INSPECTORS REPORT

WASTE LICENCE REGISTER NUMBER 181-1
APPLICANT: Swalcliffe Ltd, East Road, Dublin 3.
FACILITY: Clifford Fenton, Disused Sand/Gravel Pit, Coolamaddra, Glen of Imaal, Co Wicklow.

INSPECTORS RECOMMENDATION:
That a Waste Licence be granted subject to conditions.

(1) Introduction

This waste licence application is for activities associated with the cleanup of an unauthorised landfill of approximately 8,000 tonnes (applicant's estimate) of mixed construction, chemical, municipal, hospital, and hazardous clinical waste emplaced in 2001 at a disused sand and gravel pit of area 0.42ha, in Coolamaddra Co. Wicklow. The waste licence application by Swalcliffe Ltd, arises out of a High Court Judgement[1] on 31 July 2002, issued on 14 August 2002.

The site (proposed waste licence facility) lies in the rural uplands of the Glen of Imaal, Co. Wicklow. The site setting is agricultural consisting of numerous small fields served by a lattice network of third class roads.

The entrance to the pit is via a gated field and gravel drive which runs from the road (on a ridge) through a field and down into the waste body. The distance from the road to the boundary of the pit is approximately 60m; the pit cannot be seen from the roadway. At the base of the pit lies a small stream which flows east west to the River Slaney approximately 400m distant. The nearest residence lies immediately adjacent and upgradient of the pit, and is inhabited by Mr Clifford Fenton, the pit owner. The nearest neighbours lie 350m east and 150m west of the site. The topography is such that the third party dwellings are not at risk from dust arising at the illegal landfill.

A plan showing the location of the facility to which the application relates is provided in Figure 1. Photographs of the facility appear as Plates 1 – 3. A detailed site plan of the facility is provided as Figure 3.

The facility boundary is square shaped with a total area of 2.2 hectares (130m x 170m) of which the waste body is only 0.42 hectares (120m x 35m). Parts of the facility have been reserved for waste storage, vehicle parking and topsoil storage.

[1] High Court Judgement issued on 14 August 2002. Ref: 2002 No. 25 MCA.
Wicklow Co Co v. Clifford Fenton/Swalcliffe Ltd (Dublin Waste) before Mr Justice O'Sullivan.

The High Court Judgement on 14 August 2002 ordered *inter alia* that Swalcliffe Ltd.:

(a) by 2 October 2002 seek Agency consideration of whether any licence is required for the waste activities contained within the documents specified issued in September 2002:

- Method Statement
- Environmental Assessment
- Proposed Health & Safety Strategy

Note: Agency wrote to Shannon Solicitors on 8th October 2002 advising that a waste licence was required for the activities proposed within the three documents.

(b) that if the Agency decides that any licence is required, Swalcliffe Ltd shall carry out the 11 actions specified in the judgement (3rd Schedule, 3rd Appendix) within three months of the date of the Agency decision to grant a Waste Licence. These actions are reproduced in Attachment 1 of this report and are summarised below:

1. Swalcliffe Ltd shall initiate and implement and put into operation the health and safety programme set out in the health and safety report.

2. Swalcliffe Ltd shall initiate and implement and put into operation all necessary security measures to prevent unauthorised third party access to the site for the duration of the remediation and mitigation works.

3. Establish a trommelling system on the site that is capable of mechanically segregating the sand and gravel from the co-mingled waste.

4. Mechanically excavate and load the unsegregated waste from the landfill and trommel[2] and segregate the waste by visual inspection.

5. Segregate and categorise trommelled waste recovered from the landfill into the following indicative categories:
   i. Chemically hazardous waste
   ii. Waste of hospital origin
   iii. Construction and demolition waste
   iv. Remaining waste.

6. The segregated categories will also include all material from the landfill that has been collaterally contaminated.

7. Each segregated category of waste recovered from the landfill shall be appropriately packaged and prepared for removal by road to conform and comply with all relevant regulatory requirements.

8. Identify licensed waste facilities for the acceptance of the segregated waste in defined categories.

[2] Trommel: A revolving cylindrical sieve used for screening or sizing rock and ore.

9. Construct an engineered waste cell ensuring environmental isolation to store recovered sand soil and gravel in a safe way on the site.

10. Restore the excavation (illegal landfill) with verifiably clean soil.

11. Carry out a comprehensive aftercare environmental monitoring programme.

The waste body is now covered with a clay cover approximately 1m thick and awaits a waste licence for waste excavation, physical treatment, segregation and onward disposal, as detailed above. The intended period of the waste licence is 3 months (to meet the High Court order), after which time environmental monitoring will be undertaken for one year as provided for in Attachment F of the application *(Condition 8.1).*

The applicant has applied for waste activities specified in the WMA Third Schedule Classes 1, 4, 6, 7, 11, 12 and 13 under licensed waste disposal activities, and Fourth Schedule Classes 2, 3, 4, 6, 10 and 13 under licensed waste recovery activities. The principal activity has been set as Third Schedule, Class 7 (Physical-chemical treatment of waste prior to disposal).

I recommend that the following waste activities applied for be refused:

Third Schedule, Class 6. - No relevant proposals were included in the licence application for biological treatment, other than the words bioremediation or composting of waste, contained in Attachment B9 of the application.

Fourth Schedule, Class 6. - This activity was applied for in error. No such activity is envisaged by the applicant.

Facility Visits:

DATE	**PURPOSE**	**PERSONNEL**
23 October 2002	Facility Visit	D. Shannon, M F Rochford, M. Doak
6 November 2002	Facility Notice Check	M. Doak
7 January 2003	Facility Visit	P. Hermannsen
17 February 2003	Facility Visit	G. Carty, B. Wall

General Information:

Date of Application	**30 October 2002**
Quantity of Waste to be removed	Up to 8,000T waste/soils exported.
EIS required	Not required
Number of Submissions received	2

(2) Environmental Site Assessment

A detailed ground investigation which included trial pitting and borehole drilling was undertaken for the applicant by S. M. Bennet & Co. Ltd. during the July to September 2002 period, the details of which are set out in the required High Court document (Document 2) – the *Environmental Site Assessment*, which is set out in the style of an EIS.

The inventory of the work carried out for this report is outlined below:

- 17 trial pits excavated into the body of waste & soil sampling;
- 8 boreholes (by rotating auger) drilled and installed as groundwater monitoring wells 4 in the gravel subsoils up/cross gradient, 4 downgradient and adjacent to the stream;
- 12 soil vapour gas survey points at the waste body and vicinity;
- seepage flux measurements at the stream bed to determine groundwater influence;
- flow measurement of the stream by constructed V-notch weir;
- collection of water samples at the 8 wells and at two stream locations;
- ambient air quality survey;
- ambient landfill gas surveys (5);
- ecological survey & stream macro-invertebrate study;
- topographical survey and tie in of all monitoring stations.

The detailed investigations provide good information for determining the site situation and the impacts (if any) of the illegally emplaced waste.

The trial pit excavations determine that an assortment of waste was emplaced onto the worked out gravel quarry floor, the floor consisting of naturally occurring stiff silty clay. The types of waste emplaced include hospital waste (majority ward/food waste, documentation, occasional sharps, blood stained dressings IV tubing), construction waste, commercial and municipal waste, and fallen farm animal carcasses. Depths of waste range from 0.3m to 4m below ground level. A volumetric waste survey by S. M. Bennet & Co. Ltd (High Court Affidavit July 02) defines the mass of waste to be 3,200 tonnes over an area of 2,600m^2 (minus the clay cap of 3,800 m^3). This was a detailed assessment for the purposes of the High Court case, but the figures have since been rounded up for the waste application.

A geotechnical laboratory analysis carried out on the natural clay unit which underlies the body of waste specifies it as a compacted stiff silty clay with a permeability of 1x 10^{-8}m/s. The depth of the clay is unknown (probably more than 10m thick) and is underlain by metamorphic and granitic bedrock which is considered to be a poor aquifer.

Results of soils analyses for a large suite of parameters in the eight monitoring wells and in the soils directly underlying the waste body (trial pits) are at or below the Dutch Target Values. A leachate sample taken from one of the three trial pits and collected from the waste layer shows a pH of 7.54, with elevated results for phosphate, iron and

manganese only. Concentrations for another 23 parameters fell below values for typical leachate composition in recent waste.

Results of the soil vapour survey show that the landfill gas from the main waste body contains a significant proportion of carbon dioxide (0.05 – 4.88%), and methane (0.002 – 59.0% LEL) but that there is no significant lateral movement of the landfill gas.

Site investigations determine that the watertable lies 5m below pit surface with groundwater flow entirely in the gravels in an east-west direction before it discharges to the small stream (from seepage flow measurements) which runs along the foot of the pit. The groundwater aspects are considered to be of a local system scale (500m) given that recharge occurs to the east of the pit, flows via waste into the sand & gravels (and waste) and discharges into the stream immediately downgradient. The nearest abstraction well lies crossgradient at Mr Clifford Fenton's house, which is no longer in use.

Results of water quality for the 8 monitoring wells installed in the sands and gravels surrounding the waste show elevated results for bacterial concentrations (4,100 – 15,760 total coliform count), nitrite (0.07mg/l – 0.15mg/l), and ammonia (0.03mg/l – 1.7mg/l). The stream water quality results are similar in that the ammoniacal nitrogen (0.65mg/l) and the total (7,000) & faecal (1,300) coliforms results are above the MAC values for Drinking Water and the A1 abstraction standards for Surface Water.

In conclusion it is my opinion that the total environmental impacts arising from the presence of waste are localised, the greatest impact occurring on the Coolamaddra Stream. The stream would be the main environmental receptor for any contamination arising from the recently emplaced waste, since it lies at the foot of the waste embankment. The stream is 0.5m – 3.0m wide, water depth is 0.5m, and flow is approximately 10 l/s.

(3) Facility Development

The following three documents submitted as part of the application propose a remediation strategy for the facility as ordered by the High Court:

- **Method Statement - Document 1:** Response to High Court Order Ref: 2002 No. 25 MCA. September 2002. *Prepared by S. M. Bennet & Co. Ltd.*
- **Health & Safety Report - Document 3:** Response to High Court Order Ref: 2002 No. 25 MCA. September 2002. *Prepared by S. M. Bennet & Co. Ltd.*
- **Application for a Waste Licence; Attachment D.** Facility Design. *Prepared by NESA.*

The principal activity (3rd Schedule, Class 7) is specifically related to the excavation and recovery of waste by sorting (via a trommel) and its segregation prior to off-site disposal at a licensed facility. Some chemical treatment in the form of chlorination of potentially hazardous or infectious wastes is envisaged. The proposed activities are to be carried out over a three month period for 24hrs a day. The scope of work necessary

to carry out this activity is set out in Pages 10 to 25 of *Method Statement - Document 1*.

The proposals identified in the *Method Statement - Document 1*, the *Health & Safety Report - Document 3*, and the *Application for a Waste Licence; Attachment D* are adopted in the proposed decision as *Condition 5.2 Remediation of the Facility and as various conditions arising out of Condition 3, Facility Infrastructure,* by way of reference to the detailed documentation. In summary the Remediation Strategy set out in the three documents is as follows:

- the installation of temporary plastic sheeting across the entire waste body to prevent unnecessary recharge prior to waste activities;
- the installation of temporary security fencing around the site (Condition 3.3.1);
- the setup of a comprehensive health & safety programme which sets out a four step 'Programme of Works', the division of the site into 'cold, warm, and hot zones', and the provision and supervision of three levels of PPE. All personnel to undergo a health & safety induction course (Conditions 2.1.3 & 2.3);
- the installation of a temporary physical containment (prior to excavation), consisting of sheet piles (7m depth) on the southern boundary to contain any loose waste and prevent leachate ingress into the adjoining stream (Condition 3.10.1);
- temporary leachate collection system, comprising a sump with pump and holding tank to be positioned at the site low point (Condition 3.9);
- excavation of waste by section grid (5m x 20m) and removal by dumper to main processing area (Condition 5.3.2);
- contained processing area where pre-processing sort (removal of large objects) and anti-bacterial spray will be applied (Condition 3.5);
- remaining unsorted material will be passed into a series of machinery: hoppers and shaker bars, inclined conveyors and a trommel (Condition 3.8.1);
- presorted and trommelled material placed in appropriate quarantine as (Condition 5.3.1 {further details are required in proposed decision}):
    - chemically hazardous waste
    - waste of hospital origin
    - construction and demolition waste
    - remaining waste
- the construction of a short-term waste storage/quarantine area underlain by compacted roadbase material and plastic liner, which will include a perimeter drainage system and sump (the location to be in the roadside field and as specified in Figure 01 of the application) (Condition 3.5.1).

Overall excavation is to be completed to 1m below the original waste level as specified in Condition 5.6.1. It is proposed to restore the entire excavated area to pit levels today, for agricultural use. The applicant envisages that up to 2,000m^3 of soil will be imported to fill the void space. Given that the current topography is of a stepped nature and that a waste acceptance system would have to be organised and controlled I consider that no importation of soils should occur unless absolutely necessary (Condition 4.1). I consider that the final profile be graded to provide a slope suitable for agricultural purposes (Condition 4.2). The existing stockpiles of soils and gravel

faces should be utilised. Condition 4.4 specifies that restoration shall be completed as discussed within twelve months of date of grant of licence.

(4) Waste Types and Quantities

Condition 1.4 and Schedule A of the proposed decision controls the quantities and types of waste to be removed from the facility.

The exact quantity and types of waste to be removed cannot be confirmed until the total excavations are carried out. Any arising hazardous waste is to be packed separately into steel drums. It is envisaged that most of the clay cover material will be recovered on site (via trommelling) to be used to restore the site after excavation.

In summary all waste exported from site will need to meet the trace documentation requirements of Condition 5.7 and Condition 10.2. The volumes and types of waste to be exported are small. I am specifying that any waste to be exported from the facility shall be treated as hazardous waste and not exceed 10,000 tonnes as per Schedule A.

The quantity of soils/made ground to be exported depends on the contamination levels of the soils. Section 2 of this report demonstrates that the soils are free of any contamination (as all parameters sampled fall below the Dutch Target Values). The licensee should ensure that soils are physically sorted and stockpiled (to meet High Court requirements) and are tested for contamination as per the recent EU Council Decision of 19 December 2002 (2003/33/EC). Soils which do not meet requirements of (estimated at <1,000 tonnes) should be exported from site for disposal at a licensed facility. Further detail and procedures are needed to be written by the licensee on this matter as required by Condition 5.3.1.

(5) Management and Control of Emissions to the Environment

Since the waste activities are limited to a short duration of less than three months, the normal Agency requirement of an EMS for the facility has been omitted, but is replaced by the detailed formal Health and Safety plan (Condition 2.3) submitted with the application (Document 3; discussed in Section 3, above).

The environmental aspects associated with this application have already been discussed in Section 2 of this report. The environmental monitoring points for groundwater, surface water, dust, and noise will be as those set out in the applicant's method statement and the details provided in Attachment F of the application, and adopted as (*Schedule C: Monitoring*).

(6) Waste Management Plans

Not applicable.

(7) Submissions/Complaints

A total of 2 valid submissions were received in relation to the licence application. I have had regard to all of the submissions in making this recommendation to the Board. Below is a summary of the main concerns raised in the submissions:

1. Duchas

Duchas requested that the Agency refer to the Eastern Regional Fisheries Board for comment on the effect of the River Slaney.

Response

Done

2. Eastern Regional Fisheries Board

The Eastern Regional Fisheries Board (ERFB) note that the 'Coolamaddra Stream' is a salmonid river as part of the Slaney River. The EFRB has no objection to the waste application provided that the sump with pump and holding tank are of adequate capacity to deal with leachate production in wet weather.

Response

The size of the holding tank and the installation of high-level alarms are dealt with in Condition 3.9 of the proposed decision.

(11) Reasons for the Recommendation

I recommend the grant of a licence which will allow the activities associated with the cleanup of an illegal landfill of approximately 8,000 tonnes of mixed construction, chemical, municipal, hospital, and hazardous clinical waste emplaced at Coolamaddra Co. Wicklow, and which will meet the requirements of the High Court Judgement issued on 14 August 2002. I recommend that a licence be granted for the Third Schedule Classes 1, 4, 7, 11, 12, and 13 under licensed waste disposal activities, and the Fourth Schedule Classes 2, 3, 4,10, and 13 under licensed waste recovery activities of the Waste Management Act, 1996 for the following reasons:

1. I am satisfied that emissions from the excavation and physical treatment of waste will not result in the contravention of any relevant standard, including any standard

for an environmental medium, or any relevant emission limit value, prescribed under any other enactment.

2. I am satisfied that the activity concerned, carried out in accordance with the conditions proposed will not cause environmental pollution. Provision of a leachate collection sump and holding tank, and the provision of temporary steel shuttering on the downgradient boundary, are key aspects which will protect the Coolamaddra Stream from pollution during waste activities. Ultimately, the removal of the waste body will ensure that the Coolamaddra Stream will not be polluted in the future.

3. I am satisfied that all eleven actions required by the High Court Judgement are addressed by the twelve conditions of the proposed decision.

Signed: _____ Dated : _____

Mr Malcolm Doak 8 April 2003

ATTACHMENT 1

High Court Judgement issued on 14 August 2002.
Ref: 2002 No. 25 MCA.
Wicklow Co Co v. Clifford Fenton/Swalcliffe Ltd (Dublin Waste)
before Mr Justice O'Sullivan.

THIRD SCHEDULE; THIRD APPENDIX

1. Within three months of the date of the Order and in any event prior to the commencement of the actions referred to at 3,4,5,6,7,8,9,10 and 11 of this Appendix and for the entire period when such actions are being carried out the second named Respondent shall initiate and implement and put into operation the health and safety programme set out in the health and safety report.

2. Within three months of the date of the Order and in any event prior to the commencement of the actions referred to at 3,4,5,6,7,8,9,10 and 11 of this Appendix and for the entire period when such actions are being carried out the second named Respondent shall initiate and implement and put into operation all necessary security measures to prevent unauthorised third party access to the site for the duration of the remediation and mitigation works.

3. Establish a trammelling system on the site that is capable of mechanically segregating the sand and gravel from the co-mingled waste.

4. Mechanically excavate and load the unsegregated waste from the landfill and trammel and segregate the waste by visual inspection.

5. Segregate and categorise trammelled waste recovered from the landfill into the following indicative categories that is to say:
    i. Chemically hazardous waste
    ii. Waste of hospital origin
    iii. Construction and demolition waste
    iv. Remaining waste

6. The segregated categories will also include all material from the landfill that has been collaterally contaminated.

7. Each segregated category of waste recovered from the landfill shall be appropriately packaged and prepared for removal from the first named Respondent's lands by road transport in a manner and to the specifications necessary to conform to and comply with all relevant regulatory requirements in place in relation to the transport of such materials by road.

8. Identify and negotiate with domestic and overseas waste management facilities to accept the segregated waste in defined categories.

9. Construct an engineered waste cell ensuring environmental isolation to store recovered sand soil and gravel in a safe way on the site.

10. Restore an area of the site approximately 30 metres by 26 metres by using verifiably clean soil to the standard of the neighbouring portion of the field taking into account the existence of the worked out sand and gravel pit on the site.

11. Initiate and implement a comprehensive monitoring programme to assure effective aftercare of the first named Respondent's lands.