Determination of an Application for a PPC Landfill Permit under the Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No.1973) and the Landfill (England and Wales) Regulations 2002 (SI 2002 No. 1559)

Decision Document recording the decision-making process

Note: all references to the "PPC Regulations" are to the Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No.1973), as amended and all references to the "Landfill Regulations" are to the Landfill (England and Wales) Regulations 2002 (SI 2002 No. 1559).

Administrative details

Application date and Agency reference ("the Permit Application")
Brookhill Landfill
8 October 2003

Permit number (the "Permit") **[BV7273~~insert~~**

Applicant (the "Applicant") **AD Waste Limited**

Address/location of installation (the "Installation")]

Brookhill Landfill
Brookhill Way
Pinfold Industrial Estate
Buckley
Flintshire CH7 3PS

Name of Account Officer **Jo Cornock**
Signature of Account Officer:

Signature of Authorising Officer:

All relevant documents have been sent to the IPPC Public Registers

Purpose of this document

The Decision Document ("DD") explains how the Applicant's Permit Application has been determined and why the specific conditions in the Permit have been imposed. It is a record of the decision-making process to show how all relevant factors and legislative requirements have been taken into account.

It should be noted that the Permit contains many conditions taken from the Agency's standard Landfill PPC Permit template. These standard conditions were developed by the Agency having regard to the legal requirements of the PPC Regulations, the Landfill Regulations and other relevant legislation. This Decision Document does not include an explanation for these standard conditions, but does provide an explanation and justification for the emission limit levels and monitoring trigger levels, the choices made between optional standard conditions and for additional conditions which have been imposed in order to take installation-specific factors into account.

Summary of the decision

A Permit for the Applicant to operate the Installation has been granted by the Agency, subject to the conditions set out in the Permit. Where the Permit includes standard Agency Permit conditions (see above), these have been considered to be appropriate for the Installation, in particular in ensuring that all appropriate measures will be taken against pollution and that no significant pollution will be caused. The Agency considers that in its decision to issue the Permit and in the conditions included therein, it has taken into account all relevant considerations and legal requirements.

Description of the Permitted Installation

A non-technical summary of the activities covered by the Permit is contained within the Application. The following description of the Installation included in the Introductory Note to the Permit.

Brookhill Landfill is located near Buckley, North Wales. It has operated under the auspices of Waste Management Licence EAWML37207 which was granted by the Environment Agency in 1997. The landfill receives around 120,000 tonnes waste per annum. The application was originally for an interim hazardous landfill until the 16th July 2004 and thereafter non-hazardous landfill. This meant that hazardous waste and non hazardous waste could be disposed of together until the 16th July 2004. This is the date for end of co-disposal which has now passed and hence the permit has been issued as a non-hazardous landfill only. The landfill is expected to be completed in 2007.

The site occupies an are of approximately 5 hectares. It was initiated in the 19th Century when it was a clay pit forming part of the Brookhill Brickworks. From the late 1980's, the pit was reworked for stone and limited opencast coal extraction.

The landfill is divided into six phases, with operations having commenced in all phases except phase 6. Phases 1 and 2 have reached final level and are due to be restored. All of the phases have been constructed on a containment basis utilising in-situ reworked clays. Groundwater levels are considered to lie at least 2 metres below the lowest level, although perched groundwater is present in adjacent strata. Leachate levels are maintained below a maximum level of 2 metres depth through abstraction and subsequent treatment on-site in a small-scale treatment plant. Similarly, landfill gas is abstracted and burnt through a flare. The flare is due to be replaced and measures put in place to produce electricity.

Glossary of terms used in **this Decision Document**

"*Application*" means the application for this Permit, together with any response to a Notice served under Schedule 4 to the PPC Regulations, and any other written information provided by the Operator for consideration in the determination of the Permit [that should therefore cover amendments to the application].

"*Applicant*" means AD Waste Limited

"*Operator*" means AD Waste Limited

PART A – ADMINISTRATIVE INFORMATION RELATING TO THE APPLICATION AND INFORMATION ABOUT THE APPLICANT

The Agency's determination procedure

A1 "Duly made" check on Application received

The Application was determined to be duly made as submitted on 21st October 2003.

A2 Consultation on the Application

The Application was advertised by the Applicant according to the requirements of Part 1 of Schedule 4 to the PPC Regulations on 10th December 2003 in the 'London Gazette' and 3rd December 2003 in 'Evening Leader".

The Agency sent copies of the Application to the following statutory consultees in accordance with Part 2 of Schedule 4 to the PPC Regulations:

- Flintshire Local Health Board;
- Food Standards Agency;
- Welsh Water;
- Flintshire County Council;
- Countryside Council for Wales;
- Welsh Assembly Government

A3 Consideration of consultation responses

Responses were received from the following statutory and non-statutory consultees:

- Countryside Council for Wales;
- Welsh Assembly Government

No responses were received from members of the public during the determination period.

All responses have been considered by the Agency in determining the Application. The ways in which material responses have been taken into account are summarised in the appendix to this document.

A4 Matters of commercial confidentiality or national security

The Operator made a claim for commercial confidentiality. The nature of the claim is as follows: "The document includes specific detailed costings in relation to the restoration, aftercare, environmental controls, monitoring requirements and remedial actions/specified occurrences. It is the Operator's view that such level of detail and information is commercially confidential and should be excluded from the public register. The document clearly details (in order to assist the determination process) the way in which AD Waste Limited costs and how it provides for the such items as environmental controls, monitoring and so on. In addition many of these costs are a result of either price negotiation or tendering process and so could give a commercial advantage to other operators or suppliers.

Clearly such detail will vary from the approach taken by other operators and so AD Waste Limited are not willing for this level of detail to be made readily available to the public including its competitors, in the same way that it would expect its competitors not to see their information made publicly available.

In addition, AD Waste Limited do not believe that there is any public or environmental benefit, or dis-benefit from making this information publicly available and cannot see justification for its inclusion in the public register".

The Agency agreed that the information should be commercially confidential on 22 October 2003.

A5 Further information requirements

The Application was deemed duly made by the Agency, but further information was required in order for the Agency to be able to determine the Application. Further information was requested from the Applicant by letter as follows:

Detail	Date	Comment
Application BV7273	Received 8 October 2003	
Response to request for information	Request in e-mail dated 17 October 2003	Response in letter dated 20 October 2003
	Request in letter dated 17 October 2003	Response in letter dated 20 October 2003
	Request in letter dated 27 February 2004	Response in letter dated 25 March 2004
	Revised Drawing ESID 11 Revision A Local Hydrogeology and Hydrology.	Surface water monitoring points added
	Revised Drawing ESID 2 Revision B Environmental Site Setting	Legend changed to include Installation boundary.

The information has subsequently been placed on the Public Register.

A6 The Applicant

The Agency is satisfied that the Applicant (now the Operator) is the person who will have control over the operation of the Installation after the grant of the Permit, and that the Operator will be able to operate the Installation so as to comply with the conditions that have been included in the Permit

A6.1 OPRA profile

The Agency is satisfied that the OPRA profile submitted with the Application remains accurate following the determination of the Application, and it will be used as the basis for subsistence and other charging, and for all other relevant purposes at the commencement of the Permit. In accordance with the Agency's OPRA Scheme however, the Operator's OPRA profile for the installation may change over time. This application was submitted for an interim hazardous waste landfill and their OPRA score reflected this. As the permit has been issued after the 16th July 2004 when co-disposal ends the permit has been issued as a non-hazardous landfill. The

subsistence level will therefore change and they will be changed subsistence for a non-hazardous landfill.

PART B – THE INSTALLATION AND ITS MANAGEMENT

B1 Permit Section 1.1.1 - The permitted activities

The principal listed activity at the Installation falls within the activity description in Section 5.2 Part A(1)a of Part 1 of Schedule 1: Disposal of Waste by Landfill. The Agency considers that this constitutes the "stationary technical unit".

The Agency considers that the following activities are directly associated with the stationary technical unit and therefore form part of the Installation:

Table 1.1.1

Activity listed in Schedule 1 of the PPC Regulations / Associated Activity	Description of specified activity	Limits of specified activity
Section 5.2Part A(1)(a), The disposal of waste in a landfill.	Landfill for non-hazardous waste (landfill classification under the Landfill Regulations 2002)	Non-hazardous and inert wastes consisting of the types and quantities specified in condition 2.1.2, as an integral part of landfilling.
Leachate management	Storage and treatment of leachate pre-discharge	Leachate arising from the Permitted landfill and Standard Landfill Reference WML 37207
Landfill gas management	Flaring and/or utilisation of landfill gas for energy recovery	Landfill gas arising from the Permitted landfill
Leachate discharges to foul sewers	Discharge of leachate from the landfill.	From leachate management system to point of entry to sewer
Water discharges to controlled waters	Discharge of site drainage from the landfill.	From surface water management system to point of entry to controlled waters

The stationary technical unit and its directly-associated activities described above, together constitute the Installation.

The Applicant has confirmed that the appropriate planning permission is in place, under section 4.4.2 of the application form which refers to Planning Permission No. 4/0/21554 Flintshire County Council, the waste planning authority for the site, were consulted.

B2 Permit Condition 1.1.2 – Identification of exempt waste activities

This is a standard condition of all Permits but it is understood that it is not the Operator's intention to undertake any waste activities which are exempt from Waste Management Licensing (ie. activities listed in Schedule 3 of the Waste Management Licensing Regulations 1994) on the same site, which are not part of the Installation.

B3 Permit Section 1.2 - Site plan

The Applicant has provided a plan which the Agency considers is satisfactory for showing the site of the Installation and its extent including the location of the installation on that site. This

plan is included in the Permit as Schedule 5, and the Operator is required to carry on the Permitted activities within the site boundary. This is a revised drawing submitted after the application was received and is referenced Plan reference: ESID2 Revision B Amended 6 February 2004 Received 17 June 2004.

B4 Permit section 1.5 - Minor operational changes; (Changes allowed within the scope of this Permit)

The Permit constrains the Operator to operate the activities subject to the limits and conditions in the Permit. However the Operator may make minor changes as defined within the Application by notifying the Agency in writing under Conditions 1.5.1 -1.5.4.

B5 Permit section 2.11 - Aftercare closure and decommissioning; (Prevention of deterioration of the site)

The Applicant has provided a Site Report as required by paragraph 1 of Part 1 of Schedule 4 to the Regulations, the main elements of which are included within section 1 of the application form; site conceptual model and hydrogeological, landfill gas and stability risk assessments.

The Agency considers that this report adequately describes the condition of the site and in particular identifies any substance in, or under the land that may constitute a pollution risk.

The activity authorised by this permit was previously carried out on the site of the installation under a waste management licence EAWML 37207 which, by virtue of section 35(11A) EPA ceases to have effect on the date of granting of this permit.

B6 Permit Section 2.12 - Multiple Operator installations

This is not a multi-Operator installation

Management

B7 Permit Section 1.3 - Overarching Management Condition

Condition 1.3.1 in the Permit is a standard condition but, based upon the information submitted in the Application the Agency is satisfied that appropriate management systems and management structures are in place for this Installation, and that sufficient financial, technical and manpower resource is available to the Operator to ensure compliance with all the Permit conditions.

B8 Permit Section 2.3 - Management and FAPP

B8.1 Staffing and Training

The information provided in response to Questions in Section 2.3 of the Application indicates that the installation will be operated by an adequate number of staff, who are suitably trained and supervised. Appropriate written operating instructions will be available, and a system will be in place for the recording of staff training.

B8.2 Operation and Maintenance

The information provided in response to Questions in Section 2.3 of the Application indicates that the installation will be operated and maintained in compliance with the Conditions in the Permit. There is a requirement to comply with these procedures within the permit.

B8.3 Incidents and Complaints

The information provided in response to Questions in Section 2.3 of the Application indicates that there will be a suitable incident/complaint logging and response system in place as part of the sites Environmental Management System which will be in place for accreditation audit by December 2003.

B8.4 Fit and Proper Person

The Applicant has been able to demonstrate that he is a Fit and Proper Person as required by the PPC Regulations to carry out the Specified Waste Management Activities that are part of the permitted activities in the Installation. Financial Provision arrangements have been agreed through a bond.

PART C: DETERMINATION OF PERMIT CONDITIONS

C1. Operating conditions and determination of the appropriate measures to be taken against pollution.

C1.1 Permit Section 2.1 Landfilling controls – the Applicant's proposed measures

Table 2.1.1

Table 2.1.1: Operating techniques		
Description	**Parts**	**Date Received**
Application	The response to questions 1.2, 2.1, 2.2, 2.3, 2.4 and 2.5 in part B of the Application Form	Application: 8 October 2003
Letter from Egniol detailing monitoring sections of the application form and amended drawing references.	All	21 October 2003
Letter from Egniol, detailing clarification on points raised in our letter of 27 February 2004.	All	29 March 2004
Revised Drawing ESID 11 Revision A Local Hydrogeology and Hydrology. Surface water monitoring points added.	All	13 July 2004
Revised Drawing ESID 2 Revision B Environmental Site Setting. Legend changed to include Installation boundary.	All	Dated 6 February 2004 Received 17 June 2004

C1.2 General summary of the aspects considered in determining the appropriate measures to be taken against pollution for the installation

Brookhill landfill site constitutes an acceptable risk to the local hydrogeological and local surface water environment. Appropriate engineering and management techniques will be employed in order to prevent pollution of groundwater. The engineering proposals comply with Landfill Directive requirements. Safe operation of the site will be dependent upon effective dewatering, vigilant CQA of lining construction methods and long-term management controls in order to ensure that the site remains stable throughout the operational and post-closure phases. Appropriate standards have been agreed in respect of control and trigger levels for groundwater and surface water as have arrangements for monitoring groundwater and surface water. These will need to be continually reviewed. Proposals for leachate and landfill gas management are of an acceptable standard and in accordance with BAT.

Compliance with relevant EA Regulatory Guidance notes is summarised in tabular format below:

Landfill Directive Regulatory Guidance Note 3	
New Site/or existing site	Existing site
Extensions	No extensions
Conclusion	The site is in a Minor Aquifer, below the water table. The site has an active groundwater underdrainage system. There are no GPZ's affected. There are no watercourses which are hydraulically connected. Site is therefore RGN3 compliant.
Issues	Earlier Reg 15 risk assessment work was conducted on the assumption that Rest Groundwater levels are below the site. The Permit application assumes the site is effectively above the water table however, on account of dewatering so Landsim 2.02 has been used for modelling.

Landfill Directive Regulatory Guidance Note 16	
Extent of landfill	One waste management licence WML37207. All of existing landfill included in the installation
Historical landfilling	No identified historical landfill
Landfill Gas issues	Single temporay gas flare within the installation. This is to be upgraded and replaced. Site is situated within Coal Measures. Sidewall venting is employed to dissipate gas pressure potentially arising from Coal Measures sub-strata.
Existing Discharges	List 1 substances present in leachate. 2 boreholes upgradient. Four boreholes downgradient. No significant pollution detected to date.
Conclusion	Proposed PPC installation boundary complies with requirements of RGN16. It is possible that once groundwater management and leachate abstraction has ceased, the leachate levels will equilibrate with the Groundwater. Leachate levels will need to be maintained at levels as close to basal liner as possible to maintain hydraulic containment throughout operational phase. A 2 metre leachate head has been set. Any leachate abstracted is to be pretreated on-site prior to disposal by tanker offsite.

Landfill Directive Regulatory Guidance Note 6	
Geological barrier - Base	Cells 1 to 5 are completed or operational. Cell 6 to be constructed. All cells are constructed on an engineered containment basis. No natural geological barrier. Artificial barrier comprises 1000 mm compacted clay 1x 10-9 m/sec.
Artificial sealing liner	Comprises 1000mm compacted clay in newer Cells.
Leachate drainage layer	300mm gravel with pipework.

Drainage pipework	Leachate management within each of the Cells comprises of a central abstraction pump, HDPE collection pipework and two monitoring wells.
Geological barrier - Sides	Artificial barrier in new Cells comprises of 1000mm compacted clay plus a further 1000mm compacted clay (artificial liner) to the full height. Clay barrier to be constructed in 3 lifts.
Cap	Completed cells to be capped with geotextile and 1mm LDPE or VLDPE. No surface water drainage layer to be provided. Cover soils from 1m to 2m thick.
Conclusions	Installation design is largely RGN6 compliant in new Cells. Operator will be required to amend cap design (Improvement Condition) to incorporate SW drainage in view of need to manage leachate levels.
Stability	Clay for liner construction is to be derived from in-situ interbedded sands, siltstones, mudstones and clays on site. Preparation of clay prior to liner construction will need to be conducted carefully to avoid inclusion of rock fragments/sand. There are potential stability problems associated with the sideslopes on account of subgrade variability, presence of made ground and perched groundwater.

C2. Justification for emission levels or equivalent technical parameters set for specific emissions

The following emission levels (or "equivalent measures" or "technical parameters") have been included in the Permit for the reasons described:

C2.1 Permit section 2.2.1 - Emissions to air

Emissions from specific points are identified in Table 2.2.1below:

Table 2.2.1 : Emission points to air

Emission point reference or description	Source	Location of emission point
Landfill gas flare	Deposited wastes	To be determined and agreed in writing with the Agency
Landfill gas engine(s)	Deposited wastes	To be determined and agreed in writing with the Agency

Emission limits have been prescribed in respect of landfill gas emissions arising from the proposed landfill gas flare and associated engines in accordance with Table 2.2.2 below. These are to ensure that plant is maintained and operated in an accordance with best practice and to ensure that the air emissions at the site boundary do not exceed Environmental Assessment Levels and to minimise the risk of receptors identified through the Landfill Gas Risk Assessment being affected.

Table 2.2.2 Emission limits to air and monitoring				
Emission point reference	**Parameter**	**Limit (mg/m3/day)**	**Monitoring frequency**	**Monitoring method**
Flare	Nitrogen Oxides (NO_x)	150	Annually	Chemiluminesence
Flare	Carbon Monoxide (CO)	50	Annually	Non-Dispersive Infra red analysis
Flare	Total Volatile Organic Compounds (VOC's)	10	Annually	Extractive sampling and FID analysis
Flare	Non Methane Volatile Organic Compounds (NMVOC's)	5	Annually	Extractive sampling onto sorbent, extraction by CS_2, analysis by GC with appropriate detector
Engine(s)	Nitrogen Oxides (NO_x)	650	Annually	Extractive sampling and Chemiluminesence
Engine(s)	Carbon Monoxide (CO)	1500	Annually	Extractive sampling and non-dispersive Infra red analysis
Engine(s)	Total Volatile Organic Compounds (VOC's)	1750	Annually	Extractive sampling and FID analysis
Engine(s)	Non Methane Volatile Organic Compounds (NMVOC's)	150	Annually	Extractive sampling onto sorbent, extraction by CS_2, analysis by GC with appropriate detector

C2.2 Permit Conditions 2.2.2.3 - 2.2.2.6 - Emissions to water (other than sewer)

Surface water discharges from the installation to neighbouring surface water systems are permitted to occur at the locations specified in Table 2.2.4 below:

Table 2.2.4: Emission point to water		
Emission Point Reference or description	**Source**	**Receiving Water**
To be determined and agreed in writing with the Agency upon satisfactory completion of Improvement Condition No. 4	Surface water drainage	Un-named watercourse

The trigger levels prescribed in Table 2.2.5 relate to the existing network of surface water monitoring points and EA consented discharge point.

Table 2.2.5 : Surface water monitoring point trigger levels		
Parameters with frequency of monitoring Reference Plan ESID 11 Revision A	**Monitoring Points**	
	SW1	SW2
Ammoniacal Nitrogen (mg/l) – monthly	3.0	3.0
COD (mg/l) - monthly	500	200
Chloride (mg/l) – monthly	100	100
pH - monthly	6-9	6-9

C2.3 Permit section 2.2.2.7 - 2.2.2.10 - Emissions to sewer

The limits prescribed in Table 2.2.8 relate to the consented Trade Effluent discharge point which will eventually take place direct to foul sewer. The limits have been set by the statutory undertaker (Welsh Water).

Table 2.2.8 : Emission limits and monitoring frequency to sewer				
Emission point reference	**Substance**	**Limit (including Reference Period)**	**Monitoring frequency**	**Monitoring method**
Entry to sewer	Suspended solids	500mg/l	Weekly	To be agreed in writing with the Agency
	COD	1000mg/l	Weekly	To be agreed in writing with the Agency
	Ammoniacal Nitrogen	50 mg/l	Weekly	To be agreed in writing with the Agency
	Copper	2 mg/l	Weekly	To be agreed in writing with the Agency
	Zinc	2 mg/l	Weekly	To be agreed in writing with the Agency
	Lead	2 mg/l	Weekly	To be agreed in writing with the Agency
	Chromium	2 mg/l	Weekly	To be agreed in writing with the Agency
	Nickel	2 mg/l	Weekly	To be agreed in writing with the Agency
	pH	5 to 10	Weekly	To be agreed in writing with the Agency
	Volume	150m^3/day	Weekly	To be agreed in writing with the Agency
	Temperature	43 ° C	Weekly	To be agreed in writing with the Agency

C2.4 Permit section 2.2.3 - Emissions to groundwater

An appropriate hydrogeological risk assessment has been conducted in respect of the installation as a result of which the trigger levels presented in Table 2.2.10 below have been derived. These are considered representative of predicted leachate quality and baseline groundwater quality and as such appropriate to minimise the likelihood of groundwater pollution by List 1 and List 2 substances from occurring.

Table 2.2.9a: The trigger levels for emissions into groundwater						
Parameters with frequency of monitoring	Monitoring Point as shown on drawing ESID10					
	GW1.1	GW2.1 replacement	GW3.1 replacement	GW4.1	GW5.1	GW6.1
Ammoniacal Nitrogen (mg/l) – quarterly	1.7	1.7	1.7	1.7	10	1.7
Chloride (mg/l) – quarterly	60	60	60	60	60	60
Nickel (mg/l) – quarterly	0.15	0.15	0.15	0.15	0.15	0.15
Zinc (mg/l) – quarterly	0.254	0.254	0.254	0.254	0.254	0.254
Total Xylenes (mg/l) – quarterly	0.003	0.003	0.003	0.003	0.003	0.003
Toluene (mg/l) - quarterly	0.004	0.004	0.004	0.004	0.004	0.004

In addition, the leachate levels within the installation shall be monitored from the date of issue of this Permit at monthly intervals at the abstraction point and two additional points within each Cell. **The head of leachate shall not be permitted to exceed 2.0 metres above the base of each cell throughout the operational and post-operational phases.** The leachate quality shall be assessed quarterly in accordance with EA guidance for a representative range of List 1 and List 2 substances. The following trigger levels shall apply:

Table 2.2.12 Leachate Control Levels	
Substance	**Trigger Level – mg/l**
Ammoniacal nitrogen	4300
Chloride	5000
Nickel	3
Zinc	5
Total Xylenes	1
Toluene	1.3

C2.5 Permit section 2.2.6 - Odour

On consideration of the Application, the Agency considers that the activities to be carried out at the installation have the potential to cause odour, but that such odour is not likely to cause annoyance and that the Applicant's proposals in respect of odour control represent BAT. Agency therefore considers that the standard Condition 2.2.6.1 is appropriate and sufficient.

C2.6 Permit section 2.2.7 - Emissions to land

The trigger levels prescribed in Table 2.2.13 are included in the Permit in respect of sub-surface landfill gas fugitive emissions. The operator is required in accordance with current guidance to carry out routine monitoring and take appropriate remedial action in the event that landfill gas migration is detected at the installation boundary. This is to mitigate against vegetation stress, ensure that offsite receptors are not affected and minimise the risk of an explosion occurring in adjacent properties. Trigger levels for methane and carbon dioxide have been set for specific borehole locations. These are in general higher than standard conditions. This is in recognition of natural background emissions associated with the coal measures strata in which the landfill is situated.

Table 2.2.13 Landfill gas trigger levels		
Emission point reference/description	**Parameter**	**Trigger**
BH1, BH3, BH4, BH5, BH6, BH7, BH10, BH11, BH12, BH13, BH14, BH15, BH16, BH17, BH19, BH23, BH24, BH25	Methane	1.0%
BH8	Methane	32.2%
BH9	Methane	29.6%
BH18	Methane	6.8%
BH1	Carbon Dioxide	8.8%
BH3	Carbon Dioxide	3.1%
BH4	Carbon Dioxide	5.1%
BH5	Carbon Dioxide	1.5%
BH6	Carbon Dioxide	1.5%
BH7	Carbon Dioxide	10%
BH8	Carbon Dioxide	3.6%
BH9	Carbon Dioxide	10.4%
BH10	Carbon Dioxide	3.9%
BH11	Carbon Dioxide	6.5%
BH12	Carbon Dioxide	6.6%
BH13	Carbon Dioxide	9.4%
BH14	Carbon Dioxide	3.5%
BH15	Carbon Dioxide	17.6%
BH16	Carbon Dioxide	11.4%
BH17	Carbon Dioxide	12.9%
BH18	Carbon Dioxide	21.2%
BH19	Carbon Dioxide	11.2%
BH23	Carbon Dioxide	7.3%
BH24	Carbon Dioxide	1.5%
BH25	Carbon Dioxide	9.9%

C2.7 Permit section 2.9 - Noise (and vibration)

On consideration of the Application the Agency considers that the activities to be carried out at the installation do not inherently generate much noise or vibration, and the Agency therefore considers that the standard condition 2.9.1 is appropriate and sufficient.

C2.8 Permit section 2.13 - Transfer to effluent treatment plant

There is an on-site effluent treatment plant which has been incorporated into the Permit to allow for this future development. The Application permits leachate to be stored and pre-treated prior to transfer off site direct to the foul sewer system. The applicant has an existing Trade Effluent Discharge Consent issued by Welsh Water.

C3. Other BAT considerations – (where not covered in general section above)

C3.1 Permit section 2.4 - Efficient use of raw materials

The Agency has assessed the proposals set out in section 2.4 of the Application, and considers that they are satisfactory. The standard conditions 2.4.1 – 3 are sufficient and appropriate, regard having been given to minimising their use and to ensuring that materials with the lowest practicable environmental impact are used.

C3.2 Permit section 2.5 - Waste storage and handling

The Agency considers that the Applicant has appropriate measures in place for the storage and handling of waste to prevent releases during normal operations and to minimise the potential for accidental releases. The standard Permit Conditions 2.5.1 is considered to be appropriate and sufficient.

C3.3 Permit section 2.6 - Waste recovery or disposal

The Agency has considered the proposals in the Application for the avoidance of waste production and in respect of such waste as is produced, its potential recovery. The Agency is satisfied that the proposals show that waste production will be avoided as far as possible, and where produced will be recovered insofar as that is technically and economically possible. The Agency is further satisfied that the proposals show that the installation will be operated in such a way that waste which is unable to be recovered can be disposed of so as to avoid or reduce impact on the environment. Standard Conditions 2.6.1 – 2.6.4 are considered to be appropriate and sufficient. Under the Landfill Directive, wastes will eventually require pre-treatment and the quantity of biodegradable waste will need to be reduced.

C3.4 Permit section 2.7 - Energy efficiency

The Agency has considered the information in the Application in respect of energy efficiency, including that for the Applicant's energy management system. (See ODMP).

In respect of Condition 2.7.1, the Operator is required to report on the energy consumed at the installation over the previous calendar year.

The Agency is satisfied that at the commencement of the Permit, the installation should be operated in an energy efficient manner, and that Standard Conditions 2.7.1 – 2.7.3 are appropriate and sufficient.

In respect of Condition 2.7.1, the Operator is required to report on energy usage on an annual basis.

C3.5 Permit section 2.8 - Accident prevention and control

The Agency has considered the accident management plan submitted under Section 2.8 of the Application and considers that the Applicant has a suitable system in place to identify, assess and minimise the environmental risks and hazards of accidents and their consequences. Standard Condition 2.8.1 in the Permit is appropriate and sufficient to ensure that the necessary measures will be taken to prevent accidents and to limit their consequences.

C4. Other legal requirements relevant to the determination of the Application and to the setting of ELVs and other conditions of the Permit

C4.1 Waste Management Licensing Regulations 1994

The existing Waste Management Licence (EAWML37207) is superceded as a result of issuing this PPC Permit. The taking of appropriate measures against pollution by the Applicant in operating the installation will meet the requirements of this Act

C4.2 The Conservation (Natural Habitats etc) Regulations 1994

Deeside and Buckley Newt Sites SAC (candidate). The Countryside Council for Wales was consulted on this application and duly went through to appropriate assessment stage. See consultee response for comment.

C4.3 CROW

The taking of appropriate measures against pollution by the Applicant in operating the installation will meet the requirements of this Act

C4.4 Dangerous Substances Directive

The taking of appropriate measures against pollution by the Applicant in operating the installation will meet the requirements of this Directive

C4.5 Solvent Emissions Directive

The taking of appropriate measures against pollution by the Applicant in operating the installation will meet the requirements of this Directive

C4.6 Groundwater Regulations 1998

The taking of appropriate measures against pollution by the applicant in operating the installation will meet the requirements of these Regulations. There are conditions within the permit to ensure compliance with these regulations.

C4.7 Environment Act 1995 – Section 4 (Pursuit of Sustainable Development)

The taking of appropriate measures against pollution by the Applicant in operating the installation will meet the requirements of this Act

C4.8 Environment Act 1995 – Section 7 (Pursuit of Conservation Objectives)

The taking of appropriate measures against pollution by the Applicant in operating the installation will meet the requirements of this Act

C4.9 Human Rights Act 1998

The taking of appropriate measures against pollution by the Applicant in operating the installation will meet the requirements of this Act.

C4.10 Relevant Secretary of State Directions

There are no Secretary of State Directions made under the Pollution Prevention and Control (England and Wales) Regulations 2000, as amended, which are relevant to the determination of this application.

C5 Other conditions included in the Permit

C5.1 Permit section 1.4 - The Improvement Programme

The Agency considers that the following improvement conditions are necessary in order to achieve compliance with conditions prescribed within the PPC Permit:

Table 1.4.1: Improvement programme requirements		
Reference	**Requirement**	**Date**
1a	Install additional groundwater monitoring boreholes at nominal 100 metre spacing around northern and eastern landfill boundary and replace boreholes GW2 and GW3 which are blocked.	Within 2 months of issue date of permit
1b	Commence background groundwater quality monitoring.in line with condition 2.2.9a.	Within 2 months of issue date of permit
2	Review and establish groundwater trigger levels for all existing and new groundwater monitoring boreholes. Once established the application will be read as if it contained these figures as appropriate.	Within 14 months of issue date of permit
3	Install landfill gas abstraction infrastructure, enclosed high temperature gas flare and associated waste to energy plant	By 31 October 2005
4a	Submit arrangements for surface water management infrastructure and monitoring program.	By 30 September 2004
4b	Establish and maintain arrangements for surface water management infrastructure and monitoring program.	By 31st July 2005
5	Introduce routine six monthly analysis for a representative range of List 1 substances including cadmium, toluene, mecoprop in respect of leachate and groundwater monitoring	Immediately following issue of permit
6	Replace gas monitoring boreholes BH2.	Within 2 months of issue date of permit
7	Review and establish landfill gas trigger levels for all existing and new landfill gas monitoring boreholes. Once established the application will be read as if it contained these figures as appropriate.	Within 6 months of issue date of permit
8	Establish at least one leachate abstraction point and 2 remote monitoring points in all new cells.	Immediately following issue of permit

C5.2 Permit section 1.6 - Pre-operational conditions

The Agency considers that the circumstances do not require the imposition of any pre-operational conditions.

C5.3 Permit section 1.7 - Off-site Conditions (including Off-site monitoring)

The Agency considers that it is not necessary to impose any off-site Conditions.

C5.4 Permit section 2.10 - On-site monitoring

The Agency has decided that emissions monitoring should be carried out for the parameters listed in Tables 2.2.2, 2.2.5, 2.2.8, 2.2.9a and 2.2.13 using the methods and to the frequencies it has specified in those Tables. (See Condition 2.10.1.) These monitoring requirements have been imposed in order to ensure compliance with relevant air quality and water quality standards, thereby preventing air and water pollution.

C5.5 Permit section 3. - Records

The Agency considers that the standard condition requirements are appropriate and sufficient for the Permit.

C5.6 Permit section 4. - Reporting

The Agency considers that the standard condition requirements are appropriate and sufficient for the Permit.

C5.7 Permit section 5. - Notifications

The Agency considers that the standard condition requirements are appropriate and sufficient for the Permit.

C6. Other principal considerations taken into account in the determination process

There were no considerations other than those stated above.

APPENDIX – Consultee responses

Summary of consultation responses received and the way in which they have been taken in to account in the determination process:

Response received from	Brief summary of issues raised	Summary of actions taken or show how this has been covered
Welsh Water	No response received	The limits for discharge to sewer have been placed into the permit – these are the same limits as are currently permitted in the trade effluent discharge consent. The Regulations require us to control the emissions from the installation. If necessary, once the proposed

		treatment plant is up and running and we know what the performance capability is, the limits could be varied at a later date if necessary. Any breach of limits in the permit have to be alerted to the Agency, and action plans implemented as per the application.
Flintshire Local Health Board	No response received	
Flintshire County Council	No response received	
Food Standards Agency	No response received	
Countryside Council for Wales	CCW concur with the EA Assessment that the site is likely to have an impact alone on the designated site due to Habitat Loss and Disturbance through litter picking and monitoring activities taking place on the cSAC. There is also a likely significant impact through the deposition of dust from the landfill. They have no objection to the site in principle but ask that the applicant be required to undertake an appropriate monitoring programme to demonstrate that the site is not having an adverse effect on the features. Also that appropriate contingency measures are in place in the event of landfill operations causing an adverse impact.	The permit contains appropriate monitoring programmes to ensure that the site complies with Regulations. Also, the site is engineered to contain any leachate and the surface water flow is away from the designated area – the applicant has been asked to implement a surface water management plan to reduce any risk of impact.
Welsh Assembly Government	To ensure that the site will not have an impact on the surface and groundwaters in the area.	Sufficient conditions for both surface water and groundwater are imposed through the permit and suitable monitoring regimes are also required.
Area EMTL	No response received	