

Compliance Assessment Report

Report ID:
CAR_NRW0033220

This form will report compliance with your permit as determined by an NRW officer

Site	Volac Felinfach	Permit Ref	BV4177IS		
Operator/Permit holder	Volac International Limited				
Regime	Installations				
Date of assessment	20/07/2016	Time in	10:00	Out	15:00
Assessment type	Audit				
Parts of the permit assessed	1 Management; 2 Operations; 3 Emissions and Monitoring; 4 Information				
Lead officer's name	Cowie, Douglas				
Accompanied by	Jenkins, Nicholas,Gibson, Paul				
Recipient's name/position	Paul Skyme/ Safety and Environment Manager	Date issued	19/04/2018		

Section 1 – Compliance Assessment Summary

This is based on the requirements of the permit under the Environmental Permitting Regulations or the licence under the Water Resources Act 1991 as amended by the Water Act 2003. A detailed explanation is captured in "Compliance Assessment Report Detail" (Section 2) and any actions you may need to take are given in the "Action(s)" (section 4). This summary details where we believe any non-compliance with the permit has occurred, the relevant condition and how the non-compliance has been categorised using our Compliance Classification Scheme (CCS). CCS Scores can be consolidated or suspended where appropriate, to reflect the impact of some non-compliances more accurately. For more details of our CCS scheme, contact your local office.

Permit conditions and compliance summary	CCS Category	Condition(s) breached
A1 - Specified by permit	A	
B1 - Infrastructure - Engineering for prevention and control of emissions	A	
B3 - Infrastructure - Site drainage engineering (clean and foul)	A	
B4 - Infrastructure - Containment of stored materials	A	
B5 - Infrastructure - Plant and equipment	A	
C2 - General Management - Management system and operating procedures	A	
C3 - General Management - Materials acceptance	A	
D2 - Incident Management - Accidents, emergency and incident planning	A	
E2 - Emissions - Land and groundwater	A	
E3 - Emissions - Surface water	A	
G2 - Monitoring and Records, Maintenance and Reporting - Records of activity, site diary/journal/events	A	

KEY: See Section 5 for breach categories, suspended scores will be indicated as such.

A = Assessed or assessed in part (no evidence of non-compliance), **X** = Action only,

O = Ongoing non-compliance, not scored.

Number of breaches recorded	0	Total compliance score (see section 5 for scoring scheme)	0
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If the Number of breaches recorded is greater than zero, please see Section 3 for our proposed enforcement response

Section 2 – Compliance Assessment Report Detail

This section contains a report of our findings and will usually include information on:

- The part(s) of the permit that were assessed (eg. Maintenance, training, combustion plant, etc)
- Where the type of assessment was 'Data Review' details of the report/results triggering the assessment
- Any non-compliances identified
- Any non-compliances with directly applicable legislation
- Details of any multiple non-compliances
- Information on the compliance score accrued inc.
- Details of advice given
- Any other areas of concern
- Any actions requested
- Any examples of good practice
- A reference to photos taken

Site description

Volac International Ltd operates a processing facility at Felinfach, Ceredigion which is capable of producing approximately 55,000 tonnes/year of animal feed and human food ingredients from whey, a by-product of cheese production. The facility is permitted as an installation under Section 6.8 (The Treatment of Animal and Vegetable Matter and Food Industries) of the Environmental Permitting Regulations (EPR). Incoming whey is pasteurised and its components separated and concentrated using membrane technology prior to evaporation in a multi-effect evaporator. Recovered materials are crystallised and/or dried to produce solids which, in the case of animal feeds, are blended with other purchased ingredients to generate finished products.

Associated activities include storage of raw materials and partly processed products in stainless steel silos, product packaging and refrigeration, storage and handling of LNG and heat and steam generation. Volac has invested in a biomass-fired Combined Heat & Power (CHP) unit which was commissioned in March 2016 and now provides the primary source of heat and energy for the facility.

Process effluent is directed to an off-site effluent treatment plant (ETP) jointly operated by a consortium of Volac and a neighbouring business, Sensient Flavors Ltd, under permit EPR/BP3135EB.

Purpose of visit/assessment

This was a planned visit to the Volac facility. We inspected the new biomass CHP plant following its commissioning in early 2016. Various other inspection topics were covered including a discussion about permit variation V008.

The relevant permit conditions are listed under Sections 1.1, 2.1, 2.2, 2.3, 2.4, 2.5, 3.2 and 4.1 of Volac's permit.

Person(s) present

Volac

Paul Skyme

Mike Batt (CHP visit only)

Terry Dewhurst (CHP visit only)

Eugeos Consultants

Chris Foster (V008 discussion only)

NRW

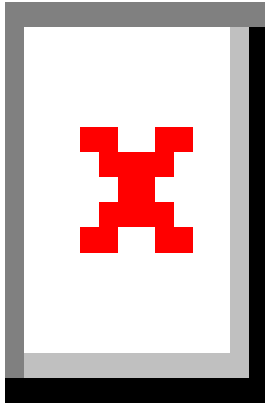
Paul Gibson

Nick Jenkins

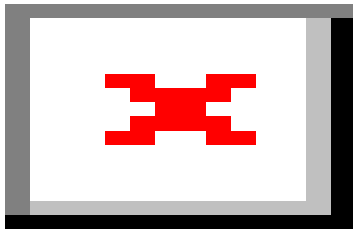
Doug Cowie

Biomass Combined Heat & Power (CHP) plant visit

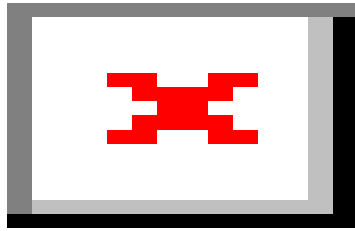
The inspecting officers were shown the new biomass CHP which was online and providing hot water, steam and power to Volac's factory. Some ancillary elements such as site drainage and biomass storage were in the final stages of construction. Below are a series of photographs showing:



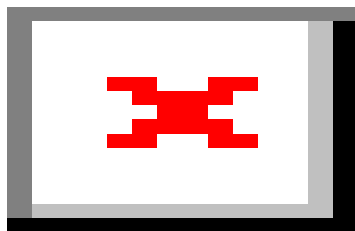
Interior of the main CHP building housing the biomass boiler



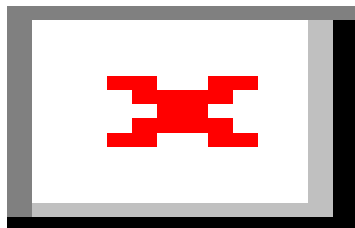
Biomass boiler viewing port



Pipe bridge (linking the CHP with the factory) and main biomass CHP stack



Biomass storage building (under construction)



Turbogenerator house

Biomass fuel is delivered to the plant in the form of round wood (logs), brash and sawmill residue. Timber is weighed and stacked within the yard opposite the chipper unit. The chipper will be enclosed by a customised, soundproofed building. A dry woodchip storage area capable of storing 5 days' worth of fuel is under construction.

Chipped wood is loaded into reception hoppers and then fed into the boiler system via conveyors. Two-stage combustion removes residual moisture from the fuel prior to the main (optimised) burn. A movable grate allows the fuel to pass through the combustion chamber and removes bottom ash at its base.

The combustion chamber has emergency quench capability to allow rapid shutdown in an emergency. Active and passive fire suppression systems are positioned throughout the plant. The

bottom ash conveyor gallery also acts as a sump with the ability to contain firewater.

The CHP plant has three heat exchangers: one water, one thermal oil and one Organic Rankine Cycle (ORC) unit. The combustion chamber heats the working medium within each unit and the heat is then converted into kinetic energy using turbogenerators. ORC technology can be used to recover heat at lower temperatures and pressures compared to steam-driven systems, and also operate well under partial load conditions. The plant also has backup diesel-powered generators.

Exhaust emissions are passed through a bag filter prior to discharge through the main stack. To protect the abatement system, exhaust gas flows which exceed 150°C can be 'blown down' and recirculated back through the plant (to allow cooling) prior to final discharge.

Foul drainage is directed to the main site effluent system which connects to the Consortium-operated ETP. Bottom ash and fly ash is collected in covered skips before being sampled and tested according to an agreed protocol. The ash was being landfilled at the time of inspection, but alternative recycling opportunities may exist depending on the characteristics of each ash. These include use as a fertiliser or as an aggregate ingredient. Volac is encouraged to explore these opportunities further and consult with the regulator if required.

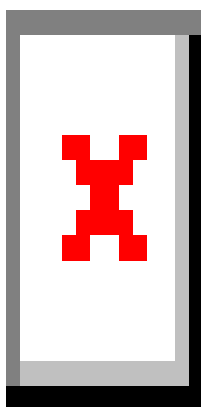
Roughly 6.0MWe of power was being generated at the time of our visit. The transformers, switchgear, motors and control room are all located within the main CHP building. Upgrades were still progressing at the time of inspection with the manufacturer able to remotely link with Volac's systems – saving time and money.

Permit Improvement Item IP16 requires a written report to be submitted to NRW following the completion of CHP commissioning. Volac confirmed that this report was being compiled but requires further technical input from the CHP engineers. NRW awaits submission of the final report.

NRW welcomes the opportunity to view the CHP systems and infrastructure and we were pleased to see that the plant was performing well at this early stage. We look forward to a follow-up visit when all remaining construction has been completed and the boilers and turbines are in reliable and continuous operation.

Effluent Treatment Plant (ETP) bypass valve

The ETP bypass valve was physically inspected during this visit (follow-up from **CAR06059**). The photo below shows the locked valve within its inspection chamber near the effluent system's large buffer (spill) tank.



The valve is kept locked in a closed position. Effluent cannot be diverted to the bypass system unless an authorised Volac member of staff opens the chamber, manually unlocks and then opens the valve.

Since our last inspection, the bypass valve has been added to the list of items on Volac's IFS plant maintenance system.

Site Emergency Plan

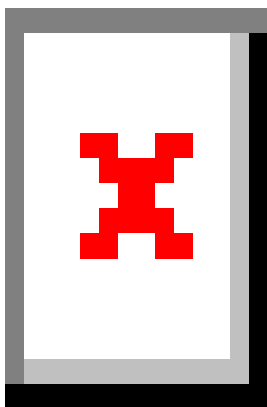
A CHP Fire Plan is being compiled in accordance with the requirements of permit Improvement Item IP17 and the final version will be submitted to NRW. The overarching Site Emergency Plan (currently v3 Aug 2015) will require updating following the completion of this work.

Volac is planning to hold an incident response exercise in October 2016 (date to be confirmed) with Mid & West Wales Fire & Rescue Service. The exercise may focus on the newly-constructed CHP plant. Any key learning points will be incorporated into the updated Site Emergency Plan (v4). NRW will review Site Emergency Plan v4 with Volac as part of a future compliance visit.

Improvement Item IP13

IP13	The Operator shall provide a written report to Natural Resources Wales detailing proposals to ensure protection of land at the installation (and adjacent controlled waters) in the event of any failure of primary containment of silos AL and AM. The report shall contain a timetable for any proposed works deemed necessary to secure BAT.	Report Under Assessment
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Volac submitted a report on 26 June 2016 in response to the requirements of IP13. Silos AL and AM are 115m³ capacity each and hold whey and whey concentrate. A third identical silo (AT) is being constructed at the same location. The silos and the tanker offloading area are shown in the photo below:



Volac's submission confirms the following:

Both silos AL and AM are located on an elevated foundation. The area surrounding both silos has undergone significant improvements with the introduction of a new concrete offloading area which is made up of concrete hard standing, shuttered kerbs and includes a high capacity drain channel. This area can be as seen surrounding the silos on drawing IPPC_09-01. "WPC 50 offloading area". The drainage system comprises of a gulley and underground drainage that will direct any spillage from failure or otherwise of the containment system into the site effluent drainage system. This can be seen on site plan IPPC Rev9-11-047-01.

From the effluent drainage system, any spillage can be collected into the site spill tank, following procedure WI.TE.10 Procedure for Discharging Compliant Effluent, and reported through to the Environmental Management team through the Procedure for Reporting Spillages F.EN.03.

During this inspection we established that:

- The new impermeable concrete (delivery) area and high-volume perimeter drains extend the footprint of the site effluent system around these silos.
- The large effluent buffer (spill) tank situated at the eastern boundary of the installation has sufficient capacity to hold the contents of all three silos in the event of a catastrophic primary containment failure.
- The silos are subject to planned preventative maintenance (recorded on the Volac IFS system) and are fitted with high-level alarms. Non-destructive integrity tests (NDTs) are carried out periodically according to the risk presented by the tank contents and manufacturer's projected lifespan.
- The new delivery area is easier to access and reduces the risk of collision damage (from articulated tanker trucks).
- Volac has considered dedicated bunding (secondary containment) around these silos but believes the site effluent system and buffer (spill) tank provides an equivalent and cost-effective level of environmental protection.

We have assessed the operator's submission in response to IP13 along with the additional details gathered during this inspection. The measures taken by Volac to protect land (and adjacent

controlled waters) in the event of primary containment failure are acceptable to NRW. We consider that the requirements of Improvement Item IP13 have now been met and can be marked as complete.

Permit variation V008

Several queries relating to Volac's permit variation application were discussed. NRW has agreed that a normal variation is appropriate for the desired permit changes.

Some site plans and EMS documents will require updating following installation of the new Genesis feeds dryer and the proposed construction of a larger round wood storage area. A new wood drying unit is planned at the biomass CHP. There will be some modifications to the storage of raw materials e.g. silo changes and additions.

A replacement absorption chiller unit is being installed which will offer increased efficiencies in terms of CHP waste heat use and lower operating temperatures. The new chiller will use more ammonia, but Volac believes the installation will still remain under the lower-tier threshold for the combined storage of substances relevant under the Control Of Major Accident Hazards Regulations (COMAH) 2015. This includes Liquefied Natural Gas (LNG) used at the installation as a secondary fuel source. Volac do not currently store sufficient LNG to require regulation as a lower-tier COMAH site. LNG storage should be managed to minimise the risk of stratification within the storage tank and possible 'roll-over' of stratified fuel. More information about this phenomenon can be found here:

https://giignl.org/sites/default/files/PUBLIC_AREA/Publications/rollover_in_lng_storage_tanks_public_document_low-res.pdf

Whey offloading (raw materials reception) has been addressed within our assessment of IP13 (see above).

Potential noise from the new feeds drier was discussed and Volac confirmed that a background noise survey was being undertaken as part of the application. Volac agreed to provide NRW with a copy of any noise surveys/reports for our comment.

Emissions monitoring for the feeds dryer bag filter is likely to involve periodic monitoring (sampling) rather than Continuous Emissions Monitoring Systems (CEMS). NRW will confirm the requirements as part of the permit variation determination.

The removal of the phosphate emission limit value (ELV) for the sewer discharge at S1 will be considered by NRW as part of the permit variation determination.

Potential use of larch round wood at the biomass CHP

Felled larch from Welsh forests has been identified as a potential source of round wood fuel for Volac's biomass CHP. Larch trees, which are widely grown in the UK for the timber market, are particularly susceptible to infection by *phytophthora ramorum* fungus and large numbers have already been affected.

Since this inspection, guidance has been provided to Volac and Eugeos regarding biosecurity when handling timber potentially infected with *phytophthora ramorum* fungus.

Conclusions and further actions required

NRW appreciates the opportunity to view the newly-commissioned CHP plant and we were pleased to see that the plant was performing well in the early stages of operation. We will return when the plant has been brought fully online and has entered a sustained period of reliable and continuous operation.

The location, operation and maintenance of the ETP bypass valve has been clarified.

A CHP Fire Plan is being compiled in accordance with the requirements of permit Improvement Item IP17 and the final version will be submitted to NRW.

NRW will review Site Emergency Plan v4 with Volac as part of a future compliance visit.

NRW considers that the requirements of Improvement Item IP13 have now been met and can be marked as complete.

Permit variation V008 was discussed and several queries addressed. The inspecting officers have updated the NRW permitting team following this inspection.

Guidance has been provided to Volac and Eugeos regarding biosecurity when handling timber potentially infected with *phytophthora ramorum* fungus.

[ENDS]

EPR Compliance Assessment Report

**Report ID:
CAR_NRW0033220**

This form will report compliance with your permit as determined by an NRW officer

Site	Volac Felinfach	Permit Ref	BV41771S
Operator/Permit holder	Volac International Limited	Date	20/07/2016

Section 3 – Enforcement Response

You must take immediate action to rectify any non-compliance and prevent repetition. Non-compliance with your permit conditions constitutes an offence and can result in criminal prosecutions and/or suspension or revocation of a permit. Please read the detailed assessment in Section 2 and the steps you need to take in Section 4 below.

Section 4 – Action(s)

This section summarises the actions identified during the assessment along with the timescales for when they will need to be completed.

Criteria Ref.	CCS Category	Action required/advised	Due Date
See Section 1 above			

Section 5 – Compliance notes for the Operator

To ensure you correct actual or potential non-compliance we may

- Advise on corrective actions verbally or in writing
- Require you to take specific actions verbally or in writing
- Issue a notice
- Require you to review your procedures or management system
- Change some of the conditions of your permit
- Decide to undertake a full review of your permit

Any breach of a permit condition is an offence and we may take legal action against you

- We will normally provide advice and guidance to assist you to come back into compliance either after an offence is committed or where we consider that an offence is likely to be committed. This is without prejudice to any other enforcement response that we consider may be required.
- Enforcement action can include the issue of a formal caution, prosecution, the service of a notice and/or suspension or revocation of the permit.

See our Enforcement and Civil Sanctions guidance for further information

This report does not relieve the site operator of the responsibility to

- Ensure you comply with the conditions of the permit at all times and prevent pollution of the environment
- Ensure you comply with other legislative provisions which may apply

Non-compliance scores and categories

CCS category	Description	Score
C1	A non-compliance that could have a major environmental effect	60
C2	A non-compliance which could have a significant environmental effect	31
C3	A non-compliance which could have a minor environmental effect	4
C4	A non-compliance which has no potential environmental effect	0.1

Operational Risk Appraisal (Opra) - Compliance assessment findings may affect your Opra score and/or your charges. This score influences the resource we use to assess permit compliance.

Section 6 – General information

Data protection notice

The information on this form will be processed by the Natural Resources Wales (NRW) to fulfil its regulatory and monitoring functions and to maintain the relevant public register(s). The NRW may also use and/or disclose it in connection with:

- Offering/providing you with its literature/services relating to environmental matters
- Consulting with the public, public bodies and other organisations (eg. Health and Safety Executive, local authorities) on environmental issues
- Carrying out statistical analysis, research and development on environmental issues
- Providing public register information to enquirers
- Investigating possible breaches of environmental law
- Assessing customer service satisfaction and improving its service
- Freedom of Information Act/Environmental Regulations request

The NRW may pass it on to its agents/representatives to do these things on its behalf. You should ensure that any persons named on this form are informed of the contents of this data protection notice.

Disclosure of information

The NRW will provide a copy of this report to the public register(s). However, if you consider that any information contained in this report should not be released to the public register(s) on the grounds of commercial confidentiality, you must write to your local area office within fifteen working days of receipt of this form indicating which information it concerns and why it should not be released, giving your reasons in full.

Customer charter

What can I do if I disagree with this compliance assessment report?

If you are unable to resolve the issue with your site officer, you should firstly discuss the matter with officer's line managers using the informal appeals procedure. If you wish to raise your dispute further through our official Complaints and Commendations procedure, phone our general enquiry number 0300 065 3000 (Mon to Fri 08.00 – 18.00) and ask for the Customer Contact team or send an email to enquiries@naturalresourceswales.gov.uk. If you are still dissatisfied you can make a complaint to the Public Services Ombudsman for Wales. For advice on how to complain to the Ombudsman phone their helpline on 0845 607 0987.

Welsh Language

If you would like this form in Welsh please contact your Regulatory Officer.