Soils Limited Guide to Site Waste Management:

There are a number of aspects relating to waste management which will affect most development sites, as waste is defined as anything you intend to discard, be it soils, construction materials, fly tipped materials or whatever the development activity may generate. The first issue is recognition of the different the types of material that may have to go to as waste and provide a mechanism (a materials management plan) to determine what is to be done with them, where they can and will go as well as how much of each given material will be generated by the development and discarded.

This process must include the correct description and classification of every one of the different materials and waste types that are planned to be discarded and how it is intended that the amounts are minimised and managed, as well as detailing how to ensure their correct disposal, recycling or re-use to comply with current waste management and duty of care requirements. These processes are the subject of both legislation and statutory guidance in the UK, so failure to adhere to them may be cause for legal action, development stoppage and project delays.

All wastes must be classified and characterised prior to disposal using the correct European Waste Code (EWC) for a given material. For example, the mixed contaminated soils typically arising on previously used (brownfield) land might be coded 17 (for construction waste), 05 (for soil), and 03 (may contain dangerous substances) – i.e. EWC 17 05 03. A star * is appended to the code if the material exhibits certain hazardous properties, which must then be expressed in terms of one of the 15 current hazardous waste (HAZ) codes.

To determine the EWC and the potentially hazardous properties of a waste material requires a detailed assessment of not only the source and type of the material, but also consideration of its absolute gross chemical properties (so a leachate analysis cannot be used to define a waste or hazard code) and its physical form, which can have a very significant effect. Lead as a bar or white paint fragment is much less hazardous than Lead in the form of dust for example. For each different hazard that may be generated by a material, a separate assessment is required and, in some cases, a cumulative effect must also be determined, as several components of a waste may contribute separately to the same hazardous property

i.e. PAH's are individually carcinogenic, but in varying concentrations depending on the chemical, but can have a cumulative effect.

Suitably detailed chemical data for prospective waste determination can be obtained in part from an effective, well structured and considered site investigation, providing that it is undertaken in line with current guidance and standards and that waste is an aspect that is considered during the commissioning of that phase of the investigation. It can be undertaken retrospectively as an additional investigation, but this is rarely as cost effective. The chemical and physical data obtained from the logs, site observation and analysis, combined with an understanding of the site historical development (and therefore likely sources of contamination) and consideration of the conceptual site model, should allow a reasonably accurate determination of most material types encountered.

However, this data will then have to be considered by a competent waste advisor, often using products such as HazWaste™ before a final determination can be made and the appropriate codes assigned. Depending on the quality of the data and types of materials encountered, certain additional specialist analysis (flammability testing for oil contaminated materials and percentage asbestos fibre being the most common at the moment) may also be required before a material can be precisely defined. A Waste Acceptance Criteria (WAC) analysis is only required if the material is to be sent to landfill, and only to confirm if that particular repository can accept the material under its current licence conditions. A WAC alone will not allow determination of an EWC or Haz code.

Only when the material to be discarded has been defined, characterised and any appropriate Haz codes determined will it be possible to appraise which soils, strata and materials could potentially be re-used or recycled and which should be discarded as not being fit for purpose given the intended end use of the site and potentially where they could be discarded to. Such activities and appraisals should always be undertaken by the development team in

consultation with suitably competent waste advisors/subcontractors and the site procedures and works plans generated should ideally be ratified by a competent person such as a Claire QP and/or the waste regulator.

A MMP (formerly the Site Waste Management Plan from 2008-2015) must be undertaken on all projects subject to the requirements of Construction Design and Management (CDM) and must include consideration of all on-site material movements that could be considered waste activities, including importation/replacement of existing site materials. This may be subject to review and challenge by the regulator depending on circumstance. MMP's can include consideration of any additional site-specific requirements for remediation under planning or other activities, and indeed the most cost-effective site solutions tend to be those that encompass, consider, appraise and combine the requirements of all of these aspects during the design stage.

In summary the MMP must detail at least the following:

- Who will be ultimately responsible for the management and implementation of the MMP
- What types of waste will be generated (including all appropriate codes, anticipated volumes and locations)
- How each specific waste type will be managed, identified, recorded, reduced, segregated, reused, recycled, discarded, imported or emplaced
- Determine and record the competence, hierarchy, delegation and specific responsibilities of all parties and tasks in terms of the management, recording, supervision, verification and validation of the works
- Ensure compliance with all relevant current waste legislation, guidance and any other site or project-specific requirements
- Define how the quantity of each waste generated from the project will be measured, defined, recorded and reported.

A good understanding of the project requirements, CSM and site materials characteristics (both physical and chemical form a good site investigation) should help facilitate the production of a suitable site-specific MMP by the project development team in concert with a

competent waste person. The earlier in the project these aspects are considered, the generally more cost-effective the process and solutions become.