Report to Cover the Period

from January 2018 to January 2019

To Satisfy EPR/VP3095FS

For Neal Soils Suppliers Ltd

Date: January 2019

Our Ref: JCD0170

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Quality Management

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Amendment Record

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1 Introduction

1.1 Background

1.1.1 NRW in pursuance of Part II of the Environment Protection Act 1990 granted a Waste Management Licence to Neal Soil Suppliers Limited (Company Registration Number 3368495) in May 2006. Eight variations of this permit have been issued in September 2009 (002), March 2011(003), May 2011 (004), March 2012 (005), March 2013(007), November 2013 (008), and May 2015 (10).

1.1.2 The first three variations authorised an increase to the list of waste codes for acceptance at the site. The fourth variation (005) included the modernisation of the facility and the inclusion of a washing plant for treatment for hazardous and non-hazardous wastes. The fifth application (006) was submitted to allow the acceptance and treatment of asbestos materials at the wash plant, this application was withdrawn later. The sixth variation (007) was a regulator initiated variation issued by the Environment Agency (now NRW) to implements the changes introduced by IED. The seventh variation (008) was an admin variation relating to the treatment of glass in the washing plant. The eighth (009) was an application to vary few existing conditions in the permit (mainly related to storage conditions) and included an application for a new wash plant. In respond to NRWôs advice, the application was withdrawn in January 2014. Another application was submitted early 2014 for an admin variation to remove one of the activities (D9) and was duly made in May 2014. The last issued variation (010) was both to authorise the requirement of the last above mentioned variation and to include an administrative correction to the regulator initiated change under EPR/VP3095FS/V007.

1.1.3 The applicable permit number is EPR/VP3095FS (previously WML30348) and the area covered by the permit is shown on *Drawing JER5040-002a*. Hereinafter this area will be called the site.

1.2 Purpose

1.2.1 This report is issued to satisfy the Permit Condition 4.2.3 that sets out the following:

1.2.2 ñ*For the following activities referenced in Schedule1, Table S1.1 A1 and A2, a report or reports on the performance of the activities over the previous year shall be submitted to NRW by 31 January (or other date agreed in writing by NRW) each year. The report(s) shall include as a minimum*:

1.2.3 (a) *a review of the results of the monitoring and assessment carried out in accordance with the permit including an interpretive review of that data; and*

1.2.4 *(b) the performance parameters set out in Schedule 4 Table S4.2 using the forms specified in Table S4.3 of that schedule*.ò

1.2.5 With respect to part ñaòof the above condition, Tables S1.1 A1 and A2 of the permit sates the following: ñ*sampling of output from the wash plant shall be undertaken in line with the approved sampling and monitoring methodology as set out in pre-operational condition 2 of table S1.4A, to demonstrate the efficacy of the plant and to show the material are fit for their intended use"*.

1.2.6 Condition 2 of Table S1.4A states:

1.2.7 ñ*The operator shall submit a methodology for the monitoring and sampling of outputs from the washing plant, to the Environment Agency for written approval. The methodology should include details of how waste sampling shall be carried out so as to prove the treated waste meets any applicable Quality Protocol or Code of Practice. The washing activities shall not commence until the Environment Agency has approved the methodology*ò

1.2.8 A pre-operational condition report titled ñThe Washing Plant- Waste Characterisation, Batching and Monitoring- Neal Soil Suppliers Ltd-V5ñ was submitted to NRW (then Environment Agency) to address several of the conditions listed in Table S1.4A including condition 2 above in May 2012. The submission was approved by NRW on the 1st of June 2012. Details of the monitoring and sampling of outputs from the washing plant were covered in Chapter 4 of this approved report. The agreed methodologies were then transferred into the IMS operational procedures submitted to NRW in June 2017.

2 Monitoring and Sampling of Outputs-Wash Plant

2.1 General

2.1.1 Chapter 4 of the approved preoperational condition report provides information on the monitoring and sampling of outputs from the wash plant and includes details on the types of output, sampling methods, the various testing requirement for the different outputs and their frequency in addition to relevant assessment criteria to be used for assessment of suitability of the outputs for their intended uses.

2.1.2 This chapter of the ñpre-operational conditionsò report list the different output from the wash to include:

- Variety of recovered sands, gravel and aggregates to be provided to the market as a saleable product suitable for their intended uses and as per the requirement of the purchaser of these products.
- Light sludge from the flotation unit for disposal.
- Heavy sludge (the filter cake) that may be recovered or disposed of depending on the quality of the input and the treatment.

2.1.3 Under the section ñtestingò, the report states that:

- The selected tests will be chosen to be compliant with the requirements of the relevant standards/specifications/guidance and client requirements.
- Samples for analysis will be taken from the final product by competent and suitably trained personnel.

2.2 Aggregates

2.2.1 The report lists the laboratory testing requirement for recovered aggregates to comply with the relevant standards and specifications, applicable at the time. The testing requirements in this report were updated during 2015 when the revised IMS (developed by Green Triangle) was issued. IMS17-01 covered the testing requirement of the Quality Protocol for recovery of aggregates.

2.2.2 As stated in the 2016 and 2017 annual reports, Neal Soils have instructed John Barritt Consulting Ltd in December 2016 to carry out another review of IMS 17-01 for the purpose of updating and upgrading of the existing procedure. This work was completed and submitted to NRW as part of the updated IMS operational procedures in June 2017. The testing requirements for aggregates and other outputs from the wash plant were detailed in operational procedure WI1. A copy of this operational procedure is provided in Appendix A. Data collected throughout 2018 for the aggregates recovered from the wash plant are provided in Appendix B.

2.3 Filter cake

2.3.1 In terms of the filter cake, the approved pre-operational conditions report states that the clean filter cake is to be provided to the market, as a saleable product suitable for its intended uses and as per the requirement of the purchaser of these products under an appropriate End of Waste code of practice.

2.3.2 It also states that some of these filter cakes may be blended with others soils and/or soil conditioners within the soil processing area of the site following the completion of their treatment in the washing plant. It states that some of these recovered soils may also be subject to spreading and seeding to produce turf or cultivated soil as required by purchasers. The aim of the blending is to produce different types of soil depending on the market demand.

2.3.3 The reports states that the filter cake designated for manufacturing of soil will be tested for a standard suit of analysis including the following:

- Metals;
- Speciated Total Petroleum Hydrocarbons (TPH), with the fraction of petroleum (gasoline) and diesel range;
- Speciated Polycyclic Aromatic Hydrocarbons (PAHs)

2.3.4 The reports also states that:

- ñThe soil composition will be compared with appropriate criteria such as the DEFRA and Environment Agency Contaminated Land Exposure Soil Guideline Values (CLEA - SGV) for the different land uses including residential, commercial and allotments or any specific requirements dictated by the purchaser. For contaminants where CLEA values are not available the Land Quality Management LQM/CIEH Generic Assessment Criteria GAC values will be used. It should be noted that acceptable concentrations for soil for the different land uses are regularly changing based on new information provided by DEFRA and the Environment Agency on these assessment criteriaò and
- ñNeal Soils will ensure they will utilise the most recent published valuesò

2.3.5 In accordance with the above approved methodology, the operational procedures for the NSL site were updated and resubmitted to NRW in June 2017 to reflect the originally agreed methodologies/procedure and later additional requirements from NRW. The testing schedule for filter cakes from treatment of hazardous waste is detailed in WI11, provided in Appendix A. Nealôs have tested all of their filter cake from hazardous batches in accordance to the latest procedures and classified them. The laboratory analysis results of these filter cake and their classification reports are provided in Appendix C.

2.4 The Light Sludge from the Flotation Unit

2.4.1 The report stated that the light sludge from the Dissolved Air Flotation (DAF) unit resulting from the treatment of contaminated material will be subject to compositional analysis tests for the

whole list of contaminants found within in the original waste(s). The analysis results will be used for the purpose of classification to identify appropriate disposal routes. .

2.4.2 It is current practice at Nealôs that all the light sludge collected from the DAF unit is stored in a tank until it is full when it is then sent off for disposal to an appropriate facility as ñhazardous materialò The reason for this classification is the high level of TPH in the sludge which would classify the material as hazardous and the inability of the laboratory to analysing the sludge for other contaminants such as metals due to the nature of the matrix. This material is usually sent to ñCastle Environmentalò Approximately 63 tonnes of this sludge were produced in 2018, 62.2 of which were sent out for disposal as hazardous waste in 2018. Scans of the waste disposal tickets for the sludge are provided in Appendix D.

2.5 Light Debris

2.5.1 Although not listed in the above discussed report, the wash plant also produces another fraction. This is collected as debris from the trash screen and usually contains light fractions of materials such as light plastics, paper, and balls of polystyrene, etc. It seems that reference to this material was mixed up with the light sludge mentioned above in the original report. This is usually collected and sent to Atlantic as combustible material capable of being recovered in the RDF production process. A total of 5669.45 tonnes were removed of the site during 2018 to the adjacent Atlantic Recycling Limited site as shown in the waste transfer note provided in Appendix E.

2.6 Recovery efficiency

2.6.1 During an audit carried out by NRW on Nealôs late 2015, NRW requested that the annual report provides information on the efficiency of the treatment process in the wash plant. The audit stated that ñ*The SGN, referring to metals contamination, requires that the operator provides the regulator with an assessment of the efficiency of the treatment process in relation to Schedule 5 (of the PPC Regulations) pollutants in terms of the removal or partition of substances within the process, for example:*

- *the precipitation of metals from solution for removal in the filter cake*
- *the degree of transfer between the incoming waste and the emissions (to air, solid waste to land and liquid effluent to sewer of, for example, pesticides or solvents).*

2.6.2 In response to the above Nealôs replied that

2.6.3 ñ*Due to the nature of the material treated and processes used, calculation of the efficiency cannot be calculated as a ratio of concentration in the input to the output as can be done in "precipitation of metals from solution". This approach is only applicable to material with high consistency and therefore there is high level of confidence in the concentration being representative of the input material. Accordingly an efficiency calculation was not agreed during the development of the preoperational report. The wash process generate not only one*

*but a number of outputs including not only the filter cake but many other constituent including the different granular materials (sands, gravels and other aggregates) in addition to the light sludge that is removed through the flotation unit. A simple approach can be used to calculate the efficiency of the wash plant by calculating the ratio of the recovered fractions compared to the total treated in any patch or for a specified period of time*ò

2.6.4 The light sludge collected in the DAF unit, which is the fraction that contains all the removed contaminants in the flotation unit, is not removed for each batch due to the negligible quantities recovered from each batch (the sludge from the different batches are collected in one tank for later disposal when the tank is full). Similarly the debris fraction collected as a screen trash which contains the remaining inclusions that may contribute to the level of contaminants in the treated material is allowed to accumulate from different batches and removed when it is full. Metals that removed by magnets and eddy currents also contribute to the removal of contaminants and are difficult to quantify. For these reasons and considering the small quantities, in terms of weight, of all of these constituents in comparison to the bulk quantity of the treated material and their various distributions in the different fractions, quantifying efficiency using the suggested method is not possible.

2.6.5 Therefore we have calculated the efficiency, as previously proposed, from the ratio of recovered quantities to the total quantity of treated waste on annual basis. A total of 198,600 tonnes were processed in the wash plant during 2018. The total quantity of disposed material including the light sludge (63 tonnes) and the light debris (5669.45 tonnes) is 5732 tonnes with the remaining 192867 tonnes, either have been or are in the process of being recycled, an efficiency of greater than 97%. In fact, although the light debris is removed to the Atlantic site as waste, it is mostly recovered as a fuel after further processing at the Atlantic site.

2.6.6 Of the above recovered materials, 42,000 tonnes of filter cake, and 85,700 tonnes of aggregates have reached ñend of wasteò status and were provided to the market. Also 2764.66Tonnes of ferrous metal and 177.9 tonnes of non-ferrous metals were recovered for recycling.

2.6.7 ñ*It is the responsibility of the end users and/or their consultants to identify the specifications of the required material. This can be in the form of a descriptive criteria (i.e. residential, commercial, general fill) or/and site specific criteria derived from risk assessment (specific concentration for one or more contaminants*.

2.6.8 *It is the responsibility of the suitably qualified person(s) at NSL to ensure that the quality of the supplied material meets the required specifications.*

2.6.9 *When only a descriptive criteria was provided by the end user, Neal Soils will use appropriate and current Soil Guideline Values (SGVs) such as S4ULs and the CLAIRE and the LQM Guidance acceptance Criteria (GACS) to assess the suitability of material for the different land use scenarios (Residential, commercial, allotments, etc.*,).ò

2.6.10 It also states:

2.6.11 *"It is the responsibility of the persons identifying the materials specification (end users) or the producer of the Material Management Plan (MMP) to ensure that all other supplied filter cakes, irrespective of their classification status" are re-used in accordance with Watch Point 15 of the CLAIRE CoP".*

2.6.12 Watch Point 15 of the CLAIRE CoP states the following:

2.6.13 All materials must be suitable for use and must not pose unacceptable risks to the environment in order to comply with the requirements of the CoP. In implementing the precautionary principle and in aiming for a high level of environmental protection (as set out in the Waste Framework Directive and case law) the EA would expect the use of materials with a Cluster project to maintain or improve the quality of land at any Donor or Receiver site. To this end the following general restrictions are applied to materials to be used under the CoP at any receiver site:

- The hazards to human health and the environment must not be increased beyond those which already exist at the receiver site, by importing materials with elevated concentrations of potentially harmful substances. A project may be regarded as ñsham recoveryò if it involves importation of soils with levels of contamination significantly above those already present i.e. to a degree that would require additional intervention should the site be redeveloped in future; and
- The importation of materials at receiver sites must not introduce any new hazards beyond those that already exist at the Receiver site, by importing materials containing new contaminants present at problematical levels. In any case this includes the importation and use of materials containing new contaminants present above hazardous waste threshold.

3 Resources Efficiency

3.1.1 The performance parameters set out in Schedule 4 Table S4.2 using the relevant forms specified in Table S4.3 of that schedule are presented in Appendix F. more details are provided below:

3.2 Water Usage

3.2.1 The washing plant is topped up with surface water from interceptor ditches on the site and as such has not needed refreshing from the mains. The washing plant water system is a closed loop system and therefore disposal of waters since first operational is not required.

3.3 Energy Usage

3.3.1 The washing plant is currently run via diesel oil generators on site.

3.3.2 A total of 260,838 litres of Diesel Oil was used on site during the reporting period. When multiplied by NRW conversion value of 10.58 (EPR Intensive Farming ï Helping you to do your four yearly reviews, January 2012) this converts to 2,759,666 kWh or 2760 MWh.

3.4 Raw Materials

3.4.1 The raw materials include both the waste materials treated in the wash plan throughout the year and those virgin raw materials used on site as part of the process. A total of 198,600 tonnes of waste material was processed in the wash plant, 26,652.36 tonnes (~13.4% of the total) were hazardous while the remaining 171,947.64 tonnes were non-hazardous. The following materials were used in the washing process:-

- 3,000 kg - Coagulant
- 4,000 L ï Flocculant A
- 1,000 L- Flocculant B
- 1,000 L ï Flocculant C
- 3,000 L ï Antifoaming Agent
- 1400 L ï PH adjustment agent

Drawings

Appendices

Appendix A

Operational Procedure WI11

Appendix B

The Aggregates Testing Data

Appendix C

The Filter Cake Testing Data & Classification

Appendix D

Light Sludge disposal Consignment Tickets

Appendix E

The Light Debris Waste Transfer Note

Appendix F

Performance Parameters in Schedule 4