

CD/LF

SEA / EPI / C29

Taff Ely Borough Council

LICENCE NO LF/01/94.

Disposal Site Licence

LANDFILL FACILITY

CONTROL OF POLLUTION ACT 1974

LICENCE TO DISPOSE OF WASTE

The Taff Ely Borough Council hereinafter called the Disposal Authority in pursuance of the powers conferred on them by the Control of Pollution Act 1974, hereby licence:

Land Reclamation Unit, Mid Glamorgan County Council, Planning Department, Greyfriars Road, Cardiff. CF1 3LG.

(herein after called the "licence holder") to operate a landfill facility (hereinafter called the "facility") on land at

Former Coedely Colliery and Cokeworks, Coedely, Tonyrefail

Grid Reference ST 010 860

which is edged in red on the drawings attached to this licence, being land occupied by the Licence Holder.

This licence is granted subject to the terms and conditions set out in the Schedules attached hereto.

Dated this 27th day of June 19 94

Signed: *J. Morris* *J.*

THIS LICENCE HOLDER'S ATTENTION IS DRAWN TO THE NOTES OVERLEAF



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SCHEDULE

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NOTES

These notes are for general guidance only and they do not constitute an authoritative statement of the law.

- 1) This licence relates only to the requirements of the Control of Pollution Act 1974 for the deposit of waste and the use of plant or equipment subject to the conditions set out in the Schedules and does not constitute a consent required by other legislation. In particular it is the responsibility of the Licence Holder to comply with any requirements of the CONTROL OF POLLUTION ACT 1974, CONTROL OF POLLUTION (AMENDMENT) ACT 1989, THE CONTROL OF POLLUTION (SPECIAL WASTE) REGULATIONS 1980, HEALTH AND SAFETY AT WORK ETC. ACT 1974, THE RADIOACTIVE SUBSTANCES ACT 1960, THE TOWN AND COUNTRY - PLANNING ACTS, BUILDING REGULATIONS, and ALL RELEVANT WATER PROTECTION AND PUBLIC HEALTH legislation including the relevant provisions of the ENVIRONMENTAL PROTECTION ACT 1990.

All discharges to watercourse and sewer have to meet the requirements of the National Rivers Authority and the Dwr Cymru Welsh Water. Any diversion or other changes will also require National Rivers Authority or Dwr Cymru Welsh Water approval.

- 2) If the licence holder ceases to occupy the land specified above, then the licence may be transferred to the new occupier after giving notice to the Disposal Authority which has the right to decline to accept the new Licence Holder.
- 3) If the Licence Holder wishes to cancel this licence, it must be returned to the Disposal Authority together with a notice stating that the licence is no longer required. Cancellation of the licence will not affect any outstanding liability of the licence holder under the conditions of the licence.

CONTRAVENTION OF LICENCE CONDITIONS

Attention is drawn to the provisions of Sections 3, 7, 9 and 16 of the Control of Pollution Act 1974 and Section 33(1)c of the Environmental Protection Act 1990. A brief resume is included below.

Section 3

Prohibits under penalty the deposit, of waste, or the use of plant or equipment, otherwise than in accordance with the terms of a licence. This Section applies to all the conditions contained herein, including any which may be the subject of appeal to the Secretary of State under Section 10 of the Act. Any deposit which takes place without compliance with all conditions may lead to prosecution under this section.

Section 7

Activities which cause pollution of water, danger to public health or would be seriously detrimental to the amenities of the locality may lead to revocation of this Licence.

Section 9

Non compliance with any licence conditions may lead to the revocation of this Licence.

Section 16

The licensing authority is empowered to require the removal of any controlled waste deposited in circumstances where any of the conditions contained in this licence are not being complied with.

Penalties under Section 3

A corporate body or person who contravenes Section 3 subsection (1) shall, subject to subsection (4), be guilty of an offence and liable on summary conviction to a fine of an amount not exceeding Scale 5 (currently £5000, January 1993), or on conviction on indictment to imprisonment for a term not exceeding two (2) years or a fine or both.

Section 33(1)c

Prohibits the treating, keeping or disposing of controlled waste in a manner likely to cause pollution of the environment or harm to human health.

Penalties under Section 33(1)c

A corporate body or person who contravenes Section 33 subsection (1)c shall, subject to subsection (8), be guilty of an offence and liable on summary conviction to imprisonment for a term not exceeding six (6) months or a fine of an amount not exceeding £20,000 or both, or on conviction on indictment to imprisonment for a term not exceeding two (2) years or a fine or both.

SCHEDULE A: 'DEFINITIONS'

In this licence except where the context otherwise requires the following expression or words shall have the meanings ascribed to them.

- A1 "Emergency" means a case where a person has a reasonable cause to believe that circumstances exist which are likely to endanger life or health or cause damage to property or pollution of water.
- A2 "Flammable liquid" shall have the same meaning as ascribed to it by the Classification Packaging and Labelling of Dangerous Substances Regulations 1984 which includes a liquid, mixture of liquids or liquid containing solids in solution or suspension which when tested in accordance with Part IV of Schedule 1 of the Classification Packaging and Labelling of Dangerous Substances Regulations 1984, gives off a flammable vapour with a flashpoint below 55°C.
- A3 "Landfill gas" is defined as the gas that is generated by the waste deposited within the waste disposal site, either directly from the waste, from chemical interaction of wastes or by biological or chemical degradation of wastes.
- A4 "Competent person" means a person who through training and or qualification understands the terms and conditions of this licence and is responsible for ensuring the facility's compliance with the licence.
- A4 "Proficient person" means a person trained to understand the terms and conditions of this licence, to recognise the general descriptions of waste that may arrive at the facility, and actions to be taken to deal with such wastes and what action to take in the event of an emergency.
- A5 "Fly Tipping" means the unregulated and hence illegal dumping of waste material.
- A6 "Environmental Hazard" means the presence of waste on land which has been deposited in such a manner or in such a quantity (whether that quantity by itself or cumulatively with other deposits of the same or different substances) as to subject persons or animals to a material risk of death, injury or impairment of health or as to threaten the pollution (whether on the surface or underground) of any water supply.

- A7 "Authorised officer" is an officer authorised by the Disposal Authority for the purposes of the Control of Pollution Act 1974.
- A8 "Operation" is defined as the receipt, handling, or removal of waste from the facility.
- A9 "Household Waste" shall have the same meaning as ascribed to it by Schedule 1 of the Collection and Disposal of Waste Regulations 1988 (SI 1988 No. 819).
- A10 "Recycling" is defined as the collection and separation of materials from waste and subsequent processing to produce marketable products.
- A11 "Reclamation" is defined as the collection and separation of materials from the waste stream.
- A12 "Working Plan" is defined as the supporting documentation supplied with the waste disposal application and will include the following documents:-
- a. Waste Encapsulation Cell Filling Operational Plan Volume 1 Text and Drawings November 1993.
 - b. Container system Construction Quality Assurance Plan November 1993.
 - c. Risk Assessment of the Colliery and Coking Works
 - d. Off-gas and leachate analysis resulting from the measuring of wastes from Coedely (Celtic Technologies February 1994).
 - e. Leaching tests on materials from Coedely Colliery and Coking Works (Celtic Technologies September 1993).
 - f. Waste encapsulation cell filling operation plan Volume 2 - Appendices September 1993.
 - g. Preliminary design considerations for a liner for the long term containment of Coking Plant Waste July 1993.
 - h. Further considerations of the siting of a containment cell for Coking Plant Waste August 1993.
 - i. Site Investigation of Coed Ely: Factual report of the Coking Works and surrounding areas. Volume 1 and 2 February 1993.
 - j. Interpretative Report of Site Investigation at Coedely Colliery and Coking Works March 1993.

SCHEDULE 'B' PERMITTED WASTES

B1 Materials deposited within the site shall be restricted to the types and quantities of waste detailed below. The quantities of waste deposited at the site shall not exceed the total specified in Condition B2 and shall consist of wastes arising from the reclamation of the Coedely Colliery and Cokeworks only

B2 The maximum quantity of waste deposited at the site shall not exceed 60,000 m³.

B3 **EXCLUSIONS**

Notwithstanding the generality of the types of waste specified in this Schedule the following wastes shall be specifically excluded from delivery to the facility.

- a. Substance within the control of Radioactive Substances Act 1960 and subsequent amendments.
- b. Percussives and explosives and other substances with similar characteristics, excepting where such wastes are in such a form or state where the percussive or explosive properties are and will remain ineffective;
- c. Any waste containing "flammable liquids".
- d. Controlled waste being defined as "special waste" in the Control of Pollution (Special Waste) Regulations 1980 and any subsequent amendments except those listed in Schedule B.
- e. Liquid wastes.

SCHEDULE 'C' GENERAL-CONDITIONS

- C1
- a. The statement of intended methods, operation and drawings contained within the document entitled operational Working Plan submitted as part of the application for this licence shall be herein after referred to as the working plan.
 - b. Prior to any operations taking place under the terms of this licence the working plan shall have been accepted in writing by the Disposal Authority. The licence holder shall obtain written acceptance from the Disposal Authority for any proposed change in the actual conduct of the operations from the proposals accepted in the working plan, as altered by any previous change accepted by the Disposal Authority, before such change is implemented.
 - c. Any reference in this licence to the working plan shall include a reference to any modification to the statement or the drawing which has been confirmed in writing by the Disposal Authority as accepted.
 - d. Subject to the terms and conditions of this licence, the site shall be operated in accordance with the working plan.
- C2. A copy of any notice or instruction including discharge consents received in respect of the facility from any authority, other than the Disposal Authority, which is relevant to waste disposal activities at the facility, shall be given to the Disposal Authority within three working days of the receipt of such notice or instructions.

SCHEDULE 'D' - SITE PREPARATION WORKS

- D1** The site liner system shall be installed in accordance with the specification in the working plan and shall consist of the following components in sequence from the base upwards
1. Prepared Clay Till Subgrade.
 2. Compacted Shale Support Layer, incorporating
 3. 2x Geogrid Reinforcing Layers.
 4. Bentonite-enhanced Sand Leakage Containment Layer.
 5. Lower Geotextile Layer.
 6. Gravel Leakage Detection Layer.
 7. Upper Geotextile Separator.
 8. Bentonite Enhanced Sand Liner.
 9. High Density Polyethylene Liner.
 10. Liner Protection Geotextile.
 11. Gravel Drainage Medium.
- The waste shall be deposited above this layer.
12. Gas Collection Layer.
 13. Polypropylene Protection Layer.
 14. High Density Polyethylene Capping Layer
 15. Sand Protection Layer.
 16. Colliery Shale.
- D2** Waste shall only be deposited in the lined area of the site. The area of the site that is to accept waste shall be so designed, constructed and maintained as to minimise the ingress of ground water, the egress of leachate and the off site migration of landfill gas generated on site. The basal and side walls shall be lined in accordance with the lining system specified in the working plan using materials suitable for the types and quantities of wastes accepted, the method and specification for emplacement and the climatic/site conditions likely to be experienced over the lifetime of the site. The liner shall be installed in accordance with the specification and procedures contained in the working plan.
- D3** The synthetic liner shall have an emplaced permeability coefficient of not greater than 1×10^{-9} m/s, be guaranteed by the manufacturer as being suitable in accordance with condition D1 and a copy of the guarantee and any supporting documentation shall be forwarded to the Disposal Authority prior to the installation of any liner.
- D4** The emplacement of the liner system shall be carried out in such a way that it does not entail any protracted exposure which may result in weathering or vandalism of the liner.

- D5 Prior to the installation of the liner system the basal and side walls shall be engineered using suitable materials to provide a sub grade layer in accordance with the specifications and procedures contained in the working plan, such that the integrity and performance of the liner is not compromised.
- D6 The system for the drainage of the subgrade layer shall be designed, constructed and maintained in accordance with the working plan, so as to collect any ingress of surface/ground water, such that the integrity and performance of the liner is not compromised. The system proposed shall allow for the monitoring of liquid within the subgrade.
- D7 The natural liner shall have an emplaced permeability coefficient of not greater than 1×10^{-9} m/s, be a minimum of 0.3 metre thickness measured normal to the surface and shall be carried out in accordance with the working plan.
- D8 Subsequent to the installation of the liner and prior to the deposit of waste the liner shall be protected in accordance with specifications and procedures contained in the working plan, so as to protect its integrity and performance.
- D9 In accordance with the working plan a system for the collection and removal of leachate shall be designed, constructed and maintained over the base of the site. The construction and emplacement of the leachate collection system shall not be so as to affect the integrity and performance of the liner.
- D10 The drainage blanket on the base of the site shall be a minimum thickness of 300 mm installed in accordance with the working plan.
- D11 The site shall be developed with a fall to facilitate the monitoring and removal of leachate. A leachate collection chamber shall be installed with the construction and method of emplacement of the chamber in accordance with the working plan.

D12 All preparatory engineering works prior to the commencement of landfilling including the selection, testing and emplacement of subgrade materials, angles of batter, external and internal site liner drainage, specifications, procedures and testing for the emplacement of any liner shall be in accordance with a programme of Construction Quality Assurance contained in the working plan. All off site testing shall be undertaken at an independent NAMAS accredited laboratory or other suitable laboratory as agreed with the Disposal Authority. Results in writing of all testing shall be sent directly as they become available, to the Disposal Authority. This does not relieve the licence holder of any obligation by virtue of Condition D13.

D13 On completion of each component of the lining system as specified in the working plan an independent chartered specialist shall furnish a "compliance document" to the Disposal Authority.

This document shall contain details of the tests carried out and the results obtained together with a statement confirming that the liner component meets the specifications in the Licence and the working plan. Location plans of all tests carried out and plans detailing the construction of the liner shall be included with the "compliance document".

The independent chartered specialist shall have full professional indemnity insurance for an appropriate amount to be agreed with the Disposal Authority.

The "Compliance document" shall be furnished to the Disposal Authority on completion of each component of the liner system and where possible prior to emplacement of the next component of the liner system and prior to any waste being brought to the site.

D14 Should the Disposal Authority or its nominated agents wish to undertake testing of any part of the liner system to check its specification and performance such requests shall not after prior notification to the licence holder be refused.

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- D15 Prior to, during and subsequent to the installation of the liner the location of all significant water ingress points shall be recorded on a site plan to an appropriate scale of not less than 1 : 1250 and held at the site office. Copies of this plan shall be forwarded to the Disposal Authority when the "compliance document" for any lined phase is submitted to the Disposal Authority.
- D16 A drainage system shall be designed, constructed and maintained to prevent surface water from surrounding land from entering the operational area, so as to avoid the contamination of any surface water.
- D17 Site roads, including site access roads, shall be designed, constructed and maintained in accordance with the working plan so that they are adequate for the traffic usage of the site.
- D18 Gates, walls and fencing shall be provided at the facility and maintained at all times in accordance with the working plan. Site gates shall be locked outside operating hours and at any time the site is left unattended in order to prevent as far as practicable access to the site. Appropriate warning signs shall be provided along the perimeter of the site.
- D19 An identification board of durable material and finish shall be displayed at the entrance to the facility. This shall give the name of the facility, the name, address and telephone number of the operator and of the Disposal Authority, the hours of operation and the telephone numbers of personnel to contact in the event of an emergency.
- D20 No empty skips or haulage vehicles shall be stored on site.
- D21 Provision shall be made within the confines of the site for the parking, loading and unloading of vehicles transporting wastes to, and leachate from, the facility in accordance with the working plan.
- D22 Arrangements shall be made for storing and maintaining machinery and equipment in accordance with the working plan.
- D23 Tanks or drums used for the storage of liquids which may be polluting shall be contained in a bunded compound whose volume is at least 25% of the total volume or 110% of the volume of the largest storage vessel whichever is the greater. Storage vessels shall be constructed of material suitable for the liquids they contain and labelled to show their contents. They shall conform, where necessary, to all relevant safety construction standards and shall be installed at a location and to specification in accordance with the working plan. All tanks, drums and containment bunds shall be inspected at monthly intervals to ensure their integrity.

- D24 Any flexible delivery pipe permanently attached to any tank shall be fitted with a tap or valve which closes automatically when not in use and shall be locked in such a way which ensures that it is kept within the bund when not in use.
- D25 Measures in accordance with the working plan shall be taken to prevent damage to all pipe work, valves, pumps and storage tanks.
- D27 In accordance with the detail of the working plan a site office, equipped with a telephone shall be provided and maintained at the facility.
- D28 In accordance with the licence holder's statement of intent for the Coedely Reclamation Site a chemical laboratory shall be provided and maintained with facilities to enable the sampling, analysis and assessment of the wastes to be undertaken.
- D29 Any synthetic liner used on the site shall be subjected to long term testing by immersion of the sample of the liner in leachate generated from the site in accordance with details agreed with the Disposal Authority.

SCHEDULE 'E' OPERATION OF SITE

E1 Before operations commence at the site, the licence holder shall submit to the Disposal Authority a quality control system for the operational management of the site to ensure the integrity and performance of the liner and capping systems are maintained and not compromised by the day to day operations of the facility. The quality control system shall be assured by a third party.

E2 The types and quantities of waste accepted shall consist of those specified in Schedule 'B' of this licence. Wastes originating outside the Coedely Reclamation Site shall not unless otherwise agreed with the Disposal Authority be accepted in any area of the site.

Wastes shall be delivered to and removed from the facility during the following hours:-

Monday to Friday:-	07.00 to 20.00 hours
Saturday:-	07.00 - 15.00
Sunday/Bank Holidays:-	Closed.

Except in cases of emergency, no delivery or removal of wastes or related operations shall take place outside these hours without the prior written approval of the Disposal Authority. All circumstances of emergency shall be reported forthwith in writing to the Disposal Authority.

E3 Prior to the commencement of filling operations the licence holder shall submit to the Disposal Authority proposals for preventing the ingress of rain water onto the site. The licence holder shall obtain confirmation of these proposals prior to any tipping operations taking place.

E4 Provision shall in accordance with the working place be made to deal with any unacceptable waste delivered to or left at the facility. Such waste shall be removed from the facility as soon as practicable or within such time as may be agreed with the Disposal Authority and taken to a facility authorised for its disposal.

E5 Prior to the commencement of filling operations the licence holder shall submit to the Disposal Authority their proposals set out in section 6.0 of Celtic Technologies document titled "Risk Assessment of the Colliery Works at Coedely".

E6 The first 2 metres of waste deposited on to the protective layer shall be deposited in a manner and consist only of material which shall not penetrate the protective layer and affect the integrity and performance of the liner. Subsequent layers of waste shall be deposited in a manner and consist of materials that shall not affect the integrity and performance of the liner laid on side walls.

- E7 No deposit or other operation shall take place during the hours of darkness unless suitable lighting has been provided. Details of the lighting shall be included in the working plan. The hours of darkness are those covered by statutory lighting up times published by the Science and Engineering Research Council.
- E8 During all operational and maintenance periods the facility shall be staffed by a competent person who is capable of ascertaining, in accordance with the terms of the working plan and having regard for information supplied with waste materials, that only waste permitted by the licence is deposited at the site. As far as practicable the nature of the waste shall be ascertained by site personnel prior to deposit to ensure that it is acceptable for disposal.
- E9 The phasing and direction of land filling shall be carried out as detailed in the working plan.
- E10 Only wastes that have previously been sampled, analysed and assessed in accordance with the working plan as being suitable for disposal at the site shall be accepted. Copies of such analysis and assessment shall be kept at the site and open to inspection by the Disposal Authority.
- E11 Waste shall be covered, sheeted or enclosed until immediately prior to deposit.
- E12 Wastes shall be compacted and formed into a layer as soon as possible after deposit and not later than at the end of the working day on which the waste is received.
- E13 Except as otherwise stated elsewhere in this licence the layers of waste shall be formed by using suitable compaction equipment with a blade or some other appropriate levelling device. The waste shall either
- i. be deposited on the surface of the site behind the face and partially compacted by a tractor or other compacting machine before being pushed over the face
- or it shall :
- ii. be deposited on the ground forming the base of the operational area or on a previous layer in front of the face and shall be formed into a compacted layer by being pushed upwards and driven over by a tractor or other compacting machine.

- E14 The depth of a layer of waste shall not after initial compaction exceed 2.0 metres.
- E15 Working faces shall be compacted to form gradients not steeper than 1:3.
- E16 The surface flanks and faces shall be sufficiently well compacted and covered to prevent the escape of litter, attraction of flies and other pests and the emanation of smell.
- E17 Measures shall be taken to prevent the creation of perched water tables within the deposited waste.
- E18 The site shall be progressively filled in accordance with the detail of the working plan with waste deposited in such a manner as to minimise leachate production.
- E19 No materials shall be deposited at the site which are likely to directly or by interaction to reduce the performance of the liner system.
- E20 Contaminated surface run off waters shall be collected and directed to the leachate collection system such that no clean waters at or around the facility become contaminated.
- E21 If the level of liquid in the leachate collection or leakage detection layers exceeds 1.0 metres then the liquid shall be pumped out and dealt with as leachate in accordance with the working plan. The amount of leachate pumped from the collection points shall be recorded on site and open to inspection by the Disposal Authority.
- E22 In accordance with the working plan effective measures shall be taken to ensure that windborne materials are contained within the site. Waste which does leave the site shall be retrieved and disposed of before the end of the following day.
- E23 Litter shall not be allowed to accumulate at the facility. Not less frequently than once per seven days or at a greater frequency as directed by the Disposal Authority any litter which may be lying at the facility or its immediate environs shall be gathered and disposed of in such a way as to prevent pollution of water, danger to public health or be seriously detrimental to the amenities of the locality.
- E24 All vehicles visiting the site carrying light wastes shall be adequately covered to prevent any loss of contents by wind or movement of the vehicle.

- E25. No waste material shall be burnt within the boundaries of the facility. Any fire occurring within the confines of the facility shall be treated as an emergency and immediate action shall be taken to extinguish it. All outbreaks of fire shall be reported immediately to the Disposal Authority. Fire fighting equipment and emergency water supplies shall be provided, regularly maintained and identified at the facility in accordance with the working plan.
- E26. A diary/log book shall be provided and retained on site. The diary/log book should be available for the licence holder, accredited agent or employees and for authorised officers of the Disposal-Authority to read or record comments pertaining to the activities of the facility.
- E27. A record shall be kept available in an agreed form for inspection for a period of not less than 2 years detailing the types and quantities of waste deposited.
- E28. A summary of the record required by E27 shall be forwarded to the Disposal Authority at weekly intervals in the form prescribed by the Disposal Authority to arrive within 14 days of the end of the period to which it refers.
- E29. Measures shall be taken in accordance with the working plan to prevent the deposit of mud, debris or any other material on any roadway by site traffic. These measures shall include the sweeping of hard surface areas, entrance and the roadway leading from the facility, and the provision of a wheelwash facility.
- E30. Measures, including proper maintenance and use, shall be undertaken to control the noise of machinery and vehicles operating at the facility which may be a danger to public health or be seriously detrimental to the amenities of the locality.
- E31. Both site and site access roads shall as necessary in dry weather, be sprayed with sufficient clean water to prevent dust occurring, but without creating excessive surface run off.
- E32. The walls of the landfill site shall be inspected daily and measures in accordance with the working plan shall be taken to ensure that the walls and site construction are maintained in a safe and stable condition.
- E33. No previously deposited and compacted waste shall be removed from the site, moved within the site or otherwise displaced without prior written agreement of the Disposal Authority.
- E34. The final 2 metres of waste shall be deposited in a manner and consist only of materials which shall not penetrate the protective layer and affect the integrity and performance of the site cap.

- E35 Should through the system of monitoring, pollution of groundwater be detected and attributed to the landfilling of wastes covered by this licence, the licence holder shall submit to the Disposal Authority a revised scheme to mitigate against such pollution. The programme if acceptable to the Disposal Authority shall be commenced within 3 months.
- E36 Any cessation of operations for a period in excess of two weeks shall be notified to the Disposal Authority. Not less than 24 hours notice shall be given to the Disposal Authority of the date on which operations are to recommence in the event of such a cessation.

SCHEDULE 'F' - SITE MONITORING

- F1** Monitoring points, as in accordance with the work plan, shall be provided around the perimeter of the Site to enable the quality and level of ground water and surface water to be determined. Boreholes shall be sunk in accordance with the working plan and records kept of the boreholes sunk which shall include lithological details and water strikes. These records shall be retained by the license holder and made available to the Disposal Authority.
- F2** Monitoring of groundwater shall be undertaken by pumped water samples or as otherwise agreed with the Disposal Authority. The methodology for such sampling and analysis shall be as agreed with the Disposal Authority.
- F3** All boreholes shall be monitored for groundwater and landfill gas in accordance with the working plan.
- The determinants for groundwater monitoring shall be as detailed in Schedule H. Results of all such monitoring required by condition F3 shall be sent to the Disposal Authority within seven days of the results being obtained.
- F4** Monitoring points shall in accordance with the working plan be provided to enable the quality and level of leachate to be determined. The methodology for such sampling and analysis shall be as agreed with the Disposal Authority.
- F5** The number and position of all monitoring points shall be in accordance with the working plan or as otherwise agreed with the Disposal Authority and shall be maintained by the licence holder. The location of all monitoring points shall be marked on plans included in the working plan which shall also contain the specifications and drilling logs for all boreholes.
- F6** Gas monitoring shall be carried out during emplacement of the waste to determine whether gases are being generated. Monitoring shall include hydrogen sulphide and hydrogen cyanide.
- a) two points on the side boundary having regard for prevailing wind direction.
 - b) two points at the working face.

All tipping shall cease and appropriate remedial measures shall be taken in the event of gas generation at levels which may cause danger to public health or serious detriment to the local amenity.

- F7 Continuing measures shall be taken to prevent migration of gas either from the site or to inappropriate places within the site. Investigations shall be carried out to ascertain the degree of potential migration within or from the site and to advise and undertake what measures, if any, are necessary to prevent serious detriment to the local amenities or a danger to public health.
- F8 Any part of the gas control system that fails to meet the design standards of the working plan shall be repaired or replaced, after consultation and the agreement of the Disposal Authority, without delay.
- F9 Any groundwater, leachate or gas monitoring boreholes that for whatever reason become unsuitable shall be restored or replaced following agreement with the Disposal Authority, within two weeks of becoming unserviceable. A record shall be kept available for inspection of all such servicing.
- F10 Monitoring of groundwater, surface water and leachate quality shall be undertaken as detailed in Schedule H. The analysis of samples of groundwater, surface water and leachate shall be carried out at a NAMAS accredited laboratory or other suitable laboratory as agreed with the Disposal Authority.
- F11 Groundwater level and leachate levels and depths shall be recorded in accordance with the working plan and the results correlated to Above Ordnance Datum (AOD).
- F12 Unless otherwise agreed with the Disposal Authority all waste delivered to the facility shall be sampled, analysed and assessed in the site laboratory or other laboratory as agreed with the Disposal Authority in accordance with methods detailed in the working plan, so as to ensure that all waste within the load is consistent with the sample provided in accordance with condition E8. Such sampling, analysis and assessment shall ensure that the waste is capable of disposal at the facility in accordance with this licence.

All such records shall be maintained by Mid Glamorgan County Council or their successors for five years, after completion of the site, and a summary of these results shall be supplied to the Disposal Authority.

- F13 The Disposal Authority may select a maximum of one in every six of the samples taken by the licence holder in accordance with Condition F12. The licence holder shall subject the selected sample to analysis by an independent chemical laboratory agreed between the licence holder and the Disposal Authority. The cost of such analysis shall be borne by the licence holder.

- F14 Results of all monitoring including groundwater/leachate, levels and gas readings and analysis shall as soon as they become available be kept on site and open to inspection. A report detailing the results shall be forwarded to the Disposal Authority within 14 days of the end of each month of all monitoring and analysis carried out in that period.
- F15 The on site sampling, analysing and assessment of wastes and/or monitoring of ground/surface water and leachate shall be undertaken by person(s) holding an appropriate qualification and as agreed with the Disposal Authority.

SCHEDULE 'G' SITE CAPPING

- G1** When final level has been reached the site shall in accordance with the working plan be capped to prevent
- i.** the uncontrolled migration of landfill gas into surface soils of the site;
 - ii.** the penetration of surface water into waste bearing layers of the site;
 - iii.** the egress of leachate from the surface of the site.
- G2** Prior to the installation of the cap a protective layer shall be laid in accordance with the working plan to ensure the integrity and performance of the cap.
- G3** In accordance with the working plan, if a natural material is to be used to cap the site, it shall be a minimum of 1.0 (one) metre thickness measured normal to the surface, and have an emplaced permeability of not greater than 1×10^{-9} m/sec. If a cap made from a synthetic material is to be used it shall have as a minimum an equivalent performance to that specified and be emplaced in accordance with the working plan. Such capping shall not be allowed to affect the integrity of the gas venting system or the leachate collection system.
- G4** The cap shall be emplaced and keyed into the liner no later than one month following the completion of infilling in each cell in accordance with the working plan. The storage of materials on areas awaiting capping shall not alter the time within which capping should be undertaken. Cover shall be provided to minimise the ingress of surface water until such time as the cap has been emplaced.
- G5** Final restoration shall be to the agreed contours in accordance with the working plan. Details of restoration including cross sectional drawings showing the proposed site profile at the time of restoration and indicating the calculated final settlement shall be included in the working plan.
- G6** In accordance with the working plan, to ensure its integrity and performance the cap shall be covered with at least 1.0 (one) metre thickness measured normal to the surface of colliery shale to prevent damage, desiccation, penetration of roots or erosion of the cap.
- G8** The final surface of the site shall be adequately contoured to allow for settlement and to encourage surface water run off.

- G9** All engineering works prior to the commencement of restoration, including respectively permeability tests and specifications for emplacing the impermeable natural or synthetic cap shall be in accordance with a programme of Construction Quality Assurance detailed in the working plan. The capping of the site shall be supervised by an independent chartered specialist.
- On completion of the cap the independent chartered specialist shall furnish a "compliance document" to the Disposal Authority. This report shall contain details of the tests carried out and the results obtained, together with a statement that the cap meets the specification in Condition G3.
- Location plans of all tests carried out and plans detailing the construction of the cap shall be included with the "compliance document". The supervising specialist shall have full professional indemnity insurance for the appropriate amount agreed with the Disposal Authority.

SCHEDULE H MONITORING

H1 Leachate, Groundwater, Surface Water, and Landfill Gas sampling shall be carried out at the frequencies set out in the Table below

STAGE	TYPE OF MONITORING	
	<u>FREQUENT</u>	<u>PERIODIC</u>
Preconstruction	Weekly	Monthly
During Cell Construction	Weekly	Monthly
During Cell Filling	Every 3 Days	Fortnightly
Up to 3 Months After Completion	Weekly	Monthly
3 to 6 Months After Completion	Monthly	Six Monthly
Ongoing	Quarterly	Six Monthly

H2 All frequent leachate and groundwater samples shall be monitored for, the following components:-

1. Electrical Conductivity
2. pH
3. Iron (total and dissolved)
4. Sulphate
5. Phenol
6. Free Cyanide

H3 All periodic leachate samples shall be monitored for components listed in H2 and the following additional components

1. Benzene
2. Toluene
3. Xylene
4. Total Hydrocarbon Extractable Material

H4 Landfill gas samples shall be sampled at the frequency set out in the Periodic section of the Table shown in H1.

H5 All landfill gas samples shall be analysed for the following components

1. Carbon Dioxide
2. Carbon Monoxide
3. Oxygen
4. Hydrogen Sulphide
5. Hydrogen Cyanide
6. Flammable Gases