Waterman Moylan
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Preliminary Construction, Demolition and Waste Management Plan

Strategic Housing Development in Kilnahue, Gorey, Co. Wexford

March 2022

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This document has been prepared and checked in accordance with
Waterman Groupõs IMS (BS EN ISO 9001: 2015 and BS EN ISO 14001: 2015)

Issue	Date	Prepared by	Checked by	Approved by
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3	24 March 2022	Stephen Dent Neville	Darragh Aiken	Mark Duignan

Comments

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1. Introduction

1.1 Context

This Preliminary Construction, Demolition and Waste Management Plan has been prepared by Waterman Moylan as part of the documentation in support of a revised planning application for a proposed residential development at a site off Kilnahue Lane, Gorey, Co. Wexford.

An application was previously submitted for planning permission in June 2016 (Planning Reg. Ref. 20160623). This submission received a decision to approve for planning by Wexford County Council on 20 February 2017, but the application was subsequently refused by An Bord Pleanála on 18 July 2017 (Reference PL26.248159).

The reasons for refusal included inadequate provision of open amenity space in accordance with the Local Area Plan, insufficient residential density and uncertainty regarding road and junction upgrade works at the adjacent Kilnahue Lane and Carnew Road. The subject application addresses these reasons for refusal.

1.2 Proposed Development

The subject site is located at the west of Gorey, Co. Wexford, with access to the site from Gorey Hill and Carnew Road. The site is bounded by agricultural lands to the west, by Carnew Road (R725), residential properties and agricultural lands to the south and east, and by Gory Hill / Kilnahue Lane to the north. The site location is indicated in the Figure below:

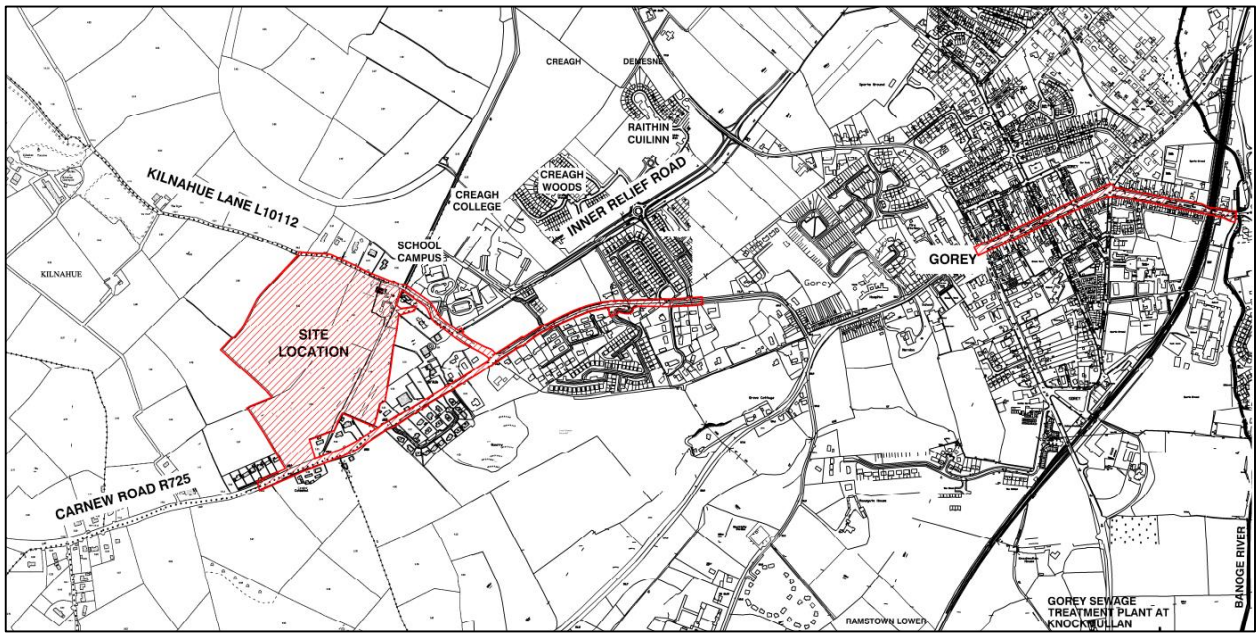


***Figure 1** | Site Location (Image Source: Google Maps)*

The proposed development consists of a total of 421 residential units, comprising of 133 houses, 228 apartment units and 60 duplex units, a crèche, two retail units and community rooms. The schedule of accommodation is set out in the Table below:

Description	1-Bed	2-Bed	3-Bed	4-Bed	Total
Houses	-	-	115	18	133
Apartments	76	145	7	-	228
Duplexes	4	26	30	-	60
Crèche	565m²				-
Retail	210m²				-
Total	**80**	**171**	**152**	**18**	**421**

Table 1 | *Schedule of Accommodation*

1.3 Background of Report

This document was set up to be a ôliving documentô which would be updated and implemented by the Developer and Main Contractor as the project progresses.

This Preliminary Construction, Demolition and Waste Management Plan sets out typical arrangements and measures which may be undertaken during the construction phase of the project in order to mitigate and minimise disruption/disturbance to the area around the site. The purpose of this report is to summarise the possible impacts and measures to be implemented and to guide the Main Contractor who will be required to develop and implement the Preliminary Construction, Demolition and Waste Management Plan on site during the course of the construction period.

As is normal practice, the Main Contractor for the project is responsible for the method in which the construction works are carried out and to ensure that best practices and all legal obligations including Local Authority requirements and Health and Safety legislation are complied with. The Main Contractor is also responsible for the design and installation of all temporary works required to complete the permanent works. The plan can be used by the Main Contractor to develop their final Construction, Demolition and Waste Management Plan. The Applicant reserves the right to deviate from the contents of this Report as the construction of the development progresses on site. Any such deviation from this report, however, shall still comply with all relevant Local Authority requirements and legislation.

2. The Site and the Surrounding Environs

2.1 Site Description

The subject site was previously used for agricultural purposes. The proposed development is located approximately 1.2km west of Gorey Town Centre. The development lands are bounded by Carnew Road to the south and Kilnahue Lane to the north.

The site slopes generally from west to east, from a high point of approximately 133m OD Malin to a low of approximately 102m OD Malin over c. 420m.

The site falls within the catchment area of the Banoge River, approximately 2.1km to the east of the proposed development. There is a ditch at approximately 97.50m OD Malin to the east of the site, which drains to an existing drainage channel located along Kilnahue Lane. Approximately 100m short of the Kilnahue Lane/Carnew Road junction, the channel turns to run parallel to Carnew Road collecting the runoff from the surrounding greenfield lands, subsequently running parallel to Pearsonôs Brook Road and ultimately discharging to the Banoge River.

Another roadside ditch is located along Carnew Road, falling eastwards. West of the subject site the ditch runs along the southern side of Carnew Road, crossing to the northern side of Carnew Road approximately 60m west of the site entrance. Runoff from the subject site currently drains to the existing drainage channel to the north-east of the site along Kilnahue Lane rather than to the ditch along Carnew Road.

2.2 Proposed Development

The proposed development consists of a total of 421 residential units, comprising of 133 houses, 228 apartment units and 60 duplex units, a crèche, two retail units and community rooms, as set out in Table 1 above. The development includes access from the Carnew Road and Kilnahue Lane/Goreyhill.

The development includes all associated site works and infrastructure which includes landscaped open space, internal roads, paths, cycle-paths, public lighting, utilities, foul and surface water drainage.

3. General Site Set-Up and Pre-Commencement Measures

The following measures will be carried out by the Main Contractor:

- A general condition survey of the roads and infrastructure in the area prior to any work being carried out on the site.
- A site compound including offices and welfare facilities will be set up by the Main Contractor.
- Prior to any site works commencing, the Main Contractor will investigate/identify the exact location of and tag all existing services and utilities around and through the site with the assistance of the relevant Wexford County Council technical divisions and utility companies.
- Subject to confirmation by the Planning Authority, typical working hours for the site will be 08:00 to 18:30 Monday to Friday and 08:00 to 14:00 on Saturdays. No Sunday work is generally permitted. These working hours are typical, however, special construction operations may need to be carried out outside these hours in order to minimise disruption to the surrounding area, which will be subject to agreement with the Planning Authority.
- Hoarding lines and site security will be set up within the development site as required. Hoarding and security fencing will be required at access to the public road network.
- Fencing will be set up in order to keep construction activity separated from the existing bodies of water.
- Access gates will be provided at all site and compound access points. The main construction access is intended to be from a site entrance located along Carnew Road.

Refer also to Section 10 of the Traffic Management Plan, included with this application, which addresses construction traffic.

4. Construction and Demolition Waste Management

This Preliminary Construction, Demolition and Waste Management guideline will be incorporated into the requirements for the Main Contractor and the Plan will be developed by the Main Contractor as the construction progresses.

4.1 Policy and Legislation

The principles and objectives to deliver sustainable waste management for this project have been incorporated in the preparation of this report and are based on the following strategic objectives:

- National Policy: The Waste Management Acts 1996 to 2005
- Local Policy: Waste Management Plan for the Dublin Region 2005 ï 2010, November 2005.

This Waste Management Plan is also in accordance with the following guidance note published by the Department of the Environment, Heritage and Local Government in July 2006:

- Best Practice Guidelines on the Preparation of Waste Management Plans for Construction and Demolition (C&D) Projects.

The hierarchy of waste management sets out the guiding principles in order of importance as follows:

1. Reduction of the amount of waste generated by the construction process.
2. Segregation of waste is a key concept that will be implemented during the course of the construction phase of the development to enable ease in re-use and recycling, wherever appropriate.
3. Recycle waste material where feasible, including the use of excess excavations as fill material, recycling of various waste fractions such as metals and packaging etc.

4.2 Typical Construction Waste

Typical construction waste which will be generated by the development is as follows:

- General site clearance waste including tree stumps etc.
- Some of the excavated material may require to be disposed of in a licensed landfill, if elevated levels of contamination are identified in the site investigation.
- Surface water runoff.
- Packaging and waste construction materials generated during the course of the construction activities.

4.3 On-Site Construction Waste Management

It is estimated that all cut and fill operations and any other excavation will be balanced in terms of quantities. Therefore, it is envisaged that no significant amounts of excavated materials shall be disposed of off-site.

All waste masonry will be stored and crushed on site and used for site haul roads in later stages of the project.

Skips will be provided for the disposal of wood from the site. It is envisaged that the majority of the wood for disposal will come from pallets used for the transport of construction materials.

Other non-hazardous waste generated by the site (packaging and running of site offices) will be collected in separate roll-on skips.

Any hazardous material encountered will be disposed of to a suitably licence tip.

The Purchasing Manager shall ensure that materials are ordered so that the quantity delivered, the timing of the delivery and the storage is not conducive to the creation of unnecessary waste.

C & D Waste Material	Quantity (tonnes)
Clay and stones	*Minimal quantities anticipated. All arisings will be used as fill and landscaping on the site.*
Concrete	*Arisings will be crushed and used as site haul roads (a concrete crushing permit will be required if crushing is to occur).*
Masonry	*All arisings will be crushed and used as site haul roads.*
Wood	*To be Completed by C&D Waste Manager*
Packaging & Other Waste Materials	*To be Completed by C&D Waste Manager*
Hazardous Materials	*To be advised by pre-commencement survey*
Total Arisings Off Site	*To be Completed by C&D Waste Manager*

***Table 2** | Estimated C&D Waste Arisings on Site*

4.4 Off-Site Waste Management Licensing/Permitting

All waste materials (where necessary, after in-situ reuse and recycling options have been fully considered) shall be disposed of off-site, under the appropriate Duty of Care and subject to approvals/consents from the relevant statutory bodies. It is the responsibility of the Main Contractor to ensure that any company to whom waste is transferred is legally permitted to do so and that the facility they bring the waste to is licensed to handle that type of waste as outlined in the Waste Management Acts 1996-2005. The Waste Collection Permit Register, in accordance with the Waste Management (Collection Permit) Regulations 2001 will be consulted to ensure that waste carriers hold the appropriate permit.

The relevant waste collection permits and waste licences shall be provided by the Main Contractor and shall be appended to this report.

An inspection of the site shall be made by the Main Contractor for hazardous substances, gas cylinders and the like. If such substances are encountered during the course of construction, then works must be halted. The project supervisor for construction stage (PSCS) and the responsible Statutory Authority shall be informed immediately.

The Main Contractor shall prepare a detailed inventory of construction based hazardous waste generated, such as tars, adhesives, sealants and other dangerous substances, and these will be kept segregated from other non-hazardous waste to prevent possible contamination. Arrangements shall be made for such substances for disposal in a safe manner to an authorized disposal site or by means acceptable to the relevant Authority.

The Main Contractor will ensure that excavation works are carried out in accordance with best standard practice and excavation materials are well segregated to minimize any potential cross-contamination.

The Main Contractor shall carry out appropriate environmental chemistry testing in order to determine the waste classification of the soils that are to be excavated and that shall include Waste Acceptance Criteria testing. The test regime shall be agreed with the receiving landfill operator and the testing shall be carried out by an accredited laboratory.

Site investigations carried out at the site, and included a waste classification report. All eight of the samples taken and tested were determined to be non-hazardous ï refer to the Site Investigation Report included in Appendix A. Although no hazardous waste was identified, it cannot be discounted that any localised contamination may have been missed. Should excavation materials be assessed to be hazardous, the Main Contractor shall carry out pre-treatment of the waste soils to a methodology that is agreed with the receiving landfill operator and in accordance with Environmental Protection Agency guidance.

The Main Contractor is encouraged to reuse and recycle any waste materials as far as is reasonably practicable.

In respect of any liquid disposal including underground water, the Main Contractor shall carry out appropriate environmental chemistry testing in order to determine whether the liquid is contaminated or not. The test regime shall be agreed with the receiving disposal facility and the testing shall be carried out by an accredited laboratory.

The Main Contractor shall manage and carry out the works in accordance with best environmental practice and in accordance with the requirements of Local Authority, EPA and all requirements as specified in this document.

4.5 Appointment of C&D Waste Manager

The Main Contractor shall appoint a C&D Waste Manager. The C&D Waste Manager will have overall responsibility for the implementation of the project Waste Management Plan (WMP) during the construction phase.

Copies of the Waste Management Plan will be made available to all relevant personnel on site. All site personnel and sub-contractors will be instructed about the objectives of the Waste Management Plan and informed of the responsibilities which fall upon them as a consequence of its provisions. Where source segregation, selective demolition and material reuse techniques apply, each member of staff will be given instructions on how to comply with the Waste Management Plan. Posters will be designed to reinforce the key messages within the Waste Management Plan and will be displayed prominently for the benefit of site staff.

4.6 C&D Record Keeping

It is the duty of the C&D Waste Manager to ensure that necessary licenses have been obtained as needed. Each consignment of C&D waste taken from the site will be subject to documentation which will conform with Table 4 along with Transportation Dockets to ensure full traceability of the material to its final destination.

Detail	Particulars
Project of Origin	*Kilnahue, Gorey, Co. Wexford*
Material being Transported	*Soil, Construction waste*
Quantity of Material	*To be completed by C&D Waste Manager*
Date of Material Movement	*To be completed by C&D Waste Manager*
Name of Carrier	*To be completed by C&D Waste Manager*
Destination of Material	*To be completed by C&D Waste Manager*
Proposed Use	*To be completed by C&D Waste Manager*

***Table 3** | Details of materials taken from site*

4.7 Topsoil

In the case of topsoil careful planning and on-site storage can ensure that this resource is reused on-site as much as possible. Any surplus of soil not reused on site can be sold. However, topsoil is quite sensitive and can be rendered useless if not stored and cared for properly.

- It is important that topsoil is kept completely separate from all other construction waste as any cross-contamination of the topsoil can render it useless for reuse.
- It is important to ensure that topsoil is protected from all kinds of vehicle damage and kept away from site-track, delivery vehicle turning areas and site plant and vehicle storage areas.

If topsoil is stored in piles of greater than two metres in height the soil matrix (internal structure) can be damaged beyond repair. It should also be kept as dry as possible and used as soon as possible to reduce any deterioration through lengthy storage and excess moving around the site.

Records of topsoil storage, movements and transfer from site will be kept by the C&D Waste Manager.

4.8 Earthworks – Cut and Fill Policy

Earthworks for road and structure foundations form a major part of the quantity of waste that will be generated by the construction phase of this project. In order to optimise the impact of the generation of surplus material due to excavation the following principles shall be considered during the detail design and construction phase:

- The quantity of excavated materials to be removed from or imported in to the site has been reduced by establishing levels of the proposed buildings which optimise the volume of cut and fill. It is not envisaged that any surplus excavated material will result from this development and that all arisings from excavations will be retained and reused on site.
- Unsuitable sub-soils generated by excavations on site will be reviewed for reuse as landscaping or non-engineering fills on adjoining or other construction sites within the region, subject to licencing.
- Careful separation of builderôs rubble packaging and contaminated waste from re-usable material will result in the minimisation of the disposal of material to landfill.

5. Deliveries

It is intended that deliveries to the construction site will typically be made to one main access, from a site entrance located along the Carnew Road (R725).

Materials should be ordered and delivered to site on an ñas neededò basis in order to prevent over-supply to site. Deliveries will be managed upon arrival to the site and systems should be provided in order to avoid any queuing of delivery vehicles.

6. Parking and Storage

Parking will be provided on site. No on-street parking or parking in the local residential areas will be permitted.

The Main Contractor will be required to schedule delivery of materials strictly on a daily basis. As there are adequate storage facilities available on site it is not envisaged that there will be any necessity to provide a secure materials staging compound remote from the site, in which to temporarily store materials from suppliers, until such time as these can be accommodated on site.

7. Dust and Dirt Control

Nuisance dust emissions from construction activities are a common and well recognised problem. Fine particles from these sources are recognised as a potential significant cause of pollution.

The Main Contractor will be required to demonstrate that both nuisance dust and fine particle emissions from the site are adequately controlled and are within acceptable limits.

Dust and fine particle generation from construction and demolition activities on the site can be substantially reduced through carefully selected mitigation techniques and effective management. Once particles are airborne it is very difficult to prevent them from dispersing into the surrounding area. The most effective technique is to control dust at source and prevent it from becoming air borne, since suppression is virtually impossible once it has become air borne.

7.1 Mitigation Measures

The following are techniques and methods which are widely used currently throughout the construction industry to control dust and dirt emitting from the site, and which may be used at the Kilnahue development.

1. The roads around the site are all surfaced and no dust is anticipated arising from unsealed surfaces.
2. A regime of ówetôroad sweeping can be set up to ensure the roads around the immediate site are as clean and free from dirt / dust arising from the site, as is reasonably practicable. This cleaning will be carried out by approved mechanical sweepers.
3. Footpaths immediately around the site can be cleaned by hand regularly, with damping as necessary.
4. High level walkways and surfaces such as scaffolding can be cleaned regularly using safe ówetô methods, as opposed to dry methods.
5. Vehicle waiting areas or hard standings can be regularly inspected and kept clean by brushing or vacuum sweeping and will be regularly sprayed to keep moist, if necessary.
6. Vehicle and wheel washing facilities can be provided at site exit(s) where practicable. If necessary, vehicles can be washed down before exiting the site.
7. Netting can be provided to enclose scaffolding in order to mitigate escape of air borne dust from the existing and new buildings.
8. Vehicles and equipment shall not emit black smoke from exhaust system, except during ignition at start up.
9. Engines and exhaust systems should be maintained so that exhaust emissions do not breach stationary emission limits set for the vehicle / equipment type and mode of operation.
10. Servicing of vehicles and plant should be carried out regularly, rather than just following breakdowns.
11. Internal combustion plant should not be left running unnecessarily.
12. Where possible fixed plant such as generators should be located away from residential areas.
13. The number of handling operations for materials will be kept to a minimum in order to ensure that dusty material is not moved or handled unnecessarily.
14. The transport of dusty materials and aggregates should be carried out using covered / sheeted lorries.

15. Material handling areas should be clean, tidy and free from dust.
16. Vehicle loading should be dampened down and drop heights for material to be kept to a minimum.
17. Drop heights for chutes / skips should be kept to a minimum.
18. Dust dispersal over the site boundary should be minimised using static sprinklers or other watering methods as necessary.
19. Stockpiles of materials should be kept to a minimum and if necessary, they should be kept away from sensitive receptors such as residential areas etc.
20. Stockpiles, where necessary, should be sheeted or watered down.
21. Methods and equipment should be in place for immediate clean-up of spillages of dusty material.
22. No burning of materials will be permitted on site.
23. Earthworks excavations should be kept damp where necessary and where reasonably practicable.
24. Cutting on site should be avoided where possible by using pre-fabrication methods.
25. Equipment and techniques for cutting / grinding / drilling / sawing / sanding etc., which minimise dust emissions and which have the best available dust suppression measures, should be employed.
26. Where scabbling is to be employed, tools should be fitted with dust bags. Residual dust should be vacuumed up rather than swept away, and areas to be scabbled should be screened off.
27. Wet processes should be used to clean building facades if possible. If dry grit blasting is unavoidable then ensure areas of work are sealed off and dust extraction systems used.
28. Where possible pre-mixed plasters and masonry compounds should be used to minimise dust arising from on-site mixing.
29. Prior to commencement, the Main Contractor should identify the construction operations which are likely to generate dust and to draw up action plans to minimise emissions. Furthermore, the Main Contractor should prepare environmental risk assessments for all dust generating processes that are envisaged.
30. The Main Contractor should allocate suitably qualified personnel to be responsible for ensuring the generation of dust is minimised and effectively controlled.

8. Water

The excavations for the drainage pipes, water supply, utilities and foundations are anticipated as being relatively shallow and will have minimal impact on the ground water in the site.

Following completion of any required initial dewatering of excavations for the drainage pipes, water supply, utilities and foundations, it is expected that flows of water into the excavation will be relatively small. These flows will be managed by sump pumping on an as-required basis.

During any discharge of surface water from the excavations, the quality of the water will be regularly monitored visually for hydrocarbon sheen and suspended solids. Periodic laboratory testing of discharge water samples will be carried out in accordance with the requirements of the discharge licence obtained from the Local Authority.

9. Noise Assessment and Control Measures

9.1 Air Quality Monitoring and Noise Control Unit's Good Practice Guide for Construction and Demolition

Prior to the commencement of work on the site a construction and demolition plan must be developed. When developing the construction and demolition plan reference must be made to the requirements of the Air Quality Monitoring and Noise Control Unitôs Good Practice Guide for Construction and Demolition.

This Guide has been produced with reference to the London Good Practice Guide: Noise and Vibration Control for Demolition and Construction produced by the London Authorities Noise Action Forum, July 2016.

9.2 Environmental Noise Mitigation Measures

General Considerations:

1. All site staff shall be briefed on noise mitigation measures and the application of best practicable means to be employed to control noise.
2. Site hoarding should be erected to maximise the reduction in noise levels.
3. The contact details of the Main Contractor and site manager shall be displayed to the public, together with the permitted operating hours, including any special permissions given for out of hours work.
4. In the event that the Main Contractor gets a complaint about noise from a neighbour he will act immediately to remedy the situation.
5. The site entrance shall be located to minimise disturbance to noise sensitive receptors.
6. Internal haul routes shall be maintained, and steep gradients shall be avoided.
7. Material and plant loading and unloading shall only take place during normal working hours unless the requirement for extended hours is for traffic management (i.e. road closure) or health and safety reasons (application must be made to local council a minimum of 4 days prior to proposed works).
8. Use rubber linings in chutes, dumpers and hoppers to reduce impact noise.
9. Minimise opening and shutting of gates through good coordination of deliveries and vehicle movements.

Plant:

1. Ensure that each item of plant and equipment complies with the noise limits quoted in the relevant European Commission Directive 2000/14/EC.
2. Fit all plant and equipment with appropriate mufflers or silencers of the type recommended by the manufacturer.
3. Use all plant and equipment only for the tasks for which it has been designed.
4. Shut down all plant and equipment in intermittent use in the intervening periods between work or throttle down to a minimum.
5. Power all plant by mains electricity where possible rather than generators.
6. Maximise screening from existing features or structures and employ the use of partial or full enclosures for fixed plant.

7. Locate movable plant away from noise sensitive receptors where possible
8. All plant operators to be qualified in their specific piece of plant.
9. Compressors and generators will be sited in areas least likely to give rise to nuisance where practicable.

Vehicle activity:

1. Ensure all vehicle movement (on site) occur within normal working hours. (other than where extension of work requiring such movements has been granted in cases of required road closures or for health and safety reasons).
2. Plan deliveries and vehicle movements so that vehicles are not waiting or queuing on the public highway, if unavoidable engines should be turned off.
3. Plan the site layout to ensure that reversing is kept to a minimum.
4. Where reversing is required use broadband reverse sirens or where it is safe to do so disengage all sirens and use banks-men.
5. Rubber/neoprene or similar non-metal lining material matting to line the inside of material transportation vehicles to avoid first drop high noise levels.
6. Wheel washing of vehicles prior to exiting the site shall take place to ensure that adjoining roads are kept clean of dirt and debris. Regular washing of adjoining streets should also take place as required by road sweepers.

Demolition Phase:

1. Employ the use of acoustic screening; this can include planning the demolition sequence to utilise screening afforded by buildings to be demolished.
2. If working out of hours for Health and Safety reasons (following approval by council) limit demolition activities to low level noise activity (unless absolutely unavoidable).
3. Use low impact demolition methods such as non-percussive plant where practicable.
4. Use rotary drills and ôbursterséactivated by hydraulic or electrical power or chemically based expansion compounds to facilitate fragmentation and excavation of hard material.
5. Avoid the transfer of noise and vibration from demolition activities to adjoining occupied buildings through cutting any vibration transmission path or by structural separation of buildings.
6. Consider the removal of larger sections by lifting them out and breaking them down either in an area away from sensitive receptors or off site.

Ground Works and Piling Phase:

1. The following hierarchy of groundwork/piling methods should be used if ground conditions, design and safety allows;
    - Pressed in methods, e.g., hydraulic jacking
    - Auger/bored piling
    - Diaphragm walling
    - Vibratory piling or vibro-replacement
    - Driven Piling or dynamic consolidation
2. The location and layout of the piling plant should be designed to minimise potential noise impact of generators and motors.

3. Where impact piling is the only option utilise a non-metallic dolly between the hammer and driving helmet or enclose the hammer and helmet with an acoustic shroud.
4. Consider concrete pour sizes and pump locations. Plan the start of concrete pours as early as possible to avoid overruns.
5. Where obstructions are encountered, work should be stopped, and a review undertaken to ensure that work methods that minimise noise are used.
6. When using an auger piling rig do not dislodge material from the auger by rotating it back and forth. Use alternate methods where safe to do so.
7. Prepare pile caps using methods which minimise the use of breakers, e.g., use hydraulic splitters to crack the top of the pile.

Monitoring:

1. Carry out regular on site observation monitoring and checks/audits to ensure that BPM is being used at all times. Such checks shall include;
    - Hours of work
    - Presence of mitigation measures
    - Number and type of plant
    - Construction methods
2. In the event that the Main Contractor gets a complaint about noise from a neighbour he will act immediately to remedy the situation.
3. A sound level digital meter will be employed as necessary to monitor noise, with results recorded to inform the contractor of noise level.
4. Site reviews must be recorded and made available for inspection.
5. Appraise and review working methods, processes and procedures on a regular basis to ensure continuous development of BPM.

Communication and Liaison:

1. A Community Liaison Plan should be developed by the developer in consultation with local residents/businesses and a single point of contact nominated to engage with Wexford County Council and the residents/businesses and to handle complaints and communication of site information.
2. All site staff should be briefed on the complaints procedure and mitigation requirements and their responsibilities to register and escalate complaints received.

9.3 Risk Assessment & Mitigation

The Main Contractor shall deal with the immediate dangers to hearing etc. associated with high noise levels and the impact of same on construction operatives, by means of risk assessment and mitigation / precautionary measures and equipment, all pursuant to the current health and safety legislation.

Current legislation limits, assessment period of 8 hours of one week (noisiest 8 hours likely to experience):

- Lower Action Value (LAV) ï 80 dBA $L_{EX,8}$, 135 dB Peak ï Hearing Protection shall be made available and information shall be provided.
- Upper Action Value (UAV) ï 85 dBA $L_{EX,8}$, 137 dB Peak ï Use of Hearing Protection is mandatory, measures to eliminate the noise as much as possible shall be applied.

- Exposure Limit Value (ELV) ï 87 dBA $L_{EX,8}$, 140 dB Peak ï Not to be exceeded

Protection by ear plugs/muffs given by their Signal-to-Noise Ratio (SRN) or Noise Reduction Rating (NRR) is typically 20 ï 30 dB.

- Exposure = $L_{EX,8}$ ï (SNR - 10)

As a guide, if it is difficult to hear a normal conversation at a distance of 2m or a workplace is consistently noisier than a busy street, it is likely that the noise levels in the area are above 80 dBA.

9.4 Potential Noise Sources

It is not envisaged that any excessively noisy activities to be carried out over extended periods of time during the construction stage. However, due to the nature of the construction works, exposure to noise levels in excess of 80 dBA (Safe Working Limit) may occur occasionally. The Main Contractor will carry out a noise assessment in relation to the proposed works at construction stage. The noise assessment shall identify, but not limited to, the following steps in its analysis;-

1. Potentially Hazardous Activities: Use of site machinery and power tools. For example, concrete saws, angle grinders, vibratory plate compactors etc.
2. Potential Hazards: Excessive noise
3. Persons as Risk: People in the vicinity of the work generating an excessive noise. These persons include employees, contractors and members of the public.
4. Risk of Exposure to the Potential Hazard: Temporary or permanent hearing loss.
5. Risk Assessment before the Implementation of Control Measures: Medium
6. Risk Assessment after the Implementation of Control Measures: Low
7. Control Measures Implemented by: Site Manager / Works Supervisor

9.5 Mitigation Measures

The following control measures are to be implemented:-

1. Site Manager shall monitor a likelihood of prolonged exposure to excessive noise and commission noise surveying/monitoring programme where necessary.
2. Works Supervisor shall assess risk arising from noise prior to each particular activity taking place and determine appropriate action. The aim shall be to minimise the exposure to excessive noise levels.
    a. If it is likely that the noise exposure exceeds Lower Action Value then hearing protection must be made available.
    b. If it is likely that the noise exposure exceeds Upper Action Value then hearing protection is mandatory to be used. Work Supervisor shall decide on the most suitable hearing protection to be used based on Exposure (see formula above) and workerôs personal preference (earmuffs or earplugs).
3. Works Supervisor shall ensure proposed measures are put in place and that their effectiveness and suitability is evaluated on regular bases.
4. Site management shall minimise noise at work by looking for alternative processes and/or working methods, which would make the work quieter and/or exposure times shorter.

5. Site Manager shall liaise with all site contractors in order to effectively control noise exposure.
6. Number of people working near source of the noise shall be minimised.
7. Plant and machinery will be compliant with current legislation and fitted with silencers where possible.
8. Employees must use hearing protection where its use is made compulsory.
9. Hearing protection zones shall be identified where necessary.
10. Spot checks on appropriate use of hearing protection shall be carried out.
11. Operators of rock breaking machines and workers nearby must wear adequate ear protection.

9.6 Proper Use of Hearing Protection

- Earmuffs: Worker must make sure that they totally cover their ears, fit tightly and that there are no gaps around the seals. Hair, glasses, jewellery, hats etc. shall not interfere with the seal. Seals and insides of earmuffs shall be kept clean. Worker shall make sure that any headband keeps its tension.
- Earplugs: Workers shall make sure that they are wearing them properly. They shall practice fitting them and get help if they are having trouble. Hands shall be clean before fitting earplugs. Earplugs must not be shared with other workers.
- Semi-inserts/caps: Same applies as for earplugs. Worker shall make sure that any headband keeps its tension.

All workers are expected to:

- Co-operate: Help the Company to do what is needed to protect their hearing. Make sure that they use properly any noise control device and follow any working methods that are put in place.
- Wear any hearing protection they are given: Make sure that they are wearing it properly. They shall wear it all the time when they are exposed noisy environment (over UAV). Taking it off even for a short while means that the hearing could still be damaged.
- Look after their hearing protection.
- Report any problems: Report any problems with the hearing protection or effectiveness of the measures to the work supervisor.

10. Erosion and Sediment Control

10.1 Run-Off to Ditches

Significant quantities of waste and potential pollutants can be generated during construction. Controls must be put in place to prevent these pollutants from washing into the local storm water system.

Protection of the surface water draining to the Banoge River to the east of the site is paramount during the construction stage of the subject development. Temporary measures will be put in place to remove sediments, oils and pollutants.

The recommendations as outlined in the Eastern Regional Fisheries Board document outline the following seven items to be considered for the protection of adjacent water courses during the construction stage:

1. Fuels, oils, greases and hydraulic fluids must be stored in bunded compounds well away from the watercourse. Refuelling of machinery, etc., should be carried out in bunded areas.
2. Runoff from machine service and concrete mixing areas must not enter the watercourse.
3. Stockpile areas for sands and gravel should be kept to minimum size, well away from the watercourse.
4. Runoff from the above should only be routed to the watercourse via suitably designed and sited settlement ponds/filter channels.
5. Settlement ponds should be inspected daily and maintained regularly.
6. Temporary crossings should be designed to the criteria laid down for permanent works.
7. Watercourse banks should be left intact if possible. If they have to be disturbed, all practicable measures should be taken to prevent soils from entering the watercourses.

The main pollutants of site water are silt, fuel/oil, concrete and chemicals. See Table 3, below, for a list and brief description of pollution prevention measures:

Source	Action
Detergents	Use of detergents should be carried out in designated areas draining to the foul sewer.
Fuel/Oil	Fuel/oil stores must be located away from the site drainage system and the edge of watercourses.
	Ensure adequate measures are identified to prevent or contain any spillage such as creating a fall away from any drainage grid or blocking drainage points.
	Prevent oil pollution by:
	• Suitable bunded storage of fuel/oil, and use of drip trays under plant, and
	• An oil separator, and/or
	• On-site spill-kit
	• Commercially available absorbent granules, pads or booms.
Material Storage	Store drums, oil and chemicals on an impervious base and within a secured bund.

	Ensure topsoil and/or spoil heaps are located at least 10m away from water courses. Consider seeding them or covering with a tarpaulin to prevent silty runoff and losses due to wind.
Leaks and Spills	Storage facilities are to be checked on a regular basis to ensure any leaks or drips are fixed to prevent loss and pollution.
	Ensure appropriate spill response equipment is located near to the material in case of containment failure or material spills, and ensure site staff know how to use it.
	Adequate stocks of absorbent materials, such as sand or commercially available spill kits and booms should be available at all times.
Litter	Provide waste bins on-site as appropriate.
Construction Vehicles	Provide vehicle wheel washing.
Concrete, Cement and Bentonite	Washout of these materials should be carried out in a designated, impermeable contained area. The washout water itself should be disposed of off-site, or discharged to the foul sewer if authorised.

***Table 4** | Pollution Prevention Measures*

10.2 Sediment Control

Construction runoff is heavily laden with silt which can block road gullies and reduce the hydraulic capacity in pipes and rivers, contributing to ponding and flooding. Continued development without appropriate controls will ultimately keep maintenance costs elevated, whether that be in cleaning gullies, jetting pipes or dredging. Sediment control plans can be implanted on site to mitigate these issues.

Sediment basins and traps should be installed before any major site grading takes place. Additional sediment traps and silt fences should be installed as grading takes place to keep sediment contained on site at appropriate locations.

Key runoff-control measures should be located in conjunction with sediment traps to divert water from planned undisturbed areas away from the traps and sediment-laden water into the traps. Diversions should be installed above the areas to be disturbed before any grading operations. Any perimeter drains should be installed with stable outlets before opening major areas for development. Any additional facilities needed for runoff control should be installed as grading takes place.

During grading operations, temporary diversions, slope drains, and inlet and outlet protection installed in a timely manner can be very effective in controlling erosion and sediment build up.

The main run-off conveyance system with inlet and outlet protection measures should be installed early and used to convey stormwater run-off through the development site without creating gullies or channels. Install inlet protection for storm drains as soon as the drain is functional to trap sediment on site in shallow pools and to allow the flood flows to enter the storm drainage system safely. Install outlet protection at the same time as the conveyance system to prevent damage to the Banoge River.

10.3 Sediment Control Measures

Sediment entrapment facilities are necessary to reduce sediment discharges to downstream properties and receiving waters. All run-off leaving a disturbed area should pass through a sediment entrapment facility before it exits the site and flows downstream.

- Straw Bales: Straw bales can be placed at the base of a slope to act as a sediment barrier. These are not recommended for use within a swale or channel. Straw bales are temporary in nature and may perform for only a period of weeks or months. Proper installation and maintenance is necessary to ensure their performance.
- Silt Fencing: A silt fence is made of a woven synthetic material, geotextile, and acts to filter run-off. Silt fencing can be placed as a temporary barrier along the contour at the base of a disturbed area, but is not recommended for use in a channel or swale. The material is durable and will last for more than one season if properly installed and maintained. Silt fencing is not intended to be used as a perimeter fence or in area of concentrated flow. If concentrated flow conditions exist, a more robust filter should be considered.
- Silt Barriers: Silt barriers can also be temporarily installed in any road gullies of partially constructed roads to prevent sediment movement into downstream drainage systems or SUDS components. When the catchment area is greater than that allowed for straw bale barriers or silt fences, runoff should be collected in diversion drains and routed through temporary sediment basins.
- Diversion Drains: Diversion drains are simple linear ditches, often with an earth bund, for channelling water to a desired location. If the drains are being eroded they can be lined with geotextile fabric or large stones or boulders.

11. Proposed Construction Phasing and Programme

The construction programme is intended to be a 24-month programme and it will be carried out in four phases as shown in the Figure below. Each phase is to be constructed in two stages which will include, in broad terms, the following:

- Stage I: Site clearance and preparation work for the construction of the housing units and all associated infrastructure.
- Stage II: Site development and construction of residential dwellings and a crèche. The development includes all associated site works and infrastructure which includes landscaped open space, internal roads, paths, public lighting, utilities, foul and surface water drainage.

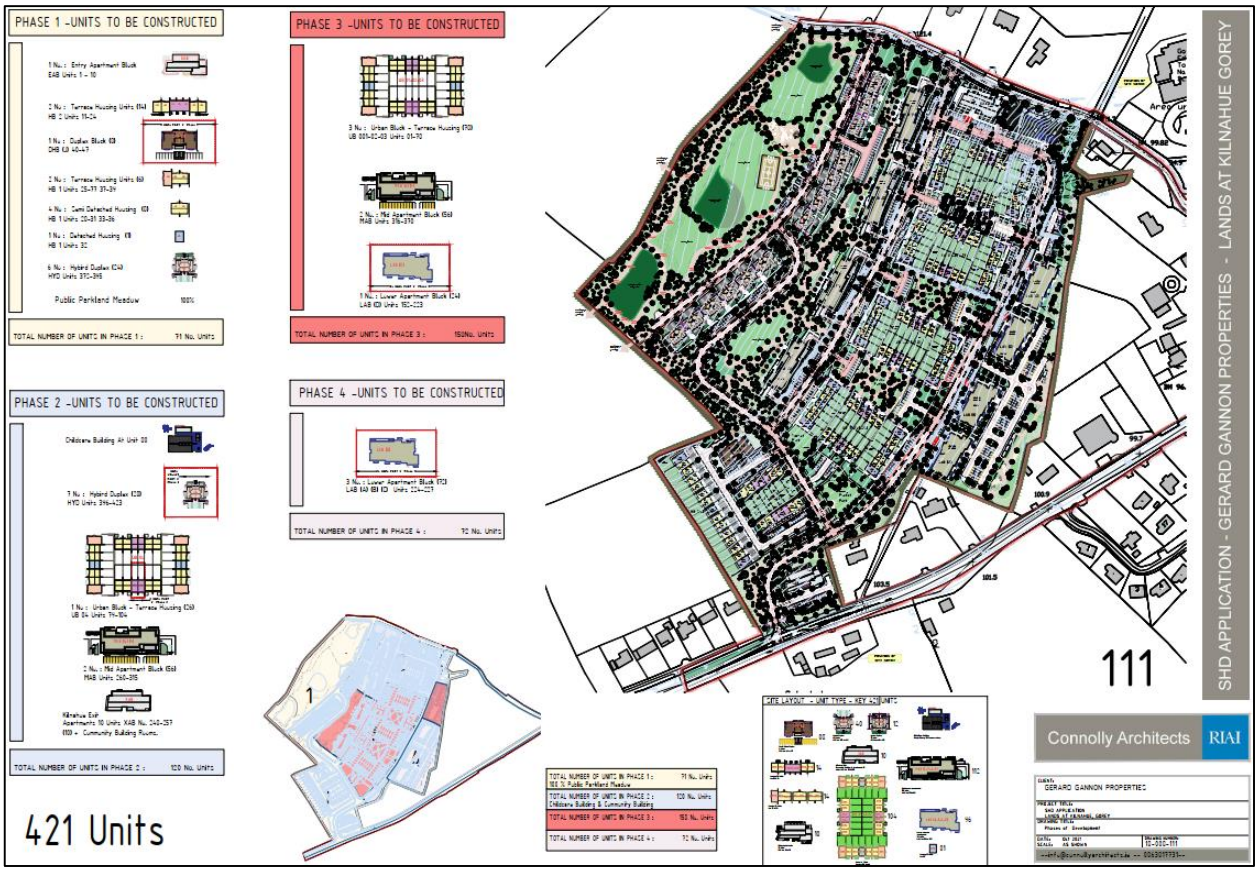


***Figure 2** | Phasing Plan*

12. Operational Stage Waste Management Plan

In line with the waste hierarchy and national targets to increase recycling rates, residents at the development will be encouraged to minimise the amount of waste they produce and recycle wherever possible. The waste storage and collection facilities at the development will therefore be well designed and located in appropriate areas in order to maximise effective waste management. Refuse facilities will be located in purposely built enclosed and ventilated storage facilities within the development. The refuse that will be collected will include household domestic waste, dry recycling, glass/bottle recycling and organic waste. The refuse storage areas, once completed, and the waste management program can be inspected at any future date.

12.1 Statutory Provisions

Waste storage and collection will be in accordance with BS 5906:2005 ñWaste Management in Buildings ï Code of Practiceò

12.2 Waste Storage for Houses

The preferred option for the storage and collection of segregated household waste for houses is the provision of individual storage containers for each house. All containers for waste, including recyclable material, should be easily accessible to both the occupier and waste collector. Waste containers will be adequately labelled to ensure the correct types go into the relevant bin.

12.3 Waste Storage for Apartments

A ground floor communal storage facility is proposed for each apartment block. Waste collection points will be located in a position that provides easy and safe access for both waste producers and collectors. Special consideration will be given to access and ease of use for older persons, persons of short stature and people with disabilities. The waste collection point will be clearly designated as a waste storage area through the use of signage and/or floor markings.

12.4 Waste Collection

An approved and certified private contractor will be engaged to provide a refuse and recycling service. The required mix of ordinary domestic waste (240 litre & 1,100 litre), and recyclable domestic waste bins will be provided. All house occupiers will be provided with 3 no. 240 litre bins, (domestic, recycling and organic). The residential apartment occupants will use 1,100 litre communal bins with access lids.

The recycling bins will be colour coded and clearly marked for the segregation of glass, plastic, aluminium, cardboard, newspaper and tetra pack, and will be clearly identified in order to separate the waste (to avoid waste contamination). The frequency of collection will be one per week for ordinary waste bins and once fortnightly for the recycling bins, by a licensed private refuse recycling operator.

12.5 Residual Waste

Residual waste is to be collected in a number of different bins located on-site. The size of bins will be determined by the volume of waste.

Public street bins will be located beside parkland meadow at the west of the development. The bins located in this area will also be collected by the private refuse contractor appointed by the management company.

Washing/hygiene facilities are to be provided for service bins and bin areas (drain off points). Recycling bins are to be cleaned and maintained as required.

When appointing a private Waste Management Contractor, the developmentôs management shall assess their suitability for the position with regards to:

- Track Record
- Suitable References
- Appropriate Permits & Licences
- Full compliance with Health and Safety Legislation
- All relevant insurances are in order
- All equipment (vehicles, on site equipment) is to the highest standard

12.6 Location of Nearby Recycling Stations/Bring Banks

The Gorey Recycling Centre is the nearest recycling station. The recycling station is located in Gorey Business Park, Ramstown, approximately 2km from the subject site.

The opening hours are shown in Table 4, below:

Opening Hours for Gorey Recycling Centre	
Monday	Closed
Tuesday	8:15 - 12:00 and 13:00 - 16:00
Wednesday	8:15 - 12:00 and 13:00 - 16:00
Thursday	8:15 - 12:00 and 13:00 - 16:00
Friday	8:15 - 12:00 and 13:00 - 16:00
Saturday	8:15 - 12:00 and 13:00 - 15:00
Sunday	Closed
	Closed Bank Holidays

Table 5 | *Opening Hours for Gorey Recycling Centre*

There is an entry charge of ú2 via a barrier, with no entry charge for customers bringing only waste electrical / electronic (WEEE) goods.

The accepted recyclable products include:

- Newspapers, Magazines, Phone Books, Greeting Cards
- Household Food Waste
- Glass Bottles & Jars - Green, Brown and Clear Glass
- Drink Cans
- Tetra Pak Cartons (milk, juice, soup, smoothie cartons etc)
- Plastic (e.g. drink or detergent bottles). See below Plastics accepted.
- Textiles (e.g. curtains, clothes, blankets, sheets, shoes etc)
- Fluorescent Lights (including spot bulbs, no pearl bulbs)
- All Metals
- Batteries (household, car and electric fence batteries - maximum of 3 x electric fence batteries)
- Electrical Goods (e.g. TV's, fridges, freezers, cookers, kettles etc)
- CD's and DVD's (for Oxfam)
- Mobile Phones (for Jack and Jill Foundation) (includes batteries and chargers)
- Books (for Oxfam)

- Waste Cooking Oil (maximum 23 litres)
- Waste Engine Oil (maximum 23 litres)

Appendices

A. Site Investigation Report

S.I. Ltd Contract No: 5861

Client:	Gerard Gannon Properties
Engineer:	Waterman Moylan
Contractor:	Site Investigations Ltd

Gorey Hill,
Gorey, Co. Wexford
Site Investigation Report

Prepared by:

.....

Stephen Letch

Issue Date:	25/06/2021
Status	Final
Revision	1

Contents: Page No.

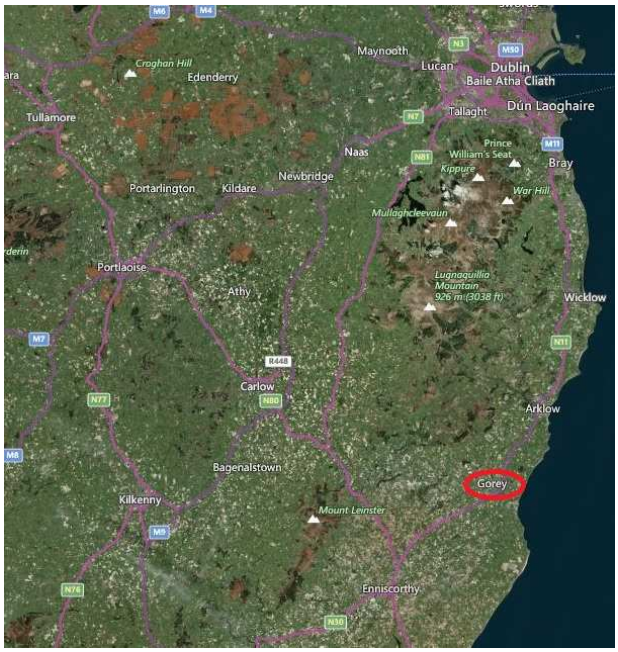
Appendices:

1. Introduction

On the instructions of Waterman Moylan, Site Investigations Ltd (SIL) was appointed to complete a ground investigation at Gorey Hill, Gorey, Co. Wexford. The investigation was completed for a residential development on the site and completed on behalf of the Client, Gerard Gannon Properties. The investigation was completed in June 2021.

2. Site Location

The site is located on lands at Kilnahue and Gorey Hill to the west of Gorey town centre in north Co. Wexford. The map on the left shows the location of Gorey in north Co. Wexford to the south of Dublin and the location of the site in the town is shown on the right.



3. Fieldwork

The fieldworks comprised a programme of trial pits with dynamic probes, soakaway tests and California Bearing Ratio tests. All fieldwork was carried out in accordance with Eurocode 7: Geotechnical Design and IEI Specification & Related Documents for Ground Investigation in Ireland (2006).

The fieldworks comprised the following:

- 8 No. trial pits with dynamic probes
- 8 No. soakaway tests

3.1. Trial Pits

8 No. trial pits were excavated using a wheeled excavator. The pits were logged and photographed by SIL geotechnical engineer and representative disturbed bulk samples were recovered as the pits were excavated. The trial pits were backfilled with the arisings immediately upon completion.

Adjacent to the trial pits, dynamic probes were completed using a track mounted Competitor 130 machine. The testing complies with the requirements of BS1377: Part 9 (1990) and Eurocode 7: Part 3. The configuration utilised standard DPH (Heavy) probing method comprising a 50kg weight, 500mm drop height and a 50mm diameter (90°) cone. The number of blows required to drive the cone each 100mm increment into the sub soil is recorded in accordance with the standards. The dynamic probe provides no information regarding soil type or groundwater conditions.

The dynamic probe results can be used to analyse the strength of the soil strata encountered by the probe. 'Proceedings of the Trinity College Dublin Symposium of Field and Laboratory Testing of Soils for Foundations and Embankments' presents a paper by Foirbart that is most relevant to Irish soil conditions and within this paper the following equations were included:

Granular Soils: DPH N_{100} x 2.5 = SPT N value

Cohesive Soils: C_u = 15 x DPH N_{100} + 30 kN/m^2

These equations present a relationship between the probe N_{100} value and the SPT N value for granular soils and the undrained shear strength of cohesive soils.

At each location, undisturbed cylindrical mould samples were recovered to complete California Bearing Ratio tests in the laboratory. The results facilitate the designing of the access roads and associated areas and are completed to BS1377: 1990: Part 4, Clause 7 ‘Determination of California Bearing Ratio’.

The trial pit logs and photographs are presented in Appendix 1 with the dynamic probe results shown on the logs. The California Bearing Ratio tests are shown in Appendix 3 along with the geotechnical laboratory test data.

3.2. Soakaway Tests

Adjacent to the trial pits, soakaway tests were completed and logged by a SIL geotechnical engineer. BRE Special Digest 365 stipulates that the pit should be filled three times and that the final cycle is used to provide the infiltration rate. The time taken for the water level to fall from 75% volume to 25% volume is required to calculate the rate of infiltration. However, if the

water level does not fall at a steady rate, then the test is deemed to have failed and the area is unsuitable for storm water drainage.

The soakaway test results are presented in Appendix 2.

3.3. Surveying

Following completion of all the fieldworks, a survey of the exploratory hole locations was completed using a GeoMax GPS Rover. The data is supplied on each individual log and along with a site plan in Appendix 5.

4. Laboratory Testing

Geotechnical laboratory testing was completed on representative soil samples in accordance with BS 1377 (1990). Testing includes:

- 8 No. moisture contents
- 8 No. Atterberg limits
- 8 No. particle size distribution curves
- 8 No. pH, chloride and sulphate content

Environmental laboratory testing was completed by Eurofins Chemtest Ltd and consisted of the following:

- 8 No. Suite I analysis
- 8 No. loss on ignition

The geotechnical laboratory test results are presented in Appendix 3 with the environmental test results and waste classification report in Appendix 4.

5. Ground Conditions

5.1. Overburden

The natural ground conditions vary slightly across the site with the area to the south east of the site, TP04, TP05, TP07 and TP08, are dominated by cohesive light brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content soils. The remaining trial pits, TP01, TP02, TP03 and TP06, are dominated by dark grey silty sandy GRAVEL with high cobble and boulder content.

The dynamic probe results generally recorded values of 4 or greater at 1.00mbgl and the values then increase steadily with depth.

5.2. Groundwater

Groundwater details in the trial pits during the fieldworks are noted on the logs in Appendix 1. No groundwater was recorded ingressing into the trial pits during the fieldworks period.

6. Recommendations and Conclusions

Please note the following caveats:

The recommendations given, and opinions expressed in this report are based on the findings as detailed in the exploratory hole records. Where an opinion is expressed on the material between the exploratory hole locations or below the final level of excavation, this is for guidance only and no liability can be accepted for its accuracy. No responsibility can be accepted for adjacent unexpected conditions that have not been revealed by the exploratory holes. It is further recommended that all bearing surfaces when excavated should be inspected by a suitably qualified Engineer to verify the information given in this report.

Excavated surfaces in clay strata should be kept dry to avoid softening prior to foundation placement. Foundations should always be taken to a minimum depth of 0.50mBGL to avoid the effects of frost action and possible seasonal shrinkage/swelling.

If it is intended that on-site materials are to be used as fill, then the necessary laboratory testing should be specified by the Client to confirm the suitability. Also, relevant lab testing should be specified where stability of side slopes to excavations is a concern, or where contamination may be an issue.

6.1. Foundations

Due to the unknown depth of foundation and no longer-term groundwater information, this analysis assumes the groundwater will not influence the construction or performance of these foundations.

For analysis of bearing capacities from the dynamic probes, the N_{100} values are used as follows in cohesive soils. The undrained shear strength (C_u) is calculated using the N_{100} value as per the equation in Section 3.1. This can then be used in calculations to work out the ultimate bearing capacity (ULS) and when a factor of safety of 3 is applied, the allowable bearing capacity (ABC) can be provided.

In granular soils, the N_{100} value is used to correlate the SPT N-value. The SPT N-value can then be used to calculate the allowable bearing capacity, as per Terzaghi and Peck, using the correlation of SPT N-value x 10 = ABC.

The table below shows the allowable bearing capacities for N_{100} values 1 to 10 at 1.00mbgl.

N_{100} Value	Cohesive Soils			Granular Soils	
	C_u	ULS	ABC	SPT N-value	ABC
1	45	245	82	2.5	25
2	60	324	110	5	50
3	75	400	135	7.5	75
4	90	480	160	10	100
5	105	555	185	12.5	125
6	120	630	210	15	150
7	135	705	235	17.5	175
8	150	780	260	20	200
9	165	855	285	22.5	225
10	180	930	310	250	250

All capacities shown are in kN/m^2.

As stated above in Section 5.1., the probe values in the GRAVEL are generally 4 or greater at 1.00mbgl. The value of 4 indicates an allowable bearing capacity of $100kN/m^2$. Using the same value for the cohesive CLAY soils indicate an allowable bearing capacity of $160kN/m^2$. A suitably qualified Engineer should inspect the foundations prior to pouring and confirm that the soils are suitable for the foundation design.

The following assumptions were made as part of these analyses. If any of these assumptions are not in accordance with detailed design or observations made during construction these recommendations should be re-evaluated.

- The foundation is to be 1m wide.
- Foundations are to be constructed on a level formation of uniform material type (described above).
- All man-made or filled material is to be removed prior to construction.
- The bulk unit weight of the material in this stratum has a minimum density of $19kN/m^3$.

The trial pits indicate that excavations in the cohesive soils should be stable for a short while at least. However, inspection of temporary excavations at the time of excavation and at regular intervals should be completed to ensure that all slopes are stable. Temporary support should be used on any excavation that will be left open for an extended period.

6.2. Groundwater

The caveats below relating to interpretation of groundwater levels should be noted:
There is always considerable uncertainty as to the likely rates of water ingress into excavations in clayey soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water.

Furthermore, water levels noted on the borehole and trial pit logs do not generally give an accurate indication of the actual groundwater conditions as the borehole or trial pit is rarely left open for sufficient time for the water level to reach equilibrium.

Also, during boring procedures, a permeable stratum may have been sealed off by the borehole casing, or water may have been added to aid drilling. Therefore, an extended period of groundwater monitoring using any constructed standpipes is required to provide more accurate information regarding groundwater conditions. Finally, groundwater levels vary with time of year, rainfall, nearby construction and tides.

Pumping tests would be required to determine likely seepage rates and persistence into excavations taken below the groundwater level. Deep trial pits also aid estimation of seepage rates.

As discussed previously, no groundwater was recorded during the fieldworks period.

There is always considerable uncertainty as to the likely rates of water ingress into excavations in cohesive soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water. Therefore, based on this information at the exploratory hole locations to date, it is considered likely that any shallow ingress into natural ground excavations will be slow to medium.

If groundwater is encountered during excavations then mechanical pumps will be required to remove the groundwater from sumps. Sumps should be carefully located and constructed to ensure that groundwater is efficiently removed from excavations and trenches.

6.3. Pavement Design

The CBR test results in Appendix 3 indicate CBR values ranging from 1.2% to 6.2%.

The CBR samples were recovered from 0.50mbgl and inspection of the formation strata should be completed prior to construction of the pavement. Once the exact formation levels are finalised then additional in-situ testing could be completed to assist with the detailed pavement design.

6.4. Soakaway Tests

The permeability of the soils varies across the site depending on the soils encountered. The soakaway tests completed at CLAY dominated parts of the site, TP04, TP05, TP07 and TP08 recorded no infiltration and therefore, failed the specification. The BRE Digest stipulates that the pit should half empty within 24hrs, and extrapolation indicates this condition would not be satisfied. The test was terminated at the end of the first (of a possible three) fill/empty cycle since further testing would give even slower fall rates due to increased soil saturation. The unsuitability of the soils for soakaways is further suggested by the soil descriptions of the materials in this area of the site where the soakaway was completed, i.e., well compacted clay/silt soils.

The tests attempted at TP01, TP02, TP03 and TP06, encountered granular GRAVEL soils and these pits drained faster than it was possible to fill the pits. A full water bowser (1000 litres) was added to the pit following excavations and the water did not remain in the pit sufficiently long enough to measure the infiltration rates. Any planned soakaways should be located in these granular GRAVEL soils.

6.5. Contamination

Environmental testing was scheduled on eight samples and the results are shown in Appendix 4. For material to be removed from site, Suite I testing was carried out to determine if the material is hazardous or non-hazardous and then the leachate results were compared with the published waste acceptance limits of BS EN 12457-2 to determine whether the material on the site could be accepted as ‘inert material’ by an Irish landfill.

The Waste Classification report created using HazWasteOnline™ software shows that the material tested can be classified as non-hazardous material. Following this analysis of the solid test results, the leachate disposal suite results indicate that the soils tested would be able to be treated as Inert Waste.

Eight samples were tested but it cannot be discounted that any localised contamination may have been missed. Any MADE GROUND excavated on site should be stockpiled separately to natural soils to avoid any potential cross contamination of the soils. Additional testing of these soils may be requested by the individual landfill before acceptance and a testing regime designed by an environmental engineer would be recommended to satisfy the landfill.

6.6. Aggressive Ground Conditions

The chemical test results in Appendix 3 indicate a general pH value between 7.91 and 8.55, which is close to neutral and below the level of 9, therefore no special precautions are required.

The maximum value obtained for water soluble sulphate was 127mg/l as SO_3. The BRE Special Digest 1:2005 – '*Concrete in Aggressive Ground*' guidelines require SO_4 values and after conversion ($SO_4 = SO_3 \times 1.2$), the maximum value of 152mg/l shows Class 1 conditions and no special precautions are required.

Appendix 1

Trial Pit Logs and Photographs

Contract No: 5861	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP01**
Contract:	Gorey Hill	Easting:	713590.283	Date:	09/06/2021
Location:	Gorey, Co. Wexford	Northing:	659508.660	Excavator:	JCB 3CX
Client:	Gerard Gannon Properties	Elevation:	119.34	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	2.70 x 0.50 x 2.00	Scale:	1:30

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.30	TOPSOIL.		119.0	119.04	0.50	ES	2	
0.5		Dark grey slightly silty sandy fine to coarse, angular to subangular GRAVEL of shale with high cobble and boulder content. Sand is fine to coarse. Cobbles and boulders are angular to subangular of shale (up to 300mm diameter).		118.5		0.50	ICBR	4 4 4 4 8 11 12 12 14 12 12 12 12 10 9 7 9 14 8 14 17 18 35	
1.0						1.00	B		
1.5				118.0					
2.0	2.00	Obstruction - possible boulders. **Pit terminated at 2.00m**		117.5	117.34				
2.5				117.0					
3.0				116.5					
3.5				116.0					
4.0				115.5					
4.5				115.0					
5.0				114.5					
5.5				114.0					
				113.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - possibl boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5861	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP02**
Contract:	Gorey Hill	Easting:	713669.183	Date:	09/06/2021
Location:	Gorey, Co. Wexford	Northing:	659466.412	Excavator:	JCB 3CX
Client:	Gerard Gannon Properties	Elevation:	109.53	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.10 x 0.50 x 1.80	Scale:	1:30

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		109.0	109.33	0.50	ES	2 2 3 4 3	
	0.60	Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of shale. Cobbles are angular to subangular of shale.			108.93	0.50	ICBR	6 7 10 12 14	
1.0		Dark grey silty very sandy fine to coarse, angular to subangular GRAVEL of shale with high cobble and boulder content. Sand is fine to coarse. Cobbles and boulders are angular to subangular of shale (up to 300mm diameter).		108.5		1.00	B	10 7 13 21 35	
1.5				108.0					
2.0	1.80	Obstruction - possible boulders. **Pit terminated at 1.80m**		107.5	107.73				
2.5				107.0					
3.0				106.5					
3.5				106.0					
4.0				105.5					
4.5				105.0					
5.0				104.5					
5.5				104.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - possible boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5861	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP03**
Contract:	Gorey Hill	Easting:	713493.341	Date:	09/06/2021
Location:	Gorey, Co. Wexford	Northing:	659306.428	Excavator:	JCB 3CX
Client:	Gerard Gannon Properties	Elevation:	119.73	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	2.50 x 0.50 x 2.00	Scale:	1:30

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.30	TOPSOIL.		119.5	119.43			0 1 2 3	
	0.50	Soft dark brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of shale. Cobbles are angular to subangular of shale.			119.23	0.50 0.50	ES ICBR	2 2 1	
1.0		Dark grey silty sandy fine to coarse, angular to subangular GRAVEL of shale with high cobble and boulder content. Sand is fine to coarse. Cobbles and boulders are angular to subangular of shale (up to 300mm diameter).		119.0				3 3 4 4 5	
1.5				118.5				4 4 6 5 9	
2.0	2.00	Obstruction - possible boulders. **Pit terminated at 2.00m**		118.0	117.73	1.80	B	16 28 35	
2.5				117.5					
3.0				117.0					
3.5				116.5					
4.0				116.0					
4.5				115.5					
5.0				115.0					
5.5				114.5					
				114.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - possible boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5861	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP04**
Contract:	Gorey Hill	Easting:	713601.218	Date:	09/06/2021
Location:	Gorey, Co. Wexford	Northing:	659341.982	Excavator:	JCB 3CX
Client:	Gerard Gannon Properties	Elevation:	110.17	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	2.90 x 0.50 x 3.00	Scale:	1:30

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		110.0	109.97	0.50	ES	2	
		Firm becoming stiff light brown slightly sandy gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of shale. Cobbles and boulders are angular to subangular of shale (up to 400mm diameter).		109.5		0.50	ICBR	2	
1.0								2	
				109.0		1.50	B	1	
1.5								2	
				108.5				3	
2.0								8	
				108.0				8	
2.5								8	
				107.5				9	
3.0	3.00	**Pit terminated at 3.00m**			107.17	3.00	B	10	
				107.0				12	
3.5								11	
				106.5				11	
4.0								8	
				106.0				7	
4.5								6	
				105.5				5	
5.0								5	
				105.0				4	
5.5								5	
				104.5				4	
								6	
								6	
								5	
								5	
								7	
								7	
								8	
								7	
								6	
								6	
								7	
								5	
								6	
								7	
								7	
								8	
								7	
								8	
								7	
								6	
								7	
								7	
								7	
								7	
								6	
								7	
								6	
								7	
								7	
								8	
								8	
								8	
								8	
								8	
								7	
								10	
								35	

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5861	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP05**
Contract:	Gorey Hill	Easting:	713680.205	Date:	09/06/2021
Location:	Gorey, Co. Wexford	Northing:	659326.329	Excavator:	JCB 3CX
Client:	Gerard Gannon Properties	Elevation:	103.76	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	2.80 x 0.50 x 3.00	Scale:	1:30

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.10	TOPSOIL.			103.66			2	
		Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of shale. Cobbles are angular to subangular of shale.		103.5		0.50	ES	4	
0.5						0.50	ICBR	4	
				103.0				3	
								3	
								6	
								7	
								8	
								14	
1.0						1.00	B	8	
								12	
								12	
				102.5				15	
								12	
1.5								20	
								17	
								14	
				102.0				12	
								12	
2.0								12	
								12	
				101.5				11	
								11	
								10	
2.5								11	
								11	
	2.70				101.06			12	
		Stiff brown slightly sandy gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of shale. Cobbles and boulders are angular to subangular of shale (up to 400mm diameter).		101.0				10	
						2.90	B	11	
3.0	3.00				100.76			14	
								13	
								10	
				100.5				14	
								17	
3.5								14	
								17	
								14	
				100.0				13	
								15	
4.0								12	
								12	
								16	
				99.5				19	
								17	
4.5								15	
								23	
								26	
				99.0				35	
5.0									
				98.5					
5.5									
				98.0					

Pit terminated at 3.00m

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5861	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP06**
Contract:	Gorey Hill	Easting:	713441.485	Date:	09/06/2021
Location:	Gorey, Co. Wexford	Northing:	659188.458	Excavator:	JCB 3CX
Client:	Gerard Gannon Properties	Elevation:	116.30	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	2.50 x 0.50 x 2.40	Scale:	1:30

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0.5	0.20	TOPSOIL.		116.0	116.10	0.50	ES	1 2 3 4 3	
1.0	1.10	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of shale. Cobbles are angular to subangular of shale.		115.5	115.20	0.50	ICBR	2 3 4 5 6 6	
1.5	2.40	Dark grey slightly silty sandy fine to coarse, angular to subangular GRAVEL of shale with high cobble and boulder content. Sand is fine to coarse. Cobbles and boulders are angular to subangular of shale (up to 300mm diameter).		115.0		1.50	B	8 11 12 12 14 14 16	
2.5		Obstruction - possible boulders. **Pit terminated at 2.40m**		114.5				26 35	
3.0				114.0	113.90				
3.5				113.5					
4.0				113.0					
4.5				112.5					
5.0				112.0					
5.5				111.5					
				111.0					
				110.5					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - possible boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5861	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP07**
Contract:	Gorey Hill	Easting:	713654.958	Date:	09/06/2021
Location:	Gorey, Co. Wexford	Northing:	659207.691	Excavator:	JCB 3CX
Client:	Gerard Gannon Properties	Elevation:	103.83	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.10 x 0.50 x 3.00	Scale:	1:30

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
	0.10	TOPSOIL.			103.73			2	
0.5		Firm becoming stiff brown slightly sandy gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of shale. Cobbles are angular to subangular of shale.		103.5		0.50 0.50	ES ICBR	2 2 2 2 2 8	
1.0				103.0		1.00	B	13 18 24 20	
1.5				102.5				18 17 17 16	
2.0				102.0				18 18 23 24	
2.5				101.5				35	
	2.70				101.13				
3.0	3.00	Stiff grey brown slightly sandy gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subangular of shale. Cobbles and boulders are angular to subangular of shale (up to 400mm diameter).		101.0	100.83	3.00	B		
3.5		**Pit terminated at 3.00m**		100.5					
4.0				100.0					
4.5				99.5					
5.0				99.0					
5.5				98.5					
				98.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Scheduled depth.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5861	**Trial Pit and Dynamic Probe Log**				Trial Pit No: **TP08**
Contract:	Gorey Hill	Easting:	713494.287	Date:	09/06/2021
Location:	Gorey, Co. Wexford	Northing:	659094.363	Excavator:	JCB 3CX
Client:	Gerard Gannon Properties	Elevation:	106.95	Logged By:	M. Kaliski
Engineer:	Waterman Moylan	Dimensions (LxWxD) (m):	3.30 x 0.50 x 2.40	Scale:	1:30

Level (mbgl) Scale:	Depth	Stratum Description	Legend	Level (mOD) Scale:	Depth:	Samples Depth	Type	Probe	Water Strike
0	0.20	TOPSOIL.		106.5	106.75	0.50	ES	2	
0.5		Firm becoming stiff brown slightly sandy gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of shale. Cobbles are angular to subangular of shale.		106.0		0.50	ICBR	3 3 3 3 4 2 3 4 7 7 5 5 8 9 10 10 12 35	
1.0				105.5		1.50	B		
1.5				105.0					
2.0				104.5	104.55				
2.5	2.40	Obstruction - possible boulders. **Pit terminated at 2.40m**		104.0					
3.0				103.5					
3.5				103.0					
4.0				102.5					
4.5				102.0					
5.0				101.5					
5.5				101.0					

Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
Obstruction - possible boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

TP01 Sidewall

TP01 Spoil

TP02 Sidewall

TP02 Spoil

TP03 Sidewall

TP03 Spoil

TP04 Sidewall

TP04 Spoil

TP05 Sidewall

TP05 Spoil

TP06 Sidewall

TP06 Spoil

TP07 Sidewall

TP07 Spoil

TP08 Sidewall

TP08 Spoil

Appendix 2

Soakaway Test Results

SOAKAWAY TEST

Project Reference:	5861
Contract name:	Gorey Hill
Location:	Gorey, Co. Wexford
Test No:	TP01
Date:	09/06/2021

Ground Conditions

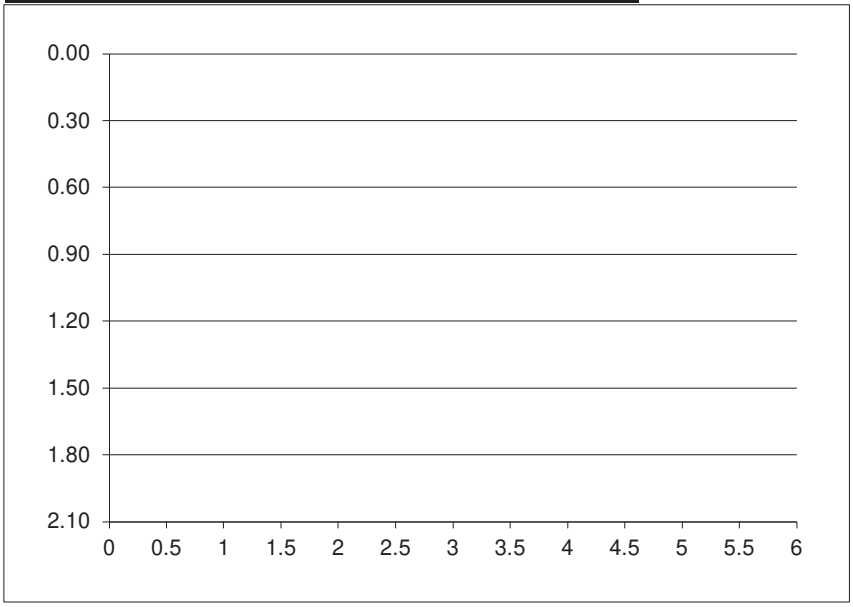
From	**To**	
0.00	0.30	TOPSOIL.
0.30	2.00	Dark grey slightly silty slightly sandy GRAVEL with high cobble and boulder content.
2.00		Obstruction - boulders.

Remarks:

Filled pit with 1000l - water level did not rise due to very high permeability of soils.

Elapsed Time (mins)	Fall of Water (m)
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

Pit Dimensions (m)		
Length (m)	2.70	m
Width (m)	0.50	m
Depth	2.00	m
Water		
Start Depth of Water	-	m
Depth of Water	-	m
75% Full	-	m
25% Full	-	m
75%-25%	-	m
Volume of water (75%-25%)	**-**	m3
Area of Drainage	**12.8**	m2
Area of Drainage (75%-25%)	**-**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **-** **m/min** or **-** **m/s**

SOAKAWAY TEST

Project Reference:	5861
Contract name:	Gorey Hill
Location:	Gorey, Co. Wexford
Test No:	TP02
Date:	09/06/2021

Ground Conditions

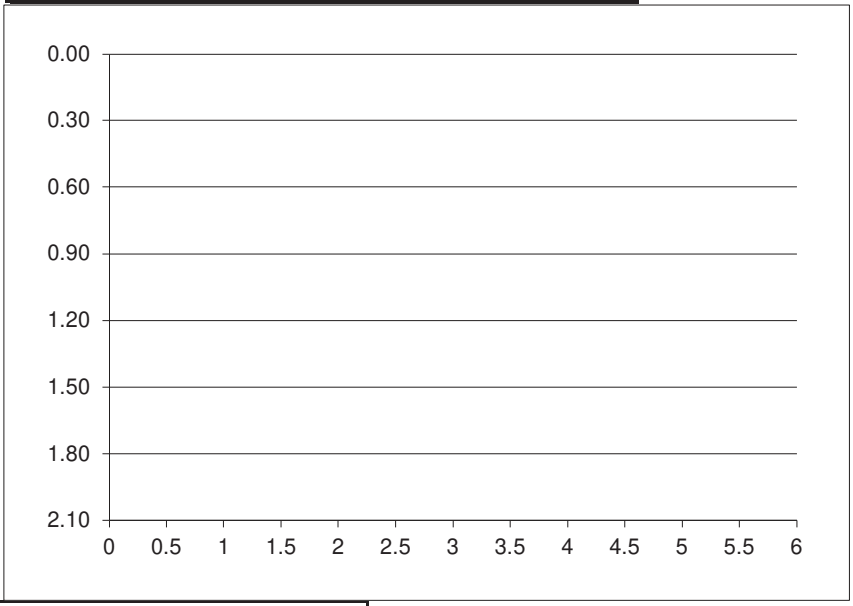
From	**To**	
0.00	0.20	TOPSOIL.
0.20	0.60	Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content.
0.60	1.80	Dark grey slightly silty slightly sandy GRAVEL with high cobble and boulder content.
1.80		Obstruction - boulders or possible bedrock.

Remarks:

Filled pit with 1000l - water level did not rise due to very high permeability of soils.

Elapsed Time (mins)	Fall of Water (m)
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

Pit Dimensions (m)		
Length (m)	3.10	m
Width (m)	0.50	m
Depth	1.80	m
Water		
Start Depth of Water	-	m
Depth of Water	-	m
75% Full	-	m
25% Full	-	m
75%-25%	-	m
Volume of water (75%-25%)	**-**	m3
Area of Drainage	**12.96**	m2
Area of Drainage (75%-25%)	**-**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **-** **m/min** or **-** **m/s**

SOAKAWAY TEST

Project Reference:	5861
Contract name:	Gorey Hill
Location:	Gorey, Co. Wexford
Test No:	TP03
Date:	09/06/2021

Ground Conditions

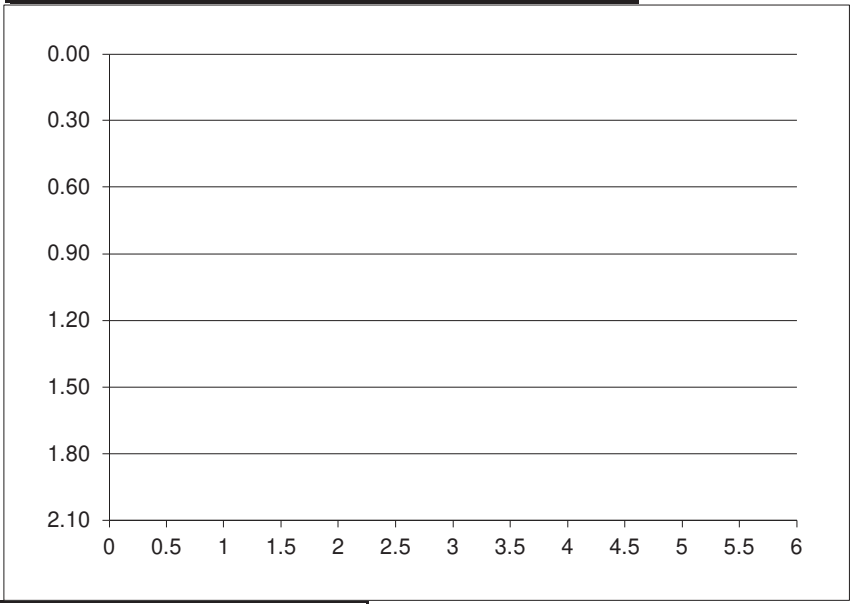
From	**To**	
0.00	0.30	TOPSOIL.
0.30	0.50	Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content.
0.50	2.00	Dark grey slightly silty slightly sandy GRAVEL with high cobble and boulder content.
2.00		Obstruction - boulders or possible bedrock.

Remarks:

Filled pit with 1000l - water level did not rise due to very high permeability of soils.

Elapsed Time (mins)	Fall of Water (m)
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-
-	-

Pit Dimensions (m)		
Length (m)	2.50	m
Width (m)	0.50	m
Depth	2.00	m
Water		
Start Depth of Water	-	m
Depth of Water	-	m
75% Full	-	m
25% Full	-	m
75%-25%	-	m
Volume of water (75%-25%)	**-**	m3
Area of Drainage	**12.00**	m2
Area of Drainage (75%-25%)	**-**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **-** **m/min** or **-** **m/s**

SOAKAWAY TEST

Project Reference:	5861
Contract name:	Gorey Hill
Location:	Gorey, Co. Wexford
Test No:	TP04
Date:	09/06/2021

Ground Conditions

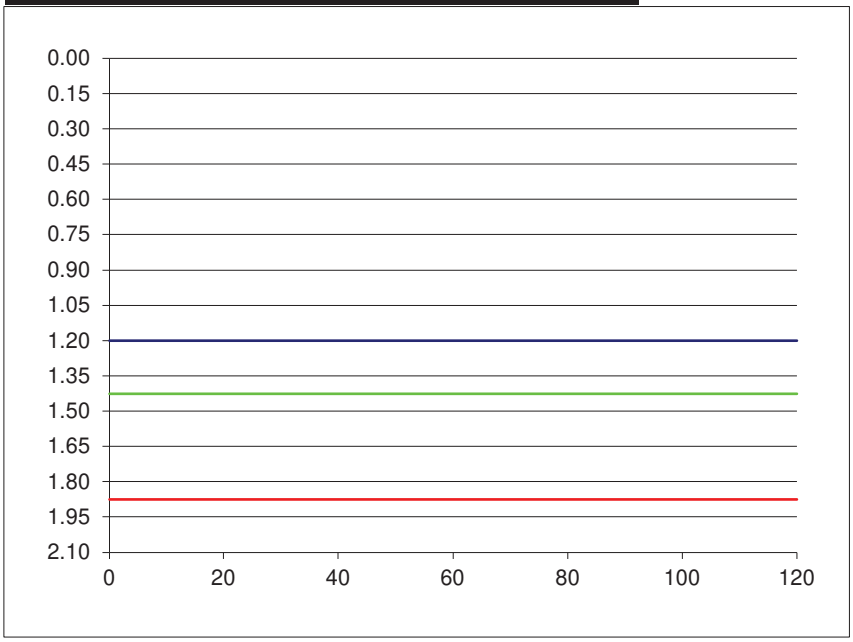
From	To	
0.00	0.20	TOPSOIL.
0.20	2.10	Firm becoming stiff light brown slightly sandy gravelly silty CLAY with high cobble and low boulder content.

Remarks:

Completed adjacent to TP04.

Elapsed Time (mins)	Fall of Water (m)
0	1.20
0.5	1.20
1	1.20
1.5	1.20
2	1.20
2.5	1.20
3	1.20
3.5	1.20
4	1.20
4.5	1.20
5	1.20
6	1.20
7	1.20
8	1.20
9	1.20
10	1.20
12	1.20
14	1.20
16	1.20
18	1.20
20	1.20
25	1.20
30	1.20
40	1.20
50	1.20
60	1.20
75	1.20
90	1.20
120	1.20

Pit Dimensions (m)		
Length (m)	2.90	m
Width (m)	0.50	m
Depth	2.10	m
Water		
Start Depth of Water	1.20	m
Depth of Water	0.90	m
75% Full	1.43	m
25% Full	1.88	m
75%-25%	0.45	m
Volume of water (75%-25%)	**0.65**	m3
Area of Drainage	**14.28**	m2
Area of Drainage (75%-25%)	**4.51**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SOAKAWAY TEST

Project Reference:	5861
Contract name:	Gorey Hill
Location:	Gorey, Co. Wexford
Test No:	TP05
Date:	09/06/2021

Ground Conditions

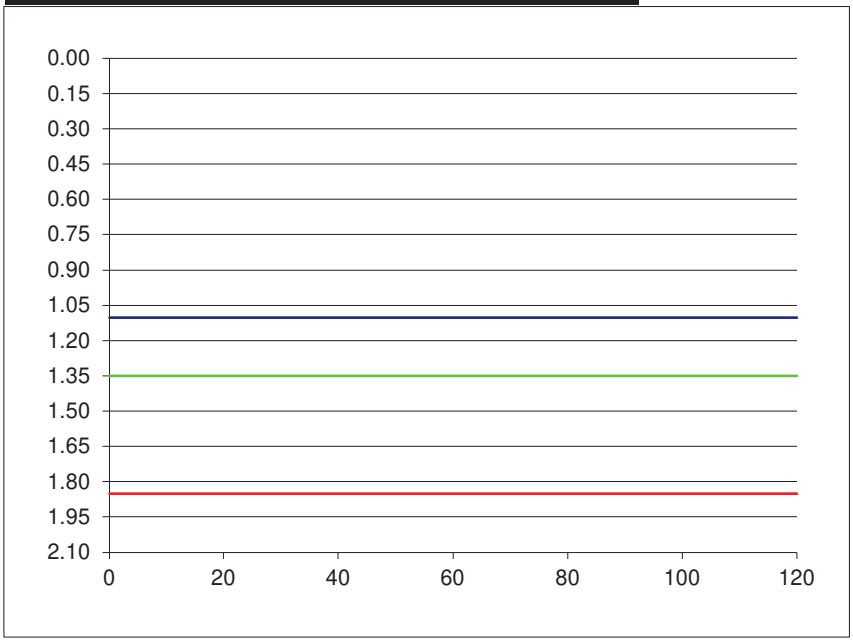
From	To	
0.00	0.20	TOPSOIL.
0.20	2.10	Firm becoming stiff light brown slightly sandy gravelly silty CLAY with high cobble and low boulder content.

Remarks:

Completed adjacent to TP05.

Elapsed Time (mins)	Fall of Water (m)
0	1.10
0.5	1.10
1	1.10
1.5	1.10
2	1.10
2.5	1.10
3	1.10
3.5	1.10
4	1.10
4.5	1.10
5	1.10
6	1.10
7	1.10
8	1.10
9	1.10
10	1.10
12	1.10
14	1.10
16	1.10
18	1.10
20	1.10
25	1.10
30	1.10
40	1.10
50	1.10
60	1.10
75	1.10
90	1.10
120	1.10

Pit Dimensions (m)		
Length (m)	2.90	m
Width (m)	0.50	m
Depth	2.10	m
Water		
Start Depth of Water	1.10	m
Depth of Water	1.00	m
75% Full	1.35	m
25% Full	1.85	m
75%-25%	0.50	m
Volume of water (75%-25%)	**0.73**	m3
Area of Drainage	**14.28**	m2
Area of Drainage (75%-25%)	**4.85**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SOAKAWAY TEST

Project Reference:	5861
Contract name:	Gorey Hill
Location:	Gorey, Co. Wexford
Test No:	TP06
Date:	09/06/2021

Ground Conditions

From	**To**	
0.00	0.20	TOPSOIL.
0.20	1.10	Firm light brown slightly sandy slightly gravelly silty CLAY with low cobble content.
1.10	2.10	Dark grey slightly silty slightly sandy GRAVEL with high cobble and boulder content.

Remarks:

Filled pit with 1000l - water level did not rise due to very high permeability of soils.

Elapsed Time (mins)	Fall of Water (m)
-	-
-	-
-	-
-	-
-	-
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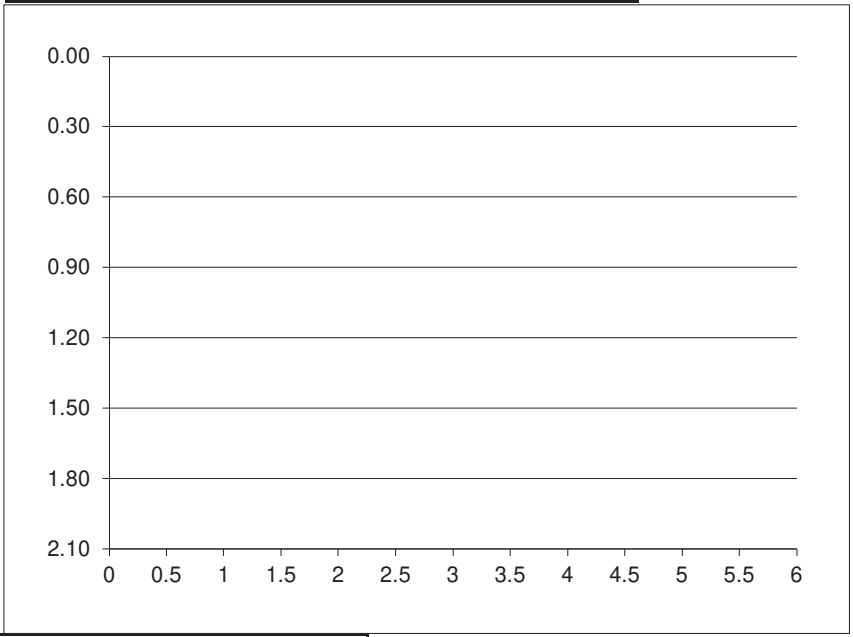
Pit Dimensions (m)		
Length (m)	2.50	m
Width (m)	0.50	m
Depth	2.10	m
Water		
Start Depth of Water	-	m
Depth of Water	-	m
75% Full	-	m
25% Full	-	m
75%-25%	-	m
Volume of water (75%-25%)	**-**	m3
Area of Drainage	**12.60**	m2
Area of Drainage (75%-25%)	**-**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **-** **m/min** or **-** **m/s**

SOAKAWAY TEST

Project Reference:	5861
Contract name:	Gorey Hill
Location:	Gorey, Co. Wexford
Test No:	TP07
Date:	09/06/2021

Ground Conditions

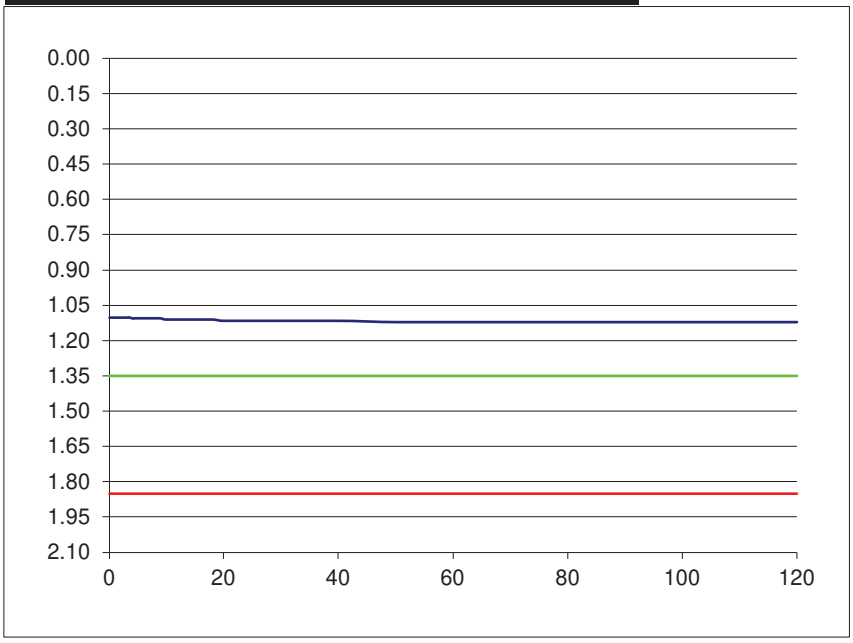
From	To	
0.00	0.10	TOPSOIL.
0.10	2.10	Firm becoming stiff brown slightly sandy gravelly silty CLAY with low cobble content.

Remarks:

Completed adjacent to TP07.

Elapsed Time (mins)	Fall of Water (m)
0	1.10
0.5	1.10
1	1.10
1.5	1.10
2	1.10
2.5	1.10
3	1.10
3.5	1.10
4	1.11
4.5	1.11
5	1.11
6	1.11
7	1.11
8	1.11
9	1.11
10	1.11
12	1.11
14	1.11
16	1.11
18	1.11
20	1.12
25	1.12
30	1.12
40	1.12
50	1.12
60	1.12
75	1.12
90	1.12
120	1.12

Pit Dimensions (m)		
Length (m)	3.00	m
Width (m)	0.50	m
Depth	2.10	m
Water		
Start Depth of Water	1.10	m
Depth of Water	1.00	m
75% Full	1.35	m
25% Full	1.85	m
75%-25%	0.50	m
Volume of water (75%-25%)	**0.75**	m3
Area of Drainage	**14.70**	m2
Area of Drainage (75%-25%)	**5.00**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

SOAKAWAY TEST

Project Reference:	5861
Contract name:	Gorey Hill
Location:	Gorey, Co. Wexford
Test No:	TP08
Date:	09/06/2021

Ground Conditions

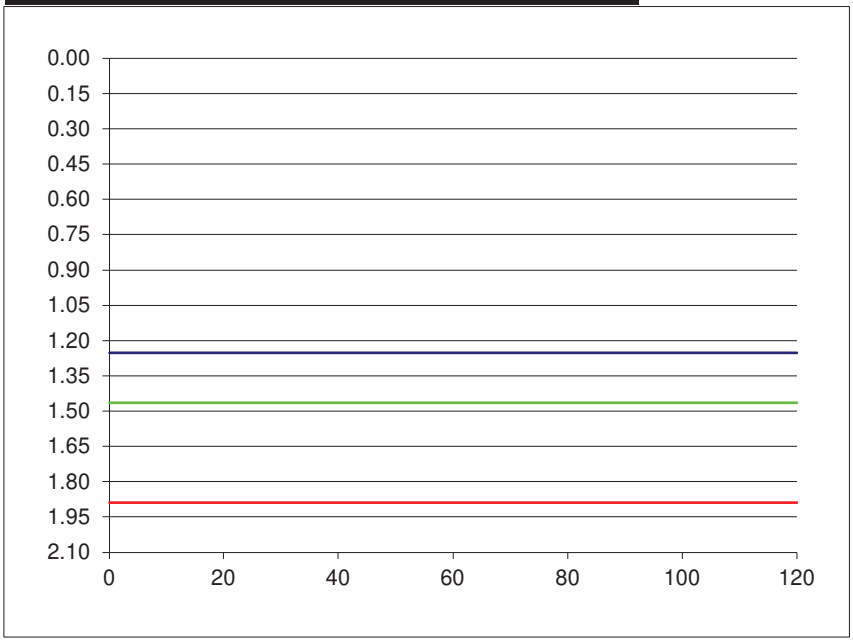
From	To	
0.00	0.20	TOPSOIL.
0.20	2.10	Firm becoming stiff brown slightly sandy slightly gravelly silty CLAY with low cobble content.

Remarks:

Completed adjacent to TP08.

Elapsed Time (mins)	Fall of Water (m)
0	1.25
0.5	1.25
1	1.25
1.5	1.25
2	1.25
2.5	1.25
3	1.25
3.5	1.25
4	1.25
4.5	1.25
5	1.25
6	1.25
7	1.25
8	1.25
9	1.25
10	1.25
12	1.25
14	1.25
16	1.25
18	1.25
20	1.25
25	1.25
30	1.25
40	1.25
50	1.25
60	1.25
75	1.25
90	1.25
120	1.25

Pit Dimensions (m)		
Length (m)	3.00	m
Width (m)	0.50	m
Depth	2.10	m
Water		
Start Depth of Water	1.25	m
Depth of Water	0.85	m
75% Full	1.46	m
25% Full	1.89	m
75%-25%	0.43	m
Volume of water (75%-25%)	**0.64**	m3
Area of Drainage	**14.70**	m2
Area of Drainage (75%-25%)	**4.48**	m2
Time		
75% Full	N/A	min
25% Full	N/A	min
Time 75% to 25%	**N/A**	min
Time 75% to 25% (sec)	**N/A**	sec



f = **Fail** **m/min** or **Fail** **m/s**

Appendix 3

Geotechnical Laboratory Test Results

Classification Tests in accordance with BS1377: Part 4

Client	Gerard Gannon Properties Ltd.
Site	Gorey Hill, Gorey
S.I. File No	5851 / 21
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie
Report Date	21st June 2021

Hole ID	Depth	Sample No	Lab Ref No.	Sample Type	Natural Moisture Content %	Liquid Limit %	Plastic Limit %	Plastic Index %	Min. Dry Density Mg/m^3	Particle Density Mg/m^3	% passing 425um	Comments	**Remarks** **C**=Clay; **M**=Silt **Plasticity**: **L**=Low; **I**=Intermediate; **H**=High; **V**=Very High; **E**=Extremely High
TP01	1.00	MK27	21/598	B	8.9	32	18	14			8.5		CL
TP02	1.00	MK03	21/600	B	11.0	30	18	12			18.2		CL
TP03	1.80	MK24	21/602	B	11.7	33	19	14			15.3		CL
TP04	1.50	MK14	21/604	B	12.1	32	20	12			44.6		CL
TP05	1.00	MK06	21/606	B	14.8	33	18	15			53.6		CL
TP06	1.50	MK21	21/608	B	9.1	32	21	11			6.8		CL
TP07	1.00	MK10	21/610	B	12.6	31	19	12			49.3		CL
TP08	1.50	MK18	21/612	B	11.8	35	20	15			46.0		CL/CI

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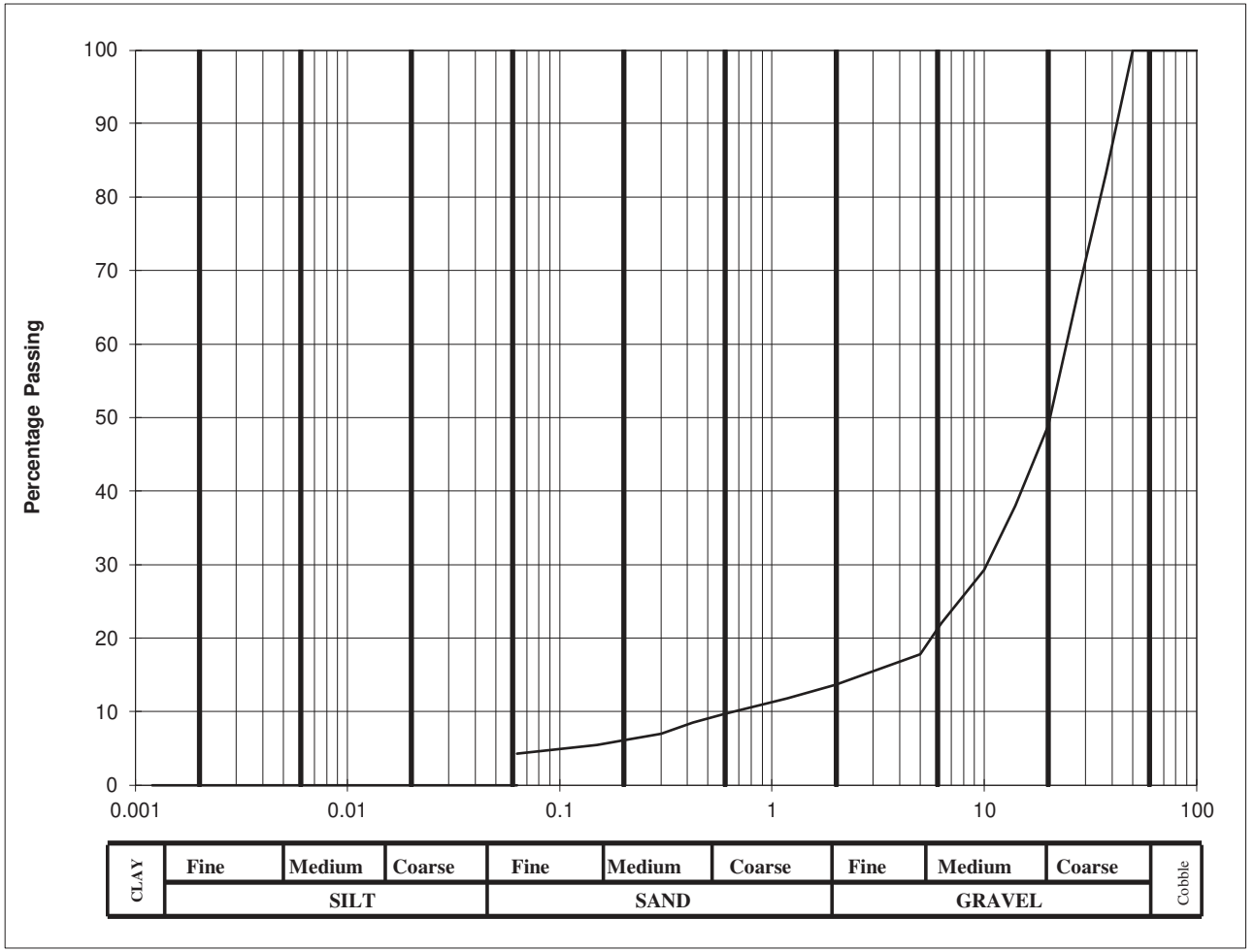
Site Investigations Ltd

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	83.2		
28	67.7		
20	48.9		
14	38		
10	29.3		
6.3	22		
5.0	17.8		
2.36	14.4		
2.00	13.7		
1.18	11.8		
0.600	9.7		
0.425	8.5		
0.300	7		
0.212	6.2		
0.150	5.5		
0.063	4		

Cobbles, %	0
Gravel, %	86
Sand, %	10
Clay / Silt, %	4



Client :	Gerard Gannon Properties Ltd.
Project :	Gorey Hill, Gorey

Lab. No :	21/598
Sample No :	MK27

Hole ID :	TP 01
Depth, m :	1.00

Material description :	slightly silty sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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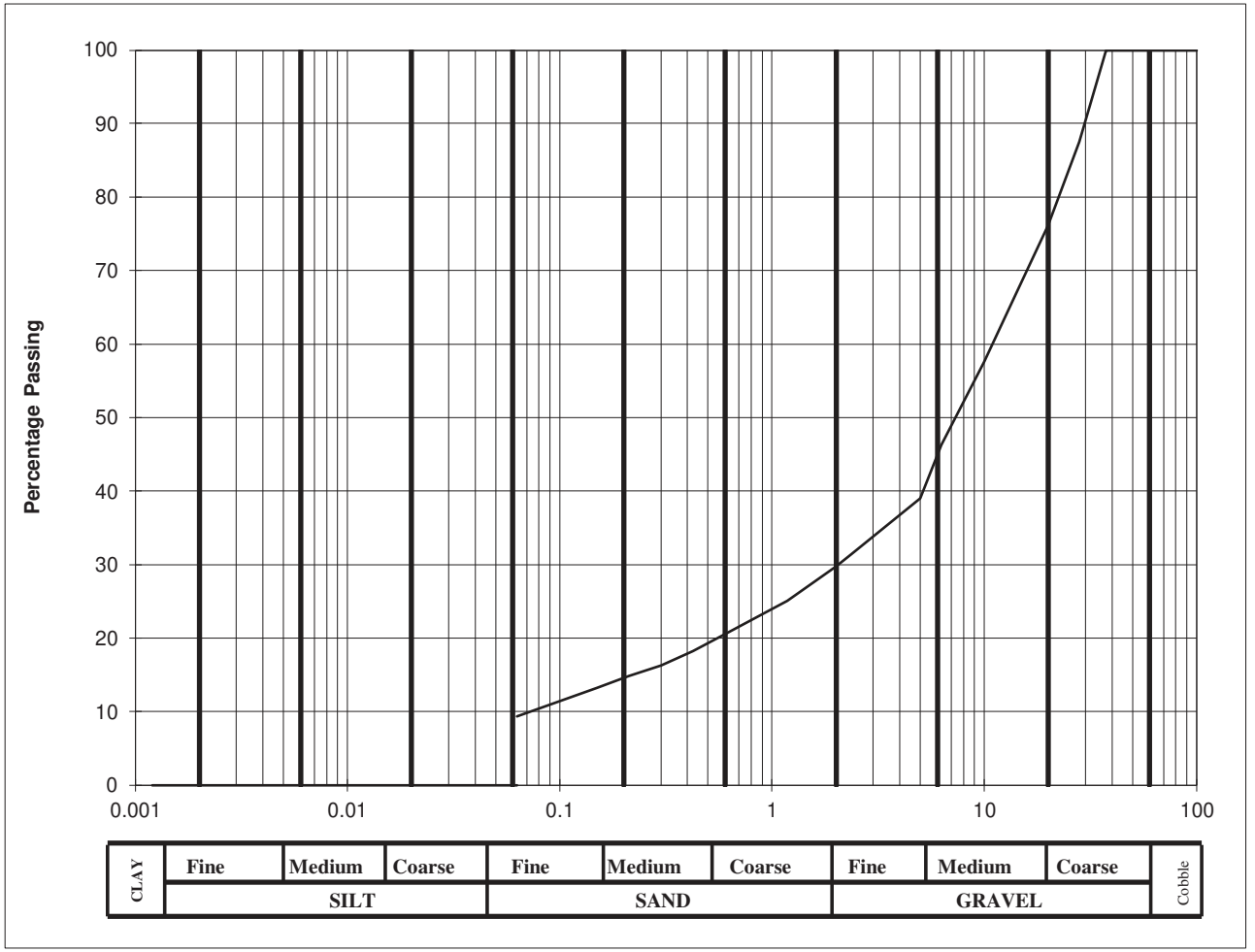
Site Investigations Ltd

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	87.5		
20	76.2		
14	66.6		
10	57.6		
6.3	46.3		
5.0	39		
2.36	31.4		
2.00	29.7		
1.18	25.1		
0.600	20.5		
0.425	18.2		
0.300	16.3		
0.212	14.8		
0.150	13.2		
0.063	9		

Cobbles, %	0
Gravel, %	70
Sand, %	21
Clay / Silt, %	9



Client :	Gerard Gannon Properties Ltd.
Project :	Gorey Hill, Gorey

Lab. No :	21/600
Sample No :	MK03

Hole ID :	TP 02
Depth, m :	1.00

Material description :	silty very sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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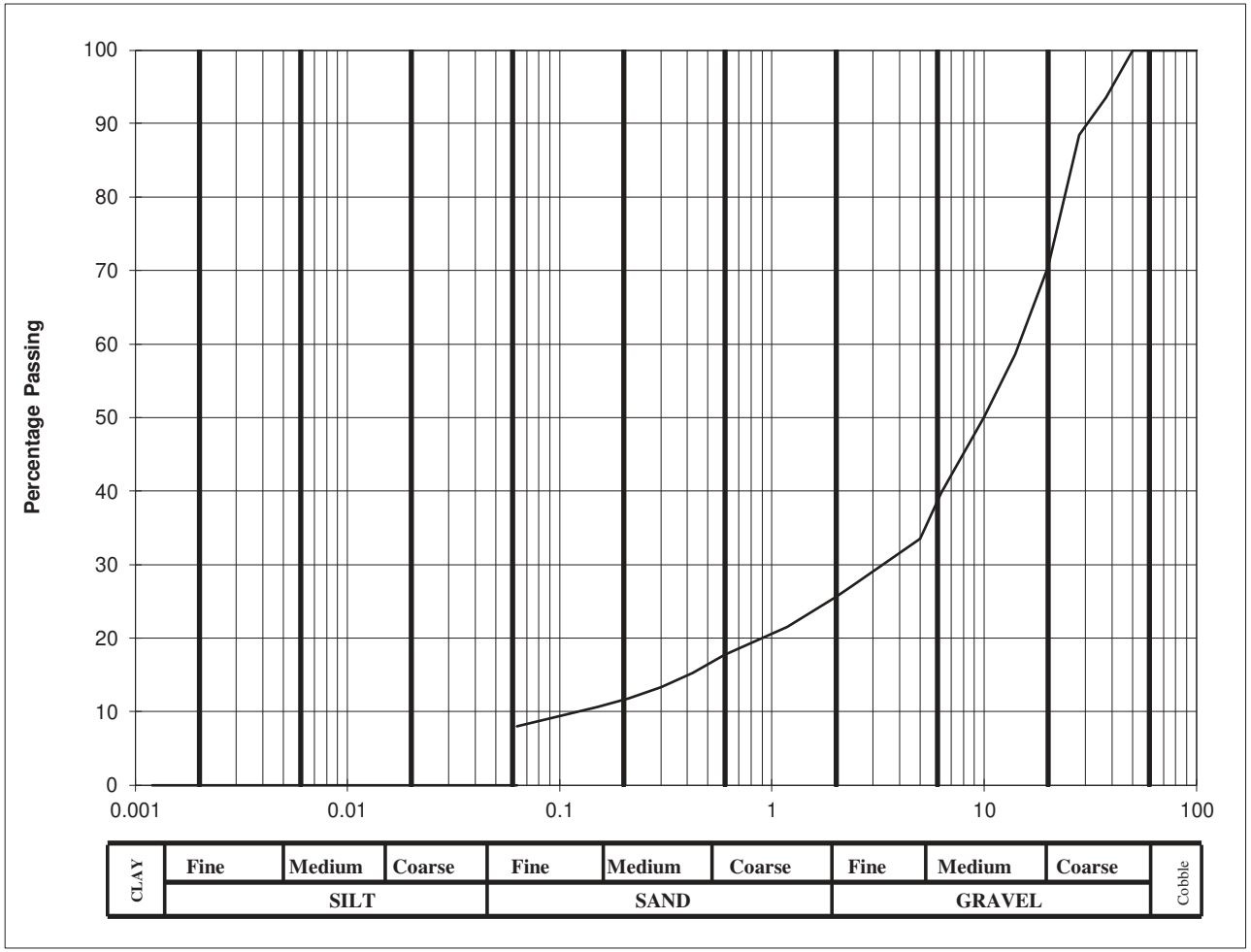
BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	93.5		
28	88.4		
20	70.5		
14	58.6		
10	50.1		
6.3	39.8		
5.0	33.5		
2.36	27		
2.00	25.6		
1.18	21.5		
0.600	17.7		
0.425	15.3		
0.300	13.3		
0.212	11.8		
0.150	10.6		
0.063	8		

Cobbles, %	0
Gravel, %	74
Sand, %	18
Clay / Silt, %	8



Client :	Gerard Gannon Properties Ltd.
Project :	Gorey Hill, Gorey

Lab. No :	21/602
Sample No :	MK24

Hole ID :	TP 03
Depth, m :	1.80

Material description :	silty sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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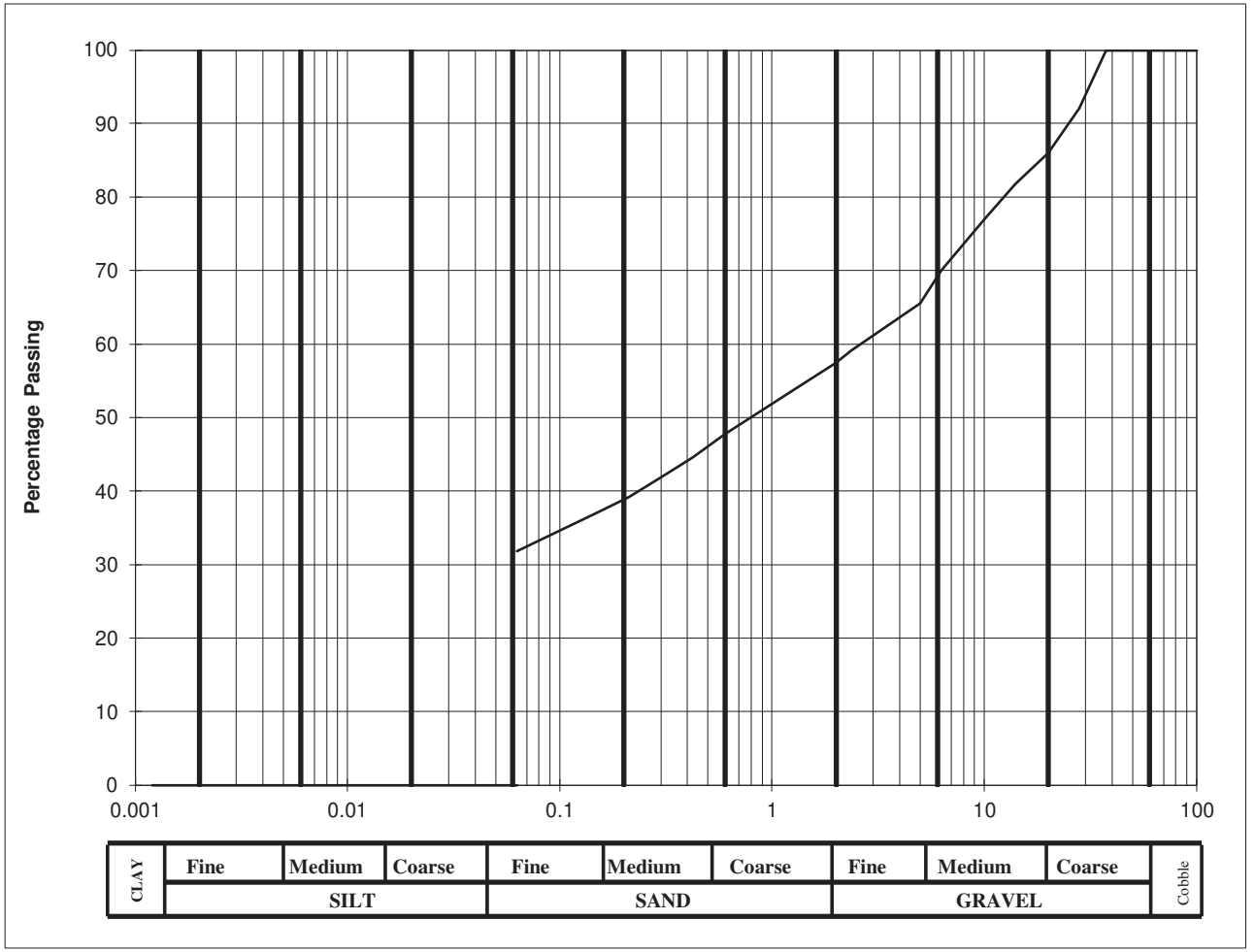
BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	92.1		
20	86		
14	81.8		
10	76.9		
6.3	70		
5.0	65.5		
2.36	59.1		
2.00	57.4		
1.18	53.2		
0.600	47.7		
0.425	44.6		
0.300	41.9		
0.212	39.2		
0.150	37.1		
0.063	32		

Cobbles, %	0
Gravel, %	43
Sand, %	25
Clay / Silt, %	32



Client :	Gerard Gannon Properties Ltd.
Project :	Gorey Hill, Gorey

Lab. No :	21/604
Sample No :	MK14

Hole ID :	TP 04
Depth, m :	1.50

Material description :	slightly sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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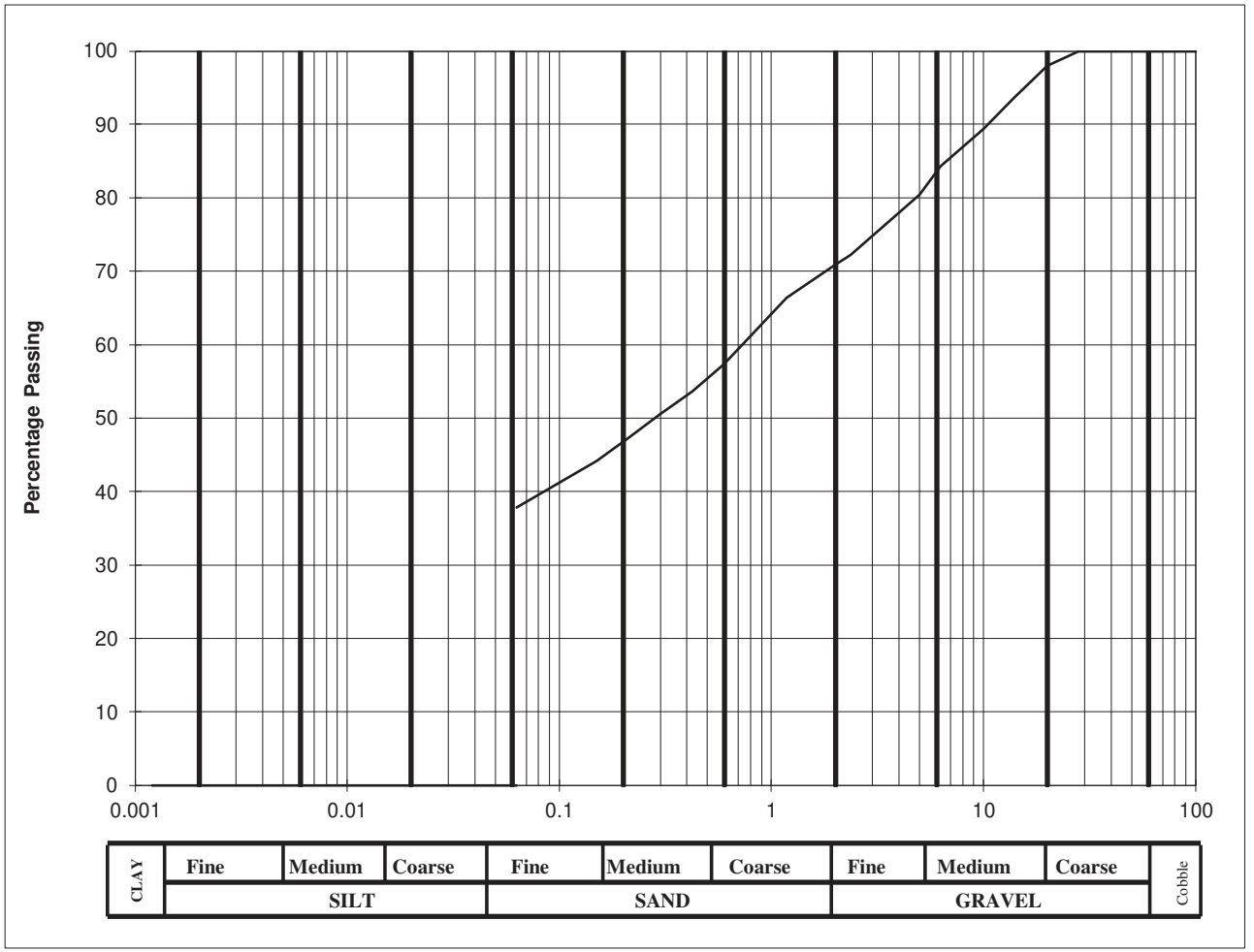
BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	100		
20	98		
14	93.7		
10	89.4		
6.3	84.3		
5.0	80.4		
2.36	72.2		
2.00	70.9		
1.18	66.4		
0.600	57.3		
0.425	53.6		
0.300	50.6		
0.212	47.3		
0.150	44.2		
0.063	38		

Cobbles, %	0
Gravel, %	29
Sand, %	33
Clay / Silt, %	38



Client :	Gerard Gannon Properties Ltd.
Project :	Gorey Hill, Gorey

Lab. No :	21/606
Sample No :	MK06

Hole ID :	TP 05
Depth, m :	1.00

Material description :	slightly sandy slightly gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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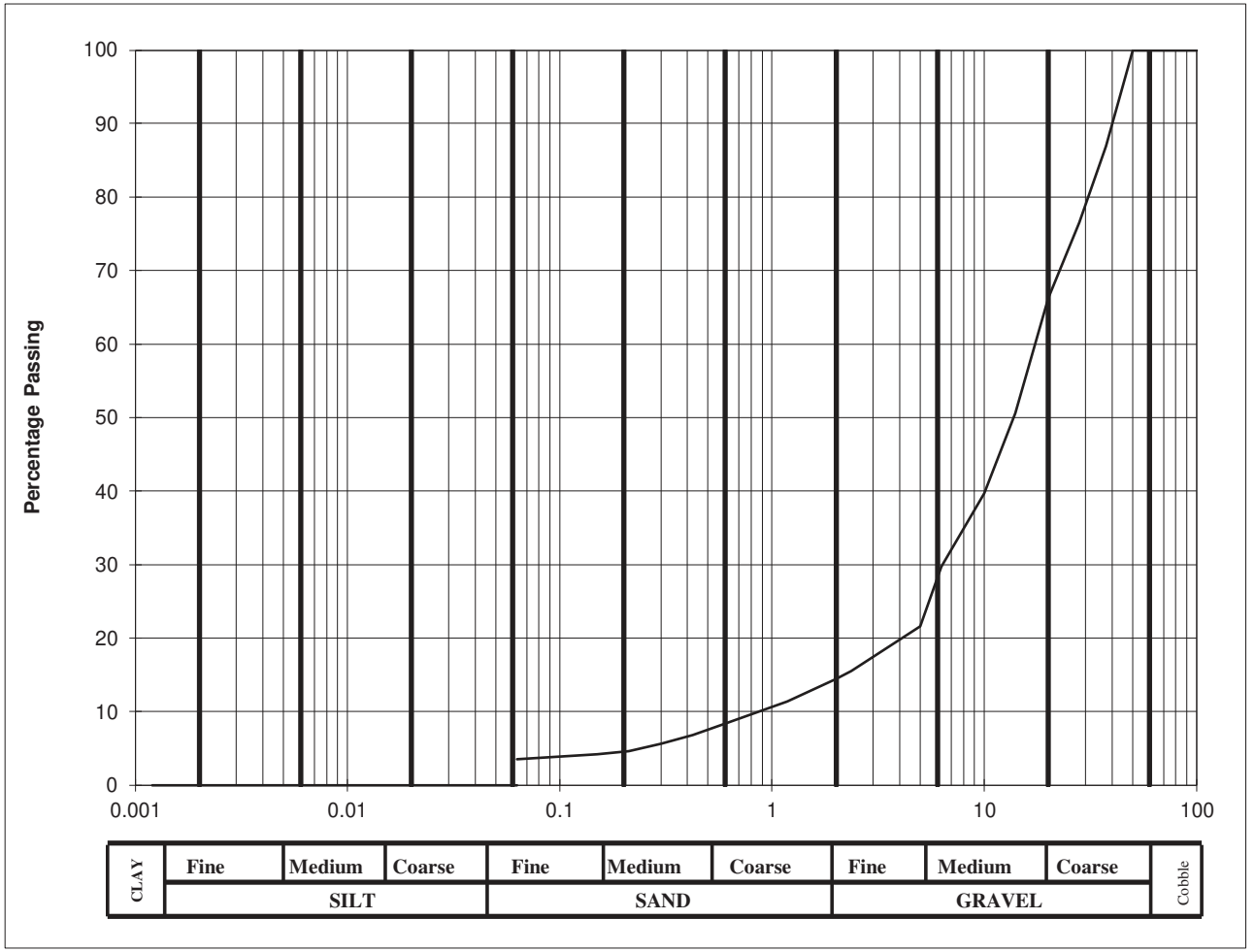
BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	86.9		
28	76.5		
20	66.2		
14	50.6		
10	39.7		
6.3	29.7		
5.0	21.6		
2.36	15.5		
2.00	14.4		
1.18	11.4		
0.600	8.3		
0.425	6.8		
0.300	5.6		
0.212	4.6		
0.150	4.2		
0.063	4		

Cobbles, %	0
Gravel, %	86
Sand, %	10
Clay / Silt, %	4



Client :	Gerard Gannon Properties Ltd.
Project :	Gorey Hill, Gorey

Lab. No :	21/608
Sample No :	MK21

Hole ID :	TP 06
Depth, m :	1.50

Material description :	slightly silty sandy GRAVEL
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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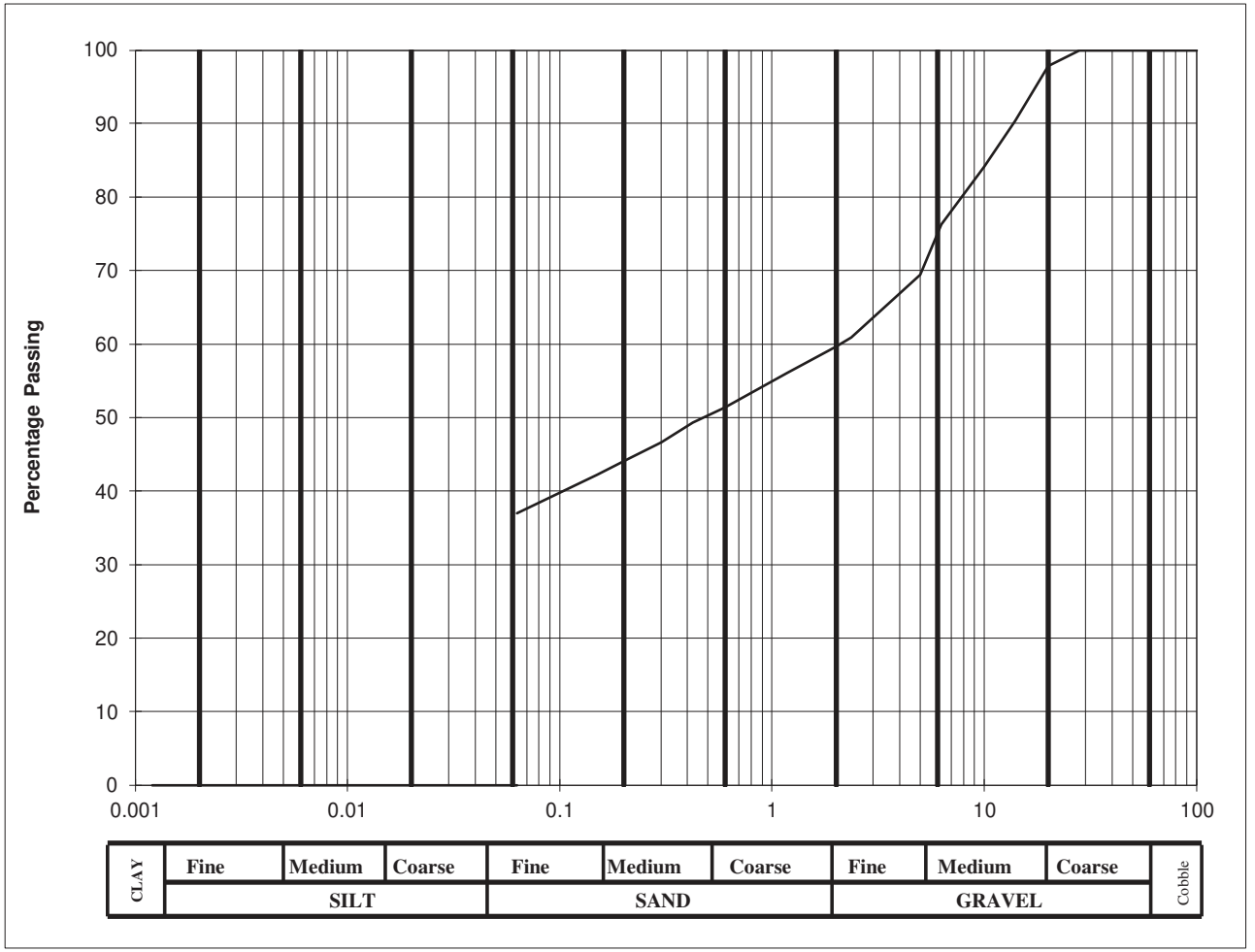
BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	100		
20	97.8		
14	90.4		
10	84.1		
6.3	76.3		
5.0	69.4		
2.36	60.9		
2.00	59.6		
1.18	56.1		
0.600	51.3		
0.425	49.3		
0.300	46.6		
0.212	44.4		
0.150	42.2		
0.063	37		

Cobbles, %	0
Gravel, %	40
Sand, %	23
Clay / Silt, %	37



Client :	Gerard Gannon Properties Ltd.
Project :	Gorey Hill, Gorey

Lab. No :	21/610
Sample No :	MK10

Hole ID :	TP 07
Depth, m :	1.00

Material description :	slightly sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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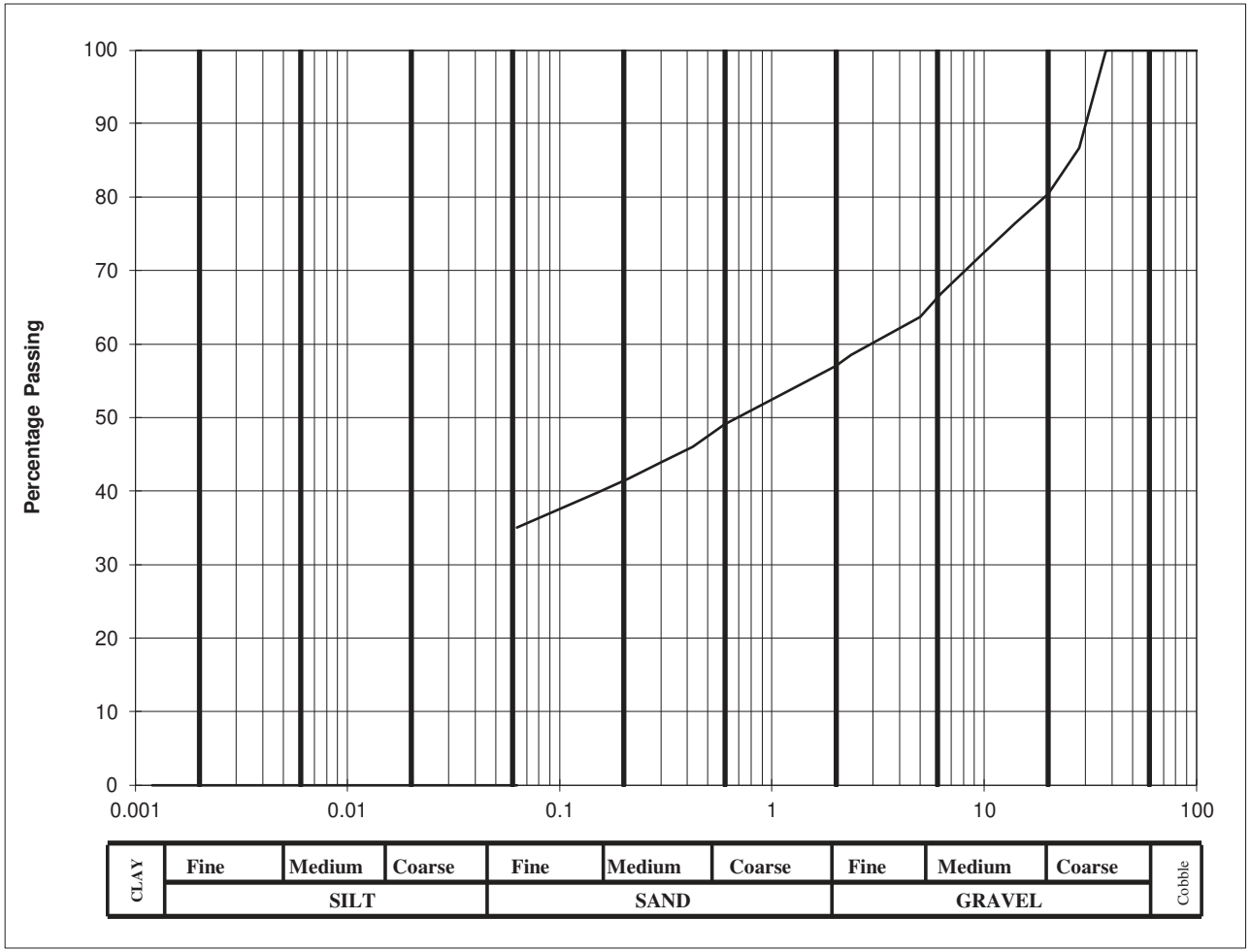
Site Investigations Ltd

BS 1377 Particle Size Analysis

Site Investigations Limited

BS Sieve size, mm	Percent passing	Hydrometer analysis	
		Diameter, mm	% passing
100	100	**0.0630**	
90	100	**0.0200**	
75	100	**0.0060**	
63	100	**0.0020**	
50	100		
37.5	100		
28	86.7		
20	80.4		
14	76.4		
10	72.5		
6.3	66.9		
5.0	63.7		
2.36	58.5		
2.00	57		
1.18	53.5		
0.600	49.1		
0.425	46		
0.300	43.9		
0.212	41.7		
0.150	39.8		
0.063	35		

Cobbles, %	0
Gravel, %	43
Sand, %	22
Clay / Silt, %	35



Client :	Gerard Gannon Properties Ltd.
Project :	Gorey Hill, Gorey

Lab. No :	21/612
Sample No :	MK18

Hole ID :	TP 08
Depth, m :	1.50

Material description :	slightly sandy gravelly silty CLAY
Remarks :	Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt

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_____Paddy McGonagle
Site Investigations Ltd

California Bearing Ratio (CBR) In accordance with BS1377: Part 4: Method 7

Client	Gerard Gannon Properties Ltd.
Site	Gorey Hill, Gorey
S.I. File No	5651 / 21
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie
Report Date	21st June 2021

CBR No	Depth (mBGL)	Sample No	Sample Type	Lab Ref	Moisture Content (%)	CBR Value (%)	Location / Remarks
TP01	0.50	MK26	CBR	21/597	11.1	9.4	
TP02	0.50	MK02	CBR	21/599	17.9	7.8	
TP03	0.50	MK23	CBR	21/601	13.2	6.4	
TP04	0.50	MK13	CBR	21/603	14.8	7.1	
TP05	0.50	MK05	CBR	21/605	13.0	5.9	
TP06	0.50	MK20	CBR	21/607	10.3	6.3	
TP07	0.50	MK09	CBR	21/609	19.8	6.5	
TP08	0.50	MK17	CBR	21/611	13.6	7.1	

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_____Paddy McGonagle
Site Investigations Ltd

Chemical Testing
In accordance with BS 1377: Part 3

Client	Gerard Gannon Properties Ltd.
Site	Gorey Hill, Gorey
S.I. File No	5851 / 21
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email:info@siteinvestigations.ie
Report Date	21st June 2021

Hole Id	Depth (mBGL)	Sample No	Lab Ref	pH Value	Water Soluble Sulphate Content (2:1 Water-soil extract) (SO_3) g/L	Water Soluble Sulphate Content (2:1 Water-soil extract) (SO_3) %	Loss on Ignition (Organic Content) %	Chloride ion Content (water:soil ratio 2:1) %	% passing 2mm	Remarks
TP01	1.00	MK27	21/598	7.95	0.122	0.017		0.19	13.7	
TP02	1.00	MK03	21/600	8.55	0.123	0.038		0.21	29.7	
TP03	1.80	MK24	21/602	8.11	0.117	0.030		0.22	25.6	
TP04	1.50	MK14	21/604	8.37	0.122	0.070		0.28	57.4	
TP05	1.00	MK06	21/606	8.32	0.127	0.090		0.29	70.9	
TP06	1.50	MK21	21/608	7.91	0.116	0.017		0.17	14.4	
TP07	1.00	MK10	21/610	8.24	0.116	0.070		0.26	59.6	
TP08	1.50	MK18	21/612	8.36	0.126	0.072		0.25	57.0	

Printed 22/06/2021

_____Paddy McGonagle
Site Investigations Ltd.

Appendix 4
Environmental Laboratory Test Results
And Waste Classification Report

eurofins | Chemtest
Eurofins Chemtest Ltd
Depot Road
Newmarket
CB8 0AL
Tel: 01638 606070
Email: info@chemtest.com

Final Report

Report No.:	21-20096-1
Initial Date of Issue:	21-Jun-2021
Client	Site Investigations Ltd
Client Address:	The Grange12th, Lock Road Lucan Co Dublin IRELAND
Contact(s):	Stephen Letch
Project	5861 Gorey Hill, Gorey
Quotation No.:	
Order No.:	32/A/21
No. of Samples:	8
Turnaround (Wkdays):	5
Date Approved:	21-Jun-2021
Approved By:	
Details:	Glynn Harvey, Technical Manager

Date Received:	14-Jun-2021
Date Instructed:	14-Jun-2021
Results Due:	18-Jun-2021

Results - Leachate

Project: 5861 Gorey Hill, Gorey

Client: Site Investigations Ltd						**Chemtest Job No.:**	21-20096	21-20096	21-20096	21-20096	21-20096	21-20096	21-20096
Quotation No.:						**Chemtest Sample ID.:**	1220385	1220386	1220387	1220388	1220389	1220390	1220391	1220392
Order No.: 32/A/21						Client Sample Ref.:	TP01	TP02	TP03	TP04	TP05	TP06	TP07	TP08
						Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
						Top Depth (m):	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
						Bottom Depth (m):	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
						Date Sampled:	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021
Determinand	**Accred.**	**SOP**	**Type**	**Units**	**LOD**									
Ammonium	U	1220	10:1	mg/l	0.050		0.16	0.17	0.16	0.15	0.10	0.15	0.14	0.14
Ammonium	N	1220	10:1	mg/kg	0.10		1.9	2.0	1.7	1.6	1.1	1.5	1.5	1.4

Results - Soil

Project: 5861 Gorey Hill, Gorey

Client: Site Investigations Ltd			**Chemtest Job No.:**		21-20096	21-20096	21-20096	21-20096	21-20096	21-20096	21-20096	21-20096
Quotation No.:			**Chemtest Sample ID.:**		1220385	1220386	1220387	1220388	1220389	1220390	1220391	1220392
Order No.: 32/A/21			Client Sample Ref.:		TP01	TP02	TP03	TP04	TP05	TP06	TP07	TP08
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
			Bottom Depth (m):		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
			Date Sampled:		11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
ACM Type	U	2192		N/A	-	-	-	-	-	-	-	-
Asbestos Identification	U	2192		N/A	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected	No Asbestos Detected
Moisture	N	2030	%	0.020	12	21	16	13	12	11	22	12
pH	M	2010		4.0	7.1	6.5	7.1	7.1	7.3	7.3	7.3	7.6
Boron (Hot Water Soluble)	M	2120	mg/kg	0.40	< 0.40	0.46	< 0.40	< 0.40	< 0.40	< 0.40	0.83	0.57
Sulphur (Elemental)	M	2180	mg/kg	1.0	1.1	1.2	< 1.0	< 1.0	< 1.0	< 1.0	1.1	1.2
Cyanide (Total)	M	2300	mg/kg	0.50	< 0.50	0.80	0.50	1.0	0.60	0.50	0.70	< 0.50
Sulphide (Easily Liberatable)	N	2325	mg/kg	0.50	< 0.50	< 0.50	0.67	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Sulphate (Total)	M	2430	%	0.010	0.081	0.096	0.067	0.061	0.016	0.022	0.058	0.023
Arsenic	M	2450	mg/kg	1.0	37	59	52	40	47	36	31	32
Barium	M	2450	mg/kg	10	42	97	80	57	42	48	48	39
Cadmium	M	2450	mg/kg	0.10	0.15	0.32	0.18	0.16	< 0.10	0.11	0.11	< 0.10
Chromium	M	2450	mg/kg	1.0	30	59	50	53	41	45	43	36
Molybdenum	M	2450	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Antimony	N	2450	mg/kg	2.0	< 2.0	3.1	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
Copper	M	2450	mg/kg	0.50	32	50	39	40	34	37	33	35
Mercury	M	2450	mg/kg	0.10	< 0.10	0.16	0.11	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Nickel	M	2450	mg/kg	0.50	33	50	48	54	37	50	42	39
Lead	M	2450	mg/kg	0.50	33	61	38	40	23	26	22	17
Selenium	M	2450	mg/kg	0.20	0.80	1.3	1.4	1.1	0.23	0.67	1.0	0.37
Zinc	M	2450	mg/kg	0.50	70	150	120	120	75	97	87	71
Chromium (Trivalent)	N	2490	mg/kg	1.0	30	59	50	53	41	45	43	36
Chromium (Hexavalent)	N	2490	mg/kg	0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50
Total Organic Carbon	M	2625	%	0.20	1.5	2.4	1.3	< 0.20	< 0.20	< 0.20	1.3	0.38
Mineral Oil (TPH Calculation)	N	2670	mg/kg	10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Aliphatic TPH >C5-C6	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C6-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C16-C21	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aliphatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aliphatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Aromatic TPH >C5-C7	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C7-C8	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C8-C10	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0

Results - Soil

Project: 5861 Gorey Hill, Gorey

Client: Site Investigations Ltd			**Chemtest Job No.:**		21-20096	21-20096	21-20096	21-20096	21-20096	21-20096	21-20096	21-20096
Quotation No.:			**Chemtest Sample ID.:**		1220385	1220386	1220387	1220388	1220389	1220390	1220391	1220392
Order No.: 32/A/21			Client Sample Ref.:		TP01	TP02	TP03	TP04	TP05	TP06	TP07	TP08
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
			Bottom Depth (m):		0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
			Date Sampled:		11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021
			Asbestos Lab:		DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Aromatic TPH >C10-C12	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C12-C16	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C16-C21	U	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C21-C35	M	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Aromatic TPH >C35-C44	N	2680	mg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Total Aromatic Hydrocarbons	N	2680	mg/kg	5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0
Total Petroleum Hydrocarbons	N	2680	mg/kg	10.0	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10
Benzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Toluene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Ethylbenzene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
m & p-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
o-Xylene	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Methyl Tert-Butyl Ether	M	2760	µg/kg	1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Naphthalene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthylene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Acenaphthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluorene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Phenanthrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]anthracene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Chrysene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[b]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[k]fluoranthene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[a]pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Indeno(1,2,3-c,d)Pyrene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Dibenz(a,h)Anthracene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Benzo[g,h,i]perylene	M	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Coronene	N	2800	mg/kg	0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Of 17 PAH's	N	2800	mg/kg	2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0
PCB 28	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 52	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 90+101	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 118	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 153	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 138	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010
PCB 180	U	2815	mg/kg	0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010	< 0.010

Results - Soil

Project: 5861 Gorey Hill, Gorey

Client: Site Investigations Ltd					**Chemtest Job No.:**	21-20096	21-20096	21-20096	21-20096	21-20096	21-20096	21-20096
Quotation No.:					**Chemtest Sample ID.:**	1220385	1220386	1220387	1220388	1220389	1220390	1220391	1220392
Order No.: 32/A/21					Client Sample Ref.:	TP01	TP02	TP03	TP04	TP05	TP06	TP07	TP08
					Sample Type:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
					Top Depth (m):	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
					Bottom Depth (m):	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
					Date Sampled:	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021	11-Jun-2021
					Asbestos Lab:	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM	DURHAM
Determinand	**Accred.**	**SOP**	**Units**	**LOD**									
Total PCBs (7 Congeners)	U	2815	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10
Total Phenols	M	2920	mg/kg	0.10		< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	0.50	< 0.10

Results - Single Stage WAC

Project: 5861 Gorey Hill, Gorey

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-20096						
Chemtest Sample ID:	1220385						
Sample Ref:	TP01						
Sample ID:							
Sample Location:							
Top Depth(m):	0.50						
Bottom Depth(m):	0.50						
Sampling Date:	11-Jun-2021						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	1.5	3	5	6
Loss On Ignition	2610	M	%	6.6	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		7.1	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0013	0.013	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0007	0.0074	0.5	10	70
Copper	1455	U	0.0014	0.014	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0011	0.011	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	0.0008	0.0077	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	1.7	17	800	15000	25000
Fluoride	1220	U	0.22	2.2	10	150	500
Sulphate	1220	U	1.4	14	1000	20000	50000
Total Dissolved Solids	1020	N	36	360	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	5.6	56	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5861 Gorey Hill, Gorey

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-20096						
Chemtest Sample ID:	1220386						
Sample Ref:	TP02						
Sample ID:							
Sample Location:							
Top Depth(m):	0.50						
Bottom Depth(m):	0.50						
Sampling Date:	11-Jun-2021						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	2.4	3	5	6
Loss On Ignition	2610	M	%	9.0	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		6.5	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0015	0.015	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0009	0.0092	0.5	10	70
Copper	1455	U	0.0018	0.018	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0008	0.0075	0.5	10	30
Nickel	1455	U	0.0007	0.0069	0.4	10	40
Lead	1455	U	0.0012	0.012	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	0.0007	0.0075	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	1.7	17	800	15000	25000
Fluoride	1220	U	0.15	1.5	10	150	500
Sulphate	1220	U	4.1	41	1000	20000	50000
Total Dissolved Solids	1020	N	32	320	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	8.0	80	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	21

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5861 Gorey Hill, Gorey

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-20096						
Chemtest Sample ID:	1220387						
Sample Ref:	TP03						
Sample ID:							
Sample Location:							
Top Depth(m):	0.50						
Bottom Depth(m):	0.50						
Sampling Date:	11-Jun-2021						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	1.3	3	5	6
Loss On Ignition	2610	M	%	5.9	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		7.1	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	0.0012	0.012	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	0.0009	0.0088	0.5	10	70
Copper	1455	U	0.0010	0.010	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0008	0.0079	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	0.0006	0.0064	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	1.0	10	800	15000	25000
Fluoride	1220	U	0.17	1.7	10	150	500
Sulphate	1220	U	4.9	49	1000	20000	50000
Total Dissolved Solids	1020	N	24	240	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	4.4	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	16

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5861 Gorey Hill, Gorey

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-20096						
Chemtest Sample ID:	1220388						
Sample Ref:	TP04						
Sample ID:							
Sample Location:							
Top Depth(m):	0.50						
Bottom Depth(m):	0.50						
Sampling Date:	11-Jun-2021						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	< 0.20	3	5	6
Loss On Ignition	2610	M	%	4.8	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		7.1	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0005	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0007	0.0072	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.090	< 1.0	10	150	500
Sulphate	1220	U	10	100	1000	20000	50000
Total Dissolved Solids	1020	N	27	270	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	3.1	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	13

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5861 Gorey Hill, Gorey

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-20096						
Chemtest Sample ID:	1220389						
Sample Ref:	TP05						
Sample ID:							
Sample Location:							
Top Depth(m):	0.50						
Bottom Depth(m):	0.50						
Sampling Date:	11-Jun-2021						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	< 0.20	3	5	6
Loss On Ignition	2610	M	%	3.5	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		7.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0005	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0007	0.0068	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.090	< 1.0	10	150	500
Sulphate	1220	U	3.8	38	1000	20000	50000
Total Dissolved Solids	1020	N	13	130	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	< 2.5	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5861 Gorey Hill, Gorey

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-20096						
Chemtest Sample ID:	1220390						
Sample Ref:	TP06						
Sample ID:							
Sample Location:							
Top Depth(m):	0.50						
Bottom Depth(m):	0.50						
Sampling Date:	11-Jun-2021						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	< 0.20	3	5	6
Loss On Ignition	2610	M	%	3.7	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		7.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0005	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0009	0.0086	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	1.1	11	800	15000	25000
Fluoride	1220	U	0.089	< 1.0	10	150	500
Sulphate	1220	U	3.4	34	1000	20000	50000
Total Dissolved Solids	1020	N	23	230	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	2.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	11

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5861 Gorey Hill, Gorey

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-20096						
Chemtest Sample ID:	1220391						
Sample Ref:	TP07						
Sample ID:							
Sample Location:							
Top Depth(m):	0.50						
Bottom Depth(m):	0.50						
Sampling Date:	11-Jun-2021						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	1.3	3	5	6
Loss On Ignition	2610	M	%	6.1	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		7.3	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0005	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0008	0.0082	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	< 1.0	< 10	800	15000	25000
Fluoride	1220	U	0.085	< 1.0	10	150	500
Sulphate	1220	U	2.6	26	1000	20000	50000
Total Dissolved Solids	1020	N	15	150	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	3.3	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	22

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Results - Single Stage WAC

Project: 5861 Gorey Hill, Gorey

					Landfill Waste Acceptance Criteria Limits		
Chemtest Job No:	21-20096						
Chemtest Sample ID:	1220392						
Sample Ref:	TP08						
Sample ID:							
Sample Location:							
Top Depth(m):	0.50						
Bottom Depth(m):	0.50						
Sampling Date:	11-Jun-2021						
Determinand	**SOP**	**Accred.**	**Units**		**Inert Waste Landfill**	**Stable, Non-reactive hazardous waste in non-hazardous Landfill**	**Hazardous Waste Landfill**
Total Organic Carbon	2625	M	%	0.38	3	5	6
Loss On Ignition	2610	M	%	3.9	--	--	10
Total BTEX	2760	M	mg/kg	< 0.010	6	--	--
Total PCBs (7 Congeners)	2815	M	mg/kg	< 0.10	1	--	--
TPH Total WAC	2670	M	mg/kg	< 10	500	--	--
Total (Of 17) PAH's	2800	N	mg/kg	< 2.0	100	--	--
pH	2010	M		7.6	--	>6	--
Acid Neutralisation Capacity	2015	N	mol/kg	< 0.0020	--	To evaluate	To evaluate
Eluate Analysis			**10:1 Eluate mg/l**	**10:1 Eluate mg/kg**	**Limit values for compliance leaching test using BS EN 12457 at L/S 10 l/kg**		
Arsenic	1455	U	< 0.0002	< 0.0002	0.5	2	25
Barium	1455	U	< 0.005	< 0.0005	20	100	300
Cadmium	1455	U	< 0.00011	< 0.00011	0.04	1	5
Chromium	1455	U	< 0.0005	< 0.0005	0.5	10	70
Copper	1455	U	< 0.0005	< 0.0005	2	50	100
Mercury	1455	U	< 0.00005	< 0.00005	0.01	0.2	2
Molybdenum	1455	U	0.0008	0.0078	0.5	10	30
Nickel	1455	U	< 0.0005	< 0.0005	0.4	10	40
Lead	1455	U	< 0.0005	< 0.0005	0.5	10	50
Antimony	1455	U	< 0.0005	< 0.0005	0.06	0.7	5
Selenium	1455	U	< 0.0005	< 0.0005	0.1	0.5	7
Zinc	1455	U	< 0.003	< 0.003	4	50	200
Chloride	1220	U	1.0	10	800	15000	25000
Fluoride	1220	U	0.088	< 1.0	10	150	500
Sulphate	1220	U	4.8	48	1000	20000	50000
Total Dissolved Solids	1020	N	22	220	4000	60000	100000
Phenol Index	1920	U	< 0.030	< 0.30	1	-	-
Dissolved Organic Carbon	1610	U	2.7	< 50	500	800	1000

Solid Information	
Dry mass of test portion/kg	0.090
Moisture (%)	12

Waste Acceptance Criteria

Landfill WAC analysis (specifically leaching test results) must not be used for hazardous waste classification purposes. This analysis is only applicable for hazardous waste landfill acceptance and does not give any indication as to whether a waste may be hazardous or non-hazardous.

Test Methods

SOP	Title	Parameters included	Method summary
1010	pH Value of Waters	pH	pH Meter
1020	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Electrical Conductivity and Total Dissolved Solids (TDS) in Waters	Conductivity Meter
1220	Anions, Alkalinity & Ammonium in Waters	Fluoride; Chloride; Nitrite; Nitrate; Total; Oxidisable Nitrogen (TON); Sulfate; Phosphate; Alkalinity; Ammonium	Automated colorimetric analysis using 'Aquakem 600' Discrete Analyser.
1455	Metals in Waters by ICP-MS	Metals, including: Antimony; Arsenic; Barium; Beryllium; Boron; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Tin; Vanadium; Zinc	Filtration of samples followed by direct determination by inductively coupled plasma mass spectrometry (ICP-MS).
1610	Total/Dissolved Organic Carbon in Waters	Organic Carbon	TOC Analyser using Catalytic Oxidation
1920	Phenols in Waters by HPLC	Phenolic compounds including: Phenol, Cresols, Xylenols, Trimethylphenols Note: Chlorophenols are excluded.	Determination by High Performance Liquid Chromatography (HPLC) using electrochemical detection.
2010	pH Value of Soils	pH	pH Meter
2015	Acid Neutralisation Capacity	Acid Reserve	Titration
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2120	Water Soluble Boron, Sulphate, Magnesium & Chromium	Boron; Sulphate; Magnesium; Chromium	Aqueous extraction / ICP-OES
2180	Sulphur (Elemental) in Soils by HPLC	Sulphur	Dichloromethane extraction / HPLC with UV detection
2192	Asbestos	Asbestos	Polarised light microscopy / Gravimetry
2300	Cyanides & Thiocyanate in Soils	Free (or easy liberatable) Cyanide; total Cyanide; complex Cyanide; Thiocyanate	Allkaline extraction followed by colorimetric determination using Automated Flow Injection Analyser.
2325	Sulphide in Soils	Sulphide	Steam distillation with sulphuric acid / analysis by 'Aquakem 600' Discrete Analyser, using N,N–dimethyl-p-phenylenediamine.
2430	Total Sulphate in soils	Total Sulphate	Acid digestion followed by determination of sulphate in extract by ICP-OES.
2450	Acid Soluble Metals in Soils	Metals, including: Arsenic; Barium; Beryllium; Cadmium; Chromium; Cobalt; Copper; Lead; Manganese; Mercury; Molybdenum; Nickel; Selenium; Vanadium; Zinc	Acid digestion followed by determination of metals in extract by ICP-MS.
2490	Hexavalent Chromium in Soils	Chromium [VI]	Soil extracts are prepared by extracting dried and ground soil samples into boiling water. Chromium [VI] is determined by 'Aquakem 600' Discrete Analyser using 1,5-diphenylcarbazide.
2610	Loss on Ignition	loss on ignition (LOI)	Determination of the proportion by mass that is lost from a soil by ignition at 550°C.
2625	Total Organic Carbon in Soils	Total organic Carbon (TOC)	Determined by high temperature combustion under oxygen, using an Eltra elemental analyser.
2670	Total Petroleum Hydrocarbons (TPH) in Soils by GC-FID	TPH (C6–C40); optional carbon banding, e.g. 3-band – GRO, DRO & LRO*TPH C8–C40	Dichloromethane extraction / GC-FID
2680	TPH A/A Split	Aliphatics: >C5–C6, >C6–C8,>C8–C10, >C10–C12, >C12–C16, >C16–C21, >C21–C35, >C35– C44Aromatics: >C5–C7, >C7–C8, >C8– C10, >C10–C12, >C12–C16, >C16– C21, >C21– C35, >C35– C44	Dichloromethane extraction / GCxGC FID detection

Test Methods

SOP	Title	Parameters included	Method summary
2760	Volatile Organic Compounds (VOCs) in Soils by Headspace GC-MS	Volatile organic compounds, including BTEX and halogenated Aliphatic/Aromatics.(cf. USEPA Method 8260)*please refer to UKAS schedule	Automated headspace gas chromatographic (GC) analysis of a soil sample, as received, with mass spectrometric (MS) detection of volatile organic compounds.
2800	Speciated Polynuclear Aromatic Hydrocarbons (PAH) in Soil by GC-MS	Acenaphthene*; Acenaphthylene; Anthracene*; Benzo[a]Anthracene*; Benzo[a]Pyrene*; Benzo[b]Fluoranthene*; Benzo[ghi]Perylene*; Benzo[k]Fluoranthene; Chrysene*; Dibenz[ah]Anthracene; Fluoranthene*; Fluorene*; Indeno[123cd]Pyrene*; Naphthalene*; Phenanthrene*; Pyrene*	Dichloromethane extraction / GC-MS
2815	Polychlorinated Biphenyls (PCB) ICES7Congeners in Soils by GC-MS	ICES7 PCB congeners	Acetone/Hexane extraction / GC-MS
2920	Phenols in Soils by HPLC	Phenolic compounds including Resorcinol, Phenol, Methylphenols, Dimethylphenols, 1-Naphthol and TrimethylphenolsNote: chlorophenols are excluded.	60:40 methanol/water mixture extraction, followed by HPLC determination using electrochemical detection.
640	Characterisation of Waste (Leaching C10)	Waste material including soil, sludges and granular waste	ComplianceTest for Leaching of Granular Waste Material and Sludge

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

HazWasteOnline™

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

BWDNT-89H9H-KV6V6

Job name

5861

Description/Comments

Client: Gerard Gannon Properties
Engineer: Waterman Moylan

Project

Gorey Hill

Site

Gorey, Co. Wexford

Classified by

Name:
Stephen Letch
Company:
Site Investigations Ltd
Date:
23 Jun 2021 08:26 GMT
Telephone:
00353 86817 9449

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: CERTIFIED

Course	Date
Hazardous Waste Classification	09 Oct 2019

Next 3 year Refresher due by Oct 2022

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	WAC Results		Page
					Inert	Non Haz	
1	TP01-0.50	0.50-0.50	Non Hazardous		Pass	Pass	2
2	TP02-0.50	0.50-0.50	Non Hazardous		Pass	Pass	6
3	TP03-0.50	0.50-0.50	Non Hazardous		Pass	Pass	10
4	TP04-0.50	0.50-0.50	Non Hazardous		Pass	Pass	14
5	TP05-0.50	0.50-0.50	Non Hazardous		Pass	Pass	18
6	TP06-0.50	0.50-0.50	Non Hazardous		Pass	Pass	22
7	TP07-0.50	0.50-0.50	Non Hazardous		Pass	Pass	26
8	TP08-0.50	0.50-0.50	Non Hazardous		Pass	Pass	30

Related documents

#	Name	Description
1	HWOL_21-20096-20210622 122628 REV.hwol	.hwol file used to create the Job

WAC results

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate the samples in this Job: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

Report

Created by: Stephen Letch
Created date: 23 Jun 2021 08:26 GMT

Classification of sample: TP01-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP01-0.50
Sample Depth:
0.50-0.50 m
Moisture content:
12%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	pH PH		7.1 pH		7.1 pH	7.1 pH		
2	boron { diboron trioxide; boric oxide } 005-008-00-8 / 215-125-8 / 1303-86-2		<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
3	sulfur { sulfur } 016-094-00-1 / 231-722-6 / 7704-34-9		1.1 mg/kg		0.968 mg/kg	0.0000968 %	✓	
4	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5		<0.5 mg/kg	1.884	<0.942 mg/kg	<0.0000942 %		<LOD
5	barium { barium oxide } 215-127-9 / 1304-28-5		42 mg/kg	1.117	41.266 mg/kg	0.00413 %	✓	
6	cadmium { cadmium oxide } 048-002-00-0 / 215-146-2 / 1306-19-0		0.15 mg/kg	1.142	0.151 mg/kg	0.0000151 %	✓	
7	molybdenum { molybdenum(VI) oxide } 042-001-00-9 / 215-204-7 / 1313-27-5		<2 mg/kg	1.5	<3 mg/kg	<0.0003 %		<LOD
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex } 051-003-00-9	1	<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
9	arsenic { arsenic } 033-001-00-X / 231-148-6 / 7440-38-2		37 mg/kg		32.56 mg/kg	0.00326 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm] 029-024-00-X / 231-159-6 / 7440-50-8		32 mg/kg		28.16 mg/kg	0.00282 %	✓	
11	mercury { mercury } 080-001-00-0 / 231-106-7 / 7439-97-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
12	nickel { nickel(II) oxide (nickel monoxide) } 028-003-00-2 / 215-215-7 [1] 234-323-5 [2] - [3] / 1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		33 mg/kg	1.273	36.956 mg/kg	0.0037 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6	1	33 mg/kg		29.04 mg/kg	0.0029 %	✓	

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
14	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.8 mg/kg	1.405	0.989 mg/kg	0.0000989 %	✓	
15	zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		70 mg/kg	1.245	76.674 mg/kg	0.00767 %	✓	
16	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5 mg/kg	1.923	<0.962 mg/kg	<0.0000962 %		<LOD
17	chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		30 mg/kg	1.462	38.585 mg/kg	0.00386 %	✓	
18	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
19	benzene	601-020-00-8	200-753-7	71-43-2		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
20	toluene	601-021-00-3	203-625-9	108-88-3		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
21	ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
22	tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1 µg/kg		<0.001 mg/kg	<0.0000001 %		<LOD
23	naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
24	acenaphthylene		205-917-1	208-96-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
25	acenaphthene		201-469-6	83-32-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
26	fluorene		201-695-5	86-73-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
27	phenanthrene		201-581-5	85-01-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
28	anthracene		204-371-1	120-12-7		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
29	fluoranthene		205-912-4	206-44-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
30	pyrene		204-927-3	129-00-0		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
31	benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
32	chrysene	601-048-00-0	205-923-4	218-01-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
33	benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
34	benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
35	benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
36	indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
37	dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
38	benzo[ghi]perylene		205-883-8	191-24-2		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
39	coronene		205-881-7	191-07-1		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
40	monohydric phenols			P1186		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
41		xylene											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
42		polychlorobiphenyls; PCB				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0306 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP01-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.5	3	5
2	LOI (loss on ignition)	%	6.6	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	7.1	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.013	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0074	0.5	10
13	copper	mg/kg	0.014	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.011	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	0.0077	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	17	800	15,000
22	fluoride	mg/kg	2.2	10	150
23	sulphate	mg/kg	14	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	56	500	800
26	TDS (total dissolved solids)	mg/kg	360	4,000	60,000

Key

User supplied data

Classification of sample: TP02-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP02-0.50
Sample Depth:
0.50-0.50 m
Moisture content:
21%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 21% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		6.5	pH		6.5	pH	6.5 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.46	mg/kg	3.22	1.17	mg/kg	0.000117 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		1.2	mg/kg		0.948	mg/kg	0.0000948 %	✓	
4	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.8	mg/kg	1.884	1.191	mg/kg	0.000119 %	✓	
5	barium { barium oxide }		215-127-9	1304-28-5		97	mg/kg	1.117	85.558	mg/kg	0.00856 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.32	mg/kg	1.142	0.289	mg/kg	0.0000289 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		<2	mg/kg	1.5	<3	mg/kg	<0.0003 %		**<LOD**
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	3.1	mg/kg		2.449	mg/kg	0.000245 %	✓	
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		59	mg/kg		46.61	mg/kg	0.00466 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		50	mg/kg		39.5	mg/kg	0.00395 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		0.16	mg/kg		0.126	mg/kg	0.0000126 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		50	mg/kg	1.273	50.267	mg/kg	0.00503 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	61	mg/kg		48.19	mg/kg	0.00482 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1.3	mg/kg	1.405	1.443	mg/kg	0.000144 %	✓	
		034-002-00-8											
15		zinc { zinc oxide }				150	mg/kg	1.245	147.499	mg/kg	0.0147 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
17		chromium in chromium(III) compounds { chromium(III) oxide }				59	mg/kg	1.462	68.123	mg/kg	0.00681 %	✓	
			215-160-9	1308-38-9									
18		TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
				TPH									
19		benzene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
20		toluene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
21		ethylbenzene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
22		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
23		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
24		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
25		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
26		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
28		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
29		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
30		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
31		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
32		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
33		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
34		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
35		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
36		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
37		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
38		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
39		coronene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-881-7	191-07-1									
40		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
				P1186									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
41		xylene											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
42	●	polychlorobiphenyls; PCB				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0509 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP02-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	2.4	3	5
2	LOI (loss on ignition)	%	9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	6.5	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.015	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0092	0.5	10
13	copper	mg/kg	0.018	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.0075	0.5	10
16	nickel	mg/kg	0.0069	0.4	10
17	lead	mg/kg	0.012	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	0.0075	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	17	800	15,000
22	fluoride	mg/kg	1.5	10	150
23	sulphate	mg/kg	41	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	80	500	800
26	TDS (total dissolved solids)	mg/kg	320	4,000	60,000

Key

User supplied data

Classification of sample: TP03-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP03-0.50
Sample Depth:
0.50-0.50 m
Moisture content:
16%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 16% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	pH PH		7.1 pH		7.1 pH	7.1 pH		
2	boron { diboron trioxide; boric oxide } 005-008-00-8 / 215-125-8 / 1303-86-2		<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
3	sulfur { sulfur } 016-094-00-1 / 231-722-6 / 7704-34-9		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5		0.5 mg/kg	1.884	0.791 mg/kg	0.0000791 %	✓	
5	barium { barium oxide } 215-127-9 / 1304-28-5		80 mg/kg	1.117	75.029 mg/kg	0.0075 %	✓	
6	cadmium { cadmium oxide } 048-002-00-0 / 215-146-2 / 1306-19-0		0.18 mg/kg	1.142	0.173 mg/kg	0.0000173 %	✓	
7	molybdenum { molybdenum(VI) oxide } 042-001-00-9 / 215-204-7 / 1313-27-5		<2 mg/kg	1.5	<3 mg/kg	<0.0003 %		<LOD
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex } 051-003-00-9	1	<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
9	arsenic { arsenic } 033-001-00-X / 231-148-6 / 7440-38-2		52 mg/kg		43.68 mg/kg	0.00437 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm] 029-024-00-X / 231-159-6 / 7440-50-8		39 mg/kg		32.76 mg/kg	0.00328 %	✓	
11	mercury { mercury } 080-001-00-0 / 231-106-7 / 7439-97-6		0.11 mg/kg		0.0924 mg/kg	0.00000924 %	✓	
12	nickel { nickel(II) oxide (nickel monoxide) } 028-003-00-2 / 215-215-7 [1] 234-323-5 [2] - [3] / 1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		48 mg/kg	1.273	51.311 mg/kg	0.00513 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6	1	38 mg/kg		31.92 mg/kg	0.00319 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1.4	mg/kg	1.405	1.652	mg/kg	0.000165 %	✓	
		034-002-00-8											
15		zinc { zinc oxide }				120	mg/kg	1.245	125.467	mg/kg	0.0125 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
17		chromium in chromium(III) compounds { chromium(III) oxide }				50	mg/kg	1.462	61.385	mg/kg	0.00614 %	✓	
			215-160-9	1308-38-9									
18		TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
				TPH									
19		benzene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
20		toluene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
21		ethylbenzene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
22		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
23		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
24		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
25		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
26		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
28		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
29		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
30		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
31		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
32		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
33		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
34		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
35		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
36		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
37		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
38		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
39		coronene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-881-7	191-07-1									
40		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
				P1186									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
41		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
42	●	polychlorobiphenyls; PCB				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0444 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP03-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.3	3	5
2	LOI (loss on ignition)	%	5.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	7.1	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	0.012	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	0.0088	0.5	10
13	copper	mg/kg	0.01	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.0079	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	0.0064	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	10	800	15,000
22	fluoride	mg/kg	1.7	10	150
23	sulphate	mg/kg	49	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	240	4,000	60,000

Key

User supplied data

Classification of sample: TP04-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP04-0.50
Sample Depth:
0.50-0.50 m
Moisture content:
13%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 13% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	pH PH		7.1 pH		7.1 pH	7.1 pH		
2	boron { diboron trioxide; boric oxide } 005-008-00-8 / 215-125-8 / 1303-86-2		<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
3	sulfur { sulfur } 016-094-00-1 / 231-722-6 / 7704-34-9		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5		1 mg/kg	1.884	1.639 mg/kg	0.000164 %	✓	
5	barium { barium oxide } 215-127-9 / 1304-28-5		57 mg/kg	1.117	55.368 mg/kg	0.00554 %	✓	
6	cadmium { cadmium oxide } 048-002-00-0 / 215-146-2 / 1306-19-0		0.16 mg/kg	1.142	0.159 mg/kg	0.0000159 %	✓	
7	molybdenum { molybdenum(VI) oxide } 042-001-00-9 / 215-204-7 / 1313-27-5		<2 mg/kg	1.5	<3 mg/kg	<0.0003 %		<LOD
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex } 051-003-00-9	1	<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
9	arsenic { arsenic } 033-001-00-X / 231-148-6 / 7440-38-2		40 mg/kg		34.8 mg/kg	0.00348 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm] 029-024-00-X / 231-159-6 / 7440-50-8		40 mg/kg		34.8 mg/kg	0.00348 %	✓	
11	mercury { mercury } 080-001-00-0 / 231-106-7 / 7439-97-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
12	nickel { nickel(II) oxide (nickel monoxide) } 028-003-00-2 / 215-215-7 [1] 234-323-5 [2] - [3] / 1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		54 mg/kg	1.273	59.786 mg/kg	0.00598 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6	1	40 mg/kg		34.8 mg/kg	0.00348 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1.1	mg/kg	1.405	1.345	mg/kg	0.000134 %	✓	
		034-002-00-8											
15		zinc { zinc oxide }				120	mg/kg	1.245	129.948	mg/kg	0.013 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
17		chromium in chromium(III) compounds { chromium(III) oxide }				53	mg/kg	1.462	67.392	mg/kg	0.00674 %	✓	
			215-160-9	1308-38-9									
18		TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
				TPH									
19		benzene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
20		toluene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
21		ethylbenzene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
22		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
23		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
24		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
25		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
26		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
28		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
29		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
30		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
31		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
32		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
33		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
34		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
35		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
36		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
37		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
38		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
39		coronene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-881-7	191-07-1									
40		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
				P1186									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
41		xylene											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
42	●	polychlorobiphenyls; PCB				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.044 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP04-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	<0.2	3	5
2	LOI (loss on ignition)	%	4.8	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	7.1	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.0002	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	<0.0005	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.0072	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	<1	10	150
23	sulphate	mg/kg	100	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	270	4,000	60,000

Key

User supplied data

Classification of sample: TP05-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP05-0.50
Sample Depth:
0.50-0.50 m
Moisture content:
12%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.3	pH		7.3	pH	7.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		<0.4	mg/kg	3.22	<1.288	mg/kg	<0.000129 %		<LOD
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		<1	mg/kg		<1	mg/kg	<0.0001 %		<LOD
4	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.6	mg/kg	1.884	0.995	mg/kg	0.0000995 %	✓	
5	barium { barium oxide }		215-127-9	1304-28-5		42	mg/kg	1.117	41.266	mg/kg	0.00413 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		<LOD
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		<2	mg/kg	1.5	<3	mg/kg	<0.0003 %		<LOD
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		47	mg/kg		41.36	mg/kg	0.00414 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		34	mg/kg		29.92	mg/kg	0.00299 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		37	mg/kg	1.273	41.436	mg/kg	0.00414 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	23	mg/kg		20.24	mg/kg	0.00202 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.23	mg/kg	1.405	0.284	mg/kg	0.0000284 %	✓	
		034-002-00-8											
15		zinc { zinc oxide }				75	mg/kg	1.245	82.151	mg/kg	0.00822 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
17		chromium in chromium(III) compounds { chromium(III) oxide }				41	mg/kg	1.462	52.733	mg/kg	0.00527 %	✓	
			215-160-9	1308-38-9									
18		TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
				TPH									
19		benzene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
20		toluene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
21		ethylbenzene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
22		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
23		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
24		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
25		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
26		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
28		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
29		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
30		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
31		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
32		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
33		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
34		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
35		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
36		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
37		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
38		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
39		coronene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-881-7	191-07-1									
40		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
				P1186									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
41		xylene											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
42		polychlorobiphenyls; PCB				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0331 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP05-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	<0.2	3	5
2	LOI (loss on ignition)	%	3.5	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	7.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.0002	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	<0.0005	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.0068	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	<1	10	150
23	sulphate	mg/kg	38	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	130	4,000	60,000

Key

User supplied data

Classification of sample: TP06-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP06-0.50
Sample Depth:
0.50-0.50 m
Moisture content:
11%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 11% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
	CLP index number / EC Number / CAS Number							
1	pH PH		7.3 pH		7.3 pH	7.3 pH		
2	boron { diboron trioxide; boric oxide } 005-008-00-8 / 215-125-8 / 1303-86-2		<0.4 mg/kg	3.22	<1.288 mg/kg	<0.000129 %		<LOD
3	sulfur { sulfur } 016-094-00-1 / 231-722-6 / 7704-34-9		<1 mg/kg		<1 mg/kg	<0.0001 %		<LOD
4	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex } 006-007-00-5		0.5 mg/kg	1.884	0.838 mg/kg	0.0000838 %	✓	
5	barium { barium oxide } 215-127-9 / 1304-28-5		48 mg/kg	1.117	47.697 mg/kg	0.00477 %	✓	
6	cadmium { cadmium oxide } 048-002-00-0 / 215-146-2 / 1306-19-0		0.11 mg/kg	1.142	0.112 mg/kg	0.0000112 %	✓	
7	molybdenum { molybdenum(VI) oxide } 042-001-00-9 / 215-204-7 / 1313-27-5		<2 mg/kg	1.5	<3 mg/kg	<0.0003 %		<LOD
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex } 051-003-00-9	1	<2 mg/kg		<2 mg/kg	<0.0002 %		<LOD
9	arsenic { arsenic } 033-001-00-X / 231-148-6 / 7440-38-2		36 mg/kg		32.04 mg/kg	0.0032 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm] 029-024-00-X / 231-159-6 / 7440-50-8		37 mg/kg		32.93 mg/kg	0.00329 %	✓	
11	mercury { mercury } 080-001-00-0 / 231-106-7 / 7439-97-6		<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		<LOD
12	nickel { nickel(II) oxide (nickel monoxide) } 028-003-00-2 / 215-215-7 [1] 234-323-5 [2] - [3] / 1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		50 mg/kg	1.273	56.63 mg/kg	0.00566 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex } 082-001-00-6	1	26 mg/kg		23.14 mg/kg	0.00231 %	✓	

#		Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				0.67	mg/kg	1.405	0.838	mg/kg	0.0000838 %	✓	
15		zinc { zinc oxide }	030-013-00-7	215-222-5	1314-13-2		97	mg/kg	1.245	107.456	mg/kg	0.0107 %	✓	
16		chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		**<LOD**
17		chromium in chromium(III) compounds { chromium(III) oxide }		215-160-9	1308-38-9		45	mg/kg	1.462	58.535	mg/kg	0.00585 %	✓	
18		TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		**<LOD**
19		benzene	601-020-00-8	200-753-7	71-43-2		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
20		toluene	601-021-00-3	203-625-9	108-88-3		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
21		ethylbenzene	601-023-00-4	202-849-4	100-41-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
22		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane	603-181-00-X	216-653-1	1634-04-4		<1	µg/kg		<0.001	mg/kg	<0.0000001 %		**<LOD**
23		naphthalene	601-052-00-2	202-049-5	91-20-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
24		acenaphthylene		205-917-1	208-96-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
25		acenaphthene		201-469-6	83-32-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
26		fluorene		201-695-5	86-73-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
27		phenanthrene		201-581-5	85-01-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
28		anthracene		204-371-1	120-12-7		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
29		fluoranthene		205-912-4	206-44-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
30		pyrene		204-927-3	129-00-0		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
31		benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
32		chrysene	601-048-00-0	205-923-4	218-01-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
33		benzo[b]fluoranthene	601-034-00-4	205-911-9	205-99-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
34		benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
35		benzo[a]pyrene; benzo[def]chrysene	601-032-00-3	200-028-5	50-32-8		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
36		indeno[123-cd]pyrene		205-893-2	193-39-5		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
37		dibenz[a,h]anthracene	601-041-00-2	200-181-8	53-70-3		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
38		benzo[ghi]perylene		205-883-8	191-24-2		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
39		coronene		205-881-7	191-07-1		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
40		monohydric phenols			P1186		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
41		xylene											
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
42		polychlorobiphenyls; PCB				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.038 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP06-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	<0.2	3	5
2	LOI (loss on ignition)	%	3.7	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	7.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.0002	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	<0.0005	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.0086	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	11	800	15,000
22	fluoride	mg/kg	<1	10	150
23	sulphate	mg/kg	34	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	230	4,000	60,000

Key

User supplied data

Classification of sample: TP07-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP07-0.50
Sample Depth:
0.50-0.50 m
Moisture content:
22%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 22% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.3	pH		7.3	pH	7.3 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.83	mg/kg	3.22	2.085	mg/kg	0.000208 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		1.1	mg/kg		0.858	mg/kg	0.0000858 %	✓	
4	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				0.7	mg/kg	1.884	1.029	mg/kg	0.000103 %	✓	
5	barium { barium oxide }		215-127-9	1304-28-5		48	mg/kg	1.117	41.802	mg/kg	0.00418 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		0.11	mg/kg	1.142	0.098	mg/kg	0.0000098 %	✓	
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		<2	mg/kg	1.5	<3	mg/kg	<0.0003 %		<LOD
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		<LOD
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		31	mg/kg		24.18	mg/kg	0.00242 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		33	mg/kg		25.74	mg/kg	0.00257 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		42	mg/kg	1.273	41.69	mg/kg	0.00417 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	22	mg/kg		17.16	mg/kg	0.00172 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				1	mg/kg	1.405	1.096	mg/kg	0.00011 %	✓	
		034-002-00-8											
15		zinc { zinc oxide }				87	mg/kg	1.245	84.466	mg/kg	0.00845 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
17		chromium in chromium(III) compounds { chromium(III) oxide }				43	mg/kg	1.462	49.021	mg/kg	0.0049 %	✓	
			215-160-9	1308-38-9									
18		TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
				TPH									
19		benzene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
20		toluene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
21		ethylbenzene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
22		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
23		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
24		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
25		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
26		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
28		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
29		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
30		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
31		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
32		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
33		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
34		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
35		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
36		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
37		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
38		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
39		coronene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-881-7	191-07-1									
40		monohydric phenols				0.5	mg/kg		0.39	mg/kg	0.000039 %	✓	
				P1186									

#		Determinand			CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number							
41		xylene									
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]		<2 µg/kg		<0.002 mg/kg	<0.0000002 %		**<LOD**
42	●	polychlorobiphenyls; PCB				<0.1 mg/kg		<0.1 mg/kg	<0.00001 %		**<LOD**
		602-039-00-4	215-648-1	1336-36-3							
								Total:	0.0307 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP07-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	1.3	3	5
2	LOI (loss on ignition)	%	6.1	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	7.3	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.0002	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	<0.0005	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.0082	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	<10	800	15,000
22	fluoride	mg/kg	<1	10	150
23	sulphate	mg/kg	26	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	150	4,000	60,000

Key

User supplied data

Classification of sample: TP08-0.50

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
TP08-0.50
Sample Depth:
0.50-0.50 m
Moisture content:
12%
(wet weight correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 12% Wet Weight Moisture Correction applied (MC)

#	Determinand	CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.6	pH		7.6	pH	7.6 pH		
2	boron { diboron trioxide; boric oxide }	005-008-00-8	215-125-8	1303-86-2		0.57	mg/kg	3.22	1.615	mg/kg	0.000162 %	✓	
3	sulfur { sulfur }	016-094-00-1	231-722-6	7704-34-9		1.2	mg/kg		1.056	mg/kg	0.000106 %	✓	
4	cyanides { salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex }	006-007-00-5				<0.5	mg/kg	1.884	<0.942	mg/kg	<0.0000942 %		**<LOD**
5	barium { barium oxide }		215-127-9	1304-28-5		39	mg/kg	1.117	38.318	mg/kg	0.00383 %	✓	
6	cadmium { cadmium oxide }	048-002-00-0	215-146-2	1306-19-0		<0.1	mg/kg	1.142	<0.114	mg/kg	<0.0000114 %		**<LOD**
7	molybdenum { molybdenum(VI) oxide }	042-001-00-9	215-204-7	1313-27-5		<2	mg/kg	1.5	<3	mg/kg	<0.0003 %		**<LOD**
8	antimony { antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex }	051-003-00-9			1	<2	mg/kg		<2	mg/kg	<0.0002 %		**<LOD**
9	arsenic { arsenic }	033-001-00-X	231-148-6	7440-38-2		32	mg/kg		28.16	mg/kg	0.00282 %	✓	
10	granulated copper; [particle length: from 0,9 mm to 6,0 mm; particle width: from 0,494 to 0,949 mm]	029-024-00-X	231-159-6	7440-50-8		35	mg/kg		30.8	mg/kg	0.00308 %	✓	
11	mercury { mercury }	080-001-00-0	231-106-7	7439-97-6		<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
12	nickel { nickel(II) oxide (nickel monoxide) }	028-003-00-2	215-215-7 [1] 234-323-5 [2] - [3]	1313-99-1 [1] 11099-02-8 [2] 34492-97-2 [3]		39	mg/kg	1.273	43.675	mg/kg	0.00437 %	✓	
13	lead { lead compounds with the exception of those specified elsewhere in this Annex }	082-001-00-6			1	17	mg/kg		14.96	mg/kg	0.0015 %	✓	

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
14		selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }				0.37	mg/kg	1.405	0.457	mg/kg	0.0000457 %	✓	
		034-002-00-8											
15		zinc { zinc oxide }				71	mg/kg	1.245	77.77	mg/kg	0.00778 %	✓	
		030-013-00-7	215-222-5	1314-13-2									
16		chromium in chromium(VI) compounds { chromium(VI) oxide }				<0.5	mg/kg	1.923	<0.962	mg/kg	<0.0000962 %		<LOD
		024-001-00-0	215-607-8	1333-82-0									
17		chromium in chromium(III) compounds { chromium(III) oxide }				36	mg/kg	1.462	46.302	mg/kg	0.00463 %	✓	
			215-160-9	1308-38-9									
18		TPH (C6 to C40) petroleum group				<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
				TPH									
19		benzene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-020-00-8	200-753-7	71-43-2									
20		toluene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-021-00-3	203-625-9	108-88-3									
21		ethylbenzene				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		601-023-00-4	202-849-4	100-41-4									
22		tert-butyl methyl ether; MTBE; 2-methoxy-2-methylpropane				<1	µg/kg		<0.001	mg/kg	<0.0000001 %		<LOD
		603-181-00-X	216-653-1	1634-04-4									
23		naphthalene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
24		acenaphthylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-917-1	208-96-8									
25		acenaphthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-469-6	83-32-9									
26		fluorene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-695-5	86-73-7									
27		phenanthrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			201-581-5	85-01-8									
28		anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-371-1	120-12-7									
29		fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-912-4	206-44-0									
30		pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			204-927-3	129-00-0									
31		benzo[a]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
32		chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
33		benzo[b]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
34		benzo[k]fluoranthene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
35		benzo[a]pyrene; benzo[def]chrysene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
36		indeno[123-cd]pyrene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-893-2	193-39-5									
37		dibenz[a,h]anthracene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
38		benzo[ghi]perylene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-883-8	191-24-2									
39		coronene				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
			205-881-7	191-07-1									
40		monohydric phenols				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		<LOD
				P1186									

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		CLP index number	EC Number	CAS Number									
41		xylene				<2	µg/kg		<0.002	mg/kg	<0.0000002 %		**<LOD**
		601-022-00-9	202-422-2 [1] 203-396-5 [2] 203-576-3 [3] 215-535-7 [4]	95-47-6 [1] 106-42-3 [2] 108-38-3 [3] 1330-20-7 [4]									
42	●	polychlorobiphenyls; PCB				<0.1	mg/kg		<0.1	mg/kg	<0.00001 %		**<LOD**
		602-039-00-4	215-648-1	1336-36-3									
										Total:	0.0302 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
ND	Not detected
CLP: Note 1	Only the metal concentration has been used for classification

WAC results for sample: TP08-0.50

WAC Settings: samples in this Job constitute a single population.

WAC limits used to evaluate this sample: "Ireland"
The WAC used in this report are the WAC defined for the inert and non-hazardous classes of landfill in the Republic of Ireland. You should check the actual acceptance criteria when the disposal site is identified as they may differ from the generic WAC used in this report.

The sample PASSES the Inert (Inert waste landfill) criteria.

The sample PASSES the Non Haz (Non hazardous waste landfill) criteria.

WAC Determinands

Solid Waste Analysis				Landfill Waste Acceptance Criteria Limits	
#	Determinand		User entered data	Inert waste landfill	Non hazardous waste landfill
1	TOC (total organic carbon)	%	0.38	3	5
2	LOI (loss on ignition)	%	3.9	-	-
3	BTEX (benzene, toluene, ethylbenzene and xylenes)	mg/kg	<0.01	6	-
4	PCBs (polychlorinated biphenyls, 7 congeners)	mg/kg	<0.1	1	-
5	Mineral oil (C10 to C40)	mg/kg	<10	500	-
6	PAHs (polycyclic aromatic hydrocarbons)	mg/kg	<2	100	-
7	pH	pH	7.6	-	>6
8	ANC (acid neutralisation capacity)	mol/kg	<0.002	-	-
Eluate Analysis 10:1					
9	arsenic	mg/kg	<0.0002	0.5	2
10	barium	mg/kg	<0.0005	20	100
11	cadmium	mg/kg	<0.0001	0.04	1
12	chromium	mg/kg	<0.0005	0.5	10
13	copper	mg/kg	<0.0005	2	50
14	mercury	mg/kg	<5.0e-05	0.01	0.2
15	molybdenum	mg/kg	0.0078	0.5	10
16	nickel	mg/kg	<0.0005	0.4	10
17	lead	mg/kg	<0.0005	0.5	10
18	antimony	mg/kg	<0.0005	0.06	0.7
19	selenium	mg/kg	<0.0005	0.1	0.5
20	zinc	mg/kg	<0.0025	4	50
21	chloride	mg/kg	10	800	15,000
22	fluoride	mg/kg	<1	10	150
23	sulphate	mg/kg	48	1,000	20,000
24	phenol index	mg/kg	<0.3	1	-
25	DOC (dissolved organic carbon)	mg/kg	<50	500	800
26	TDS (total dissolved solids)	mg/kg	220	4,000	60,000

Key

User supplied data

Appendix A: Classifier defined and non CLP determinands

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex

CLP index number: 006-007-00-5
Description/Comments: Conversion factor based on a worst case compound: sodium cyanide
Data source: Commission Regulation (EC) No 790/2009 - 1st Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP1)
Additional Hazard Statement(s): EUH032 >= 0.2 %
Reason for additional Hazards Statement(s):
14 Dec 2015 - EUH032 >= 0.2 % hazard statement sourced from: WM3, Table C12.2

barium oxide (EC Number: 215-127-9, CAS Number: 1304-28-5)

Description/Comments: Data from ECHA's C&L Inventory Database, Sigma Aldrich SDS dated 6/2/20
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/88825
Data source date: 02 Apr 2020
Hazard Statements: Acute Tox. 3 H301 , Skin Corr. 1B H314 , Eye Dam. 1 H318 , Acute Tox. 1 H332

arsenic (EC Number: 231-148-6, CAS Number: 7440-38-2)

CLP index number: 033-001-00-X
Description/Comments: Worst Case: IARC considers arsenic Group 1; Carcinogenic to humans
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s):
29 Sep 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

lead compounds with the exception of those specified elsewhere in this Annex

CLP index number: 082-001-00-6
Description/Comments: Least-worst case: IARC considers lead compounds Group 2A; Probably carcinogenic to humans; Lead REACH Consortium, following CLP protocols, considers many simple lead compounds to be Carcinogenic category 2
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2A (Sup 7, 87) 2006; Lead REACH Consortium www.reach-lead.eu/substanceinformation.html. Review date 29/09/2015

chromium(III) oxide (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from ECHA's C&L inventory database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 30 Apr 2020
Hazard Statements: Acute Tox. 4 H302 , Skin Sens. 1 H317 , Eye Irrit. 2 H319

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3 H226 , Asp. Tox. 1 H304 , STOT RE 2 H373 , Muta. 1B H340 , Carc. 1B H350 , Repr. 2 H361d , Aquatic Chronic 2 H411

ethylbenzene (EC Number: 202-849-4, CAS Number: 100-41-4)

CLP index number: 601-023-00-4
Description/Comments:
Data source: Commission Regulation (EU) No 605/2014 – 6th Adaptation to Technical Progress for Regulation (EC) No 1272/2008. (ATP6)
Additional Hazard Statement(s): Carc. 2 H351
Reason for additional Hazards Statement(s):
03 Jun 2015 - Carc. 2 H351 hazard statement sourced from: IARC Group 2B (77) 2000

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4 H302 , Acute Tox. 1 H330 , Acute Tox. 1 H310 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410 , Aquatic Chronic 2 H411

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4 H302 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Carc. 2 H351 , Skin Sens. 1 H317 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410 , Skin Irrit. 2 H315

anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2 H319 , STOT SE 3 H335 , Skin Irrit. 2 H315 , Skin Sens. 1 H317 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4 H302 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2 H315 , Eye Irrit. 2 H319 , STOT SE 3 H335 , Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

indeno[123-cd]pyrene (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2 H351

benzo[ghi]perylene (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1 H400 , Aquatic Chronic 1 H410

coronene (EC Number: 205-881-7, CAS Number: 191-07-1)

Description/Comments: Data from C&L Inventory Database; no entries in Registered Substances or Pesticides Properties databases; SDS: Sigma Aldrich, 1907/2006 compliant, dated 2012 - no entries; IARC – Group 3, not carcinogenic.
Data source: http://clp-inventory.echa.europa.eu/SummaryOfClassAndLabelling.aspx?SubstanceID=17010&HarmOnly=no?fc=true&lang=en
Data source date: 16 Jun 2014
Hazard Statements: STOT SE 2 H371

- **monohydric phenols** (CAS Number: P1186)

Description/Comments: Combined hazards statements from harmonised entries in CLP for phenol, cresols and xylenols (604-001-00-2, 604-004-00-9, 604-006-00-X)
Data source: CLP combined data
Data source date: 26 Mar 2019
Hazard Statements: Acute Tox. 3 H301 , Acute Tox. 3 H311 , Acute Tox. 3 H331 , Skin Corr. 1B H314 , Skin Corr. 1B H314 >= 3 %, Skin Irrit. 2 H315 1 £ conc. < 3 %, Eye Irrit. 2 H319 1 £ conc. < 3 %, Muta. 2 H341 , STOT RE 2 H373 , Aquatic Chronic 2 H411

- **polychlorobiphenyls; PCB** (EC Number: 215-648-1, CAS Number: 1336-36-3)

CLP index number: 602-039-00-4
Description/Comments: Worst Case: IARC considers PCB Group 1; Carcinogenic to humans; POP specific threshold from ATP1 (Regulation 756/2010/EU) to POPs Regulation (Regulation 850/2004/EC). Where applicable, the calculation method laid down in European standards EN 12766-1 and EN 12766-2 shall be applied.
Data source: Regulation 1272/2008/EC - Classification, labelling and packaging of substances and mixtures. (CLP)
Additional Hazard Statement(s): Carc. 1A H350
Reason for additional Hazards Statement(s):
29 Sep 2015 - Carc. 1A H350 hazard statement sourced from: IARC Group 1 (23, Sup 7, 100C) 2012

Appendix B: Rationale for selection of metal species

boron {diboron trioxide; boric oxide}

Diboron trioxide used as the most hazardous species.

sulfur {sulfur}

chemtest reports Elemental sulfur using this CAS

cyanides {salts of hydrogen cyanide with the exception of complex cyanides such as ferrocyanides, ferricyanides and mercuric oxycyanide and those specified elsewhere in this Annex}

Available species

barium {barium oxide}

Chromium VII at limits of detection. Barium oxide used as the next most hazardous species. No chromate present.

cadmium {cadmium oxide}

Chromium VII at limits of detection. Cadmium oxide used as the next most hazardous species. No chromate present.

molybdenum {molybdenum(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight.

antimony {antimony compounds, with the exception of the tetroxide (Sb2O4), pentoxide (Sb2O5), trisulphide (Sb2S3), pentasulphide (Sb2S5) and those specified elsewhere in this Annex}

Chromium VI at limits of detection. Antimony compounds used as the next most hazardous species. No chromate present.

arsenic {arsenic}

Worst Case Scenario

mercury {mercury}

Worst case CLP species based on hazard statements/molecular weight

nickel {nickel(II) oxide (nickel monoxide)}

Chromium VI at limits of detection. Nickel oxide used as the next most hazardous species. No chromate present.

lead {lead compounds with the exception of those specified elsewhere in this Annex}

Chromium VI at limits of detection. Lead compounds used as the next most hazardous species. No chromate present.

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

Harmonised group entry used as most reasonable case. Pigment cadmium sulphoselenide not likely to be present in this soil. No evidence for the other CLP entries: sodium selenite, nickel II selenite and nickel selenide, to be present in this soil.

zinc {zinc oxide}

Chromium VI at limits of detection. Zinc oxide used as the next most hazardous species. No chromate present.

chromium in chromium(VI) compounds {chromium(VI) oxide}

Worst case CLP species based on hazard statements/molecular weight. Industrial sources include: production stainless steel, electroplating, wood preservation, anti-corrosion agents or coatings, pigments.

chromium in chromium(III) compounds {chromium(III) oxide}

Reasonable case species based on hazard statements/molecular weight. Industrial sources include: tanning, pigment in paint, inks and glass

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.1, May 2018
HazWasteOnline Classification Engine Version: 2021.162.4804.9151 (21 Jun 2021)
HazWasteOnline Database: 2021.162.4804.9151 (21 Jun 2021)

This classification utilises the following guidance and legislation:
WM3 v1.1 - Waste Classification - 1st Edition v1.1 - May 2018
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2019 - UK: 2019 No. 720 of 27th March 2019
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
POPs Regulation 2019 - Regulation (EU) 2019/1021 of 20 June 2019

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Email: info@chemtest.com

UKAS TESTING
2183

Final Report

Report No.:	21-20943-1
Initial Date of Issue:	24-Jun-2021
Client	Site Investigations Ltd
Client Address:	The Grange12th, Lock Road Lucan Co Dublin IRELAND
Contact(s):	Stephen Letch
Project	5851 Gorey Hill
Quotation No.:	
Order No.:	34/A/21
No. of Samples:	8
Turnaround (Wkdays):	5
Date Approved:	24-Jun-2021
Approved By:	
Details:	Glynn Harvey, Technical Manager

Date Received:	18-Jun-2021
Date Instructed:	18-Jun-2021
Results Due:	24-Jun-2021

Results - Soil

Project: 5851 Gorey Hill

Client: Site Investigations Ltd			**Chemtest Job No.:**		21-20943	21-20943	21-20943	21-20943	21-20943	21-20943	21-20943	21-20943
Quotation No.:			**Chemtest Sample ID.:**		1224569	1224570	1224571	1224572	1224573	1224574	1224575	1224576
Order No.: 34/A/21			Client Sample Ref.:		TP01	TP02	TP03	TP04	TP5	TP06	TP07	TP08
			Client Sample ID.:		MK 27	MK 03	MK 24	MK 14	MK 06	MK 21	MK 10	MK 18
			Sample Type:		SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
			Top Depth (m):		1.0	1.0	1.8	1.5	1.0	1.5	1.0	1.5
			Bottom Depth (m):		1.0	1.0	1.8	1.5	1.0	1.5	1.0	1.5
			Date Sampled:		16-Jun-2021	16-Jun-2021	16-Jun-2021	16-Jun-2021	16-Jun-2021	16-Jun-2021	16-Jun-2021	16-Jun-2021
Determinand	**Accred.**	**SOP**	**Units**	**LOD**								
Moisture	N	2030	%	0.020	9.0	9.8	10	11	11	8.7	11	12
Loss on Ignition 440 (Fines)	U	2620	%	0.20	[E] 2.0	[E] 2.5	[E] 2.4	[E] 0.42	[E] 1.1	[E] 1.1	[E] 8.7	[E] 0.69
Group 1 & 2 Material > 20mm	N	2620	%	0.10	27	14	17	61	13	24	15	11

Deviations

In accordance with UKAS Policy on Deviating Samples TPS 63. Chemtest have a procedure to ensure 'upon receipt of each sample a competent laboratory shall assess whether the sample is suitable with regard to the requested test(s)'. This policy and the respective holding times applied, can be supplied upon request.The reason a sample is declared as deviating is detailed below. Where applicable the analysis remains UKAS/MCERTs accredited but the results may be compromised.

Sample:	Sample Ref:	Sample ID:	Sample Location:	Sampled Date:	Deviation Code(s):	Containers Received:
1224569	TP01	MK 27		16-Jun-2021	E	Plastic Tub 500g
1224570	TP02	MK 03		16-Jun-2021	E	Plastic Tub 500g
1224571	TP03	MK 24		16-Jun-2021	E	Plastic Tub 500g
1224572	TP04	MK 14		16-Jun-2021	E	Plastic Tub 500g
1224573	TP5	MK 06		16-Jun-2021	E	Plastic Tub 500g
1224574	TP06	MK 21		16-Jun-2021	E	Plastic Tub 500g
1224575	TP07	MK 10		16-Jun-2021	E	Plastic Tub 500g
1224576	TP08	MK 18		16-Jun-2021	E	Plastic Tub 500g

Test Methods

SOP	Title	Parameters included	Method summary
2030	Moisture and Stone Content of Soils(Requirement of MCERTS)	Moisture content	Determination of moisture content of soil as a percentage of its as received mass obtained at <37°C.
2040	Soil Description(Requirement of MCERTS)	Soil description	As received soil is described based upon BS5930
2620	LOI 440	LOI 440 Trommel Fines	Determination of the proportion by mass that is lost from a soil by ignition at 440°C.

Report Information

Key

U	UKAS accredited
M	MCERTS and UKAS accredited
N	Unaccredited
S	This analysis has been subcontracted to a UKAS accredited laboratory that is accredited for this analysis
SN	This analysis has been subcontracted to a UKAS accredited laboratory that is not accredited for this analysis
T	This analysis has been subcontracted to an unaccredited laboratory
I/S	Insufficient Sample
U/S	Unsuitable Sample
N/E	not evaluated
<	"less than"
>	"greater than"
SOP	Standard operating procedure
LOD	Limit of detection

Comments or interpretations are beyond the scope of UKAS accreditation
The results relate only to the items tested
Uncertainty of measurement for the determinands tested are available upon request
None of the results in this report have been recovery corrected
All results are expressed on a dry weight basis

The following tests were analysed on samples as received and the results subsequently corrected to a dry weight basis TPH, BTEX, VOCs, SVOCs, PCBs, Phenols

For all other tests the samples were dried at < 37°C prior to analysis
All Asbestos testing is performed at the indicated laboratory
Issue numbers are sequential starting with 1 all subsequent reports are incremented by 1

Sample Deviation Codes

A - Date of sampling not supplied
B - Sample age exceeds stability time (sampling to extraction)
C - Sample not received in appropriate containers
D - Broken Container
E - Insufficient Sample (Applies to LOI in Trommel Fines Only)

Sample Retention and Disposal

All soil samples will be retained for a period of 30 days from the date of receipt
All water samples will be retained for 14 days from the date of receipt
Charges may apply to extended sample storage

If you require extended retention of samples, please email your requirements to:
customerservices@chemtest.com

Appendix 5

Survey Data

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
Trial Pits					
TP01	713590.283	659508.660	119.34	313664.690	159466.052
TP02	713669.183	659466.412	109.53	313743.608	159423.795
TP03	713493.341	659306.428	119.73	313567.728	159263.775
TP04	713601.218	659341.982	110.17	313675.628	159299.337
TP05	713680.205	659326.329	103.76	313754.633	159283.681
TP06	713441.485	659188.458	116.30	313515.860	159145.779
TP07	713654.958	659207.691	103.83	313729.381	159165.017
TP08	713494.287	659094.363	106.95	313568.675	159051.663

Contract No:	5861	Client:	Gerard Gannon Properties	Legend Key
Contract:	Gorey Hill	Engineer:	Waterman Moylan	Locations By Type - TP
Location:	Gorey, Co. Wexford	Scale:	1:2500	
Title:	Site Plan	Drawn By:	SL	

UK and Ireland Office Locations