MEMO

TO:	Board of Directors	**FROM:**	Kealan Reynolds
CC:		**DATE:**	January '03

SUBJECT: Application for the review of a waste licence from Reduce, Reuse and Recycle Ltd. (Reg. No. 95-2).

Background

Reduce, Reuse and Recycle Ltd. (3R's) operate a non-hazardous waste transfer station at Knockmitten Lane, Western Industrial Estate, Dublin 12. 3R's are currently one of the top Repak recyclers in the country as they collect cardboard and plastics from the "back door" of many supermarkets and retail outlets nationwide. The facility is licensed to accept 17,000 tonnes per annum, however management of the facility has informed the Agency that the annual waste intake is approximately 40,000 tonnes. The original waste licence limited the facility to 17,000 tonnes per annum (tonnage applied for by the applicant) and it is considered that this volume is well below the maximum capacity of the facility.

Scenarios provided for in the recommended proposed decision

The recommended proposed decision provides for a number of scenarios and allows for the expansion of the facility operations through a number of Phases. There are two maximum tonnages provided for:

1- In the case where a new building is constructed and the existing building is rebuilt the applicant may accept 200,000 tonnes per annum:
   - **50,000** tonnes of mixed commercial and industrial waste
   - **147,000** tonnes of pre-segregated cardboard and plastics
   - **3,000** tonnes of construction and demolition waste

2- In the case where a new building is not constructed but the existing building is rebuilt the applicant may accept 97,000 tonnes per annum:
   - **50,000** tonnes of mixed commercial and industrial waste
   - **45,000** tonnes of pre-segregated cardboard and plastics
   - **3,000** tonnes of construction and demolition waste

Facility Capacity

The operating capacity of the facility is outlined in detail below with the maximum annual tonnage being broken down into daily quantities. The recommended proposed decision also ensures that the quantity of waste accepted at the facility does not exceed the duty capacity of the plant in place at the facility. In this regard Condition 3.11 of the recommended proposed decision requires the applicant to provide adequate duty and standby capacity at the facility and the applicant is required to report to the Agency on the duty and handling capacity at the facility.

Condition 11.5 of the recommended proposed decision requires the applicant to submit a report to the Agency demonstrating that they have provided sufficient capacity at the facility prior to increasing the tonnage as provided for in Schedule A of the recommended proposed decision. In the case where the Agency is not satisfied that adequate capacity has been provided at the facility the waste intake may not be increased at the facility.

Facility Capacity For 50,000 tonnes per annum of Commingled Commercial and Industrial Waste

- As seen from above, regardless of either scenario the maximum quantity of commingled waste to be accepted at the facility is 50,000 tonnes per annum. This figure was derived using a formula taken from a USEPA publication. In practice 50,000 tonnes per annum equates to ~ 140 tonnes per day. This refers to the maximum tonnage following the removal of ancillary activities off-site (e.g. workshop, skip storage). All of the incoming commingled waste is loaded into a shredder that feeds into a tromell (where the fines are removed, see below) and is subsequently compacted into 40ft ejector trailers for transport to landfill. Each load of waste leaving for landfill weighs approximately 20-25 tonnes. To maintain a throughput of 140 tonnes per day the applicant would therefore be required to fill 6-7 40ft trailers per day. In practice it would take a maximum of 1 hour to fill a 40ft trailer and it is considered that filling 6-7 of these per day should not create any problems at the facility providing that adequate handling capacity is provided and that the facility operation is suitably managed.

- As outlined above the commingled waste is shredded and subsequently passed through a trommel. All fines are removed in the trommel and the great majority of these fines are organic. The fines/organic wastes are then conveyed into an enclosed 40ft trailer that is parked in the building. Approximately 15% of the incoming commercial and industrial waste is estimated to be organic, therefore up to 7,500 tonnes of organic waste may be segregated at the facility. This equates to a maximum of 20 tonnes per day, that is one 40ft trailer per day. Providing the trailer containing the fines/organic waste is removed off-site on a daily basis (provided for in Condition 7.4.1) the handling and storage of this material should not generate nuisances at or around the facility.

- If the waste handling equipment at the facility were to breakdown, all of the incoming commingled waste could be loaded directly into 40ft trailers and it would still be possible to load and remove 6-7 40ft trailers per day without causing significant handling, capacity or nuisance problems.

Facility Capacity For 147,000 tonnes per annum of pre-segregated plastic and cardboard waste

- This section assesses the worst case scenario at the facility regarding the operational capacity of the facility. The annual tonnages previously provided in the recommended proposed decision were based on the best case scenario for the facility.

- In the case that (i) the applicant receives planning permission to construct the proposed new transfer building at the facility; (ii) the existing building has been rebuilt; and (iii) all the ancillary activities (skip repair, skip storage, vehicle storage, etc.) have been relocated off the facility, the recommended proposed decision allows a maximum of 147,000 tonnes per annum of pre-segregated cardboard and plastics to be accepted at the facility. The majority of this waste would be handled in the new building with a smaller quantity being handled in the existing building. This waste stream arrives pre-segregated and sometimes baled and some of the baled materials can be placed directly into storage for transport off-site for recovery. The majority of the materials are tipped onto the floor of the building and fed along a conveyor line into a baler for dispatch off-site.

- 147,000 tonnes per annum equates to approximately 471 tonnes per day or 2826 tonnes per week. The throughput of a typical large-scale baler when baling cardboard/plastics is between 40-100 tonnes throughput per hour. It is not expected that the throughput of the balers would be a problem but the proper storage of the baled material would be crucial. Based on the 471 tonnes per day figure, it is estimated that 785 bales (each bale ~ 600kg – info. from applicant) would be produced each day. The storage of 785 bales at any one time would have space requirement of approximately 1175m^3 (each bale ~ 1.5m^3). The storage area provided for in the new waste building is approximately 5250m^3, however up to 30% of this area will need to be left free for access and manoeuvring of forklifts, so in practice 3675m^3 is available for storage of baled cardboard and plastic (based on storage of bales to 10m in height in an area 15m x 35m). The storage capacity therefore in the new waste building equates to approximately 3.1 days. It is considered necessary to ensure that a minimum of 1 week's storage capacity is provided (8225m^3). It is therefore considered that the storage capacity of the facility for handling pre-segregated cardboard and plastic would be equivalent to 210 tonnes per day, which equates to 65,520 tonnes per annum. See the recommended changes to the recommended proposed decision below.

- In addition to the proposed new building the applicant proposes to use part of the existing building for cardboard and plastic baling. As above using a worst case scenario the capacity of this part of the facility is outlined below. There is approximately 1190m^3 storage space available in the existing facility (based on 2 100m^2 areas and two curtain side trailers provided 6 days per week). Based on the provision of a weekly storage capacity this equates to ~70 tonnes per day or 25,550 tonnes per annum. This capacity may increase by ~ 4,450 tonnes per annum following the removal of the ancillary activities off-site. The amended tonnage is recommended below.

- It should also be noted that there is also a limited amount of storage area in the existing waste building and it would be common practice for the applicant to park a curtain-side 40ft articulated trailer in the yard of the facility and load it directly from the baler output. It is estimated that each articulated trailer would take 23 tonnes per load (from applicant), this would then equate to a daily total of 9-10 trucks per day

leaving the facility. It is not anticipated that this would create any significant environmental issues at the facility. There is sufficient yard space outside proposed building 2 (900m^2 to the front of the building and 350m^2 to the southern end of the building) to allow for the movement of vehicles into and out of the building and also to allow for the parking of up to four 40ft articulated trucks at any one time for loading baled cardboard and plastics.

Hours of Operation

The recommended proposed decision provides two sets of hours for waste acceptance and facility operation. This was proposed as it is considered that Site 2 on the facility is a more sensitive facility as it is in very close proximity to a number of private residences. Operations are restricted on Site 2 to 8.00am – 8.00pm six days per week. Operations on Site 1 are restricted to 6.00am – 9.00pm seven days a week up to and until the existing waste building has been rebuilt incorporating acoustic cladding and an acoustic barrier has been provided along the northern boundary of the facility. It is only following the completion of the above infrastructure that the applicant will be allowed to accept waste at Site 1 for 24 hours per day. . Regardless of the hours of waste acceptance, a waste shredder and waste trommel may not be used from 10.00pm to 6.00am. This in practice means that wastes may only be accepted at night and may not be processed until 6.00am, this is to allow the delivery of wastes to the facility that may be collected during nighttime collections in the Dublin area.

On-Site Traffic Management

As part of the waste licence application 3R's assessed the impact of the proposed redevelopment of the facility on on-site traffic movements. It was estimated that if the facility was operating at 200,000 tonnes per annum a total of 180 traffic movements to and from the facility per day would occur. It was predicted that maximum traffic movements would be between the hours of 9.00am – 5.00pm, with a maximum number of movements occurring between 11am – 12.00noon. It is predicted that the maximum number of traffic movements in an hour would be 18 (both in and out).

One of the potential issues regarding traffic management at the facility is that vehicles enter and exit the existing waste building by the same doorway. It is considered that this is the best option as this entrance is located to the rear of the facility and it has a far less potential for negative impact on the surrounding environment compared to the case where a one way system were to be used. A one way system would mean that vehicles enter from the rear of the building and exit at the front. This would however mean that the front door of the facility would remain open for long periods and this is more likely to give rise to odour, dust and noise emissions.

The success of traffic management at the facility is down to diligence on behalf of the facility operator and management on-site. There are a number of potential bottlenecks at the facility that will need continuos monitoring and control to ensure the efficient and safe movement of vehicles through the facility. It is considered that a condition should

be added to the recommended proposed decision to require the applicant to implement a traffic management plan at the facility. See proposed condition below.

The recommended proposed decision requires that prior to the increase of waste acceptance at the facility to the maximum quantity that all skip storage and vehicle parking shall be relocated off-site and this should also aid in freeing up space to promote the movement of traffic at the facility.

Control of Environmental Nuisances

There are a number of conditions in the recommended proposed decision that control nuisances at and around the facility. Two main concerns in relation to this facility are odours and noise emissions:

Odours: It is considered that the pre-segregated plastic and cardboard accepted and handled at the facility should not give rise to significant odours at or around the facility. The potential source of odours would be the 50,000 tonnes of commingled waste. The recommended proposed decision contains a number of conditions for the control and management of odours at the facility. For example, Condition 3.7 of the recommended proposed decision requires that all doors are kept closed where possible (given the number of vehicle movements, this will not occur during waste acceptance) and Condition 5.4 requires the regular cleaning and washing down of waste handling equipment. Condition 7.4 requires that waste be moved off-site within 24hours and that an odour control programme be implemented at the facility. Since late 2002 a "Mist-Air" system has been in use at the facility and the number of complaints received in relation to odours from the facility have greatly reduced. Condition 7.1 requires that odours shall not create a nuisance at or around the facility. It is considered that a combination of odour control technology and appropriate operational procedures should ensure that significant odours will not arise from the facility.

Noise: A number of complaints received in the past have been in relation to night-time noise levels in the vicinity of the facility (results summary attached). In enforcing the existing waste licence the Agency carried out night-time noise monitoring at a private residence beside the facility on 23rd January 2003. The results of the noise monitoring show that the noise emissions from refuse vehicles leaving the facility are not having a significant impact on the noise levels in the vicinity of the facility and that other noise sources such as the nearby M50 road are contributing to noise levels in the vicinity of the facility. The control of tonal and impulsive noises (e.g. sounding of horns) is provided for in the recommended proposed decision and the licensee must comply with these conditions.

Summary

1. In reaching the decision to allow the facility to operate at the scenarios outlined (as amended by this memo) I have had regard to a number of factors including the capacity of the infrastructure, potential nuisances which are likely to arise and environmental controls at the facility.

2. In practice the efficient operation of the facility and the optimum use of its capacity is down to diligent facility operation and management.

3. For example, it is imperative that all wastes processed on-site should be removed off-site as soon as possible after processing.

4. I am satisfied that compliance with the conditions of the licence should ensure that the activities at the facility would not cause environmental pollution at or in the vicinity of the facility.

Recommendation

1. It is recommended that the following amendments be added to the recommended proposed decision to ensure that the facility will be operated without causing environmental pollution.

- Add Condition 5.12 to read as follows:

  5.12 Traffic Management:

  5.12.1 Within three months of the date of grant of this licence the licensee shall agree and implement a traffic management plan at the facility to ensure the safe and efficient movement of traffic within the facility. The plan shall be reviewed on a six monthly basis.

- Amend Schedule A as follows:

A.1 Waste Acceptance

Table A.1

Where the proposed waste transfer Building 2 has been developed on Site 2

WASTE TYPE	Phase I	Phase II	Phase III
Co-mingled Commercial and Industrial	30,000	40,000	50,000
Pre-segregated cardboard and plastics	25,550	65,520	65,520
C &D	3,000	3,000	3,000
TOTAL	58,550	108,520	118,520

Phase I – From the date of grant of this licence

Phase II – Following the construction and commissioning of Building 2

Phase III – Following the completion of Phase II, the rebuilding of Building 1 and removal of auxiliary activities off-site (i.e. maintenance workshop, skip storage, etc.)

Table A.2

Where for planning or other reasons Building 2 has not been developed on Site 2

WASTE TYPE	Scenario 1	Scenario 2[Note 1]
Commingled Commercial and Industrial	30,000	50,000
Pre-segregated cardboard and plastics	25,550	30,000
C &D	3,000	3,000
TOTAL	58,550	83,000

Note 1: The tonnage of pre-segregated cardboard and plastic waste may be increased with the prior agreement of the Agency provided that the total amount of these wastes accepted at the facility does not exceed the combined tonnage of 83,000 per annum (as specified in the total above).

Scenario 1 – From the date of grant of this licence
Scenario 2 – Following the rebuilding of the Building 1 and the removal of auxiliary services off-site (i.e. workshop, skip storage, etc.)

Attachment 1 – Summary of Noise Monitoring (carried out on 23/01/03)

Time	L_{Aeq}	L_{AF90}	L_{AF10}	L_{AFMin}	L_{AFMax}
02:51 to 03:21	46.4	40.2	47.0	36.2	68.7 (car offsite)
03:29 to 03:59	45.0	42.0	46.6	38.6	56.9
04:05 to 04:35	44.4	41.4	46.6	38.3	54.9 (truck)
04:40 to 05:10	50.5	43.6	52.2	40.8	75.6 (dog)
05:12 to 05:42	51.1	47.6	53.4	44.2	62.7 (dog)
05:48 to 06:18	54.9	52.2	56.6	49.2	73.5 (on site thud)
06:20 to 06:50	57.9	53.8	59.4	51.1	78.7 (horn on site)
06:52 to 07:22	60.6	58.0	61.8	55.6	81.2 (van offsite)
07:24 to 07:54	61.3	58.4	62.0	56.2	82.0 (dog)

Main noise from site:

Run 1 – Truck engine idling for 10 mins on site – faintly audible.
Run 2 – Mostly quiet except brief noise from engines of refuse collection vehicles on site.
Run 3 – No noise from site
Run 4 – Truck engine on site clearly audible for 4 mins - 59 dB(A). More engines audible for last 7 mins of monitoring - up to 63 dB(A).
Run 5 – Minimal noise from site except truck engine for 1 minute.
Run 6 - Quite a few trucks departed but offsite traffic was main noise.
Run 7 – Vehicles intermittently audible on site. Back ground noise when site is quiet was 53-55 dB(A).
Run 8 – Noise from site not significant.
Run 9 – Various audible vehicle movement on-site but distant traffic noise is more significant.