

## INSPECTORS REPORT

**WASTE LICENCE REGISTER NUMBER:** 4-2

**FACILITY:** Arthurstown Landfill, Arthurstown, Kill, Co. Kildare.

**APPLICANT:** South Dublin County Council.

**INSPECTOR'S RECOMMENDATION:** That a Revised Waste Licence 4-2 be granted subject to conditions.

### (1) Introduction:

This report relates to an application by South Dublin County Council for a review of the existing Waste Licence for Arthurstown Landfill (Reg. No. WL 4-1 issued on 04/03/99). The facility is located in a worked out sand and gravel quarry in a rural location about two kilometres to the south-east of Kill village. The licensed landfill area is 46 hectares with the licensed facility being in the region of 64 hectares. The existing licensed facility is bounded to the north-east by an old landfill referred to as "*Gavin's Dump*". The old landfill was surrounded by a bentonite slurry cut-off wall prior to the construction of the new landfill facility. The review application does not propose any change in the footprint of the area to be landfilled. The nearest residential property is adjacent to the northern boundary of the facility approximately 70m from the nearest landfill cell (No. 15). Two other nearby residences are located approximately 110m and 160m from this cell. A timber treatment yard operated by Balcas is located adjacent to the southern boundary.

The principle amendments proposed in the review application to the existing waste licence (WL 4-1) are as follows;

1. Increase the annual tonnage of waste accepted at the facility from 360,000 tonnes per annum to 440,000 tonnes per annum (t/a).
2. Amend the hours of waste acceptance at the facility from 8.30 a.m. – 6 p.m. (Monday – Saturday) to 7.00 a.m. – 8 p.m. (Monday – Saturday).
3. Amend the condition allowing for one working face only to provide for two working faces to handle the increased waste inputs or as further agreed with the Agency.
4. Amend the condition which specifies the final capping system of the landfill, to allow for alternative specifications which would be in accordance with the Agency's Landfill Site Design Manual or as agreed from time to time with the Agency.
5. The facility boundary in the application for review includes "*Gavin's Dump*" and an adjacent field, both of which are not in the facility boundary specified in the existing waste licence. However, no additional waste activities are proposed in these areas or in the facility.
6. The applicant also, in making reference to Section 54(1) of the Waste Management Act and to the existing planning permission, requested amendments to the requirements on the landfill lining system and on the maintenance of groundwater at specified levels. A copy of the existing planning permission is included in Appendix II.

Section (2) of this report details the proposed amendments and the Inspector's Recommendations.

The classes of activity applied for by the applicant are those waste disposal activities licensed under the existing Waste Licence. They are classes 1, 4, 5, 6 & 7 of the Third Schedule of the Waste Management Act 1996. The principal activity is class 5.

### Recommendation

It is recommended that all the above activities be licensed subject to the conditions outlined in the recommended Proposed Decision (PD).

**Appendix 1 contains site location maps and a layout plan.**

<b>Quantity of waste (tpa)</b>	Limit of 360,000 tonnes per annum in existing licence. Review application proposes 440,000 tonnes per annum.
<b>Environmental Impact Statement Required</b>	No
<b>Number of Submissions Received</b>	Fourteen
<b>Date application received</b>	31/08/01
<b>Recent Site Visit</b>	24/01/03 (Donal Howley)

**(2) Amendments to the Existing Licence Requested.**

(i) **Increase in Waste Tonnage:** The existing waste licence, Ref. WL 4-1 allows for the acceptance of up to 360,000 t/a of baled municipal waste. Up to the the end of 2001 the facility had accepted 1,130,748 tonnes of waste (Annual Environmental Report for 2001). The figure at the end of 2002 was reported as 1,594,185 tonnes (Quarterly Monitoring report for Oct.-Dec. 2002). Based on these figures the facility has accepted in the region of 463,500 tonnes of waste in 2002 which is a significant exceedance of the limit set in the existing licence of 360,000 tonnes per annum (Condition 5.6). This has been raised as a non-compliance (see Section 4 of this report) and will be considered separately to this application to determine the appropriate Agency action. It should be noted that this also exceeds the threshold at which a new Environmental Impact Statement would be required.

The overall estimated capacity for the facility is in the region of 3.5 million tonnes of waste. The increase in waste tonnage proposed in the application will result in an increase in the rate of filling of the landfill. If the facility accepts waste at the quantity applied for in the review application it will reach capacity in approximately four and a half years from the start of 2003. Condition 1.4 of the recommended PD specifies the maximum annual tonnage at the facility at 440,00 t/a of baled municipal waste.

- (ii) **Hours of Waste Acceptance:** The existing waste licence specifies the hours of waste acceptance at the facility to 8.30 a.m. – 6 p.m. (Monday – Saturday). The applicant applied to extend these hours to 7.00 a.m. – 8 p.m. (Monday – Saturday). The recommended PD allows for extended hours of waste acceptance from 8.00 a.m. to 7.30 p.m. Monday to Saturday. An additional thirty minutes at the end of the working day (i.e. 7.30 p.m. – 8.00 p.m.) is provided to facilitate clean-up and daily cover operations. The hours of waste acceptance applied for in the review application have been limited due to the potential for noise nuisance in the period for 7.00 a.m. to 8.00 a.m.
- (iii) **Working face:** The applicant applied to amend the condition allowing for one working face only to provide for two working faces to handle the increased waste inputs or as further agreed with the Agency. Condition 5.11 of the existing licence specifies that only one working face be operated at a time unless subject to the prior written agreement of the Agency. I consider that this condition provides sufficient flexibility in regard to the number of working faces at the facility and as such the recommended PD reflects no change in this regard (Condition 5.5.1).
- (iv) **Design of Final Cap (Condition 4.18.1):** The applicant has requested that conditions specifying the final cap be made more flexible to allow for consideration of alternative specifications in design, which would be in accordance with the Agency’s Landfill Site Design Manual or as agreed from time to time with the Agency. Condition 4.3 of the recommended PD specifies final capping requirements allows for consideration of alternative designs subject to Agency agreement. The Agency has instructed the licensee under the existing licence to commence final capping of Cells 1-6.

- (v) **Facility Boundary:** The recommended PD provides for the change in facility boundary to include the remediated area referred to as “Gavin’s Dump” and the adjacent field. No waste activities are to take place in these areas and the recommended PD includes provisions on the maintenance of “Gavin’s Dump”.
- (vi) **Reference to Section 54(1) of the Waste Management Act, 1996 and the existing planning permission:** The review application makes reference to Section 54(1) of the Waste Management Act and states that the landfill liner and groundwater control system are detailed in the planning permission for the facility. In doing so the application refers to “*the Waste Licence having precedence over the Planning Act with regard to the environmental matters*” and requests that flexibility/amendment be provided in a revised licence in relation to the landfill liner and groundwater control systems.
- **Request for flexibility in the design of the landfill liner** - Under the existing waste licence there is no specific condition dealing with the liner system. However, the landfill liner is designated a Specified Engineering Works in Schedule F under the existing waste licence. The landfill lining requirements as specified in the recommended PD (Condition 3.11) are in accordance with the Landfill Directive requirements for landfill for non-hazardous waste. The development of Stages 3 & 4 commenced in 2002 under the existing licence and is near completion. The cells are required to be constructed in accordance with the requirements of the Landfill Directive. The use of these cells is subject to prior Agency agreement following submission of satisfactory validation reports.
  - **Groundwater Controls** - The planning permission requires that the groundwater level beneath the landfill should be maintained below the base of the clay layer of the lining system by the provision of a perimeter drainage system and that the facilities for regulating the groundwater level be maintained on a permanent basis (Condition 11 of the Second Schedule). The application requests an amendment to this requirement such that groundwater pumping may cease, thereby allowing the groundwater to rise to its natural level (approximately 6m above artificial level), when enough waste is in place to ensure that the lining system does not float. The application contends that leachate will be prevented from leaking from the base of the cells due to the maintenance of a low leachate head and the negative hydrostatic pressure at the base of the landfill. The applicant argues that this would be of a greater environmental benefit and would also result in a decrease in power and maintenance requirements. Condition 3.15 of the recommended PD requires the licensee to maintain the groundwater levels below the base of the clay layer of the lining system until such time as agreed otherwise with the Agency. This allows for consideration to be given to the cessation of this groundwater pumping following completion of waste deposition at the landfill.

Other changes requested by the applicant include;

- **Leachate Management (Condition 4.17.1 of WL 4-1):** Flexibility in regard to leachate management is requested by the applicant with specific regard to the possibility of the use of Osberstown wastewater treatment plant and any additional treatment equipment at the facility that may be required to facilitate this. The recommended PD allows for consideration of such proposals subject to prior Agency agreement.
- **Fuel Storage (Condition 4.13.4 of WL 4-1):** The applicant requested that a diesel pump for a fuel tank in the marshalling yard not be required within a bunded area and proposes a monthly inspection of the pump and feed pipe. Bunding is considered necessary for tank storage areas. Condition 3.11.4 of the recommended PD reflects the requirement in the existing licence in this regard.

Other changes in the recommended PD to the existing licence (WL 4-1) include a number of formatting and structural changes to reflect changes in licences issued by the Agency for landfill facilities, consideration of the requirements of the Landfill Directive for which a Conditioning Plan

was submitted by the licensee and also proposals by the applicant in relation to effecting agreements of the Agency under the existing licence.

### **(3) Facility Development Status**

The provision and maintenance of infrastructure at the facility is to be controlled by Condition 3 of the recommended PD. Infrastructure at the facility includes facility offices and car park, two weighbridges, a wheelwash unit, a marshalling yard for acceptance, storage and movement of baled waste containers, haul roads and access roads to the cells, leachate collection and storage infrastructure, a landfill gas collection system with an enclosed flare, and surface water and groundwater collection infrastructure with retention pond. The retention pond is used as a settlement pond for the collected surface water and groundwater.

The facility is based on a four-stage design. Stages 1 & 2, comprising ten cells in total, all of which have been developed. As referred to above the development of Stages 3 & 4, comprising a further five cells in total, commenced in 2002 and is near completion.

Condition 3.16 of the recommended PD specifies requirements for “Gavin’s Dump”. Monitoring locations and frequencies specified in the recommended PD in general reflect the current monitoring regime under the existing waste licence. However, some amendments have been made to the monitoring requirements having regard to complaints received and the results of the monitoring carried out to date. Condition 6.4.2 of the recommended PD requires the licensee to submit to the Agency for its agreement groundwater monitoring trigger levels in accordance with the requirements of the Landfill Directive.

### **(4) Licence History**

There have been complaints made by residents over the course of the existing licence. While it is noted that the licensee has implemented various measures at the facility to control odours there has been of late an increase in the number of such complaints from residents in the surrounding areas of the facility, including Kill village. The following is a summary of the complaints that have been received at the facility as reported in the Annual Environmental Reports (AERs) for the facility by the licensee;

<b>Report</b>	<b>Period covered</b>	<b>No. of Complaints</b> <sup>Note 1</sup>	<b>No. of complaints regarding odours</b>	<b>No. of complaints regarding noise</b>
AER 1	04/03/99 – 03/03/00	22	11	1
AER 2	04/03/00 – 31/12/00	19	15	-
AER 3	01/01/01 – 31/12/01	57	47	1
AER4	01/01/02 – 31/12/02	70	61	5

**Note 1:** Other issues of complaints/concerns were traffic, flies, water quality, embankment/waste height, flooding, tree damage

Measures in place at the facility for control of potential odour nuisances include daily and temporary cover; landfill gas management including flaring (the current flare is operating near its capacity and proposals have been received under the existing licence to install a flare of greater capacity and for gas utilisation plant) and venting; and also the use of odour masking agents (which themselves have also been the subject of odour complaints).

In order to ensure that the facility operates such that it does not cause odour nuisance an effective odour management system is required, including odour monitoring (Condition 8.14). The provision of final capping over completed cells within a specified timeframe (Condition 5.7.5) is also an

essential component. The recommended PD also requires that sufficient landfill gas management infrastructure be provided at the facility to facilitate landfill gas collection and flaring/utilisation (Condition 3.13.1) which includes those provisions proposed by the licensee under the existing licence. All gas vents/wells not connected to the landfill gas collection system are required to be fitted with an effective activated carbon filter unless otherwise agreed with or instructed by the Agency. Schedule C.5 of the recommended PD sets Emissions Limits Values for the Landfill Gas Flare and/or Utilisation Plant when installed.

A number of noise complaints in relation to the facility were received during the course of the existing waste licence. These included complaints regarding activities at the facility due to cell development works prior to and after the hours of waste acceptance allowed for under the licence and also regarding tonal noise. Cell development works are near completion and activities such as rock-breaking and the use of water pumps which were the source of the complaints are no longer occurring at the site. In addition to specifying hours of waste acceptance the recommended PD also specifies hours of operation of the facility.

Since the grant of the waste licence (3<sup>rd</sup> March 1999), ten notifications of non-compliance have been issued in relation to issues such as exceedance of specified leachate levels, leachate management practices not agreed with the Agency, dust levels, noise levels, odours, monitoring, bunding, non-notification of incidents, exceedance of specified waste quantities and use of cells without Agency agreement. The most recent notification of non-compliance dated 03/02/03 (NC04DH) related to the quantity of waste accepted at the facility, exceedance of the 1.0m leachate level in Cell 1 and the use of Cell 10 in the absence of Agency agreement. Two notifications of non-compliance were issued in 2002 (NC02DH & NC03DH) in relation to non-notifications of incidents, bunding and the use of Cell 8 in the absence of Agency agreement.

#### **(5) Waste Management, Air Quality and Water Quality Plans**

The Waste Management Plan (2000 - 2005) adopted by Kildare County Council on the 17th July 2000 and the Water Quality Management Plan for the Liffey Catchment were considered. No relevant air quality plan exists. The Waste Management Plan refers to material deposited at the Arthurstown facility constituting one of the largest imports of non-hazardous waste generated outside the county. The Waste Management Plan for the Dublin Region was adopted in December 1998 by the relevant local authorities. This plan identifies in its short term policy the maximisation of the utilisation of the Arthurstown Landfill facility, including the provision of adequate baling capacity and the diversion of a substantial proportion of the waste stream for baling and disposal at Arthurstown.

It is noted also that the Kildare County Development Plan 1999 refers to Kildare County Council's intention to "*ensure that the dump shall cease to operate within ten years of the date of the granting of planning permission on 10<sup>th</sup> July 1994*".

#### **(6) Submissions**

Fourteen submissions have been received in relation to this application. The issues, concerns and requests raised in these submissions include the following:

##### **Odour;**

- *There is a major problem with smells, which can be quite strong at times depending on the weather conditions. The odour is at its worst when weather is still and calm with little or no breeze and in frosty weather.*
- *There is a continued emission of obnoxious odours from the landfill at Arthurstown, Kill, which is polluting the atmosphere of the village and its surrounds*
- *It had been promised before this appalling dump was opened that "we would not know that the dump was there".*

- *The number of calls reported for the period 04/03/00 to 31/12/00 is disputed. It is stated that there is an offensive odour five out of seven days every week and that this is evident within a three miles radius in Kill, Johnstown, Straffan Road, Turfbog Lane and Arthurstown Road.*
- *Numerous complaints have been made to Kildare County Council and to the facility's management but the problem has grown significantly worse. When the weather is fine with no wind to dissipate the odours, the smell is quite appalling.*
- *One submitter states that as she writes she is unable to open the windows or hang out washing because of the all pervasive stench from the facility. Another submission refers to being like "prisoners" in their own homes because of not being able to open their windows.*
- *Reference is made to claims by the facility management of an increase in gas burning, but that there has been no improvement in air quality in and around the village. On still days the problem is worse.*
- *A second working face should not be allowed until the odours from the current one are properly controlled.*
- *One submission (dated 09/10/01) from the South Western Area Health Board stated that they have received occasional complaints regarding smells from the facility. It also states that the Environmental Health Officer for the area has from time to time noticed a heavy dump type smell from the facility during the course of his duties and at weekends. He would consider the location of the dump gives rise to very few complaints and occasional low level nuisances of varying duration.*

#### **Comment**

Odour from the facility is the primary issue arising from the majority of complaints received. The key odour measures currently in place and those required by the recommended PD are discussed in Section 4 of this report. The provisions in the recommended PD in relation to having one working face at any time unless otherwise agreed with the Agency is similar to that in the existing licence. This allows the Agency to consider the use of a second working face in certain circumstances.

#### **Noise /Hours of waste acceptance/ Increase in tonnage/ Traffic;**

- *There is a major problem with noise.*
- *The current situation with the hours of operation being 8.30a.m. - 6.00p.m. is that trucks arrive at the facility gate from 7.30a.m. and queue in a convoy along the road. This causes an obstruction to traffic from both directions. It is contended that if the hours are extended to 7.00a.m. - 8.00p.m. then trucks will start queuing from 6.15a.m. There are 103 residents living along the access route and it is requested that consideration be shown to them.*
- *One submission objects to the facility being open until 8.00p.m. as this will cause a lot more noise. It also refers to the proximity of one of the proposed cells to their garden and that this is going to create a lot more noise in the evening time and most likely after 8.00p.m. Reference is also made to it being bad enough having to listen to rock-breakers working late into the evening during cell construction, without it being open late on a constant basis. This is a deemed a "rural area" and the dump should only be open normal working hours i.e. 8.30a.m. – 5.30p.m. as originally applied for. There is an intermittent problem with a tonal noise in the house which has led to a lot of sleepless nights since the dump opened.*
- *The opening of the dump at 7.00a.m. would most likely result in residents being woken by convoys of trucks from 6.30a.m. onwards.*
- *An increase in tonnage means more trucks, more odours and more inconvenience.*
- *The approach road has not been completed*
- *The footpath has not been maintained and is completely overgrown. Kildare County Council had agreed with local people to provide a footpath along the roadway. A gravel footpath was provided along certain parts of the road. The pathway outside the dump has since been ramped up with clay and a lot of the rest of the gravel pathway has not been maintained.*
- *No speed controls have been put in place*

- *The road section widening has resulted in the reduction of road frontage which has resulted in dangerous situation of vehicles having to protrude out onto the road in order to observe traffic when leaving residence*
- *The application only mentions dump trucks and sludge trucks. It does not refer to trucks, which bring in capping material to the site.*
- *There is a very high volume of dump trucks and trucks bringing sub-soil to the dump at high speed putting the road into poor repair.*
- *One submission refers to having written to Kildare County Council in 1997 in the planning stage of Phase I about a blind bend on the road at which the entrance to their cul-de-sac is. Kildare County Council had agreed to move this entrance to an acceptable location but this has never happened.*

**Comment**

Issues relating to traffic and roads offsite are a matter for the planning authority, Kildare County Council. Any trucks entering the facility may only do so in accordance with Condition 1.6 of the recommended PD. This limits the hours of waste acceptance to 8.00 a.m. to 7.30 p.m. – Monday to Saturday. An additional 30 minutes is provided for at the end of waste acceptance for clean-up and daily cover activities. The recommended PD does not allow for the opening at 7.00 a.m. as proposed by the applicant due to noise considerations. Condition 7.7 of the recommended PD specifies that there shall be no queuing of waste vehicles on the public access road prior to entering the facility. A noise survey carried out on behalf of the licensee did not identify any tonal noise source at the facility. Agency monitoring carried out in 2002 indicated a possible noise source in the area as being from a ventilation unit in the adjacent timber treatment facility. The review application proposes an increase in the rate of acceptance of waste at the facility but does not propose any change in the overall quantity to be accepted at the facility. An increase in the rate of filling of the landfill will reduce the time taken to reach the final profile.

**Flies**

- *There is a major problem with flies, particularly bad this summer (2001)*
- *Concern is raised about the request to operate two working faces as this will result in an increase in the number of flies in the dump.*

**Comment**

Adherence to the requirements of the licence such as those specified under Condition 5 & 7.1 should control any potential nuisance from flies. As referred to previously the recommended PD allows for one working face unless otherwise agreed with the Agency.

**Quality of Life**

- *One submission states that the dump has had a major negative impact on the quality of the lives of the submitters family and has affected the quality of their lives enormously. One submission (dated 20/04/02) from Emmet Stagg T.D. included a copy of one of the previously received submissions. It states that the points made are valid and that any extension of the operating hours will lead to a further reduction in their quality of life.*
- *The reference to the “human element” in the application indicates that South Dublin County Council do not care too much about the local people in the area.*
- *It stated that it is a pity that as a gesture of goodwill the Council would not supply gas from the dump to the local people for all the inconvenience they caused. The flaring of the gas is wasteful and sinful. An article about uses of landfill gases for housing developments is included.*

**Comment**

The recommended PD requires the licensee to ensure that the facility is operated such that it does not cause nuisance. The recommended PD also requires the licensee to install generators for the purpose of energy utilisation. These generators are to be connected to the national grid. The licensee is required to include in the facility’s AER details of any environmental improvement schemes undertaken by the licensee in the surrounding area.

**Health**

- *One submission refers to being told that the smells are of no danger to human health but states that when the smell is very strong they can suffer headaches when outside in the garden.*
- *Concern is raised at the ongoing unacceptable odour levels and possible airborne gas emissions. Particular concern is raised regarding the vulnerability of children to environmental chemicals. Reference is made to the levels of children that have had a viral infection with symptoms exhibited being headaches, elevated body temperature and nausea. It refers to and expresses concern at attendance records for December/January 2003 at Kill National School which it states indicates a substantial increase in the number of children out sick over similar periods in previous years*
- *One submission refers to having four children who have been constantly sick since November 2002 and expresses concern that an extension to the dump would be detrimental to their health. Reference is made to gastro-enteritis, flu, high temperatures and various viral infections being rampant throughout Kill village at the moment (March 2003) .*

**Comment**

The recommended PD requires the licensee to control all emissions from the facility including landfill gas and odours. Ongoing monitoring of emissions are required under various conditions the recommended PD in relation to landfill gas and odours (Conditions 7.9, 8.1 & 8.14).

**Water Quality**

- *Concern is raised about the water quality in the area and the interference of the groundwater levels i.e. wells and rivers in the area.*
- *One submitter in Kill village refers to a “bleach-like” taste of the tap water and to using bottled water instead.*

**Comment**

The licensee has implemented an extensive groundwater and surface water control scheme at the facility. Monitoring to date has not indicated any significant impact from the facility on the water quality in the surface waters or groundwaters adjacent to the facility. It is noted that monitoring of private wells (cross- and down- gradient of the facility) have indicated the presence of both faecal and total coliforms. A report on sampling carried out on behalf of the licensee (January 2002) concluded that the likely source was local point sources (e.g. farmyard, septic tanks). If upon completion of the landfilling operations of the facility the Agency agrees to the cessation of the artificial maintenance of the groundwater at levels below the landfill liner groundwater levels will return to natural levels. Kill village is on the Poulaphouca Regional water supply.

<b>(7) Reasons for the Recommendation</b>
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I recommend that a revised waste licence, subject to conditions, be granted in accordance with the conditions in the recommended Proposed Decision.

In coming to this recommendation, I consider that the continued landfilling of baled municipal waste in specified areas at the facility and the associated activities and works would, subject to the conditions of the recommended Proposed Decision, comply with the requirements of Section 40(4) of the Waste Management Act 1996.

Signed: \_\_\_\_\_

Dated: \_\_\_\_\_

Donal Howley  
Inspector,  
Environmental Management & Planning



**APPENDIX I – SITE LOCATION MAP & LAYOUT PLANS**

**APPENDIX II –COPY OF PLANNING PERMISSION [PL 09.091910]**