ENVIRONMENT AGENCY

Permit with introductory note

Pollution Prevention and Control (England & Wales) Regulations 2000

Holford Brinefield Landfill Site

Ineos Enterprises Limited
Lostock Gralam
Northwich
Cheshire
CW9 7TD

Permit number

XP3934SL

Holford Brinefield Landfill
Permit Number XP3934SL

Introductory note

This introductory note does not form a part of the permit

The main features of the installation are as follows.

Holford Brinefield lies within the Cheshire Plain and covers an area of approximately 10 square kilometres. The centre of the installation lies at National Grid Reference SJ705735. The installation itself covers an area of some 6 square kilometres of underground caverns that are the result of controlled solution mining for brine in halite deposits (rock salt). Waste disposal operations commenced in 1952 and areas of the installation have historically received limited waste streams relating to brine extraction processes or from the downstream plants that use the brine for manufacturing.

The surrounding land is predominantly used for pasture and arable farming. Residential areas lie adjacent to the north west and east of the installation. Smaller residential areas lie within the boundaries of the installation location.

The waste deposition process is different to the majority of landfilling operations as waste is deposited in underground caverns formed as a result of controlled brine extraction. As a result, there is no surface filling of waste and visible signs of mineral extraction and waste disposal activities are limited to individual above ground well heads located above each cavern. Waste is transported to the caverns by buried pipelines, so there are no vehicle movements associated with waste placement. The installation does not include any surface features, infrastructure or directly associated activities.

It is proposed that the installation will operate as a non-hazardous waste landfill. The caverns currently accept and will continue to accept, two types of waste, namely,

- Brine purification plant waste (BPP) which consists of non-hazardous slurry in brine; and
- Distiller blow off waste (DBO) which consists of inorganic alkali waste generated for the manufacture of soda ash which is received by pipeline as 2 -10% waste/water slurry in brine.

The installation has the benefit of a natural geological barrier comprising in-situ halite and up to 200m of Mercia Mudstone. The salt deposits and Mercia Mudstone both act as low permeability barriers with permeabilities of $1x10^{-10}$ and $1x10^{-9}$ m/s^{-1} reported for the Mercia Mudstones.

The hydrogeological characteristics of the Mercia Mudstones ensure the hydrogeological isolation of the caverns.,as a result there is little risk of ingress of groundwater. Therefore a groundwater management system is not required at Holford. As the waste is deposited in below ground caverns, developed within an in-situ geological barrier, there is no requirement for a side slope lining system. Due to the nature and construction of the waste caverns and the surrounding geology and hydrogeology, rainwater and groundwater will not enter the waste, therefore leachate is not likely to be generated within the cavity, and therefore a leachate management system is not required.

Holford landfill site does not accept putrescible wastes and therefore has no potential to generate methane-rich landfill gas; therefore a landfill gas management system is not required.

Status log of the permit		
Detail	**Date**	**Response Date**
Application XP3934SL	Received 30/03/07	
Response to request for information	Request dated 08/08/07	Response dated 30/08/07
Permit determined	29/10/07	

Other existing licences/authorisations/registrations relating to this site		
Holder	**Reference Number**	**Date of issue**
Ineos Enterprises Limited	EAWML/60357/T02/M01	14/06/77

Superseded or partially superseded licences/authorisations/consents relating to this installation			
Holder	**Reference Number**	**Date of Issue**	**Fully or Partially Superseded**
Ineos Enterprises Limited	EAWML/60357/T02M01	14/06/77	Partially superseded

End of Introductory Note

Permit

Permit number
XP3934SL

The Environment Agency (the Agency) in exercise of its powers under regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations 2000 (SI 2000 No 1973) and regulation 6 of the Landfill (England and Wales) Regulations 2002 (SI 2002 No.1559) hereby authorises **Ineos Enterprises Limited** ("the operator"),

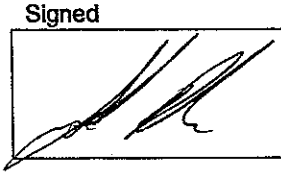
of/ whose registered office (or principal office) is

Runcorn site HQ
South Parade
Runcorn
Cheshire
WA7 4JE

Company registration number 4651437

to operate an installation at
Holford Brinefield Landfill
Holford Brinefield Offices
Lostock Gralam
Northwich
Cheshire
CW9 7TD

to the extent authorised by and subject to the conditions of this permit.

Signed	Date
	29 October 2007

John Baxter

Authorised to sign on behalf of the Agency

Conditions

1. Management

1.1 General management

1.1.1 The activities shall be managed and operated:

(a) in accordance with a management system, which identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents and non-conformances and those drawn to the attention of the operator as a result of complaints; and

(b) by sufficient persons who are competent in respect of the responsibilities to be undertaken by them in connection with the operation of the activities.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.2 Accidents that may cause pollution

1.2.1 The operator shall:

(a) maintain and implement an accident management plan;

(b) review and record at least every 4 years or as soon as practicable after an accident, (whichever is the earlier) whether changes to the plan should be made;

(c) make any appropriate changes to the plan identified by a review.

1.3 Finance

1.3.1 The financial provision for meeting the obligations under this permit set out in the Performance Agreement to be imminently entered into between the operator and the Agency shall thereafter be maintained by the operator throughout the subsistence of this permit and the operator shall produce evidence of such provision whenever required by the Agency.

1.3.2 The operator shall ensure that the charges it makes for the disposal of waste in the landfill covers the cost of operating the landfill, as far as possible the cost of the financial provision required by condition 1.3.1 and the estimated costs for the closure and aftercare of the cavities.

1.4 Energy efficiency

1.4.1 The operator shall:

(a) Review and record at least every 4 years whether there are suitable opportunities to improve the energy efficiency of the activities; and

(b) Implement any appropriate measures identified by a review.

1.5 Site security

1.5.1 Site security measures shall prevent unauthorised access to the site, as far as practicable.

2. Operations

2.1 Permitted activities

2.1.1 The operator is authorised to carry out the activities specified in schedule 1 table S1.1 (the "activities").

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in red on the site plan at schedule 2 to this permit.

2.3 Operating techniques

2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1 table S1.2, unless otherwise agreed in writing by the Agency.

2.4 Off-site conditions

There are no conditions in this permit to which regulation 12(12) of the PPC Regulations apply.

2.5 Improvement programme

2.5.1 The operator shall complete the improvements specified in schedule 1 table S1.3 by the date specified in that table unless otherwise agreed in writing by the Agency.

2.5.2 Except in the case of an improvement which consists only of a submission to the Agency, the operator shall notify the Agency within 14 days of completion of each improvement.

2.6 Pre-operational conditions

There are no pre-operational conditions in this permit.

2.7 Engineering

2.7.1 No construction of new landfill infrastructure involving techniques other than those currently agreed with the Agency, shall commence until the operator has submitted relevant construction proposals and the Agency has confirmed that it is satisfied with those proposals.

2.7.2 The construction of landfill infrastructure for future cavities, shall take place only in accordance with the approved construction proposals unless:

(a) any change to the approved construction proposals would have no impact on the performance of any element of the design; or

(b) a change has otherwise been agreed in writing by the Agency.

2.7.3 For the purposes of conditions 2.7.1, the Agency shall be deemed to be satisfied where it has not, within the period of 4 weeks from the date of receipt of the relevant construction proposals, either:

(a) confirmed whether or not it is satisfied; or

(b) informed the operator that it requires further information.

2.7.4 Where pollution controls are immediately necessary to prevent an incident or accident, then conditions 2.7.1 and 2.7.2 do not apply and the relevant landfill infrastructure may be constructed, provided that the construction proposals are submitted to the Agency as soon as practicable.

2.8 Waste acceptance

2.8.1 Wastes shall only be accepted for disposal if:

(a) they are listed in schedule 3, and

(b) they are non hazardous wastes, and

(c) they are not liquid wastes, and

(d) they are wastes which have been treated, except for inert wastes for which treatment is not technically feasible; or it is waste other than inert waste and treatment would not reduce its quantity or the hazards which it poses to human health or the environment.

2.8.2 The total quantity of waste that is deposited in any year shall not exceed the limits in schedule 1 Table S1.4.

2.9 Leachate levels

There are no conditions relating to leachate levels in this permit.

2.10 Closure, aftercare and decommissioning

2.10.1 The operator shall maintain and operate the activities so as to prevent or where that is not practicable, to minimise, any pollution risk on closure and decommissioning.

3. Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land.

3.2 Emissions to groundwater

3.2.1 There shall be no emission from the activities into groundwater of any substance in List I (as defined by the Groundwater Regulations) contrary to those regulations.

3.2.2 There shall be no emission from the activities into groundwater of any substance in List II (as defined in the Groundwater Regulations) so as to cause pollution (as defined in those regulations).

3.3 Fugitive emissions of substances

3.3.1 Fugitive emissions of substances (excluding odour, noise and vibration) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.4 Noise and vibration

3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause annoyance outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures have been taken to prevent or where that is not practicable to minimise the noise and vibration.

3.5 Monitoring

3.5.1 The operator shall maintain records of all monitoring required by this permit including records of the taking and analysis of samples, instrument measurements (periodic and continual), calibrations, examinations, tests and surveys and any assessment or evaluation made on the basis of such data.

3.5.2 The Operator shall undertake surveys to monitor the disposal cavity profile during waste placement at a frequency to be agreed in writing with the Agency.

3.6 Transfers off-site

No condition applies.

4. Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Agency, for at least 6 years from the date when the records were made.

4.1.2. Any records required to be made by this permit shall be supplied to the Agency within 14 days where the records have been requested in writing by the Agency.

4.1.3 All records required to be held by this permit shall be held on site and shall be available for inspection by the Agency at any reasonable time.

4.2 Reporting

4.2.1 A report or reports on the performance of the activities over the previous year shall be submitted to the Agency by 31 January (or other date agreed in writing by the Agency) each year. The report(s) shall include as a minimum:

(a) the annual production/treatment set out in schedule 4 table S4.1;

(b) details of any contamination or decontamination of the site which has occurred;

(c) details of the survey required by condition 3.5.2;

(d) the volumetric difference (reported in cubic meters) between the most recent survey and the previous survey for each cavity i.e. the additional volume of each disposal cavity void that is occupied by waste;

(e) an assessment of the settlement behavior of the landfill, based on the difference between the most recent topographical survey and the previous annual topographical survey for the installation;

(f) a calculation of the remaining capacity of each cavity.

4.2.2 Within 28 days of the end of the reporting period the operator shall, unless otherwise agreed in writing by the Agency, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, using the forms specified in schedule 4.

4.2.3 A summary report of the waste types and quantities accepted shall be made for each quarter. It shall be submitted to the Agency within one month of the end of the quarter and shall be in the format required by the Agency.

4.2.4 The operator shall, unless notice under this condition has been served within the preceding 4 years, submit to the Agency, within 6 months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.2.5 All reports and notifications required by the permit shall be sent to the Agency using the contact details supplied in writing by the Agency.

4.3 Notifications

4.3.1 The Agency shall be notified without delay following the detection of:

(a) any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution;

(b) the breach of a limit specified in the permit;

(c) any significant adverse environmental effects.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3. Prior written notification shall be given to the Agency of the following events and in the specified timescales:

(a) as soon as practicable prior to the permanent cessation of any of the permitted activities;

(b) as soon as practicable prior to the cessation of the landfill activities, for a period likely to exceed 1 month; and

(c) at least 7 days prior to the resumption of the landfill activities after a cessation notified under (b) above.

4.3.4 Where the Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Agency when the relevant monitoring is to take place. The operator shall provide this information to the Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.5 The Agency shall be notified within 7 days of any changes in technically competent management and the name of any incoming person together with evidence that such person has the required technical competence.

4.3.6 The Agency shall be provided, within 14 days of the operator or any relevant person being convicted of a relevant offence, (unless such information has already been notified to the Agency), with details of the nature of the offence, the place and date of conviction, and the sentence imposed.

4.3.7 The Agency shall be notified within 14 days of the operator and/or any relevant person lodging an appeal against a conviction for any relevant offence and of the outcome when the appeal is decided.

4.3.8 The Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

(a) any change in the operator's trading name, registered name or registered office address;

(b) any change to particulars of the operator's ultimate holding company (including details of an ultimate holding company where an operator has become a subsidiary); and

(c) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

Schedule 1 - Operations

Table S1.1 Activities

Activity listed in Schedule 1 of the PPC Regulations	Description of specified activity	Limits of specified activity
Section 5.2 Part A (1) (a), The disposal of waste in a landfill.	Landfill for non-hazardous waste (landfill classification under the Landfill Regulations 2002)	Receipt, handling, storage and disposal of wastes, consisting of the types and quantities specified in condition 2.8, as an integral part of landfilling.

Table S1.2 Operating techniques

Description	Parts	Date Received
Application	The response to questions 2.1, 2.2, 2.3, 2.4, 2.5, 2.7, 2.8, 2.9, 2.10 and 2.11 of the application form.	30/03/07

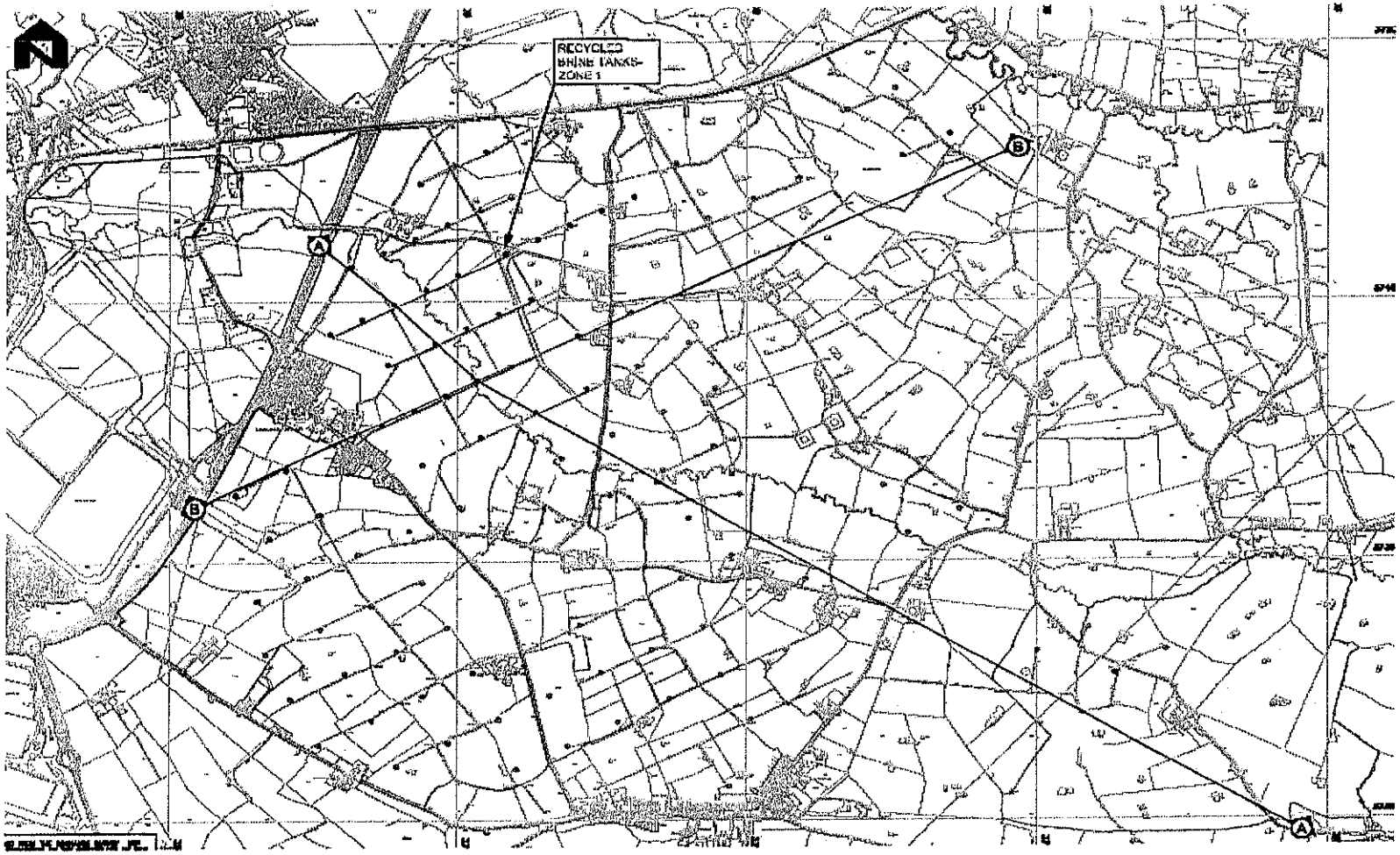
Table S1.3 Improvement programme requirements

Reference	Requirement	Date
1.3.1	The Operator shall establish and maintain a scheme of precise levelling surveys referenced to Ordnance Datum for the installation. The scheme shall include details of but not be limited to: (a) Survey technology; (b) Accuracy to be attained; (c) Details of instrumentation to be used including calibration details; (d) Information regarding the fieldwork to be undertaken; (e) The calculations to be undertaken; (f) Method of presentation of the survey results. The scheme/plan shall be implemented by the operator form the date of approval by the Agency.	29/04/08
1.3.2	The operator shall establish pin level survey positions which shall be established on a grid basis, with pins positioned every 60 to 100 metres throughout the installation, or at any other agreed spacing. Surveying of the specified pin level positions shall be implemented by the operator from the date of approval by the Agency.	29/04/08
1.3.3	The operator shall produce a management plan for monitoring uncontrolled releases of brine or unwanted by-product from the waste disposal pipe lines. The plan shall include but not be limited to: (a) Details of pipework integrity testing; (b) Contingency measures to be taken should a leak be identified; (c) Details of flow rates along pipelines used for the transportation of waste to the disposal cavities; (d) Actions to be taken in the event of a difference in flow readings being detected; The monitoring management plan shall be implemented by the operator form the date of approval by the Agency.	29/04/08

Table S1.4 Annual waste input limits

Category	Limit Tonnes/ Year
Non-hazardous waste	220,000

Schedule 2 - Site plan



Schedule 3 - List of permitted wastes

EWC Code	Description
01 - Wastes resulting from exploration, mining, quarrying, and physical and chemical treatment of minerals.	
01 04	**Wastes from physical and chemical processing of non-metalliferous minerals**
01 04 11	Waste from potash and rock salt processing other than mentioned in 01 04 07.
06 - Wastes from Inorganic Chemical Processes	
06 03	**Wastes from the MFSU of salts and their solutions and metallic oxides**
06 03 14	Solid salts and solutions other than those mentioned in 06 03 11 and 06 03 13

Schedule 4 - Reporting

Parameters, for which reports shall be made, in accordance with conditions of this permit, are listed below.

Table S4.1 Performance Parameters		
Parameter	**Frequency of assessment**	**Unit**
Energy used	Annually	MWh of electricity

Table S4.2 Reporting Forms		
Media/Partner	**Reporting Format**	**Date of form**
Sonar surveys and interpretation	Reporting format to be agreed in writing with the Agency	
Waste Return	Waste Return Form RATS2E	

Schedule 5 - Notification

This page outlines the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the PPC Regulations.

Part A

Permit Number	**XP3934SL**
Name of operator	**Ineos Enterprises Limited**
Location of Installation	**Holford Brinefield Landfill, Lostock Gralam, Northwich Cheshire, CW9 7TD**
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or fugitive emission which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and Time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B to be supplied as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the installation in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of **Ineos Enterprises Limited**

Schedule 6 - Interpretation

"*Accident*" means an accident that may result in pollution.
"*Annually*" means once every Year.
"*Application*" means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 4 to the PPC Regulations
"*Authorised Officer*" means any person authorised by the Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in Section 108(4) of that Act.
"*Background concentration*" means such concentration of that substance as is present in:

- For emissions to surface water, the surface water quality up-gradient of the site; or
- For emissions to sewer, the surface water quality up-gradient of the sewage treatment works discharge; or
- For emissions of landfill gas, the ground or air outside the site and not attributable to the site.

"*Construction Proposals*" means written information, at a level of detail appropriate to the complexity and pollution risk, on the design, specifications of materials selected, stability assessment (where relevant) in relation to the New Cell or Landfill Infrastructure.
"*Disposal Cavity*" *means an underground cavern developed as a result of controlled brine solution mining, or any other recognised brine recovery technique.*
"*Fugitive emission*" means an emission to air, water or land from the activities which is not controlled by an emission or background concentration limit.
"*Groundwater Regulations*" means the Groundwater Regulations SI 1998 No. 2746, and words and expressions used in this permit which are also used in the Regulations shall have the same meanings as in those Regulations.
"*Landfill Infrastructure*" means any specified element of the:

- *permanent capping;*
- *above ground wellheads;*
- *pin level survey positions;*
- *vertical pipework within a borehole linking respective wellhead and cavity;*

"*Landfill Regulations*" means the Landfill (England and Wales) Regulations SI 2002 No. 1559, and words and expressions used in this permit which are also used in the Regulations shall have the same meanings as in those Regulations.
"*Land Protection Guidance*" means Agency guidance "H7 - Guidance on the protection of land under the PPC Regime: Application site report and site protection monitoring programme".
"*Liquids*" means any liquid other than leachate within the engineered landfill containment system.
"*No impact*" means that the change made to the construction process will not affect the agreed design criteria, specification or performance in a way that has a negative effect.
"*notify without delay*" and "*notified without delay*" means that a telephone call can be used, whereas all other reports and notifications must be supplied in writing, either electronically or on paper.
"*PPC Regulations*" means the Pollution, Prevention and Control (England and Wales) Regulations SI 2000 No.1973 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.
"*Quarter*" means a calendar year quarter commencing on 1 January, 1 April, 1 July or 1 October.
"*Relevant person*" and "*relevant conviction*" shall have the meanings given to them in the Environmental Protection Act 1990

"*Site Protection and Monitoring Programme*" means a document which meets the requirements for Site Protection and Monitoring Programmes described in the Land Protection Guidance.
"*Technically competent management*" and "*technical competence*" shall have the meanings given to them in the Environmental Protection Act 1990.
"*Waste code*" means the six digit code referable to a type of waste in accordance with the List of Wastes (England) Regulations 2005, or List of Wastes (Wales) Regulations 2005, List of Wastes (Northern Ireland) Regulations 2005 (as amended), or The Special Waste Amendment (Scotland) Regulations 2004 as appropriate, and in relation to hazardous waste, includes the asterisk
"*Year*" means calendar year ending 31 December.

END OF PERMIT