

## **Appendix 16**

**Imported Fill Protocol  
prepared by  
JBS&G**



Maryland Development Company

Imported Fill Protocol

Lot 3990 and 3991 DP1190132 Jordan Springs  
Boulevard, Jordan Springs, NSW

8 June 2018

55064/115858 (Rev A)

JBS&G

[www.jbsg.com.au](http://www.jbsg.com.au)

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## Abbreviations

Term	Definition
ACM	Asbestos Containing Material
AF	Asbestos Fines
AEC	Areas of Environmental Concern
ASS	Acid Sulphate Soils
Bgs	Below Ground Surface
COPC	Contaminants of Potential Concern
CMP	Contamination Management Plan
DP	Deposited Plan
EPA	NSW Environmental Protection Authority
ENM	Excavated Natural Material
FA	Friable Asbestos
HHERA	Human Health and Ecological Risk Assessment
LOR	Limit of Reporting
MCF	Material Classification Form
NEPC	National Environmental Pretention Measure
OEH	NSW Office of Environment and Heritage
PASS	Potential Acid Sulphate Soils
PCC	Penrith City Council

Term	Definition
POEO	Protection of the Environment Operations Act
SAS	Site Audit Statement
VENM	Virgin Excavated Natural Material

## Definitions

**Principal** - The principal as defined in the Fill Supply Agreement or as novated under the Fill Supply Agreement

**Supplier** - The Supplier as novated under the Fill Supply Agreement

**Environmental Consultant** – The Principal’s nominated Environmental Consultant (JBS&G)

# 1. Introduction and Background

## 1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Maryland Development Company Pty Ltd (the client, MDC) to prepare an Imported Fill Protocol (IFP) for Lots 3990 and 3991 DP1190132, Jordan Springs Boulevard, Jordan Springs, NSW (the site). The site is located on the southern side of Jordan Springs Boulevard and occupies an approximate area of 5.978 ha. The location of the site is provided on **Figure 1**, the site layout is provided on **Figure 2**.

It is understood that the site is proposed to be developed into a residential area, and as part of the development application process Penrith City Council (PCC) has requested that a fill management protocol be developed for the site.

The site is located within the former St Marys ADI site (the property) which covered an area of approximately 1,545 ha and included the current suburbs of Ropes Crossing, Jordan Springs, Llandilo and St Mary's. The former ADI site comprised various uses, but was predominantly utilised as a bomb filling and munitions factory from 1941 to the early 1990's.

Various demolition works, unexploded ordnance clearances and environmental investigation works were conducted within the property during the mid 1990's which ultimately led to the property being declared suitable for residential landuse with substantial vegetable gardens and poultry in a Site Audit Statement (SAS) CH001/1 prepared by Christopher Kidd of HLA Envirosciences Pty Ltd (HLA 1999<sup>1</sup>). It is noted that the SAS contained some exclusions which are not relevant to the site, and was subject to the ongoing implementation of a contamination management plan.

A Contamination Management Plan (CMP) was prepared for the Western Precinct of the property by URS (2008<sup>2</sup>). The plan outlines a framework to identify and address any discovery of chemical contamination or potential unexploded ordnance (UXO) to ensure safe working environments for workers during development, and to avoid unacceptable impact to the natural environment.

Given the period of time since the SAS (HLA 1999), a Supplementary Contamination Assessment was conducted by Alliance Geotechnical (AG 2018<sup>3</sup>). The assessment aimed to determine whether contamination was present at the site as a result of past or current landuses, provide advice on the suitability of the site for the intended landuse, and to provide recommendations for further investigation, management and/or remediation based on the findings.

Based on the finding of the AG investigation it was concluded that the site conditions are unlikely to have changed since the SAS in 1999 and the site was considered (by AG) suitable for the proposed landuse (in its current condition) on the basis that the Contamination Management Plan (URS 2008) continued to be implemented.

This document outlines the procedures to be followed for assessing soil and/or rock materials imported to the site during development works, and to ensure contaminated materials are not imported to the site in contravention of the Protection of the Environment Operations Act and Regulations (POEO 1997). For the purposes of this report:

- The source site refers to any site approved to provide material for filling; and
- The fill site refers to Lots 3990 and 3991 DP1190132 (the site).

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<sup>1</sup> NSW Environment Protection Authority Site Audit Statement (SAS) CHK001/1 ADI St Mary's Property – excluding Eastern Sector, QEL, Site 6 and Site 23, Buildings and concrete stockpile. HLA Envirosciences Pty Ltd (HLA 1999)

<sup>2</sup> Contamination Management Plan Western Precinct Development Phase – Off Forresters Road St Marys. URS Pty Ltd. July 2008 (URS 2008)

<sup>3</sup> Supplementary Contamination Assessment Lot 3990 in DP1190132 Jordan Springs Boulevard, Jordan Springs, NSW. Alliance Geotechnical Pty Ltd 20 April 2018 (AG 2018)

## **1.2 Objective**

The objectives of this IFP is to outline the procedures/requirements to be followed by the supplier and Principal to ensure that fill materials received onto the site comply with relevant environmental regulatory requirements and site suitability.

It is a further objective to prevent unsuitable materials being inadvertently brought onto the site.

## **1.3 Scope of Works**

The procedures described in this IFP relate to the importation of virgin excavated natural material (VENM) and excavated natural material (ENM) only, onto the site.

Additionally, the IFP outlines the procedures to be followed prior to and during importation for:

- the source site;
- the transportation of materials between the source site and fill site; and
- the fill site.



## 2. Background Information and Previous Reports

The site was historically part of the former St Mary's ADI site, which was predominantly used for bomb filling and munitions production. As discussed in **Section 1**, operations of the ADI facility ceased by the 1990's and various investigation works were conducted ultimately leading to the site being declared suitable for residential landuse including substantial vegetable garden and poultry(HLA 1999). Discussion of previous reports is provided below.

### 2.1 Site Audit Statement – Stage 2 Decontamination Audit Report for ADI Site, St Marys, CHK001/01 (HLA 1999)

An SAS was completed in 1999 by Christopher Kidd of HLA-Envirosciences of the ADI St. Marys Property – Excluding the historical Eastern Sector, QEL, Site 6 and Site 23, buildings and Concrete Stockpile. As part of the Site Audit Statement the following reports were reviewed:

- Historical Reports – St Marys Property, ADI Limited, 1996;
- Validation Report for the western Sector, ADI St Marys Facility, ADI Limited November 1994;
- Validation Report for the North Western Sector of the ADI St Marys Facility, Report No. 498800, ADI Limited 1995;
- Validation Report for the Southern Sector West of the ADI St Marys Property, Report No. 498810, ADI Limited 1996;
- Validation Report for the Southern Sector East of the ADI St Marys Property, Report No. 498810, ADI Limited 1996;
- Validation Report for the Northern Sector West of the ADI St Marys Property, Report No. 498820, ADI Limited 1996;
- Validation Report for the Central Sector East of the ADI St Marys Property, Report No. 498840, ADI Limited 1997;
- Validation Report for the Central Sector West of the ADI St Marys Property, Report No. 498840, ADI Limited 1996;
- Validation Report for the North Eastern Sector of the ADI St Marys Property, Report No. 498850, ADI Limited 1996; and
- QA/Verification Survey Results, ADI St Marys Property, Report No. PG980323da ADI Limited. 1999.

On review of the abovementioned reports, the auditor concluded the property (i.e. the greater Maryland development site, including the current site area) was suitable for residential, including substantial vegetable gardens and poultry subject to the following conditions:

- Excludes the historical Eastern Sector, QEL, Site 6 and Site 23 which are covered by separate site audit statements, namely CHK001/2, CHK001/4 and CHK001/5.
- Excludes areas not yet investigated including the footprint of original buildings (including the W series buildings), car parks and roads, mainly around former Administration Centre Buildings (CHK001/6) and the concrete stockpile in the Central Sector West.
- An appropriate management plan, including procedures for the safe handling and disposal of any items of ordinance that may be found during earthworks, should be lodged prior to the commencement of development earthworks. This plan should be similar to the "Remnant Contamination Management Plan" submitted by ADI.

## 2.2 Contamination Management Plan (URS 2008)

Based on the conditions of the SAS discussed in **Section 2.1**, a contamination management plan (CMP) was prepared by URS for the Western Precinct of the property in 2008.

The CMP provides a framework to identify and address any discovery of chemical contamination or potentially explosive ordnance items to ensure safe working environments for workers during development, and to avoid unacceptable impact to the natural environment.

Details and description of potential chemical contamination such as discoloured or odorous soils, potential asbestos containing materials and presence of foreign materials including drums or other waste were outlined in the document. Procedures in the form of a contamination management flowchart was developed to action items if discovered.

Implementation of this CMP should be adhered to during development works at the site, including while material importation takes place.

## 2.3 Site Walkover Contamination Report – Proposed Residential Subdivision Proposed Lots 3989, 3990 and 3991 DP1190132, Jordan Springs, NSW (DP 2017<sup>4</sup>)

Douglas Partners (DP) conducted a site walkover of Lots 3989, 3990 and 3991 DP1190132 in 2017 during a site walkover and limited historical review at Jordan Springs.

The works were conducted as part of a due diligence procedure to identify whether any additional activities or sources of potential contamination had occurred at the site since the sale of the property in June 2013. Generally, the site was observed as being vacant and free of additional activities and contamination sources based on the limited historical review and site inspection conducted. Potential sources of contamination associated with filling within the eastern portion of Lot 3989, and small stockpiles in the central northern portion of Lot 3991 were identified.

Based on the results of the works conducted it was identified that no significant source of contamination was identified since the sale of the property in June 2013. It was recommended that fill materials in Lot 3989 and the five small stockpiles in Lot 3991 be investigated further.

## 2.4 Supplementary Contamination Assessment Lot 3990 in DP1190132 – Jordan Springs Boulevard, Jordan Springs, NSW. Alliance Geotechnical (2018)

AG conducted a supplementary contamination assessment on Lot 3990 DP1190132 at Jordan Springs Boulevard, Jordan Springs, NSW. The assessment was required to provide updated information on the site regarding its suitability for the proposed low to medium density residential landuse.

The assessment included a limited desktop review and site inspection. Ultimately it was confirmed that no new areas of environmental concern (AEC) or contaminants of potential concern (COPCs) were identified that would warrant further assessment.

The site was identified as mostly vacant with no observed land use activities. Visual evidence of vehicle tracks were observed at a number of locations. No evidence of wide spread filling was observed at the site, it was noted that earth bund-wall features were observed in the southern portion of the site. No staining or odours were observed.

Review of EPA records was undertaken which did not identify any notifications, records or notices that related to the site.

Review of aerial photography was conducted for the period between 2002 and 2017, no significant change to the site layout or notable observations were made from the photographs reviewed.

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<sup>4</sup> *Site Walkover Contamination Report – Proposed Residential Subdivision Proposed Lots 3989, 3990 and 3991, DP1190132, Jordan Springs, NSW.* Douglas Partners Pty Ltd. 21 September 2017 (DP 2017)



Based on the information obtained from the desktop review and site inspection it was concluded that;

- The contamination status of the site was considered unlikely to have changed since HLA (1999); and
- The site was considered suitable for the proposed use, provided ongoing implementation of the URS 2008 CMP occurs.



### 3. Regulatory Guidelines

The importation of materials to the site is regulated by the Protection of the Environment Operations Act 1997.

The following regulatory instruments and NSW EPA endorsed guidelines applying to imported materials were considered in preparation of this IFP:

- NSW EPA Waste Classification Guidelines. Part 1: Classifying Waste (EPA 2014).
- Protection of the Environment Operations (Waste) Regulation 2014.
- National Environment Protection (Assessment of Site Contamination) Measure, National Environment Protection Council, 1999, amended 2013 (NEPC 2013).
- NSW EPA Contaminated Sites Guidelines for the NSW Site Auditor Scheme, 2nd Edition (EPA 2017).
- NSW EPA Sampling Design Guidelines – Contaminated Sites (EPA 1995).

## 4. Source Site Requirements

The following sections outline the possible sources and types of fill material that can be brought to site.

Imported materials will only be accepted to the site if they:

- Meet the definition of VENM as defined in relevant legislation (**Section 4.1**); or
- Meet the definition of ENM as defined in relevant regulations (**Section 4.2**).

If the material is approved, transport of material must meet the requirements specified in **Section 5** with the movement and placement of imported material to be undertaken in accordance with procedures documented in **Section 6**.

### 4.1 Virgin Excavated Natural Material (VENM)

The Protection of the Environment Operations Act 1997 defines VENM as:

‘Natural material (such as clay, gravel, sand, soil or rock fines):

- That has been excavated or quarried from areas that are not contaminated with manufactured chemicals or process residues, as a result of industrial, commercial, mining or agricultural activities, and
- That does not contain any sulfidic ores or soils or any other waste.’

Material imported to the fill site as VENM must meet this definition.

Please refer to the Fact Sheet: Virgin Excavated Natural Material provided in **Appendix A** for additional information.

#### 4.1.1 VENM Assessment

Assessment of VENM materials shall be undertaken in accordance with the requirements of EPA 1995 and incorporate a review of the source site history and inspection of materials prior to/during/after importation onto the site. A Virgin Excavated Natural Materials Assessment Report prepared by a suitably qualified environmental consultant must be provided prior to importation of any VENM.

The VENM assessment sampling and reporting will consist of the following:

- Details of the source site history, source site address, and characteristics of the material (such as colour, soil type, odours).
- A minimum of 1 sample per 1000 m<sup>3</sup>, plus QA/QC samples as appropriate and a maximum requirement of 10 samples per source site.
- Samples should be analysed for the following parameters: pH, 8 metals consisting of total arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc, total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylenes (BTEX), polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs), electrical conductivity (EC) and asbestos. Please note this list is not exhaustive and additional parameters may require analysis depending on the source site history.
- Sample analytical results must not be detectable at levels above laboratory limits of reporting, with the exception of metals and EC.
- Metals detections must be at levels within published background ranges, such as background ranges provided in the National Environment Protection (Assessment of Site Contamination) Measure Schedule B1 (NEPC 1999).

- EC detections must comply with the chemical concentrations listed in **Column 2** and **Column 3** of **Table 2** of The Excavated Natural Material order 2014 (refer to **Appendix B** for additional information).
- Laboratory report(s) from a NATA accredited laboratory and chain of custody documentation, in addition to other QA/QC documentation to demonstrate the samples were obtained using appropriate procedures by suitably qualified personnel and that samples were analysed within relevant holding times.

Potential VENM will also be assessed to ensure it does not contain acid sulphate soils (ASS) or potential acid sulphate soils (PASS).

#### **4.2 Excavated Natural Material**

All ENM to be imported to the fill site must be assessed in accordance with The Excavated Natural Material Order 2014 (**Appendix B**).

ENM is defined as “naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that has:

- a) Been excavated from the ground, and
- b) Contains at least 98% (by weight) natural material, and
- c) Does not meet the definition of Virgin Excavated Natural Material.

ENM does not include material that has been processed or contains acid sulphate soils (ASS) or potential acid sulphate soils (PASS).”

##### **4.2.1 ENM Assessment**

The requirements of ENM assessment are provided in The Excavated Natural Material Order 2014 (**Appendix B**).

A minimum of 10 composite samples per 4,000 tonnes of material are required, and must meet the criteria presented in **Table 2** of **Appendix B**.

An Excavated Natural Materials Assessment Report prepared by a suitably qualified environmental consultant (which must include laboratory reports from a NATA accredited laboratory) must be provided prior to importation of any ENM.

#### **4.3 Timing**

The following times must be allowed for testing of materials prior to approvals being granted:

- 10 days for VENM assessment; and
- 15 days for ENM assessment;

#### **4.4 Non- Conformances**

In the event materials do not meet the requirements detailed above, materials will not be approved for importation to the fill site and an alternative source site will need to be provided by the Supplier and be investigated to confirm conformance.

#### **4.5 Approval Prior to Importation**

All imported materials must meet the approval of the client or their appointed representative/environmental consultant. Documentation as outlined above (such as the Virgin Excavated Natural Materials Assessment Report) must be provided to the client for review and approval prior to importation of any materials to the site.



MDC reserves the right to refuse material at their discretion or if supporting documentation does not meet the requirements outlined in this IFP document or legislative guideline requirements, or if material brought to the fill site is not consistent with the supporting documentation.

It is noted that Geotechnical requirements for imported materials are not included in this IFP. If Geotechnical requirements need to be confirmed, advice from a Geotechnical Engineer should be sought.

#### **4.6 Random Audits/Material Inspections**

The Principal, or Principal's Representative, must have the ability to conduct random source site inspections during importation of material to the fill site. In the event that material being excavated is not consistent with that originally investigated and approved, importation will cease until a revised approval is granted.

## 5. Transport Requirements

### 5.1 Chain of Responsibility

The road transport heavy vehicle “Chain of Responsibility” (CoR) recognises that a number of different participants in each road transport ‘Chain’ can influence and direct a driver’s on-road behavior, and the state of the heavy vehicle being driven. For this reason, under the Heavy Vehicle National Law, a number of the parties in the road transport ‘Chain’ are given responsibility for either:

- Complying with their specific obligations under the laws; or
- Taking all reasonable steps to ensure that *other* parties in the road transport ‘Chain’ achieve compliance and are not encouraged or incentivised to break the law.

Generally speaking, CoR compliance requires duty-holders to address the following four main areas:

- **The load:** ensuring the load is not in excess of the heavy vehicle’s capacity, and that it is properly restrained;
- **The vehicle:** ensuring that the heavy vehicle is properly maintained and roadworthy;
- **The driver:** ensuring that the driver is not fatigued when driving the heavy vehicle; and
- **The public:** ensuring that the heavy vehicle is not induced or encouraged to speed while on the road, endangering the driver and other members of the public.

Under this Procedure, and through the project-specific ‘CoR Compliance Plans’ described in this Procedure, the Principal Contractor will manage any specific obligations it owes and take reasonable steps to ensure broader CoR compliance in a particular transport ‘Chain’.

### 5.2 Truck Specifications

Any truck used to transport material onto the fill site must comply with the following specifications:

- No semi-trailers.
- Truck registration details to be provided to the Principal Contractor the day before delivery.
- Truck registration details to be provided when arriving on site, on a daily basis, prior to being accepted onto the fill site.
- All loads must be covered with automatic tarp covers.

In addition, tracking devices such as site specific stickers, bar codes or smart phones may be required on all trucks prior to being accepted onto the fill site.

### 5.3 Transport Rules

Approved and appropriate routes must be used between source and fill sites and must comply with any and all traffic control measures required by the Principal and source site Developer requirements.

### 5.4 Transport Contractor Requirements

Prior to being an accepted transport contractor it must be demonstrated that they are a Fleet Owner.

## **5.5 Wet Weather Protocol**

Wet weather communication protocol (i.e. if inclement weather) must be clear and regular in relation to conditions at source and receiving fill sites to minimise risk of rejecting access at gatehouse.

If a truck containing imported material arrives at the fill site after notification of site shutdown, the principal contractor has the right to deny access to the fill site. It is then the supplier's responsibility to ensure that any rejected material is disposed of legally and must provide certification to the Principal to confirm this. Any material rejected due to fill site closure may be re-accepted at the fill site if the supplier can certify that the material is fit for purpose and can provide (at the suppliers cost) the necessary testing certificates and evidence to warrant this. Acceptance of this material will still however remain at the full discretion of the Principal.

## 6. Fill Site Requirements

### 6.1 Material Tracking Overview

Approximately 40 000 m<sup>3</sup> of material is required to be imported to the fill site to raise the site grade associated with the residential development. Materials must be characterised as per **Section 4** prior to importation to the site.

The approach for the management and tracking of fill material for reuse within the site is documented below. The system is designed to track the quantity and quality of materials from their arrival on the fill site, through temporary storage to placement.

The system comprises the following elements:

- Definition of Roles and Responsibilities;
- Material quality information;
- Material movement tracking;
- Material emplacement;
- Documentation required;
- Dealing with non-conformance; and
- Dealing with expected and unexpected finds

### 6.2 Roles and Responsibilities

The roles of the Principal Contractor, the supplier and the Environmental Consultant are detailed below with a responsibility matrix provided as **Table 6.1**.

The Principal Contractor will be responsible for the following:

- Approving the movement and placement of materials intended for onsite use;
- Ensuring all subcontractors and consultants involved in the material classification, generation, movement and placement are adequately briefed in the requirements of this IFP; and
- Ensure clear lines of communication are maintained between all relevant responsible parties.

The supplier will be responsible for the following:

- Implementation and overall management of onsite procedures and protocols;
- The movement and placement of materials intended for onsite use;
- Liaising with suppliers in sourcing of materials from offsite, whether imported VENM or ENM;
- Ensuring materials proposed to be imported to the fill site are acquiescent with requirements of the IFP and
- Ensuring the IFP is operated effectively in conjunction with other relevant documents such as the CMP (URS 2008).

The Environmental Consultant will be responsible for the following:

- Undertaking sampling and characterisation works of materials and/or review of characterisation reports provided by the supplier, as required, for potential beneficial reuse within the site, as per the requirements of the IFP;



- Identification of AF/FA (asbestos fines and friable asbestos) impacted materials;
- Liaising with the supplier with regards to the importation of materials which does not meet the definition of VENM to ensure materials meet the project requirements and to prevent unsuitable materials being inadvertently brought onto the fill site;
- Undertaking a minimum of two weekly inspections, or a minimum of 1 inspection/10,000 m<sup>3</sup> of imported VENM or 1 inspection/5000 m<sup>3</sup> for imported ENM, to confirm materials sampled are consistent with those being imported;
- Review materials tracking documents submitted by the supplier and investigate/resolve any discrepancies;
- Cross check inspection findings with materials tracking sheets; and
- Prepare an Imported Material Summary Letter including material tracking documentation on the completion of the importation works.

**Table 6.1 Responsibility Matrix**

Scope	The Principal	The Supplier
VENM or ENM Assessment Reports for materials proposed for importation to the fill site		X <sup>1</sup>
All Weather Haul Road at the Delivery Address	X	
Delivery Access (in and out)	X	
Traffic Control at the Delivery Address in accordance with the applicable Traffic Management Plan	X	
Security of and responsibility of imported material until the material is accepted by the Principal in accordance with this Agreement		X
Acceptance of material if it meets the requirements of ENM/VENM	X <sup>2</sup>	
Maintenance and management of Delivery Trucks		X
Safety Performance and Professional Conduct of Truck Drivers in Transit		X
Provision for truck and material entry fill site approvals as per <b>Section 6.3</b>	X	
Provision for Spotter at Tip Location		X
Provision for spotter at the Tip Location	X	

1. To be reviewed for approval by JBS&G prior to importation to site.

2. Twice weekly checks to be undertaken by the Environmental Consultant during material import

### 6.3 Fill Site Entry Requirements

The Principal will review the legitimacy of any truck/vehicle entering the site. The Principal will have the authority to reject any vehicle in line with the contractual obligations and performance requirements of this protocol.

#### Truck Requirements

Upon each trucks arrival, the Principal will document and ensure the following requirements are met:

- Truck registrations;
- Coding systems and vehicle tracking systems;
- Visual inspections of all trucks to ensure they are approved to enter the site;
- All trucks must retract automatic tarps upon approach to the inspection point;
- A full time spotter will be provided by the supplier at the site entry to ensure the quality of material meets the requirements of this protocol and the contractual requirements; and
- Material will be visually checked by the suppliers spotter and by the Principal for sizing of material and inclusions such as ACM (asbestos containing material), bricks or concrete as well as odours or staining and for general compliance with the contractual provisions and

quality provisions outlined in this protocol document and detailed on the Site Entry Material Compliance Check List (**Appendix C**).

#### Rejection Criteria

Trucks may be rejected for a range of reasons including but not limited to:

- Not being an approved truck, or meeting the Truck Specifications;
- For carrying non-conforming or contaminated material; and/or
- If the site is closed or unable to accept material for whatever reason.

Any truck rejected will be required to turn back using the nominated turning bay/road. If material is rejected at the entry, the supplier must be notified immediately and Site Entry Material Compliance Checklist, detailing the rejection criteria, must be completed and signed by both the supplier and principal's representatives outlining the reasons for rejection. A copy of the Check List is provided in **Appendix C**.

The supplier must ensure that any rejected material is disposed of legally and must provide certification to the Principal to confirm this. Any material rejected due to site closure or for any other reason may be re-accepted at the site if the supplier can certify that the material is fit for purpose and can provide (at the suppliers cost) the necessary testing certificates and evidence to warrant this. Acceptance of this material will still however remain at the full discretion of the Principal.

#### **6.4 Fill Placement/Tipping Location**

Spotters will be supplied by the Principal at the tipping site. Material will be visually checked by supplier and Principal for sizing of material and inclusions such as ACM, bricks or concrete as well as odours or staining and for general compliance with the contractual provisions and quality provisions outlined in this protocol document. Non-conforming or contaminated material will be rejected and will be removed and disposed of legally (at the suppliers cost) by the supplier. The supplier shall provide documented evidence of the legal disposal of rejected material (i.e. tipping dockets from a licenced landfill facility) and a validation inspection and sampling will be undertaken by the Environmental Consultant if required.

The following must be undertaken at the tipping site for every truck load of imported material brought onto site:

- A visual inspection on placement of every load by the Principal to confirm compliance (see checklist provided in **Appendix D**);
- Random spot checks by Environmental Consultant; and
- Additional check samples if required (i.e. if the material appears inconsistent with the Material Classification Form (MCF)).

#### **6.5 Non-Conformances**

In the event materials are received which do not conform to this IFP, then the CMP (URS 2008) for the site/s shall be implemented.

## 7. Onsite Material Re-Use

Insitu material generated during civil works across the site, which are required to be re-used, should be assessed using the Material Compliance Checklist in **Appendix D** and tracked from source to placement location. Potential for chemically impacted materials or UXO items exists within insitu soils at the site and therefore diligent implementation of the CMP (URS 2008) is required.

Whilst noting insitu materials are considered suitable under the existing SAS (CHK001/1, HLA 1999), additional characterisation sampling to confirm suitability may be required.



## 8. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

## Figures



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Scale: 1:40,000

Datum: GDA 1994 MGA Zone 56 - AHD

A4			

A	Original Issue - R01	FH	04-06-2018
Rev	Description	Drm.	Date:

**Legend:**  
 Site boundary



**Figure 1: Site Location**

Client: Maryland Development Company

Project: Lot 3990

Job No: 55064

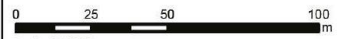
File Name: 55064\_01







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Scale: 1:2,500

Datum: GDA 1994 MGA Zone 56 - AHD

A4			
A	Original Issue - R01	FH	05-06-2018
Rev	Description	Drm.	Date:

**Legend:**

- ▭ Site boundary
- Lot boundary



**Figure 2: Site Layout**

Client: Maryland Development Company

Project: Lot 3990

Job No: 55064

File Name: 55064\_02





## Appendix A Fact Sheet: Virgin Excavated Natural Material

# Fact sheet: Virgin excavated natural material

## Who should use this fact sheet?

This fact sheet is designed to help those who use, supply or generate excavated natural materials to correctly classify these materials. In particular, it provides information on the factors to consider when assessing whether material excavated from a site is able to be classified as 'virgin excavated natural material' (VENM).

This fact sheet should be read in conjunction with the following Department of Environment and Climate Change (DECC) publications:

- *Waste Classification Guidelines: Part 1 – Classifying waste* (available at [www.environment.nsw.gov.au/waste/envguidlms](http://www.environment.nsw.gov.au/waste/envguidlms))
- *Avoiding the dangers of accepting fill on your land* (available at [www.environment.nsw.gov.au/waste/factsheets](http://www.environment.nsw.gov.au/waste/factsheets)).

## Virgin excavated natural material

The *Protection of the Environment Operations Act 1997* defines VENM as:

'natural material (such as clay, gravel, sand, soil or rock fines):

- that has been excavated or quarried from areas that are not contaminated with manufactured chemicals or process residues, as a result of industrial, commercial, mining or agricultural activities, and
- that does not contain any sulfidic ores or soils or any other waste.'

No other criteria for VENM have been approved. By definition, VENM cannot be 'made' from processed soils. Excavated material that has been stored or processed in any way **cannot** be classified as VENM.

## Are manufactured chemicals or process residues likely to be present?

A material can only be classified as VENM if it has been excavated from an area that is **not** contaminated with other waste materials or manufactured chemicals.

Past land uses are a useful first indicator of likely contamination. The possibility that a previous land use has caused contamination of a site must be considered when assessing whether an excavated material is VENM.

Land uses that could result in contaminants being present in an excavated material are listed overleaf. The list is not exhaustive and an excavated natural material may still be contaminated even where none of these activities have previously occurred on a site. Also activities not directly related to a site may lead to contamination: examples include diffuse sources of pollution, such as contaminated groundwater, that migrates under a site or dust settling out from industrial emissions.



Land uses that could result in contaminants being present in an excavated material include:

- acid/alkali plant and formulation
- agricultural/horticultural activities
- airports
- asbestos production and disposal
- chemicals manufacture and formulation
- defence works
- drum re-conditioning works
- dry cleaning establishments
- electrical manufacturing (transformers)
- electroplating and heat treatment premises
- engine works
- explosives industry
- gas works
- iron and steel works
- landfill sites
- metal treatment
- mining and extractive industries
- oil production and storage
- paint formulation and manufacture
- pesticide manufacture and formulation
- power stations
- railway yards
- scrap yards
- service stations
- sheep and cattle dips
- smelting and refining
- tanning and associated trades
- waste storage and treatment
- wood preservation

## Is chemical assessment necessary?

Classification as VENM requires certainty that the material concerned is not contaminated.

Where it is uncertain whether an excavated material can be classified as VENM, a chemical assessment can determine if the material is contaminated.

Note that the term 'clean fill' has no legal standing under the *Protection of the Environment Operations Act 1997* or the Protection of the Environment Operations (Waste) Regulation 2005. Where an excavated material cannot be classified as VENM, it may be eligible for reuse under the 'excavated natural material exemption 2008'. Further information on this option is available on the DECC website at [www.environment.nsw.gov.au/waste/RRRecoveryExemptions.htm](http://www.environment.nsw.gov.au/waste/RRRecoveryExemptions.htm)

## Penalties apply

Under the *Protection of the Environment Operations Act 1997*, it is an offence to supply false or misleading information to another person, including information about the **type, classification, characteristics, composition or quantity of a waste**. Significant penalties apply.

## More information

Contact DECC's Waste Management Section on (02) 9995 5000.

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August 2008

## Appendix B: The Excavated Natural Material Order 2014



# **Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014**

## **The excavated natural material order 2014**

### **Introduction**

This order, issued by the Environment Protection Authority (EPA) under clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 (Waste Regulation), imposes the requirements that must be met by suppliers of excavated natural material to which 'the excavated natural material exemption 2014' applies. The requirements in this order apply in relation to the supply of excavated natural material for application to land as engineering fill or for use in earthworks.

### **1. Waste to which this order applies**

- 1.1. This order applies to excavated natural material. In this order, excavated natural material means naturally occurring rock and soil (including but not limited to materials such as sandstone, shale, clay and soil) that has:
- a) been excavated from the ground, and
  - b) contains at least 98% (by weight) natural material, and
  - c) does not meet the definition of Virgin Excavated Natural Material in the Act.

Excavated natural material does not include material located in a hotspot; that has been processed; or that contains asbestos, Acid Sulfate Soils (ASS), Potential Acid Sulfate soils (PASS) or sulfidic ores.

### **2. Persons to whom this order applies**

- 2.1. The requirements in this order apply, as relevant, to any person who supplies excavated natural material, that has been generated, processed or recovered by the person.
- 2.2. This order does not apply to the supply of excavated natural material to a consumer for land application at a premises for which the consumer holds a licence under the POEO Act that authorises the carrying out of the scheduled activities on the premises under clause 39 'waste disposal (application to land)' or clause 40 'waste disposal (thermal treatment)' of Schedule 1 of the POEO Act.

### **3. Duration**

- 3.1. This order commences on 24 November 2014 and is valid until revoked by the EPA by notice published in the Government Gazette.



## 4. Generator requirements

The EPA imposes the following requirements on any generator who supplies excavated natural material.

### Sampling requirements

- 4.1. On or before supplying excavated natural material, the generator must:
  - 4.1.1. Prepare a written sampling plan which includes a description of sample preparation and storage procedures for the excavated natural material.
  - 4.1.2. Undertake sampling and testing of the excavated natural material as required under clauses 4.2, 4.3, and 4.4 below. The sampling must be carried out in accordance with the written sampling plan.
- 4.2. The generator must undertake sampling and analysis of the material for ASS and PASS, in accordance with the NSW Acid Sulfate Soil Manual, Acid Sulfate Soils Management Advisory Council, 1998 and the updated Laboratory Methods Guidelines version 2.1 – June 2004 where:
  - 4.2.1. the pH measured in the material is below 5, and/or
  - 4.2.2. the review of the applicable Acid Sulfate Soil Risk Maps (published by the former Department of Land and Water Conservation and available at <http://www.environment.nsw.gov.au/acidsulfatesoil/riskmaps.htm>) indicates the potential presence of ASS.
- 4.3. For stockpiled material, the generator must:
  - 4.3.1. undertake sampling in accordance with Australian Standard 1141.3.1-2012 Methods for sampling and testing aggregates – Sampling – Aggregates (or equivalent);
  - 4.3.2. undertake characterisation sampling by collecting the number of samples listed in Column 2 of Table 1 with respect to the quantity of the waste listed in Column 1 of Table 1 and testing each sample for the chemicals and other attributes listed in Column 1 of Table 4. For the purposes of characterisation sampling the generator must collect:
    - 4.3.2.1. composite samples for attributes 1 to 10 and 18 in Column 1 of Table 4.
    - 4.3.2.2. discrete samples for attributes 11 to 17 in Column 1 of Table 4.
    - 4.3.2.3. The generator must carry out sampling in a way that ensures that the samples taken are representative of the material from the entire stockpile. All parts of the stockpile must be equally accessible for sampling.
    - 4.3.2.4. for stockpiles greater than 4,000 tonnes the number of samples described in Table 1 must be repeated.
  - 4.3.3. store the excavated natural material appropriately until the characterisation test results are validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 4 and the absolute maximum concentration or other value listed in Column 3 of Table 4.

**Table 1**

<b>Sampling of Stockpiled Material</b>		
<b>Column 1</b>	<b>Column 2</b>	<b>Column 3</b>
<b>Quantity (tonnes)</b>	<b>Number of samples</b>	<b>Validation</b>
<500	3	Required
500 – 1,000	4	
1,000 – 2,000	5	
2,000 – 3,000	7	
3,000 – 4,000	10	

4.4. For in situ material, the generator must:

- 4.4.1. undertake sampling by collecting discrete samples. Compositing of samples is not permitted for in-situ materials.
- 4.4.2. undertake characterisation sampling for the range of chemicals and other attributes listed in Column 1 of Table 4 according to the requirements listed in Columns 1, 2 and 3 of Table 2. When the ground surface is not comprised of soil (e.g. concrete slab), samples must be taken at the depth at which the soil commences.
- 4.4.3. undertake sampling at depth according to Column 1 of Table 3.
- 4.4.4. collect additional soil samples (and analyse them for the range of chemicals and other attributes listed in Column 1 of Table 4), at any depth exhibiting discolouration, staining, odour or other indicators of contamination inconsistent with soil samples collected at the depth intervals indicated in Table 3.
- 4.4.5. segregate and exclude hotspots identified in accordance with Table 2, from material excavated for reuse.
- 4.4.6. subdivide sites larger than 50,000 m<sup>2</sup> into smaller areas and sample each area as per Table 2.
- 4.4.7. store the excavated natural material appropriately until the characterisation test results are validated as compliant with the maximum average concentration or other value listed in Column 2 of Table 4 and the absolute maximum concentration or other value listed in Column 3 of Table 4.



**Table 2**

<i>In Situ Sampling at surface</i>				
Column 1	Column 2	Column 3	Column 4	Column 5
Size of <i>in situ</i> area (m <sup>2</sup> )	Number of systematic sampling points recommended	Distance between two sampling points (m)	Diameter of the hot spot that can be detected with 95% confidence (m)	Validation
500	5	10.0	11.8	Required
1000	6	12.9	15.2	
2000	7	16.9	19.9	
3000	9	18.2	21.5	
4000	11	19.1	22.5	
5000	13	19.6	23.1	
6000	15	20.0	23.6	
7000	17	20.3	23.9	
8000	19	20.5	24.2	
9000	20	21.2	25.0	
10,000	21	21.8	25.7	
15,000	25	25.0	28.9	
20,000	30	25.8	30.5	
25,000	35	26.7	31.5	
30,000	40	27.5	32.4	
35,000	45	27.9	32.9	
40,000	50	28.3	33.4	
45,000	52	29.3	34.6	
50,000	55	30.2	35.6	

Table 2 has been taken from NSW EPA 1995, *Contaminated Sites Sampling Design Guidelines*, NSW Environment Protection Authority.

**Table 3**

<i>In Situ Sampling at Depth</i>	
Column 1	Column 2
Sampling Requirements *	Validation
<p>1 soil sample at 1.0 m bgl from each surface sampling point followed by 1 soil sample for every metre thereafter.</p> <p>From 1.0 m bgl, sample at the next metre interval until the proposed depth of excavation of the material is reached. If the proposed depth of excavation is between 0.5 to 0.9 m after the last metre interval, sample at the base of the proposed depth of excavation.</p>	<p>Required if the depth of excavation is equal to or greater than 1.0 m bgl</p>

\* Refer to Notes for examples

## Chemical and other material requirements

- 4.5. The generator must not supply excavated natural material waste to any person if, in relation to any of the chemical and other attributes of the excavated natural material:
- 4.5.1. The chemical concentration or other attribute of any sample collected and tested as part of the characterisation of the excavated natural material exceeds the absolute maximum concentration or other value listed in Column 3 of Table 4:
- 4.5.2. The average concentration or other value of that attribute from the characterisation of the excavated natural material (based on the arithmetic mean) exceeds the maximum average concentration or other value listed in Column 2 of Table 4.
- 4.6. The absolute maximum concentration or other value of that attribute in any excavated natural material supplied under this order must not exceed the absolute maximum concentration or other value listed in Column 3 of Table 4.

**Table 4**

Column 1	Column 2	Column 3
Chemicals and other attributes	Maximum average concentration for characterisation (mg/kg 'dry weight' unless otherwise specified)	Absolute maximum concentration (mg/kg 'dry weight' unless otherwise specified)
1. Mercury	0.5	1
2. Cadmium	0.5	1
3. Lead	50	100
4. Arsenic	20	40
5. Chromium (total)	75	150
6. Copper	100	200
7. Nickel	30	60
8. Zinc	150	300
9. Electrical Conductivity	1.5 dS/m	3 dS/m
10. pH *	5 to 9	4.5 to 10
11. Total Polycyclic Aromatic Hydrocarbons (PAHs)	20	40
12. Benzo(a)pyrene	0.5	1
13. Benzene	NA	0.5
14. Toluene	NA	65
15. Ethyl-benzene	NA	25
16. Xylene	NA	15
17. Total Petroleum Hydrocarbons C <sub>10</sub> -C <sub>36</sub>	250	500
18. Rubber, plastic, bitumen, paper, cloth, paint and wood	0.05%	0.10%

\* The ranges given for pH are for the minimum and maximum acceptable pH values in the excavated natural material.

## Test methods

- 4.7. The generator must ensure that any testing of samples required by this order is undertaken by analytical laboratories accredited by the National Association of Testing Authorities (NATA), or equivalent.
- 4.8. The generator must ensure that the chemicals and other attributes (listed in Column 1 of Table 4) in the excavated natural material it supplies are tested in accordance with the test methods specified below or other equivalent analytical methods. Where an equivalent analytical method is used the detection limit must be equal to or less than that nominated for the given method below.
  - 4.8.1. Test methods for measuring the mercury concentration.
    - 4.8.1.1. Analysis using USEPA SW-846 Method 7471B Mercury in solid or semisolid waste (manual cold vapour technique), or an equivalent analytical method with a detection limit < 20% of the stated absolute maximum concentration in Column 3 of Table 2 (i.e. < 0.20 mg/kg dry weight).
    - 4.8.1.2. Report as mg/kg dry weight.
  - 4.8.2. Test methods for measuring chemicals 2 to 8.
    - 4.8.2.1. Sample preparation by digesting using USEPA SW-846 Method 3051A Microwave assisted acid digestion of sediments, sludges, soils, and oils (or an equivalent analytical method).
    - 4.8.2.2. Analysis using USEPA SW-846 Method 6010C Inductively coupled plasma - atomic emission spectrometry, or an equivalent analytical method with a detection limit < 10% of the stated absolute maximum concentration in Column 3 of Table 2, (e.g. 10 mg/kg dry weight for lead).
    - 4.8.2.3. Report as mg/kg dry weight.
  - 4.8.3. Test methods for measuring electrical conductivity and pH.
    - 4.8.3.1. Sample preparation by mixing 1 part excavated natural material with 5 parts distilled water.
    - 4.8.3.2. Analysis using Method 103 (pH) and 104 (Electrical Conductivity) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).
    - 4.8.3.3. Report electrical conductivity in deciSiemens per metre (dS/m).
  - 4.8.4. Test method for measuring Polynuclear Aromatic Hydrocarbons (PAHs) and benzo(a)pyrene.
    - 4.8.4.1. Analysis using USEPA SW-846 Method 8100 Polynuclear Aromatic Hydrocarbons (or an equivalent analytical method).
    - 4.8.4.2. Calculate the sum of all 16 PAHs for total PAHs.
    - 4.8.4.3. Report total PAHs as mg/kg dry weight.
    - 4.8.4.4. Report benzo(a)pyrene as mg/kg.



- 4.8.5. Test method for measuring benzene, toluene, ethylbenzene and xylenes (BTEX).
- 4.8.5.1. Method 501 (Volatile Alkanes and Monocyclic Aromatic Hydrocarbons) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).
- 4.8.5.2. Report BTEX as mg/kg.
- 4.8.6. Test method for measuring Total Petroleum Hydrocarbons (TPH).
- 4.8.6.1. Method 506 (Petroleum Hydrocarbons) in Schedule B (3): Guideline on Laboratory Analysis of Potentially Contaminated Soils, National Environment Protection (Assessment of Site Contamination) Measure 1999 (or an equivalent analytical method).
- 4.8.6.2. Report as mg/kg dry weight.
- 4.8.7. Test method for measuring rubber, plastic, bitumen, paper, cloth, paint and wood.
- 4.8.7.1. NSW Roads & Traffic Authority Test Method T276 Foreign Materials Content of Recycled Crushed Concrete (or an equivalent method).
- 4.8.7.2. Report as percent.

### **Notification**

- 4.9. On or before each transaction, the generator must provide the following to each person to whom the generator supplies the excavated natural material:
- a written statement of compliance certifying that all the requirements set out in this order have been met;
  - a copy of the excavated natural material exemption, or a link to the EPA website where the excavated natural material exemption can be found; and
  - a copy of the excavated natural material order, or a link to the EPA website where the excavated natural material order can be found.

### **Record keeping and reporting**

- 4.10. The generator must keep a written record of the following for a period of six years:
- the sampling plan required to be prepared under clause 4.1.1;
  - all characterisation sampling results in relation to the excavated natural material supplied;
  - the volume of detected hotspot material and the location;
  - the quantity of the excavated natural material supplied; and
  - the name and address of each person to whom the generator supplied the excavated natural material.
- 4.11. The generator must provide, on request, the characterisation and sampling results for that excavated natural material supplied to the consumer of the excavated natural material.



## 5. Definitions

In this order:

**application or apply to land** means applying to land by:

- spraying, spreading or depositing on the land; or
- ploughing, injecting or mixing into the land; or
- filling, raising, reclaiming or contouring the land.

**Bgl** means below ground level, referring to soil at depth beneath the ground surface.

**composite sample** means a sample that combines five discrete sub-samples of equal size into a single sample for the purpose of analysis.

**consumer** means a person who applies, or intends to apply excavated natural material to land.

**discrete sample** means a sample collected and analysed individually that will not be composited.

**generator** means a person who generates excavated natural material for supply to a consumer.

**hotspot** means a cylindrical volume which extends through the soil profile from the ground surface to the proposed depth of excavation, where the level of any contaminant listed in Column 1 of Table 2 is greater than the absolute maximum concentration in Column 3 of Table 2.

**in situ material** means material that exists on or below the ground level. It does not include stockpiled material.

**in situ sampling** means sampling undertaken on *in situ* material.

**N/A** means not applicable.

**stockpiled material** means material that has been excavated from the ground and temporarily stored on the ground prior to use.

**systematic sampling** means sampling at points that are selected at even intervals and are statistically unbiased.

**transaction** means:

- in the case of a one-off supply, the supply of a batch, truckload or stockpile of excavated natural material that is not repeated.
- in the case where the supplier has an arrangement with the recipient for more than one supply of excavated natural material, the first supply of excavated natural material as required under the arrangement.

**Manager Waste Strategy and Innovation  
Environment Protection Authority  
(by delegation)**

## Notes

The EPA may amend or revoke this order at any time. It is the responsibility of each of the generator and processor to ensure it complies with all relevant requirements of the most current order. The current version of this order will be available on [www.epa.nsw.gov.au](http://www.epa.nsw.gov.au)

In gazetting or otherwise issuing this order, the EPA is not in any way endorsing the supply or use of this substance or guaranteeing that the substance will confer benefit.

The conditions set out in this order are designed to minimise the risk of potential harm to the environment, human health or agriculture, although neither this order nor the accompanying exemption guarantee that the environment, human health or agriculture will not be harmed.

Any person or entity which supplies excavated natural material should assess whether the material is fit for the purpose the material is proposed to be used for, and whether this use may cause harm. The supplier may need to seek expert engineering or technical advice.

Regardless of any exemption or order provided by the EPA, the person who causes or permits the application of the substance to land must ensure that the action is lawful and consistent with any other legislative requirements including, if applicable, any development consent(s) for managing operations on the site(s).

The supply of excavated natural material remains subject to other relevant environmental regulations in the POEO Act and Waste Regulation. For example, a person who pollutes land (s. 142A) or water (s. 120), or causes air pollution through the emission of odours (s. 126), or does not meet the special requirements for asbestos waste (Part 7 of the Waste Regulation), regardless of this order, is guilty of an offence and subject to prosecution.

This order does not alter the requirements of any other relevant legislation that must be met in supplying this material, including for example, the need to prepare a Safety Data Sheet. Failure to comply with the conditions of this order constitutes an offence under clause 93 of the Waste Regulation.

## Examples

### *In situ* sampling at depth

Example 1.

If the proposed depth of ENM excavation is between 1 m bgl and 1.4 m bgl, then:

- 1 sample on surface (as per the requirements of Table 2).
- 1 sample at 1 m bgl.
- No further depth sampling after 1 m bgl, unless required under section 4.4.4.

Example 2.

If the proposed depth of ENM excavation is at 1.75 m bgl, then:

- 1 sample on surface (as per the requirements of Table 2).
- 1 sample at 1 m bgl.
- 1 sample at 1.75 m bgl.
- No further depth sampling after 1.75 m bgl, unless required under section 4.4.4.

Example 3.

If the proposed depth of ENM excavation is at 2.25 m bgl, then:

- 1 sample on surface (as per the requirements of Table 2).
- 1 sample at 1 m bgl.
- 1 sample at 2 m bgl.
- No further depth sampling after 2 m bgl, unless required under section 4.4.4.

## Appendix C: Site Entry Material Compliance Checklist

### Site Entry Material Compliance Checklist

Prior to any truck entering the site, the following conditions must be met.

1. The truck registration number must be on the list of approved registration numbers for the day's activities.
2. The truck must not be a semi-trailer.
3. The load must be covered with an automatic tarp cover.
4. The material must not contain anthropogenic material (i.e. ACM, bricks, concrete, staining or odours).

If any of the above detailed requirements are not met, the truck must not be granted access to site. In the event that a truck is rejected the following must immediately be undertaken:

- The truck must be turned back using the nominated turning bay/road.
- The supplier must be notified.
- This form, detailing the cause of the rejection, must be completed and signed by both the supplier and principal's representatives and outline the reasons for rejection.

Suppliers representative	Principal Contractor representative
<b>Cause of rejection:</b>	
<b>Signatures:</b>	



## Appendix D: Material Compliance Checklist

### Material Compliance Checklist:

JBS&G Material Characterisation Form (MCF) number:

Is the material VENM or ENM (please circle).

For every load of material imported and placed on the site, the following compliance checklist provided must be completed.

**Table E. Compliance Checklist**

Compliance Criteria	Yes (/x)	No (/x)	Outcome
Does material appear consistent with that described in the corresponding MCF?			If no, the area must be isolated and the Environmental Consultant notified.
Does the material contain any anthropogenic inclusions (e.g. potential ACM, bricks, concrete, staining or odours)			If Yes, the area must be isolated and the Environmental Consultant notified.
Does material visually meet the geotechnical requirements?			If no, the area must be isolated and the Geotechnician notified.
Has a random spot check been undertaken by the Environmental Consultant?			Random spot checks will be undertaken however are not a requirement for every load.

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A	George Black	Greg Dasey	DRAFT - Issue for Client Review		08/06/2018

