

INSPECTORS REPORT
WASTE LICENCE REGISTER NUMBER 70-1

(1) Summary:

This application is for an existing unlined landfill facility accepting an estimated 12,000 tpa of non-hazardous waste. The landfill has been in operation since 1978 and landfilling is expected to cease in 2003. The facility is located in a former slate quarry and it is believed that waste has been placed directly on the bedrock. The proposed decision requires leachate and landfill gas management systems to be put in place. A detailed restoration plan is also required to be submitted.

Name of Applicant	Cork County Council
Facility Name (s)	Benduff Landfill
Facility Address	Benduff, Rosscarbery, Co. Cork
Description of Principal Activity	Deposit in or on land
Quantity of waste (tpa)	12,000
Environmental Impact Statement Required	No
Number of Submissions Received	Eight valid submissions
Inspector's Recommendation	The draft proposed decision, as submitted to the Board, be approved.

(2) Site visits:

Date	Reason	Personnel
30/10/98	Site notice check	Brian Donlon
3/6/99	Site visit	Brian Donlon/Jane Brogan
4/7/00	Site visit	Regina Campbell

(3) Facility Location

Appendix 1 contains a site location map and a plan showing the layout of the facility.

The existing facility is located on a side road approximately 300m north of the main Rosscarbery-Skibbereen road (N71). The towns of Skibbereen and Clonakilty are both approximately 20km from the facility whilst the village of Rosscarbery is situated 2.5km to the east. The facility is located in a former slate quarry and is surrounded by a small pine plantation to the north and planted woodland and dry heath to the west. Pasture land lies to the east and northeast. A piggery also bounds the facility to the southeast. There are approximately 17 residences within the 500m boundary offset.

(4) Waste Types and Quantities

Condition 5 and Schedule G control the quantities and types of waste to be accepted at the facility. The total quantity of waste will not exceed 12,000 tpa.

(5) Activity Summary

The facility is presently operating as a municipal waste landfill. The facility accepts waste from local authority collection services and private individuals. Sewage sludge and industrial non-hazardous sludge (sludge from water treatment plants) is also accepted at the facility. Inert waste will be accepted and used in the restoration of the site. The landfill occupies approximately 3 ha with an average depth of waste of approximately 18 to 20 metres. The landfill is being developed in a phased manner with filling followed by restoration taking place. Landfilling is due to cease in 2003. A small civic waste facility also currently operates at the site.

(6) Facility Operation/Management

- **Waste Acceptance Procedures**

Conditions 5.1 and 5.2 restrict the waste types that can be accepted. No hazardous waste will be accepted for landfilling. A small civic waste facility is currently in operation with recycling banks for bottles, cans and waste oil. A skip is also provided for white goods and an area is set aside for scrap metal.

- **Waste Handling**

Condition 4.8 requires a weighbridge to be installed at the facility. Waste being delivered to the site is controlled at the reception area. All loads of waste are tipped over a retaining wall at the waste tipping area. Waste is then brought to the working area for compaction. Waste is inspected at the reception and waste tipping area. Condition 4.7 requires the construction of a waste inspection and quarantine area.

- **Nuisance Control**

Potential nuisances are controlled by Condition 6 – Environmental Nuisances. No wheelwash will be provided at the facility. All vehicles entering and leaving the site will travel on hardstanding areas within the site. This will ensure that no mud is carried onto the public highway. Conditions 6.1, 6.2 and 6.6 will ensure that the site roads and public road are kept free of debris and mud.

- **Hours for Waste Acceptance**

Conditions 5.8 and 5.13.1 control the hours of waste acceptance at the facility.

(7) Facility Design

- **Infrastructure**

At present the main entrance is secured with steel security gates. Condition 4.3 specifies that the site boundary is secured using chainlink type security fencing.

Infrastructure to be put in place include a waste inspection/quarantine area and a security fence. There are no plans to install a wheelwash at the site. No fuel is stored on site. Conditions 4.12 and 5.19 relate to the provision and operation of the Civic Waste Facility.

- **Leachate Management**

Benduff Landfill has been operated as a 'dilute and disperse' landfill for over 20 years. No attempt has been made to collect, treat or dispose of leachate over this time. Wells drilled both around and through the waste mass have failed to find measurable quantities of leachate so it is presumed that leachate is dispersing from the area. Condition 5.11 requires that cover material is placed over the whole landfill and Condition 4.16 specifies that the final capping will include a low permeability layer. These measures will ensure that rainfall penetration and subsequent leachate production is minimised.

Condition 4.14 requires that a leachate abstraction system is put in place. Leachate will subsequently be tankered off-site to an agreed Waste Water Treatment Plant if substantial quantities of leachate are found to develop in the waste.

- **Landfill Gas Management**

The nearest dwellings are approximately 185m to the east and 180m to the west. The application suggested the incorporation of passive vents into the final cap at approximate grid spacing of 40m x 40m. Condition 4.15 requires the installation of a landfill gas collection and flaring system. Condition 9.1 governs landfill gas monitoring at the facility. Schedule E.1 requires landfill gas monitoring to be undertaken at perimeter locations. Schedule F.4 specifies emission limit values for a Landfill Gas Flare.

- **Capping System**

The final capping system required is specified under Condition 4.16.2.

(8) Restoration and Aftercare

Condition 8.1 requires detailed restoration and aftercare plans to be submitted for agreement. Condition 8.2 limits the highest peak post-settlement level to 95m O.D. Under Condition 8.3 a drawing of the final contours is to be submitted for agreement with the Agency.

(9) Hydrogeology

The site is underlain by the Kinsale Formation of Lower Carboniferous Age consisting of slates and mudstones. Groundwater flow in the bedrock is via fissure flow. The site is located at a local groundwater divide and so flow direction is both to the east and west. It is believed that waste was placed directly onto the slate bedrock or slate spoils, in some places infilling the former quarry workings. This combined with the lack of overburden at the site and exposure of bedrock indicates an extreme vulnerability for the groundwater. The bedrock underlying the site is classified as a poor aquifer, moderately productive in local zones (Pl). Off site migration of leachate is believed to be occurring via the slate spoils and shallow bedrock fractures which are present to the west of the site.

As part of the application process, four bedrock groundwater monitoring wells and two domestic wells were tested. Ammoniacal nitrogen, which is a good indicator of leachate contamination, was elevated in one groundwater well to the west of the site (average of 3.6mg/l NH₄-N in MW1). Groundwater quality therefore does show slight impact from leachate but domestic wells in the vicinity show no exceedance of criteria. Condition 4.14 requires leachate abstraction from the waste and subsequent treatment at a WWTP if substantial quantities of leachate are found to develop in the waste.

Mitigation measures include capping and restoration as required in Condition 4.16 and Condition 8. Monitoring in accordance with Condition 9.1 will also be carried out and Condition 10.5 provides for immediate investigations in the event of any pollution being detected in local wells.

(10) Emissions to Air

- **Landfill Gas**

At present, emissions of landfill gas are diluted and dispersed and to date, have not given rise to any problems. Condition 4.15 requires the active collection and flaring of landfill gas at the facility. Schedule E.1 specifies the landfill gas monitoring locations.

- **Dust**

Dust monitoring showed that there are no exceedance of standards both for dust deposition levels and TSP levels. The greatest potential for the generation of dust emissions is from the waste tipping area, the working face and during the restoration of the landfill. Dust monitoring locations are specified in Schedule E.3 and emission limits are set out in Schedule F.3.

- **Odour**

This will be controlled by the use of daily cover and immediate disposal of difficult wastes such as sludge. Potential sources of background odour in the vicinity are mainly associated with agricultural practices. Under Condition 6.7 no nuisance may arise from odour at the facility.

(11) Noise Emissions & Vibration

A noise survey undertaken has shown that there is no noise nuisance associated with the site. The main source of noise from the landfill is mobile plant on site and traffic on internal site roads and access roads. However there is also noise from the piggery and plant and machinery facility adjacent to the site. Condition 9.1 requires noise monitoring and noise emission limits are set in Schedule F.1 for the nearest noise sensitive location.

(12) Emissions to Sewer

Not applicable.

(13) Emissions to Surface Water

There are no surface water bodies flowing through the site. The site is located on a local surface water divide and therefore spring-fed streams rise and flow on either side of the site. To the east of the site, spring fed streams flow to Rosscarbery Harbour whereas to the west they flow to the Cashel River which joins the Roury River before discharging to the sea. The landfill is not causing environmental pollution of surface water. The primary strategy for controlling surface water from the landfill will be by the formation of a domed profile with run-off to the surrounding ditches.

Condition 9.1 requires monitoring of the surface water near the site to be undertaken. The locations, frequency and parameters required are set out in Schedule E.5.

(14) Other Significant Environmental Impacts of the Development

- **Cultural Heritage**

The landfill is located in an old slate quarry which was in use in the 19th century and up to 1950. A chimney with some ruinous stone walls remains on the southwestern side of the site. Nine men were killed in a landslide in 1892 and a number of bodies are reportedly still buried beneath rubble. Two memorial sites to the victims are located to the west of the site boundary and occasional memorial services are held. Condition 8.6 requires the preservation of the historical structures on the site to be undertaken as outlined in the application.

(15) Waste Management, Air Quality and Water Quality Plans

The Waste Management Plan for Cork County (May 1999) states that Benduff Landfill has applied for a waste licence but will close in the short-term. There are no Air Quality or Water Quality Plans for this area.

(16) Submissions/Complaints

A total of eight valid submissions were made in relation to this application. Appendix 2 contains a list of the submitters.

1. Submission from Sean & Dominic O' Mahony [received 26/11/98]

In the letter the O'Mahonys state that they own the adjoining land to the landfill and that they do not accept that Cork County Council own the landfill site. They demand production of evidence of the Council's ownership of the land.

Response

The Agency obtained legal advice on this matter whereby it is not the function of the Agency to investigate the title of the Applicant in the lands. This is a matter between the O'Mahonys and Cork County Council. In section B.1 of the application, Cork County Council states that it is the landowner of the site. The proposed decision refers to the area outlined in the Site Plan submitted as part of the application.

2. Submission from Sean O'Mahony [received 26/11/98]

Sean O'Mahony states that he is the owner of a house that is adjacent to the site boundary. He has found it difficult to keep tenants in the house due to nuisances from the dump including odour and flies and due to the danger of landfill gas. He also states that the dump is visible from the house and is unsightly. He also states that the height of the landfill should not exceed 86m.

Response

Condition 6 of the proposed decision will control nuisances from the landfill including odour and flies. Condition 5.10 requires the use of daily cover material which will also limit odours. Condition 4.15 requires a landfill gas collection system to be put in place and landfill gas monitoring is also required at a location adjacent to the house referred to in the submission. The highest point of the landfill was already greater than 88m O.D. according to a Contoured Site Plan undertaken in July 1998 and submitted as part of the application. Condition 8.2 limits the highest post-settlement level to 95m O.D. at any point on the landfill. A detailed Restoration and Aftercare plan is also required to be submitted under Condition 8.1 and this will ensure that the landfill is landscaped properly after closure.

3. Submission from Dominic O' Mahony [received 20/1/99]

The letter refers to the following concerns:

- a) Cork County Council plan to close their other West Cork sites and make Benduff their central dump. He states that the dump is already full and cannot cater for more rubbish.*
- b) The dump is visible from his house and the final level of 98m proposed in the application is unacceptable. He states that it was agreed with his father that the finished height of the landfill would be 83m*

- c) *Litter is a problem from the dump and is dangerous to livestock especially calves. Litter is also a problem along the roadside and fly-tipping also occurs*
- d) *Flies, rats, birds and odours are a problem. Birds dropping litter in cattle water troughs is a problem.*

Response

- a) Benduff Landfill can only accept a maximum of 12,000 tonnes per annum. Landfilling is due to cease there after 2003.
- b) Condition 8.2 limits the highest post-settlement level to 95m O.D. at any point on the landfill. A detailed Restoration and Aftercare plan is also required to be submitted under Condition 8.1 for the agreement of the Agency. This will include detailed landscaping plans.
- c) & d) Condition 6 will ensure that all environmental nuisances are controlled including litter, flies, rats, birds and odours.

4. Submission from Collins, Brooks & Associates, Solicitors [received 22/1/99]

This submission was received on behalf of Sean and Dominic O' Mahony. The letter states that the O'Mahonys wish to have on record the fact that they claim to be entitled to a legal interest in the property. They state that a copy of the letter has also been sent to Cork County Council and that consideration of the application should be deferred pending production of proof of ownership.

Response

See response to Submission no. 1.

5. Submission from Collins, Brooks & Associates, Solicitors [received 25/2/99]

This submission was received on behalf of Sean and Dominic O' Mahony. The letter stated disappointment that the previous submission appeared to be ignored.

Response

A letter was sent by the Agency to the solicitors stating that their letter was being treated as a submission.

6. Submission from Collins, Brooks & Associates, Solicitors [received 8/3/99]

This submission was received on behalf of Sean and Dominic O' Mahony. The letter stated that submission no. five should be treated as more than a submission. Cork County Council had applied for a licence in respect of a premises to which it did not hold proper title and that the matter should be clarified before the application was considered further.

Response

See response to submission no. 1.

7. Submission from Leonard Tobin [received 10/5/99]

The letter refers to the following concerns:

- a) the dump is already full. Cork County Council said when first began dumping that they would only fill in two quarried holes.*
- b) As a resident within 180m of the site, he and his family have had problems with vermin and flies especially in the summer. The Council have appeared to make no attempt to control the problem. Odour is also a problem.*
- c) Litter in the vegetation at his house and along the roadside is a problem and the Council have a poor record in controlling the problem.*
- d) Has a view of the site from his house and is unsightly. He is opposed to any increase in the height of the landfill.*
- e) The condition of the dump and approach roads is unacceptable. Flytipping is a problem and no prosecutions have been brought by the Council.*

Response

- a) Benduff Landfill can only accept a maximum of 12,000 tonnes per annum. Landfilling is due to cease there after 2003.
- b) & c) Condition 6 will ensure that measures are put in place to control such nuisances as litter, vermin, flies and odour.
- d) Condition 8.2 limits the highest post-settlement level to 95m O.D. at any point on the landfill. Condition 8.1 requires detailed Restoration and Aftercare plans to be submitted for agreement with the Agency.
- e) Conditions 6.1, 6.2 and 6.3 will ensure that the site, its environs and road network in the vicinity of the site are kept free of litter.

8. Submission from Collins, Brooks & Associates, Solicitors [received 14/1/99]

This submission was received on behalf of Sean and Dominic O' Mahony. The letter refers to the following concerns:

- a) the O' Mahonys propose to offer 3 acres of their adjoining property to the Council to be used for the disposal of rubbish. They claim that the Council previously dumped rubbish on their land and that they have been forced to consider this option as the landfill has reached a height of 15m above their land. They outline the types of waste they would accept and what time of the year they would allow access.*
- b) The letter also states that the proposed final profile of the landfill is unacceptable. They state that the final profile should be as flat as possible with a gentle slope in an easterly direction. The height of the public road and the piggery which is 84m above sea level should be taken into consideration.*
- c) Cork County Council should be responsible for the proper maintenance of the area such as extraction of gases and other similar problems that should be addressed in order to comply with proper Environmental Standards.*

Response

- a) The proposed decision deals with the area to which the waste application refers. However, Condition 9.13 requires a report on any historical landfilling by Cork County Council adjacent to the site boundary.
- b) Condition 8.2 limits the highest post-settlement level to 95m O.D. at any point on the landfill and Condition 8.3 requires a drawing of the final contours of the landfill to be submitted to the Agency for agreement. Condition 8.1 also requires detailed Restoration and Aftercare plans to be submitted.
- c) Conditions 4.14 and 4.15 require leachate and landfill gas management systems to be put in place. Condition 7 controls emissions and environmental impacts of the landfill and Condition 9 stipulates the environmental monitoring that must take place.

Signed _____

Dated:

Regina Campbell
Inspector, Environmental Management & Planning

APPENDIX 1
LOCATION MAP & LAYOUT PLAN

APPENDIX 2
LIST OF PERSONS MAKING SUBMISSIONS

1. Sean & Dominic O'Mahony,
Barley Hill,
Rosscarbery,
Co. Cork.

2. Sean O' Mahony,
Barley Hill,
Rosscarbery,
Co. Cork.

3. Dominic O'Mahony,
Barley Hill,
Rosscarbery,
Co. Cork.

- 4, 5, 6, & 8 Collins, Brooks & Associates, Solicitors,
7 Rossa Street,
Clonakilty,
Co. Cork.

7. Mr. Leonard Tobin,
Barley Hill,
Rosscarbery,
Co. Cork.