
ATTACHMENT D - INFRASTRUCTURE & OPERATION

D.1.a Site Security

The entire licensed facility is fenced with 2.4 m high palisade fencing. The main entrance to the facility can be secured outside operational hours by gates. There is also a CCTV surveillance system in operation at the facility consisting of approximately 12-14 cameras in different areas onsite and along the perimeter fencing. All surveillance data is sent through a SCADA system to an office in the main administration office.

The proposed waste transfer station will be secured to the west by perimeter fencing. The existing perimeter fencing will be moved to the west at the south west corner of the proposed facility in order to ensure there is adequate access for the ejector trailers to the low level area of the building. It is proposed to place perimeter fencing to the east of the waste transfer station to prevent access to the facility by members of the public using the civic amenity facility. A system of internal and external CCTV cameras will also be installed at the facility and images will be transmitted to the control room at the site administration office and at the office of security contractor. Existing and proposed fencing is illustrated in Drawing CE08-011-05-003, Site Layout Plan.

D.1.b Access Roads

The main access road to the licensed facility leaves the City South Link Road just north of the proposed waste transfer station. This main access road is a concrete paved with black-top.

Direct access to the waste transfer station will be from the north-east corner of the facility off the main access road. This road and the entire facility yard area will be concrete paved. The exit road for the large waste ejector trailers will be through the existing lower loading level of the civic amenity area to the main access road. Existing and proposed access roads are illustrated in Drawing CE08-011-05-010.

D.1.c Hardstanding Areas

The majority of the facility will be covered in concrete hardstanding. This will cover an area of approximately 1.1 acres. A grassed area of approximately 0.12 acres will be provided to the north and to the northwest corner of the proposed facility. The extent of proposed hardstanding is illustrated in Drawing CE08-011-05-003 Site Layout Plan.

It is proposed that runoff from the hardstanding area will be collected via a system of gullies and collection pipe work and drained to the existing surface water collection system at the surface water swales to the east of the proposed facility. This will discharge to the existing surface water lagoon at the south east corner of the site. The outlet of the lagoon is tested continuously and is released to the reed-bed percolation area before outfalling to the Tramore River. Trigger levels have been set for a number of key parameters. If these trigger levels are exceeded, the flow will be redirected to the leachate treatment system and released to the sewer.

Effluent generated within the building, following routine wash-down etc. will be contained within the building (by a elevated ramp level at each doorway) and will be collected internally using a system of gullies and drains and will pass through a screen and interceptor before being discharged to the site leachate collection system via existing

leachate pump sump 1. The leachate will be treated in the existing leachate conditioning plant before being released to the sewer – Tramore valley sewer.

D.1.d Plant

The following plant will be used at the proposed facility:

- Two weighbridges
- Front end loader
- Shunt truck
- Steel hopper plate

Weighbridges

It is proposed to establish two weighbridges at the proposed facility as indicated on Drawing CE08-011-05-003. The existing landfill weighbridge will be relocated to the waste transfer facility when waste landfilling ceases at the site. The weighbridge will be operated automatically using system of lifting barriers and CCTV cameras entry and exit barriers. Weight and identification of RCVs entering the weighbridge will be recorded and relayed back to the control room in the site administration building

A second weighbridge will be installed in the low-level waste collection area, within the building, where the large ejector trailers will be parked. This will be set flush with floor level and will weigh ejector trailers before and after filling. This weight information will be transmitted to the administration building via a telemetry link and all records will be maintained.

Front End Loader

A front-end loader will be used within the waste transfer building for the loading of waste from the reception floor into the empty ejector trailer located on the lower level as indicated on Drawing CE08-011-05-008.

Shunt Truck

A shunt truck will be deployed at the site for the movement of empty ejector trailers from the storage area to within the lower level of the building for the bulking up of waste.

Steel hopper plate

A steel hopper plate will be fixed to the 1.1 m dividing wall between the high and low level areas to prevent waste falling between the receiving ejector trailer and the dividing wall.

D.1.e Wheel-wash

The proposed waste transfer station will be paved with concrete hardstanding and the access road entering and leaving the facility will be paved. A daily cleaning schedule will be implemented inside the waste transfer building whereby the waste reception area is washed down each evening. Therefore, it is not considered necessary to provide a wheel wash facility at this proposed waste transfer station. The existing site wheel-wash located adjacent to the landfill will be used if required.

D.1.f Laboratory Facilities

There are currently laboratory facilities onsite within the main administration building. Environmental monitoring and analysis is undertaken by Cork City Council staff at this laboratory and specialist testing is undertaken by external accredited laboratories.

There will be no laboratory facilities within the waste transfer facility.

D.1.g Fuel Storage

There will be no fuel storage onsite. Currently, landfill vehicles are refuelled at a City Council Garage, north of the licensed facility. It is proposed that vehicles from the waste transfer station will refuel at this garage.

D.1.h Waste Quarantine Areas

A waste quarantine and inspection area will be designated within the waste transfer station building. It will be an area of approximately 4 x 5 m. This area will be maintained for the inspection of suspect loads of waste and for quarantine if necessary. Details of the waste inspection and quarantine area are illustrated on Drawing CE08-011-05-007 Waste Transfer Building Floor Plan. Any leachate from this area will be contained within the building and be collected by the internal system of gullies and drains which will discharge to the site leachate collection system.

D.1.i Waste Inspection Areas

Details of the waste inspection area are outlined in Attachment D.1.h above.

D.1.j Traffic Control

Traffic flows at the waste transfer station will be as per Drawing CE08-011-05-010 Traffic Flow Layout Plan.

On entry into the waste transfer facility, the refuse collection vehicles (RCVs) will pass over the weighbridge and then turn and reverse into the upper level of the waste transfer station building. After an RCV unloads its waste, the vehicle will exit the facility via the same route that they entered it, turning onto to the southbound carriageway of the South City Link Road.

The large ejector vehicles on entry into the facility will park their empty ejector trailer on the high-level hardstanding area as indicated on Drawing CE08-011-05-010. The vehicles will then drive to the low level area, reverse into the building via the roller shutter door to hitch up to the full waste trailer.

It is proposed that the vehicles then exit via the lower level skip area of the civic amenity and travel along the exit road to the east of the civic amenity area to the main access road. A shunt truck will move empty ejector trailers and place them in the low-level waste collection area for filling.

There will be onsite staff parking (approx. 4 parking spaces) located to the east of the waste transfer building.

D.1.K Services

The site is serviced with electricity, water and telemetry ducts. All these services will be connected to the waste transfer building from nearby supplies. Preliminary connection details are outlined in Drawing CE08-011-05-011.

D.1.I Sewerage and Surface Water Drainage

It is proposed that runoff from the hardstanding area will be collected via a system of gullies and collection pipe work and drained to the existing surface water swales to the east of the proposed facility. This will discharge to the existing surface water lagoon at the south east corner of the site. The outlet of the lagoon is tested continuously and is released to the reed-bed percolation area before outfalling to the Tramore River. Trigger levels have been set for a number of key parameters. If these trigger levels are exceeded, the flow will be redirected to the leachate treatment system and released to the sewer.

Effluent generated within the building, following routine wash-down etc. will be contained within the building (by a elevated ramp level at each doorway) and will be collected internally using a system of gullies and drains and will pass through a screen and interceptor before being discharged to the site leachate collection system (via pump sump 1). The leachate will be treated in the existing leachate conditioning plant before being released to the sewer – Tramore valley sewer.

Preliminary details of leachate and surface water drainage services are outlined in Drawing CE08-011-05-011.

D.1.m Plant Sheds and Garages

The waste transfer building will be the only plant shed on the proposed facility. The building elevations, floor plan, cross sections and artist impression of the building is provided in Drawings CE08-011-05 006 to 009.

The building will comprise of goose wing grey coloured roof and wall cladding with the lower level of the wall comprised of concrete rendered finish wall. U clear perspex windows and roof panels provide natural daylight into the building. The height of the centre of the building is approximately 10 m falling to the lower level of 9.1 m at the building edges. There is also an air filtration unit proposed, with a 11.5 m stack located to the western side of the building.

All garages are located outside the licensed boundary at City Council Garage, north of the licensed facility. No additional garages will be associated with the proposed development.

D.1.n Site Accommodation

Currently, site accommodation is centred in the main site administration office north east of the proposed waste transfer station as indicated on Drawing CE08-011-05-003 Site Layout Plan. These facilities will be used by workers at the proposed waste transfer station.

D.1.o Fire Control System

The building will be designed and constructed in accordance with current Building Regulations with regard to Fire Safety. The building design will consider all aspects

in terms of escape and early warning signals for personnel. The building structure will be designed to reduce the risk of fire spread with appropriate materials with a low flame spread rating.

The location of the building is such that there is no particular risk in terms of fire spread to adjacent sites through radiant heat and therefore use of fire resistant cladding systems is not necessary.

The site will be serviced by a watermain, feeding hydrants with a flow rate and pressure as determined by the Cork City Council Fire Service. It is proposed to install a fire detection and alarm system complying to IS 3218 (Code of Practice for Fire Detection and Alarm Systems for Buildings - System Design, Installation and Servicing) and will be an L1 type system serving all parts of the building. Smoke detectors, bell sounders and manual call points will be placed throughout the building.

In addition, a methane detection system will be installed to provide warning of potential fire hazards. Emergency lighting, emergency exit signs and other way-finding provisions will be installed. Manual fire fighting equipment like hose reels will be provided. Lighting systems shall be low voltage in so far as is practicable.

Cork City Council, as operators of the building, shall put in place a facility operations procedure which will include details for staff training and action during outbreak of fire.

D.1.p Civic Amenity Sites

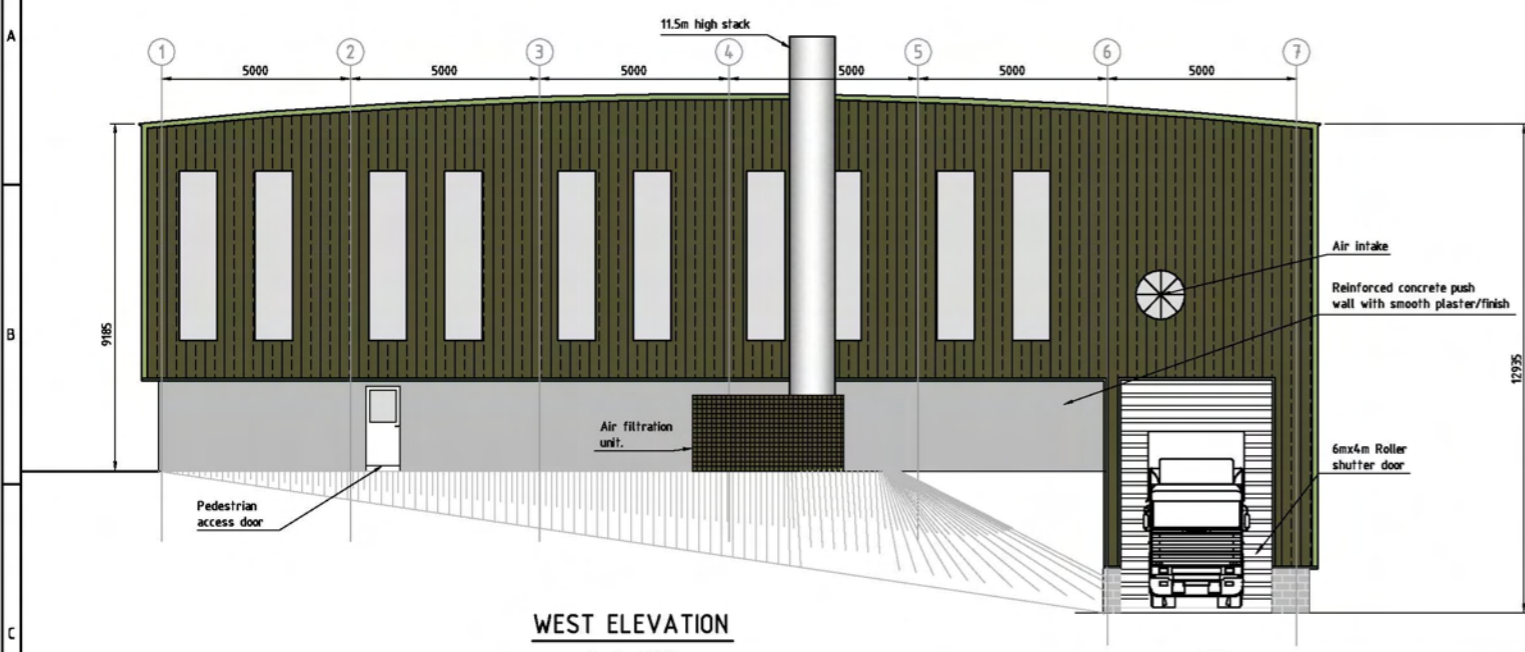
Not Applicable.

D.1.q to D.1.s

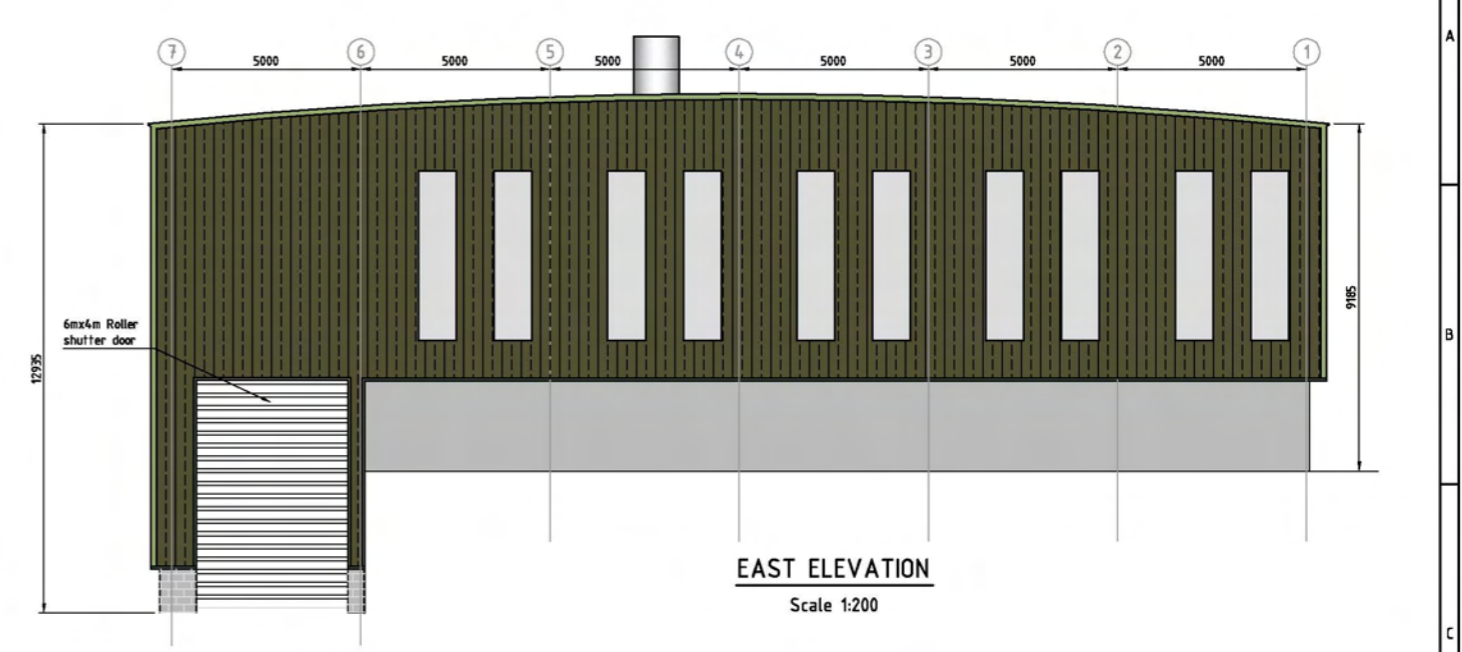
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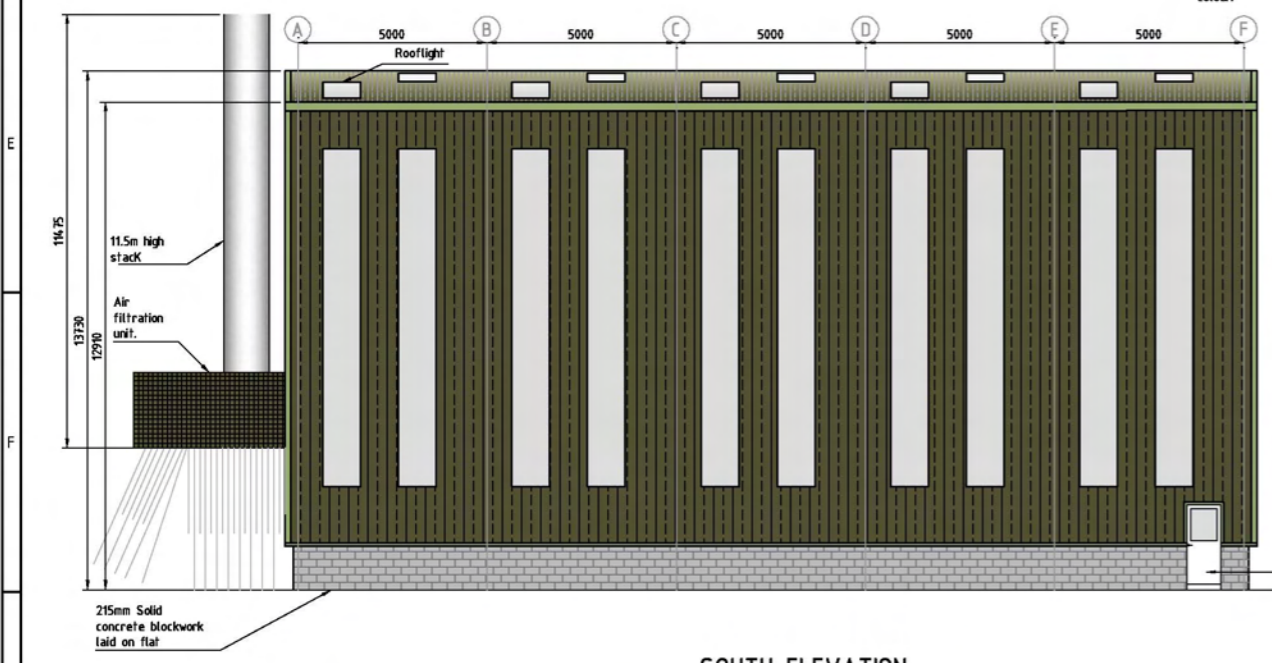


WEST ELEVATION
Scale 1:200

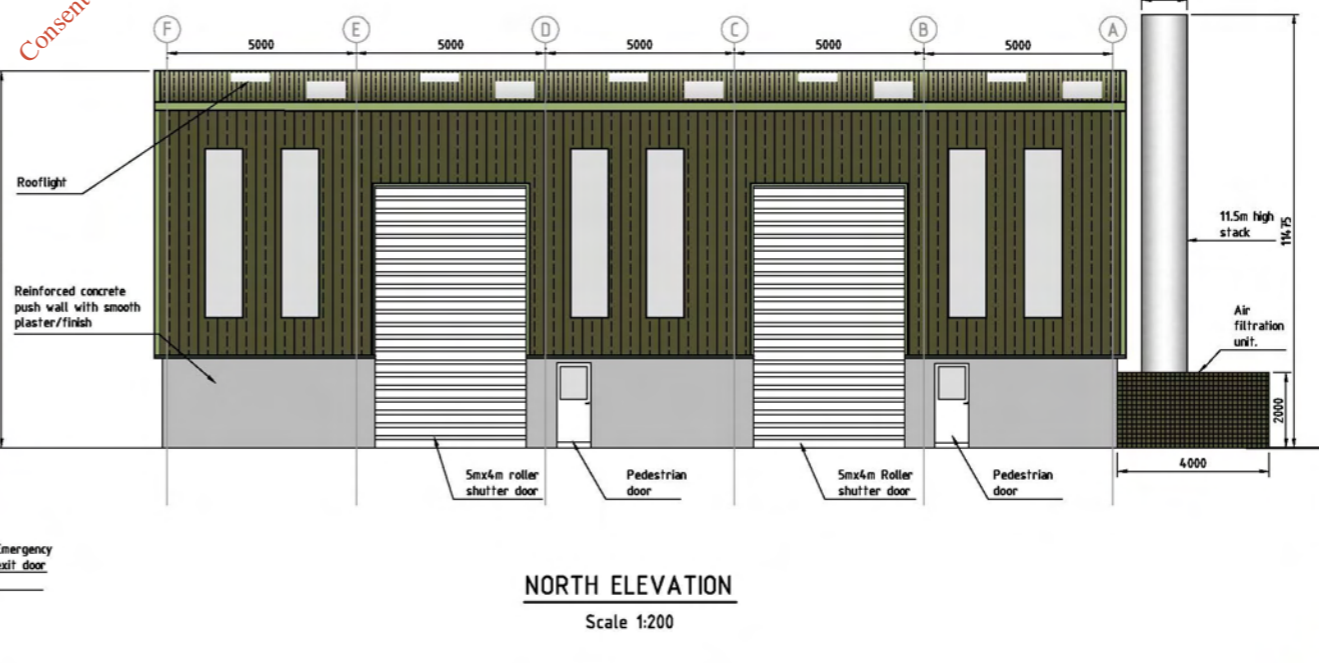


EAST ELEVATION
Scale 1:200

- NOTES :**
1. Roof cladding consists of Kingspan 40 mm Thick KS 1000 RW Panel, Colour HPS 200 Goose wing grey profiled, 50mm Cavity, 60mm 30kg/m³ Density mineral fiber insulation and 0.7mm Aluminium Liner or equal approved (refer to Kingspan High Humidity Application Acoustics Cladding Details), on Kingspan 200 / 200 Pressed Metal Roof Purlins on portal rafter. Min.10 % of roof area to be translucent sheeting to allow in natural light.
 2. Wall cladding consists of Kingspan 40 mm Thick KS 1000 RW Panel, Colour HPS 200 Goose wing grey profiled 50mm Cavity, or equal approved, on Kingspan 200 / 200 pressed metal roof purlins on portal columns external face. 60mm 30kg/m³ Density mineral fiber insulation and 20mm Thick steel liner or equal approved on 203 X 76 PFC on portal column internal face.
 3. Pressed metal double sided highline gutter & downpipes, complete with edge, corner and drip flashings to approved colour.
 4. Cladding to be Kingspan KS 1000 RW roof and wall panel. 40mm pir insulation core. all joints, laps and details to be fully air sealed in accordance with manufacturers instructions.
 5. Purlins to be M170/180 at 1800mm Centres max/min.
 6. Bracing; allow for 13mm x 8 CHS bracing at both ends total length 240m
 7. Door 11m x 4.0m x 5.5m fast action fully sealed door, type H2 by Jasco or equal approved.
 8. Masonry wall with rendered finish



SOUTH ELEVATION
Scale 1:200



NORTH ELEVATION
Scale 1:200

Rev.	Drawn	CHKD	COC	Appd	Rev Orig	Date	Description
A	CH	ME	Cork		09.12.08		Issue for Waste Licence Application
Revision History							
Name of Client							
CORK CITY COUNCIL							
Name of Job							
KINSALE ROAD LANDFILL SITE WASTE TRANSFER STATION							
Title of Drawing							
WASTE TRANSFER BUILDING ELEVATIONS							
Scales Used							This Drawing was plotted to
1:200							A3
Dwg. No.							Rev.
CE08-011-05-006							A

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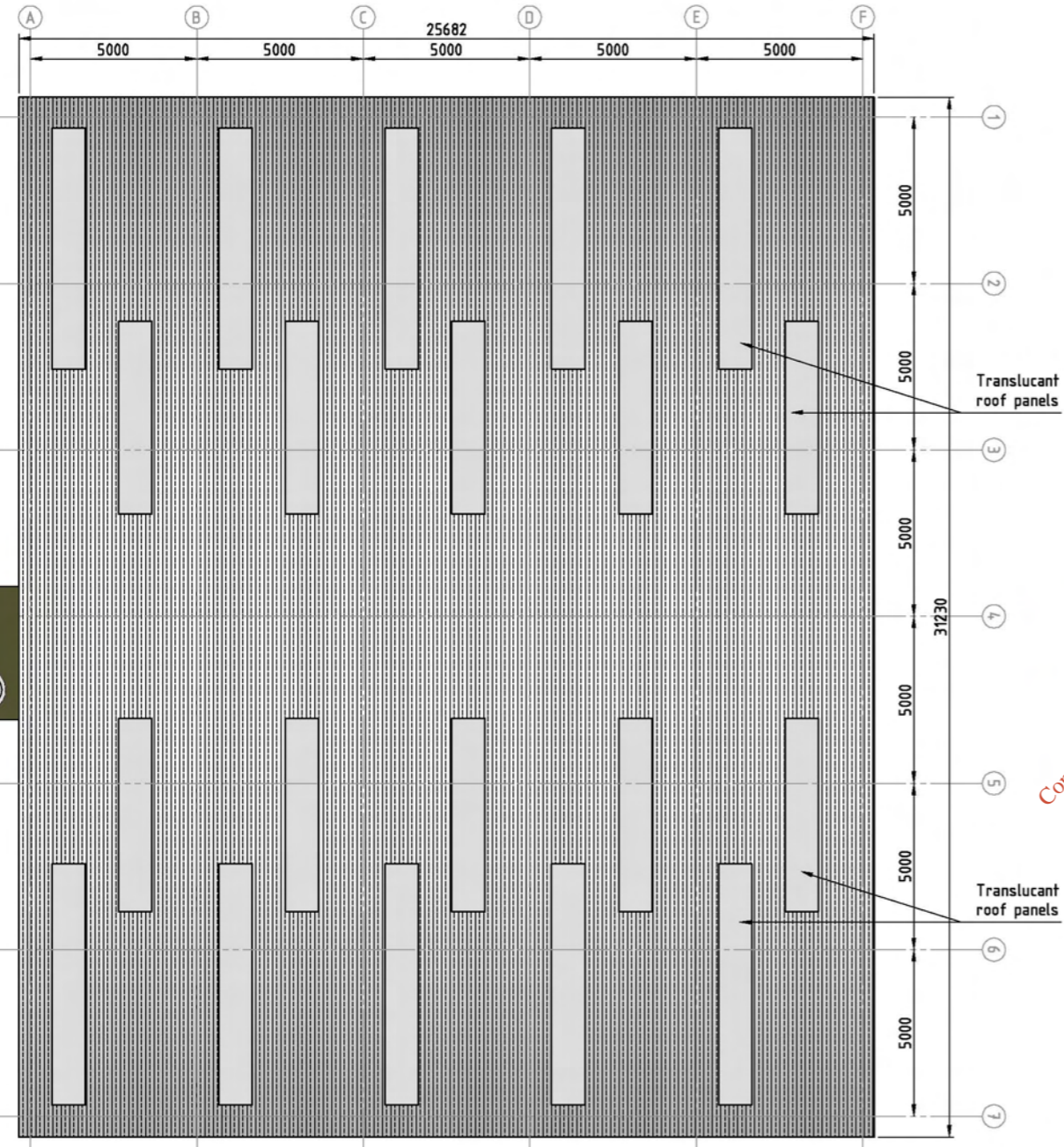
NOTES:

ROOF PANELS:

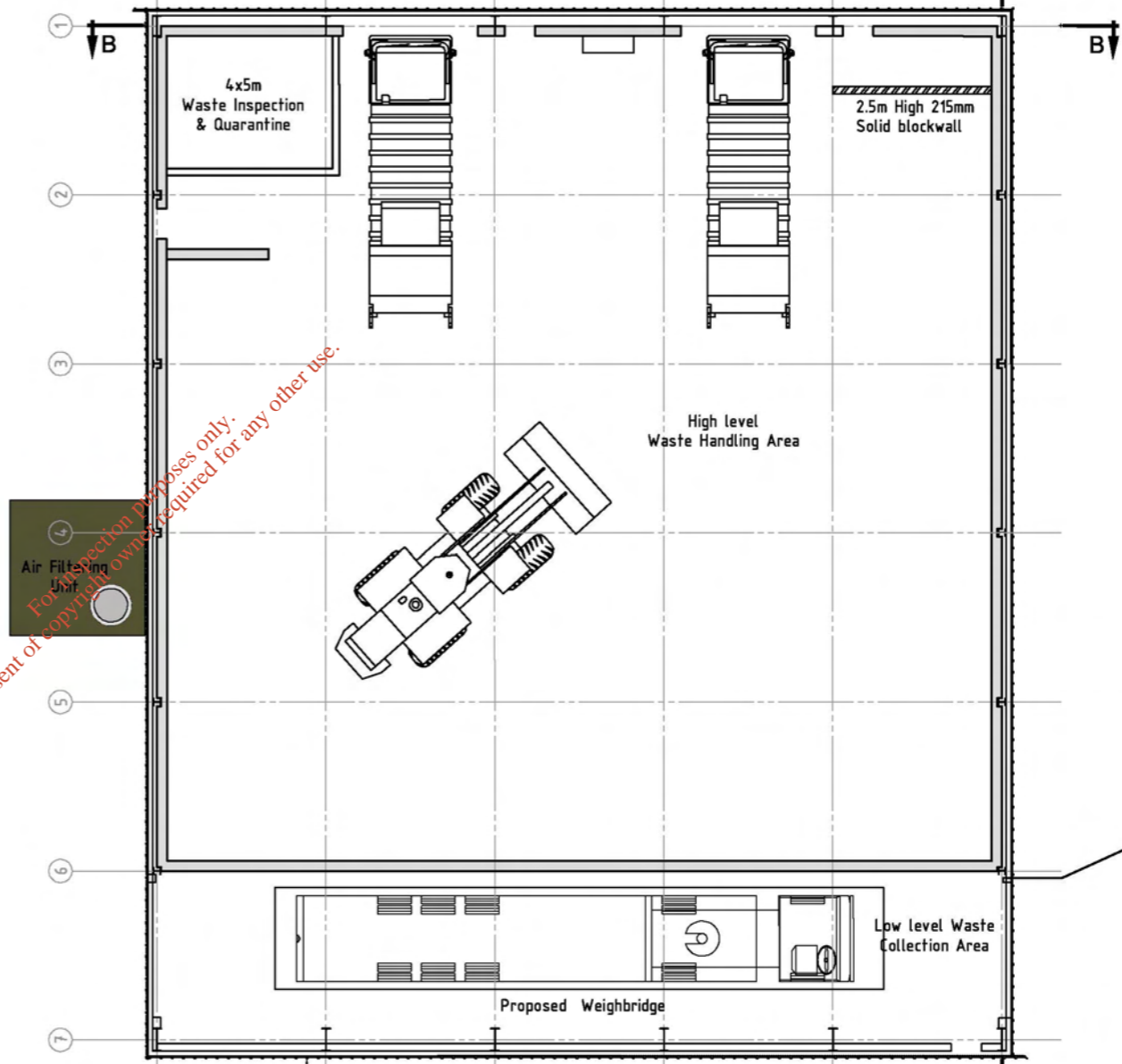
KINGSPAN KS 1000 CR LOW PITCH PANEL. 75mm THICK WITH 40mm PIR INSULATION CORE. COLOUR: HPS 200 GOOSE WING GREY TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.

TRANSLUCENTS:

KINGSPAN GRP BARREL VAULT TRANSLUCENT ROOF LIGHT PANELS TO PROVIDE NATURAL LIGHTING TO A MINIMUM OF 10% OF ROOF AREA.



ROOF PLAN
Scale 1:200



FLOOR PLAN
Scale 1:200

Rev.	Drawn	CHKD	CHKD	Appd	Rev Orig	Date	Description
A	CH	COC	ME	Cork	09.12.08		Issue for Waste Licence Application

Name of Client
CORK CITY COUNCIL

Name of Job
KINSALE ROAD LANDFILL SITE

Title of Drawing
WASTE TRANSFER BUILDING FLOOR PLAN

Scales Used
1:200

Dwg. No.
CE08-11-05-007

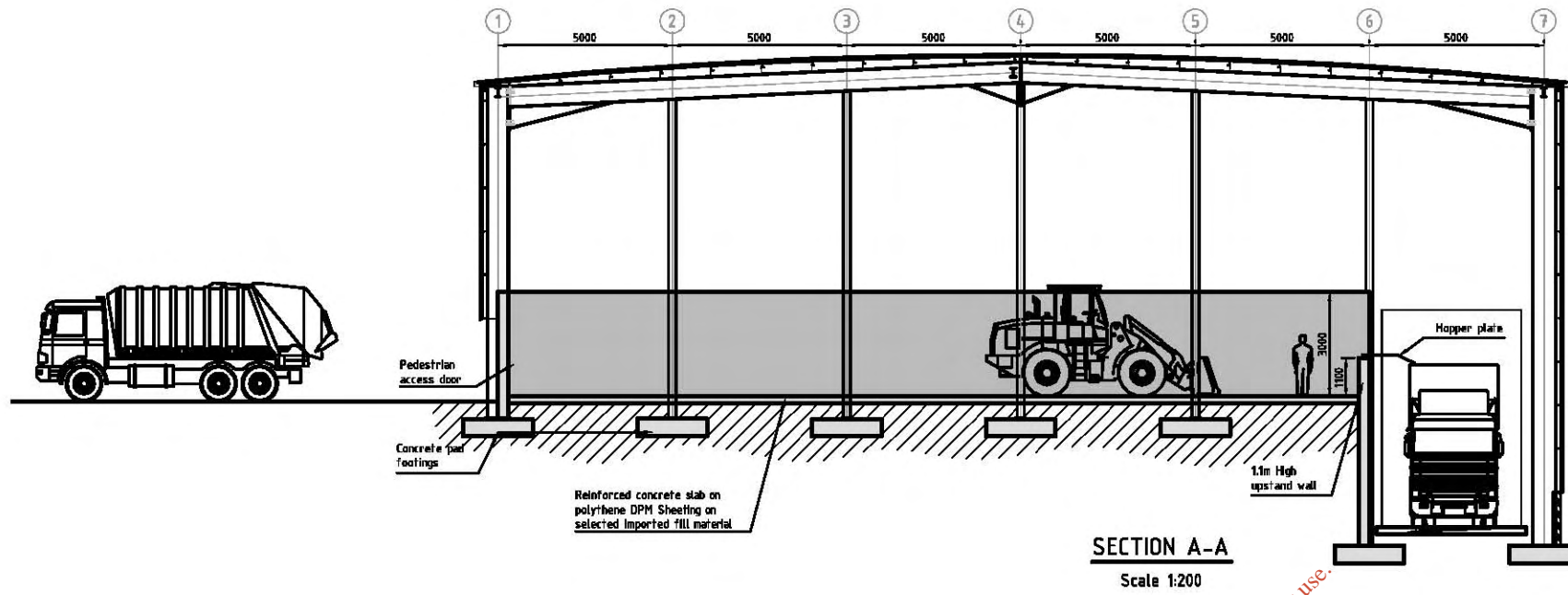
Rev.
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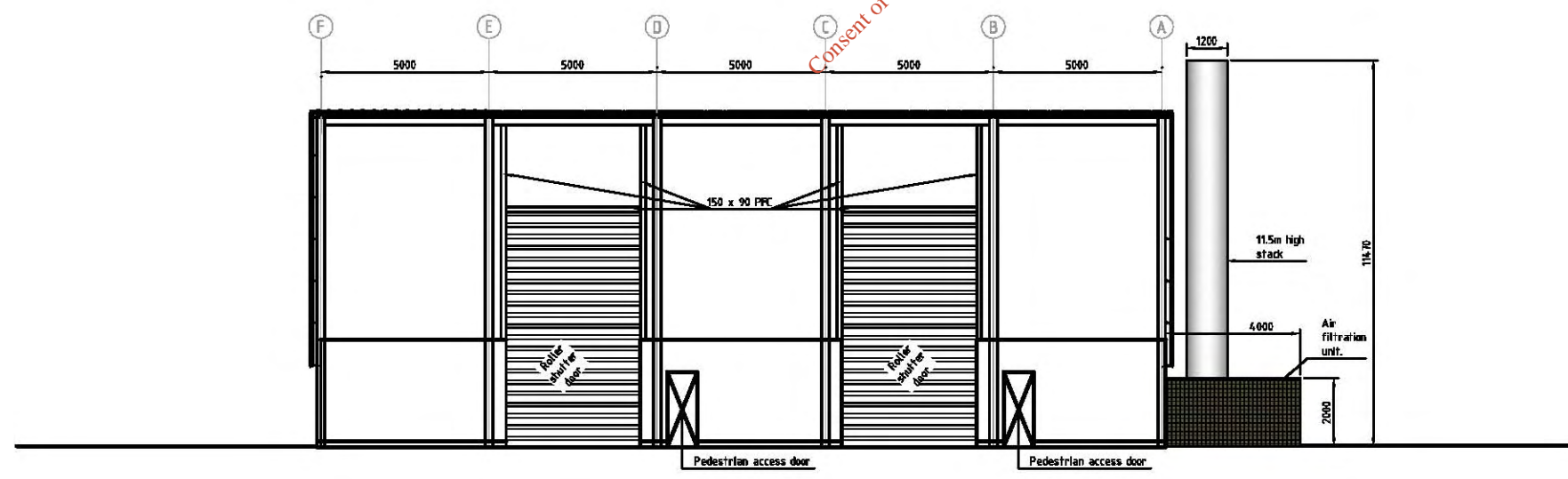
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SECTION A-A
Scale 1:200



SECTION B-B
Scale 1:200

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NOTES:
REFER TO DRAWING CE08-011-04-006 FOR SECTION LOCATIONS

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A	CT	CC	ME	Cork	09.12.08	Issue for Waste Licence Application
Revision History						
Name of Client						
CORK CITY COUNCIL						
Name of Job						
KINSALE ROAD WASTE TRANSFER STATION						
Title of Drawing						
WASTE TRANSFER BUILDING CROSS SECTIONS						
Scale Used						
1:200						
Dwg. No.						Rev.
CE08-011-05-008						A

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NATURAL SCALE

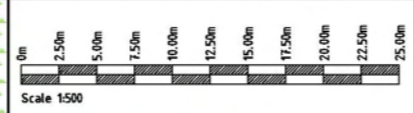
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Revision History								
Name of Client								
CORK CITY COUNCIL								
Name of Job								
KINSALE ROAD WASTE TRANSFER STATION								
Title of Drawing								
ARTIST IMPRESSION								
Scales Used							This Drawing was plotted to A3	
Dwg. No.							Rev.	
CE08-011-05-009							A	

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LEGEND:

- Proposed hard standing
- Existing palisade fence
- Existing grassed areas
- Proposed 2.4m High Palisade Fencing
- Swept path of vehicle
- Wheel path of vehicle
- Centre line of vehicle

Rev.	Drawn	CHKD	COC	Appd	Rev	Orig'n	Date	Description
A	CH	CO	ME	Cork	09.12.08			Issue for Waste Licence Application

Name of Client
CORK CITY COUNCIL

Name of Job
KINSALE ROAD LANDFILL SITE WASTE TRANSFER STATION

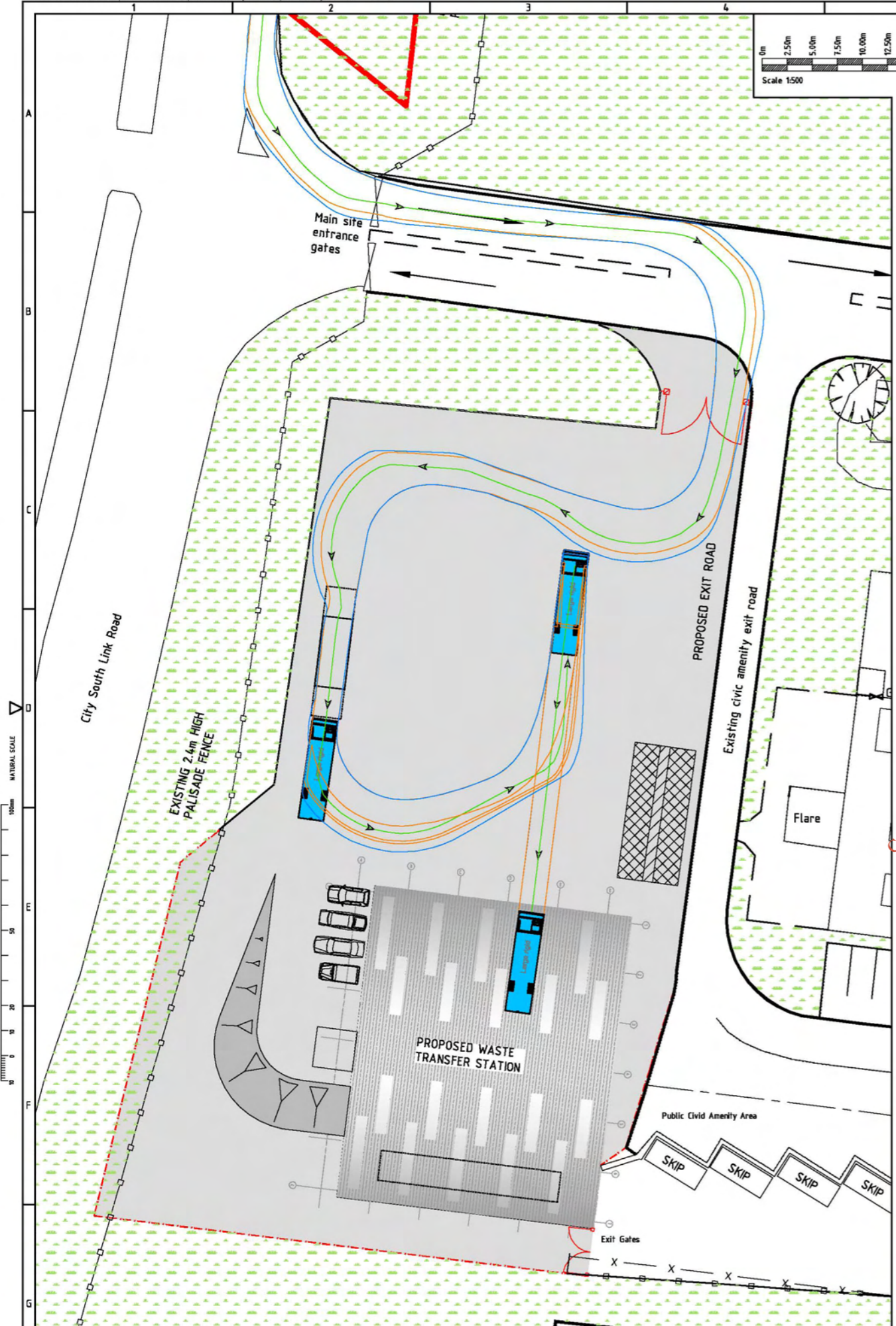
Title of Drawing
TRAFFIC FLOW LAYOUT PLAN (Including Auto Track)

Scales Used
1:500

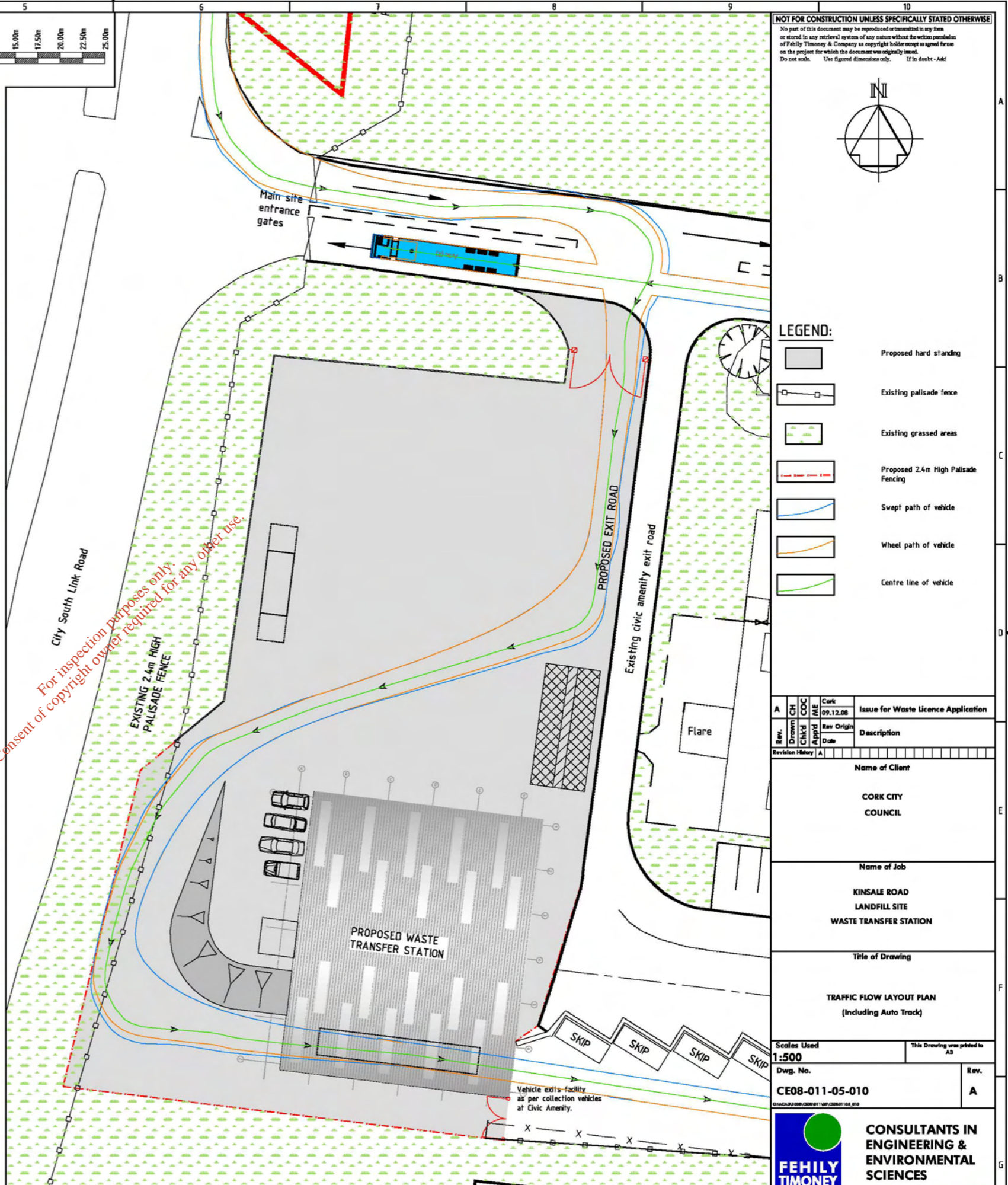
Dwg. No.
CE08-011-05-010

Rev.
A

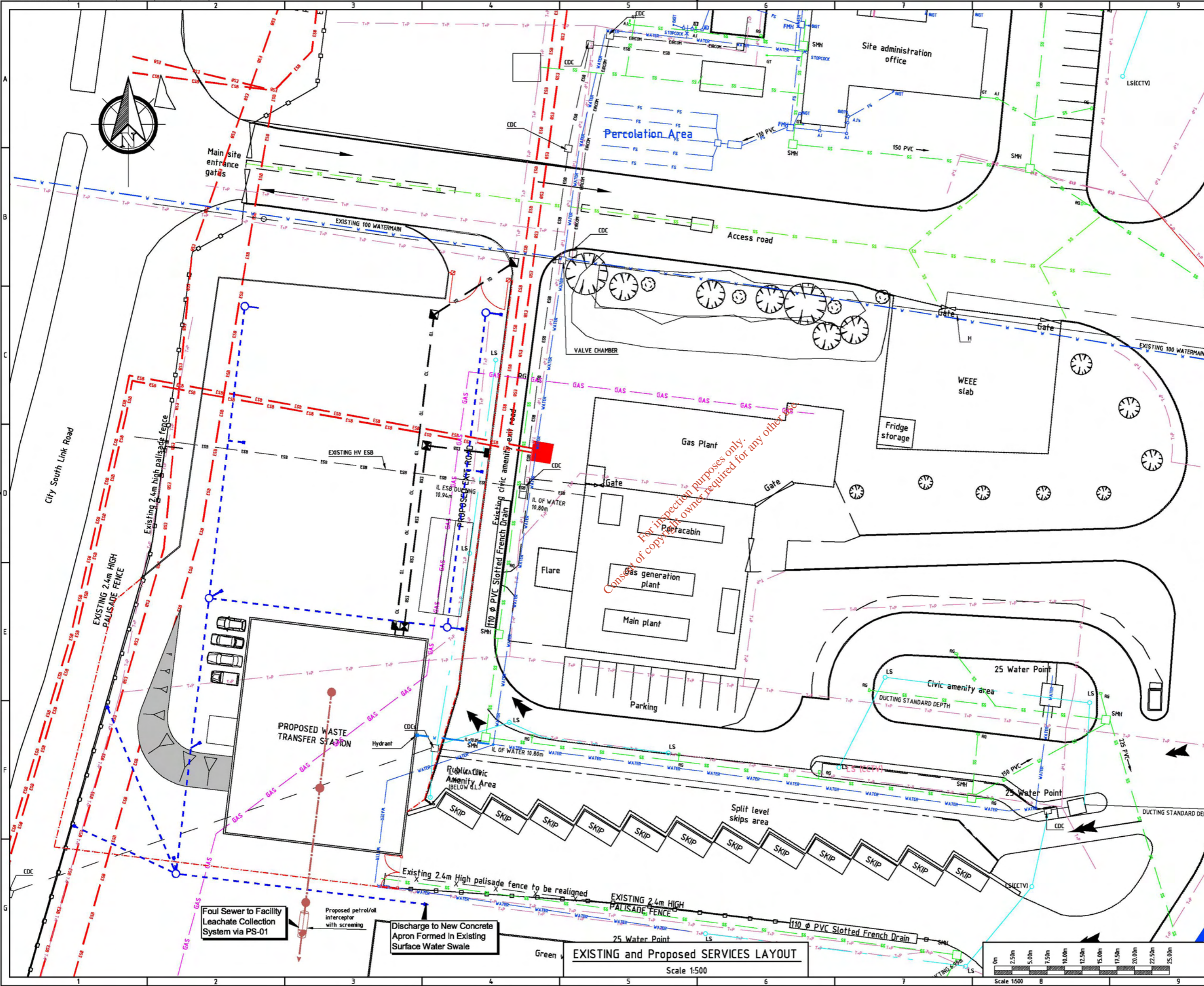
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TRAFFIC PLAN FOR RCV'S ARRIVING AT FACILITY
 Scale 1:500



TRAFFIC PATH FOR EJECTOR TRAILERS COLLECTING WASTE FROM THE FACILITY
 Scale 1:500



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LEGEND:

	EXISTING ESB
	EXISTING WATER SUPPLY
	EXISTING STORMWATER
	EXISTING FOUL WATER
	EXISTING CABLE DUCTS
	EXISTING TELE DUCTS
	EXISTING GAS PIPEWORK
	EXISTING LAMP STAND
	PROPOSED WATER CONNECTION
	PROPOSED TELEMETRY DUCTS
	PROPOSED ESB SUPPLY
	PROPOSED SURFACE WATER SEWER
	PROPOSED FOUL WATER SEWER

Rev.	Drawn	CHKD	Appd	Rev Orig	Issue
					Issue for Waste Licence Application

Name of Client	
CORK CITY COUNCIL	

Name of Job	
KINSALE ROAD LANDFILL SITE WASTE TRANSFER STATION	

Title of Drawing	
EXISTING and PROPOSED SERVICES	

Scale Used	This Drawing was plotted to
1:500	A3
Dwg. No.	Rev.
CE08-011-05-011	A

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Attachment D.2 Facility Operation

The review of the current waste licence is for the development of a waste transfer station along the western boundary of the site. Following scoping with the EPA, it was agreed that this review application will focus solely on the proposed waste transfer station as there are no proposed changes to any other site infrastructure.

D.2.a) Unit Operations

Drawing CE08-011-05-003 indicates the proposed layout for the waste transfer station. The main operation at the proposed development will be the acceptance and bulking of residual municipal solid waste.

The activities that will occur at the proposed waste transfer station are listed as follows;

- D.2.1 Waste acceptance
- D.2.2 Unloading and inspection of waste
- D.2.3 Transfer of materials offsite
- D.2.4 Odour abatement system

The locations at which these activities occur and a flow diagram of site activities are indicated in Drawing CE08-011-005-003 and Figure D.1.

D.2.1 Waste Acceptance

All waste material arriving to the facility will pass over the weighbridge where details of the loads will be recorded. Waste will arrive at the site in Cork City Council refuse collection vehicles.

D.2.2 Unloading of waste

Waste will be unloaded within the transfer building. Once the vehicle approaches the building the fast acting roller shutter doors will open to allow the vehicle to reverse in. Once the vehicle is within the building, the rollers shutter doors will close immediately. The waste material will be visually inspected and any non suitable material will be removed and placed in the waste quarantine/inspection area prior to being taken off site. The waste will then be moved using the front end loader and deposited in the empty ejector trailer in the low level area of the building.

D.2.3 Transfer of materials offsite

Once the ejector trailer has been filled, it will be transported off-site for disposal at a suitable licensed facility. A second weighbridge will be installed within the low area of the building to weigh all trailers going off-site. This information will be relayed and stored in the SCADA system in the main administration building.

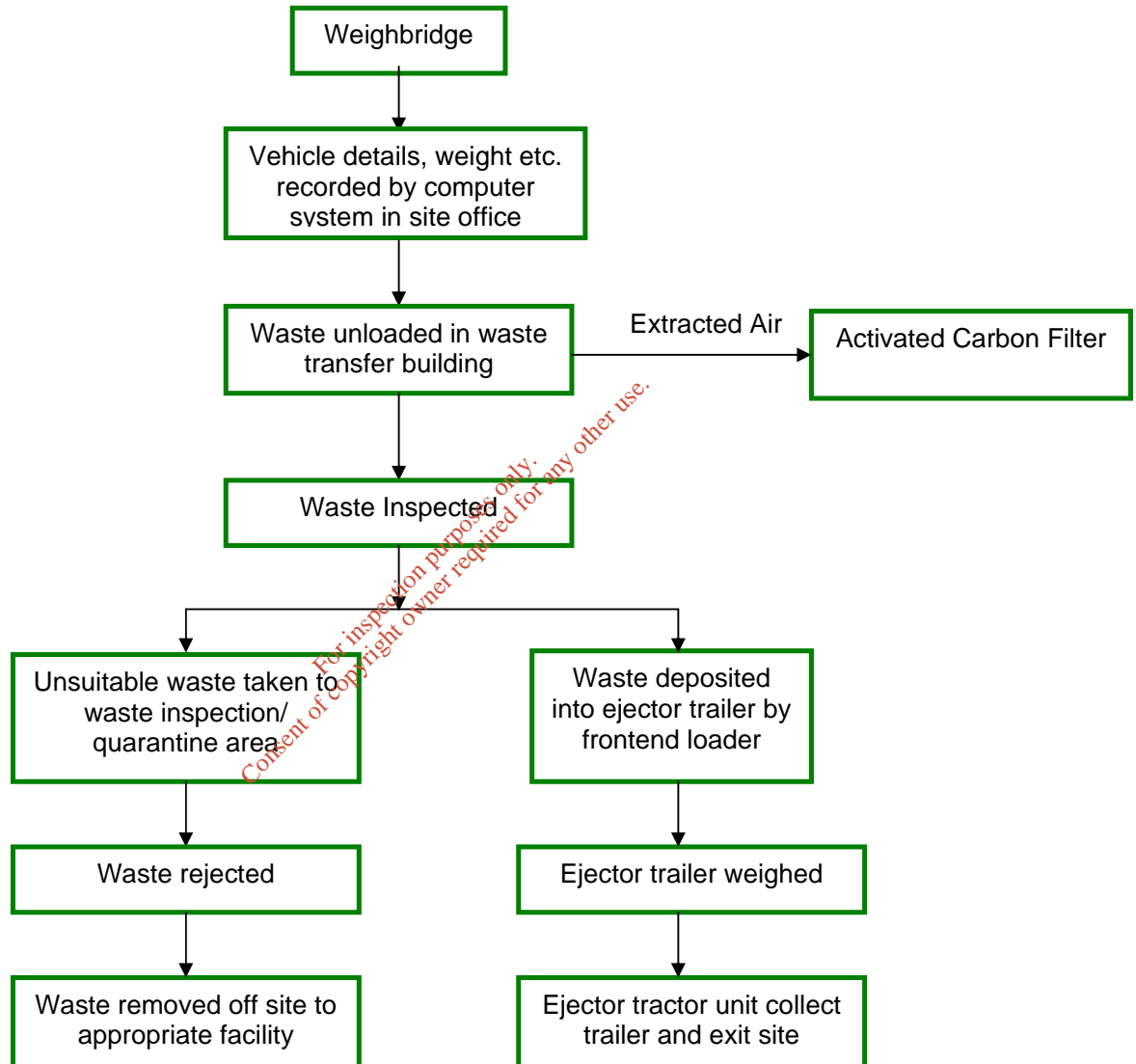
D.2.4 Activated Carbon Filter

The waste transfer station will be operated under negative pressure. A total of 3 air changes per hour will take place at the facility. Air from within the building will be drawn firstly through a dust filter and then through an activated carbon filter to remove odorous compounds prior to discharge to the atmosphere. This technology is BAT and therefore emissions from this system will not have a significant impact on the environment.

D.2 b) Flow Diagram of the process

The waste transfer process of the development is outlined below. The process for waste acceptance and handling for this activity is outlined in Figure D.1.

Figure D.1 Waste Transfer Station Process Flow Diagram



D.2.c) Details of any aspects of the facility that can cause emissions to the environment during normal operations and also in the event of a malfunction or interruption of services

Aspects of the facility that have the potential to generate environmental emissions include:

- Openings such as access doors - fugitive air emission of odour and dust
- Activated carbon filter - controlled point source air emission

- Internal building surfaces – leachate run-off from washing and accepting waste
- External hardstanding area - surface water run-off
- Machinery and plant operation - noise emissions

These environmental aspects and associated impacts are discussed in detail in Attachments E- Emissions, F – Control and Monitoring and I – Existing Environment and Impact of the Activity.

D.2.d) Laboratory Facilities

Cork City Council has established a laboratory facility with the main administration building which is used for regular testing. Off-site laboratories facilities will be used if and when required.

D.2.e) Incineration facilities

Not applicable.

Attachment D.3 Liner System

Not Applicable.

Attachment D.4 Leachate Management

A leachate management system is currently in operation for the existing landfill facility. A leachate collection system collects leachate for the landfill area and pumps the leachate to a leachate collection lagoon and treatment plant. This leachate is then pumped to the connection on the Tramore Valley sewer and treated in Carrigrennan wastewater treatment plant. Leachate generated within the proposed waste transfer building will be connected to the existing leachate management system at the landfill facility.

Attachment D.5 Landfill Gas Management

There is an existing landfill gas management plan at the landfill facility however, under this licence review application; landfill gas management is not applicable to the waste transfer station development. The proposed waste transfer building will be fitted with a gas detector in order to detect landfill gas infiltration.

Attachment D.6 Capping System

An approved capping system and capping and restoration programme is in place for the existing landfill facility. Under this licence review application; this is not applicable to the proposed waste transfer station facility.

ATTACHMENT E EMISSIONS

Drawing CE08-011-01-012 overleaf indicates the location of the emission points for the proposed development.

Attachment E.1 Emissions to Atmosphere

There will be one point emission source to the atmosphere via the activated carbon filtering system. This will discharge to atmosphere via a c.11.5 m high stack. This system will have a maximum flow of c. 22,000 m³/hr based on 3 – 4 air changes per hour. This emission point location is identified as A2-1 on Drawing CE08-011-01-012.

As the building will operate under negative pressure and the tipping of waste within the transfer building will only occur when all doors are closed, fugitive emissions of odour and/or dust will not be significant. Minor emissions will occur during the opening/closing of roller shutter doors but the installation of rapid action doors will minimise any fugitive emissions from the facility.

Attachment E.2 Emissions to Surface Water

Surface water runoff from the hard-standing areas of the waste transfer building will be collected and drained to the existing surface water swales to the east of the facility. This swale discharges to the surface water lagoon at the south east corner of the site. The outlet of the lagoon is tested continuously and is released to the reed-bed percolation area before outfalling to the Tramore River.

Attachment E.3 Emissions to Sewer

Currently, the licensed site is connected to the Tramore Valley sewer. Wastewater and leachate is pumped from the facility to this sewer connection. It is proposed that leachate from the waste transfer building will be connected into the current leachate collection system and discharged to the Tramore Valley sewer and treated at Carrigrennan wastewater treatment plant on Little Island.

Attachment E.4 Emissions to Groundwater

There will be no direct discharges to groundwater from the proposed facility. All activities and operations will be conducted on hardstanding areas.

Attachment E.5 Noise Emissions

The main noise sources from the proposed facility will arise from the:

- entry and exit of waste vehicles from the facility
- operation of the mobile machinery within the waste transfer building
- unloading and loading of waste within the transfer building.

Noise emissions will have broadband characteristics will some tonal reversing siren sounds intermittently.

Noise emissions will be controlled and minimised as all activities will take place inside the main transfer building. The building enclosure will attenuate and reduce

noise emissions significantly. Also, the fast acting closing door will ensure noise emissions are minimised as far as possible. Operation of the facility will be day-time operations (8.00 to 18.00 Monday to Friday and 8.00 to 17.00 on Saturdays) will be.

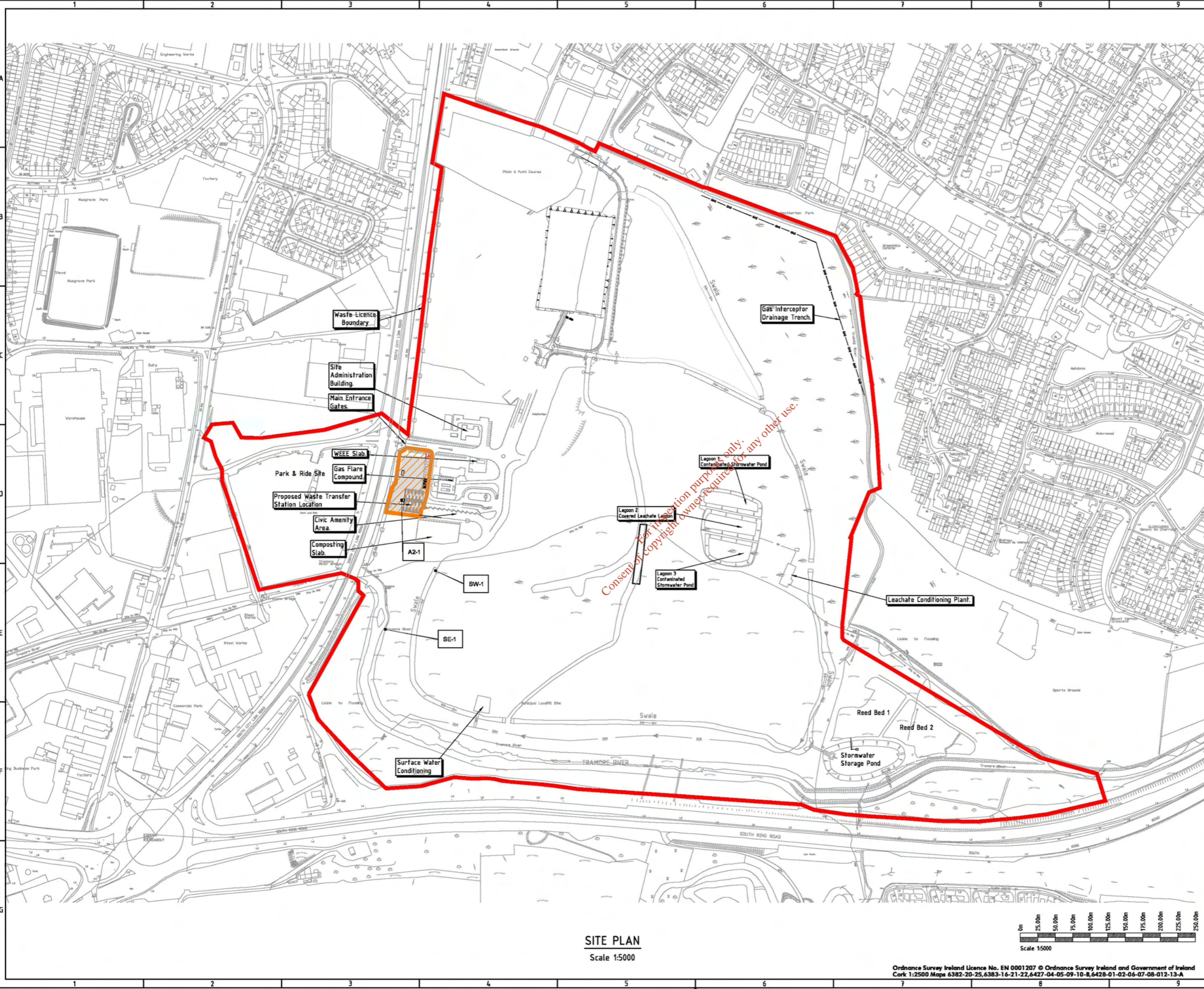
A low continuous broadband noise emission will also emanate from the air filtering system during operational hours. However, it is expected that this will not be discernable outside the boundary of the waste transfer station.

Attachment E.6 Environmental Nuisance

Environmental nuisances such as scavenging birds, flies, dust, litter and fire events have the potential to cause nuisance at the proposed facility. Environmental nuisances such as increased bird numbers, flies and litter is minimised due to all waste handling occurring inside the waste transfer building. All waste vehicles are fully enclosed or covered to prevent any litter entering the environment.

All access roads will be fully paved and traffic generated dust will be minimised. All waste handling activities will be undertaken within the waste transfer building which will reduce dust emissions. Fugitive dust emissions may be released from the waste transfer building when the doors are open however; these doors are fast acting closing doors and which will minimise the escape of dust or any windblown litter. The internal building will also be washed and cleaned at the end of each day to prevent the build up of dust and litter. Negative pressure and air extraction from the building will also reduce fugitive dust emissions and filters on the air extraction system will remove any dust particles from the exhaust gas released.

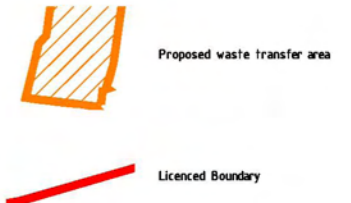
Any fire water run-off will be collected through the internal collection system and discharged to the site leachate collection system or be collected in the surface water collection system. Fire water will be contained within these systems and this will prevent any environmental impacts on the receiving environment from a fire incident and ensure emissions are minimal.



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Legend
 A2-1 : Air Filtration Emission
 SW1 : Surface Water Emission
 SE1 : Sewer Emission



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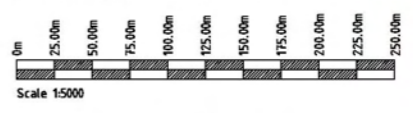
Name of Job
 KINSALE ROAD LANDFILL SITE

Title of Drawing
 EMISSION POINT MAP

Scales Used
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Dwg. No.
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 A

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SITE PLAN
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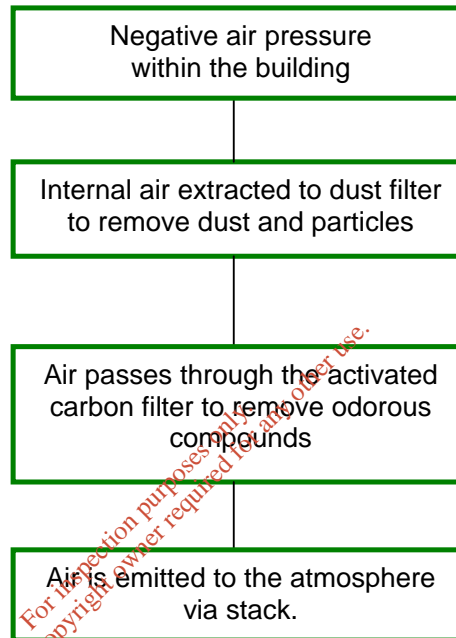
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 Cork 1:2500 Maps 6382-20-25, 6383-16-21-22, 6427-04-05-09-10, 6428-01-02-06-07-08-012-13-A

ATTACHMENT F CONTROL & MONITORING

Attachment F.1 Emissions and Abatement

To Atmosphere

The air abatement system will consist of an activated carbon filter unit. The flow diagram for this system is outlined below:



To Surface Water/Sewers/Groundwater

Clean surface water run-off, groundwater and sewer, will continue as undertaken under the current waste licence. Monitoring will be undertaken quarterly for both surface water and groundwater with a visual inspection of surface water weekly and groundwater level measurement monthly. Monitoring of the stormwater retention pond and the emissions to sewer will continue as in the current waste licence.

Attachment F.2 – F.9 Monitoring and Sampling Points

Environmental monitoring to be undertaken at the proposed facility will include:

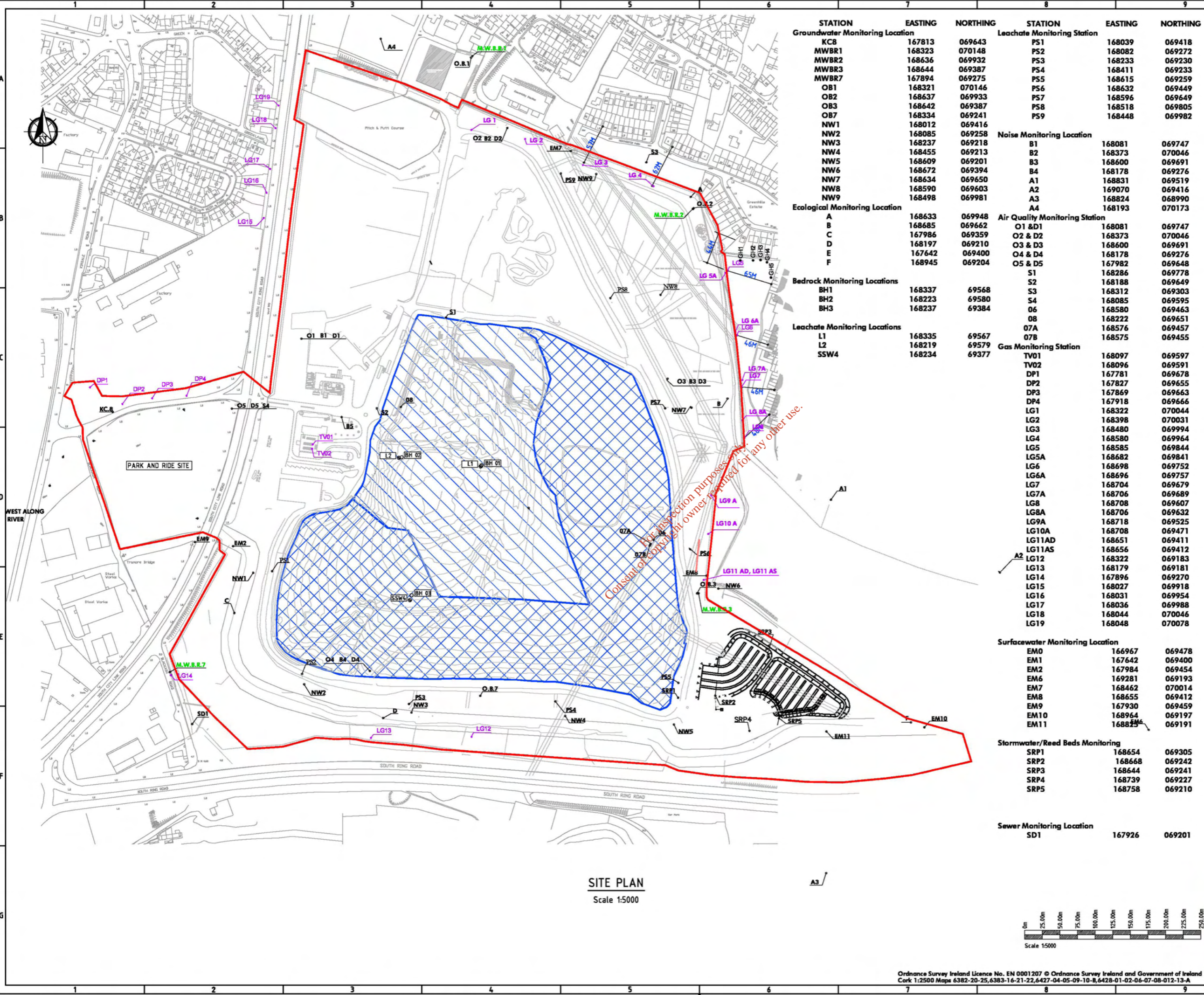
- surface water – one location –existing waste licence stormwater/reed bed monitoring point (SPR1)
- air - 3 locations - air abatement discharge point (AM1), dust (D6) and odour (O10)
- sewer – one location – existing waste licence sewer discharge (SD1)
- noise emissions – two existing licence locations – B1 and B4.

Existing monitoring locations at the landfill facility are indicated on CE08-011-05-013. Proposed monitoring points for the waste transfer station are indicated on drawing CE08-011-05-0014 – Proposed Monitoring Location Map. It is proposed to continue

the environmental monitoring at the proposed facility in accordance with the frequency and parameters outlined in the current Waste Licence.

Environmental monitoring will be undertaken by either Cork City Council staff or a competent person(s) contracted by the applicant. This person(s) will be responsible for ensuring that sampling is undertaken in compliance with EPA protocols. The results and interpretative reports will be prepared on a basis specified by the licence for the facility and submitted in a manner suitable for presentation to the EPA.

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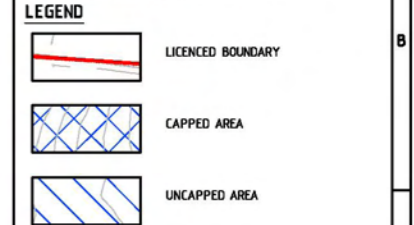


STATION	EASTING	NORTHING	STATION	EASTING	NORTHING
Groundwater Monitoring Location					
KCB	167813	069643	PS1	168039	069418
MWBR1	168323	070148	PS2	168082	069272
MWBR2	168636	069932	PS3	168233	069230
MWBR3	168644	069387	PS4	168411	069233
MWBR7	167894	069275	PS5	168615	069259
OB1	168321	070146	PS6	168632	069449
OB2	168327	069933	PS7	168596	069649
OB3	168642	069387	PS8	168518	069805
OB7	168334	069241	PS9	168448	069982
NW1	168012	069416			
NW2	168085	069258	Noise Monitoring Location		
NW3	168237	069218	B1	168081	069747
NW4	168455	069213	B2	168373	070046
NW5	168609	069201	B3	168600	069691
NW6	168672	069394	B4	168178	069276
NW7	168634	069650	A1	168831	069519
NW8	168590	069603	A2	169070	069416
NW9	168498	069981	A3	168824	068990
Ecological Monitoring Location					
A	168633	069948	A4	168193	069778
B	168685	069662	Air Quality Monitoring Station		
C	167986	069359	O1 & D1	168081	069747
D	168197	069210	O2 & D2	168373	070046
E	167642	069400	O3 & D3	168600	069691
F	168945	069204	O4 & D4	168178	069276
Bedrock Monitoring Locations					
BH1	168337	69568	O5 & D5	167982	069648
BH2	168223	69580	S1	168286	069778
BH3	168237	69384	S2	168188	069649
Leachate Monitoring Locations					
L1	168335	69567	S3	168312	069303
L2	168219	69579	S4	168085	069595
SSW4	168234	69377	06	168580	069463
Gas Monitoring Station					
TV01 168097 069597					
TV02 168096 069591					
DP1 167781 069678					
DP2 167827 069655					
DP3 167869 069663					
DP4 167918 069666					
LG1 168322 070044					
LG2 168398 070031					
LG3 168480 069994					
LG4 168580 069964					
LG5 168585 069844					
LG5A 168682 069841					
LG6 168698 069752					
LG6A 168696 069757					
LG7 168704 069679					
LG7A 168706 069689					
LG8 168708 069607					
LG8A 168706 069632					
LG9A 168718 069525					
LG10A 168708 069471					
LG11AD 168651 069411					
LG11AS 168656 069412					
LG12 168322 069183					
LG13 168179 069181					
LG14 167896 069270					
LG15 168027 069918					
LG16 168031 069954					
LG17 168036 069988					
LG18 168044 070046					
LG19 168048 070078					
Surfacewater Monitoring Location					
EM0	166967	069478			
EM1	167642	069400			
EM2	167984	069454			
EM6	169281	069193			
EM7	168462	070014			
EM8	168655	069412			
EM9	167930	069459			
EM10	168964	069197			
EM11	168824	069191			
Stormwater/Reed Beds Monitoring					
SRP1	168654	069305			
SRP2	168668	069242			
SRP3	168644	069241			
SRP4	168739	069227			
SRP5	168758	069210			
Sewer Monitoring Location					
SD1	167926	069201			

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LEACHATE MONITORING STATION-(PS1)
 NOISE MONITORING LOCATION-(B1/A1)
 AIR QUALITY MONITORING STATION-(O1/S1/O1)
 ODOUR MONITORING LOCATION (O6/O7A/O7B)
 GAS MONITORING STATION-(LG1/DP1/TVO1)
 SURFACEWATER MONITORING LOCATION-(EM1)
 GROUNDWATER MONITORING LOCATION-(BW1/OB1/KCB/NW1)
 STORMWATER/REED BEDS MONITORING-(SRP1)
 SEWER MONITORING LOCATION-(SD1)
 ECOLOGICAL MONITORING LOCATION-(A)



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Name of Job
**KINSALE ROAD
 LANDFILL SITE**

Title of Drawing
**EXISTING ENVIRONMENTAL
 MONITORING LOCATIONS**

Scales Used
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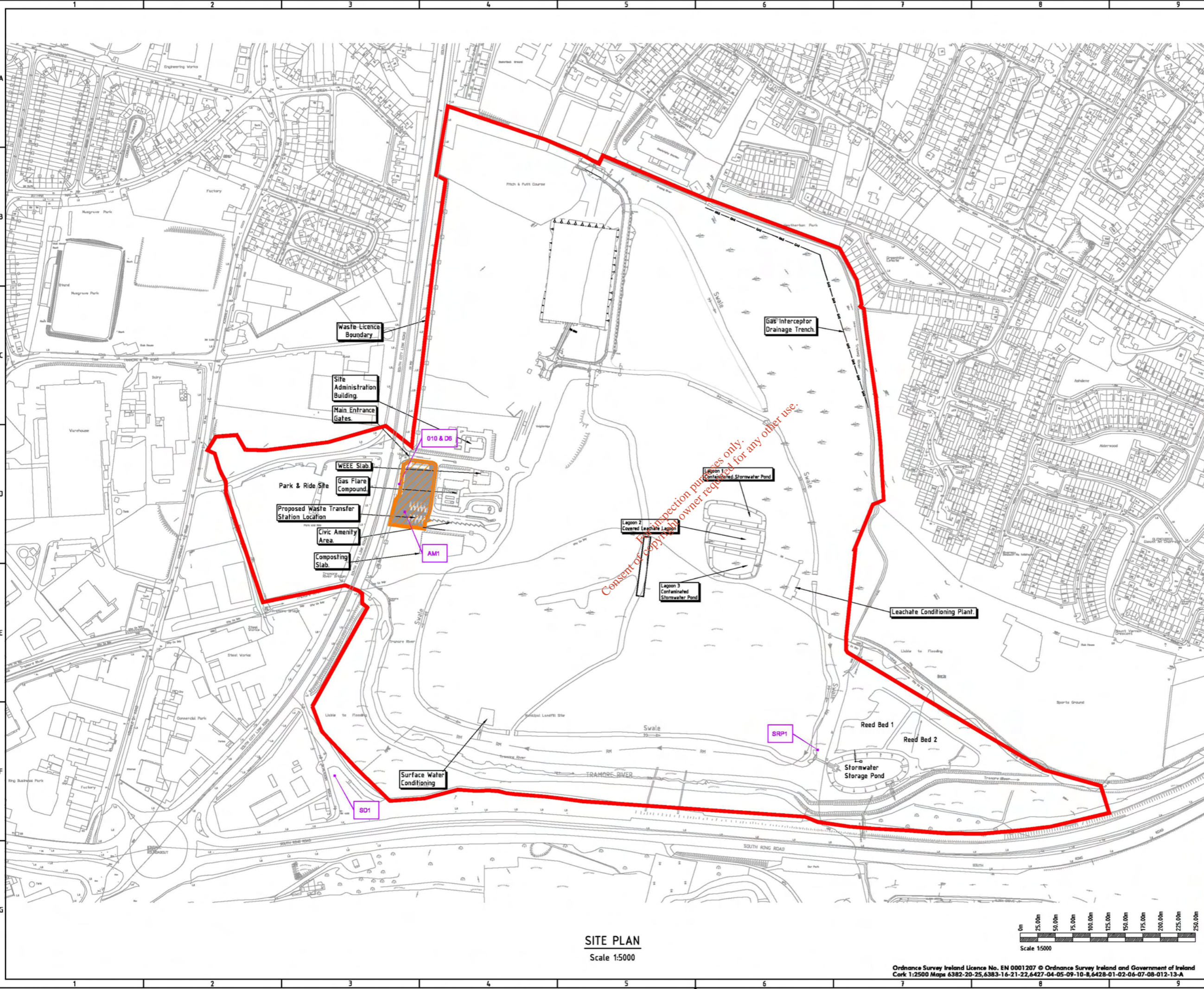
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- Legend**
- O10 : Odour Monitoring;
D6 : Dust Monitoring
E168018 N069618
 - SD1 : Sewer Monitoring
(current monitoring W0012-02)
E167926 N069201
 - SRP1 : Stormwater/Reed Bed Monitoring
(current location under W0012-02)
E168654 N069305
 - AM1 : Air Monitoring
E168026 N069578
- Proposed waste transfer area
 - Licenced Boundary

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Name of Client
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Name of Job
 KINSALE ROAD LANDFILL SITE

Title of Drawing
 PROPOSED ENVIRONMENTAL MONITORING LOCATION FOR WASTE TRANSFER STATION

Scales Used
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 CE08-011-05-014

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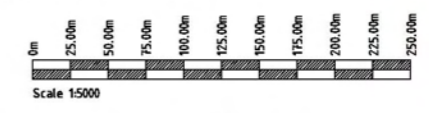
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ATTACHMENT G. RESOURCE USE AND ENERGY EFFICIENCY

Attachment G.1 Raw Materials and Product

Table G.1 outlines the estimated quantities of raw material to be used at the waste transfer building.

Table G.1: Proposed Raw Material Consumption

Resource	Quantities per Annum
Diesel Oil	c.20,000 L
Electricity	c.200,000 kWh
Water	c.500 m ³

Attachments G.2 Energy Efficiency

The dominant energy uses at the facility will be diesel usage and electricity usage. Diesel consumption will be mainly used by the mobile machinery e.g. front loader, shunt truck, etc. Electricity will be used in internal and external lighting, negative pressure air abatement system, shutter doors, weighbridges etc.

The building has been designed to reduce energy consumption by maximising the use of u clear perspex on the roof of the building to maximise the use of natural lighting. All plant and equipment within the proposed development will be chosen as far as possible with the highest energy efficient rating. An energy efficiency audit will be conducted by Cork City Council Energy Agency, as part of the new waste licence to ensure energy is being used efficiently at the facility.

ATTACHMENT H – MATERIALS HANDLING

Attachment H1 Waste Types and Quantities – Existing & Proposed

In this licence review, it is not proposed to increase the waste types and quantities under the current waste licence. In fact, waste quantities accepted will decrease over the coming years when the landfill facility closes.

The types and quantities of waste (and EWC codes) proposed to be accepted at the facility is outlined in the Table H.1.1 below.

Table H.1.1: Proposed Waste Types & Quantities to be Accepted

Waste Type	EWC Code	Quantity Tonnes per annum
Household and Commercial Municipal Solid Waste	15 01 06 – mixed packaging	22,000
	20 01 02 – glass	
	20 02 03 – other non-biodegradable waste	
	20 03 01 – mixed municipal wastes	
	20 03 02 – waste from markets	
	20 03 03 – street cleaning residues	
	20 03 07 – bulky waste	
	20 03 99 – municipal waste not otherwise specified	
	19 12 12 - other waste (including mixtures of materials) from mechanical treatment of waste other than those mentioned in 19 12 11	
	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 07 – glass packaging	
	15 01 06 – mixed packaging	
	20 01 01 – paper and cardboard	
20 01 02 - glass		
20 01 38 – wood other than that mentioned in 20 01 37		
Construction and Demolition Waste	17 01 01 – concrete	300,000
	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 04 07 – mixed metals	
	17 05 04 – solid and stones other than those mentioned in 17 05 03	
	17 06 04 – insulation materials other than those mentioned in 17 06 01 and 17 06 03	
	17 09 04 – mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	
17 01 01 – concrete		
Waste to be imported for restoration purposes	17 05 04 - soil and stones other than those mentioned in 17 05 03	100,000
	20 02 02 – soil and stones	
	19 13 02 – solid wastes from soil remediation other than those mentioned in 19 13 01	
Green waste for composting	02 01 07 – waste from forestry	1,000 m³ stored at any one time
	03 01 01 – waste bark and cork	
	03 01 05 – sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04	

Waste Type	EWC Code	Quantity Tonnes per annum
	03 03 01 – waste bark and wood	
	20 02 01 – biodegradable waste	
Wastes for Civic waste facility	13 00 00 – Oils	5,000
	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	
	16 01 03 - end-of-life tyres	
	16 02 13* - discarded equipment containing hazardous components (16) other than those mentioned in 16 02 09 to 16 02 12	
	16 05 04* - gases in pressure containers (including halons) containing dangerous substances	
	16 06 00 – Batteries and accumulators	
	17 02 01 - wood	
	17 04 07 -mixed metals	
	20 01 01 – paper and cardboard	
	20 01 02 - glass	
	20 01 11 - textiles	
	20 01 21 – fluorescent tubes and other mercury containing waste	
	20 01 23 – discarded equipment containing chloroflurocarbons	
	20 01 25- edible oil and fat	
	20 01 27*- paint, inks, adhesives and resins containing dangerous substances	
	20 01 35 – WEEE - - discarded electrical and electronic equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components	
	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 that mentioned in 20 01 37	
20 01 39 – Plastic		
20 01 40 - Metal		
20 02 01 – biodegradable waste		
Total		427,000 +1,000 m³ stored at any one time of green waste

Attachment H.2 Waste Acceptance Procedures

Each waste load accepted at the facility, recorded at the weighbridge will be catalogued in a computer system in the existing site administration office. A telemetry link will be established between the WTS building and the site main administration office to transmit this information.

Any unacceptable waste including hazardous wastes arriving at the facility will be moved to the waste quarantine area at the northern side of the transfer building. Only residual municipal solid waste (MSW) will be accepted at the facility, sludges, empty drums, sewage sludge, asbestos etc. will not be accepted. The waste checking procedure will follow the requirements of EU Council Decision 2003/33/EC of 19 December 2002. Hazardous contaminated soils will not be accepted, handled or treated at the facility.

Attachment H.3 Waste Handling

Refuse Collection Vehicles Bringing Waste to the Facility

Refuse collection vehicles (RCVs) will arrive at the facility reception hardstanding area to the north of the waste transfer station building where they will pass over the weighbridge before reversing into the transfer station building. A system of lifting barriers and CCTV cameras at the weighbridge will control the movement and identification of RCVs arriving at the facility.

Waste will be tipped in the higher level waste handling area within the building and inspected. RCVs will exit the facility via the same route that they entered it, turning onto the southbound carriageway of the South City Link Road.

Acceptable waste will be lifted using a front-end loader (FEL) and deposited into the waiting ejector trailer in the low level area. A steel hopper plate will be fixed to the 1.1 m dividing wall between the high and low level areas to prevent waste falling between the receiving ejector trailer and the dividing wall.

Compactor or Ejector Trailers Taking Waste from the Facility

Empty compactor or ejector trailers will enter the facility using the same road as the RCVs. They will unhitch and park their empty trailer in the high level area before driving to the low level area, by-passing the building to the south, then reversing into the eastern low level roller shutter door to hitch up to the full waste trailer. After hitching up, the truck with full compactor or ejector trailer will exit the facility to the south of the split-level civic amenity area. A weighbridge will be permanently fitted in the low level area, weighing ejector trailers before and after filling. This weight information will be transmitted to the administration building via a telemetry link.

Waste filling to the receiving trailer will only be permitted when the low level area has been vacated and the roller shutter doors closed. A pedestrian access door is provided on the southern gable of the building as a safety egress route for anyone in the low level area.

It is intended that the Front End Loader (FEL) operator will have access to a shunt truck to move filled trailers out of the low level area and empty ones in as required, allowing him to operate more independently of the collection vehicles. It also reduces the risk of the FEL operator tipping waste when there is no collection vehicle in place. Before removal of the ejector trailer from the waste transfer building, the trailer will be covered and sealed with waterproof fabric to prevent any dust and/or litter emissions while parked externally. The loaded ejector trailer will also not be parked for greater than 4-5 hours external to the waste transfer building in order to prevent odorous emissions.

Attachment H.4 Waste Arisings

Small quantities of municipal waste will be generated at the administration buildings and canteen facility from employees at the waste transfer station. This waste is recovered onsite at the civic amenity as far as possible and the remaining waste will be incorporated into the waste collected at the waste transfer building and transported offsite for disposal.

Leachate generated within the proposed waste transfer station will be released to the onsite leachate collection system and discharged to the Tramore Valley sewer for treatment at Carrigrennan wastewater treatment plant.

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ATTACHMENT I - EXISTING ENVIRONMENT AND IMPACT OF THE ACTIVITY

Under the current waste licence there are a number of environmental monitoring locations monitored in accordance with the frequency and parameters outlined in Schedule D of the current waste licence. To examine the existing environment for the proposed waste transfer station, 2007 monitoring data was examined especially focusing on monitoring location in close proximity to the proposed development.

Attachment I.1 – Assessment of Atmospheric Emissions

Existing Environment

Dust/ PM10/Odour

Dust deposition, PM₁₀ and odour monitoring is undertaken at the facility. Dust deposition monitoring is undertaken at five monitoring locations. Monitoring results are outlined in Table 1 below.

Table 1: Dust Monitoring Results 2007

Location	Grid co-ordinates	Description	Dust Deposition Results 2007 mg/m ² /day			
			Q1	Q2	Q3	Q4
D1	168081E, 069747N	Western boundary of the landfill	191	156	63	47
D2	168373E, 070046N	Northern boundary of the landfill	182	85	113	68
D3	168600E, 069691N	Eastern boundary of the landfill	128	214	108	88
D4	168178E, 069276N	Southern boundary of the landfill	109	-	1419	106
D5	167982E, 069648N	Located in the Park & Ride Facility	306	281	79	77
Licence Limit			350	350	350	350

Monitoring results throughout 2007 were in compliance with the emission limit value of 350 mg/m²/day with the exception of location D4 during Quarter 3 of 2007. Exceedence of this limit value was attributed to high vehicular activity in the area and the capping works in the area.

Total suspended particulate (TSP) were also monitored at these monitoring points and results are outlined in Table 2. These results are all within the TA Luft guideline limit of 150 ug/m³.

Table 2: Total Suspended Particulate Monitoring Results 2007

Location	Grid co-ordinates	Total Suspended Particulate Result ug/m ³			
		Q1	Q2	Q3	Q4
D1	168081E, 069747N	33	31	24	115
D2	168373E, 070046N	36	46	60	95
D3	168600E, 069691N	22	49	68	122
D4	168178E, 069276N	71	117	61	40
D5	167982E, 069648N		64	57	111
TA Luft guideline limit		150	150	150	150

PM₁₀ monitoring is undertaken at four monitoring locations at the facility. Monitoring is undertaken continuously at one location S3 and is conducted quarterly at S1, S2 and S4.

Results of the continuous monitoring are included in Attachment I.1.1. Monitoring results for S1, S2 and S4 are provided in Table 3 below.

Table 3: Total Suspended Particulate Monitoring Results 2007

Location	Grid co-ordinates	PM ₁₀ Result ug/m ³			
		Q1	Q2	Q3	Q4
S1	168399E, 069753N	28	47	40	77
S2	168222E, 069651N	49	14	30	55
S4	167982E, 069648N	37	23	18	50
SI. 271 of 2001 Limit Value		50	50	50	50

Results are compared to the SI 271 of 2001 which provides a 98 percentile 24 hour emission limit value of 50ug/m³ for particulate matter in ambient air. This limit value is not to be exceeded more than 7 times in a calendar year.

In the year 2007, all monitored levels complied with the 24 hour (98%ile) limit value.

Odour monitoring was undertaken by Odour Monitoring Ireland Ltd at nine locations at the landfill facility (O1, O2, O3, O4, O5, O6, O7A, O7B and O8). All ambient air concentrations were low and well within any respective exposure threshold concentrations.

Monitoring location O9 recorded the highest odour threshold concentration; however this is located closest to the active landfilling area. A landfill gas odour was detected in the vicinity of this monitoring location. Landfill gas odour was also detected at monitoring location O8 (compost area). Hydrogen sulphide concentrations recorded at each monitoring location were less than 3 ppb in ambient air.

Elevated ambient air concentrations of photo ionisation detector (PID) continuous total volatile organic carbon (TVOC) were detected at monitoring locations O8 and O9. GCMS screens illustrated a large array of volatile organic compounds present in the air stream at all monitoring locations.

Landfill Gas

Landfill gas emissions are measured in each building onsite, at the landfill gas enclosed flare and at perimeter landfill gas wells. Monitoring is undertaken in accordance with Schedule D of the Waste Licence.

A licence emission limit value of 1% v/v (20% LEL) for methane and 1.5% v/v for carbon dioxide has been provided for landfill gas detection in buildings or adjacent the facility. Six buildings are monitored on a weekly basis and no landfill gases were detected during the 2007 monitoring period.

A programme of measures to control gas and intensive monitoring regime has been implemented by Cork City Council. These measures included the installation of approximately 163 gas wells. Landfill gas is collected from these wells and piped to a gas utilisation plant. The utilisation plant is a Combined Heat and Power (CHP) Plant which converts methane to electricity and heat. Approximately, 1.1 MW of electricity is produced at maximum output and this is sold to the national grid under an agreement with ESB. This is equivalent to the domestic electricity demand of approximately 1,500 houses.

An enclosed flare is also installed onsite which is activated on the shut-down of the utilisation engine. A stand-by open flare is also available onsite. Monitoring emissions from the enclosed gas flare (TVO1) are within the emission limit values for all the parameters specified in the licence. It is estimated that the methane destruction in the landfill flare and gas engines is 99%.

Potential Impacts of Proposed Development

Emissions from the proposed facility to the atmosphere will consist of a point emission from the air filtration unit and fugitive emissions from odour and/or dust released during the opening of roller shutter doors.

The air filtration unit proposed will consist of a dust filter followed by a activated carbon filter to remove odorous compounds. This abatement system is considered to be the Best Available Technology (BAT) for the reduction of odour and dust emissions for a waste facility. The building will be under negative pressure as all air within the building will be pulled toward the air filtration unit. The unit will remove dust particles and odour emissions from the inlet gas and exhaust gas is released into the atmosphere. The unit will be designed to filter 3 to 4 air changes per hour within the building which is also the required standard.

Mitigation measures incorporated into this proposed development to control these potential emissions are the roller shutter doors in the waste transfer building are rapid action doors and will close quickly after vehicles entry and exit. This will minimise any fugitive emissions at the facility. Operating the building under negative pressure and will also limit emissions from building openings and air will be drawn inwards rather than outwards to the atmosphere.

All waste vehicles will be fully enclosed or covered to prevent any litter and dust entering the environment. Loaded ejectors that are removed from the waste transfer building awaiting pick up will also be fully covered and sealed with waterproof fabric to prevent and dust and/or litter emissions. The loaded ejector trailer will also not be parked for greater than 4-5 hours external to the waste transfer building in order to prevent odourous emissions.

The abatement systems outlined above will ensure that the proposed development will not significantly impact on the receiving environment. Monitoring will be undertaken regularly to ensure the air abatement system is being managed and operated efficiently.

Ambient dust and odour monitoring (O10 & D6) will be also carried out at a proposed monitoring location adjacent to the waste transfer station to ensure the environmental is not significantly impacted on.

Attachment I.2 – Assessment of Impacts of Surface Water Discharges on the Receiving Waters

Existing Environment

A stormwater retention and reed bed facility was constructed in 2004 and commissioned in 2005. This facility accepts all uncontaminated surface water run-off from the landfill facility. Monitoring of the stormwater lagoon/reed bed system is undertaken in accordance with Schedule D Table D.5.2. There were no exceedences in the suspended solids emission limit value to the reed bed system during 2007.

Surface water monitoring is undertaken on the Tramore River which flows south of the landfill and the Trabeg stream which flows around the north and east of the landfill and then joins the Tramore to the south east of the landfill. There are five surface water monitoring points on the Tramore River and results of these monitoring points are provided in Table 4 overleaf.

Results for pH and DO are variable across all monitoring points. Levels of conductivity and chloride become more elevated downstream and may as a result of back up of tidal waters in this area. Ammonium is also very variable at each monitoring point however there seem to be a trend of elevated results in quarter 2 and quarter 4 at each monitoring location.

BOD levels downstream of the landfill although variable show more elevated levels than upstream. COD and SS illustrate a variable trend across the monitoring locations. TOC is monitored at EM2 upstream and EM11 downstream of the landfill. Levels of TOC are more elevated at downstream and the trend over 2007 is that TOC has been increasing in both locations across each quarter.

Table 4 Tramore River Monitoring Results 2007

Parameter	EM0				EM1				EM2				EM11				EM6/10			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
pH	7.58	6.53	7.64	6.52	7.79	6.47	8.1	6.92	7.52	6.05	7.71	7.2	7.3	5.93	8.04	7.64	7.52	6.32	7.79	7.2
Temp.C	8.8	12.9	13.6	12.9	8.2.C	14.1	15	13.0	9.3	12.4	14.8	12.5	8.9	13	11.3	13.2	8.9	12.5	12	13.5
D.O.	10.2	11.2	7.7	9.5	10.4	11.9	7.7	8.7	8.2	6.8	8.1	9.1	9.8	8.5	6	9.2	8.6	10.4	6.4	8.9
Cond.	333	402	423	359	330	396	388	360	345	421	370	382	351	425	394	389	380	480	493	430
NH4	0.01	0.25	0.003	0.09	<0.01	0.38	<0.01	0.14	0.04	0.53	<0.01	0.4	0.07	0.33	<0.01	0.07	0.1	0.44	0.01	0.12
BOD	0.6	0.3	1.5	0.8	0.5	0.6	1.3	1.1	1.5	1.7	1.7	1.7	1.7	1.1	2.1	6.2	5.5	1.8	3.7	5.7
COD	5	3	3	4	3	4	8	5	7	5	5	5	3	5	6	9	7	3	5	8
Suspended Solids	3.4	5	3	4	14.8	5	31	27	10.6	5	6	12	19.2	10	4	10	1	8	10	7
Chloride	21.3	19.8	20.2	21.6	21.5	21.3	21.9	20.8	22.7	25.5	22.1	21.7	21.5	32.6	25	22.7	31.2	52.4	49.6	25.3
TOC									2	2	3	4	3	3	4	6				

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There are two surface water monitoring points on the Trabeg Stream and results of these monitoring points are provided in Table 5. EM7 is upstream of the landfill and EM8 is downstream of the landfill before it joins the Tramore River.

Table 5 Trabeg River Monitoring Results 2007

Parameter	EM7				EM8			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
pH	7.53	6.23	7.72	7.35	7.1	5.98	7.31	7.28
Temp.C	9.8.C	14.4.C	15.1.C	13.9.C	10.6.C	15.3.C	13.8.C	13.3.C
DO	7	5.1	4.1	6.6	6.8	8.6	4.8	7.4
Cond.	695	730	659	680	697	771	750	724
NH4	0.02	0.63	0.02	0.14	0.08	0.63	0.06	0.04
BOD	6.8	4.6	7	6.2	12.2	5.2	8.5	8.2
COD	9	7	10	10	15	9	20	12
Sus.Sol	3.8	7	29	15	1.6	5	5	7
Chloride	35	38.3	26.1	21.2	35	35.4	45.3	32.7

Monitoring results illustrate that pH is consistent across both monitoring points. DO BOD and COD are variable however, COD is slightly more elevated downstream. Chloride and conductivity are variable but more elevated downstream again due to the tidal influence on the stream. Ammonium trends are variable and significantly peaked in quarter 2 of 2007 both upstream and downstream. Suspended solid levels are lower downstream.

The more extended annual parameters which include metals and nutrients such as phosphate, nitrogen, sulphate etc do not show any significant trend or concentrations across each stream.

Potential Impacts of Proposed Development

Emissions to surface water from the proposed development will be limited to surface water run-off from the hard-standing areas of the waste transfer building facility. The surface water will enter the current surface water collection system and be collected in the stormwater lagoon. The outlet of the lagoon is tested continuously and is released to the reed-bed percolation area before outfalling to the Tramore River. Trigger levels have been set for a number of key parameters. If these trigger levels are exceeded, the flow will be redirected to the leachate treatment system and released to the sewer. Therefore, the impact of surface water emissions from the proposed development will be negligible.

Attachment I.3 – Assessment of Impact on Receiving Sewer

Existing Environment

Emissions to sewer are monitored in accordance with Schedule D Table D.5.3 of the current waste licence. Emission limit values for each parameter are outlined in Schedule C of the waste licence.

The 2007 monitoring results of the sewer emissions are outlined in Table 6 below:

Table 6: Sewer Monitoring Results

Parameter	2007 Monitoring Range	Emission Limit Value	No. of Exceedences
Flow	0-23 m ³ /hr	25 m ³ /hr	0
BOD	0.1-8.0 mg/l	3,000 mg/l	0
Ammoniacal Nitrogen (NH ₄ -N)	130-360 mg/l	600 mg/l	0
Suspended Solids	0.1-200 mg/l	1,000 mg/l	0
Sulphates (as SO ₄)	1.0-30 mg/l	500 mg/l	0
pH	7.5-8.0	6-9 pH units	0
Methane	0.03 – 1.2 mg/l	0.2 mg/l	26

The only parameter which exceeded the current licence emission limit value was dissolved methane. A conditioning plant was installed in 2003, to reduce the concentration of dissolved methane. It is hoped that with increased control and cleaning schedules at this plant that dissolved methane exceedences will be reduced in 2008.

Potential Impacts of Proposed Development

Emissions to the sewer for the proposed waste transfer facility include: drainage from within the building, following routine wash-down etc. Internal wastewater will be collected internally using a system of gullies and drains, before being discharged to the site leachate collection system via a screen/intreceptor. Leachate will be conditioned at the onsite leachate treatment plant and discharged to the Tramore valley sewer.

As waste will not be left for long periods of time in the unloading area and will mainly be removed at the end of one working day, minimum quantities of waste leachate will be generated. The impact of leachate generation from the proposed facility will not impact on the current emissions to sewer. Emissions of parameters from proposed development will be minimal when compared to the emissions associated with landfill leachate.

Attachment I.4 – Assessment of Impact of Groundwater and Soils

There will be no direct discharge to groundwater from the proposed development therefore there will be no impact on groundwater or soils from the facility.

Attachment I.5 – Ground and/or Groundwater Contamination

There will be no direct discharge to groundwater from the proposed development therefore there will be no impact on ground or groundwater from the facility.

Attachment 1.6 – Noise Impacts

Existing Environment

Noise monitoring is undertaken annually at the facility at four onsite locations (B1-B4) and two offsite sensitive locations (A1 and A4).

Results for the Noise Monitoring are provided in Table 7 below.

Table 7: Noise Monitoring Results

Location	Description	L _{Aeq} 2007	L _{Aeq} 2006
B1	Western boundary of the landfill	60	57
B2	Northern boundary of the facility	60	53
B3	Eastern boundary of the facility	53	48
B4	South western boundary of the facility	63	61
A1	Eastern Boundary in Greenhills Housing Estate	58	51
A4	Northern Boundary at Christ Kings School	59	54

The noise emission limit value specified in the waste licence states that the L_{Aeq} 30 minutes should not exceed 55 dB(A) during the day and 45 dB(A) at night at the sensitive locations A1 and A4. The landfill does not operate during night time hours therefore noise monitoring is not carried out.

B1 is located on the western boundary of the landfill north of the main admin building and in close proximity to the South City Link Road. Noise levels are elevated at this location and the major noise sources at this location was identified as traffic from the South City Link Road.

B2 is located to the northern boundary of the facility. This location is in close proximity to the Greenhills housing estate and ESB transformer station and City Council Garage. Again noise levels are elevated however, noise sources from the landfill facility itself were not discernable at this location. Noise levels recorded are therefore thought to be due to external sources north of the landfill facility.

B3 is located to the eastern boundary of the facility. This monitoring point is in close proximity to the Greenhills housing estate. Noise levels here are within the licence limit values however, the dominant noise sources again in this area is traffic noise from along South Link Road.

B4 is located to the south western boundary of the facility and experiences the highest noise levels from all monitoring points. It is located in close proximity to the South Link Road and is dominated by heavy traffic noise from the South Ring road. Noise sources from the landfill were not discernable at this location.

A1 is located to the eastern boundary of the landfill and is in the Greenhills Housing Estate. A1 noise levels are higher than that recorded at B3 also located on the eastern boundary within the landfill however, this monitoring point is further north of A1. The dominant noise sources in this area is traffic noise from the South Ring Road and noise from the landfill was not discernable.

A4 is located at a noise sensitive location Christ King School. North of the landfill facility and is in close proximity to B2 monitoring point onsite. From the noise results, noise levels are very similar for both locations (A4 and B2). Traffic levels from the South City Link Road would contribute more to the noise levels experienced at A4 as well as other external sources such as birds and schoolchildren activity. Noise sources from the landfill were not discernable at this location.

From the results and observations above it is evident that traffic noise is the dominant noise source in the Kinsale Road landfill area with the South City Link Road bounding the facility to the west and the South Ring Road bounding the facility to the south. Monitoring Point B1 is representative of the noise levels in the existing

environment that is experienced at the location of the proposed waste transfer station. Noise levels are elevated at this location due to traffic noise from the South City Link Road.

Potential Impacts of Proposed Development

The main noise sources from the proposed facility will arise from the:

- entry and exit of waste vehicles from the facility
- operation of the mobile machinery within the waste transfer building
- unloading and loading of waste within the transfer building
- Noise emissions will also emanate from the air filtering system during operational hours.

Noise emissions will be controlled and limited due to all waste activities such as, operation of the mobile machinery and the unloading and loading of waste, taking place inside the main transfer building. The building enclosure will attenuate and reduce noise emissions significantly. Also, the rapid action closing door will ensure noise emissions are minimised as far as possible. Noise emissions will also be limited to day-time hours from 8.00 am to 6.00 pm Monday to Friday; 8.00 am to 5.00 pm on Saturdays; and 7.00 am to 9.00 am on Sundays and Bank Holidays.

The closure of the landfilling activities and the operation of the waste transfer station at the facility will significantly reduce the number of waste vehicles entering the facility and therefore significantly reduce associated noise emissions from on site traffic. This will be a positive impact on the current noise environment of the area.

Due to the already elevated noise climate of the area due to traffic noise associated with the South City Link Road, and the proposed control and mitigation measures outlined above for the facility, it is expected noise emissions from the proposed facility will not be discernable outside the licensed boundary of the facility. The impact of the proposed facility will be negligible to the noise climate of the area.

Attachment I.7 – Assessment of Ecological Impacts and Mitigation Measures

Methodology for the Ecological Assessment

Two site walkovers were carried out in order to assess the ecology of the proposed development site. The site visits were carried out on the morning of the 12th and 14th of November 2008. The weather during the site visits was good, with low winds (Beaufort Force 2), no rain and good visibility.

The surveys undertaken at the site included habitat, botanical, mammal and bird surveys. Standard ecological survey techniques were used (Lawrence & Brown, 1973; Clark, 1988; Fossitt, 2000; Institute of Environmental Assessment, 1995; Smal, 1995; Bibby *et al.*, 2000; Sargent & Morris, 2003; Bang & Dahlstrom, 2004; JNCC, 2004; The Heritage Council, 2005; Sutherland, 2006).

It should be noted that the timing of this ecological assessment was sub-optimal for some aspects, the botanical survey in particular, and as a result some species may have been under-recorded. A bat survey was not carried out at the site as it was considered to be too late in the season for bats to be on the wing. However a visual

assessment was made on the potential of the site to provide roosting and foraging opportunities.

An overall ecological evaluation of the site and an impact significance assessment was undertaken using the NRA (2006) guidelines (see Attachment I.7.1).

Ecology in the Existing Environment

Habitats and Botanical species in the existing environment

A total of six dominant habitats were recorded on the proposed development site. These are listed in Table 8. The most widespread habitat on the site was grassy verge (GS2) with some patches of low scrub (WS1) occurring in the north of the site. A certain amount of habitat management occurs on the site, i.e. the scrub has been planted with some ornamental species in the north of the site and bark mulch has been spread over some areas of amenity grassland. A small patch of immature woodland (WS2) is located in the south of the site and scattered Common Lime trees (WD5) are also present. Amenity grassland (GA2) occurs along the eastern boundary of the site and this has been maintained to a short sward height. CE08-011-05-015 Habitat Map shows the location of all habitats on the site.

Table 8 Habitats Identified on the Site (after Fossitt, 2000)

Habitat Code	Description
GS2	Grassy Verge
WS1	Scrub
GA2	Amenity Grassland
WD5	Scattered Trees
WS2	Immature Woodland
WL2	Treeline

The habitats south of the site comprise of a mosaic of grassy verge and scrub habitats (GS2/WS1), with a similar species mix to those occurring on the site. The proportion of scrub increases further south, especially on the southern side of the Tramore River, which flows in a south-easterly direction approximately 85 m south of the development site. The Tramore River is a deep, slow moving depositing lowland river (FW2) with some in-stream vegetation growth.

A total of 41 botanical species were recorded on the site during the survey. Table 8 lists the species recorded and their habitat of occurrence. Botanical species diversity was highest in the grassy verge habitat, with 30 species recorded here, while diversity was also relatively high in the scrub habitat (17 botanical species). Botanical species diversity elsewhere on the site was generally low with less than ten species recorded in each of the remaining habitats. The most widespread species occurring on the site was Bramble, Crack Willow, Osier and Ribwort Plantain which occurred in at least three of the six habitats recorded on the site. The main tree species found on the site were Ash, Common Lime, White Poplar and several Willow species. See Table 9 for species scientific names.

Fauna in the existing environment

Mammals

No signs or sightings of mammals were made on the site. The proposed site for the waste transfer station is very small in area (1.1 acres) and provides very limited foraging potential for mammals. Similarly the site is relatively open and provides limited cover for mammals. It is more likely to be used by mammals in a temporary basis as they travel between more suitable nearby sites such as the scrub area further south of the site than for breeding. Species likely to occur from time to time include the Fox, *Vulpes vulpes*, Rabbit, *Oryctolagus cuniculus* and Brown Rat, *Rattus norvegicus*. It is not surprising that there are no mammal breeding sites on the proposed development site due to the lack of suitable habitat.

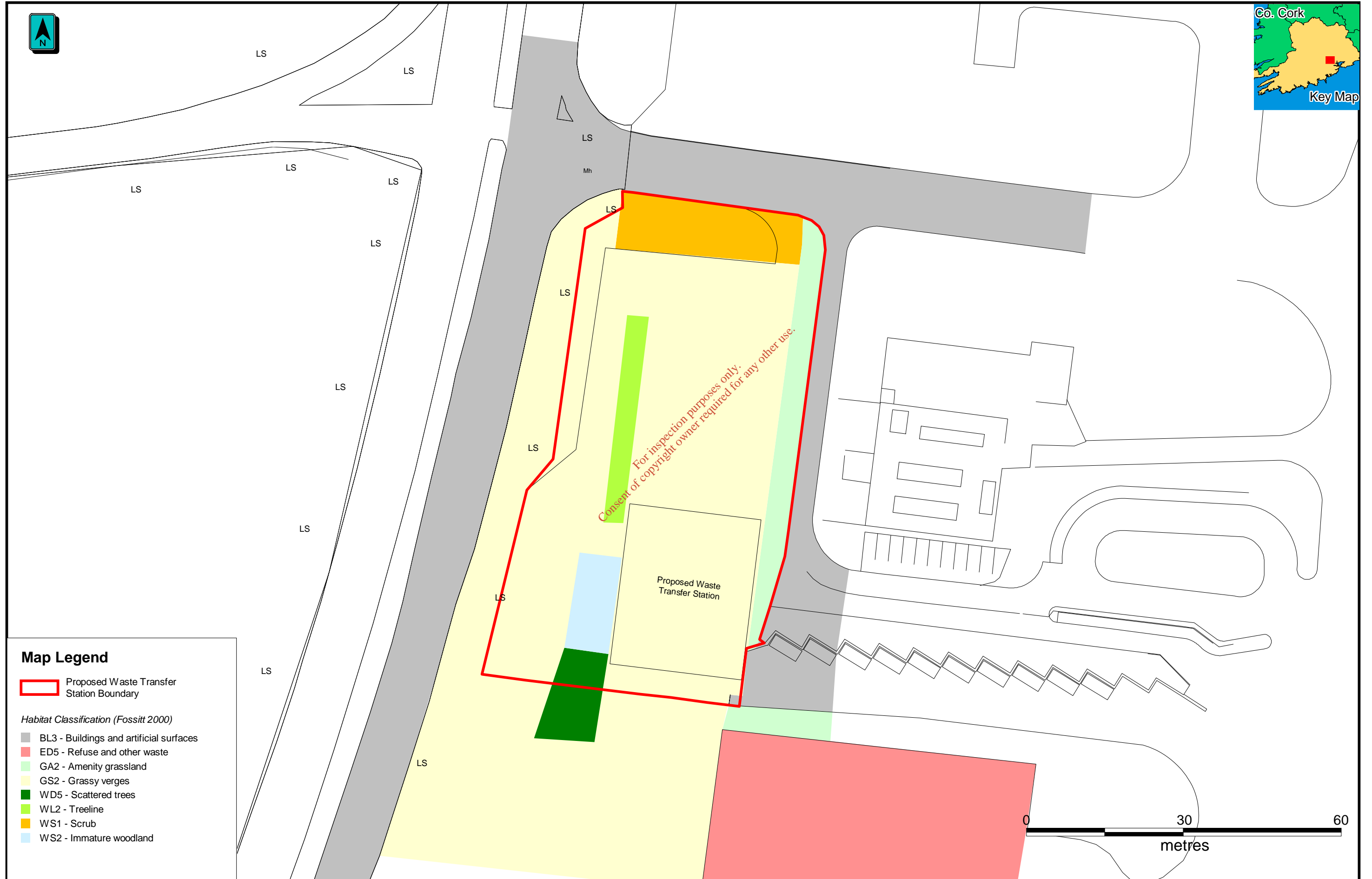
There are no suitable roosting sites for bats on the site and the amount of vegetation present is very low and therefore unlikely to attract large numbers of foraging bats.

Birds

A total of 12 bird species were recorded during the two avian surveys. Maximum counts of each species are available in Table 10. Bird diversity and abundance was generally low, reflecting the small size of the site and limited vegetation cover. The species assemblage was dominated by common resident species such as Goldcrest, *Regulus regulus* and Blackbird, *Turdus merula* with most birds recorded in the scrub areas on the site as well as in scattered trees. The species recorded are not listed on the Birds of Conservation Concern in Ireland (BoCCI) list (Lynas *et al.* 2007) and are not of conservation priority under the E.U. Birds Directive. Other species recorded on the site outside of the avian surveys included Long-tailed Tit, *Aegithalos caudatus*, and a number of waterbird species flying over the site (i.e. Black-headed Gull, *Larus ridibundus*, Curlew, *Numenius arquata*, Oystercatcher, *Haematopus ostralegus* and Common Gull, *Larus canus*). It is not considered likely that these waterbird species, some of which are of high conservation concern, would use the site on a regular basis due to the lack of suitable habitats available for these species. It is possible that seasonal migrants such as Swallow, *Hirundo rustica* also use the site during the summer months, however the small size of the site and limited vegetation cover would indicate that the site is of low value to birds.

Overall Ecological Value

Using the NRA (2006) guidelines for site evaluation, this site is given an E Rating – Low value, locally important. Attachment I.7.1 shows the NRA criteria for rating sites and it can be seen that an E Rated site consists of artificial or highly modified habitats with low species diversity and low wildlife value.



Map Legend

Proposed Waste Transfer Station Boundary

Habitat Classification (Fossitt 2000)

- BL3 - Buildings and artificial surfaces
- ED5 - Refuse and other waste
- GA2 - Amenity grassland
- GS2 - Grassy verges
- WD5 - Scattered trees
- WL2 - Treeline
- WS1 - Scrub
- WS2 - Immature woodland

Table 9 Botanical species recorded on the site and their habitat of occurrence

Common Name	Scientific Name	Habitat of occurrence*
Ash	<i>Fraxinus excelsior</i>	WS2
Bramble	<i>Rubus fruticosus agg.</i>	GS2, WS1, WS2, WL2
Butterfly Bush	<i>Buddleja davidii</i>	WS1
Common Lime	<i>Tilia x europaea</i>	WD5,WS2,WL2
Common Nettle	<i>Urtica dioica</i>	GS2,WS1
Common Reed	<i>Phragmites australis</i>	GS2,WS1
Common Vetch	<i>Vicia sativa</i>	GS2,WS1
Crack Willow	<i>Salix fragilis</i>	WS1,WS2,WL2
Daisy	<i>Bellis perennis</i>	GA2
Dandelion	<i>Taraxacum officinale</i>	GA2
False Oat Grass	<i>Arrhenatherum elatius</i>	GS2,WS1
Germander Speedwell	<i>Veronica chamaedrys</i>	GS2,WS1
Gorse	<i>Ulex europaeus</i>	WS1,WS2
Grey Willow	<i>Salix cinerea</i>	WS2
Hawthorn	<i>Crataegus monogyna</i>	WS2
Meadow Buttercup	<i>Ranunculus acris</i>	GS2,GA2
Oil-seed Rape	<i>Brassica napus var.oleifera</i>	GS2,GA2
Osier	<i>Salix viminalis</i>	WS1,WS2,WL2
Ribwort Plantain	<i>Plantago lanceolata</i>	GS2,WS1,GA2
Silverweed	<i>Potentilla anserina</i>	GS2,WS1
Sycamore	<i>Acer pseudoplatanus</i>	WS2,WL2
Thistle Sp.	<i>Centaurea sp</i>	GS2,WS1
White Poplar	<i>Populus alba</i>	WS1
Wild Carrot	<i>Daucus carota</i>	GS2,WS1
Winter Heliotrope	<i>Petasites fragrans</i>	GS2,WS1
Broad-leaved Dock	<i>Rumex obtusifolius</i>	GS2
Cocksfoot	<i>Dactylis glomerata</i>	GS2
Field or Hedge Bindweed**	<i>Convolvulus arvensis or Calystegia sepium</i>	GS2,WS1
Smooth Sow Thistle	<i>Sonchus oleraceus</i>	GS2
Red Clover	<i>Trifolium pratense</i>	GS2
Perennial Rye Grass	<i>Lolium perenne</i>	GS2
Lesser Trefoil	<i>Trifolium dubium</i>	GS2
Hoary Plantain	<i>Plantago media</i>	GS2
Sun Spurge	<i>Euphorbia helioscopia</i>	GS2
Self Heal	<i>Prunella vulgaris</i>	GS2
Red Dead Nettle	<i>Lamium purpureum</i>	GS2
Soft Rush	<i>Juncus effusus</i>	GS2
Yorkshire Fog	<i>Holcus lanatus</i>	GS2
Bush Vetch	<i>Vicia sepium</i>	GS2
Cleavers	<i>Galium aparine</i>	GS2
Red Bartsia	<i>Odontites vernus</i>	GS2

*Habitat code is identified in Table 8 above

**was unable to distinguish due to time of year

Table 10 Maximum numbers of birds recorded during the two site visits

Common Name	Scientific Name	0 - 25 m	25 - 50 m	Flying
Blackbird	<i>Turdus merula</i>	3	1	0
Blue Tit	<i>Parus caeruleus</i>	1	2	0
Chaffinch	<i>Fringilla coelebs</i>	1	0	0
Coal Tit	<i>Parus ater</i>	1	2	0
Ferel Pigeon	<i>Columba livia</i>	0	0	1
Goldcrest	<i>Regulus regulus</i>	4	3	0
Greenfinch	<i>Carduelis chloris</i>	2	0	0
Magpie	<i>Pica pica</i>	2	0	0
Robin	<i>Erithacus rubecula</i>	1	1	0
Rook	<i>Corvus frugilegus</i>	0	0	3
Woodpigeon	<i>Columba palumbus</i>	3	0	0
Wren	<i>Troglodytes troglodytes</i>	2	1	0
No. of Species		10	6	1

Potential Impacts of Proposed Development

The potential impacts of the proposed development will be similar during the construction and operational phase of this project as much of the habitat loss will be permanent. Disturbance to fauna will be higher in the construction phase of the project however.

Potential impacts on Habitats and Botanical Species

The habitats on the site are not of high ecological value and the botanical species recorded are not rare or protected. The natural progression of the habitats on the site in the absence of the development would likely be an increase in scrub cover and maturation of trees on the site. The site is largely dominated by grassland habitats which are managed and it is therefore unlikely that the ecological value of the site would increase significantly over time.

The proposed development will result in significant habitat loss, as much of the site will be covered by a hardstanding area and buildings. There is scope however for the retention of some scrub habitat in the north and west of the site and this should be retained where possible. The loss of any trees on the site can be compensated for by the planting of a tree line or hedgerow along the site boundary. This tree line/hedgerow will comprise a range of native tree species.

The Tramore River is located approximately 85 m from the site, therefore it is considered unlikely that there will be any impacts on this river from increased run-off during construction of the proposed development. Mitigation measures will ensure that there are no impacts on this River.

Potential impacts on Fauna

No mammals were recorded on the site and the bird species assemblage was not diverse, consisting of a small number of common resident species. The habitats present on the site are not of high importance for wildlife and it is unlikely that the proposed development will have significant impacts on the local fauna populations.

Furthermore, the habitats adjacent to the site in the vicinity of Tramore River are of higher value to wildlife than those which occur on the site.

Overall Impact Significance

As mentioned above, this site has been given a Rating of E – low value, locally important, using the NRA (2006) guidelines for site evaluation (Attachment I.7.1). The proposed development will have a permanent impact on a large part of the site. Therefore, using the NRA (2006) recommended criteria for assessing impact significance; the proposed development will have a Minor Negative impact on the site.

Conclusions for Ecology

The area of the proposed development is not of conservation concern. Furthermore there are no nearby designated sites. The habitats and flora found on the site are of low ecological value and much of the species diversity can be maintained by retaining a certain amount of existing vegetation and planting native tree species along the site boundary. No mammals or birds of conservation concern were observed on the site. With the careful application of the mitigation measures, there will be no significant impacts on the local surrounding flora and fauna community as a result of the proposed development.

Mitigation Measures

1. Where possible, the destruction or removal of any mature vegetative cover will be conducted outside of the avian breeding season (March-August inclusive), as stipulated by the Wildlife Act 1976 and (amendment) 2000. This will reduce disturbance and/or displacement impacts of the development on breeding bird species.
2. No disturbance to habitats or flora outside the site boundary and approved access tracks will be used. This will minimise the impact of habitat loss and deterioration on the local surrounding wildlife.
3. Waste and refuse generated at the site, particularly during construction, will be stored in appropriate containers.
4. Where possible, buffer zones of at least 10 m width will be established between aquatic zones and construction works. This is easily achieved by this particular development as the nearest aquatic zone is approximately 85 m from the site boundary.

Residual Impacts

With the application of the above mitigation measures, along with controls measures described in Attachment D & Attachment I for surface water and leachate management, there will be no significant residual impacts of this development.

Attachment I.7.1

NRA (2006) recommended site evaluation scheme.

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Site Rating	Qualifying Criteria
A	<p>Internationally important Sites designated (or qualifying for designation) as SAC* or SPA* under the EU Habitats or Birds Directives. Undesignated sites containing good examples of Annex I priority habitats under the EU Habitats Directive. Major salmon river fisheries. Major salmonid (salmon, trout or char) lake fisheries.</p>
B	<p>Nationally important Sites or waters designated or proposed as an NHA* or statutory Nature Reserves. Undesignated sites containing good examples of Annex I habitats (under EU Habitats Directive). Undesignated sites containing significant numbers of resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive or species protected under the Wildlife (Amendment) Act 2000. Major trout river fisheries. Water bodies with major amenity fishery value. Commercially important coarse fisheries.</p>
C	<p>High value, locally important Sites containing semi-natural habitat types with high biodiversity in a local context and a high degree of naturalness, or significant populations of locally rare species. Small water bodies with known salmonid populations or with good potential salmonid habitat. Sites containing any resident or regularly occurring populations of Annex II species under the EU Habitats Directive or Annex I species under the EU Birds Directive. Large water bodies with some coarse fisheries value.</p>
D	<p>Moderate value, locally important Sites containing some semi-natural habitat or locally important for wildlife. Small water bodies with some coarse fisheries value or some potential salmonid habitat. Any water body with unpolluted water (Q-value rating 4-5).</p>
E	<p>Low value, locally important Artificial or highly modified habitats with low species diversity and low wildlife value. Water bodies with no current fisheries value and no significant potential fisheries value.</p>

ATTACHMENT J - ACCIDENT PREVENTION AND EMERGENCY RESPONSE

Attachment J.1 – Accident Prevention and Emergency Response

It is not anticipated that the operation of the waste transfer station will present any danger to the public. Access to the site will be restricted to employees, hauliers and pre-arranged visitors. All visitors, once on site, will be accompanied by a member of staff at all times. Procedures are in place to ensure the health and safety of all persons entering the site.

Staff will be present onsite at all times during opening hours to supervise and carry out operations and to deal with any emergencies. Key staff will be on-call to respond to any emergency situation outside of normal working hours e.g. night-time, weekends and Public Holidays.

An emergency response procedure has been prepared and implemented at the existing facility to prevent accidents and minimise any effects on the environment from accidental emissions or emergency situations, including:

- Activation of Office Fire or Gas Alarms
- Procedure for Dealing with Hot or Burning Loads
- Procedure for Dealing with Fires and Explosions on Site
- Procedure for Dealing with Flooding
- Procedure for Dealing with Uncontained Spillage / Leakage
- Procedure for Dealing with a Notifiable Injury
- Procedure for Dealing with a Landfill Gas Emergency
- Procedure for Dealing with Power Failure

A copy of this procedure is included in Attachment J.1.1. This emergency response procedure will be updated in accordance with the new revised waste licence to incorporate the operation of the proposed waste transfer station.

Cork City Council has Public Liability Insurance that covers environmental impairment due to the facility. A copy of this insurance certificate is included in Attachment J.1.2.

Attachment J.1.1

Copy of Emergency Response Procedure

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EMERGENCY RESPONSE PROCEDURE
FOR
KINSALE ROAD LANDFILL SITE

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August 2007

EMERGENCY RESPONSE PROCEDURE
FOR
KINSALE ROAD LANDFILL SITE

Prepared for:-

Cork City Council,
City Hall,
Cork.

Prepared by:-

Fehily Timoney & Co.,
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User is Responsible for the Revision Status of this Document

Rev. Nr.	Description of Changes:	Prepared by:	Checked by:	Approved by:	Date:	No. of Copies:
0	Issue to Client	DE			02/08/00	
1			KR	KR	June 06	4
2		KR	KR	JT	Aug 07	4

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1.0 Scope / Objective

Condition 9.2 of Waste Licence No. 12-2 granted to Cork City Council for the Kinsale Road Landfill site by the Environmental Protection Agency (EPA) requires the Council to prepare an Emergency Response Procedure (ERP). This Emergency Response Procedure (ERP) will apply to Kinsale Road Sanitary Landfill Site and describes the actions to be taken in the event of a site emergency.

The purpose of this procedure is to propose appropriate actions to ensure health and safety risks to employees and visitors, and damage to property and the environment is minimised.

2.0 Responsibility

This document describes the ERP for the Kinsale Road landfill site. The ERP will be maintained at the landfill site by the Facility Manager. He will be responsible for the implementation of this procedure.

The Landfill Technician, Weighbridge Operator and all Cork City Council employees will be responsible for following this procedure.

Changes to the ERP will not be made without written approval from the Agency.

A revision history table is given in Appendix 1 of this document.

3.0 Definition

An emergency is defined as an unforeseen or sudden occurrence demanding immediate action.

4.0 Circulation List

The ERP is distributed to those named below and is available for reference from the Facility Manager whose copy will be maintained at the site office. In order to maintain control of the procedures within the revision process, the ERP should not be copied without permission from Mr. Michael O'Brien, Senior Engineer. Persons using this document are responsible to ensure that they are using the most up to date version.

Name	Position
Dr. Brian Donlon	Senior Inspector, EPA
Mr. Michael O'Brien	Senior Engineer
Mr. John Twomey	Facility Manager

5.0 References

The following forms are referenced in this document:

- Emergency Report Form SF 04 (Appendix 3)
- Site Incident Log (Appendix 4)

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6.0 Procedures

6.1 Emergency Response Procedures

1. Emergencies can be :
 - activation of site office fire or gas alarm
 - discovery of a fire within the site boundary
 - landfill gas detected exceeding safe operating levels within the site boundary or outside the site
 - explosions
 - flooding
 - uncontained spillage / leakage
 - major injury or dangerous occurrence
 - unable to accept/landfill waste
2. In the event of an emergency all employees should react promptly and calmly, following the guidelines outlined in this document.

6.2 Activation of Office Fire or Gas Alarms

1. The site's offices are fitted with fire and gas detection systems. These sound alarms if either smoke or gas above pre-set levels, is detected in the site offices.
2. On hearing an alarm all personnel must evacuate the offices, closing all windows and doors behind them, if practical.
3. All personnel should proceed to the assembly point in the visitors car park where employees, site visitors and site contractors will be accounted for (the site visitors book and contractors sheets should be checked if accessible).
4. The emergency services should be notified immediately by dialling 999 if it is suspected a fire has broken out or if the fire alarm sounds. Personnel should only tackle a fire if safe to do so and if they have been trained in the use of a fire extinguisher.
5. If the alarm is legitimate, the Facility Manager should be notified as soon as is practicable.

6.3 Procedure for Dealing with Hot or Burning Loads

1. If on inspection a load is found to be hot or burning it should be refused admission to the site.
2. Details of the load (name, registration number, type of load, site of origin) should be recorded in the appropriate register retained in the site office.
3. If the load has entered the site, prior to disposition, it should be directed to the Quarantine area, away from the filling area to a location where the material can be extinguished. These loads must never be located close to areas of the site which are lined in case of heat damage to the liner.
4. If the load has been deposited it should be spread in a controlled manner and covered with inert material. This should always be carried out by working from the edges of the load inwards toward the centre. Machines must never be driven through the burning material.

Refer to 6.4 for dealing with fires.

6.4 Procedure for Dealing with Fires and Explosions on Site

The EPA should be notified of all fires and explosions on site.

1. Procedure for Dealing with Fires

The Facility Manager or deputy should be informed immediately. A fire on the surface of the waste, or within the waste, should, if it is safe to do so, be tackled as follows:

- a) Using available mobile plant, (bucket or blade), the fire should be smothered with inert material working from the outside edge of the fire towards the centre.
- b) Under no circumstances should a machine be driven into the centre of the fire as this will endanger both driver and machine.
- c) If the fire is not completely extinguished and continues to burn below the surface, then the burning material should be isolated by digging out and spreading on top of inert material, after which it should again be smothered.
- d) In certain circumstances it may be necessary to call the emergency services.

- e) A careful watch should be kept to ensure that all burning material has been fully and permanently extinguished.
- f) Access to the immediate waste area should be restricted. Under no circumstances should further waste be deposited until authorised by the Facility Manager.
- g) The EPA should be informed of the incident in accordance with Condition 9 of the Licence.

2. Procedure for Dealing with Explosions

- a) Ensure all personnel and site visitors are accounted for.
- b) Check site for signs of fires resulting from the explosion. If identified follow the procedure in Section 1 above.
- c) If the explosion results in personal injury the emergency services should be called by the Facility Manager or his appointed deputy in his absence. In the event of a fire refer to Section 1 above. In addition, the EPA should be notified as soon as is practicable.
- d) Access to the immediate area should be restricted. Under no circumstances should further waste be deposited until authorised by the Facility Manager.
- e) Every effort should be made after (d) above to identify the cause and source of the explosion.
- f) The EPA should be informed as per Condition 9 of the Licence.

6.5 Procedure for Dealing with Flooding

1. Immediately report the occurrence to the Facility Manager or in his absence, his appointed deputy.
2. Every effort must be made to prevent the flood :
 - causing pollution to the nearby watercourses (Tramore River and the Trabeg River).
 - leaving the site's boundary and entering neighbouring land
 - entering the working cell / any cell containing waste,
 - entering gas / leachate wells
3. Barriers to contain the flood should be constructed using machinery and inert cohesive material. The mobile pump on site may be utilised as required, however due consideration should be given to the siting of the outflow and any potential problems which could arise. Care should be taken

to ensure any contaminated water is contained. Any escape of such water into surrounding ground or surface waters should be prevented.

4. If efforts to contain the flood fail, the fire brigade should be called for assistance.
5. As soon as is practicable after the emergency the EPA will be notified.
6. The incident will be reported on the Site's Incident Log and Emergency Report Form SF 04.

6.6 Procedure for Dealing with Uncontained Spillage / Leakage

1. Immediately report the occurrence to the Facility Manager or in his absence, his appointed deputy.
2. Priorities in this incidence remain the same as those listed in Section 6.5 Step 2 (Dealing with Floods). The spill / leak should be contained and the material recovered (if possible) by the most appropriate means available (plant, inert material etc.).
3. Access to the immediate area should be restricted, if necessary.
4. The EPA should be notified as soon as is practicable.
5. Having carried out all practicable actions the EPA should be consulted to agree any further action which may be required.
6. The incident will be reported to the Site's Incident Log and Emergency Report Form.

6.7 Procedure for Dealing with a Notifiable Injury

1. Immediately report the incident to the Facility Manager or in his absence, his appointed deputy. If required, the emergency services should also be notified as soon as is practicable.
2. The immediate area should be kept clear to provide access for the emergency services.
3. Record all injuries in the accident book and note as much information about the accident as possible.
4. Report the incident to the Health and Safety Officer as soon as is practicable.

5. If practicable the area in which the incident took place should remain undisturbed until any investigations into the circumstances are complete.
6. The incident will be reported on the Site's Incident Log and Emergency Report Form SF 04.

6.8 Procedure for Dealing with a Landfill Gas Emergency

The following procedure is drawn up in accordance with the guidelines outlined in Operational Procedure 18.

Areas which may be affected by migrating gas include :

The Landfill Site Offices

Surrounding Housing Estates and Industrial Units

Plan 1 should be followed for buildings situated on or immediately adjacent to the landfill.

Plan 2 should be followed for the remaining identified risk areas.

Plan 1

1. All rooms are currently monitored for the presence of methane and carbon dioxide.
2. If concentrations of methane and carbon dioxide in any room exceed 2500ppm and 5000ppm respectively, the building shall be ventilated and monitored until it can be demonstrated that concentrations remain below these levels.
3. If concentrations of methane and carbon dioxide in any room exceed 10000ppm (20% LEL) and 1.5% respectively the building shall be evacuated immediately and ventilated.
4. If safe to do so wearing the appropriate Personal Protective Equipment (PPE) the building should be re-entered and gas samples taken to establish the source of the gas.

Plan 2

1. Should routine gas monitoring indicate a potential hazard or should an emergency call be received, Plan 1 (given above) should be implemented.

2. Inform Bord Gais, the EPA, local Garda and contractors on site.
3. Notify the Health and Safety Authority within 7 days whenever the following concentrations are found and are attributable to landfill gas ;
 - methane and carbon dioxide at concentrations in excess of 1.0% v/v and 1.5% v/v respectively.

6.9 Procedure for Dealing with Power Failure

The following areas will be affected in the event of power failure:

- a) Waste Acceptance
- b) Wheel-wash unit
- c) Civic Amenity Site
- d) Leachate collection system
- e) Landfill Gas collection system

(a) *Waste Acceptance*

- 1 If a power failure occurs, the standby generator at the weighbridge will automatically kick in.
- 2 The generator will provide enough power for lighting within the weighbridge hut and to run the weighbridge computer. To this end the facility can continue to accept waste for disposal during a power outage.

(b) *Wheel-wash unit*

- 1 The wheel-wash unit will not work during a power outage. However if a waste collection vehicle requires a wash down the portable power washer, equipped with generator can be used.

(c) *Civic Amenity Site*

- 1 A power outage will result in a loss of function of the automatic barriers at the Civic Amenity Site.
- 2 A manual override exists for each of the barriers.
- 3 During a power outage the barriers will be manually raised and shall remain in the up-position.
- 4 A General Operative will issue tickets for each recycling / waste transaction.

(d) *Leachate Collection System*

- 1 All electrical equipment relating to the leachate collection system (pumps, monitors, flow meters etc.) will cease to operate during a power outage.
- 2 Leachate will continue to drain via gravity to the perimeter collection trench.
- 3 The leachate collection trench has a capacity of 22500m³ and can cope with leachate draining in it for several days (weather dependent).
- 4 In the event of a power outage of more than several days or in the case of the collection trench overflowing; the leachate can be (a) tankered off site, (a) pumped to across the river to the Tramore Valley Sewer (using generator & portable pump). Access to the sewer can be gained via the inspection chamber on the west side of the Tramore river (within the site boundary).

(e) **Landfill Gas Collection System**

- 1 All plant relating to the landfill gas collection system (pumps, monitors, flow meters etc.) will cease to operate during a power outage.
- 2 However due to the fact that Bioverda (formerly Irish Power systems) are a supplier to the mains grid connection their plant at the Kinsale Road Landfill Site will get first call on repairs.

7.0 Unable to Accept or Landfill Waste

The inability to accept or landfill waste may be caused by one of the following:-

- Mechanical failure
- Power failure
- Industrial disputes
- Fire
- Adverse weather conditions
- Traffic
- The facility not licensed to accept a particular waste

In the event of a mechanical breakdown of plant at the site the Facility Manager will make arrangements for the prompt repair of the machine. If the repair work will be prolonged then the Manager will make arrangements for replacement equipment.

If due to an industrial dispute or a prolonged down-time is anticipated by the Landfill Manager, then notification will be given to the following personnel that waste is to be diverted:-

- Cork City Council – Senior Engineer
- All waste carriers transporting waste to the Kinsale Road Landfill site.

- The Environmental Protection Agency
- The Facility Manager at an alternative Cork County Council landfill site.

A list of contact telephone numbers are given in Appendix 2 of this document.

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8.0 Records

All forms in Section 5 will be retained.

9.0 Review

The Facility Manager will review the cause of the emergency and will put appropriate measures in place to prevent the reoccurrence of such an emergency.

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Appendix 1
Revision History

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Appendix 2
Emergency Contact Numbers

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Emergency Telephone List

	Contact Name	Telephone No.
Cork City Council Offices	During Working Hours	021 4966222
	Non-Working Hours	021 4966512
Senior Engineer Environment	Michael O'Brien	086 2549420
Facility Manager	John Twomey	086 1706878
Deputy Facility Manager	Kevin Ryan	086 8152765
Landfill Technicians	Cathy Healy	086 6079113
	Pat Foley	086 8152353
	Fiona O'Connor	086 3883664
Junior Foreman	Mick Reck	086 8597721
Irish Power	Rob Bateman	087 2323750
Environmental Protection Agency	Dr. Brian Donlon	021 4875540
Environmental Protection Agency	Siobhán McDonnell	021 487 5540
Emergency Services		999/112
Residents Association	Alan Casey (Greenhills Estate)	021 4891505 (Home) 021 4864890 (Work)
Health & Safety Authority		1890 289389
Waste Contractors		
Greenstar	Paul Kelly	087 2474193
Onyx	Michael Walsh	086 2460687
Rohu Waste Broker	Fred Rohu	087 2240132
Veolia Waste Services	Gavin Douglas	086 8102002

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Appendix 3
Emergency Report Form

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EMERGENCY REPORT FORM SF/04

1. Nature of Emergency
2. Place of Occurrence
3. Date / Time of Occurrence
4. Cause of Emergency
5. Details of any injury or damage caused
6. Response action initiated
7. To whom emergency reported
8. Corrective action taken
9. Recommendations for preventative action
10. Date for completion of preventative action

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Report Completed By : Name : _____
Signature : _____
Date : _____

Appendix 4
Location Incident Log

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LOCATION INCIDENT LOG

Date : _____

Time	Incident	Reported By	Action	LEM Initials

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Appendix 5
Fire Drill Report Form

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SF 29 Fire Drill Report Form:

Fire Drills shall be carried out at least once a year:

Location: Kinsale Road Landfill Site

Assembly Point: Green Area between the Weighbridge Hut & Site Offices

Date of Fire Drill	
Time of Fire Drill	

The Following Areas Have Been Evacuated:

	YES	NO
Offices	<input type="checkbox"/>	<input type="checkbox"/>
Lab	<input type="checkbox"/>	<input type="checkbox"/>
Bird Control Hut	<input type="checkbox"/>	<input type="checkbox"/>
Storage Huts Adjacent to the Offices	<input type="checkbox"/>	<input type="checkbox"/>

Number of People Evacuated:	
Names:	

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YES NO

All Rooms Have Been Evacuated By Fire Marshall:

Incidents to Report:	
Details / Changes Recommended	
Fire Drill End Time:	

Signed: _____ Date: _____

Attachment J.1.2

Public Liability Insurance Certificate

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CERTIFICATE OF INSURANCE

Insured : Cork City Council

Insurers : Irish Public Bodies Mutual.

Renewal Date : 1st October 2009

Limit of Indemnity : Employers Liability
€ 13,000,000 any one event, inclusive of costs/expenses/unlimited any one period


Public Liability
€ 13,000,000 any one event/unlimited any one period.

Deductible : Substantial deductible applies each and every claim.

Cover : As per standard IPB policy wording, amended to apply to the Council.

Cover applies where legal liability attaches to Cork City Council for injury to employees/ injury to Third Parties/Third Party Property Damage arising out of the various activities the Council engage in, in their capacity as local authority.

The policy provides an indemnity to Principals clause.


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09/10/08
09 October 2008

ATTACHMENT K - REMEDIATION, DECOMMISSIONING, RESTORATION AND AFTERCARE

Attachment K.1 Cessation of Activity

It is anticipated that the facility will be operated indefinitely. However if the facility should close for some unforeseen reason all waste and all equipment will be removed from the facility. Waste would be removed to authorised facilities. Equipment would be recycled where possible. The building where waste activities occur would, (if permissible) remain and would likely be used again.

If a decision is taken to decommission the facility, the Agency will be notified at least six months in advance of the closure and an aftercare management plan will be prepared and submitted to the Agency within this time period.

Activities at the site are unlikely to result in either groundwater or land contamination as the entire site is made up of concrete hardstandings and there is no permanent storage of waste on site. The nature of activities that occur at the site will ensure that no remediation of the site will be necessary in the event of closure of the facility.

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ATTACHMENT L - STATUTORY REQUIREMENTS

Attachment L.1 – Statutory Requirements

The information submitted in the Waste Licence Application and its attachments, complies fully with Section 40 (4) [(a) to (i)] of the Waste Management Acts.

Best Available Technology (BAT) will be used throughout the development.

Attachment L.2 **Fit and Proper Person**

The applicant is a local authority and has not been convicted under the under the Waste Management Acts 1996 to 2003, the EPA Act 1992 and 2003, the Local Government (Water Pollution) Acts 1977 and 1990 or the Air Pollution Act 1987, therefore this section is not applicable.

In compliance with Condition 12.2 of the current waste licence (W0012-02), existing financial provisions for the restoration and aftercare of the landfill facility will continue. The proposed waste transfer station will not increase the overall liability of the facility; therefore additional financial provisions are not required for this development.

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