

Annual Environmental Report

January-December 2008

**Queally Pig Slaughtering T/A Dawn Pork and Bacon
Grannagh,
Co. Kilkenny**

IPPC Licence Registration Number: PO 175-01

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1.0 INTRODUCTION

This is the ninth Annual Environmental Report, referred to hereafter as AER, covering environmental performance at the Queally Pig Slaughtering facility in Grannagh, Co Kilkenny. Throughout this report Queally Pig Slaughtering will be referred to as Dawn Pork and Bacon. The AER has been prepared in accordance with the requirements of condition 2.8.2 of Integrated Pollution Prevention and Control (IPPC) Licence No .PO 175-01 issued by the Environmental Protection Agency (EPA). This report has been compiled as outlined in the EPA guidance note for AER.

The AER is viewed by the Management of Dawn Pork and Bacon as an important part of company communication, both internally and publicly on environmental matters.

The class of activity that takes place at Dawn Pork and Bacon is Class No. 7.4 and can be described as follows; The slaughter of animals in installations where the daily capacity exceeds 1500 units and where one unit has the following equivalents- 1 pig = 2 units.

The National Grid Reference-for site activities is E2569, N1143

1.2 Description of site activities

The facility at Grannagh is located on a site of approximately 30 acres on the main Waterford to Limerick Road, approximately 4 miles outside Waterford City. The River Suir is located to the east of the plant and runs into Waterford Harbour.

The on-site Waste Water Treatment Plant, referred to hereafter as WWTP, is located on the banks of the River Suir, slightly upstream from the main factory. The WWTP is also used by Dawn Meats Exports Ltd. to treat wastewater however, the day to day operation and monitoring of the WWTP is under the control of Dawn Pork and Bacon. .

The WWTP receives all the wastewater from the slaughtering and processing facility, the surface water drains in the pig intake area, skip area and WWTP area. The final effluent from the WWTP is discharged into the River Suir from a dispersion pipe, which runs approximately 20m out to the River Suir.

1.2.1 Brief description of process

Operations at Grannagh have the capacity to slaughter 248 animals per hour. In addition to slaughtering, there are facilities for cutting, boning, curing, chilling and freezing of pork and bacon products.

Normal hours of production at the plant are 6.00am to 6.00pm, Monday to Friday. Cleaning operations, which are vital component of daily activity, continue until 11.00p.m. Different areas within the plant work different shifts. The refrigeration plant operates continuously and controls the temperature of the chill rooms and the cold store.

Groundwater is used as a water supply to the plant, with boreholes located off- site to the south east of the plant. The water is chlorinated, prior to on-site storage and use.

The energy supply for the plant is derived from electricity, natural gas and oil combustion, with two hot water boilers and one heating boiler present on the site.

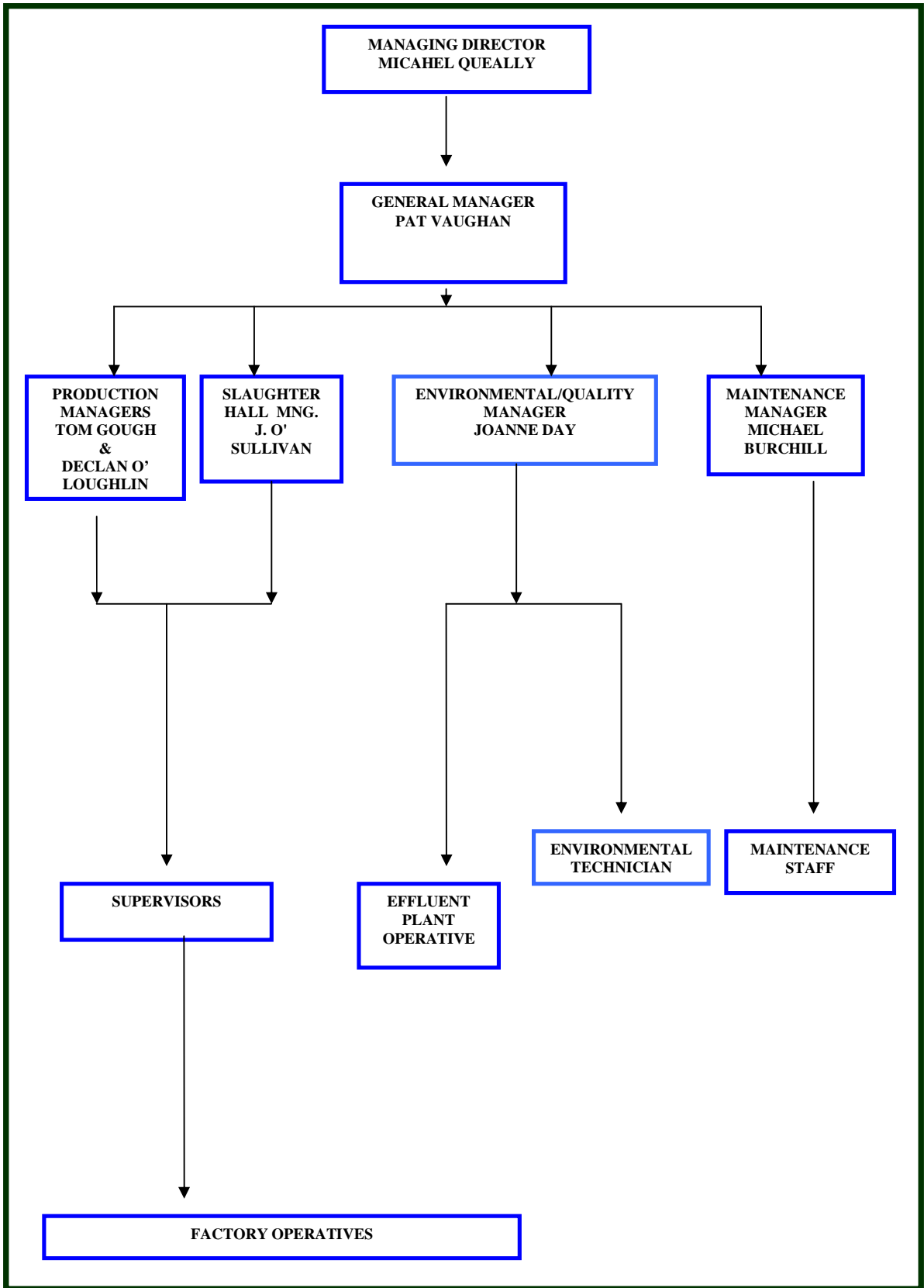
Following a comprehensive identification and evaluation process it was concluded that the significant environmental aspects due to site activities for 2008 are as follows:

- Effluent discharge
- Energy consumption
- Waste management
- Odour management

These environmental aspects will be discussed later in this report.

1.3 Dawn Pork and Bacon Environmental Policy

The following page displays Dawn Pork and Bacon's Environmental Policy. As can be seen it is endorsed by Senior Management at Dawn Pork and Bacon and confirms our commitment to pollution prevention, waste minimisation and compliance with legal obligations.



2.0 SUMMARY INFORMATION – 2008

Included in the following pages are the self monitoring results for Dawn porak and Bacon final effluent and surface water discharge.

2.1 Emissions to waters - 2008

This section includes the self monitoring data from the final effluent discharge point at Dawn Pork and Bacon. This data was submitted to the EPA during 2008 as part of the biannual reports.

Table 1: Schedule 1(i) Emissions to Water

| Emission Point Reference No: | EW- 1 |
|------------------------------|---|
| Name of Receiving Waters: | River Suir |
| Location: | Grannagh, Co. Kilkenny |
| Volume to be emitted: | 1800m ³ in one day 90m ³ rate per hour |
| <u>Parameter</u> | <u>Emission limit value 2008</u> |
| pH | 6-9 |
| Temperature | 25 ⁰ C |
| COD | 100mg/l |
| BOD | 40mg/l |
| Suspended Solids | 60mg/l |
| Nitrates (as N) | 20mg/l |
| Total Ammonia (as N) | 10mg/l |
| Total Phosphorus (as P) | 2mg/l |
| Orthophosphate | 1mg/l |
| Detergents | 5mg/l |
| Oils, fats and Grease | 15mg/l |

AER Electronic Reporting System Printout is located in Appendix 1.

Table 2: Summary of mass emissions to water 2008

| <u>Parameter</u> | <u>2008 Mass emission (Kg/year)</u> | <u>Licensed Mass emissions (Kg/year)</u> |
|-------------------------------------|---|--|
| Volume Discharged (m ³) | 483,625 | 657,000 |
| COD | 19,354 | 65,700 |
| Suspended solids | 1,131.5 | 39,420 |
| Nitrates | 7,738 | 13,140 |
| BOD | 5,318 | 26,280 |
| Total Phosphorus | 722 | 1,314 |
| Orthophosphate | 273 | 657 |
| Detergents | 147.7 | 3,285 |
| Oils, Fats and Grease | 511 | 9,855 |
| Ammonia | 918 | 6,570 |

Table 2 shows 2008 and licensed mass emissions from monitoring point EW 1. EW1 is located in the Dawn Pork and Bacon WWTP, it is the point where treated effluent leaves the WWTP and enters the River Suir.

Chemical Oxygen Demand (COD), Suspended Solids, Ammonia and Nitrates are analysed daily in-house by a trained laboratory technician. Total Phosphate is analysed weekly in-house by a trained laboratory technician. Biochemical Oxygen Demand (BOD), Oils, Fats and Grease (OFG) and Detergents are analysed at a frequency required by IPPC Licence PO 175-01 Schedule 1(iii) Monitoring of Emissions to Water, by an external laboratory.

Licensed mass emission figures are based on the Emission Limit Values (ELV) multiplied by maximum emission period (255 production days in 2008). To calculate mass emissions for 2008 and 2007 a weekly average figure in mg/L for each parameter was multiplied by 5 days production in each week to give maximum mass emission to water.

The following paragraphs outline some of the operational control measures in place to aid in the mass emission decrease from EW1:

- During times of increased loading into the WWTP, the forward feed of influent was adjusted to allow sufficient treatment. Similarly, when the loading on the effluent plant decreased forward feed was also adjusted.
- Phosclear is a chemical dosed into the WWTP to decrease the phosphate concentration.
- The mixed liquor suspended solids (MLSS) was also microscopically analysed, weekly, to monitor the microbiological activity.
- The on-site Dissolved Air Flootation unit (DAF), allows removal of most OFG before influent enters the WWTP.

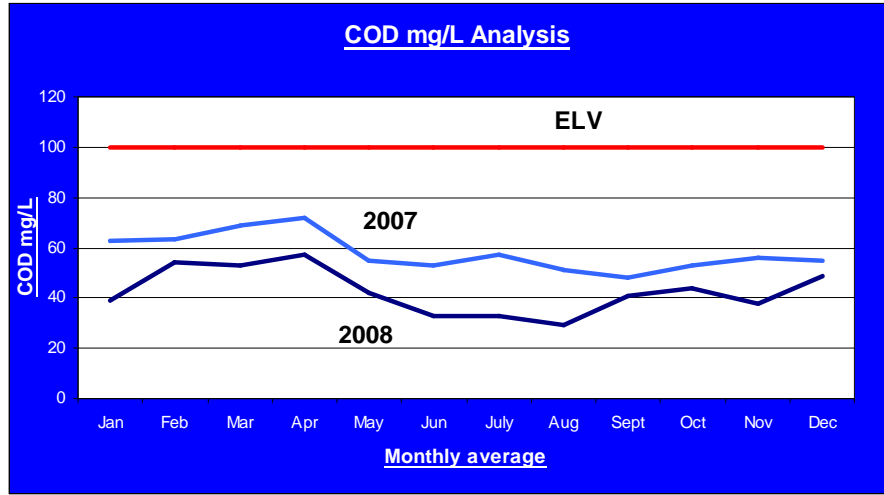
The following graphs, detail the comparison between 2007 and 2008 monthly emissions data from EW1. COD, BOD, Suspended Solids, Total Nitrogen, Total Phosphate, Orthophosphate, OFG, pH, Temperature, and Detergents are analysed in the following graphs.

The monthly average figures for each parameter for 2007 and 2008 are represented on each graph. The X-axis (horizontal axis) of each graph displays the month i.e. (January to December) and the Y-axis (vertical) displays the concentration of each parameter in final effluent in mg/L of effluent analysed.

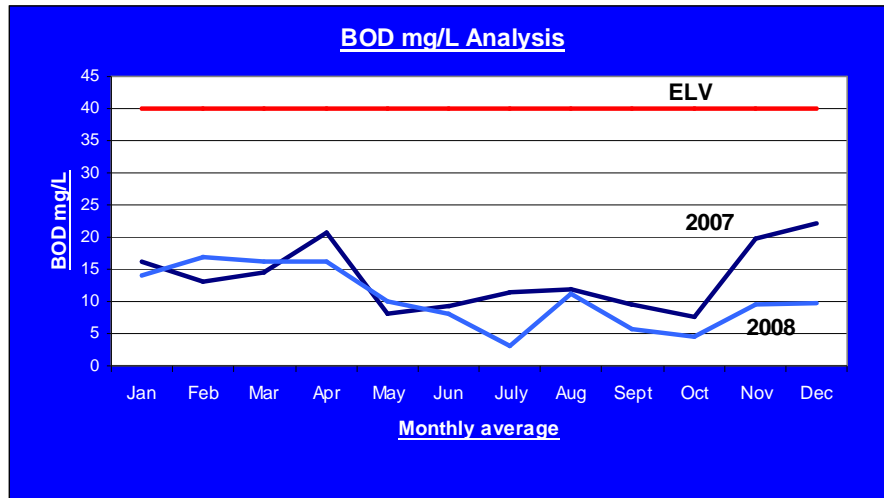
The red line in each graph indicates the ELV as set by IPPC Licence PO 175-01 Schedule 1(iii) Monitoring of Emissions to Water.

There were no non-compliances recorded during 2008 for the final effluent.

Graph 1 COD in Final Effluent 2007 versus 2008



Graph 2: BOD in Final Effluent 2007 versus 2008



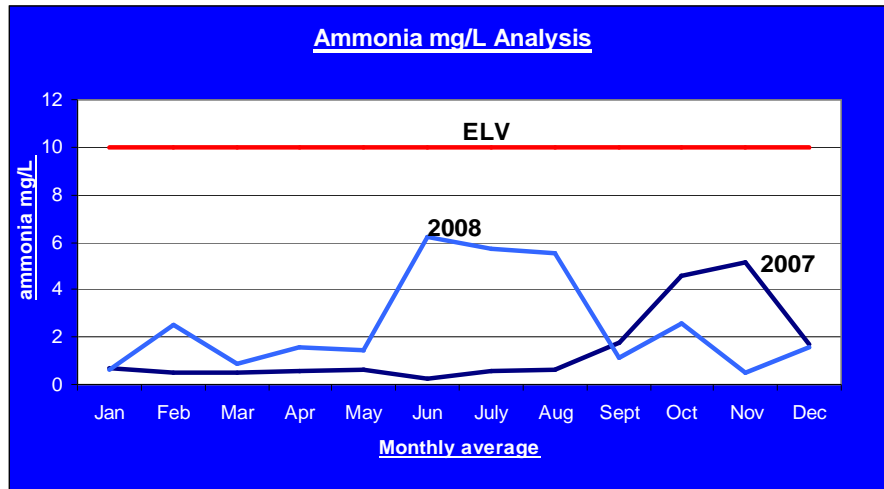
As seen from graph 1, monthly COD concentrations in final effluent have decreased in 2008 when compared to 2007. Both sets of data are well within the ELV set in IPPC Licence PO 175-01 Schedule 1(iii) Monitoring of Emissions to Water and represented in table 1 on page 5 of this report.

The periods of increased COD in the final effluent can be attributed to increased loading on the WWTP. The increase loading is due to elevated production in Dawn Meats and Dawn Pork and Bacon.

Graph 1 shows an increase in COD in January of 2007 and 2008. This is attributed to the accumulation of raw material (live pig) in suppliers farm over the Christmas shut down. The loading on the WWTP would increase and lead to a slight increase in COD, however as seen from graph 1 COD is still within ELV and less than 2007.

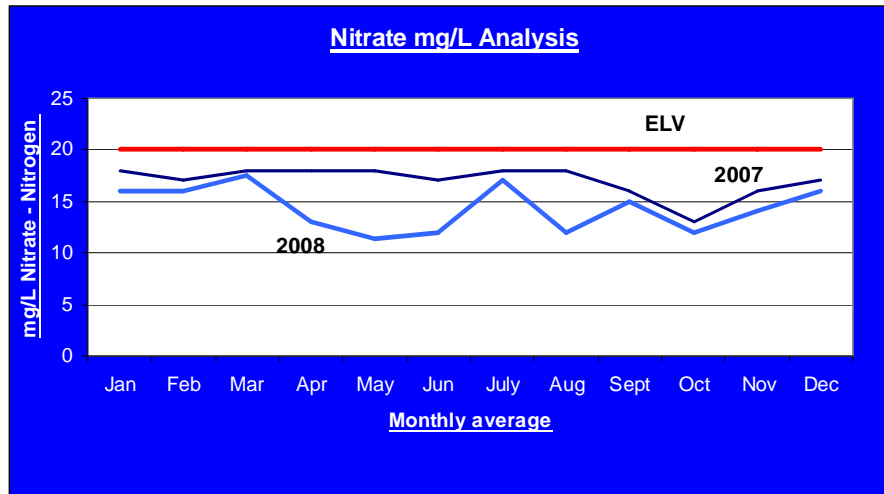
As seen from graph 2, monthly BOD concentrations in final effluent have decreased in 2008 over 2007. BOD concentrations in 2007 and 2008 remained within ELV at all times.

Graph 3: Ammonia in Final Effluent 2007 versus 2008



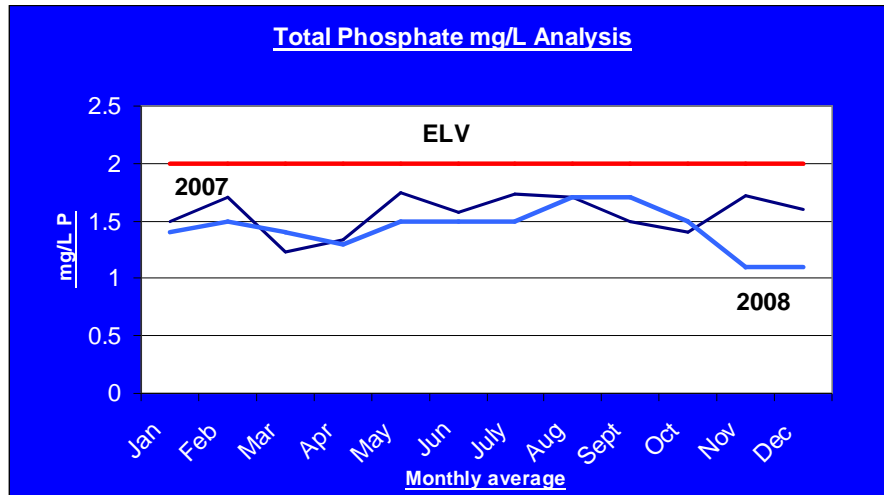
Graph 3 shows the trend in ammonia concentration in final effluent in 2007 and 2008. It can be seen from graph 3 that ammonia levels remained within ELV at all times.

Graph 4: Nitrate in final effluent 2007 versus 2008



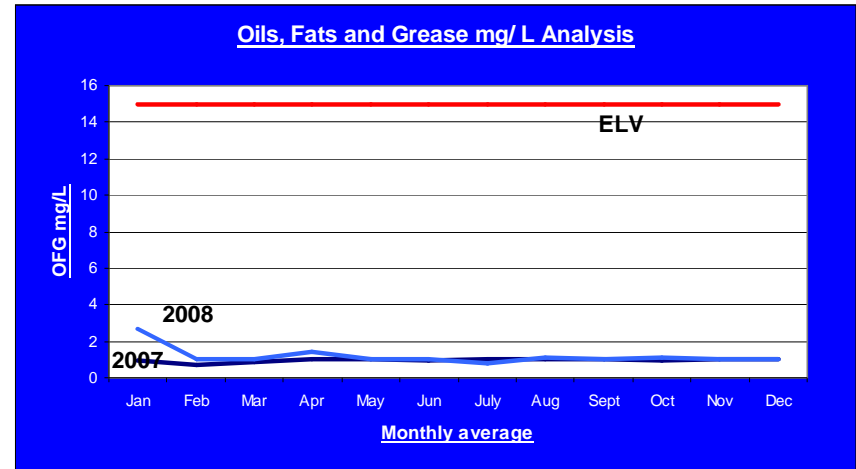
Graph 4 shows the nitrate concentration in final effluent in 2007 and 2008. 2008 nitrate concentrations are lower than 2007 due to stringent operational control in the WWTP.

Graph 5: Total Phosphate in Final Effluent 2007 versus 2008



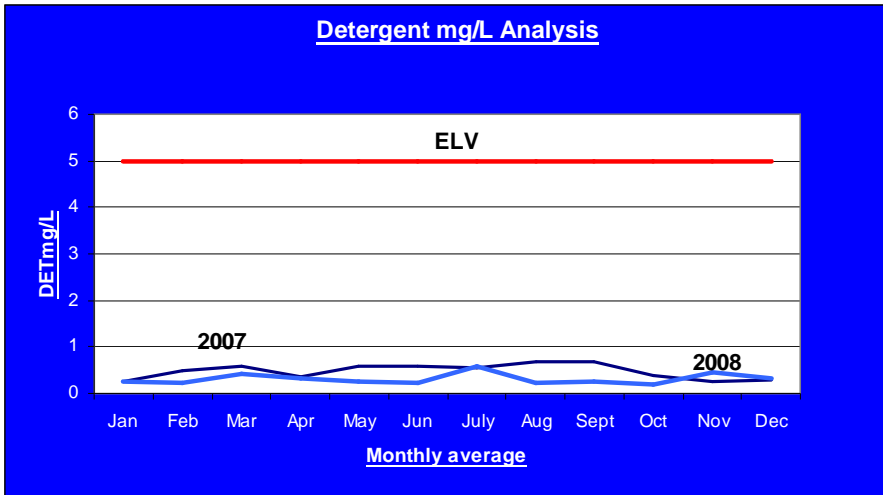
On analysis of graph 5, it can be deduced that the ELV for Total phosphate is 2mg/L P. The monthly average figure for 2008 was generally 1.5mg/L P (+/- 0.5 mg/L P). If concentrations of Total Phosphate in final effluent increased above this level the phosclear dosing unit was adjusted and the effluent monitored until Total phosphate levels were within the 1.5mg/L P (+/- 0.5 mg/L P) range or lower. To compare 2007 and 2008 Total Phosphate concentrations the trend is that they remained similar except in November /December 2008, when levels decreased. This is due to the installation of a new phosclear dosing pump, which allowed increased operational control of Total Phosphate levels.

Graph 6: OFG in Final Effluent 2007 versus 2008



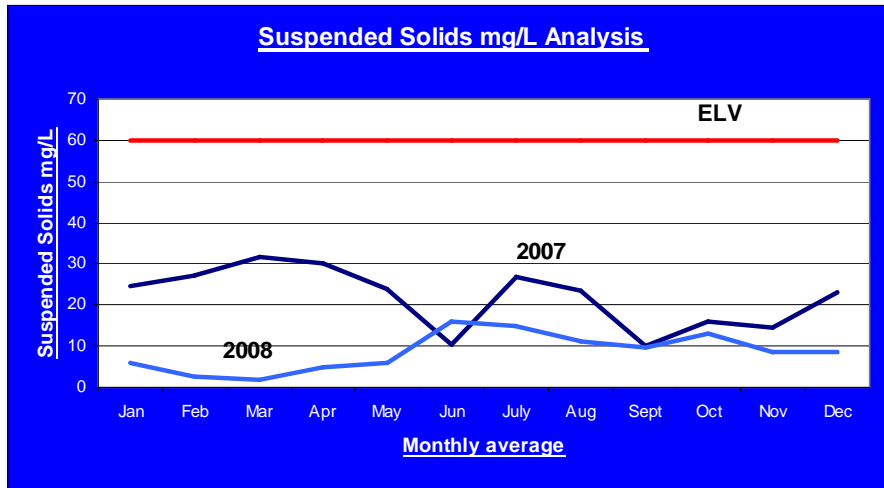
OFG in 2008 and 2007 are both within limits. From graph 6, the ELV for OFG is 15 Mg/L and with an average of 1 mg/L throughout 2007 and 2008 the DAF unit at Dawn Pork and Bacon has proven very efficient.

Graph 7: Detergents in Final Effluent 2007 versus 2008



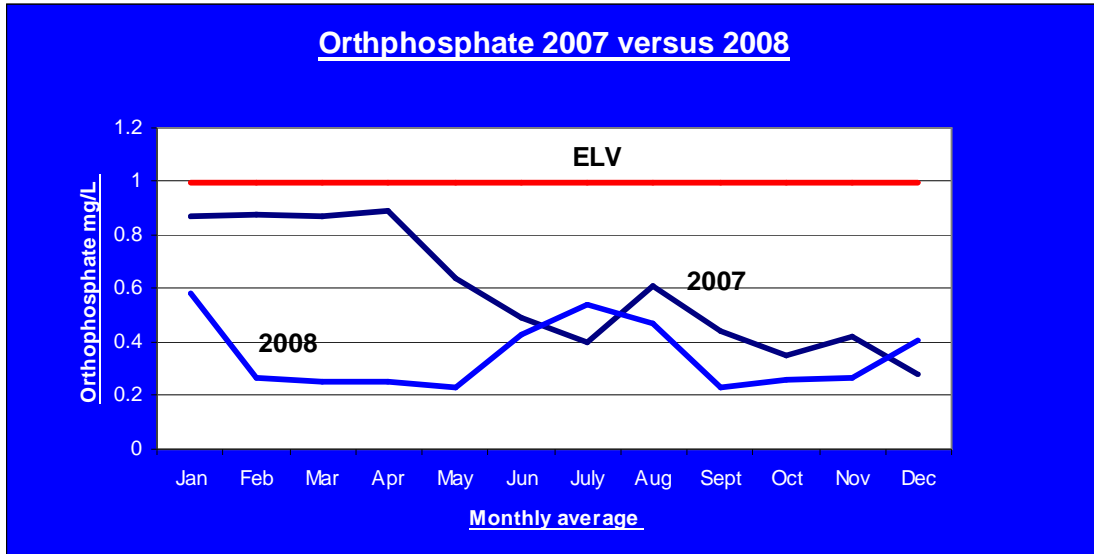
Upon review of graph 7, it can be said that detergents in EW1 effluent are of similar concentrations in both 2007 and 2008. With a monthly average concentration of <1 mg/L detergents are within the ELV of 5 mg/L.

Graph 8: Suspended Solids in Final Effluent 2007 versus 2008



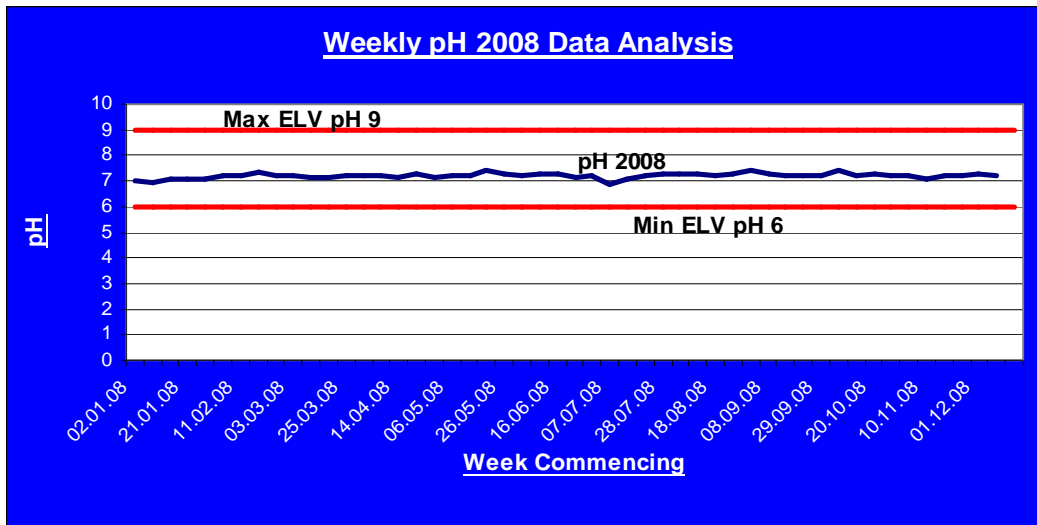
Graph 8 represents the suspended solids emitted to the River Suir from EW1 during 2007 and 2008. Data displays that in 2008 suspended solids levels were lower than samples analysed in 2007.

Graph 9: Orthophosphate in Final Effluent 2007 versus 2008



As seen from graph 9 the orthophosphate levels are much lower in 2008 than in 2007 both trends are within ELV.

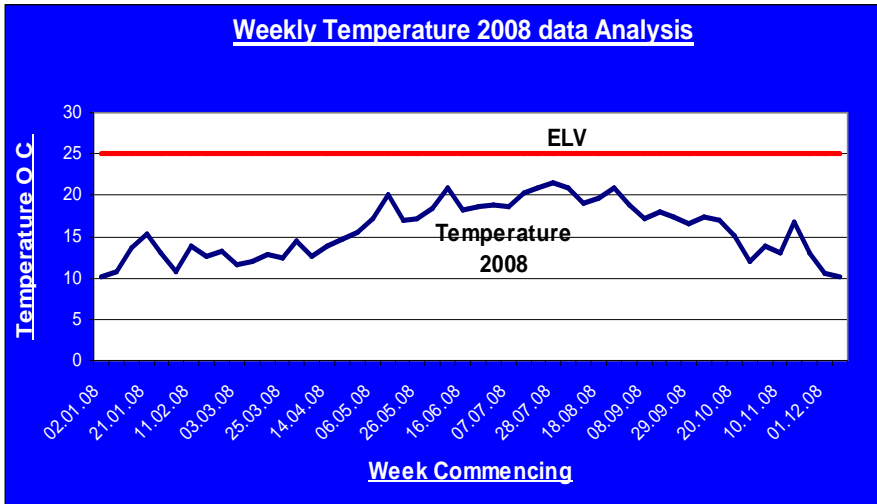
Graph 10: pH in Final Effluent 2008



pH and temperature for 2008 are shown in graphs 10 and 11.

The data is based on averaged weekly analysis of the pH and temperature of the final effluent.

Graph 11: Temperature in Final Effluent 2008



Any variations in trend in graph 11 can be attributed to seasonal temperature variations.

2.2 Surface Water Results

The programme for managing our surface water IPPC Licence requirements has been integrated into our EMP and objectives and targets 2008, it can be viewed in section 3.0 of this report.

Table 3: Schedule 3 (i) Surface Water Discharge Monitoring

| | |
|------------------------------|----------------------------------|
| Emission Point Reference No: | EW- 3 |
| Name of Receiving Waters: | River Suir |
| Location: | Grannagh, Co. Kilkenny |
| <u>Parameter</u> | <u>Monitoring frequency 2008</u> |
| Conductivity | Continuous |
| COD | Monthly |
| Total Ammonia | Quarterly |
| Suspended Solids | Quarterly |
| Chloride | Quarterly |
| Fats, oils and grease | Quarterly |
| Visual inspection | Weekly |

The average figures for the parameters mentioned on page 13 are given in table 4 below. It can be deduced that there is no significant variation in results between 2007 and 2008.

Table 4: 2008 Average Surface Water Monitoring Results

| Parameter | COD | Total ammonia | Suspended solids | Chloride | FOG | Visual inspection |
|-----------|-------|---------------|------------------|----------|-----|--------------------------|
| 2007 | 18.58 | 0.56 | 2 | 28 | <1 | No visible contamination |
| 2008 | 18.9 | 0.50 | 0 | 40 | <1 | No visible contamination |

Based on continuous analysis of conductivity, the following warning and action limits are in place for Dawn Pork and Bacon Surface water discharge at EW – 3

Warning Limit = 2.0 mS/cm

Action Limit = 2.5 mS/cm

Should these limits occur the Environmental Manager must be informed immediately and an investigation initiated.

2.3 Emissions to Atmosphere

As stated in IPPC Licence PO 175-01 condition 5 emissions to atmosphere are discussed in the following paragraphs:

- 2.3.1 Condition 5.1 of IPPC Licence states that odours and air emissions shall be managed so they do not cause environmental nuisance. During 2008 a daily odour audit was conducted to ensure that no environmental nuisance arose. There were no complaints from employees or the public during 2008 in relation to this issue.
- 2.3.2 Condition 5.2 of IPPC Licence informs that an annual boiler emissions test must be submitted to the EPA as part of AER. The 2008 boiler efficiency test is located in appendix 2 of this report.
- 2.3.3 There were no non-conformances in relation to air emissions during 2008.

2.4 Waste Arising

There are a number of different waste types generated at Dawn Pork and Bacon. The following sections give a detailed description of waste generated. Category 2 and 3 refers to animal by-product waste.

2.4.1 Category 2:

- All animal materials collected at the Dawn Pork and Bacon brush screen in the effluent plant
- Dead on arrivals and pigs that fail ant-mortem inspection
- Pigs which exceed permitted residue levels under Directive 96/23 EC
- Pigs which fail post mortem inspection and condemned pieces
- The red offal and green offal from casualties, detained pigs and condemned pigs
- Animal by-product which are not category 1 or 3. Some examples include waste on the floor in the kill line, meat which is visibly contaminated, malodorous or discoloured e.g. faecal smearing, putrefactive and mouldy meat
- The meat in the lockable bins in the primal, boning and packing area is category 2. Also the bin in the tray wash room

2.4.2 Category 3

- Parts of the slaughter animals, which are fit for human consumption but are not intended for human consumption for commercial reasons
- Hair and toenails
- Pizzles and toenails
- Blood
- Bone
- Lungs and trachea
- Large intestine (washed out)
- Former foodstuffs of animal origin, which No longer, intended for human consumption for commercial reasons or due to problems with manufacturing or packaging defects which do not present any risk to human or animals
- Enlarged hearts due to faulty valves
- Livers that have minor fluke infections
- Milk spot lesions
- Waste on floor in primal and boning hall
- Light bruising

2.4.3 Packaging and office waste

- Paper from office use
- Cardboard from canteen and office
- Waste from the canteen
- Printer cartridges
- Electronic waste

2.4.4 Maintenance and production waste

- Electronic waste - bulbs
- Oils – from degreasing
- Pallets from production
- Blades and sharps – from production boning and cutting of product also circular saw blades.

2.4.5 Lab waste includes

- COD vials
- Total Nitrogen vials
- Total Phosphate vials
- Waste chemical

2.4.6 Data for waste arising 2008

Table 5 outlines the quantity of waste generated during 2008. The data is reported in tonnes/annum.

Table 5: Quantity of waste arising in 2008

| <u>EWC Code</u> | <u>Hazardous/non hazardous</u> | <u>Description of waste</u> | <u>Quantity tonnes / annum</u> | <u>Method of disposal /recovery</u> | <u>Location of Disposal recovery</u> |
|-----------------|--------------------------------|--|------------------------------------|-------------------------------------|--|
| 20202 | Non-Hazardous | Cat 2 | 2,873 | Processing | Off – Site (Ireland) |
| 20202 | Non - Hazardous | Blood (Cat 3) | 1899.358 | Processing | Off – Site (N.Ireland) |
| 20202 | Non- Hazardous | Offal (Cat 3) | 1850.94 | Processing | Off – Site (Ireland) |
| 20202 | Non- Hazardous | Lungs and Liver (cat 3) | 1015.25 | Pet food | Off – Site (Ireland) |
| 200101 | Non- Hazardous | Pallets | 1721 pallets | Recovery (R0) | Off – Site (Ireland) |
| 200101 | Non- Hazardous | Packaging and office waste | 153.00 | Recycling / landfill (R0) (D1) | Off – Site (Ireland and abroad) |
| 020204 | Non- Hazardous | Sludge from effluent plant | 4099.940 | Land spreading (R10) | Off – Site (Ireland) |
| 200121 | Hazardous | Electronic waste Bulbs | 0.155 | Recycling (R4) | Off – Site (Ireland and abroad) |
| 080318 | Non-Hazardous | Electronic waste printer cartridges and cellular equipment | 0.15 | Recycling | Off –site (abroad) |
| 130208 | Hazardous | Oil | 120 liters | Recovery by distillation (R13) | Off – Site (Ireland) |
| 160506 | Hazardous | Lab waste | 0.194 | Incinerated (D10) | Off – Site (abroad) |
| 180101 | Hazardous | Blades and sharps | 0.240 | Incinerated (D10) | Off – Site (abroad) |

Note

The codes in the method of disposal column refer to table 10 Table of codes to be used in completing waste information table as in EPA guidance note for annual environmental report.

2.4.7 Waste disposal contractors.

Each waste stream generated at Dawn Pork and Bacon is disposed of through approved waste contractors. The approved status is given by the EPA and/or the Department of Agriculture, Fisheries and Food (DAFF). Table 6 below outlines the waste licence/IPPC Licence and/or animal by-product processing approval number.

Table 6(a) Details of waste disposal contractors and animal by-product rendering plants

| Waste/animal by-product | Disposal/rendering facility | Approval/waste licence number | Comment |
|----------------------------|---|---|---|
| Cat 2 | Dublin By-products, Dunlavin, Co. Wicklow | IPPC Licence P0041-02 | |
| Blood (Cat 3) | APC Technologies, 2 Silverwood Ind. Estate, Craigavan, Co. Armagh | REN /241/89 – as issued by DAFF | |
| Offal (Cat 3) | Western Proteins, Ballyhaunis co. Mayo | IPPC Licence P0048-02 and R918 as issued by DAFF | |
| Lungs and Liver (cat 3) | Premier Petfoods, Cahir, Co. Tipperary | ID3 - as issued by DAFF | |
| Pallets | | | Broken pallets are sent off-site and are repaired. They are re-used in production |
| Packaging and office waste | Greenstar , Six Cross Roads, Buttlertown, County Waterford. | W0116-02 and waste collection permit WCP/KK/054/02 | |
| Sludge from effluent plant | Agrilife Ltd, Tourin, Cappoquinn, Co. Waterford | WCP/KK/317/06 and see PO 179-01 Dawn Meats (exports) IPPC Licence nutrient management plan. | |

Table 6(b) Details of waste disposal contractors and animal by-product rendering plants

| Waste/animal by-product | Disposal/rendering facility | Approval/waste licence number | Comment |
|--|---|---|--|
| Electronic waste Bulbs | Irish Lamp recycling, Woodstock Industrial Estate, Kilkenny road, Athy, Co. Kildare. | 02/2000 B | |
| Electronic waste printer cartridges and cellular equipment | Redeem PLC, 8 Ashcourt, Ashbourne Industrial Park, Ashbourne, Co. Meath | | The waste is transferred to England to be recycled. |
| Oil | Safety Kleen Ireland Ltd, Unit 5, Airton Road, Tallaght, Dublin 24. | W0091-01 | |
| Lab waste | Veolia, Corrin, Fermoy, Co. Cork | W0050-02, waste collection permit number WCP-CK08-0578-01 | Veolia collect and transfer the waste to Sava in Holland. The waste is incinerated in Holland. |
| Blades and sharps | Sterile Technologies Ireland Ltd. Unit 430 Beech Road, Western Industrial Estate Naas Road, Dublin 12 | W0055-02 Waste collection permit WCP/KK/170(A)/07 | Waste is transferred to Germany to be incinerated |

2.5 Agency Monitoring and Enforcement

During 2008 Dawn Pork and Bacon final effluent samples were collected and analysed by the EPA. The samples were taken on the 22/10/08, 20/08/08, 28/04/08 and 18/02/08, the samples were grab samples. All analysis results were within ELV and agreed with Dawn Pork and Bacon analysis of final effluent on same dates.

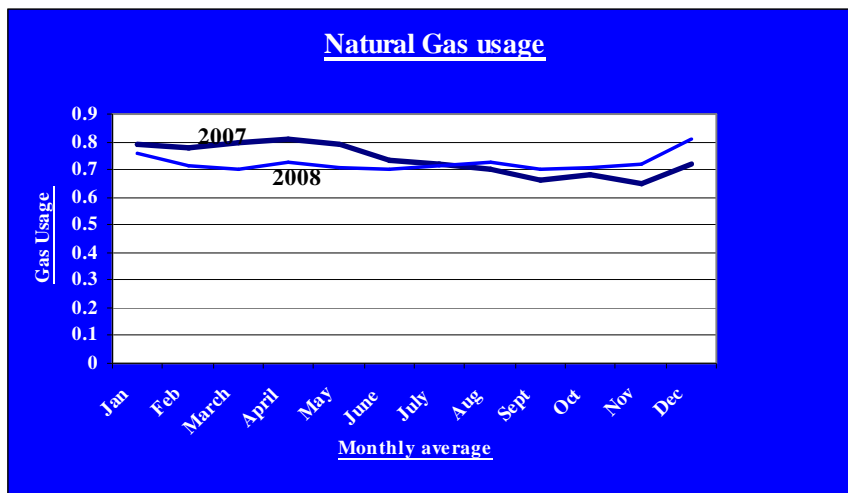
The site audit conducted by the EPA on the 25.04.08, highlighted some non-conformances. All of these non-conformances have been addressed and a letter of response detailing corrective/preventative action was sent to the EPA on the 27.05.09.

2.6 Energy and Water consumption

Table 7: Energy Consumption 2008

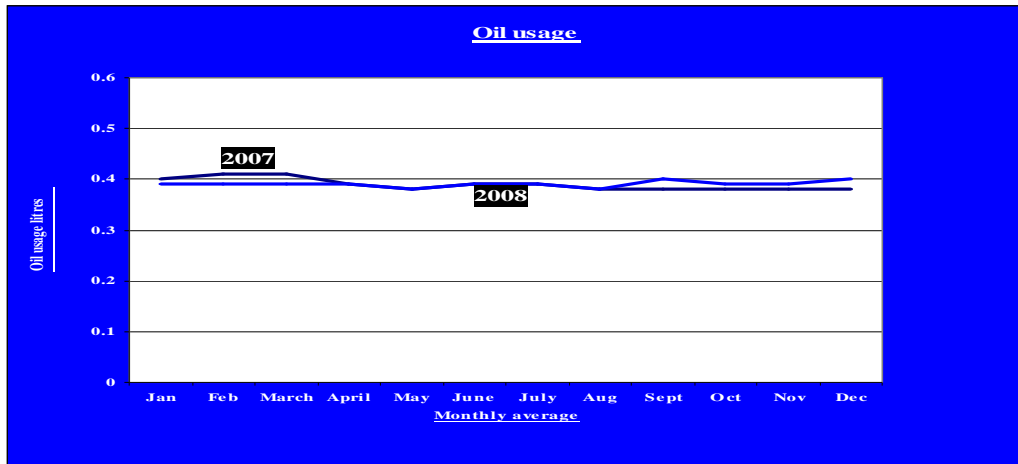
| Energy Type | Total used 2008 |
|-------------|------------------------|
| Natural Gas | 390,576 M ³ |
| Electricity | 2.88 megawatts |
| Oil | 212,099 Litres |

Graph 12: Natural gas consumption 2008



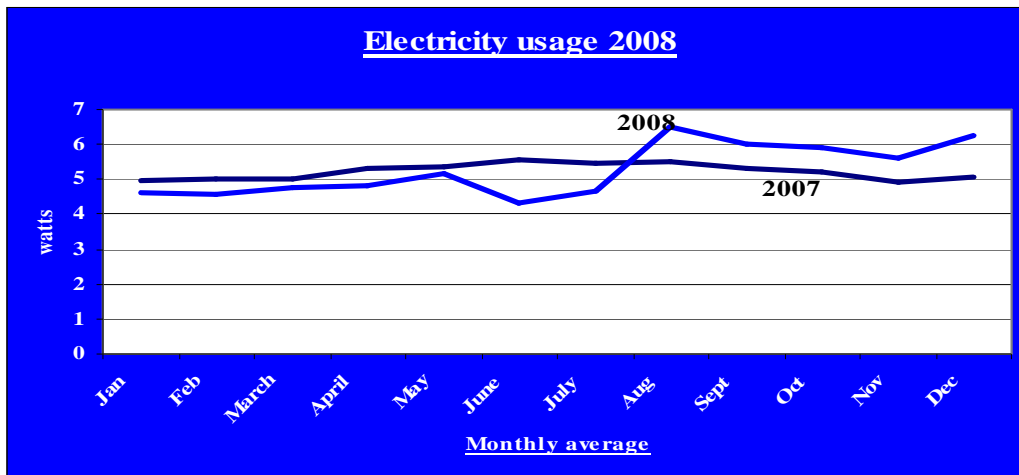
Natural gas usage in 2008 and 2007 are compared in graph 12. Quantities used remain similar in both years. Graph 12 shows the quantity of gas used in 2007 and 2008 per pig slaughtered.

Graph 13: Oil consumption 2008 versus 2007



Oil usage per pig slaughter remains similar in 2007 and 2008 as seen in graph 13.

Graph 14: Electricity consumption 2007 versus 2008



From graph 14 it can be seen that electricity usage increased in August 2008. This was due to increased production in Dawn Meats and Dawn Pork and Bacon.

Graph 15: Water consumption 2007 versus 2008

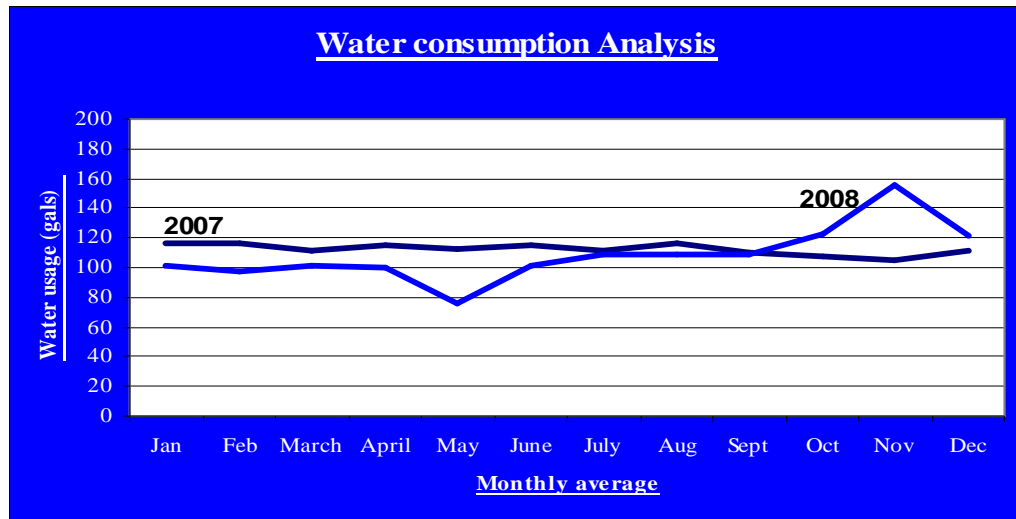


Table 8: Water Consumption 2008

| <u>Water Source</u> | <u>Total 2008</u> |
|---------------------|-------------------|
| Water | 56,672,584 Gals |

The well water used to supply the factory is pumped at a rate of up to 800m³/day. The water is extracted from the well at a rate of 100cu/hr. See appendix 3 for licence specific report on annual groundwater monitoring.

2.7 Environmental complaints and incidents

There were no environmental complaints or incidents recorded for Dawn Pork and Bacon for 2008.

3.0 MANAGEMENT OF THE ACTIVITY

Senior Management at Dawn Pork and Bacon conduct an annual review of the EMS. The outcome of this review are outlined in the following pages.

3.1 Environmental Management Programme Report

Following a comprehensive identification and evaluation process it was concluded that the significant environmental aspects due to Dawn Pork and Bacon process for 2008 are as follows:

- Effluent discharge
- Energy consumption
- Waste Management

Therefore these aspects have been managed in the Dawn Pork and Bacon EMP and schedule of objectives and targets for 2008.

As part of our IPPC Licence we are required to monitor;

- Boiler efficiency
- Every two years to conduct an Environmental noise survey.
- Ground water
- WWTP Sludge
- Equipment Calibration

It was therefore agreed by Senior Management to manage these requirements in the EMP and schedule of objectives and targets for 2008 also.

As part of continual environmental improvement at Dawn Pork and Bacon, environmental training for employees and contractors is also managed in the 2008 EMP and schedule of objectives and targets.

The following pages detail the objectives and targets 2008, the EMP 2008 and the proposed objectives and targets and EMP for 2009. A summary of the outcome of 2008 projects is also included.

A number of EMP as applied to Dawn Pork and Bacon are ongoing annually. For this reason these EMP methods are only included once in the following pages. The 2009 revision of these EMP methods are included.

Table 9 Environmental Management Programme 2008 – Results Discussion

| Project Number | Project Title | Status | Comment |
|----------------|--|----------|---|
| EMP 01 | Monthly/quarterly surface water monitoring | Complete | This project is ongoing on an annual basis. Therefore the EMP method is the same for 2008 and 2009 and is only shown once in this report. The same project number is used as a reference each year. |
| EMP 02 | Waste water effluent inspection | Complete | This project is ongoing on an annual basis. Therefore the EMP method is the same for 2008 and 2009 and is only shown once in this report. The same project number is used as a reference each year. |
| EMP 03 | Complete groundwater analysis | Complete | This project is ongoing on an annual basis. Therefore the EMP method is the same for 2008 and 2009 and is only shown once in this report. The same project number is used as a reference each year. |
| EMP 04 | Equipment calibration | Complete | This project is ongoing on an annual basis. Therefore the EMP method is the same for 2008 and 2009 and is only shown once in this report. The same project number is used as a reference each year. |
| EMP 05 | Commission and review site energy audit | Complete | This project was completed on time and recommendations have been incorporated into Dawn Pork and Bacon environmental Objectives and targets 2009. |
| EMP 06 | Waste sludge analysis | Complete | This project is ongoing on an annual basis. Therefore the EMP method is the same for 2008 and 2009 and is only shown once in this report. The same project number is used as a reference each year. |
| EMP 07 | Daily odour audit | Complete | This project is ongoing on an annual basis. Therefore the EMP method is the same for 2008 and 2009 and is only shown once in this report. The same project number is used as a reference each year. |
| EMP 08 | Boiler efficiency testing | Complete | This project was completed on time and the report can be reviewed in appendix 2. |
| EMP 09 | Review of EMS procedures | On-going | The timeframe for this project was underestimated and this project is now expected to be completed in May 2009. An update will be included in the AER for 2009. |
| EMP 10 | Noise Survey | Complete | This project was completed on time and the report the report was submitted to the EPA in June 2008. |

Dawn Pork and Bacon
Environmental Objectives and Targets
2008 and 2009

DAWN PORK AND BACON ENVIRONMENTAL OBJECTIVES AND TARGETS

Issued by: Anne-Marie Danaher

DATE: 11.09.08

Approved by Joanne Day

DATE: 11.09.08

REV: 00

REF: DERC 17

PAGE 1 OF 1

| OBJECTIVE | EMP | Target | Completion date | Status | Responsibility | Indicator |
|--|------------|---|------------------------|---------------|--------------------------|----------------------|
| Pollution Prevention | | Comply with condition 6.2, 9.2.1, 9.1.4, 9.3. schedule1(ii) and 1(i) IPPC license PO-175-01 To comply with condition 4.4.6 Operational control ISO 14001:2004 | | | | |
| | EMP 01 | Monthly/quarterly surface water monitoring | Dec 08 | Complete | AMD | Record |
| | EMP 02 | Waste water effluent inspection | Dec 08 | Complete | AMD | Records |
| | EMP 03 | Complete groundwater analysis | Mar -08 | Complete | AMD/Martina | Report |
| | EMP 04 | Equipment calibration | Dec 08 | Complete | AMD/J Day | Record |
| Energy conservation | | To comply with condition 4.4.6 Operational control ISO 14001:2004 | | | | |
| | EMP 05 | Commission and review site energy audit | Mar-08 | Complete | J Day | Report |
| Waste Management | | To comply with condition 2.6 and schedule 2(iii) waste analysis IPPC license PO-175-01 To comply with condition 4.4.2 Competence training and awareness ISO 14001;2004 | | | | |
| | EMP 06 | Waste sludge analysis | June 08/Dec 08 | Complete | AMD/Joanne Day/Ray Hayes | Report |
| Odour Management | | Implement control measures for odour management | | | | |
| | EMP 07 | Daily odour audit | Dec 08 | Complete | AMD/J. Day | Daily Reports |
| Reduce contribution to global warming and help achieve Ireland GHG emission reduction. | | To comply with condition 5.2 of IPPC License PO 175-01.To comply with condition 4.4.6 Operational control ISO 14001:2004 | | | | |
| | EMP 08 | Boiler efficiency testing | Sept 08 | Complete | AMD/MB | Report |
| Create Environmental awareness | | To comply with condition 2.6 IPPC license Po-175-01 To comply with condition 4.4.2 Competence training and awareness ISO 14001;2004 | | | | |
| | EMP 09 | Review of EMS procedures | Dec 08 | ongoing | AMD | Documented Procedure |
| Reduce Environmental Noise | | To comply with condition 8 IPPC license Po-175-01 To comply with condition 4.4.6 Operational control ISO 14001:2004 | | | | |
| | EMP 10 | Noise Survey | May 08 | Complete | MOR/AMD/J Day | Report |

DAWN PORK AND BACON ENVIRONMENTAL OBJECTIVES AND TARGETS

Issued by: Anne-Marie Danaher

DATE: 12.01.09

Approved by Joanne Day

DATE: 12.01.09

REV: 01

REF: DERC 17

PAGE 1 OF 2

| OBJECTIVE | EMP | Target | Completion date | Status | Responsibility | Indicator |
|----------------------|------------|---|------------------------|---------------|--------------------------|---|
| Pollution Prevention | | Comply with condition 6.2, 9.2.1, 9.1.4, 9.3. schedule1(ii) and 1(i) IPPC license PO-175-01 To comply with condition 4.4.6 Operational control ISO 14001:2004 | | | | |
| | EMP 01 | Monthly/quarterly surface water monitoring | On-going | On-going | AMD | DERC 45 |
| | EMP 02 | Waste water effluent inspection | On-going | On-going | AMD | Records |
| | EMP 03 | Complete groundwater analysis | Mar -09 | pending | AMD/Martina | Report |
| | EMP 04 | Equipment calibration | On-going | On-going | AMD/J Day | Record |
| | EMP 05 | Bund Integrity testing | May 09 | Pending | AMD/Charlie Coakley | Report |
| Energy conservation | | Reduce energy usage by 5% in 2009 over 2008 figures per 1000 pigs | | | | |
| | EMP 10 | Install occupancy detectors | On-going | On-going | Supervisors AMD/MB | Visual |
| | EMP 12 | Insulate heat exchangers | May- 09 | pending | Supervisors AMD/MB | Records |
| Waste Management | | To comply with condition 2.6 and schedule 2(iii) waste analysis IPPC license PO-175-01 To comply with condition 4.4.2 Competence training and awareness ISO 14001;2004 | | | | |
| | EMP 09 | Review of waste contractors | Mar 09 | On-going | AMD/Joanne Day | Documented questionnaire/ document change note |
| | EMP 06 | Waste sludge analysis | June 09/Dec 09 | Pending | AMD/Joanne Day/Ray Hayes | Report |

DAWN PORK AND BACON ENVIRONMENTAL OBJECTIVES AND TARGETS 2009

Issued by: Anne-Marie Danaher

DATE: 12.01.09

Approved by Joanne Day

DATE: 12.01.09

REV: 01

REF: DERC 17

PAGE 2 OF 2

| OBJECTIVE | EMP | Target | Completion date | Status | Responsibility | Indicator |
|--|------------|--|------------------------|---------------|-----------------------|---|
| Odour Management | | Implement control measures for odour management | | | | |
| | EMP 07 | Daily odour audit | ongoing | ongoing | AMD/J. Day | Daily Reports |
| Reduce contribution to global warming and help achieve Ireland GHG emission reduction. | | To comply with condition 5.2 of IPPC License PO 175-01 and to inform haulage companies (indirect aspect) to be environmental aware. To comply with condition 4.4.6 Operational control ISO 14001:2004 | | | | |
| | EMP 9 | Review of waste contractors includes the transport they use | Mar 09 | On-going | AMD/Joanne Day | Documented questionnaire/ document change note |
| | EMP11 | Haulage company transport review | June 09 | Pending | AMD/J. Day | Documented report |
| | EMP 08 | Boiler efficiency testing | June 09 | Pending | AMD/MB | Report |
| Create Environmental awareness | | To comply with condition 2.6 IPPC license Po-175-01 To comply with condition 4.4.2 Competence training and awareness ISO 14001;2004 | | | | |
| | EMP 13 | Train employees and contractors on procedures | June 09 | pending | AMD/Joanne Day | DERC 31 environment department training matrix. |

Dawn Pork and Bacon

EMP

2008 and 2009

| | |
|----------------------------------|---------------|
| ISSUED BY: Anne-Marie Danaher | DATE: 2008 |
| APPROVED BY: Joanne Day | DATE: 2008 |

| |
|-------------|
| REF: EMP 05 |
| REV 00 |
| PAGE 1 of 1 |

SUBJECT: EMP 05 ON-SITE ENERGY AUDIT (Project Method)

PURPOSE

- .1 The purpose of this procedure is to establish a baseline for energy consumption at Dawn Pork and Bacon and to use this baseline to improve energy usage at Dawn Pork and Bacon.
- .2 To implement and achieve Dawn Pork and Bacon Environmental Objectives and Targets 2008 and to manage our significant environmental aspects.

2.0 SCOPE

- 2.1 This project applies to;
 - 2.1.1 Production areas of the factory
 - 2.1.2 Chills and cold storage areas
 - 2.1.3 Plant room

3.0 RESPONSIBILITIES

- 3.1 The Environmental Manager has overall responsibility for the co-ordination of this project with the support of the Maintenance Manager and Environmental Technician.

4.0 PROJECT METHOD

- 4.1 Following agreement with the Environmental Manager an external consultant will come on-site and conduct an energy audit.
- 4.2 The Environmental Technician must be available to assist the external consultant on day of survey, if required.
- 4.3 All correspondents with external consultant must be discussed with the Environmental Manager.
- 4.4 A copy of the audit is retained by the Environmental Manager.
- 4.5 The audit must be submitted to the EPA.

5.0 REFERENCES

- 5.1 ISO 14001:2004 Condition 4.4.6 Operational control

6.0 RECORDS

- 6.1 Audit report

7.0 TIMEFRAME

- 7.1 March 2008

ISSUED BY: DATE:
Anne-Marie Danaher 2008

APPROVED BY: DATE:
Joanne Day 2008

REF: EMP 09

REV 00

PAGE 1 of 1

SUBJECT: EMP 09 EMS Procedure Review (Project Method)

1.0 PURPOSE

To update Dawn Pork and Bacon EMS inline with ISO 14001:2004 requirements.

To allow employees to be trained in accordance with documented procedures.

To manage Dawn Pork and Bacon significant environmental aspects and to achieve Dawn Pork and Bacon Objectives and Targets 2008.

2.0 SCOPE

2.1 This procedure applies to all EMS Procedures at Dawn Pork and Bacon.

3.0 RESPONSIBILITIES

3.1 The Environmental Manager has the responsibility to ensure overall implementation of this project.

3.2 The Environmental Technician has responsibility of day-to-day review of procedures.

4.0 DEFINITIONS

4.1 N/A

5.0 PROJECT METHOD

5.1 Initial review of the procedures will take place by the Environmental Technician.

5.2 In line with ISO 14001:2004 a definitions section will be added to each procedure.

5.3 ISO 14001:2004 reference, responsibility and relevant records section must be added.

5.4 The revision date/number changed and procedure signed/approved by Environmental Manager.

5.5 All procedures new and existing will be entered into a procedure database that is maintained by the Environmental Technician.

5.6 Procedures shall be reviewed by Environmental Technician on an annual basis, if required change/reviews will take place more regular.

5.7 Old revisions of a procedure shall be marked as obsolete and kept in the document change folder with a document change note.

5.8 It is the responsibility of the Environmental Technician to ensure that only the latest revision of each procedure is in circulation.

5.9 Correct DESP reference must be ensured.

6.0 REFERENCES

6.1 14001:2004 Condition 4.4.6 Operational control

6.2 Dawn Pork and Bacon Register of Environmental Aspects and Impacts DERC 04

6.3 Dawn Pork and Bacon Objectives and Targets DERC 17

6.4 IPPC Licence PO 175-01 Condition 2.4

7.0 RECORDS

7.1 Dawn Pork and Bacon EMS database

8.0 TIMEFRAME

8.1 Dawn Pork and Bacon procedures shall have initial baseline review complete by end December 2008. This will ensure all procedure conform to the ISO 14001:2004 standard.

ISSUED BY: DATE:
Anne-Marie Danaher 2008

APPROVED BY: DATE:
Joanne Day 2008

REF: EMP 10

REV 03

PAGE 1 of 2

SUBJECT: EMP 10 Noise Monitoring Survey (project method)

1.0 PURPOSE

The purpose of this project is;

- 1.1 To ensure that a review of noise sources is carried out in accordance with Condition 8.3 of IPPC Licence P0175-01.
- 1.2 To achieve Dawn Pork and Bacon Environmental Objective and Target on noise reduction for 2008.

2.0 SCOPE

2.1 This procedure applies to the listed existing noise sources and in the future any new noise sources identified as a result of complaints, installations of new equipment etc.

- 2.1.1 N1 Aerator holding tank
- 2.1.2 N2 Aerator No 1.
- 2.1.3 N3 Aerator No 2.
- 2.1.4 N4 Standby Generator
- 2.1.5 N5 Plant Room Louvre
- 2.1.6 N6 Cooling tower

2.2 Noise is measured at the following locations;

- 2.2.1 Southern Boundary
- 2.2.2 South Eastern Boundary
- 2.2.3 Northern Boundary

2.3 Noise sensitive locations identified through complaints.

3.0 RESPONSIBILITIES

- 3.1 Environmental Manager must arrange for external consultant to come on-site and conduct noise survey.
- 3.2 The Environmental Technician must be available to assist the external consultant on day of survey, if required.
- 3.3 All correspondents with external consultant must be discussed with the Environmental Manager.
- 3.4 A copy of the survey is retained by the Environmental Manager.

| | | |
|----------------------------------|---------------|-----------------------|
| ISSUED BY: Anne-Marie Danaher | DATE: 2008 | REF: EMP 10 |
| APPROVED BY: Joanne Dav | DATE: 2008 | REV 03 PAGE 2 of 2 |

SUBJECT: EMP 10 Noise Monitoring Survey (project method)

4.0 Method to complete project and achieve environmental objective

- 4.1 A programme for the noise survey is prepared and submitted to the EPA for approval.
- 4.2 The survey of noise sources and ambient noise monitoring is completed by an external consultant.
- 4.3 The following limits apply to at the site boundaries; Daytime: 55dB(A) and night-time: 45dB (A).
- 4.4 Non-conformances to site boundary limits are identified in the survey, taking into account background noise levels.
- 4.5 Non-conformances are recorded on a corrective action record form.
- 4.6 If non-conformances are attributed to an operation or piece of equipment on site, corrective action is taken. Investigations are conducted into the cause of the problem and measures are taken to prevent re-occurrence.

5.0 REFERENCES

- 5.1 IPPC Licence PO 175-01 condition 8.3
- 5.2 ISO 14001 Operation control condition 4.4.6
- 5.3 Dawn Pork and Bacon Objectives and Targets 2008 DERC 17
- 5.4 Dawn Pork and Bacon Register of Environmental Aspects and Impacts DERC 04

6.0 RECORDS

- 6.1 DERC 33 Non-conformance and corrective action form.
- 6.2 DERC 01 Complaints/near misses/Incidents
- 6.3 DERC 20 Communications register

7.0 Timeframe

- 7.1 To be complete by May 2008

ISSUED BY: DATE:
Anne-Marie Danaher 26.01.09

APPROVED BY: DATE:
Joanne Day 26.01.09

REF; EMP 01

REV: 02

PAGE 1 OF 1

IPPC Licence Reg. No. PO 175-01

**SUBJECT: EMP 01 DAWN PORK AND BACON SURFACE WATER DISCHARGE
MONITORING (Project method)**

1.0 PURPOSE:

To monitor the quality of the surface water in accordance with condition 9.1.4 of the IPPC licence.

2.0 SCOPE

This procedure applies to emission point reference numbers EW-3.

3.0 RESPONSIBILITY

3.1 Environmental Technician

3.1.1 Collect samples on monthly basis to be test internally according to IPPC Licence Po 175-01.

3.1.2 Collect samples quarterly to be tested externally for oils, fats and grease.

3.1.3 Verify surface water inspection record.

3.1.4 Report monitoring results to Environmental Manager

3.2 WWTP Operator

3.2.1 Daily inspection of surface water monitoring point

3.3 Environmental Manager

3.3.1 Implement corrective/preventative action if results are out of spec.

4.0 DEFINITIONS

n/a

5.0 Project Method

5.1 The Environmental Technician will ensure that samples of surface water from the specified point are collected.

5.2 Samples of surface water are analysed internally or submitted for analysis to a nominated external laboratory.

5.3 One litre samples are sent quarterly for external analysis.

5.4 Conductivity is monitored continuously

5.5 COD and ph are monitored monthly.

5.6 Total ammonia, suspended solids, chloride are monitored internally quarterly.

5.7 Visual inspection is also carried out on a daily basis.

5.8 All results are included in the AER/biannual reports sent to EPA

6.0 REFERENCES

6.1 IPPC Licence P0175-01 Schedule 3(i)

6.2 DERC 17 Dawn Pork and Bacon Environmental Objectives and Targets

6.3 DERC 04 Dawn Pork and Bacon Register of Environmental aspects

6.4 ISO 14001:2004 Condition 4.4.6 Operational Control

7.0 RECORDS

7.1 Surface water monitoring record DERC 29

7.2 DERC 31 Training Matrix

7.3 DERC 45 Surface water monitoring results

8.0 TIMEFRAME

8.1 Ongoing 2009

ISSUED BY: DATE:
Anne-Marie Danaher 21.01.09

APPROVED BY: DATE:
Joanne Day 21.01.09

REF: EMP 02

REV: 02

PAGE: 1 OF 4

SUBJECT: DAWN PORK AND BACON WASTE WATER MONITORING (project method)

1.0 PURPOSE

The purpose of this procedure is to;

- 1.1 Monitor and continually improve the quality of treated wastewater discharges from the on-site effluent treatment plant.

2.0 SCOPE

- 2.1 This procedure applies to collection, analytical results interpretation and communication of effluent from emission point EW1, located at discharge point for the clarifier in the WWTP.

3.0 RESPONSIBILITY

3.1 Environmental Manager

- 3.1.1 The Environmental Manager has the responsibility to ensure that this procedure is adhered to.
- 3.1.2 The Environmental Manager has the responsibility to notify the EPA of any non-conformance. The notification must include, cause for nonconformance and corrective/preventative action..

3.2 Effluent Plant Operative

- 3.2.1 The WWTP operative has the responsibility to ensure samples are collected according to this procedure.

3.3 Environmental Technician

- 3.3.1 The Environmental Technician has the responsibility to ensure samples are tested according to IPPC licence PO175-01 and Dawn Pork and Bacon Environmental Laboratory Manual.
- 3.3.2 The Environmental technician must also ensure results are interrupted and communicated in an accurate and timely manner.

4.0 DEFINITIONS

4.1 **Continual Improvement** refers to an ongoing process of performance enhancement. In the context of this environmental standard, it means that you need to enhance your organization's overall environmental performance by enhancing its environmental management system and by improving its ability to manage the environmental aspects of its activities, products, and services. Continual improvements can be achieved by carrying out internal audits, performing management reviews analyzing data, and implementing corrective and preventive actions

4.2 **Documented Procedure** A documented procedure describes and controls a logically distinct process or activity, including the associated inputs and outputs.

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Anne-Marie Danaher 21.01.09

APPROVED BY: DATE:
Joanne Day 21.01.09

REF: EMP 02

REV: 02

PAGE: 2 OF 4

SUBJECT: DAWN PORK AND BACON WASTE WATER MONITORING (project method)

4.3 **EMS Environmental Management System** a management system is a network of interrelated elements. Elements include responsibilities, authorities, relationships, activities, functions, processes, practices, procedures, and resources. A management system uses these elements to establish policies and objectives and to develop ways of applying these policies and achieving these objectives

4.4 **Non-Conformance:** Failure to comply with a requirement of Dawn Pork and Bacon EMS and/or IPPC Licence PO 175-01.

4.5 **Record** is a document that contains objective evidence which shows how well activities are being performed or what kind of results are being achieved. It always documents what has happened in the past.

4.6 **WWTP** Waste Water Treatment Plant

5.0 Project Method

5.1 Sample collection

5.1.1 Samples are collected by the WWTP operator each morning at 8:30am.

5.1.2 Samples are taken from aeration basin 1, aeration basin 2, and balance tank. Composite samples are taken of influent from Dawn Pork and Bacon and Dawn Meats.

5.1.3 Before samples are collected the collection container must be rinsed thoroughly with the sample it is going to contain.

5.1.4 Once samples have been taken the sampling containers from the composite sampler should be washed, to ensure no residue is left in the sampling container.

5.1.5 Split sample should be collected in one large container, homogenized and then split into smaller containers..

5.1.6 Homogeneous samples are really important, so mixing the contents of the sampling containers from the composite sampler before taking final sample to lab is advised

5.2 Sample analysis

5.2.1 Samples of treated wastewater will be submitted for analysis to a nominated external laboratory. The frequency of testing for specific analytical parameters are (using standard methods);

| <u>Frequency</u> | <u>Parameter</u> |
|-------------------------|---|
| Continuous | pH, Temperature, Flow |
| Daily | COD, Suspended solids, Total Ammonia (as N) |
| Weekly | BOD, Nitrates (as N), Total Phosphorous (as P), Detergents |
| Monthly | Oils, fats and Grease |

ISSUED BY: Anne-Marie Danaher
DATE: 21.01.09

ER 2008

IPPC Licence Reg. No. PO 175-01

APPROVED BY: Joanne Day
DATE: 21.01.09

REF: EMP 02
REV: 02
PAGE: 3 OF 4

SUBJECT: DAWN PORK AND BACON WASTE WATER MONITORING (project method)

- 5.2.1 Samples will be analyzed by external labs for parametric values for Biochemical Oxygen Demand (BOD), Detergents (DET) and Oils, Fats and Grease.
- 5.2.2 All analytical monitoring result must be signed and dated by the analyst.
- 5.2.3 The procedures used by external laboratories will be reviewed and kept on file at the Dawn Pork and Bacon site.
- 5.2.4 In-house samples will be analyzed according to in-house procedures and IPPC licence PO 175-01 requirements.

5.3 Interpretation/Communication of analytical results

- 5.3.1 The Environmental Manger will review the analytical results on a weekly basis.
- 5.3.2 If there are any results that exceed of ELV the environmental technician will alert the Environmental Manager immediately. a non-conformance/corrective action form will be filled out

6.0 REFERENCES

- 6.1 Dawn Pork and Bacon Environmental Management Programme, project number 22 and Dawn Pork and Bacon Objectives and targets Objective number 17
- 6.2 ISO 14001:2004 condition 4.4.6 Operational control
- 6.3 Dawn Pork and Bacon IPPC Licence PO175-01 condition 10 Monitoring and Schedule 1 (i) Emission to Water, Schedule 1(ii) effluent treatment control, Schedule 1(iii) Monitoring of emissions to water.
- 6.4 IPPC licence PO 175-01 condition 4 notification
- 6.5 Dawn Pork and Bacon site Environmental Procedure DESP 04 Notification of Environmental Incidents.
- 6.6 Local Government (Water Pollution) Act, 1977 and Local Government (Water Pollution) (Amendment) Act, 1990

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Anne-Marie Danaher 21.01.09

APPROVED BY: DATE:
Joanne Day 21.01.09

REF: EMP 02

REV: 02

PAGE: 4 OF 4

SUBJECT: DAWN PORK AND BACON WASTE WATER MONITORING (project method)

- 6.7 Local Government (Water Pollution) Regulations, 1978
- 6.8 Local Government (Water Pollution) Regulations 1983
- 6.9 Local Government (Water Pollution) Regulations, 1992
- 6.10 Water Quality (Dangerous Substances) Regulations 2001
- 6.11 Local Government (Water Pollution) (Amendment) Regulations, 1996
- 6.12 The Local Government (Water Pollution) (Amendment) Regulations, 1999
- 6.13 Local Government (Water Pollution) (Fees) Regulations 2001
- 6.14 Water Services Act 2007
- 6.15 European Communities (Water Policy) Regulations 2003
- 6.16 Water Policy Regulations (Amendment) Regulations 2004
- 6.17 Waste Water Discharge (Authorisation) Regulations 2007
- 6.18 European Communities (Quality of bathing waters) Regulations, 1992-1994
- 6.19 European Communities Quality of Bathing waters Regulations, 1996-1998
- 6.20 Local Government (Water Pollution) (Control of Cadmium Discharges) Regulations,
1985
- 6.21 Water Quality (Dangerous Substances) Regulations 2001
- 6.22 Fisheries Acts, 1959-1997:
- 6.23 European communities (Good Agricultural Practice for Protection of Waters)
(Amendment) Regulations 2006

7.0 RECORDS

- 7.1 DERC 05 Daily effluent plant report
- 7.2 DERC33 Environmental non-compliance/corrective action
- 7.3 DERC 29 Surface water inspection monitoring
- 7.4 DERC 45 Surface water discharge
- 7.5 DERC 57 Dawn Pork and Bacon final effluent emission limit
- 7.6 DERC 61 Surface water discharge frequency monitoring
- 7.7 DERC69 Frequency matrix for environmental analysis
- 7.8 DERC 31 Environmental Department Training Matrix.

8.0 TIMEFRAME

- 8.1 Ongoing 2009

ISSUED BY: DATE:
Anne-Marie Danaher 12.01.09

REF: EMP 03

REV 02

APPROVED BY: DATE:
Joanne Dav 12.01.09

PAGE 1 OF 1

SUBJECT: EMP 03 GROUND WATER QUALITY MONITORING (Project method)

1.0 PURPOSE

The purpose of this procedure is to monitor groundwater resources over time to determine the impact, if any, of on-site activities on its overall quality.

To maintain and continually improve the analysis and quality of ground water on site.

To implement and achieve Dawn Pork and Bacon Environmental Objectives and Targets.

2.0 SCOPE

2.1 The groundwater-monitoring programme applies to the borehole on site.

3.0 RESPONSIBILITY

3.1 The Environmental Manager has overall responsibility for the co-ordination of this project.

4.0 DEFINITIONS

4.1 N/A

5.0 PROJECT SUMMARY

5.1 The borehole, already in existence in the site is to be used as a monitoring borehole.

5.2 Samples of groundwater are to be collected from the borehole in March of each year.

5.3 Samples will be submitted for chemical analysis for a range of parameters.

5.4 The report will be submitted to the EPA as part of AER.

6.0 REFERENCES

6.1 ISO 14001:2004 Condition 4.4.6 Operational Control:

6.2 External Lab report

7.0 TIMEFRAME

7.1 Annually in March

ISSUED BY: DATE:
Anne-Marie Danaher 18.02.09

APPROVED BY: DATE:
Joanne Day 18.02.09

REF: EMP 04

REV 01

PAGE 1 of 1

SUBJECT: EMP 04 CALIBRATION OF ON-SITE EQUIPMENT (Project Method)

1.0 PURPOSE

- 1.1 The purpose of this procedure is to continually optimise the operation of equipment at the Dawn Pork and Bacon site.
- 1.2 To implement and achieve Dawn Pork and Bacon Environmental Objectives and Targets 2008

2.0 SCOPE

- 2.1 This project applies to;
 - 2.1.1 Effluent plant equipment
 - 2.1.1.1 Surface water conductivity probe at EW 3
 - 2.1.1.2 pH Probe in the Balance Tank
 - 2.1.1.3 Chart recorder in the Plant room (WWTP)
 - 2.1.1.4 pH / Temperature probe at EW1
 - 2.1.1.5 Flow meter at EW 1
 - 2.1.1.6 DO meter in Aeration tank 1 and 2
 - 2.1.2 Lab equipment(environmental lab)
 - 2.1.2.1 Oven
 - 2.1.2.2 Scales
 - 2.1.2.3 Spectrophotometer
 - 2.1.2.4 Handheld DO probe
 - 2.1.2.5 Conductivity probe
 - 2.1.2.6 pH probe.

3.0 RESPONSIBILITIES

- 3.1 The Environmental Manager has overall responsibility for the co-ordination of this project with the support of the Maintenance Manager and Environmental Technician.

4.0 PROJECT METHOD

- 4.1 On site effluent plant equipment is calibrated every three months in-house by the Environmental Technician.
- 4.2 . On site effluent plant equipment is calibrated annually by external consultants.
- 4.3 The Environmental Technician must arrange for external consultant to come on-site following Environmental Manager approval.
- 4.4 Annual calibration of lab equipment is organised by the Environmental Technician following Environmental Manager approval.

5.0 REFERENCES

- 5.1 ISO 14001:2004 Condition 4.4.6 Operational control
- 5.2 IPPC Licence PO 175-01 Condition 5.2

6.0 RECORDS

- 6.1 Boiler Efficiency report

7.0 TIMEFRAME

- 7.1 June 2008

ISSUED BY: DATE:
Anne-Marie Danaher 18.02.09

APPROVED BY: DATE:
Joanne Day 18.02.09

REF: EMP 05

REV 00

PAGE 1 of 1

SUBJECT: EMP 05 BUND AND UNDERGROUND PIPELINE/TANK INTERGRITY (Project Method)

1.0 PURPOSE

To ensure the protection of groundwater and surface water supplies by verifying bund and underground pipeline/tanks integrity.

To implement and achieve Dawn Pork and Bacon Environmental Objectives and Targets.

2.0 SCOPE

2.1 This procedure applies to all bunds and underground pipelines/tanks on the Dawn Pork and Bacon site.

3.0 RESPONSIBILITIES

3.1 The Environmental Manager has the responsibility to liaise with relative consultants and arrange testing on-site.

3.2 The Environmental Manager must retain the inspection report so it is available for viewing at all times by interested parties.

4.0 DEFINITIONS

4.1 Interested parties: The EPA and Local authorities

5.0 PROCEDURE

5.1 The Environmental Manager will organise for external Environmental consultants to come on-site in May 2009 and conduct a bund and underground pipeline/tank integrity test.

5.2 The report for the testing conducted will be reviewed by the Maintenance Manager and Environmental Manager.

5.3 The report must be submitted as part of the 2009 AER.

6.0 REFERENCES

6.1 ISO 14001:2004 Condition 4.4.6 Operational control

6.2 IPPC Licence Po 175-01 Condition 9.3

7.0 RECORDS

7.1 Bund and underground pipeline/tank integrity inspection report 2009

ISSUED BY: DATE:
Anne-Marie Danaher 18.02.09

APPROVED BY: DATE:
Joanne Day 18.02.09

REF: EMP 06

REV: 03

PAGE 1 OF 1

SUBJECT: EMP 06 WASTE SLUDGE ANALYSIS (Project Method)

1.0 PURPOSE

1.1 The purpose of this procedure is to ensure that the waste sludge is analysed in accordance with condition 7.5.2 of IPPC Licence P0175-01.

1.2 To achieve Dawn Pork and Bacon Environmental Objectives and Targets

2.0 SCOPE:

2.1 This procedure applies to the sludge generated from the WWTP process.

3.0 RESPONSIBILITY

3.1 It is the responsibility of the Environmental Technician to ensure this procedure is carried out.

4.0 DEFINITIONS

4.1 N/A

5.0 PROCEDURE

5.1 A composite sample of sludge is collected on a bi-annual basis. An analysis of the following parameters is carried out by an external contract laboratory using standard methods;

5.1.1 % Dry matter

5.1.2 Total N

5.1.3 Total P

5.1.4 Total K

5.2 The external Laboratory must be INAB accredited if possible.

5.3 The results of the analysis are reported to the EPA in the AER.

5.4 Results are filed in the organic waste register.

6.0 REFERENCES:

6.1 External Laboratory reports for sludge analysis.

6.2 IPPC licence PO 175-01 Schedule 2(iii)

7.0 RECORDS:

7.1 Organic waste register DERC 19

7.2 Dawn Pork and Bacon Objectives and Targets DERC 17

7.3 Dawn Pork and Bacon Register of environmental aspects and impacts

8.0 TIMEFRAME

8.1 June and December annually

ISSUED BY: DATE:
Anne-Marie Danaher 21.01.09

APPROVED BY: DATE:
Joanne Day 21.01.09

REF: EMP 07

REV: 02

PAGE: 1 OF 2

SUBJECT: EMP 07 ODOUR SURVEY/AUDIT (Project method)

1.0 PURPOSE

- 1.1 The purpose of this procedure is to ensure that an appropriate daily odour survey is conducted in the event of any odour complaints or odour causing a nuisance beyond the site boundary or at sensitive locations, and
- 1.2 To ensure that environmental records are used to initiate corrective action.
- 1.3 To manage Dawn Pork and Bacon Significant Environmental Aspects and Impacts and to achieve environmental Objectives and Targets for 2008.

2.0 SCOPE

- 2.1 This procedure covers specific areas around the factory.
- 2.2 This procedure applies as a result of an odour identified through a complaint or to demonstrate compliance.

3.0 RESPONSIBILITY

- 3.1 It is the responsibility of the Environmental Manager to ensure;
 - 3.1.1 An investigator is identified to conduct the odour survey.
 - 3.1.2 Action to mitigate any (actual or potential) odour is undertaken.
 - 3.1.3 Corrective and preventative action is effective.
 - 3.1.4 Results of actions are communicated to all personnel involved.
- 3.2 The investigator is responsible for;
 - 3.2.1 Undertaking the odour survey as outlined in the following procedure.

4.0 DEFINITIONS

- 4.1 N/A

5.0 Project Method

5.1 INVESTIGATOR

- 5.1.1 4.1 Where possible the person investigating the odour complaint or conducting the survey should;
- 5.1.2 Avoid strong food or drinks for at least half an hour before undertaking the survey.
- 5.1.3 Colds, sinusitis or sore throat can affect the sense of smell.
- 5.1.4 The health and safety of the individual undertaking the assessment should not be compromised. Containers or vents should never be sniffed where there is any possibility of them containing or having contained substances which may be harmful or if the content is unknown.

5.2 LOCATION

- 5.2.1 The survey will include a walk around the perimeter of the site.
- 5.2.2 A number of factors will determine the choice of location, including;
 - 5.2.2.1 Complaints received
 - 5.2.2.2 Proximity of housing to the installation

ISSUED BY: DATE:
Anne-Marie Danaher 21.01.09

APPROVED BY: DATE:
Joanne Day 21.01.09

REF: EMP 07

REV: 02

PAGE: 2 OF 2

SUBJECT: EMP 07 ODOUR SURVEY/AUDIT (Project method)

5.2.3 When completing the odour audit the following ranking is used.

- 0 – No detectable odour
- 1 = Slight odour detected within small area
- 2 = Pungent odour detectable over large area

5.2.4 To make an accurate observation, the observation period should be over a standard time, generally 5 minutes at each location. During this time the extent and intensity can be evaluated.

5.2.5 If an odour is detected, depending on the extent the following must be completed;

5.2.6 Identify immediately the source of the odour.

5.2.7 Put measures in place to minimise/eliminate the odour e.g. addition of odour block

6.0 REFERENCES:

5.1 ISO 14001:2004 Condition 4.4.6 Operational control

5.2 IPPC Licence PO 175-01 Condition

6.0 RECORDS:

6.1 Odour inspection report DERC 81

6.2 Wind direction report DERC 83

7.0 TIMEFRAME

7.1 On-going throughout the year

| | |
|----------------------------------|-------------------|
| ISSUED BY: Anne-Marie Danaher | DATE: 18.02.09 |
| APPROVED BY: Joanne Day | DATE: 18.02.09 |

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|-------------|
| REF: EMP 08 |
| REV 02 |
| PAGE 1 of 1 |

SUBJECT: EMP 08 ANNUAL BOILER EFFICIENCY TESTING PROJECT METHOD

1.0 PURPOSE

- 1.1 The purpose of this procedure is to continually improve the atmospheric emissions from boilers at the Dawn Pork and Bacon site.
- 1.2 To implement and achieve Dawn Pork and Bacon Environmental Objectives and Targets.

2.0 SCOPE

- 2.1 This project applies to the two boilers on – site.

3.0 RESPONSIBILITIES

- 7.2 The Environmental Manager has overall responsibility for the co-ordination of this project with the support of the Maintenance Manager.

4.0 DEFINITIONS

- 4.1 N/A

5.0 PROJECT METHOD

- 5.1 A programme of boiler efficiency testing is carried out both internally through regular maintenance and also by contracting to a heating service specialist.
- 5.2 After testing, the boilers are correctly balanced (air intake adjusted etc.) if required, to ensure that it is working to the optimum efficiency level.
- 5.3 All test equipment is traceable to National Standards.

6.0 REFERENCES

- 6.1 ISO 14001:2004 Condition 4.4.6 Operational control
- 6.2 IPPC Licence PO 175-01 Condition 5.2

7.0 RECORDS

- 7.1 Boiler Efficiency report

8.0 TIMEFRAME

- 8.1 Annually in June

ISSUED BY: DATE:
Anne-Marie Danaher 21.01.09

APPROVED BY: DATE:
Joanne Day 21.01.09

REF: EMP 09
REV 00
PAGE 1 of 1

SUBJECT: EMP 09 Waste contractor questionnaire review (Project Method)

1.0 PURPOSE:

- 1.1 To achieve Dawn Pork and Bacon Environmental objectives and targets for 2009.
- 1.2 To inform waste contractors of Dawn Pork and Bacon's commitment to environmental protection
- 1.3 To identify the waste contractors that are not environmentally conscious in their daily operations

2.0 SCOPE

- 2.1 This procedure applies to all waste contractor services utilised by Dawn Pork and Bacon, including Animal by-product waste contractors

3.0 RESPONSIBILITY

3.1 Environmental Technician

- 3.1.1 Maintains a record of EPA and DAFF approved waste contractors
- 3.1.2 Review waste contractor practices.

3.2 Environmental Manager

- 3.2.1 Maintains communications with waste contractors should any issues arise. .

4.0 Project Method

- 4.1 Review the waste contractor questionnaire.
- 4.2 Send the waste contractor questionnaire to all waste contractors used by Dawn Pork and Bacon.
- 4.3 Review the results/comments of the completed waste contractor questionnaire.
- 4.4 Communicate result/comments to Environmental Manager
- 4.5 Revise the Approved suppliers database as necessary.

5.0 REFERENCES

- 5.1 IPPC Licence P0175-01 Schedule 2 and condition 7
- 5.2 DERC 17 Dawn Pork and Bacon Environmental Objectives and Targets
- 5.3 DERC 04 Dawn Pork and Bacon Register of Environmental aspects
- 5.4 ISO 14001:2004 Condition 4.4.6 Operational Control

6.0 RECORDS

- 6.1 On-site waste records

7.0 TIMEFRAME

- 7.1 March 2009

| | |
|----------------------------------|-------------------|
| ISSUED BY: Anne-Marie Danaher | DATE: 18.02.09 |
| APPROVED BY: Joanne Day | DATE: 18.02.09 |

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| REF: EMP 10 |
| REV 00 |
| PAGE 1 OF 1 |

SUBJECT: EMP 10 INSTALATION OF OCCUPANCY DETECTORS

1.0 PURPOSE

- 1.1 The purpose of this procedure is to continually improve the energy efficiency of the lighting system in operation at the Dawn Pork and Bacon site.
- 1.2 To implemant and achieve Dawn Pork and Bacon Environmental Objectives and Targets.

2.0 SCOPE

- 2.1 This procedure applies to all lighting used at Dawn Pork and Bacon.

3.0 RESPONSIBILITIES

- 3.1 The maintenance manager has the responsibility to organising installation.
- 3.2 The environmental manager has the responsibility to assist in preparing for installation and to file/retain records of installation.
- 3.3 Security has responsibility to turn off lights when staff has finished work.

4.0 PROCEDURE

- 4.1 One production has finished each day security turn-off all lights in the factory.
- 4.2 Installation of occupancy detectors in areas such as packing, plant room, cold stores and changing rooms are required to fulfil this EMP and Dawn Pork and Bacon Environmental Objectives and Targets.

5.0 REFERENCES

- 5.1 ISO 14001:2004 Condition 4.4.6 Operational control

6.0 RECORDS

- 6.1 Visual inspection

ISSUED BY: DATE:
Anne-Marie Danaher 21.01.09

APPROVED BY: DATE:
Joanne Day 21.01.09

REF: EMP 11

REV 00

PAGE 1 of 1

SUBJECT: EMP 11 Review of haulage company transport (Project Method)

1.0 PURPOSE:

- 1.1 To achieve Dawn Pork and bacon Environmental objectives and targets for 2009.
- 1.2 To inform contactors of Dawn Pork and Bacon's commitment to environmental protection
- 1.3 To limit the environmental impact from the indirect impact of Dawn Pork and Bacon operations ie haulage of our product

2.0 SCOPE

- 2.1 This procedure applies to Toomey to you and other contractor services utilised by Dawn Pork and Bacon.

3.0 RESPONSIBILITY

- 3.1 Environmental Technician
 - 3.1.1 Review haulage company practices.
- 3.2 Environmental Manager
 - 3.2.1 Review outcome of the project and include in the annual management review.

4.0 Project Method

- 4.1 Design a checklist for the inspection of haulier vehicles when they come on-site.
- 4.2 The checklist will be incorporated into the EMS.
- 4.3 Environmental Technician to conduct an audit of the vehicles on a random basis at least once a month.
- 4.4 Communicate result/comments to Environmental Manager
- 4.5 Environmental Manager to discuss results with senior Management and decide any action required..

5.0 REFERENCES

- 5.1 DERC 17 Dawn Pork and Bacon Environmental Objectives and Targets
- 5.2 DERC 04 Dawn Pork and Bacon Register of Environmental aspects
- 5.3 ISO 14001:2004 Condition 4.4.6 Operational Control

6.0 RECORDS

- 6.1 On-site waste records

7.0 TIMEFRAME

- 7.1 June 2009

ISSUED BY: DATE:
Anne-Marie Danaher 18.02.09

APPROVED BY:
DATE:
Joanne Day 18.02.09

REF: EMP 12

REV 00

PAGE 1 of 1

SUBJECT: EMP 12 INSULATION OF HEAT EXCHANGERS (project Method)

1.0 PURPOSE

- 1.1 The purpose of this procedure is to continually improve the energy efficiency of the hot water heating system in operation at the Dawn Pork and Bacon site.
- 1.2 To implement and achieve Dawn Pork and Bacon Environmental Objectives and Targets.

2.0 SCOPE

- 2.1 This procedure applies to two heat exchangers used at Dawn Pork and Bacon.

3.0 RESPONSIBILITIES

- 3.1 The maintenance manager has the responsibility to organising insulation
- 3.2 The environmental manager has the responsibility to assist in preparing for insulation and to file/retain records of insulation.

4.0 PROCEDURE

- 4.1 Insulation jackets are to be put around the two heat exchangers in the plant room.
- 4.2 The surface temperature of the heat exchangers is 74°C which exceeds the 50°C threshold over which insulation is recommended.

5.0 REFERENCES

- 5.1 ISO 14001:2004 Condition 4.4.6 Operational control
- 5.2 Site energy audit

6.0 RECORDS

- 6.1 Energy consumption log

| | |
|----------------------------------|-------------------|
| ISSUED BY: Anne-Marie Danaher | DATE: 21.01.09 |
| APPROVED BY: Joanne Day | DATE: 21.01.09 |

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| REF: EMP 13 |
| REV 00 |
| PAGE 1 of 1 |

SUBJECT: EMP 13 ENVIRONMENTAL AWARENESS

1.0 PURPOSE

To promote and continually improve the environmental awareness throughout the factory
To implement and achieve Dawn Pork and Bacon Environmental Objectives and Targets.

2.0 SCOPE

2.1 This procedure applies to all production operations on site.

3.0 RESPONSIBILITY

3.1 The Environmental Manager has overall responsibility for the co-ordination of this project.

4.0 PROJECT SUMMARY

4.1 A new environmental induction training programme has been put in place which will be delivered to all new employees at induction.

4.2 Further training will be provided to the effluent plant operative where necessary.

4.3 Monthly environmental information leaflets will be placed on the notice boards to create awareness around the plant.

4.4 Contractors will also be sent the company environmental policy and relevant procedure before they come on-site.

5.0 REFERENCES

5.1 Condition 4.4.2 Competence training and awareness ISO 14001:2004

6.0 TIMEFRAME

6.1 June 09 refresher training annually

APPENDIX 1

PRTR emissions data submitted separately in excel file

APPENDIX 2

Boiler efficiency Monitoring report
Conducted by: GasFix Ireland Ltd.

Date: 19.07.08

| | | | |
|----------------------|--------------------|----------------------|---------------------|
| Burner Make | Riello | Boiler make | Buderus No.2 |
| Model | RS190 | Model | SK 725 |
| Serial Number | 02262000529 | Serial Number | |
| Spec Number | 835 T1 | Input Kw | |
| Fuel | NG 20 | Output Kw | 1600 |
| Output Kw | 2290 | | |

Isolate power supply to appliance

Flue analysis

| | Checked | N/A |
|------------------------|---------|-----|
| Clean burner head | X | |
| Check spark probe | X | |
| Check flame probe | X | |
| Check photo/UV cell | | X |
| Check/change nozzles | | X |
| Clean fan | X | |
| Clean burner body | X | |
| Clean sight glass | | |
| Clean boiler | X | |
| Check for oil leaks | | X |
| Check for gas leaks | X | |
| Check air pressure sw | X | |
| Check gas pressure sw | X | |
| Check for water leaks | | X |
| Check Seals | X | |
| Check flues | X | |
| Test fire burner | X | |
| Check/reset combustion | X | |

| | High | Low |
|------------------------------|--------------|--------------|
| Flue temperature | 190 | 128.9 |
| O2 content % | 3.80 | 7.110 |
| Gross efficiency % | 82.10 | 83.9 |
| Net efficiency % | 90.65 | 92.50 |
| Excess air % | 22.30 | 50.70 |
| CO2 content % | 9.73 | 7.90 |
| CO Content ppm | 5 | 6 |
| Ambient temp | 15.70 | 15.7 |
| Nox | 32.3 | 34.5 |
| Gas inlet pressure Mb | 90 | 90 |
| Burner pressure Mb | 14.5 | 3 |
| Oil pressure bar | | |
| Nozzle Size/Degree | | |
| Smoke No. | | |

Parts used:

| |
|-----------------|
| |
| |
| |
| Remarks: |
| |
| |

Time sheet

| Date | Travel time | Arrive | Depart | Total hrs | Office use |
|------|-------------|--------|--------|-----------|------------|
| | | | | | |

Engineer signature

Client signature

Boiler efficiency Monitoring report
Conducted by: GasFix Ireland Ltd.

Date: 19.07.08

| | | | |
|----------------------|--------------------|----------------------|---------------------|
| Burner Make | Riello | Boiler make | Buderus No.3 |
| Model | RS190 | Model | SK 725 |
| Serial Number | 02340000009 | Serial Number | See below |
| Spec Number | 835 T1 | Input Kw | |
| Fuel | NG 20 | Output Kw | 1600 |
| Output Kw | 2290 | | |

Isolate power supply to appliance

Flue analysis

| | Checked | N/A |
|------------------------|---------|-----|
| Clean burner head | X | |
| Check spark probe | X | |
| Check flame probe | X | |
| Check photo/UV cell | | X |
| Check/change nozzles | | X |
| Clean fan | X | |
| Clean burner body | X | |
| Clean sight glass | | |
| Clean boiler | X | |
| Check for oil leaks | | X |
| Check for gas leaks | X | |
| Check air pressure sw | X | |
| Check gas pressure sw | X | |
| Check for water leaks | | X |
| Check Seals | X | |
| Check flues | X | |
| Test fire burner | X | |
| Check/reset combustion | X | |

| | High | Low |
|-----------------------|-------|-------|
| Flue temperature | 206.4 | 127.5 |
| O2 content % | 3.50 | 6.2 |
| Gross efficiency % | 81.50 | 84.3 |
| Net efficiency % | 89.90 | 92.9 |
| Excess air % | 19.80 | 41.50 |
| CO2 content % | 9.93 | 8.41 |
| CO Content ppm | 8 | 12 |
| Ambient temp | 15.70 | 15.70 |
| Nox | 61.80 | 34.4 |
| Gas inlet pressure Mb | 90 | 90 |
| Burner pressure Mb | 13 | 2.5 |
| Oil pressure bar | | |
| Nozzle Size/Degree | | |
| Smoke No. | | |

Parts used:

| |
|-----------------|
| |
| |
| |
| Remarks: |
| |
| |

Time sheet

| Date | Travel time | Arrive | Depart | Total hrs | Office use |
|------|-------------|--------|--------|-----------|------------|
| | | | | | |

Engineer signature

Client signature

Boiler efficiency Monitoring report
Conducted by: GasFix Ireland Ltd.

Date: 20.09.08

| | | | |
|----------------------|--------------------|----------------------|--------------------|
| Burner Make | Riello | Boiler make | Buderus No. |
| Model | G10 | Model | G 215 |
| Serial Number | 01433030059 | Serial Number | See below |
| Spec Number | 464 T1 | Input Kw | |
| Fuel | Light oil | Output Kw | 85 |
| Output Kw | | | |

Isolate power supply to appliance

Flue analysis

| | Checked | N/A |
|------------------------|---------|-----|
| Clean burner head | | X |
| Check spark probe | X | |
| Check flame probe | | X |
| Check photo/UV cell | X | |
| Check/change nozzles | X | |
| Clean fan | | X |
| Clean burner body | X | |
| Clean sight glass | X | |
| Clean boiler | | X |
| Check for oil leaks | X | |
| Check for gas leaks | | X |
| Check air pressure sw | | X |
| Check gas pressure sw | | X |
| Check for water leaks | | X |
| Check Seals | X | |
| Check flues | X | |
| Test fire burner | X | |
| Check/reset combustion | X | |

| | High | Low |
|------------------------------|----------------|-----|
| Flue temperature | 204.2 | |
| O2 content % | 5.9 | |
| Gross efficiency % | 84.00 | |
| Net efficiency % | 89.30 | |
| Excess air % | 39.40 | |
| CO2 content % | 11.10 | |
| CO Content ppm | 10 | |
| Nox | 17.6 | |
| Draught Mb | 70.3 | |
| Gas inlet pressure Mb | | |
| Oil pressure bar | | |
| Burner pressure Mb | 12.00 | |
| Nozzle Size/Degree | 2.25-60 | |
| Smoke No. | 0 | |

Parts used:

Remarks:

Time sheet

| Date | Travel time | Arrive | Depart | Total hrs | Office use |
|------|-------------|--------|--------|-----------|------------|
|------|-------------|--------|--------|-----------|------------|

Engineer signature

Client signature

APPENDIX 3

Ground water chemical analysis

Microchem 10.03.08

| <u>Test</u> | <u>Result</u> |
|---------------------------------------|----------------------|
| Colour | 10 Hazen |
| Fluoride | 0.2 mg/L |
| Iron (as Fe) | 28.4 ug/L |
| Nitrate (as N) | 7.79 mg/L |
| Odour (APHA 20 th edition) | Odourless |
| Oxidisable Substances EP 2008 | Compiles |
| Sodium (as Na) | 28 mg/L |
| Ammonium NH ₄ – SOP 2.1179 | 0.21 mg/L |
| Chloride SOP 2.1179 | 50 mg/L |
| Nitrite (as N) SOP 2.1179 | ND < 0.02 mg/L |
| pH SOP 2.1025 | 7.15 |
| Sulphate SOP 2.1179 | 38 mg/L |

| <u>Test</u> | <u>Result</u> |
|--|----------------------|
| Aluminium (as Al) Subcontracted Laboratory Method | < 200 ug/L |
| Arsenic Subcontracted Laboratory Method | < 10 ug/L |
| Cadmium Subcontracted Laboratory Method | < 5 ug/L |
| Chromium Subcontracted | < 50 ug/L |
| Copper Subcontracted | < 2.0 ug/L |
| Cyanide (sub) Subcontracted Laboratory Method | < 50 ug/L |
| Lead Subcontracted | < 10 ug/L |
| Manganese (as Mn) Subcontracted | < 50 ug/L |
| Mercury (as Hg) Subcontracted Laboratory Method | < 1.0 ug/L |
| Nickel Subcontracted | < 20 ug/L |
| Organochlorine pesticides Subcontracted Laboratory Method | < 0.10 ug/L |
| Organophosphorus Pesticide residue Subcontracted Laboratory Method | < 0.10 ug/L |
| Polychlorinated biphenyls Subcontracted | < 0.005 ug/L |
| Polycyclicaromatic hydrocarbons Subcontracted Laboratory Method | < 0.10 ug/L |