

MEMO			
TO:	Board of Directors	FROM:	Breege Rooney
CC:		DATE:	12 November 2001
SUBJECT: Waterford County Council, Dungarvan Waste Disposal Site – Technical Committee Report on Objections to Proposed Decision – Reg. No. 32-1			

Application Details	
Applicant:	Waterford County Council
Location of Activity:	Dungarvan Waste Disposal Site, Ballinamuck Middle, Dungarvan, Co. Waterford
Reg. No.:	32-1
Proposed Decision issued on:	14/06/01
Inspector:	Tadhg O' Mahony

Objections Received	Date Received
Objection by Applicant: 1. Mr. L.O.Toole, MCOS on behalf of Waterford County Council	11/07/01
Objections by Third Party: 2. Mr. Tommy Burke, Ballyneety, Dungarvan, Co. Waterford 3. Mary O'Connell for Noel O'Connell Intl., Kilgobinet, Dungarvan, Co. Waterford 4. Mr. Brian White, Dungarvan UDC	11/07/01 11/07/01 11/07/01
Submission on Article 34 1. Mr. Tommy Burke, Ballyneety, Dungarvan, Co. Waterford	11/09/01

Consideration of the Objections.

The Technical Committee (Breege Rooney, Chairperson, Maeve McHugh and Malcolm Doak, committee members) have considered all of the issues raised and this report details the Committee's comments and recommendations following examination of the objections.

Objection No. 1: Mr. Larry O'Toole, M.C. O'Sullivan on behalf of Waterford County Council (11/07/01)

Waterford County Council first of all give a summary of the relevant section of the Inspectors Report for each ground of Objection in Section 1 and then they present their Ground of Objection.

The text in italics in this memo are taken directly from the relevant objection.

The general grounds of the objection are set out in Section 1 below and follow the format of the Inspectors report. Specific grounds of appeal relating to specific conditions of the PD are set out in Section 2 of this Objection.

Section1: General Objections Based on Inspectors Report

It is advised by the Agency that the following activities have been refused:

Waste Disposal Activities:

Class 1: Deposit, on in or under land

Class 2: Land treatment, including biodegradation of liquid or sludge discards in soils

Class 11: Blending or mixture prior to submission to any activity referred to in a preceding paragraph of this Schedule.

Class 12 Repackaging prior to submission to any activity referred to in a preceding paragraph of this Schedule.

Waste Recovery Activities

Class 8 Oil re-finishing or other re-uses of oil

The refusal of Class 11 and 12 of Waste Disposal Activities and Class 8 of Waste Recovery Activities is accepted by Waterford County Council (WCC).

It is considered by the applicant however that the refusal of the other activities and in particular Class 1: Waste Disposal activity, will result in considerable difficulties for Waterford County Council in relation to their statutory obligations under Section 38 of the Waste Management Act, 1996 which requires them to provide and operate, or arrange for the provision and operation of, facilities for the disposal of waste. Dungarvan Landfill is presently the largest landfill in the County accepting approximately 50,000 tonnes of waste per annum. Tramore landfill, the only other facility in the county was issued with a PD in April 2001 which restricted the allowable intake to the site to 15,000.

Waterford County Council are currently actively progressing with the provision of an alternative facility at Garrynagree, Dungarvan. It is conservatively estimated that it could be a further three years before the alternative facility is in place and this is subject to favourable judicial outcome and Agency approval of the Waste Licence Application and EIS.

Waterford County Council are also implementing a number of recycling proposals and have received tenders for the collection of dry recyclables in Dungarvan and Tramore. Other initiatives included the installation of 40 bring centres in the County. The objective of the programme is to improve recycling rates and to divert waste from landfill however the funding for the scheme is dependant on landfill income in line with the polluter pays

principle and the closure of Dungarvan landfill will jeopardise the implementation of the recycling programme.

It is considered therefore that there is no realistic alternative to Dungarvan landfill in the short term either in the County or in the surrounding Region and that the closure of Dungarvan Landfill to municipal waste could result in significant environmental pollution in the County through illegal tipping. It is also considered that the decision of the Agency is based on inconclusive grounds as set out in the Inspectors report and on a possible misunderstanding of certain facts relating to waste intake at the site.

Waterford County Council are willing to bring forward elements of the Conditioning Works set out in the PD to ensure that any risk of environmental pollution is minimised such that the landfill can be operated in the short term prior to opening of the alternative facility.

The reasons for the recommendations are set out in the Inspectors report dated 31st May 2001 and these reasons are challenged below.'

Technical Committee's Evaluation

General

The Agency acknowledges that:-

- (a) there are only two municipal landfills, Dungarvan and Tramore, that serve County Waterford and that there are constraints associated with these.
- (b) Waterford County Council (WCC) have advised that they are pursuing other sites and that it may take three years before an alternative facility is in place.
- (c) WCC are implementing a number of recycling proposals and that the funding of the scheme was to be based on landfill income.
- (d) WCC consider that there is no alternative to Dungarvan landfill in the short term.

However, these are not factors that the Agency can base their decision upon when determining whether or not to grant a licence. The Waste Management Act, 1996 specifically details under Section 40(4) the criteria that must be satisfied before the Agency can grant a licence. The Technical Committee are concerned that the Local Authority recycling programme is dependent upon revenue generated by waste disposal as there is an obvious conflict here which might have implications for the amount of waste to be recycled in the county. In these particular circumstances the recommendation at the P.D. stage was to grant a licence subject to conditions and to refuse Class 1: Deposit, on, in or under land.

The Technical Committee notes that the Applicant states that the early implementation of the Conditioning Works would minimise the risk of environmental pollution however this does not meet the legal obligations on the Agency in Section 40 (4) of the Waste Management Act, 1996 that there will be no environmental pollution as a result of the activities proposed in the Objection . The Technical Committee's (TC) assessment of the grounds of objection, of the waste intake at the site and WCC's proposal to bring forward elements of the conditioning works are discussed below.

Recommendation

No Change.

1. Surface water and Groundwater Resources

WCC's Summary and Objection in relation to Groundwater Resources

The Agency note that List I and List II substances together with ammonia at significant concentrations have been detected in the groundwater. It is also noted that the Waulsortian limestone beneath the site is a regionally important aquifer with high to extreme vulnerability and that the aquifer is the source of the Dungarvan water supply located 600m west of the landfill.

A report on groundwater monitoring which updates the information available to the Agency is attached as Annex 1 of this objection. The report concludes the following.

- The level of groundwater quality varies quite significantly from borehole to borehole in the vicinity of the site. The groundwater quality at the boreholes is of a reasonable quality with consistent concentrations recorded throughout the monitoring period. The remaining boreholes all show a degree of contamination, with high to elevated levels of Ammonia. In particular GW1, RC2 and RC6, indicate serious contamination and the most recent results appear to confirm earlier suspicions that leachate is entering the borehole standpipes and contaminating the sample. It is considered therefore that the results are not representative of the general groundwater quality beneath the landfill. Further investigation will be carried out and if necessary the boreholes will be plugged and replaced.*
- The proximity of the site to the Colligan estuary explains the high concentrations of Sodium and Chloride, and may also account for certain elevated Conductivity levels.*
- Throughout monitoring slightly elevated levels of Iron and Manganese were recorded on various sampling dates. Sites GW1 and GW2 recorded particularly high levels of these metals. As there is significant variance from site to site, these extreme levels could be a result of leachate reducing conditions on the localised geological areas, causing high levels of Iron and Manganese to precipitate out into solution. Further monitoring is recommended to assess this situation.*
- The report therefore concludes that the existing landfill, as it is uncapped and with little leachate control is having only a very localised impact of the groundwater around the site.*
- The GSI did not express any concern about the location of the landfill in relation to the public water supply. In addition monitoring results on the public water supply indicate that the landfill is not having any impact on the water quality of the supply.*
- Although there are indications of some level of contamination of the aquifer below the site from the landfill it should be noted that the aquifer is unusable as a resource given the poor background quality of the water, its location downstream of and outside the zone of contribution as identified by the GSI and, most importantly, the saline influence within*

the aquifer. Landfill siting policy in Denmark, is to locate landfills near the coast for this very reason that the saline influence on the aquifers makes the resource unusable.

- In the short term and until alternative facilities can be put in place there must be a recognition by the Agency that historically poorly sited landfills can still be operated in a manner that minimises the risk of environmental pollution. This includes the risk on contamination to groundwater.*
- Monitoring of groundwater downstream of unlined landfills in Ireland and Denmark has shown a strong attenuation of contaminants that infiltrate the groundwater from landfills and have shown that they generally disappear from the groundwater within 50 metres from the landfill and that those pollutants that have not disappeared were generally found in environmentally safe concentrations.*
- The results of studies carried out at two Danish Landfills have indicated that natural attenuation of hazardous organic chemicals in leachate is substantial, limiting the extension of organic chemicals to a distance of a few hundred metres from the landfill (Christensen et al. 1993a). It was found that dilution and sorption could not account for the observed fate of the organic compounds and it was concluded that biological and abiotic degradation were the major attenuation processes (Christensen et al. 1993a, Christensen, Nielsen and Bjerg 1993, Kromann, Ludvigsen and Christensen 1993, Christensen et al 1993b).*
- Results of a major groundwater and surface water monitoring programme at Balleally Landfill, the largest landfill in Ireland accepting more than 350,000 tonnes of waste per annum (over 1m tonnes in 1996-1998) and an unlined site located within the footprint of Rogerstown estuary confirmed this attenuation of contaminants.*
- The monitoring programme, in relation to Balleally, which was carried out over 1997 and 1998 and confirmed with compliance monitoring in 2000 demonstrated that organic materials, nutrients and hazardous organic chemicals were subjected to a strong attenuation downgradient of the landfill such that they had completely disappeared within 50m from the landfill.*
- The groundwater assessment included in Annex 1 of this Objection confirms that the background groundwater water quality below the site is poor and that there is some evidence of contamination of the groundwater. However based on the above references it can be expected that a similar attenuation takes place of these contaminants. Furthermore the amount of contaminants entering the groundwater will be significantly reduced through the phased capping of the landfill.*
- Condition 4.4 of the Waste Licence sets out the requirements for the capping system which is to be constructed over the filled waste. Based on the above capping system it is estimated that the volumes of leachate will reduce to less than 5,000 m³/yr or less than 10% of current levels. In the short term the phased capping of filled areas will lead to a significant reduction of the leachate being generated at the site.*
- Furthermore the installation of leachate collection pipework around the toe of the landfill and the collection and subsequent treatment of the leachate will result in a significant reduction of leachate entering the groundwater.*

- *In order to confirm this, Waterford County Council propose to drill a borehole downgradient of the landfill, possibly near the Ballyneety bridge to confirm this approach.*

Subject to the approval of the Agency maintaining the landfill operational Waterford County Council also propose to carry out the following measures in order to reduce the potential impact of the site on the groundwater.

1. *The leachate collection toe drain will be completed along the northern boundary of the site within 6 months. (This is less than the 24 months stipulated in the PD).*
2. *A report on the options for leachate treatment will be forwarded to the Agency within 6 months.*
3. *Line the leachate lagoon within 18 months (this is less than the 24 months stipulated in the PD).*
4. *Install infrastructure for the abstraction of leachate in accordance with the PD.*
5. *Completed filled areas of the landfill will be capped within 12 months of filling (This is less than the 24 months stipulated in the PD).*
6. *Install a borehole downstream of the landfill, preferably close to Ballyneety Bridge, to monitor the groundwater quality downstream of the landfill.*
7. *Use Dungarvan Water Supply to monitor groundwater upstream of the landfill.'*

Technical Committee's Evaluation

Waterford County Councils objection refers to a report on groundwater monitoring which updates the information available to the Agency and is included as Annex 1 of their objection. The purpose of this report was to analyse surface water, groundwater and leachate monitoring data, which has been recorded at the site from March 1999 to March 2001.

(a) Groundwater

Ammonia is generally present in natural waters, though in very small amounts, as a result of microbiological activity, which causes the reduction of nitrogen, containing compounds. It has a low mobility in soil and subsoil and therefore its presence in groundwater much above 0.1mg/l N may indicate direct industrial contamination (MacCartaigh *et al*, EPA 1999). The TC is of the opinion that Ammonia is a key parameter for the determination of groundwater pollution by a landfill. Hence, ammonia is chosen as one of the parameters to determine the status of the groundwater in the vicinity of the site.

Ammonia is a List II substance under the Groundwater Directive [80/68/EEC]. This Directive requires member states to limit the introduction into groundwater of substances in List II so as to avoid pollution of water by these substances. There is no specific limit for ammonia in ground water. Hence, the most appropriate limits/standard that can be used in Ireland are the Drinking Water Regulations [S.I. No. 81 of 1988]. The statutory Drinking Water Regulations M.A.C. limit for ammonia is 0.23 mg/l N [0.3 mg/l NH₄].

The elevated ammonia results for the two boreholes installed in the overburden, GW1 and GW2 vary from 4.9 → 58 mg/l N as compared to a Drinking Water Regulations (DWR) Maximum Admissible Concentration (MAC) of 0.23 mg/l N. The ammonia concentration was found to exceed the DWR MAC in all samples taken for these boreholes (8 in total) over a period from 29/9/99 to 14/03/01.

The elevated ammonia results for the boreholes drilled into the bedrock, i.e. RC1, RC2, RC3, RC4 and RC6, varied from 0.55 → 1191 mg/l N as compared to a DWR MAC of 0.23 mg/l N. The ammonia concentration was found to exceed the DWR MAC in 20 out of 30 samples taken for all the aforementioned boreholes.

The groundwater in all of these boreholes except RC1 (saline intrusion) is considered by the Technical Committee to be polluted.

There was also exceedances of iron and lead concentrations in the groundwater. The iron exceedances varied from 2.1 → 30.474 mg/l Fe for boreholes GW1, GW2, RC2, RC4 and RC6 as compared to a DRW MAC of 0.2 mg/l Fe. The lead exceedances for RC1 and RC6 varied from 8.4 to 46 mg/l Pb as compared to a DRW MAC of 0.05 mg/l Pb.

It is argued by the consultants M.C. O'Sullivan & Co. Ltd. that in particular GW1, RC2 and RC6 indicate serious contamination but that leachate is entering the borehole stand pipes and contaminating the samples. However, the borehole logs were checked by the TC and the Technical Committee is satisfied that the sealing material was well below bedrock for RC2 and RC6. The top meter of GW1, which is a shallow overburden well drilled to a depth of 10m, was also sealed with bentonite.

The TC notes the information regarding attenuation of contaminants downstream of landfills included in the objection. The objection cites the following processes as potential contributors to the attenuation process: dilution, precipitation, sorption or degradation. The TC notes however that these processes are dependant on site specific conditions and that no evidence has been provided to show that the conditions necessary for these processes to take place are present in the case of the Dungarvan landfill.

Dungarvan Water Supply

The Technical Committee consider that the groundwater beneath the facility is currently unsuitable for agricultural, commercial, domestic, fisheries, industrial or recreational uses. This is due to the fact that the groundwater is polluted by leachate generated at the facility and due to saline intrusion from the estuary. However, the continued pollution of the groundwater by the landfill breaches the requirements of Section 40(4) of the Waste Management Act, 1996. In addition, the groundwater discharges to the Colligan river and hence the effect that the landfill may have on the Colligan River must also be considered. This is considered under the Technical Committee assessment section on Surface Water (SW).

The Agency is prohibited from granting a licence unless it is satisfied that Section 40(4) of the Waste Management Act, 1996 is satisfied. This includes that the activity concerned, carried out in accordance with the licence conditions, will not cause environmental pollution.

WCC has proposed seven measures to reduce the potential impact of the site on the groundwater subject to the Agency licensing the continued landfilling of municipal waste. Most of the measures proposed by WCC, for works to be carried out, vary from 6 months to 18 months completion time. While it is acknowledged and welcomed that WCC have proposed shorter timeframes it should be noted that there are no significant new remediation measures proposed in the objection that are not already detailed in the Proposed Decision except for a report on the options for leachate treatment to be forwarded to the Agency within 6 months.

It is the Technical Committee's opinion that measures to reduce the impact the landfill is having on the groundwater must be instigated as soon as possible in order to ameliorate the current groundwater quality. The Technical Committee is not satisfied that in the intervening period of 18 months before all the remediation measures are completed that further pollution of the groundwater will not take place as a result of the landfill activities. The Technical Committee is not satisfied that the proposed activity will not cause environmental pollution.

The Technical Committee is of the opinion that the proposed measures followed by appropriate monitoring would have to be carried out before the Agency could licence the landfill to accept municipal waste. However, WCC are proposing to bring forward the proposed measures only on the basis of continued landfilling of municipal waste.

Recommendation

No Change

WCC's Objection and Summary in relation to Surface Water Resources

The Agency note that groundwater flows from south to north across the site results in discharge of leachate generated within the landfill to the River Colligan and that this river is an important river for salmonids, brown trout, sea trout and salmon. It is also noted that there is evidence of increased ammonia concentrations in the River downstream of the landfill.

A report on surface water monitoring which updates the information available to the Agency is attached as Appendix A of this objection. The report concludes the following:-

- *Concentrations of Chromium, Nickel and Zinc have exceeded surface water standards on a number of occasions, these were generally at times after prolonged periods of dry weather and subsequent low flow in the Colligan river. It appears that leachate from the landfill is causing a certain degree of contamination at extended periods of dry weather and low flows as indicated by results at SW2 and SW1, but the tidal nature of the Colligan Estuary provides significant dilution and dispersion to reduce contaminants by the Ballyneety Bridge sampling location.*

The measures discussed in relation to the groundwater above including capping of the landfill and the abstraction of leachate will lead to a progressive reduction in the leachate entering the surface water. In addition the following measures are proposed in order to reduce the potential impact of the site on the surface water.

1. *Infill the ditch along the southern boundary of the site which is currently filling with leachate. This will prevent leachate migration to the river.*
2. *Raise the flood barrier above spring tide within 6 months.*
3. *Raise the anglers path along the north to above spring tide.*
4. *Install a depth gauge within the River Colligan between surface water sampling points SW1 and SW2 within 6 months.*
5. *Include EPA stations 280 and 300 as part of the surface water monitoring programme.*

Technical Committee's Evaluation

The surface water results were examined against the Drinking Water Regulations (DWR) [S.I. No. 81 of 1988], the Surface Water Regulations (SWR) [S.I. No. 294 of 1989] and the Dangerous Substances in Surface Water Regulations [S.I. 12 of 2001].

The sample results for EPA Station No. 280, the furthest monitoring station upstream of the landfill in the Colligan River, indicates that the overall quality of the surface water is good.

However at the next d/s monitoring station, SW2 the final freshwater site, the quality of the water is polluted. The results indicate that the river is polluted at SW2 as demonstrated on 20/09/99 by a COD of 143 mg/l (no DWRS MAC), a conductivity of 3840 μ S/am @ 25°C (no DWRS MAC), and a slightly elevated nickel result of 0.06 mg/l Ni (DWRS 0.05 mg/l Ni), on 29/09/99 by a chromium of 0.118 mg/l DWRS 0.05 mg/l Cr) and on 06/12/00 by a nitrite result of 3.1 mg/l (DWRS 0.03 mg/l N).

At SW1, the next monitoring station downstream of the landfill the surface water is polluted as demonstrated on 03/03/99 by nitrite at 0.45 NO₂ mg/l (DWRS 0.1 mg/l NO₂), on 20/09/99 by Nitrite 0.03 mg/l N (DWRS 0.03mg/l N), Chromium 0.194 mg/l Cr (DWRS 0.05 mg/l Cr), Nickel 0.097 mg/l Ni (DWRS 0.05 mg/l Ni) and Zinc 4.994 mg/l ZN (DWRS 3mg/l Zn).

Ballyneety Bridge (EPA Station 300), the furthest monitoring station downstream of the landfill, is polluted as demonstrated on 15/06/99 by ammonia of 0.0742 mg/l NH₃ as compared to a DWRS of 0.02 mg/l NH₃.

Samples taken at SW3 and SW4 which are located in the SW drain that runs alongside the southern boundary of the site indicate that severe leachate pollution of the drain is evident and that the surface water in this drain is polluted. The elevated ammonia results vary from 12.1 to 1653 mg/l N (DWR MAC 0.2mg/l N). The purpose of this drain is to channel the surface water run-off away from the landfill and into the Colligan River.

The results for the surface water also significantly breach the Dangerous Substances in Surface Water standards (DSSWS). These new regulations only legally apply to applications received after 1 July 2001, however, the limits established are relevant in determining what pollution is. Some of the highest breaches at SW2, the final freshwater site were, on 29/09/99 for chromium a result of 118ug/lCr (DSSWS 15ug/l), a nickel of 60 ug/l (DSSWS 5ug/l), zinc of 2741ug/l (DSSWS 40ug/l) and on 3/10/99 a copper of 49ug/l (DSSWS 5ug/l).

Some of the highest breaches at SW1, the next monitoring station d/s of the landfill closer to the estuary include: on 29/09/99 a chromium a result of 194ug/lCr (DSSWS 15ug/l), a nickel of 97 ug/l (DSSWS 5ug/l), zinc of 4994ug/l (DSSWS 40ug/l) and on 3/10/99 a copper of 90ug/l (DSSWS 5ug/l).

Overall the results indicate that on certain dates SW2 and SW1 were polluted. The SW drain is severely polluted. The applicant argues that the leachate from the landfill is causing a certain degree of contamination at extended periods of dry weather and low flows but that the tidal nature of the Colligan estuary provides significant dilution and dispersion to reduce contaminants by the Ballyneety Bridge sampling station. However, it is the Technical Committee's assessment that pollution rather than contamination have taken place. In addition, the Agency must satisfy itself that pollution is not taking place within the river or in the harbour regardless of the weather and flow conditions. The river fauna will be more sensitive to pollution during low flow periods. The Technical Committee is not satisfied that

the proposed measures to reduce the potential impact of the site on the surface water will prevent pollution taking place immediately. The timescale for the completion of the works ranges from 6 months to 18 months and timescales for some of the measures are not specified. The application is proposing to maintain the current landfill operation of disposing of municipal waste and carrying out the measures over a period of time. However, while the Technical Committee welcomes these proposed measures and proposed reduction in the time scales the Technical Committee is not satisfied that environmental pollution would not continue to take place.

Recommendation

No Change

2. WCC's Summary in relation to Ecologically Valuable Habitats

The Agency note that the continued acceptance of waste at the landfill has potential to adversely impact the countryside and places of special interest and that this would be in breach of the Waste Management Act, 1996.

WCC's Objection

Ecological assessments carried out for the Waste Licence Application (1998) and the EIS (1999) indicated that the landfill was not resulting in any significant negative impact to the estuary or to the designated areas adjacent to and downstream of the landfill. Since then operations at the landfill have improved substantially including some leachate collection, bird control, litter control and reduction of animal waste to the landfill. Reference has been made above to the landfill at Balleally which is adjacent to an SAC and SPA and studies at that landfill have also indicated that the landfill poses no risk to these sensitive ecologically designated areas.

Measures conditioned in the Licence and which Waterford County Council are willing to bring forward (see below) will further reduce the potential impact of the landfill on the surrounding areas.

Technical Committee's Evaluation

The Technical Committee notes WCC comments. However, notwithstanding the proposed remediation measures including those measures in the proposed decision, the Technical Committee is not satisfied that in the intervening period before all the remediation measures are completed that if the facility is allowed to accept waste, other than inert waste, that further environmental pollution would not take place.

Recommendation

No Change

3. WCC's Summary in relation to Remaining Capacity

The Agency (p.3) note that the tonnage's accepted at the site increased from 45,911 in 1998 to 80,661 tonnes in 1999. The assumption is made that a similar intake to 1999 was accepted at the site in 2000 and this rate of intake was carried on to May 2001, the date of the Inspectors report. On this basis the Inspector assumes/estimates that 248,233 tonnes of waste were accepted at the site between January 1998 and May 2001. Given that the

predicted remaining capacity at the site in February 1998 (at the time of the original Application) was 170,000 tonnes it is considered by the Inspector that the capacity of the site is now exceeded. In addition it is noted that the increased waste input has resulted in a significant increase in the height of the landfill.

WCC’s Objection

At the time of the Application in February 1998 it was considered that the life of the site at Dungarvan was approximately 3 years until the end of 2001 on the basis that an alternative site would have been put in place at that stage. The estimate of capacity was an approximation based on the waste intake at that time and allowing for some annual increase. It was also considered that that volume of material needed for restoration was 200,000m³ which the Inspector has also identified.

At the time of the Application a landscape restoration plan showed the maximum final restoration level of the landfill to be 19mOD.

In November 2000 it was estimated that the remaining capacity of the site at that stage was 180-200,000 tonnes based on a finished contour height of 19mOD.

The current maximum level of the landfill is 16mOD as surveyed in June 2001 by Precise Control Ltd (see Drg 01080D.DWG attached) although the level over the northern part of the site is more typically 15mOD. An assessment of the remaining capacity of the site has been carried out based on the contours and Sections A-A and B-B shown on Drawing No. DUN-LF-0012 attached, i.e. maximum level of 15mOD as set out in the PD. The volume has been calculated using a computerised ground model of the site as surveyed in June 2001 compared to the contours shown on Drg. No. DUN-LF-0012 and the total remaining capacity of the site is estimated to be approximately 170,000m³ (approximately 135,000 – 150,000 tonnes). This intake of waste could be accepted and still remain within the levels set in Condition 4.3 of the PD. Furthermore if a GCL is used in lieu of a clay cap (see Condition 4.4) the overall final restored height will be less again than that suggested in the Waste Licence.

Sections C-C and D-D on the same drawing (DUN-LF-0012) show the restoration contours and cross-sections associated with a 19m top contour and it is considered that this allows for a more gentle final profile than that for the maximum 15m contour. On this basis it is proposed that a suitable height between 15m and 19m would be more appropriate given the timescales needed in filling the site and the proposed contours set out in the final restoration plan.

The assumption by the Agency regarding tonnage’s was a reasonable one on the basis of the available information given that in Article 13 replies May 2000 it was advised to the Agency that the predicted maximum tonnage to be accepted at the site was estimated to be 98,081 tonnes based on the 1998 volume. However after this time the time the quantity of inert C&D waste reduced considerably and Waterford County Council succeeded in reducing considerably the quantities of tannery fleshings going to the landfill.

The actual waste intake to the site from 1998 to present over that time based on weighbridge records is as follows:

Year	Tonnage accepted	Inspectors estimate
1998	45,911	45,911

1999	80,665	80,661
2000	49,401	80,661
2001 (Jan – May)	30,000	41,000
Total	205,000	248,233

It can be seen that the volume of waste assumed to have been accepted at the site by the Agency is considerably less (sic) than is actually the case. Furthermore on the basis of the Mitchell & Associates assessment (1999) it is considered that there is significant capacity remaining at the site which can be visually mitigated.

Technical Committee’s Evaluation

The Technical Committee assumes that WCC’s reference to less in the following sentence should mean ‘more’ *‘It can be seen that the volume of waste assumed to have been accepted at the site by the Agency is considerably less (sic) than is actually the case.*

The EIS submitted in April 1999 predicted the remaining capacity of the landfill was 170,000 tonnes. At that time it was anticipated that the landfill would remain open until the end of 2001.

The Inspector, based on the information submitted in the application, determined, that the landfill would have accepted 248,233 tonnes of waste from 1998 to the end of May 2001. In summary it was estimated that the capacity of the landfill had been exceeded, in May 2001, by 78,233 tonnes. In addition, the Inspector also noted that increased waste input has resulted in a significant increase in the height of the landfill. The PD set the maximum settlement height and final profile as 15mOD Malin Head (Condition 4.3).

A new survey of the remaining capacity of the landfill, based on a maximum final profile of 15m OD, was carried out in June 2001, on behalf of WCC after issue of the PD. This survey estimated that the total remaining capacity is approximately a maximum of 150,000 tonnes.

WCC also consider that a final maximum profile of 15mOD will not allow a domed surface given that there are areas in the northern lobe which have attained this height already. They suggest that the final height should be in the range of 15m to 19m OD in order to allow for a ‘more domed surface peaking at 19mOD’. WCC did not carry out an assessment to determine the remaining capacity if the final profile was set at 19mOD.

The Agency acknowledges, based on the new information supplied in the objection, that there is remaining capacity of 150,000 tonnes at a final maximum profile of 15mOD. However, the Technical Committee is not satisfied that the activity if allowed to accept further municipal waste for disposal will not cause environmental pollution. As such the TC do not recommend allowing the facility to accept any further municipal waste as the Agency is prohibited from granting a licence unless it is satisfied that the activity concerned, subject to the conditions of the licence, will not cause environmental pollution.

The TC notes that much of the southern area of the landfill has a height of 10m OD and there is considerable scope to infill the existing roadways/tracks in the centre of the landfill where spot heights lie in the range of 3m to 5m OD. However, the Technical Committee considers that a domed final profile is possible to a maximum height of 15mOD, with some necessary reworking in the northern lobe of the landfill.

Recommendation:

No Change

4. Landfill Design

It is accepted that the landfill is not an engineered landfill and is unlined and has operated historically on the dilute and disperse principle. Groundwater monitoring has shown there to be some evidence of contamination below the site however, it is argued that, on the basis of other studies referenced within these objections, that attenuation of the contaminants is likely to occur within a very short distance of the landfill. The groundwater is outside the zone of influence of the Dungarvan Water Supply and is an unusable resource because of saline influence. Surface water quality downstream of the landfill is generally good as evidenced at the Ballyneety Bridge and as detailed in Part 1 of these objections. Waterford County Council are proposing to bring forward elements of the conditioning works set out in the licence to reduce leachate generation at the site and to collect leachate from the site for treatment. Waterford County Council propose to commence capping of filled areas of the site and to introduce surface water management works.

Given these conditioning works which are set out in Part 1 of these objections, it is considered that the continued acceptance of waste until the end of the remaining capacity of the site will not result in a risk to surface water and groundwater in the vicinity of the facility.

Technical Committee's Evaluation

The Technical Committee note that pollution and not contamination has occurred. Furthermore, even with possible downstream attenuation there is still pollution in the vicinity of the landfill.

The Technical Committee commend WCC's proposal to bring forward proposed conditions of the PD including commencement of capping of filled areas, infrastructure associated with surface water management works, measures to reduce leachate generation at the site and measures to collect leachate from the site for treatment. However, the Technical Committee is not satisfied that in the intervening period of 18 months before all the remediation measures are completed, that if the facility is allowed to accept waste other than inert waste that environmental pollution will not take place.

Recommendation

No Change

5. Other issues

Waterford County Council have in the past indicated to the Agency the difficulties involved in securing the site given that there has historically been a perceived public right of way along the line of the old railway through the site.

Drawing No. DUN-LF-010 issued to the Agency in September 2000 shows the line of the 'Old Right of Way' which certain members of the public perceive to exist along the line of the old railway. Following abandonment of the railway line itself Waterford County Council purchased the land along the line and within the boundary of the site in the early 1970's and covered it with waste. Waterford County Council have already provided an alternative right of way to local anglers as shown on Drg. No. DUN-LF-010 Rev. A, attached, and given the

immediate need for Waterford County Council to use this area along the line of the old railway to provide additional filling capacity (this area was always included in voidspace calculations), Waterford County Council propose to provide a pathway running along the southern boundary of the site as shown on Drg. No. DUN-LF-010 Rev. A. The security fencing to be installed by Waterford County Council in accordance with Condition 3.4 will be placed inside this proposed pathway as shown. Similarly Waterford County Council propose to install the fencing inside the line of the 'anglers right of way' and request that the site boundary on the application be amended to reflect this (see Objection to Condition 1.2).

Technical Committee's Evaluation

Condition 1.2 of the PD defines the boundary of the facility and a number of subsequent Conditions refer to the facility. WCC has not provided information to indicate whether the proposed new right of way running along the southern boundary of the site is over waste or not. In addition, WCC did not clarify whether there is waste between the anglers pathway running along the river and the proposed new boundary in the north of the site and outside of the anglers pathway in the south of the site. There are a number of Conditions that refer to the facility that must incorporate all areas of the facility where waste was deposited e.g. restoration of the landfill. Hence, the Technical Committee does not recommend amending the facility boundary. Condition 3.4.1 requires security fencing to be maintained around the facility boundary and Condition 3.4.2 requires security fencing along the existing right of way running through the facility. The TC are of the opinion that what is required is that any right of way, whether new or existing, are fenced so as not to allow the public access to the rest of the facility. It is recommended that Condition 3.4.3 be amended to reflect this case. In addition, the TC recommend that there is no need to fence the boundary of the facility where the fencing of the right of way prevents the public from gaining access to the rest of the facility and recommend amending Condition 3.4.1 to reflect this.

Recommendation

Amend the first sentence of the following Conditions as follows:

Condition 3.4.1

2.4m security and stockproof fencing shall be installed and maintained around the facility boundary within nine months of the date of grant of this licence, **except where fencing will be provided, in accordance with Condition 3.4.3, which excludes members of the public gaining access to the facility.**

Condition 3.4.3

The licensee shall within twelve months of the date of grant of this licence install security fencing along the entire length of rights of way through the facility.

Proposed remediation measures to be adopted by Waterford County Council

The following remediation measures are proposed by Waterford County Council in order to ensure the continuance of municipal waste filling at Dungarvan landfill.

- 1. Infill the ditch along the southern boundary of the site which is currently filling with leachate within 6 months. This will prevent direct leachate migration to the river.*
- 2. Construct a new pathway along the southern boundary of the site.*
- 3. Install security fencing to make the site secure. The fence will be inside the line of the new pathway to the south and the anglers path along the north.*
- 4. The anglers path along the north will be raised to above spring tide.*

5. *The primary wastes which are problematical, i.e. tannery waste fleshings), whelk shells and eggs are to be banned from the site.*
6. *Waterford County Council through the implementation of the Waste Plan will endeavour to divert recyclable waste from the landfill and thereby reducing inputs to the site. The initial target is 7,500 tonnes of waste per annum to be recycled in the County which equates to a reduction of 5,000 tonnes per annum going to Dungarvan Landfill.*
7. *The leachate collection toe drain will be completed along the northern boundary of the site within 6 months. (This is less than the 24 months stipulated in the PD).*
8. *A report on the options for leachate treatment will be forwarded to the Agency within 6 months.*
9. *Line the leachate lagoon within 18 months (this is less than the 24 months stipulated in the PD).*
10. *Completed filled areas of the landfill will be capped within 12 months of filling (this is less than the 24 months stipulated in the PD).*
11. *Include the Dungarvan Water Supply in the monitoring programme as the upstream groundwater monitoring borehole.*
12. *Install a borehole downstream of the landfill, preferably close to Ballyneety Bridge, to monitor the groundwater quality downstream of the landfill.*
13. *Raise the flood barrier above spring tide within 6 months.*
14. *Install a depth gauge in the Colligan River between sampling points SW1 and SW2 within 6 months.*
15. *Include EPA stations 280 and 300 as part of the surface water monitoring programme.*
16. *Implement all conditions of the Waste Licence when issued.*

It is considered that the continuance of filling with the measures proposed by the Agency and to be implemented by Waterford County Council as above will not result in further pollution over and above that which is being caused through the historical filling of waste at the site. On the contrary it is considered that, given the measures proposed by Waterford County Council, the site can be remedied and operated to ensure that it does not result in any significant impact on the environment.

Technical Committee's Evaluation

There are 16 proposed measures listed above of which 2,4,6,8 and 14 are new measures proposed by WCC. However, the Technical Committee believes that further environmental pollution would result if the facility were licenced to continue accepting waste other than inert waste. The Technical Committee is not satisfied that in the intervening period of 18 months before all the remediation measures are completed, that if the facility is allowed to accept waste other than inert waste that environmental pollution will not take place. All the proposed measures would have to be carried out and then additional monitoring would have to take place before an assessment of the effectiveness of the remediation could be carried out.

Recommendation

No Change

SECTION 2 – SPECIFIC OBJECTIONS TO LICENCE CONDITIONS

Ground 1 Condition 1.2

Waterford County Council propose to change the boundary of the site to that shown on Drg. No. DUN-LF-010 Rev A such that the revised boundary will be within the alternative pathway along the southern boundary of the site and also within the path provided for the anglers (See General Objection 5 in Section 1 above).

Technical Committee's Evaluation

Please refer to earlier ground of Objection No.5 Other Issues in relation to this matter.

Recommendation

No Change

Ground 2 Condition 1.4

Based on the reasons set out in Section 1 of this Objection Waterford County Council request that the Agency amend the Licence to allow the following activities at the site.

Class 1: Deposit, on in or under land

Class 2: Land treatment, including biodegradation of liquid or sludge discards in soils.

The grounds for this objection are set out in General Objection Section 1.

Technical Committee's Evaluation

There was no specific proposal in relation to Class 2 proposed by WCC in their Objection. The Technical Committee, as discussed above, is not satisfied that in the intervening period of 18 months before all the remediation measures are completed that if the facility is allowed the continued disposal of waste and sludge that environmental pollution will not take place.

Recommendation

No Change

Ground 3 Condition 1.5 and Schedule A

It is considered that 100,000 tonnes of inert waste is insufficient to allow a successful restoration and aftercare programme to be carried out.

The subsoil, topsoil and clay cap alone will constitute more than 100,000 tonnes and additional inert fill will be required to achieve the required restoration profile.

The Inspectors report itself (Section 3) recommends that the facility be allowed to accept 100,000 tonnes per annum. It is requested that this Condition and Schedule A be amended to allow for 1000,000 tonnes per annum of inert material for restoration purposes.

Technical Committee's Evaluation

The Technical Committee assumes that the request for 1000,000 tonnes per annum of inert material in the objection is a typing error.

A total of 200,000 tonnes of inert material (clay) had been predicted in the application to be required for restoration of the facility. It was estimated, based on the information supplied in the application, that in the order of 173,817 tonnes of construction material (clay) had been accepted at the facility between January 1998 and May 2001 and it was assumed by the Agency Inspector that some of this material was used for the ongoing restoration of the site. The TC note that Condition 1.5 allows tonnage's of restoration material to be agreed in advance with the Agency. The Technical Committee is of the opinion that the total quantity of

material to be used for restoration can be agreed in advance with the Agency under Condition 1.5 and Condition 4.1 and there is no need to specify a quantity in Condition 1.5

Recommendation

Amend Condition 1.5 to read as follows:

The total quantity of inert waste to be recovered at the facility to achieve the Restoration and Aftercare Plan shall be agreed with the Agency under Condition 4.1 of this licence.

Amend Schedule A: Waste Acceptance

Delete the 100,000 tonnes in Column headed Maximum (Tonnes)

Amend Note 1 to read as follows

Note 1: To be agreed with the Agency under Condition 4.1 of the Licence

Ground 4 Condition 1.6 and Schedule A

Waterford County Council are proposing to implement recycling activities within the county to reduce the volume of waste going to landfill. Key components of the recycling measures are the recycling facilities at the Landfill. It is requested that the tonnage restrictions on recyclable waste streams be lifted or alternatively that the note “unless otherwise agreed in advance with the Agency” be added to Condition 1.6 and Schedule A.

It is also requested that Note 2 at the bottom of Table A1 in Schedule A1 is amended to read the following: “Note 2: Cardboard, beverage cans, bottles, paper, waste oils, batteries, fluorescent tubes and other household hazardous waste as agreed with the Agency for storage in appropriate receptacles at the civic waste facility”. This is to enable Waterford County Council to meet their obligations for the collection of household hazardous waste in accordance with the National Plan for Hazardous Waste.

Technical Committee’s Evaluation

- (a) The Technical Committee agrees that “unless otherwise agreed in advance with the Agency” should be added to Condition 1.6 so as to maximise recovery and recycling and to ensure that the necessary infrastructure is available for the tonnage’s applied for.
- (b) The Technical Committee propose that the Agency amend Note 2 so that WCC can meet their obligation for the collection of household hazardous waste in accordance with the National Plan for Hazardous Waste.

Recommendation

Amend Condition 1.6 as follows:

Municipal Waste, Commercial Waste and Industrial Waste may be recovered at the civic waste facility subject to the maximum quantities and other constraints listed in Schedule A **unless otherwise agreed in advance with the Agency.**

Amend Schedule by adding a foot Note 3 as follows:

Note 3: Unless otherwise agreed in advance with the Agency under Condition 1.6 of the licence.

Add the word Note 3 as superscript to the 1,000 per annum of rows 2 and 3.

Amend Note 2 at the bottom of Table A1 in Schedule A1 to read as follow:

Note 2: Cardboard, beverage cans, bottles, paper, waste oils, batteries, fluorescent tubes and **other household hazardous waste as agreed with the Agency** for storage in appropriate receptacles at the civic waste facility.

Ground 5 Condition 1.7

Waterford County Council require additional flexibility in terms of the recycling services it will provide to the public. It is therefore requested that conditions 1.7.2.1 and 1.7.3.1 be amended to read the following:

“Civic Waste Facility

1.7.2.1 Waste shall only be accepted at the Civic Waste Facility between the hours of 08.00 to 17.00 Monday to Saturday and Bank Holidays and 08.00 to 13.00 on Sunday. The facility shall be closed on 25th to 27th December inclusive”

Hours of Operation

1.7.3.1 The facility shall only be operated between the hours of 08.00 to 17.00 Monday to Saturday and Bank Holidays and 08.00 to 13.00 on Sunday. The facility shall be closed on 25th to 27th December inclusive”.

Technical Committee’s Evaluation

WCC applied for the hours 9.00 am and 5.00 p.m. Monday to Friday, and 9.00 a.m. to 1.00 p.m. Saturday in their application. It was stated that any acceptance and placement of waste outside these hours was in the case of an emergency only. The EIS stated the same hours of opening and that the site was closed on a Sunday. The Technical Committee is of the opinion that the Agency cannot grant an extension of hours beyond those detailed in the application and the EIS, as the environmental implications of same have not been assessed.

The Conditions do not preclude the Local Authority closing the facilities on 25 to 27 December inclusive hence, the TC are of the opinion that as the Condition relate to opening hours there is no need to specify when the facility is closed in the Conditions.

Recommendation

Amend Conditions 1.7.2.1 and 1.7.3.1 as follows:

Condition 1.7.2.1

Waste may only be accepted at the Civic Waste Facility between the hours of 9:00 to 17:00 Monday to Friday inclusive and 09:00 to 13:00 on Saturday.

Condition 1.7.3.1

The facility may only be operated during the hours of 08:30 to 18:00 Monday to Friday inclusive and 08:30 and 14:00 on Saturday.

Ground 6 Condition 3.2.3

Construction Validation Reports are more typically associated with landfill lining works to ensure that material properties, transport, installation and testing are carried out in accordance with a Construction Quality Plan. This is because of the importance of the lining systems to the successful functioning of a contained landfill and because of the critical nature of the installation techniques to the integrity of the lining. Construction Quality Assurance is not typically associated with most of the Specified Engineering Works set out in Schedule B.

It is requested therefore that the following “where required by the Agency” is added to the first sentence of this Condition.

Technical Committee’s Evaluation

The works detailed in Schedule B: Specified Engineering Works include, Final capping, Construction of, - Civic Waste Facility Infrastructure, - Waste Inspection and Waste Quarantine Area Infrastructure, - Demolition Waste Recovery Area, - Metal Recovery Area, installation of, - Landfill Gas Management Infrastructure, - Leachate Management Infrastructure, - Groundwater Control Infrastructure, - Surface Water Management Infrastructure, Restoration and Aftercare Works and Site security fencing. The Technical Committee is of the opinion that the works specified in Schedule B do require construction validation reports. Where certain aspects of the *Construction Validation Reports* report are not applicable these can be agreed with the Agency at the appropriate time.

Recommendation

No Change.

Ground 7 Condition 3.13.3

The typical plan area of the lined leachate lagoon is likely to be in the region of 100m². The typical rainfall less evaporation is approximately 600mm per annum and the total volume of additional leachate produced by rainfall falling within the lagoon is estimated to be approximately 60m³ per annum. It is conservatively estimated that following capping the total volume of leachate to be generated at the site will be in the region of 5,000m³ per annum. Even allowing for just 50% collection of the leachate the additional leachate produced by rainfall will only be 1% or 2% of the total leachate produced each year.

In addition given the location of the site and the proposed lined lagoon away from any residences it is not considered that there will be any negative impacts associated with an open leachate lagoon and it is not therefore considered necessary to roof the storage lagoon. It is therefore requested that this Condition is removed.

Technical Committee’s Evaluation

The Technical Committee is of the opinion that while it is considered a very good idea to roof the leachate storage lagoon it may also be prohibitively expensive in comparison to the environmental benefit. However, the Technical Committee is of the opinion that the roofing of such structures should be considered as odours from such lagoons could be a problem. If the results of the study recommend roofing it can be retrofitted at that stage.

Recommendation

Hence amend Condition 3.13.3 as follows:

Prior to the installation of all structures for the treatment and storage of leachate the licensee shall submit proposals regarding the feasibility of roofing such structures so as to minimise the ingress of rain. These proposals shall be reported in accordance with Condition 3.2.1 Specified Engineering Works.

Ground 8 Condition 3.14

Condition 3.14.1.1 requires infrastructure for the active collection and flaring of landfill to be installed and commissioned within 18 months of the date of grant of the licence.

A gas collection system is best installed in conjunction with or after the construction of the permanent capping system in order that the collection pipework can be placed at the

appropriate depths to facilitate maintenance of the system. Installation of the collection system in advance of the capping system would therefore cause operational difficulties during filling of the site and would make construction of the capping difficult. Given the requirement to cap the site within 24 months of filling ceasing it is requested that this Condition be amended to read “Within 24 months of the date of cessation of filling,.....”. Notwithstanding the above, Waterford County Council have proposed to cap filled areas on a phased basis within 12 months of their being filled and will endeavour to incorporate a gas collection system on a similar phased basis in conjunction with the capping.

Technical Committee’s Evaluation

The TC consider that gas control and gas collection infrastructure should be installed as soon as possible to avoid environmental pollution. The Agency Landfill Manual ‘Landfill Site Design’ specifies that gas wells be installed as site filling progresses thereby providing gas control at an early stage of the landfill’s development.

Recommendation:

No Change

Ground 9 Condition 3.15

The preferred method for the assessment of the feasibility of gas utilisation at the site is to carry out pumping trials on the installed gas collection system therefore basing the assessment on the actual quantity and quality of gas recovered. Given the above it is requested therefore that this Condition be amended to read “Within 3 months of the installation of the first phase of the gas collection system, the licensee shall undertake an assessment of the feasibility of landfill gas utilisation at the facility. A report on this assessment shall be submitted to the Agency within a further 3 months. If assessed to be feasible, the licensee shall install and commission a system for the utilisation of landfill gas within a further 6 months from the date of approval of the Agency. The licensee shall install continuous carbon monoxide monitors on the outlets of the gas engine(s) prior to their commissioning.”

Technical Committee’s Evaluation

See response to Ground 8 Condition 3.14 above. It is the Technical Committees opinion that the licensee would need to assess the feasibility of landfill gas utilisation at the facility before installing a gas collection system as the outcome of the report will influence the installation of the gas collection system. Such an assessment can include modelling the landfill gas quantities based on the age, type and quantities of waste disposed of at the landfill.

Recommendation

No change.

Ground 10 Condition 3.16

It is considered likely at this stage (subject to further study and design) that the surface water retention pond will be at the location of the existing wetland/lagoon area on the north-east side of the landfill. Prior to construction of this pond successful separation and diversion of the surface water and leachate systems will have to have been carried out. Given the available retention in the existing wetland/lagoon area and the fact that this area naturally drains to the Colligan River it is not considered necessary to line the surface water retention pond. It is requested therefore that this requirement is removed from this Condition.

Technical Committee's Evaluation

The Technical Committee agrees that the surface water pond will not need to be lined provided that the surface water and leachate systems are separated and diverted prior to the construction of the surface water pond.

Recommendation

Amend Conditions 3.16.1 and 3.12.1 as follows:

Condition 3.16.1

A surface water retention pond shall be constructed within eighteen months of the date of grant of this licence. **Prior to construction of this pond the licensee must separate and divert the surface water and leachate systems.** As a minimum, the infrastructure shall be capable of the following:

Delete the words '**and the surface water retention pond**' from Condition 3.12.1

Condition 3.12.1

The liner system for the leachate storage lagoon shall comprise the following (or equivalent): a composite liner consisting of at minimum a basal soil/clay layer of at least 1m in thickness with a permeability of less than $1 \times 10^{-9} \text{ ms}^{-1}$ overlain by a 2mm thick high density polyethylene (HDPE) layer. The sidewalls shall be designed and constructed to achieve an equivalent protection.

Ground 11 Condition 3.20 (see also Condition 5.9.2 below)

Waterford County Council wish to retain the option of collecting scrap cars and other vehicles at the Metal Recovery Area at the facility and propose to construct a separate paved area to allow for this function. WCC will provide a service for draining fluid (oils/brake fluid etc) from the collected vehicles and on this basis consider that the facility can be operated without any significant negative environmental impact. It is therefore requested that this Condition be amended from "...compound for the acceptance of white goods and other metal wastes,..." to "...compound for the acceptance of white goods, scrap vehicles and other metal wastes,..."

Technical Committee's Evaluation

End of life vehicles are not currently classified as hazardous wastes. However, the Commission Decision 2000/532/EC as amended by Commission Decision 2001/119/EC classifies end of life vehicles as a hazardous waste from 1/01/02. The TC welcomes WCC's proposal to handle this proposed hazardous waste. However, in order to ensure that such waste is appropriately handled the TC recommend two additional Conditions to ensure the proposed paved area is adequately constructed and that the collection of all the hazardous components are appropriately handled and removed.

Recommendation:

Add two additional Conditions to the Licence as follows:

3.20.2

The licensee shall submit a proposal to the Agency for agreement on the construction of a suitable paved area for handling end of life vehicles prior to the handling same.

3.20.3

The licensee shall submit a proposal to the Agency for agreement on the decontamination of end of life vehicles prior to handling same.

**Add to Schedule B: Specified Engineering Works
Construction of end of life vehicle area**

Ground 12 Condition 3.22.2

The zone of contribution to the Dungarvan Water Supply has already been referenced in this Objection to being upgradient of the landfill (Section 1). WCC propose therefore to incorporate the water supply into the monitoring programme and to use this as the upgradient monitoring point. It is requested therefore that section (i) of this Condition be amended to read as follows:

- (i) *Within six months from the date of grant of this licence, the licensee shall, subject to the agreement of the relevant landowners, install two groundwater monitoring points downgradient of the facility to allow for the sampling and analyses of groundwater. The licensee shall also incorporate the Dungarvan Public Water Supply into the groundwater monitoring programme and use the extraction borehole(s) as the upgradient groundwater monitoring point.”*

Technical Committee’s Evaluation

Section 1 of the objection states that the GSI study dated June 1998 identified the zone of contribution to the Dungarvan water supply to lie a minimum of 300m to the west of the landfill. Groundwater flow in the vicinity of the landfill is from south to north. The zone of contribution to the Dungarvan water supply is therefore not hydrogeologically upstream of the landfill, and the Dungarvan water supply is not therefore an appropriate upstream groundwater monitoring location. Furthermore the TC notes that the zone of contribution to the Dungarvan water supply may potentially be subject to a range of influences different to those affecting the groundwater upstream of the landfill.

Recommendation

No Change.

Ground 13 Condition 4.4

Geocomposite drainage layers are a proven alternative to granular drainage layers and are commonly used to provide both the gas drainage and surface water drainage layers in landfill capping systems. It is requested therefore that Part (c) of this Condition be amended to read “drainage layer of 0.5m thickness having a minimum hydraulic conductivity of 1×10^{-9} m/s or a geocomposite drainage layer having equivalent transmissivity.”

Technical Committee’s Evaluation

The Objector requested that the drainage layer have ‘a minimum hydraulic conductivity of 1×10^{-9} m/s’ rather than the more permeable hydraulic conductivity of 1×10^{-4} m/s specified in the PD. The TC assumes that this is a typing error and that the Objector means 1×10^{-4} m/s.

Part (c) of Condition 4.4 refers to the provision of a surface water drainage layer for final capping. The purpose of this drainage layer is to collect and divert surface water off the landfill. The critical aspect of this layer is the transmissivity rather than the thickness of the layer. Condition 4.4.1(c) does not specify the material to be used and therefore does not

preclude the use of a geosynthetic drainage medium. The TC are of the opinion that the option to decrease the thickness of the drainage layer should be included in the Condition so long as the transmissivity of the layer remains the same.

Recommendation

Amend Condition 4.4.1(c) as follows:

c) drainage layer of 0.5m thickness having a minimum hydraulic conductivity of 1×10^{-4} m/s or a geocomposite drainage layer of equivalent transmissivity agreed in advance with the Agency.

Ground 14 Condition 4.7

Considering the request in Section 1 of this Objection to allow for the continuation of Class 1 Waste Disposal Activities at the site it is requested that this Condition be amended to read as follows:

“The restoration of the landfill facility shall be completed within twenty four months from the date of completion of waste filling at the site.”

Technical Committee’s Evaluation

The Technical Committee has recommended that no further municipal waste should be accepted for disposal at this facility hence it is not recommended that an extended time be given for the restoration of the landfill.

Recommendation

No Change

Ground 15 Condition 5.3.1

Considering the requirement for consultation with Duchas, it is considered that 3 months is too short to allow for the completion of and submission of the proposal for planting to the Agency. It is requested therefore that the 3 month period be amended to 6 months to fully satisfy the requirements for consultation.

Technical Committee’s Evaluation

The Technical Committee agrees to extend the time period to 6 months to allow for a sufficient period of time for consultation with Duchas.

Recommendation

Amend Condition 5.3.1 as follows:

A detailed proposal for landscape planting at the facility shall be submitted to the Agency for agreement within **six** months of the date of grant of this licence. These proposals shall incorporate mixtures of appropriate species in keeping with the existing native vegetation in the area. The proposals shall be developed in consultation with Duchas and shall incorporate appropriate screening of the facility from the surrounding road network and private property.

Ground 16 Condition 5.4.4

Considering the request in Section 1 of this Objection to allow for the continuation of Class 1 Waste Disposal Activities at the site it is requested that this Condition be amended to read as follows:

“All areas of the landfill facility shall be permanently capped within eighteen months from the date of completion of waste filling at the site.”

Technical Committee's Evaluation

See response to Ground 14 above

Recommendation

No Change

Ground 17 Condition 5.9.2 (See also Condition 3.20 above)

It is requested that this Condition is removed for the reasons set out in Objection to Condition 3.20 above.

Technical Committee's Evaluation

See response to Ground 11 above.

Recommendation

No Change

Ground 18 Condition 8.8

Surface water will not be discharged from the site until capping of filled areas is underway and the surface water drainage system is in place. It is therefore requested that this Condition be amended to read "Within two months from the date of installation of surface water control infrastructure at the site, the licensee shall initiate a monitoring programme...."

Technical Committee's Evaluation

The Technical Committee notes that surface water is already polluted by the landfill and therefore it is imperative that the surface water monitoring is initiated as soon as possible, and in any event within 2 months of the date of grant of the licence, to assess the effectiveness of various controls including the TC recommendation that the facility cease accepting municipal waste.

Recommendation

No Change

Charge 19 Condition 8.11.1

It is requested that this Condition be amended to allow for the extent and timescales of the biological assessment to be prepared in consultation with Duchas.

Technical Committee's Evaluation

The biological assessment is required to be undertaken within 12 months and the Technical Committee considers this adequate time to consult with Duchas.

Recommendation

No Change

Ground 20 Condition 8.12

It is considered that a stability assessment every 6 months is unnecessary as generally slope heights and profiles will remain unchanged and the abstraction and collection of leachate

will generally improve the stability of the slopes. It is requested therefore that this condition be amended such that stability assessments will only be required annually.

Technical Committee's Evaluation

The Technical Committee considers that a stability assessment annually is sufficient and agrees to amend the frequency to annually.

Recommendation

Amend Condition 8.12 as follows:

Within three months of the date of grant of this licence, and **annually** thereafter, the licensee shall carry out a stability assessment of the side slopes of the facility.

Ground 21 Schedule D: Monitoring – Table D1.1

It is proposed to remove Surface Water Station SW3 from the monitoring programme as the ditch that the sample is taken from is to be filled by WCC (See General Objection Section 1). It is requested therefore that station is deleted from Table D1.1.

Technical Committee's Evaluation

Condition 3.16.2 stipulates that the surface water drain be sealed and hence the Technical Committee agree that this monitoring station can be deleted.

Recommendation

Delete SW3 from Table D1.1 and any other reference to monitoring this location.

Ground 22 Table D5.1

It is requested that the monitoring frequency for the parameters for leachate be amended such that metals are analysed for biannually and the remaining chemicals annually. This is because of difficulties at laboratories in testing the leachate because of its high concentrations and because of the predictability of leachate properties.

Technical Committee's Evaluation

The PD requires that metal analysis of the leachate be carried out annually. The Applicant has objected and requested that the metals be analysed biannually. The Technical Committee is of the opinion that biannually means every 6 months and this would mean that the Applicant is requesting a more frequent analysis than specified in the PD. However, if WCC means every two years the Technical Committee does not agree as analysis should be carried out annually to assess the quality of the leachate for treatment purposes.

Recommendation

No Change

Objection No.2: Mr. Tommy Burke (11/07/01)

Letter dated 09/07/01

Ground 1

I agree fully with the EPA decision as regards Waste Licence Register No. 32-1, Waterford County Councils application for a licence for the dump at Ballinamuck M.Dungarvan. It was the only decision the EPA could have come to, if it wanted to retain its own reputation, as regards the protection of the environment. The EPA is the first state body which has done its

job in connection with the dump at Ballinamuck. However, I fear that the Directors of the EPA may buckle under the pressure that may be brought on them by the employees of W.C.C., the Trade Unions and the elected environmental desecraters of Dungarvan Urban District and Waterford County Councils and change their decision. Therefore I have decided to object to one very unimportant aspect of the licence. I think it is unnecessary to roof the lined leachate storage lagoon.

Condition 3.13.3

Technical Committee's Evaluation

See response to Ground 7 Objection 1 above

Recommendation

Amend Condition 3.13.3 as proposed under Ground 7 Objection 1.

Ground 3 Criminal Proceedings against Waterford County Council.

In my submissions to the EPA during 1998 regarding waste licence 32-1, I offered to cooperate with the EPA were they the EPA to take some sort of criminal proceedings against W.C.C. for their actions here. I received no response from the EPA to that offer of cooperation. That offer still stands. I would like the EPA to let me know within six months in writing whether they are or are not prepared to take me up on that offer.

Technical Committee's Evaluation

If the Agency decides to grant a licence and if a licensee does not comply with the conditions of that licence there are a number of enforcement options that the Agency can take. These options include legal proceedings.

Recommendation

No Change

Submission on Article 34: Mr. Tommy Burke, Ballyneety Dungarvan, Co. Waterford

Letter & Photographs Received 11/09/01

Ground 1: *Mr Burke's submission states that he received a letter from the Agency, dated 30/08/01 but that he did not know what the letter was about. He said that in response to this letter he was making a further submission consisting of a written submission and photographs.*

Technical Committee's Evaluation:

The Technical Committee notes that the letter sent to Mr Burke by the Agency, dated 30/08/01 was sent to all objectors. It consisted of an explanatory note in relation to the implementation of the requirements of the Landfill Directive.

Recommendation:

Implement changes to the Conditions to reflect the requirements of the Landfill Directive.

Ground 2: *The objector states that it is important that the Agency reads his earlier submissions submitted on various dates. He also refers to ‘a public right of way’ which he states was discussed in one of his previous submissions.*

Technical Committee’s Evaluation:

The Technical Committee notes that these submissions were assessed during the process of assessing the application. The Technical Committee has also considered the public right of way issue under WCC’s objection Ground 5 Other Issues.

Recommendation:

No change

Ground 3: *The objector states that Dungarvan Urban District Council operated the facility from the late sixties to the mid-eighties, that they operated it badly and that Waterford County Council are operating it just as badly now. He also submitted photographs to illustrate this point.*

Technical Committee’s Evaluation:

The Technical Committee notes the objector’s concerns and the photographs submitted. The Technical Committee considers that the conditions of the licence will govern the operational practices at the facility from the date of grant of the licence.

Recommendation:

No change

Ground 4: *The objector refers to the fact that thousands of tonnes of gravel were removed from the Colligan River bed and brought to the landfill, thus destroying two of the best fishing pools in the River Colligan. He also poses the question ‘what action was, or will be taken against Dungarvan Urban District Council for this?’*

Technical Committee’s Evaluation:

With regard to the objector’s concerns in relation to fishing pools in the River Colligan the Technical Committee notes that Condition 8.11.1 of the proposed decision required that an extensive ecological assessment of the River Colligan be carried out. If a waste licence is granted for this facility, the Agency will be responsible for the enforcement of the licence.

Recommendation:

No change

Ground 5: *The objector states that he has read Waterford County Council’s objection to the proposed decision and feels that they ‘are more or less saying we have nowhere else to put the refuse, so let us continue to use Ballinamuck’. He says that this is an excuse and that the landfill was full fifteen years ago. He says that ‘there is massive land, air and water pollution coming from the dump’ and again he refers to photographs submitted. He also expresses his concerns about the impact that leachate is having on water quality.*

Technical Committee's Evaluation:

The Technical Committee has recommended that no further municipal waste be accepted at Dungarvan landfill. In addition it is recommended that if a licence is granted that the conditions relating to leachate management infrastructure (Condition 3.13), landfill gas management (Condition 3.14), surface water management (Condition 3.16), groundwater management (Condition 3.17) and monitoring (Condition 8) are maintained so as to minimise the impact the facility is having on the environment.

Recommendation:

No change.

Objection No.3: Mary O'Connell for Noel O'Connell International Ltd. 11/07/01

Letter dated 10/07/01

Ground 1

As a waste disposal contractor I wish to appeal the sudden decision of the said closing of the Dungarvan Landfill site at Ballinamuck. This decision would have a serious effect on the business of our customers and I may be left with no other option but to discontinue the service with job losses. As there is no landfill within 20 miles incurring enormous expense on all concerned.

Technical Committee's Evaluation

As previously stated the Agency is prohibited from granting a waste licence unless, it is satisfied that the criteria set out in Section 40(4) of the Waste Management Act, 1996 are satisfied. In this case the proposed continued disposal of waste at the facility would result in environmental pollution. Hence, the Technical Committee considers that the Agency has no other option but to grant a licence for the restoration of the landfill and to refuse acceptance of any further municipal waste from date of grant of the licence.

It should be noted that under Section 30 of the Waste Management Act, 1996 a local authority is responsible for the provision of recovery and disposal facilities for household waste.

Recommendation

No Change

Objection No. 4: Mr. Brian White, Town Clerk, Dungarvan UDC (11/07/01)

Letter dated 10/07/01

On behalf of Dungarvan U.D.C., I wish to object against the proposed decision of the EPA in respect of the Waste Licence Application submitted by Waterford County Council for the continuation of the landfill facility at Ballinamuck Dungarvan.

The U.D.C. are of opinion that the licence to operate a landfill at Ballinamuck should be granted so that the municipal and trade waste of the town can adequately be catered for until such time as an alternative means of waste disposal is put in place.

Having regard to the length of time that the facility has been in operation, its relatively short intended future life and the restoration and aftercare commitments given by the County

Council, this Council strongly feels that the licence should allow municipal waste until such time as there is a viable alternative available.

The environmental problems that would be caused by the effective closure of this landfill could outweigh the environmental gains to be achieved by its early closure.

Dungarvan town has Urban Renewal Designation to try to generate economic activity in the town, to reduce dereliction and improve the environmental quality of life.

Job losses at Glaxo SmithKline of 104 have just been announced and the Council are seriously concerned about the negative impact that the closure of the existing landfill will have on other industries in the town, and in the towns ability to create and sustain jobs in the medium term. Having regard to the foregoing, I again ask that the EPA reconsider its proposed decision and in the interest of local social, economic and environmental sustainability, that the facility be allowed to continue until the planned alternative is put in place.

Technical Committee's Evaluation

The Agency issued a Proposed Decision which included that no further municipal waste be accepted for disposal at the Dungarvan landfill. The reason for this decision was that the continued disposal of waste at the facility would result in environmental pollution and as such did not comply with Section 40(4) of the Waste Management Act, 1996. The Agency is prohibited from granting a waste licence unless it is satisfied that Section 40(4) of the Waste Management Act, 1996 is satisfied. Hence, the Agency proposed that it grant a licence to restore the landfill in order to improve the environmental performance of the site and the environmental status of the area.

The Technical Committee notes that Section 38 of the Waste Management Act, 1996 places responsibility on a local authority to provide for the recovery and disposal of household waste and the local authority may also provide facilities for other waste.

Recommendation

No Change

Signed: _____
Breege Rooney
Technical Committee Chairperson