Attachment A1: Non Technical Summary

Introduction

SWS Environmental Services have prepared an Environmental Impact Statement (EIS) on behalf of AVR – Environmental Solutions Ltd. to submit as part of a planning application to Cork County Council and a waste licence application to the Environmental Protection Agency (EPA).

This is the Non-Technical Summary of the Waste Licence application and form Attachment A1. The information contained in this Non-Technical complies with the requirements of Article 12(1) (u) of the Waste Management (Licensing) Regulations, SI 395 of 2004.

The EIS was prepared as per the requirements set out in the Environmental Impact Assessment Regulations (EIA) [European Communities (EIA) Regulations, 1989] (SI No. 349 of 1989), and EIA Regulations [European Communities (EIA) Regulations, 1999] (SI No. 93 of 1999). The EIS was also prepared in accordance with the requirements of the Planning and Development Regulations, 2001 (S.I. No. 600 of 2001).

12 (1) (a) Addresses (Registered and Correspondence)

AVR – Environmental Solutions Ltd., with registered offices at Corrin, Fermoy, Co. Cork are applying to the Environmental Protection Agency for a Waste Licence and Cork County Council for Planning Permision in respect of its proposed development of a Waste Recovery/Transfer and Sludge Drying Facility in the townland of Foxhole, Youghal, Co. Cork.

Any correspondence in relation to this project should be sent to Project Manger (AVR – Environmental Solutions Ltd.) c/o SWS Natural Resources Ltd., Shinagh House, Bandon, Co. Cork.

12 (1) (b) Planning Authority

The proposed development is within the functional area of Cork County Council. The area of the proposed development is zoned Industrial/Enterprise in the Cork County Development Plan, 2003. The existing site has Planning Permission (ref: S/00/7093) for "the construction of a waste transfer station" and also holds a Waste Management Permit (ref: CK(S) 23/03) for a "Waste Recycling/Transfer Station".

12 (1) (c) Sanitary Authority

AVR – Environmental Solutions Ltd. propose to discharge treated foul sewage, waste water and storm water to the Youghal Town Council outfall via the Youghal Town Council Sewer for the medium term. Currently under discussion with the Council is the possibility that discharge will enter the proposed municipal waste water treatment plant to be built in Youghal. The results of the aquatic dispersion modelling indicate that the discharge will not negatively impact on the aquatic environment either physically or biologically and the long term discharge may continue at the current proposed location, at the discretion of the Council.

12 (1) (d) Townland (Future Postal Address) and National Grid Reference

The site of the proposed development is located off the R634 (former N25 Cork to Waterford Road) adjacent to the existing Youghal Landfill and Civic Amenity Centre. The future postal address of the proposed facility is Foxhole, Youghal, Co. Cork. The site has National Grid Reference 2097E, 7977N.

12 (1) (e) Nature and Capacity of Facility

The proposed development consists of a Waste Recovery/Sludge Drying Facility on 3.54acres. It is proposed to manage 70,000 tonnes/annum of commercial/enterprise and industrial waste, 30,000 tonnes/annum of non-hazardous biological sludge from waste water treatment plants, 10,000 tonnes/annum of leachate and 500 tonnes/annum of washings.

12 (1) (f) Classes of Activity under the Third and Fourth Schedules

Third Schedule — Waste Disposal Activities

7. "Physico-chemical treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in paragraphs 1 to 5 or paragraphs 8 to 10 of this Schedule (including evaporation, drying and calcination)".

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

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

13. "Storage prior to submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where the waste concerned is produced".

Fourth Schedule — Waste Recovery Activities

Principal Activity:

2. "Recycling or reclamation of organic substances, which are not used as solvents (including composting and other biological processes)".

Other Activities:

3. "Recycling or reclamation of metals and metal compounds".

4. "Recycling or reclamation of other inorganic materials".

9. "Use of any waste principally as a fuel or other means to generate energy".

11. "Use of waste obtained from any activity referred to in a preceding paragraph of this Schedule".

12. "Exchange of waste for submission to any activity referred to in a preceding paragraph of this Schedule".

13. "Storage of waste intended for submission to any activity referred to in a preceding paragraph of this Schedule, other than temporary storage, pending collection, on the premises where such waste is produced".

12 (1) (g) European Waste Catalogue Codes

It is proposed to treat wastes with the following European Waste Catalogue Codes as presented by the Commission Decision 2000/532/EC of 3 May 2000.

02 Wastes From Agriculture, Horticulture, Aquaculture, Forestry, Hunting And Fishing, Food Preparation And Processing

02 01 04	Waste plastics (except packaging)
02 01 10	Waste metal
02 02 04	Sludges from on-site effluent treatment
02 03 05	Sludges from on-site effluent treatment
02 04 03	Sludges from on-site effluent treatment
02 05 02	Sludges from on-site effluent treatment
02 06 03	Sludges from on-site effluent treatment
02 07 05	Sludges from on-site effluent treatment

03 Wastes From Wood Processing, and the Production of Panels and Furniture, Paper and Cardboard

03 01 01	Waste bark and wood
03 01 05	Sawdust, shavings, cuttings, wood, particle board, and veneer other than those mentioned in 03 01 04
03 03 01	Waste bark and wood
03 03 11	Sludges from on-site effluent treatment other than those mentioned in 03 03 10

04 Waste from the Leather, Fur and Textile Industries

04 01 07	Sludges, in particular from on-site effluent treatment free of chromium
04 02 20	Sludges from on-site effluent treatment other than those mentioned in 04 02 19

05 Waste from Petroleum Refining, Natural Gas Purification and Pyrolytic Treatment of Coal

05 01 10	Sludges from on-site effluent treatment other than those mentioned in 05 01 09

06 Waste from Inorganic Chemical Processing

06 05 03	Sludges from on-site effluent treatment other than those mentioned in 06 05 02

07 Wastes From Organic Chemical Processes

07 01 12	Sludges from on-site effluent treatment other than those mentioned in 07 01 11
07 02 12	Sludges from on-site effluent treatment other than those mentioned in 07 02 11
07 02 13	Waste plastic
07 03 12	Sludges from on-site effluent treatment other than those mentioned in 07 03 11
07 04 12	Sludges from on-site effluent treatment other than those mentioned in 07 04 11
07 05 12	Sludges from on-site effluent treatment other than those mentioned in 07 05 11
07 06 12	Sludges from on-site effluent treatment other than those mentioned in 07 06 11
07 07 12	Sludges from on-site effluent treatment other than those mentioned in 07 07 11

10 Waste Packaging

10 01 21	Sludges from on site effluent treatment other than those mentioned in 10 01 20
10 12 13	Sludge from on site effluent treatment

15 Waste Packaging

15 01 01	Paper and cardboard packaging
15 01 02	Plastic packaging
15 01 03	Wooden packaging
15 01 04	Metallic packaging
15 01 05	Composite packaging
15 01 06	Mixed packaging
15 01 07	Glass packaging
15 01 09	Textile packaging

17 Construction and Demolition Wastes

17 01 01	Concrete
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 07	Mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02 01	Wood
17 02 02	Glass
17 02 03	Plastic
17 03 02	Bituminous mixtures containing other than those mentioned in 17 03 01
17 04 01	Copper, bronze, brass
17 04 02	Aluminium
17 04 03	Lead
17 04 04	Zinc
17 04 05	Iron and steel
17 05 06	Tin
17 05 07	Mixed metals
17 04 11	Cables other than those mentioned in 17 04 10

17 05 04	Soil and stone other than those mentioned in 17 05 03
17 05 06	Dredging spoil other than those mentioned in 17 05 05
17 05 08	Track ballast other than those mentioned in 17 05 07
17 06 04	Insulation material other than those mentioned in 17 06 01 and 17 06 03
17 08 02	Gypsum-based construction materials other than those mentioned in 17 08 01
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03

19 Wastes From Waste Management Facilities, Off-Site Waste Water Treatment Plants And The Preparation Of Water Intended For Human Consumption And Water For Industrial Use

19 02 03	Premixed wastes composed only of non-hazardous wastes
19 02 06	Sludges from physico/chemical treatment other than those mentioned in 19 02 05
19 06 04	Digestate from anaerobic treatment of municipal waste
19 06 06	Digestate from anaerobic treatment of animal and vegetable waste
19 07 03	Landfill leachate other than those mentioned in 19 07 02
19 08 05	Sludges from the treatment of urban waste water
19 08 12	Sludges from biological treatment of industrial waste water other than those mentioned in 19 08 11
19 08 14	Sludges from other treatment of industrial waste water other than those mentioned in 19 08 13
19 09 02	Sludge from water clarification
19 09 03	Sludges from decarbonation
19 09 06	Solutions and sludges from regeneration of ion exchangers
19 10 01	Iron and steel
19 10 02	Non-ferrous waste
19 11 06	Sludges from on-site effluent treatment other than those mentioned in 19 11 05
19 12 01	Paper and cardboard
19 12 02	Ferrous metal
19 12 03	Non-ferrous metals
19 12 04	Plastic ad rubber
19 12 05	Glass
19 12 07	Wood other than those mentioned in 19 12 06
19 12 08	Textiles
19 12 09	Minerals (for example sand, stone)
19 12 10	Combustible waste (refuse derived fuel)
19 12 12	Other wastes (including mixtures of materials from mechanical treatment of waste other than those mentioned in 19 12 11
19 13 04	Sludges from soil remediation other than those mentioned in 19 13 03
19 13 06	Sludges from groundwater remediation other than those mentioned in 19 13 05

20 Municipal Wastes

20 01 01	Paper and Cardboard
20 01 02	Glass
20 01 10	Clothes
20 01 11	Textiles
20 01 34	Batteries and accumulators other than those mentioned in 20 01 33
20 01 36	Discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35
20 01 38	Wood other than those mentioned in 20 01 37
20 01 39	Plastics
20 01 40	Metals
20 02 02	Soil and stones
20 03 04	Septic tank sludge

12 (1) (h) Raw, ancillary material, substances, preparations, fuels and energy

It is not proposed to treat the wastes accepted in the Waste Recovery/Transfer Facility other than in a mechanical fashion, chipping, compressing, baling, etc.

The proposed Sludge Drying Facility will be powered by a steam boiler using wood chip fuel or light diesel oil. A back-up generator unit will employ diesel fuel. It is estimated to be in the region of

It is estimated that electrical consumption shall be in the range of 250,000kW.

Other materials utilised include:

- Hydraulic Oil,
- Disinfectant,
- Engine Oil,
- Superfloc,
- Nutient dosing chemicals,
- Acids/Bases.

12 (1) (i) Plants, methods, processes, ancillary processes, abatement technologies, treatment systems and operating procedures

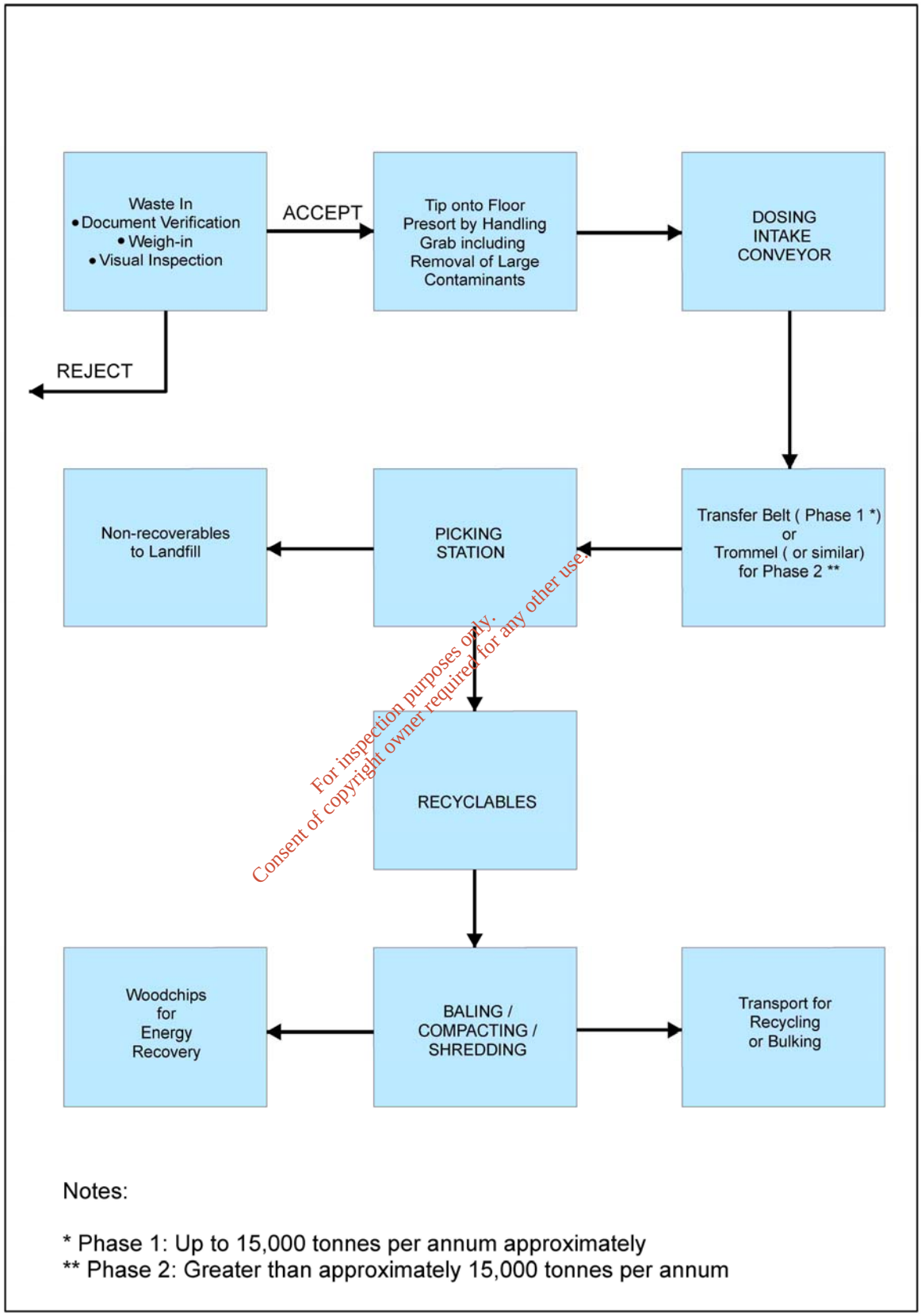
Waste Recovery and Transfer Building

The following plant and equipment will be used at the Waste Recovery and Transfer building:

- Materials Handling Grab,
- Dosing Intake Conveyor,
- Transfer Belt during phase 1 up to approximately 15,000 tonnes per annum,
- Trommel Drum Screen or similar during phase 2 when throughput tonnages increase beyond approximately 15,000 – tonnes per annum,
- Picking Station, Sorting Belt and Overband Magnet, fully air-conditioned with high lux fluorescent lighting,
- Infloor Conveyor to Compactor,
- Baler,
- Shredder,
- Woodchipper,
- Forklift or loading shovel.

It is proposed to operate the Waste Recovery and Transfer building will only operate between 8:00am and 9:00pm Mondays to Fridays, set-up and and clean-up will take place between 7:00am and 8:00am and 9:00pm and 10:00pm Mondays to Fridays. On Saturdays operations will take place between 8:00am and 1:00pm, with set-up and and clean-up between 7:00am and 8:00am and 1:00pm and 2:00pm.

The process description at the Waste Recovery and Transfer building is presented in a flow diagram.



Sludge Drying Facility

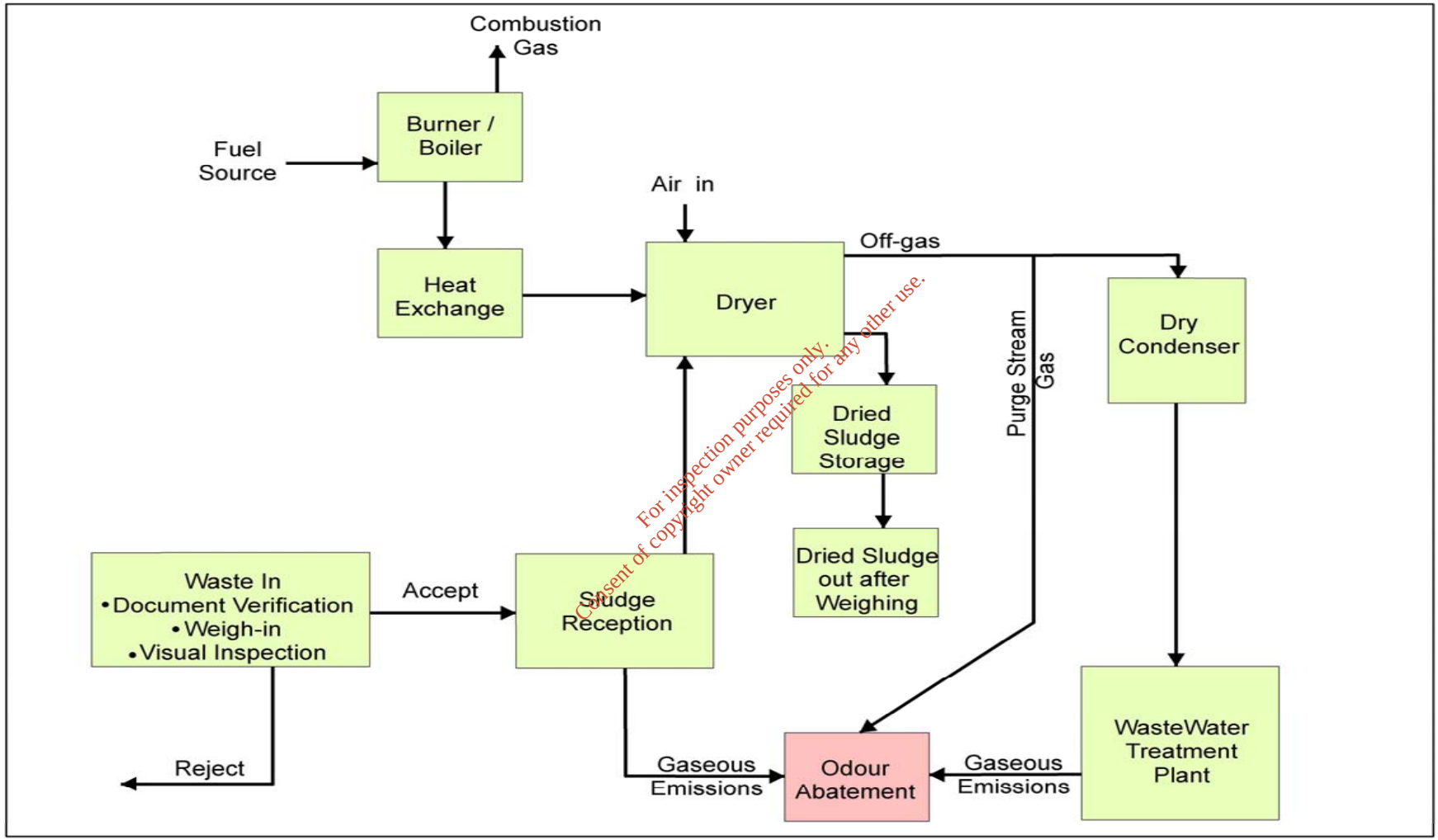
Wet sludge (with a minimum Dry Solids (DS) content of 10%) on arrival at the facility will be weighed and randomly sampled for analysis. The wet sludge is then tipped into sludge reception bins (covered with hydraulic lids and gratings) in the fully enclosed Sludge Reception building. The sludge is then pumped to a dosing/mixing bin that controls the flow of sludge into the dryer. The dryer is heated using a totally indirect method of heating; various energy sources are available to operate the dryer and it is proposed to use biomass (woodchip). The dryer will be insulated, except at the ends, to minimize heat loss, thus reducing energy usage and provide for very safe working conditions.

The drying process creates steam; which is carried via the off-gas duct to the scrubber/separator or similar type plant, where it is condensed. Any fine particulate matter is returned to the dryer and the condensed effluent is sent to the hooded waste water treatment plant where it is treated to according EPA effluent discharge limits. Purge stream off-gas, volatile organics evaporating from the hooded waste water plant and odours from the sludge reception bin will be treated by a standalone odour abatement technology such as a biofilter.

The dried sludge is received onto a discharge conveyor and transferred to a product cooling conveyor, and indirectly cooled. The product with a moisture content of less that 10% is then screened to separate the fines, which are returned by the fines conveyer to the front of the dryer. The end-product is a sterilised granulate.

This facility will run on a 24 hour basis 7 days a week including holidays. It will be shut down for maintenance.

The process description for the sludge drying facility is presented in a diagrammatical format.



Ancillary facilities include:

- Administrative Building including SCADA centre, laboratory; canteen; sauna; toilet and shower facilities, parking including disabled parking bays; cycle racks and motorcycle bay,
- Weighbridge,
- Wheelwash,
- Transformer/Plant Building,
- Standby Generator,
- Truck Parking and Bulk Storage Area,
- Material Inspection Area,
- Waste Quarantine Area,
- Bunded Fuel Storage Area,
- Boiler and Woodchip Storage Building,
- Stormwater Retention Tank,
- Interceptor Compound,
- Firewater Storage Tank,
- Sludge Reception Building,
- Dried Sludge Discharge Area,
- Mobile Dewatering Plant,
- Mobile Firefighting Plant,
- Waste Water Treatment Plant and Balancing Tank.

Waste handling will be in line with BAT Guidance Notes for the Waste Sector: Waste Treatment Activities, EPA, Draft November 2003. Best Available Technique (BAT) was used in the design of the proposed development and the EIS was prepared using national guidelines and regulations on the information to be contained therein.

12 (1) (j) Section 40(4) of the Act

Section 40(4) of the Act does not apply as this waste application is not part of a licence review.

12 (1) (k) Emissions

Liquid Emissions

Liquid emissions from the integrated facility will include foul waters, storm waters and potential fire waters. Foul waters and process waters will be collected and directed to the waste water treatment plant (WWTP). Storm and fire waters will be collected in retention tanks. In the event of contamination of these waters, the tanks will be equipped to pump the water to the WWTP if necessary. It is estimated that at maximum operating capacity AVR – Environmental Solutions Ltd. will discharge approximately $10m^3$/hr of treated effluent and storm waters.

The surface water drainage system on the site will be fitted with Class 1 oil and grit interceptors or similar. These will prevent the escape of vehicular fuels or any oil spillages on-site. The WWTP will treat effluent from the sludge drying process and will also treat storm/fire waters, should contamination occur.

Liquid emissions from the WWTP and discharges from the retention tanks will be to the Youghal Town Council outfall via the Youghal Town Council sewer network.

Air Emissions (Gaseous, Odour and Dust)

Potential impacts on existing air quality would be posed by emissions from the sludge reception area, the boiler system, the sludge drying process, the WWTP and abatement and control technologies such as a biofilter or a thermal oxidiser. Emissions will be limited by the use of abatement systems such as a biofilter, thermal oxidiser and electrostatice precipitator to treat air emissions from the facility. Each of the facilities will also be fully enclosed to prevent fugitive emissions. It is estimated that at maximum operating capacity AVR – Environmental Solutions Ltd. will discharge approximately 350,000Nm^3/d of treated effluent and storm waters.

Noise Emissions

The layout of the facility has been designed in such a way as to minimise the potential for noise disturbance associated with the facility at the nearest sensitive locations. Noise associated with operations at the facility will be minimised by the use of Kingspan Insulation in the buildings. An approximately 2m block-on-flat wall will be constructed adjacent to the Waste Recovery/Transfer Facility to further limit any potential impact on the nearest noise sensitive locations. Recommendations from the Guidance Notes for Noise in Relation to Scheduled Activities, EPA, 1995 for the appropriate noise criteria relevant for a development of this type were used. This document specifies that to avoid disturbance at noise sensitive locations noise levels should be kept below 55dB $L_{Aeq,1hr}$ for daytime hours (08:00 – 22:00hrs) and below 45dB $L_{Aeq,1hr}$ for nighttime hours (22:00 – 08:00hrs). It is intended that the facility will operate within these parameters.

12 (1) (l) Impact Assessment

GEOLOGY AND HYDROGEOLOGY

Existing Environment

Though the limestones of the Youghal syncline are considered a major or regionally important aquifer (GSI, 1994) and they are classified as amongst the most productive in the country, due to the coastal location of the site, the risk of saline intrusion to the groundwater, limits its potential for potable use (GSI, 1994). Groundwater in the area, therefore, is not likely to be considered suitable for extraction.

Impacts during Construction

The geotechnical site investigation report describes the subsoils as sandy/gravelly clays; as such these materials have little economic value. A site investigation report was carried out with respect to the made ground present on the site and it is proposed that during the site construction phase material will be removed to the adjacent landfill site if required.

Impacts during Operation

The site is not intended to deal with hazardous materials or putrescible waste. Therefore, potential contamination during the operation of the facility should be minimal. Furthermore the hardstanding area of the site will divert surface water run-off and all storm waters will be collected and monitored prior to discharge.

Impacts during Decommissioning
The main potential impact associated with the decommissioning of the facility would pertain to where contaminants had been stored on-site. Potential contaminants to be stored on-site will include fuels such as light diesel oil, which will be contained in bunded areas. The operator of the site has prepared a Decommissioning Plan. Therefore the control and management of the facility during decommissioning means that any potential risk is reduced.

Mitigation Measures

Impacts during Construction
It is intended to use this soil/overburden for landscaping purposes on-site as appropriate.

Impacts during Operation
A quarantine area will be established on-site to temporarily store such materials should they unintentionally arrive on-site, thereby controlling, preventing and managing any potential risk. The entire operational area of the site will be concreted. This measure should protect the sub-surface from any potential contamination. Surface run-off will be directed from the site with the installation of hardstanding throughout the facility. Run-off from all site surfaces will be collected and monitored, thereby further reducing the pollution potential of the site. Process ad foul water will be treated prior to discharge.

Impacts during Decommissioning
All care will be taken during decommissioning, to ensure that potential contaminants will not be released from the site.

AIR

Existing Conditions
Baseline dust, dour and gaseous emissions are well within permissible allowable levels.

Impacts Assessment

Construction Phase
It is expected that the construction phase will last a total of approximately 1 year and due to the scale of the development and short term earth moving activities, any impact on air quality will be minimal.

Operations Phase and Mitigation Measures

Dust

Activities at the proposed facility have the potential to generate dust in the loading and treatment of waste. However, as operations will be conducted indoors, dust generation will be prevented at source and thus impacts are considered minimal.

Odour

The proposed facility will treat waste from commercial and industrial sources. The absence of any significant quantities of putrescible organic waste due to segregation by the producer will ensure that odour impacts any minimal.

The Sludge Drying building will be operated as a closed housed system to contain any generated dust. Dust potential from wet sludge is considered non-existent. The system is designed to prevent fugitive emissions. Proper housekeeping, maintenance and management of the sludge drying building will ensure that dust generating activities are limited.

Any dusts generated from combustion plant and vehicles on site will be minimised by regularly following effective maintenance and operation procedures. Staff operation and awareness training is proposed to ensure procedures are correctly followed. Regular cleaning and inspection of the site is essential to control dust levels.

A 2m buffer zone around the site together with a 1.85 - 2m high palisade fence will minimise the transfer of generated dust to neighbouring sites.

Any dust generated by boiler equipment and standby generator will be well within proposed ground level concentrations as directed by the draft TA Luft 2002 guidelines and SI 271 of 2002 Air Quality Standards (Refer to Air Quality Data and Modelling Report). Therefore no mitigation measures are required.

Gaseous Emissions

Vehicles and plant associated with materials handling and the incoming waste material provide the only source of gaseous emissions at the Waste Recovery and Transfer building. Gaseous emissions levels are negligible. Sludge will be stored in a specially designed sludge reception building. The wet sludge will be pumped directly into the enclosed system.

The dried granular sludge has a very low odour potential and will be stored in closed silos and containers.

Excess process water and gas purge streams from the Sludge Drying Facility will be sent directed to the hooded wastewater treatment plant. Gaseous emissions from the hooded Waste Water Treatment plant will be treated by the standalone odour abatement technology.

WATER

Existing Environment

The Blackwater catchment is one of the largest in the state, draining an area in excess of 2,000km3. The Upper Blackwater Estuary shows decreased oxygen levels. Below this area, oxygen levels are increased, even though oxygenation is disturbed throughout the lower estuary and it then recovers fully by the Inner Youghal Bay.

Nitrogen and phosphate concentrations are somewhat elevated in the Upper Estuary under freshwater conditions. However, under saline conditions the Lower Estuary concentrations of these parameters are reduced to background coastal levels in Inner Youghal Bay.

Chlorophyll concentrations are overall elevated in both the Upper and Lower sections of the Estuary.

The breaching of these criteria levels classifies both sections of the Blackwater Estuary as eutrophic however; this classification does not appear to extend into the waters of Youghal Bay. Consequently, under the Urban Waste Water Treatment Regulations (S.I No. 254 of 2001 & 91/271/EEC) the Upper and Lower Blackwater Estuary are classified as Sensitive Areas.

Improvements in the municipal waste water treatment schemes, as well as, the reduction in the landspreading of sludge and the introduction of the Nutrient Management Plans in this area, should lead to a reduction in pollution levels in the river and its tributaries in the future.

Impact Assessment and Mitigation Measures

Storm Waters

Surface water runoff from paved and roofed areas will be collected via the site drainage system. The entire site shall be bunded using kerbing to prevent the uncontrolled escape of storm water. Four Class One type oil and grit interceptors or similar will be installed with a 120m^3 Storm Water Retention Tank with a monitoring well so that contaminates and or spilled hydrocarbons.

A sluice valve will control discharge of the storm waters to the outfall via the Youghal Town Council sewer network. The monitoring well will ensure that discharges are within acceptable emission limit values, again these limits will be set by the EPA in agreement with Youghal Town Council. In the event on an incident with potential for contamination of surface waters (e.g. spillage), the sluice valve will close preventing any discharge from the site.

Foul Waters

These waters shall be collected in the site foul water system and transported to the waste water treatment plant for treatment.

Process Waters

The only process water on-site shall be the final effluent from the waste water treatment plant. This effluent shall be monitored so that it is within the emission limit values set by the EPA. Monitoring shall be carried out at a frequency, to be specified by the EPA. The impact of the plant output on the river flow rate is negligible and therefore does not require mitigation.

Fire Waters

In the event of an incident, for example a fire, the potential contaminated waters will be collected through the storm water drainage system with the entire site acting as a large bunded area using the raised kerbing as an extra backup measure. Fire water will be stored in the Firewater Retention Tank. Any spent fire water will then be treated at the waste water treatment plant.

Bunds

There are a number of bunded areas at the proposed development and include the following:

- Fuel storage area,
- Quarantine area,
- Standby generator pad.

All these bunds will be tested for integrity and a discharge valve will be installed to pump out any contaminated water and hydrocarbons to be treated at an EPA approved facility.

NOISE

Existing Environment

The primary noise sources in the area are mobile vehicles including haulage vehicles and private cars utilising the civic amenity site and NCT centre. The noise environment would be typical for locations situated near major transport routes.

Overall, the average daytime Leq of 54dB(A) measured onsite was lower than the average daytime Leq of 66dB(A) measured at the nearest noise sensitive resident. This is due to traffic noise and the close proximity of the nearest noise sensitive location to the R634. During night time hours the noise levels at are reduced, however levels are still quite elevated with an average Leq of 50dB(A) due to traffic noise.

Impact Assessment and Mitigation Measures

Impact during the Construction Phase

The nearest dwelling (noise sensitive location) is over 180m from the site boundary. Noise levels at this distance were calculated from the sound power data assuming the plant would be operating at the nearest point of the boundary to the sensitive receivers. Construction equipment will not generally operate at the boundary of the site.

Combined Impact of the Operation

The noise contribution from the facility, at the nearest noise sensitive location can be obtained by summing the individual noise contributions from the above elements. The increase in noise level from the facility at the nearest noise sensitive location is 31 dB(A) during daytime and 22dB(A) during night time.

The overall noise level, at the nearest noise sensitive location, can be predicted (BS 4142 1997 Method of Rrating Iindustrial Nnoise affecting Mmixed R residential and Iindustrial Aareas) using the noise level contribution from the facility and the measured background noise levels at the nearest dwelling house.

The noise generated by the proposed development at the nearest dwelling house is predicted to be more than 10dBA below the existing background noise levels; therefore there will not be any significantly impact at the nearest noise sensitive location.

VIBRATION

Some construction activities such as driving piliespiles can give rise to considerable levels of ground vibration. However, at the proposed development flight augured piles will be used instead of driven piles. Therefore no adverse vibration effects are anticipated.

Plant and equipment is not expected to give rise to any vibration during the operations phase. Therefore it is not expected that vibration during the operations phase will impact on any adjacent building.

CLIMATE

Existing Environment

The long term weather patterns in this location reflect regional weather conditions of the South-Munster Area which is dominated by low-fronts from the west and south west during winter. During the summer more settled conditions prevail. For localised weather conditions meteorological measurements from nearby weather stations were consulted.

Impact Assessment and Mitigation Measures

No impacts are anticipated. Therefore, no mitigation measures are required.

FLORA AND FAUNA

Existing Environment

There are no National Heritage Areas (NHAs), Special Areas of Conservation (SACs), Special Protection Areas (SPAs), wildfowl sanctuaries, Ramsar sites, Nature reserves or National Parks within the site boundary.

The site is located adjacent to the Blackwater River cSAC no. 002170, Blackwater River and Estuary pNHA no. 000072, Blackwater Estuary SPA no. 4028, and within 300m of a Ramsar site (Blackwater Estuary, Ireland 7IE028).

The site is located in Landscape Character Area no. 35 Youghal Bay (Composite Mosaic and Marsh Estuary), as mapped in the 2003 Cork County Development Plan. The landscape character is Type 2: Broad Bay Coast.

No tracks, traces or other signs of mammalian activity were observed at the site. Species that are likely to inhabit the site include the Brown Rat, Pygmy Shrew and Field Mouse. It is probable that foxes and rabbits (Oryctolagus cunniculus) also occur in the area. The site does not provide potential roosts for bat species. The common frog (Rana temporaria) was not observed at the site. Due to current vehicular movements at the site, it is unlikely that frogs reside here. During the site survey transect, a total of 44 birds of 14 species were recorded. 27 birds of 8 species were observed within the site itself. A further 17 birds of 10 species were observed within the vegetated site boundaries

Finally consultation with the local National Parks and Wildlife Ranger corroborates that the site is not of great importance for birds, in regard to that of the surrounding habitats (P. Smiddy, pers comm). It is therefore considered unlikely that the loss of habitat within the proposed development site will have a negative impact on bird populations or habitat diversity of the surrounding areas.

Impacts on Flora and Fauna

The entire site will be cleared of existing vegetation. This will lead to the permanent and complete loss of existing habitats at the site. The habitats present at the site are not considered to be of high ecological value and are not listed as priority habitats in the Habitats Directive.

The main potential impacts for mammals occurring at the site will be the loss and fragmentation of habitat, and disturbance. Currently the habitats may provide feeding and residence opportunities for mammals (although no evidence of mammal setts or burrows was found). Loss of habitat will permanently remove these opportunities. Increased human activity at the site will deter mammals from using the site.

These impacts are not considered to be a significant negative impact because they will be localised and minimal. It is predicted that the local animal species will adapt to the change in their local environment, through either avoidance of the development site or restriction of their usage of the site. Mammals can move to another location which has similar habitat types.

Aquatic discharge to the outfall point was assessed via a baseline aquatic survey to determine what if any sensitive species were present – no sensitive species were recorded and no negative impacts will be associated with the discharge.

Mitigation

It is recommended that specified areas be used to dispose of excavated material and that all waste and unused building materials be removed from site. Vegetation from the surface should be stockpiled and used to resurface bare ground along road edges and disturbed areas.

Any landscaping programme for the developed site should use native tree and shrub species, both to maintain the ecological integrity of site within the wider environment and to provide potential habitat for local fauna.
While the existing habitat within the site itself is considered of low conservation value, the developer should take into account where possible, the Wildlife (Amendment) Act 2000 Section 46, amending Section 40 of the Wildlife Act, 1976 with regards to the timing of vegetation removal and habitat destruction.

To reconcile for the destruction and removal of existing habitats, it is recommended that the landscape design includes hedgerow planting and management that involve the use of native species that are in line with those species present in the surrounding area. Hedgerow planting will also act as a buffer zone, (e.g. to reduce disturbance) between the development and the surrounding areas.

CULTURAL HERITAGE

Existing Environment
The study of the three editions of OS maps did not reveal any features of archaeological significance on or near the site of the proposed development. There are no references to any features of archaeological significance that might be affected by the proposed development. The field inspection covered the entire site and did not reveal any features of archaeological potential.

Impacts and Mitigation Measures

The combined desktop, literary and field inspection did not reveal any previously unrecorded features of archaeological significance on or near the site of the proposed development.

It is recommended that a licensed and experienced archaeologist monitor the removal of all topsoil prior to construction of this development. The archaeologist will examine all deposits revealed during the course of excavations and, where possible, determine a date and context for any archaeological features that may emerge.

The developer must report the discovery of any archaeological features to DOEHLG and facilitate and fund both their investigation and recording.

Any artefacts uncovered during the course of excavation must be reported to the Duty Officer of the National Museum of Ireland.

LANDSCAPE

Existing Environment

The area of the proposed development is zoned Industrial/Enterprise in the Cork County Development Plan 2003.

The overall visual impression of the site is a brown field site with a complex of built anthropogenic structures such as high metal fencing and posts, telephone and electricity poles, Youghal Landfill and Civic Amenity Centre, the NCT Centre, Foxhole IDA

Industrial Estate and Foxhole Business Park incorporating Millennium Court office buildings.

The site occupies a very low-lying elevation, as it is enclosed to a significant extent by the confluence of rivers that surrounds it. Elevations changes across the site are negligible in comparison to the surrounding landscape. The site can be seen from the N25 scenic particularly in Waterford section directly opposite the site. However the Youghal Landfill and Civic Amenity Centre is the focal point of this fragmented landscape.

Site Aspect is south facing with the minimal sloping degree of 0-1. Therefore, site exposure is greatest on the eastern and southern side of the site, across the Blackwater Estuary and Youghal Bay.

The Cork County Development Plan 2003, supports the Landcover classification as the site is located in an area zoned for industrial and enterprise development.

Agricultural practices such as tillage, grasslands and forestry dominate the landuse patterns of the hills.

Impact Assessment and Mitigation Measures

The proposed development will form a linear block between the NCT Centre and the Youghal Landfill and Civic Amenity reducing the visual impact of the existing developments.

A Landscape Masterplan and detailed planting specifications for the proposed site was prepared and the proposed planting is based on the recommendations of Cork Rural Design Guide published by Cork County Council.

Much of the roadways in the vicinity of the site (i.e. N25 and R634) are well screened by the presence of hedgerows. Therefore the proposed development is not significantly visible from roads. Intermittent views may occur. These will be further obscured by the proposed landscaping measures at the site.

The R634 from Youghal Town to the N25 was also assessed to determine potential visibility. The commercial/industrial developments at Foxhole are clearly visible from this location. The absence of any screening on the northern side of these structures renders them highly visible. However, screening of the proposed development from these buildings and from the tree planting detailed in the Landscape Development Report will reduce the visual impact of the development significantly.

The sky is predominately cloudy and grey for the majority of the yearly climatic conditions therefore it is recommended that the buildings in the proposed site will have a 'goose-wing grey' colour to harmonise with the natural background sky.

Finally, the proposed development will be on a scale with existing structures in the Foxhole area. It will form a linear block between the NCT Centre and the Youghal Landfill and Civic Amenity reducing the visual impact of the existing developments.

TRAFFIC

Existing Environment

Traffic data collected as part Traffic section of the Environmental Impact Statement (EIS) prepared by Fehily Timoney & Company on behalf of Cork County Council in May 2003 for the *Intensification of Use of Youghal Landfill* shows an annual average daily traffic (AADT) volume of approximately 5,496 vehicles per day of which 22% were heavy good vehicles (HGV's). This equates to the removal of 48% of the total predicted 2003 traffic (i.e. using a growth factor of 3.5% per annum) on this portion of the R634 if the Youghal Bypass had not been built.

It can be assumed that most traffic accessing this road are visiting Youghal Landfill and Civic Amenity Site as the NCT Centre generates low volumes, likewise Youghal Shipping uses the lands adjacent to the landfill rarely.

Impact Assessment and Mitigation Measures

The proposed development will increase the growthed AADT 2004 figure of 5,688 by an AADT of 42.12 in terms of HGV's, the number of car movements is negligible. Therefore the proposed development generated traffic will not have any significant impact on the surrounding road network. In fact it can be stated that the proposed facility at Foxhole, Youghal will not result in any significant impact on traffic flows along the adjoining roads due to the opening of the N25, Youghal Bypass.

The geometry of the T12 does not facilitate two-way movement for HGV's, though it did historically. However this was removed by Cork County Council due to illegal camping activities and fly tipping. Cork Council created two lay-bys. As part of the planning conditions granted for the *Intensification of Use of Youghal Landfill* by An Bord Pleanala Cork County Council is required to upgrade the road to facilitate further two-way movement of HGV's.

Construction Phase

As the impact is considered negligible during the construction phase, no mitigation measures are required other than good construction practice and site housekeeping.

Operations Phase

The primary mitigation measure will be the upgrade of the T12 connecting the site to the R634, Cork County Council will have to complete these works by 2006 as part of the planning conditions granted for the *Intensification of Use of Youghal Landfill* by An Bord Pleanala.

It is also proposed to introduce additional mitigation measures, which will include the following:

- Staggering of deliveries/collections to/from the proposed facility, this limits the number of HGV's on the surrounding road network, at any one time,
- Instructing all vehicles travelling to the site from outside Youghal town will access the site off the N25 Youghal Bypass,
- Segregated Service and Vehicular access in the interest of safety,
- Implementing a traffic management plan to prevent congestion and queuing in the local environs.

Sustainable Modes of Transport

Pedestrian and cycle modes are high in the pyramid of sustainability and will be accommodated fully at the proposed development, by means of bicycle racks and a pedestrian entrance into the facility. The bicycle racks will be located in a well lit, secure area near the Administration building.

Car Parking

There is sufficient parking for both staff and visitors. This is also conforms to the Car Parking Standards in Appendix IV of the Cork County Development Plan 1996. This will ensure that over spill onto the public road occurs.

HUMAN BEINGS

Existing Environment

The 2002 Census contains the latest available employment statistics in the Town Council Area. The single largest employment section in Youghal is the Manufacturing Industries. This sector has most likely decreased greatly since the census was compiled due to the closures of a number of factories.

Impact Assessment and Mitigation Measures

The main areas of concern with respect to the potential effects of the development on the human environment are air quality impact, noise impact, ecological impact, visual impact traffic impact and impacts associated with decommissioning of the facility. These impacts are presented under their various headings above. Other potential impacts include: health and safety impacts to employees and locals, potential impacts on tourism and socio-economic impacts.

Health and Safety considerations for employees were given merit at the design stage of this facility. These considerations include ventilation in the picking station at the Waste Recovery and Transfer building. Part of the design and scoping process for selection of the indirect method of sludge drying was the safety and environmental controls that could be put in place as preventative control measures rather than mitigation measures.

Operations during the lifespan of the facility will be conducted inline with the relevant legislation and implementation of the site Health and Safety Plan and will be overseen by the Health and Safety Manager.

Hazardous materials will not be stored on-site. Only diesel oil and waste will be stored on site. Both of which will be stored securely.

MATERIAL ASSETS

Existing Environment

The site of the proposed development is located within commutable distance to a number of significant towns in the Cork County region. At the time of the last census (2002), unemployment was running at low levels in Youghal. However, by February 2003, two of the town's major employers had announced closures. Therefore, there is most likely a good supply of labour presently available in Youghal. In terms of transportation, Youghal is well serviced by roads. The N25 National Secondary Route from Cork to Waterford serves the town. This route is also a designated Euroroute E30; thus it is part of the officially designated European network of roads, which represent the core of the transport system throughout Europe.

Decommissioning Plan

A Decommissioning Plan has been prepared to ensure that the proposed facility is shut down and decommissioned in a safe and environmentally sound manner.

Impact Assessment and Mitigation Measures

Economic Impact

It is estimated that the construction phase of the proposed development will bring up to 30 jobs to Youghal. Throughout the operational phase, a minimum of 17 persons will be employed at the facility. Spin off industries associated with the proposed development may also produce jobs in the form of cleaning services, catering providers, etc.

Existing Infrastructure

It is proposed that the site will have it's own waste water treatment plant. Therefore, there are no impacts expected to the existing sewage infrastructure. There is no negative impact expected to other infrastructure in the area, which has been planned with industrial development in mind.

Transport Infrastructure

The proposed development is located adjacent to the Youghal by-pass. Therefore, there are no negative economic impacts anticipated for the town of Youghal related to vehicular movements to and from the site. This represents a positive impact for the area.

Proximity to the existing landfill will ensure that any waste contaminants that may have to be disposed of can be done in close proximity to the site without generating excessive traffic on the roads.

Property Values

The area of the proposed development has been zoned by the planning authority as Industrial/Enterprise. Also, there is little evidence to suggest that adjacency to a well managed waste management facility negatively impacts on house prices.

Tourism

The Cork County Development Plan 2003 states as an aim the desire, to promote development in Youghal with regard to its coastal setting and its special recreational, heritage and marine tourism functions. With this in mind, the Department of Arts, Sport and Tourism (DAST) was consulted during the Public Consultation Stage, along with other relevant parties.

A landscape assessment was conducted to investigate the impact of the proposed development on views and prospects in the Youghal area. This assessment concludes that the visual impact of the proposed development on the surrounding environment will be minor to negligible. This is due to the fact that the site will be well screened by trees and other developments in its vicinity such as the Millennium Court office buildings at Foxhole Business Park, the NCT centre and Youghal Landfill. The site will therefore be in harmony with the other buildings in this industrial and commercial zoned area.

Natural Resources

The facility of the proposed development will reduce the volume of waste requiring disposal in the Cork Area. The Waste Recovery/Transfer Facility will promote recovery and recycling. The Sludge Drying Facility will reduce sludge volumes currently being exported and landfilled.

These measures represent a positive impact on natural resources and are in keeping with sustainable development practices.

INTERACTION OF THE FOREGOING

Environmental Impact Assessment (S.I No. 349 of 1989; S.I. No. 93 of 1999) states that not only are the impacts on the individual elements of the environment to be considered, but so too are the interactions between those elements.

Table 14.1 illustrates the interaction of impacts assessed for this project.

	Geology	Air	Water	Noise	Climate	Flora & Fauna	Cultural Heritage	Land-scape	Traffic	Human Beings	Material Assets
Geology			✓			✓		✓			
Air				✓	✓				✓	✓	
Water					✓	✓					
Noise									✓	✓	
Climate		✓	✓								
Flora & Fauna	✓		✓								
Cultural Heritage								✓		✓	✓
Land-scape	✓						✓			✓	✓
Traffic		✓								✓	✓
Human Beings		✓		✓							
Material Assets							✓		✓	✓	

Table 14.1 Impact Interaction Matrix

12 (1) (m) Monitoring of Emissions

Discharges from the storm water retention tanks will be monitored continuously for the parameters as set by the EPA. In the event of any contamination of these waters, the discharge to the sewer will cease. The waters will instead be sent for treatment in the WWTP. The final effluent from the WWTP will be regularly monitored to ensure that it complies with EPA licence limit values.

Air and noise monitoring is proposed to be carried out annually to ensure the proposed facility is within the EPA limit values specified.

AVR – Environmental Solutions intend to implement the ISO14000 Environmental Management System. This system will ensure that all environmental legislation relevant to the site is complied with and that there is continuous improvement in environmental performance at the site.

Liquid emissions, air emissions and noise emissions are expected to be the only emissions on the proposed site. Emission characteristics will be in line with limit values to be issued by the EPA.

12 (1) (n) Prevention, minimization and recovery of Waste arising on site

Best Available Technique (BAT) was used in the design of the proposed development and the EIS was prepared using national guidelines and regulations on the information to be contained therein. All processes and technology used are designed to operate to prevent and minimise waste arising. It is proposed to use excess steam at the site to heat the Administration building.

12 (1) (o) Off-site treatment or disposal of waste

Recovered materials or those awaiting disposal will be stored temporarily on-site. Disposal of materials will occur at licensed and permitted facilities, to be agreed with the EPA. Waste collectors with valid Waste Collection Permit will be used to convey the sorted waste.

While this site is not intended to deal with hazardous materials, some may inadvertently arrive at the site. Should this occur, these wastes will be contained in a quarantine area pending removal from the site. All facilities used for the off-site processing of these wastes will be appropriately licensed and permitted.

12 (1) (p) Emergency measures

An Emergency Response Plan will be implemented in the event of any accident, fire or other such incident. This Plan will be in line with the requirements of the ISO14000 Environmental Management System. The purpose of the Plan is to minimise the environmental impact of any emergency situation which could potentially occur.

A Health & Safety/Environmental Officer will be appointed to implement the Health & Safety Plan for the site. Duties of the Officer are as follows:

- The Health & Safety/ Environmental Officer is responsible for ensuring that the emergency response procedure provides for an appropriate response to unexpected or accidental incidents,
- To give directions to bring back evacuees when the emergency is over or when appropriate,
- To carry out a health & safety and environmental risk assessment of the site periodically and it is important to carry out a risk assessment especially after an accident or emergency onsite,
- To maintain records of the employees training, fire equipment service records and Incident Reports,
- To make any modifications to the Emergency Response Procedure in accordance with the Documentation Control in the Environment Management System and review this procedure annually from the date of release,
- To put in place any mitigation measures from the risk assessment as soon as possible.

The risk assessment will not be limited to but will include the assessment of the operability of the emergency equipment and the adequacy of existing emergency procedures.

The Training Responsibilities assigned to the Health & Safety/Environmental Officer will include:

- Fire Extinguisher Training,
- Mobile Fire Fighting Unit Training,
- Evacuation Procedure,
- First Aid Training.

In the long term, it is not envisaged that there will be a requirement to shutdown operations at the Waste Recovery/Transfer and Sludge Drying Facility. Decommissioning of the facility has been considered at the design stage. All plant removal will be evaluated and managed properly to prevent emissions as a result of decommissioning. Any wastes generated through the decommissioning process will be handled in line with best practice.

12 (1) (q) Closure, Remediation and Aftercare

In the long term, it is not envisaged that there will be a requirement to shutdown operations at the Waste Recovery/Transfer and Sludge Drying Facility. Decommissioning of the facility has been considered at the design stage. All material and plant removal will be evaluated and managed properly to prevent emissions as a result of decommissioning. Any wastes generated through the decommissioning process will be handled in line with best practice.

12 (1) (r) Landfill

This section is not applicable.

12 (1) (s) Control of Major Hazards involving Dangerous Substances

The proposed activity does not fall within the European Communities (Control of Major Accidents Hazards involving Dangerous Substances) Regulations 2000 (SI No 476 of 2000). The site does not fall under the SEVESO Directives (96/82/EC; 2003/105/EC).

12 (1) (t) List I and II

The proposed development can not give rise to an emission containing List I and II substances specified under 80/68/EEC of 17 December 1979 into an aquifer.