Practical element being carried out during 2017.

In 2017 there were no recorded incidents of unpermitted release of dangerous for the environment materials off site.

Waste & Natural Resources

The nature of our work generates waste on site and at consumer sites, in 2017 work continued on reducing the amount of packaging used and where possible to move fully to recyclable materials wherever possible.

- In 2017 the site generated and disposed of 829 tonnes of waste material offsite. An increase 44 tonnes based on previous year's details and an increase of 5.6% previously
- Recycling of site waste however continues to increase in 2017 with 314 tonnes of recyclable material transferred off site against 239 tonnes of recyclable material transferred off site in 2016, an increase of 31.3%.

A large part of recycling increase has been because of the new cardboard recycling set up. The site has two new cardboard recycling cages which are provided Free of charge from our waste collector. Once filled they are quickly collected as the waste collector is next door to the site.

The site's largest waste producers continue to be the micronutrient waste washings and the herbicide waste washings. Trial work started in 2017 to look at methods to reduce the Herbicide Waste Washings quantities using warm 10% sodium carbonate solution to reduce washing quantities. This process was a success by considerably reducing water usage and reducing waste generated. Unfortunately, the infrastructure to the plant is not currently in place to implement this project and a capital requirement for power and heated water will need to be in place for full implementation on the plant. This project has however been included on the site's 5-year CAPEX plan. Other work to reduce washings include the introduction of a Production Planner in 2017. The planner details production levels and is fully aware of trying to reduce changeovers on production as this waste's time and creates washings unnecessarily.

The site continued to use filling line washings where possible to reduce water usage and reduce waste produced but also reclaiming agrochemical material back for future production runs where possible dependant on product quality allowance.

Environmental Management Systems

The management system continues to be progressed and developed with improvements including revised flooding protection measures and waste controls and additional EHS resources in 2017.

The site maintained its Level 4 Green Dragon award in October 2017, with 2 Minor Non-Conformances raised by the Auditor. The 2 Minor non-conformances raised were for:

1. The Current Environmental Policy does not include commitments to protection of the environment or meeting compliance obligations. A revised site based Environmental Policy is to be generated.
2. The Emergency Control Centre site Inventory list did not include measurement units. This is now complete, an updated Inventory Checklist including measurement units is now in place.

The site's 2018 Environmental Key Target is to attain full ISO14001 accreditation

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