Importation Protocol
for Reach Lane Quarry Landfill

Report for:
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Document revision history

Revision	Date	Author	Purpose	Summary of Changes

1.0 INTRODUCTION

1.1 L.B. Silica Sands Limited requires the importation of circa 3,930,000 m^3 of inert waste to facilitate the restoration of Reach Lane Quarry (EPR/HP3094SQ). Circa 255,000 tonnes of inert waste are imported per year, which will increase to 500,000 tonnes per year once the quarry operation has ceased.

1.2 Materials to be accepted will be in line with Environment Agency guidance, therefore from a chemical and biological perspective will be wholly inert. Where required during pre-acceptance procedures, the operator will undertake an analysis of the material prior to deposit to ensure it is suitable.

1.3 The waste acceptance protocol details the processes through which the importation of inert material will be controlled, ensuring that the environmental and physical properties of the material are deemed suitable and in compliance with the Permit requirements.

1.4 The Importation Protocol has been developed in line with the EA's landfill technical guidance and will form part of the site specific Environmental Management System documents under the Environmental Permit EPR/HP3094SQ. This document relates solely to waste acceptance for the inert landfill activity. Waste acceptance procedures for the wash plant are within the site's Operational Plan.

2.0 IMPORTATION PROCEDURE & CONTROLS

Waste Acceptance Control

2.1 The fill material will be from multiple sources, both as dug from greenfield sites, and waste streams from waste treatment, construction and demolition contracts.

2.2 To determine a material's acceptability for use at the site the Operator will apply this protocol ensuring that both the wastes properties are fully assessed and that the importers of the material are suitably licensed.

Waste Carriers Licence

2.3 A Waste Carriers Licence will need to be provided to the Operator prior to any importation by a third party. The certificate will be checked to ensure that it is valid. If there is any doubt as to the certificates' validity, then the Operator will restrict access to the site whilst clarification is provided regarding validity and status.

Prior Assessment of Waste Characteristics

2.4 Prior to import, waste must be pre-assessed to determine whether the site can accept it and process it without risk to the human health or to the environment. This process is integral to the management of the site. The pre-acceptance process is shown in Schematic 1.

2.5 Prior to the importation of waste, the Operator will evaluate the source of the waste to be imported under this protocol. The Operator will employ a Waste Information Form (WIF) that will be used to document the evaluation process for each waste stream to be deposited at the site i.e. the tracking process. This form will identify the following information as a minimum prior to the waste being accepted into the site:

- Waste source and origin;
- The code applicable to the waste under the European Waste Catalogue (EWC);
- Determination if the waste has hazardous properties based on WM3, and if so what hazardous properties does it have;

- Chemical solid test results on metals, hydrocarbons and non-metals as well as the leachate assessment detailed in the Waste Acceptance Criteria (WAC);
- The process producing the waste (including a description of the process, its SIC code and characteristics of its raw materials and products which may affect its behaviour under landfill conditions);
- The waste treatment applied, or a statement of why treatment is not considered necessary;
- The appearance of the waste (including smell, colour, consistency and physical form);
- Confirmation that the waste is not prohibited from disposal to landfill (for example liquid waste and whole used tyres);
- The class of landfill the waste can be disposed at; and
- Confirmation of whether the waste requires testing.

2.6 The WIF along with any supporting information will be retained at the Operators office. Each WIF will have a unique reference.

2.7 The WIFs will usually be associated for all incoming sources. For sources with the M.O'Brien Group, a 'Season Ticket' can be organised which remain valid for up to a year. It is up to the Landfill Charge Hand or Deputy to update the Season Tickets, and advice the waste producer on any upcoming renewal requirements. Details in relation to Season Tickets should be recorded in the Site Diary.

2.8 Waste types that can be accepted at site are set out in Appendix A.

2.9 Wastes to be imported to the site are potentially from multiple sources. The requirement for WAC testing results to be submitted for each source is dependent on the type and nature of the materials.

2.10 The Operator will record the source and documentation references on the WIF form during the evaluation of each waste source. Wastes from brownfield sites (made ground), mixed waste, or wastes containing potentially reactive materials and/or low level contaminants will need to be supported by WAC testing. WAC testing will be undertaken prior to importation. Table 2.1 below outlines the Inert WAC Criteria.

Table 2.1 Inert Waste Acceptance Criteria

Determinant	Leachate Criteria (LS=10l/kg) mg/kg	Soil mg/kg
Arsenic	0.5	
Barium	20	
Cadmium	0.04	
Chromium	0.5	
Copper	2.0	
Mercury	0.01	
Molybdenum	0.5	
Nickel	0.4	
Lead	0.5	
Antimony	0.06	
Selenium	0.1	
Zinc	4.0	
Chloride	800	
Fluoride	10	
Sulphate (as SO4)	1000	
Total Dissolved Solids (TDS)	4000	
Phenol Index	1.0	
Dissolved Organic Carbon	500	
BTEX (C5-C10)		6
PCB (total)		1
Mineral Oil (C10-C40)		500
PAH (total)		100
Total Organic Carbon		3%*

Table 2.1 Inert Waste Acceptance Criteria

1. If the waste does not meet these values for sulphate, it may still be considered as complying with the acceptance criteria if the leaching does not exceed either of the following values 1500mg/l as C0 at L/S =0.1 1/kg and 6000 mg/kg at L/S = 10 1/kg. It will be necessary to use a percolation test to determine the limit value at L/S = 0.1 1/kg under initial equilibrium conditions, whereas the value at L/S – 10 1/kg may be determined either by a batch leaching test or by a percolation test under conditions approaching local equilibrium.

2. If the waste does not meet these values for DOC at its own pH value, it may alternatively be tested at L/S =10 1/kg and a pH between 7.5 and 8.0. The waste may be considered as complying with the acceptance criteria for DOC, if the result of this determination does not exceed 500mg/kg.

3. The values for Total Dissolved Solids(TDS) can be used alternatively to the values for sulphate and chloride.

4. In the case of soils, a higher TOC limit value may be permitted by the Environment Agency at an inert waste landfill, provided the DOC value of 500mg/kg is achieved at L/S 10 l/kg, either at the soil's own pH or at a pH value between 7.5 and 8.0.

5. Acceptance criteria for the geological barrier will be set out in the CQA Strategy Plan.

2.11 If a material complies with the inert criteria and is submitted with detailed Leachate Results (L/S=10 l/kg) (WAC testing) which meet the standards specified in Table 1 above, then they will be deemed suitable for use within the site.

2.12 Certain wastes, listed in Table 2.2 below, may be accepted for disposal at the site without additional testing provided that the following criteria is met:

- The waste is from a single stream/source material. Different wastes listed in Table 2.2 below may be accepted together, provided they originate from the same source; and
- The waste is uncontaminated and does not contain material or other substances that are not acceptable for disposal at the site.

Table 2.2 Inert Wastes Not Requiring Additional Testing

EWC Code	Description	Restrictions
10 11 03	Waste glass-based fibrous materials	Only without organic binders
15 01 17	Glass packaging	
17 01 01	Concrete	Selected Construction and Demolition Waste only
17 01 02	Bricks	Selected Construction and Demolition Waste only
17 01 03	Tiles and ceramics	Selected Construction and Demolition Waste only
17 01 07	Mixtures of concrete, bricks, tiles and ceramics	Selected Construction and Demolition Waste only
17 02 02	Glass	
17 05 04	Soil and stones	Excluding topsoil, peat and soil and stones from contaminated sites.
19 12 05	Glass	
20 01 02	Glass	Separately collected glass only.
20 02 02	Soil and stones	Only garden and parks waste; Excluding topsoil and peat.

Assessment of Non-Greenfield Soils

2.13 Where a material is potentially reactive (or contaminated) the Operator will assess the waste streams and Certificates of Analysis, including WAC results. If the representative samples of the waste stream meet the standards set out in Table 1 above then they will be determined as suitable. The WIF will be completed for this waste stream and signed. Only once approved will the import commence. Non-greenfield soils are included in Table 2.3 below.

Table 2.3 Inert Wastes Requiring Testing		
EWC Code	Description	Restrictions
17 05 04	Soil and stones	Excluding topsoil, peat and soil and stones from contaminated sites.
19 02 06	Silt/clay from soil washing	Limited to silt/clay from soil washing plants only.
20 02 02	Soil and stones	Only garden and parks waste; Excluding topsoil and peat.

2.14 The chemical test results must have been obtained from samples which are representative (i.e. be both recent and, if obtained during a site investigation, be from the same depth as the source of materials which are proposed to be imported) of the material to be imported. If samples are obtained from stockpiles then composite samples (mixed sub-samples) should ideally be collected. Samples should be collected by a competent Environmental Engineer/Consultant or Representative of the Producer. All chemical testing should be undertaken by a UKAS accredited laboratory and the test record describing the soil kept. An assessment must be undertaken against the materials reactivity (using the Waste Acceptance Criteria (WAC)) and determine whether it has any hazardous properties using WM3 Waste Classification. Where more than 2 samples are taken a statistical approach based upon the 95th percentile of the data set will be adopted as determined necessary.

2.15 Materials imported onto the site will be tipped under the guidance of the trained site operatives to ensure materials comply with the description on the WIF form.

2.16 Only inert waste/materials will be accepted at the site for use as fill material. All materials will need to comply with the chemical specification presented in this section.

3.0 ON SITE WASTE MANAGEMENT CONTROL

Site Acceptance

3.1 The waste will access the site off the Reach Lane public highway. The vehicles will go direct to the site office where it will be inspected, weighed, and checked against the relevant pre-acceptance information. The waste acceptance and management process are shown in Schematic 1.

Weighbridge

3.2 All wastes transported to the site are visually inspected and weighed at the weighbridge upon entry to the site by trained personal, where safe. Where visual inspection at the weighbridge is not possible, waste will be visually inspected at the tipping face, and the site operative informed via radio of this action.

3.3 Only permitted waste that conforms to the type and description in the documentation supplied by the producer and/or holder is accepted. Skip waste entering the site is further visually inspected and associated Duty of Care paperwork checked. Details of the input will be recorded, which includes at least the following:

- Date and time of delivery;
- Vehicle details (registration mark);
- Written description, EWC code, origin and quantity of the waste;
- Waste producer details; and
- Waste Transfer Note number.

3.4 The Waste Transfer Note will be taken from the carrier, checked to ensure it is fully completed with the correct data and the material conforms to the pre-acceptance information within the WIF. If the Operative believes that the information provided is sufficient, the Carrier will be directed to the relevant placement area. Should the waste be found unsuitable the load remains on the vehicle for immediate off-site transfer. If the material has been offloaded, it will be moved to the designated

quarantine area. Such events will be recorded in the site diary and the regulator informed where necessary.

Vehicular Unloading

3.5 Vehicular unloading will be supervised by a trained operative. During placement of the waste, the waste material will be further inspected to check its contents are consistent with the description provided on the Duty of Care note. If there is any uncertainty regarding the waste type against the expected characterisation as set out in the pre-acceptance information and/or Duty of Care note, the material will be immediately reloaded and rejected off site having given consideration for the relevant Duty of Care requirements. If the producer/ carrier has already left site the material in question will be placed in the designated quarantine area.

Unsuitable Waste

3.6 In the event that potentially unacceptable waste is identified during operation it is segregated and taken to the Quarantine Area.

3.7 In the event of waste being unacceptable at any stage, the Producer will be notified to remove the material from site and if deemed necessary, the importation of the waste stream will be stopped until acceptability can be confirmed.

3.8 If necessary, further testing will be undertaken to determine acceptability. The testing is undertaken by the Operation Manager or delegate.

3.9 The details of such incidents is recorded in the site diary. The details noted should be of the following:

- Reason for load rejection; and
- Steps taken following identification of unsuitable material.

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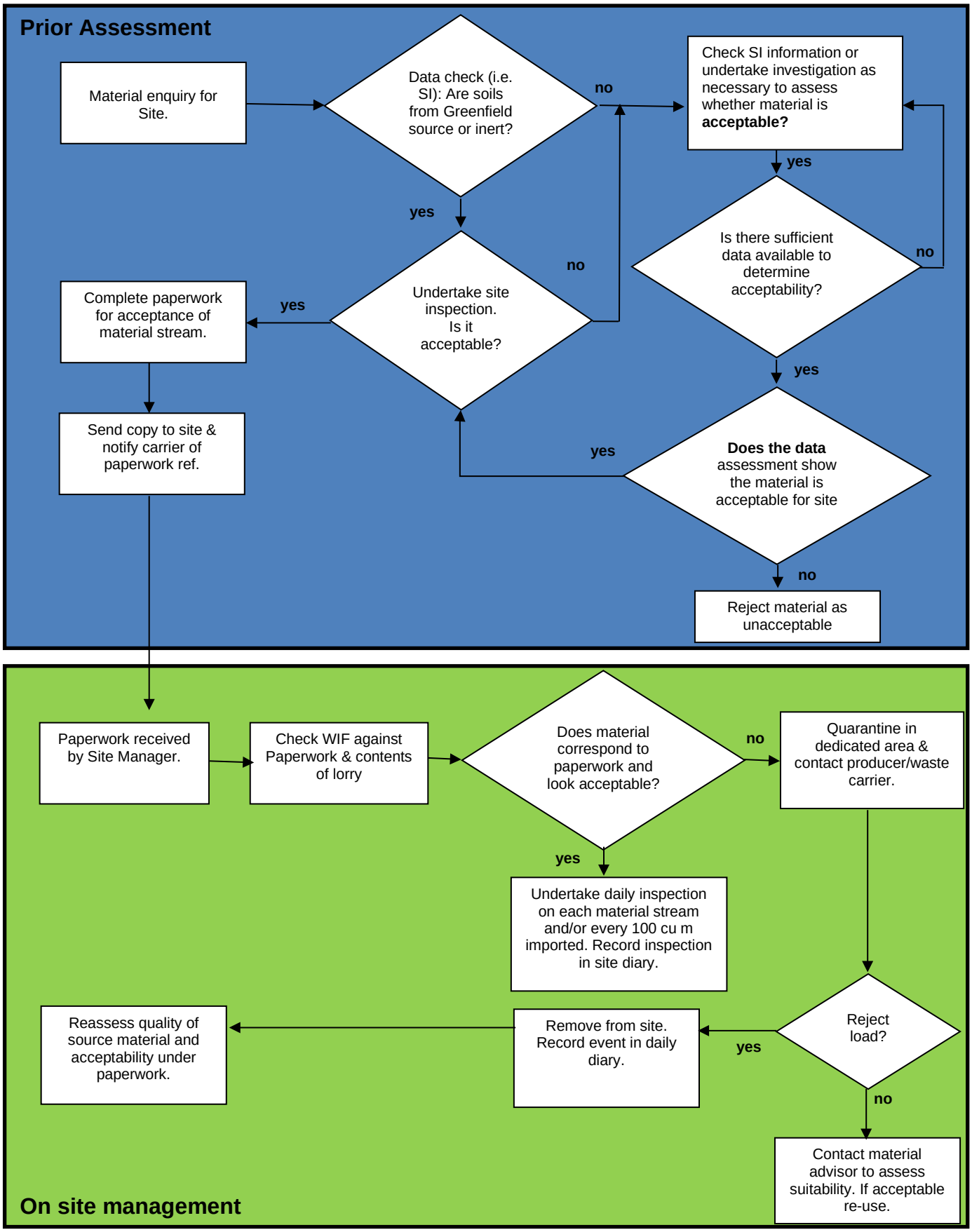
Schematic 1
Pre-Acceptance & Acceptance Procedures

Schematic 1


Prior Assessment
Material enquiry for Site.
Data check (i.e. SI): Are soils from Greenfield source or inert?
no
Check SI information or undertake investigation as necessary to assess whether material is acceptable?
yes
yes
Is there sufficient data available to determine acceptability?
no
yes
Undertake site inspection. Is it acceptable?
no
yes
Complete paperwork for acceptance of material stream.
Send copy to site & notify carrier of paperwork ref.
yes
Does the data assessment show the material is acceptable for site
no
Reject material as unacceptable
Paperwork received by Site Manager.
Check WIF against Paperwork & contents of lorry
Does material correspond to paperwork and look acceptable?
no
Quarantine in dedicated area & contact producer/waste carrier.
yes
Undertake daily inspection on each material stream and/or every 100 cu m imported. Record inspection in site diary.
Reject load?
yes
Remove from site. Record event in daily diary.
Reassess quality of source material and acceptability under paperwork.
no
Contact material advisor to assess suitability. If acceptable re-use.
On site management

Appendix A
Permitted Wastes

Table S2.1 Permitted Waste Types	
Waste Code	**Description**
10	**WASTES FROM THERMAL PROCESS**
10 11	**Wastes from manufacture of glass and glass products**
10 11 03	Waste glass based fibrous materials (only without organic binders)
15	**WASTE PACKAGING, ABSORBENTS, WIPING CLOTHS, FILTER MATERIAL AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**
15	**Packaging (including separately collected municipal packaging waste)**
15 01 07	Glass packaging
17	**CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)**
17 01	**Concrete, bricks, tiles, and ceramics**
17 01 01	Concrete
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 07	Mixtures of concrete, bricks, tiles, and ceramics
17 02	**Wood, glass and plastic**
17 02 02	Glass
17 05	**Soil (including excavates soil from contaminated sites) tones and dredging spoil**
17 05 04	Soil and stones other than those mentioned in 17 05 03 (excluding topsoil, peat, excluding soil and stones from contaminated sites)
19	**WASTES FROM MANAGEMENT FACILITIES, OFF SITE WASTE WATER TREATMENT PLANTS AND THE PREPARATION OF WATER INTENDED FOR HUMAN CONSUMPTION AND WATER FOR INDUSTRIAL USE**
19 02	**Wastes from physico/chemical treatments of waste**
19 02 06	Silt/clay from soil washing activity
19 12	**Wastes from the mechanical treatment of waste (for example sorting, crushing, compacting, pelletising) not otherwise specified**
19 12 05	Glass
20	**MUNICIPAL WASTES (HOUSEHOLS WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES, INCLUDING SEPARATELY COLLECTED FRACTIONS**
20 01	**Separately collected fractions (except 15 01)**
20 01 02	Glass (separately collected glass only)
20 02	**Garden and park wastes (including cemetery wastes**
20 02 02	Soil and stones (Only from garden and parks waste; excluding topsoil, peat)