

**SOLWAY FOODS LTD,
ROGERSTONE PARK**

ENVIRONMENTAL PERMIT No. EPR/UP3237CP

Waste Minimisation Audit Report

January 2018

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WASTE MINIMISATION AUDIT REPORT

SUMMARY

This report summary represents the ongoing work undertaken at Solway Foods Rogerstone Park site. The term 'waste' represents the responsible management of raw materials, the lean manufacturing work undertaken for the most value from raw ingredients and packaging (referred to as 'material variance in the report) and traditionally for the term 'waste', the materials which are discarded at the back end of the process.

The previous report was issued to Natural Resources Wales over four years ago. This summary report is issued in January 2018 and represents the major work streams undertaken since that date (to include some projects that have commenced and ended). This is to demonstrate to the Regulator that product efficiency and waste minimisation is of utmost important to the processes at the Installation.

The information within the report was provided by the SHE lead, the Hygiene Manager, Production Manager, and Operational Manager.

For 2017: The site produced (in tonnes):

- General Waste 3734
- Packed Waste (AD) 811
- Sludge/Potato waste 11064
- Recycling 1188
- Food Waste (unpacked) 3926

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1.0 SITE ARRANGEMENTS/ BACKGROUND

The Installation, operated by Solway Foods, has had their Environmental Permit ("Permit") since 2005. Regulated under Section 68 Part A(l)(d)(i) "Treating and processing material intended for the production of food products from animal raw materials (other than milk) at plant with finished production capacity of more than 75 tonnes per day" for the Environmental Permitting Regulations 2010. In addition; the site has an Effluent Treatment Plant ("ETP") which is listed under Section 5.3 Part A(l) (c) (ii) "Disposal of non-hazardous waste in a facility with a capacity of more than 50 tonnes per day by physio-chemical treatment".

The site was built in 1999 and designated areas of waste storage were provided at the Permit application stage. Since then, some areas have been changed across the site. NRW has given permission for each variation and minor external storage change.

The treatment of the onsite effluent treatment plant ("ETP") is through a dissolved air flotation ("DAF") plant. This creates a large amount of sludge waste. Effectively, the cleaner the discharge water to final sewerage, the larger the sludge output from the treatment unit.

The site had an onsite (land owned by 2 Sisters Food Group – Installation was built on adjoining green field area) Waste to Energy Plant (Anaerobic Digestion) on site that ceased operation in 2015. Since then arrangements have been made to utilise off site AD treatment.

Changes – The Installation has created a significant increase in factory area footprint. This brings associated increased production and waste water and physical waste management challenges. These are discussed throughout the report.

1.1. Waste Arrangements at Installation

There are several complex, separate processes within the overall production facility at Rogerstone Park. Effectively, each area (i.e. kitchens, oriental, packing) operates almost independently from the following area. This requires individual waste solutions bespoke to that area.

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The site operates a coloured bag system. Each individual line and area has their own coloured bag dependant on the nature of waste discharged. Organic content is discharged to dolavs for removal directly into food skips (this is the best content for AD treatment).

Wastes from the processes are stored externally. Due to the nature and quantities of wastes produced; wastes are removed from site daily. Dry recyclables such as cardboard and plastics are stored for longer periods of time. These are clean materials (plastics are washed). Waste streams that contain food content are kept under cover (tarpaulin) as this is a source of pest concern; specifically, seagulls.

ETP sludge is removed from the storage tanks twice daily.

1.2. Successful Historical Projects Undertaken

- Rogerstone Park was the first site in the Group (previously Premier Foods) to become 0% landfill.
 - A comprehensive waste management training session within the 3 day site induction process.
 - A dedicated team employed by the site, within a designated area, to manually pull out all recyclables that may have been missed at line disposal stage.
 - Waste segregation within line areas acceptable to pass M&S Silver Factory status.
 - Rapeseed to Bio-oil in 2010
 - All large packaging (oil dolavs, wine and vinegar dolavs) all sent back to suppliers. Agreement with purchasing.
 - Large scale on site Waste to Energy Plant.
 - Additional staff employed in potato plant especially to double peel potatoes that have been rejected on first process (done by camera) this saves several hundreds of tonnes.
 - A staff shop for all waste packaged food.
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1.3. Methodology

This waste minimisation summary was collated from several projects undertaken at the Installation. From –

- Methodology outlined in the Envirowise Environmental Technology Best Practice Programme Guide ET219, Waste Mapping and GG025, Saving Money Through Waste Minimisation, Raw Material Use.
- Lean principles through M&S lean manufacturing standards
- Environmental projects undertaken for waste minimisation.

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2.0 Waste Tracking and Results

Below is a record of total site waste by tonnage/tonnage production – compared for previous 6 years.

Trends in Waste Disposal and Recovery			
Year	Parameter		
	Total non hazardous waste	Total hazardous waste	Total waste per unit output
2011	15254	1.4	0.60
2012	13,324	3	0.58
2013	15366	5.33	0.59
2014	14564	2.9	0.54
2015	11010	2.6	0.42
2016	16444.8	6.2	0.58
2017	20724	0	0.62

Note, this basic figure does not display the large amounts of recycling that makes up the total waste figure. NRW will recognise the increase in % year on year from the site.

3.0 Materials/Waste Review

All relevant data across the factory is assessed to determine the most cost effective waste minimisation opportunities. (The large amounts of projects undertaken on site are only summarised within this report).

Detailed investigations are undertaken by the designated team to include:

- Process flow exercise and waste mapping for each line
- Investigation of line breakdown in more detail – are there any underlying issues local to that area or product?
 - Reasons for line breakdown or slowing?
 - How far do staff have to walk to get materials or discard waste?
 - Overflow storage capacity
 - Printer or line checker areas causing waste?
- Packaging costs savings (although largely dictated by customer, the Rogerstone Park team influence the most efficient packaging to work with our equipment and any on going transport issues)
- Alternative waste stream alternatives? (meetings with our waste provider to discuss up to date issues).
- Procurement – several work streams have been managed by procurement. Specifically relating to incoming packaging issues, such as large bulky items. It is agreed at contract level that IBCs and packaging will be returned to supplier.
- The transport stage at Rogerstone Park is largely controlled by the customer; but the site has undertaken several projects in designing streamlined packaging solutions (such as tray size, carton size) to reduce journeys to site from the third party haulier.
- Daily communications of waste production and material losses.

Work is undertaken with the customer also, to establish effective use of raw materials (sell by dates, extended life, suggestions on suitability of their required ingredient with our manufacturing process)

3.1 Materials Inventory/ Daily Checks

There is a weekly site performance of waste and materials measured at Site Leadership Level and Daily KPI's processed at every level of the organisation by area and shift (see Section 3.5 for more information about KPIs). Site waste performance is reviewed monthly with divisional team and actions logged and reviewed monthly. This performance is delivered through a conference call.

3.2 Waste Analysis & Reporting

Value stream mapping exercises have been undertaken across most of the major processes and lines of the factory. This process identifies potential areas of waste or material losses throughout the factory.

The site has identified opportunities through the value stream mapping process to improve customer service levels and support promotional activity, e.g. Indian Promotional Weeks. An example of a quick opportunity identified was the site depatching direct from site on Indian promotional weeks rather than through the offsite storage facility.

The Sales & Operational Planning process clearly maps the customer forecasts against each of the value streams in the factory. Any issues, such as plant outages, are clearly communicated with the customer and contracts amended as and when appropriate to do so (this ensures no over production and waste).

There is a dedicated team to analyse losses and waste.

3.3 Communications

Waste communications are a vital part of the effective management of the day to day business. Material losses, and therefore the efficiency of the processes, cannot be accurately measured but for the communications between each department. The production day incorporates a 9am production meeting where issues, and any lines to be 'shorted' (hence create waste) are discussed. At 2pm the daily meeting takes place on shop floor. This notifies management of any potential wastes for the day and any actions that can be undertaken immediately to rectify.

Stock control is undertaken daily and reported back to the relevant meeting. As you can appreciate this is a complex site and good quality stock reporting is vital with supplying correct information.

Throughout the day waste briefs are undertaken daily through team huddles. Important information is displayed in KPI cockpits. Team managers provide any line briefings or toolbox talks as they are received.

Waste receptacle by line, and their availability, are checked through start up sheets and SHE tours. Maximum recycling at source will only be achieved if the correct tools are provided to the work force. Any missing items are escalated through normal channels or raised at SHE monthly meetings; which is attended by Senior Management.

Any immediate end of life waste issues (such as incorrect items being discovered in the waste management area) would be resolved quickly. The item could be traced back to the

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area and the relevant information provided in brief or site 9am meeting dependant on severity.

3.4 Environmental Briefings

There is a bi monthly slot for all environmental issues, in the format of a training session, in the SHE committee meeting. This can be waste as a subject.

Waste is reported on the team briefs.

In December 2016 a dedicated waste briefing was undertaken across the whole factory to reiterate the importance of placing waste within designated waste bins and not allowing it to enter into drains. It was noted that rice was a particular problem within the waste collected in the ETP screen process. This action has been completed.

3.5 KPIs

Key Performance Indicators are tracked on a monthly basis by Site, Group and Division. This is achieved by monitoring and recording of actual waste removed from site as monitored by the onsite weighbridge and supplied by the waste haulier.

A daily review meeting at senior level is supported by local areas having daily / mid shift reviews in their cockpits – to include complaints, rejections, stock adjustments and waste.

The site overall KPI scorecard is reviewed monthly with the divisional team through a formal review, weekly through conference call. As site level the weekly Senior Leadership Team review site performance and any strategic improvement programmes and then operationally on a daily basis through aligned KPI's.

3.6 Problem Solving/Waste Recording

To improve how any waste issue is encouraged to be addressed and solved.

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FOCUSED IMPROVEMENT 12 STEP			OWNER:	START DATE:	END DATE:	1	2	3	4	5	6	7	8	9	10	11	12						
1. PROBLEM		2. TEAM		3. LOSS OR WASTE																			
4. MEASURES		5. USE 5W+1H		6. TARGET																			
				7. PLAN & TEAM ACTIONS																			
8. ANALYSIS						9. CONTAINMENT & COUNTERMEASURES																	
						10. CONFIRM RESULTS																	
						11. ROLL OUT						12. FUTURE ACTIONS											
Step 1 Describe the problem which needs 12 Step. Explain why A3 not suitable.		Step 2 Agree Team and record their role in this 12 Step.		Step 3 Describe the Loss or Waste to be reduced or eliminated.		Step 4 Show graphs or measures of the Loss or Waste to be reduced or eliminated.		Step 5 Use 5W+1H to describe the problem in detail.		Step 6 Based on Steps 1-5 agree a target for the reduction or elimination of the loss which will be delivered.		Step 7 Agree the resource plan & drive delivery of team actions during the 12 Step.		Step 8 Conduct Analysis to find and confirm the Root Cause.		Step 9 Contain the root cause in the short term. Eliminate Root Cause using countermeasures.		Step 10 Confirm root cause, containment & countermeasures have delivered expected results.		Step 11 Roll out countermeasures and scanning to similar areas or problems.		Step 12 Capture the problems which were found during 12 Step and agree how to action.	

3.7 Action Plan

Below is snapshot of current daily action plan for waste /material variance projects on site. This is taken from the most up to date 2pm action meeting, at the time of report compilation.

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ACTION LOG

2.00pm Daily Waste Meeting



[CLICK HERE TO SORT BY DEPARTMENT](#)

	ISSUE	ACTION	Resp.	Area	Action Date	Review Date	Status
1	BFY tan red 153kg OOL	plan to sell short life (5 days)	JG	Planning	15-Jan	16-Jan	0
2	chilli sce stock cut one batch out for 16/01/18	take one batch off plan for 16/01/18	JG	Planning	15-Jan	16-Jan	C
3	Veg masala shortage G and A code missing	check stocks	MH	Stock con	15-Jan	16-Jan	C
4	Ryog 002 going OOL 1600kg	To be used as RYOG102 check 102 yog reduced	JG	Planning	15-Jan	16-Jan	0
5	RMUS019 MMUS046 BOM error	correct BOM to reduce waste risk	MW/DD	SC / LR	15-Jan	16-Jan	0
6	2684kg spicy curry b/b15/01	Plan into production	SD	HR	15-Jan	16-Jan	0

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7	Blast stock	Provide stock to meeting	MH	Stock con	15-Jan	16-Jan	
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