



Performance Report to Cover the Period

From January 2022 to January 2023

To Satisfy EPR/VP3095FS



Quality Management

Prepared by:		
Reviewed, corrects and authorised by:	 (Technical Director)	
Date:	January 2023	
Revision:	0	
Project Number:	NSSL/2023	
Document Reference:	230109 R NSSL -AH annual performance report for 2022- NRW -final	
Document File Path:	https://dausoneg-my.sharepoint.com/personal/ahlimhashm_dausoneg_co_uk/Documents/Documents/Ahlim/reports out/annual and long term reports/annual 2022/Neals/for NRW/230109 R NSSL -AH annual performance report for 2022- NRW -final.docx	

Table of Contents

Quality Management	2
Drawings & Appendices	5
Drawings.....	5
Drawing JER5540-002a	5
Appendices	5
Appendix A Operational procedure WI1	5
Appendix B The Filter Cake Analysis Results and classification reports	5
Appendix C Waste consignments for the Light Sludge	5
Appendix D Waste transfer for the debris	5
Appendix E Performance Parameters in Schedule 4	5
1 Introduction.....	6
1.1 Background.....	6
1.2 Purpose.....	6
2 Monitoring and Sampling of Outputs-Wash Plant	8
2.1 General	8
2.2 Aggregates.....	8
2.3 Filter cake	9
2.4 The Light Sludge from the Flotation Unit.....	10
2.5 Light Debris.....	10
2.6 Recovery efficiency.....	10
3 Resources Efficiency	12
3.2 Water Usage	12
3.3 Energy Usage	12
3.4 Raw Materials.....	12
Drawings.....	13
Drawing JER5540-002a.....	14
Appendices	15

Drawings & Appendices

Drawings

Drawing JER5540-002a

Appendices

Appendix A Operational procedure WI1

Appendix B Waste consignments for the Light Sludge

Appendix C Waste transfer for the debris

Appendix D Performance Parameters in Schedule 4

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. Ten 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), May 2015 (10), April 2020 (12) and December 2020 (13), June 2021 (14).
- 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 NRW's 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. The 12th (012) was a variation to add two additional waste codes. The 13th (013) variation was issued by NRW in response to a Regulation 61 Notice following the publication of the revised BAT reference document BRef for waste treatment. Another variation (014) was issued in June 2021 to remove groundwater and surface water monitoring tables within Schedule 3. This version has also added two new improvement conditions.
- 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 4.2.2 that sets out the following:
- 1.2.2 *"For the following activities referenced in schedule 1, table S1.1 (A1 to A3), a report or reports on the performance of the activities over the previous year shall be submitted to Natural Resources Wales by 31 January (or other date agreed in writing by Natural Resources Wales) each year. The report(s) shall include as a minimum:*

(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;

(b) the annual production / treatment data set out in schedule 4 table S4.2; and

(c) the performance parameters set out in schedule 4 table S4.3 using the forms specified in table S4.4 of that schedule.

- 1.2.3 With respect to part “a” of the above condition, Tables S1.1 A1, A2 and A3 of the permit states the following: *“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”.*
- 1.2.4 Condition 2 of Table S1.4A states:
- 1.2.5 *“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”.*
- 1.2.6 A pre-operational condition report titled “The Washing Plant- Waste Characterisation, Batching and Monitoring- Neal Soil Suppliers Ltd-V5” 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, the last versions of which were submitted to NRW in September 2019 as part of response to Regulation 61 Notice (BAT conclusion).

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. This information is included in the IMS procedures incorporated within the Work Instructions (WI) as part of IMS17.
- 2.1.2 This chapter of the “pre-operational conditions” 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 “testing”, 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 previous 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. Record of all data collected throughout 2022 for the aggregates recovered from the wash plant are kept on site and can be provided to request.

2.3 Filter cake

- 2.3.1 In terms of the filter cake, the approved pre-operational conditions report and updated WI procedures contained with IMS17, 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 report and relevant procedures 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 With regards to suitability for use, the updated WI02 states the following:
- 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).
 - It is the responsibility of the suitably qualified/trained person(s) to ensure that the quality of the supplied material meets the required specifications.
 - When only descriptive criteria are provided by the end user, Neal Soil Suppliers Limited will use appropriate and current soil guideline values 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.).
 - Only products found, following testing to be compliant with the required standards and specification will be recovered. Materials failing the requirement will be either retreated or disposed of at a third-party facility.
- 2.3.5 In accordance with the above approved methodology, the operational procedures for the NSL site were updated and resubmitted to NRW in September 2019 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. Neal's have tested all 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 kept on site ready for inspection by NRW when required.

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 Neal's 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 "hazardous material". 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. Approximately 101.04 tonnes of this sludge were produced in 2022, all of which were sent out to "Tradebe UK for disposal as hazardous waste. Scans of the waste disposal tickets for the sludge are provided in Appendix B.

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 2655.338 tonnes were removed of the site during 2022 to the adjacent Atlantic Recycling Limited site as shown in the waste transfer note provided in Appendix C.

2.6 Recovery efficiency

- 2.6.1 During an audit carried out by NRW on Neal's 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 *"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 Neal's replied that

- 2.6.3 *“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”.*
- 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 240,000 tonnes (70,000 tonnes Hazardous and 170,000 tonnes Non Hazardous) were processed in the wash plant during 2022. The total quantity of disposed material including the light sludge (101.04 tonnes) and the light debris (2655.338) is approximately 2756.4 tonnes with the remaining 237,243.6 tonnes, either have been or are in the process of being recycled, an efficiency of approximately 98.55%. 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 The recovered materials include 160,000tonnes tonnes of sand and aggregates that reached “end of waste” status and were provided to the market and 75,000 tonnes of filter cake. Also 839.14 tonnes of ferrous metal and 10.4 tonnes of non-ferrous metals were recovered for recycling.

3 Resources Efficiency

- 3.1.1 The performance parameters set out in Schedule 4 using the relevant forms specified in Table S4.3 of that schedule are presented in Appendix D. 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 119,296 litres of Diesel Oil were used on site during the reporting period. When multiplied by NRW conversion value of 10.58 (EPR Intensive Farming – Helping you to do your four yearly reviews, January 2012) this converts to 1,262.15 kWh.

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 245,820 tonnes of waste material was processed in the wash plant, 25,820 tonnes (~10.5 % of the total) were hazardous while the remaining 220,000 tonnes were non-hazardous. The following materials were used in the washing process:-

DFloc 331 – 6600kg

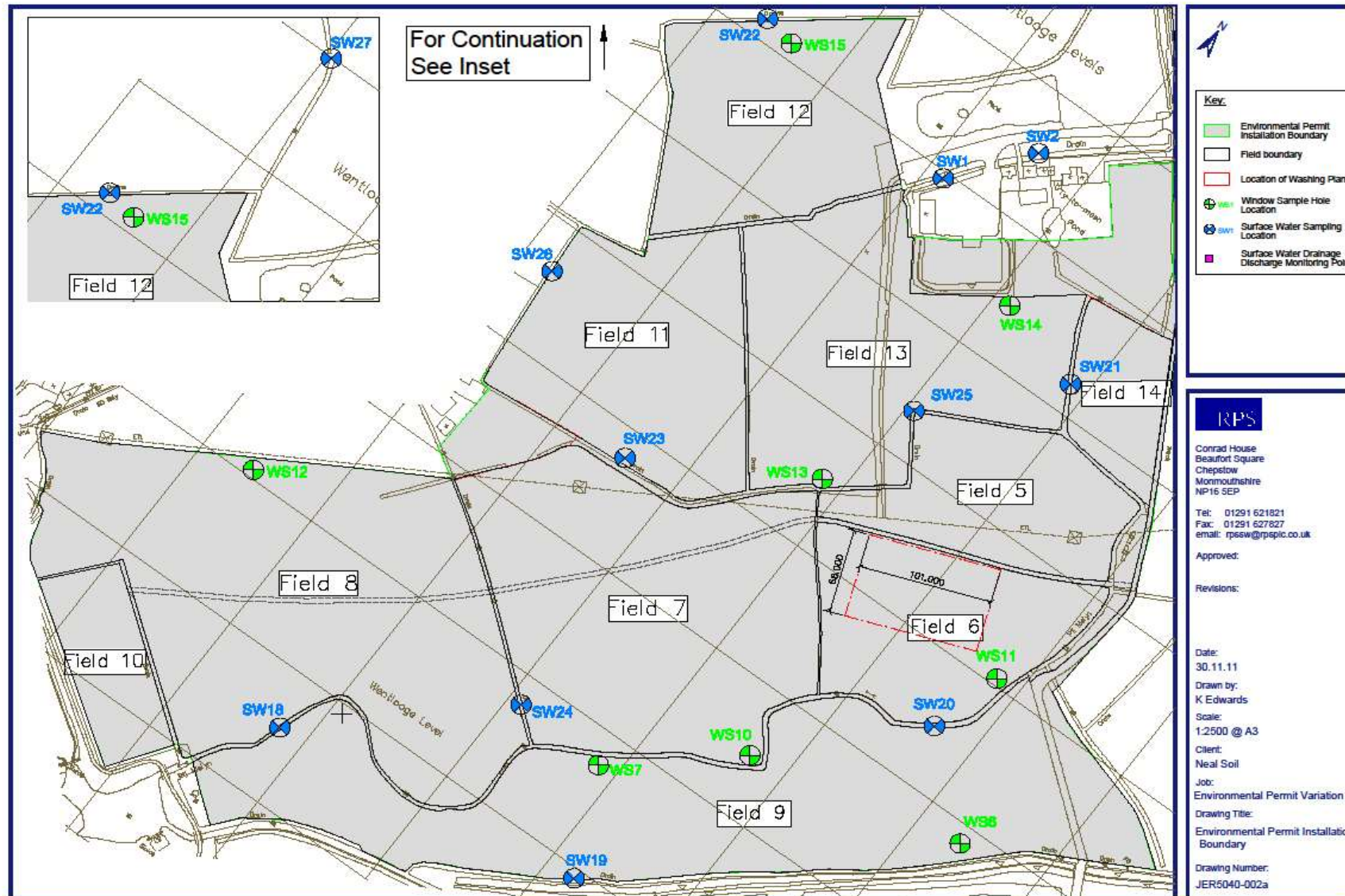
DFloc 5278 – 6000kg

D-Sperse PE58 – 3000kg

DFloc 335 – 3000kg

Sulphuric Acid – 4800kg

Drawings



Appendices

Operational Procedure WI11

Work Instruction		Total Pages: 2
Testing Schedule		Revision Number: 2
		Revision Date: August 2020
		Date Next Revision Due: August 2021
Document Reference: WI11		Approved By: David Neal Managing Director

TESTING SCHEDULE	
Purpose	To define and document the company's procedure to: - Assess the required testing in line with current guidance and conditions - Indicate frequency of testing - Indicate the standard to which the material should be tested This document is aimed to enable the procedure to be communicated to employees of the group to ensure responsibilities are sourced and identified.
Scope	This procedure applies to all products produced at either the dry processing areas or the products produced at the washing plant at Neal Soil Suppliers Limited.
Other Relevant Documents	WRAP QP for Recycled Aggregates (IMS17-01) Small Projects Strategy (IMS17-02) On Site Sampling and Testing (WI10) Wash Plant Water Testing (WI09)
References	Standards for Highways Specification (MCHW) UK relevant soil guidelines values One Touch Data: Haz Waste Online
Responsibilities	The Managing Director has overall responsibility for the implementation of this procedure. With support from the senior managers to ensure compliance is maintained and training is kept up to date.

GEOTECHNICAL TESTING AS PER WRAP QP			
Test Type	Test Standard	Product(s)	Frequency (Production Period)
Particle Size Distribution/ Fines Content	BS EN 933-1	Series 500 Series 600 Series 800 Sand	Weekly
Water Content	BS EN 1097-5	Series 600 Series 800	Weekly
Plasticity Index	BS EN 1377-2	Series 600 Series 800	Weekly
Constituent Analysis	BS EN 933-11	Series 500 Series 600 Series 800	Monthly
Water Soluble Sulfates	BS EN 1744-1	Series 500 Series 600 Series 800 Sand	Monthly
Particle Density	BS EN 1097-6	Sand	Monthly
Water Absorption	BS EN 1097-6	Sand	Monthly
LA Coefficient ²	BS EN 1097-2	Series 500 Series 600	6 Monthly ¹

		Series 800	
Acid Soluble Sulfate & Total Sulfur	BS EN 1744-1	Sand	6 Monthly ¹
Acid Soluble Chloride	BS EN 1744-5	Sand	6 Monthly ¹
Influence on initial setting times of cement	BS EN 744-1	Sand	6 Monthly ¹
Acid Soluble Sulfide & Total Sulfur	BS EN 1744-1	Series 500 Series 600 Series 800	Yearly
Dry Density and Optimum Moisture/Water Content	BS EN 13285 Clause 5.3	Series 600 Series 800	Yearly
Bulk Density	BS EN 1097-3	Series 600 Series 800 Sand	Yearly
Frost Heave	BS EN 812-124	Series 800	Yearly
Magnesium Sulfate Soundness	BS EN 1367-2	Series 800	2 Yearly

¹Calendar Period Frequency

²The LA test is done on the same size fraction for these coarse aggregates and as such should have similar results for each of the products. If initial test data confirms this then just one size may then test each six months thereafter as a control and the result applied to the other products.

CHEMICAL TESTING – SITE MONITORING		
Test Type	Material	Frequency (Calendar Period)
Metals (8) (As, Cd, Cu, Ni, Pb, Hg, Se, Zn)	Washing Plant Water	Monthly/Post Hazardous Campaign
Chromium III, VI	Washing Plant Water	Monthly/Post Hazardous Campaign
TPH UK CWG – Speciated	Washing Plant Water	Monthly/Post Hazardous Campaign
PAH – Speciated 16	Washing Plant Water	Monthly/Post Hazardous Campaign
pH	Washing Plant Water	Monthly/Post Hazardous Campaign

CHEMICAL TESTING – BATCH PRODUCT MONITORING		
Test Type	Material	Frequency (Calendar Period)
Metals (11) (As, Be, B, Cd, Cr, Cu, Ni, Pb, Hg, Se, Zn)	Filter Cake	Batch Process
Chromium – VI & III	Filter Cake	Batch Process
TPH UK CWG	Filter Cake	Batch Process
PAH 16 Speciated	Filter Cake	Batch Process
pH	Filter Cake	Batch Process
BTEX	Filter Cake	Batch Process
Others	Filter Cake	Batch Process for input batches with elevated other contaminants (i.e. Phenol etc.)
Metals (11) (As, Be, B, Cd, Cr, Cu, Ni, Pb, Hg, Se, Zn)	Sand Stone	Batch Process
Chromium – VI & III	Sand Stone	Batch Process
TPH UK CWG	Sand Stone	Batch Process
PAH 16 Speciated	Sand	Batch Process

	Stone	
pH	Sand Stone	Batch Process
BTEX	Sand Stone	Batch Process
Others	Sand Stone	Batch Process for input batches with elevated other contaminants (i.e. Phenol etc.)
WAC Single Stage 10:1	Sand Stone	Batch Process

CHEMICAL TESTING – GENERIC SITE TESTING		
Test Type	Material	Frequency (Calendar Period)
Metals (11) (As, Be, B, Cd, Cr, Cu, Ni, Pb, Hg, Se, Zn)	Small Project Strategy (Residential or Commercial) or Project(s)	Ad hoc Or Quarterly
Chromium – VI & III	Small Project Strategy (Residential or Commercial) or Project(s)	Ad hoc Or Quarterly
TPH UK CWG	Small Project Strategy (Residential or Commercial) or Project(s)	Ad hoc Or Quarterly
PAH 16 Speciated	Small Project Strategy (Residential or Commercial) or Project(s)	Ad hoc Or Quarterly
pH	Small Project Strategy (Residential or Commercial) or Project(s)	Ad hoc Or Quarterly
BTEX	Small Project Strategy (Residential or Commercial) or Project(s)	Ad hoc Or Quarterly
Others (e.g. phenol etc.)	Small Project Strategy (Residential or Commercial) or Project(s)	Ad hoc Or Quarterly
BS3882:2015 Specification for Topsoil	British Standard Topsoil	Ad hoc

SUPPLY CHAIN – THIRD PARTY APPROVED LABORATORIES	
Type of Testing Required	Laboratory Name
Geotechnical	GSTL
Geotechnical	Socotec
Geotechnical	Celtest
Geotechnical	RSK/Structural Soils
Chemical	Chemtest
Chemical	Chemtech
Chemical	DETS
Chemical	EnviroLab

Light Sludge disposal Consignment Tickets

The Light Debris Waste Transfer Note

Performance Parameters in Schedule 4

Permit Number: EPR/VP3095FS Operator: Neal Soil Suppliers Ltd
 Facility: Neal Soil Suppliers Limited Form Number: Energy1 / ~~06003412~~

Reporting of Energy Usage for the year 2022

Energy Source	Energy Usage Quantity	Primary Energy (MWh)	Specific Usage (MWh/unit output)
Electricity *	MWh		
Diesel	119,296		
TOTAL	- 119 - 296 Ltrs.		

* Conversion factor for delivered electricity to primary energy = 2.4

Operator's comments :

Signed Date 06/01/2023
 (Authorised to sign as representative of Operator)

Drafting note: If the operator is required to submit Resource Efficiency Physical Index (REPI) data to the Pollution Inventory, please ensure that no metrics are repeated in this reporting form.

Permit Number: EPR/VP3095FS Operator: Neal Soil Suppliers Ltd
 Facility: Neal Soil Suppliers Limited Form Number: WaterUsage1/2020031712

Reporting of Water Usage for the year 2022

Water Source	Usage (m ³ /year)	Specific Usage (m ³ /unit output)
NIL	NIL	
TOTAL WATER USAGE	NIL	

Operator's comments: ADDITIONAL WATER USED: THIS HAS BEEN OBTAINED FROM OUR OWN WATERSOURCE
 DITCH ON SITE FOR THE TOPPING UP OF THE WASH PLANT.

Signed: *[Signature]* Date: 06/01/2023.
 (authorised to sign as representative of Operator)

Drafting note: If the operator is required to submit Resource Efficiency Physical Index (REPI) data to the Pollution Inventory, please ensure that no metrics are repeated in this reporting form.

Permit Number: EPR/VP3095FS Operator: Neal Soil Suppliers Ltd
 Facility: Neal Soil Suppliers Limited Form Number: Performance1 / 0603#2-

Reporting of other performance indicators for the period 01 01 2022 to 31 12 2022

Parameter	Units
TREATED NON-HAZARDOUS	170,000 TONNES
TREATED HAZARDOUS	70,000 TONNES
ALLEGATES RECOVERED	160,000 TONNES

Operator's comments :

Signed Date: 06/01/2023.
 (Authorised to sign as representative of Operator)

Drafting note: if the operator is required to submit Resource Efficiency Physical Index (REPI) data to the Pollution Inventory, please ensure that no metrics are repeated in this reporting form.