

Neal Soil Suppliers Ltd

Ty to Maen Farm
Wentloog

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AUDIT REPORT FORM



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Part 1: Audit reference information

Permit number	EAWML 30348 EPR-VP3095FS	Site name	Neal Soil Suppliers Ltd (NSS)
Date(s) of audit	7 th & 10 th December 2015	CAR ID No.	NP3336FD/0256694
Lead auditor	Gareth Danter-Hill	Other auditors	Lara Moggridge

Part 2: Executive Summary

This report provides an analysis and evaluation of the current on site processes and procedures used by Neal Soil Suppliers Ltd (NSS) in order to operate the facility in line with the permit held. An audit was carried out on site that comprised of an unaccompanied site inspection, 2 office meetings, the first with John Edwards (site TCM) and the second with Liam Neal and Lloyd Howells. In addition to this a review of both Duty of Care and Hazardous Waste paperwork was undertaken which involved a day in the offices of Neal Soil Suppliers and the seizure of 23 hazardous waste folders.

The audit was undertaken to review compliance against the conditions of the permit held at the site (EPR-VP3095FS, EAWML 30348). The permit details numerous conditions and guidance documents that must be complied with in order to operate a facility of this type legally and in a manner that will protect the environment and prevent the potential harm to human health. Compliance with permit conditions was assessed through the scrutiny of the management system, sector guidance, and relevant legislation as well as on site procedures.

The audit found that NSS are not compliant with a number of the permit conditions. Some of the breaches are major and significant, with others being less so. Major and significant breaches have the potential to cause serious environmental pollutions and have to be rectified as a matter of urgency. Significant failings have been identified across operational procedures and processes that display evidence of a lack of competence and technical expertise. The lack of competence and management on site has resulted in poor implementation of the management system and processes that has resulted in the facility being ineffective and inadequate for the treatment and storage of hazardous waste.

The treatment of hazardous waste on site is not being undertaken in line with the permit requirements, site management system or sector guidance note - resulting in operations being outside of the requirements of legislation. There is a lack of adequate treatment of hazardous waste, road sweeping wastes and other wastes, which means the quality of outgoing wastes is unknown. Further breaches of the permit have been found through the lack of batching and tracking of waste. The seriousness of the failures to comply can be recognised by considering the lack of batching and tracking together with the defective hazardous waste treatment on site. Hazardous waste and road sweeping waste are being non-compliantly blended with non-hazardous wastes on site, not only is this activity outside of legislative requirements but there is no way to track where these hazardous wastes have gone, on or off site.

Due to the lack of tracking and batching of waste on site the CLAIRE CoP and its associated Small Site Strategy are not being complied with. In addition to this, the declarations are not being submitted correctly and so without these the deposit of waste is unlawful and must not continue. Site specific risk assessments have not been completed for the receiving sites and so invalidates any CLAIRE declarations.

The storage of certain types of waste on site is outside of the requirements of the permit. Large quantities of wastes are being stored in a manner likely to cause a pollution to the environment. In some cases on site, this pollution has been identified as leachate being caused by the decomposition of waste. The leachate that is being produced has been identified as seeping out of the ground and overflowing into a cut off ditch on site that also does not benefit from the required infrastructure.

Duty of Care and Hazardous waste paperwork is not being kept or recorded correctly. There have been numerous examples seen of the site incorrectly completing waste transfer notes with regards waste codes, descriptions and tonnages. In addition to this the Hazardous waste consignment notes are not being fully completed. There are minimal outgoing consignments for the hazardous filter cake, post treatment on site.

The conclusions of this audit are that significant improvements need to be made to ensure that compliance is achieved without delay, and corrective actions need to be taken in order to prevent further offending taking place. A report has been requested by NRW from NSS (to be submitted before 29th April 2016), identifying where improvements will be made, with timescales for these improvements and reasons why the failings have occurred in the first place. NRW would also recommend that immediate actions are put in place at NSS to cease the blending and export of potentially hazardous wastes prior to the report submission.

Part 3: Permit conditions

The table below summarises what permit conditions were audited, areas of non-compliance and suggested corrective action.

CAR Sub-criterion assessed	Permit conditions affected	Comments	CCS Score	Proposed dates for completion
A1	1.1.1; 2.3.1; 2.3.2 (b)	Ensure that all activities are carried out in line with the requirements of the permit.	Cat 1	Immediately
B1	2.1.1 S1.1 A1-4	Please construct the required infrastructure where waste that has the potential to pollute the environment is to be stored.	Cat 2	In line with dates provided in your report due on 29/04/2016
C1	1.1.1 (b)	Ensure that correct and sufficient persons and resources are employed to carry out site permitted activities in a legal and compliant way.	Cat 2	In line with dates provided in your report due on 29/04/2016
C2	1.1.1; 2.3.1	Improve the management of the site. Please review site activities and processes and compile a report detailing where the site is failing and what corrective actions are to be taken to ensure immediate compliance against the permit.	Cat 1	In line with dates provided in your report due on 29/04/2016
C4	1.1.1; 2.1.1 S1.1 A1-4	All waste that is on site not benefitting from the required infrastructure needs to be either removed from site or placed on permitted infrastructure as per the permit requirements.	Cat 2	01/04/2016

Part 4: Observations and Actions

Observation 1 - Storage of waste

As detailed in CAR NP3336FD/0251267, the waste storage of road sweeping wastes, sewage grits, transfer station fines and metal contaminated wastes continues to be a problem. The wastes are stored on unmade ground and permit condition 2.1.1 requires they are stored on an impermeable surface with sealed drainage (*locations of storage are identified in Plan A*).

Dark, black leachate was seen pooling on the made ground in the immediate vicinity of the road sweeping waste and sewage grits (*location identified in Plan A*). This leachate was seen overflowing from the storage area and flowing down a bank into a cut off ditch to the rear of this area of the site, near SW20. Significant bleaching of the grass on the banking was also seen in this area. It was evident that the leachate was present within the cut off ditch due to black staining along the top of the water line in the ditch, emphasising the importance for correct and compliant infrastructure for the storage of wastes. The overflowing leachate from the waste, if allowed to continue over prolonged periods of time could result in a pollution risk to the SSSI and ground through seepage/infiltration or overtopping in periods of wet weather. Leachate and the pollution of the ground has also been seen around the edge of the area towards the front of the wash plant storage area (near to WS11).



(*location identified in Plan A*)

The 'transfer station' area of the site (*location identified in Plan A*) does not benefit from the required infrastructure for the waste types that are allowed under this section of the permit. Permit condition 2.1.1 Table S1.1 section A4 requires all hazardous and non-hazardous waste to be stored on an impermeable surface with sealed drainage. As recently detailed within an e-mail to the operator (27th January 2016) this area of the permit allows the storage for onward processing only. The permit (Table S1.1 activities A4-Waste Transfer Station & Table S2.4 permitted waste types and quantities) is a very restricted area and only allows for certain wastes to be accepted onto site before being processed through the wash plant. No wastes are to be accepted under the waste transfer station and then passed into the soil and aggregate processing facility. The only waste types that are allowed to be accepted onto the transfer station that can be then moved into the wash plant facility for processing are:

- 17-05-03* soil and stones containing dangerous (hazardous) substances
- 17-05-05* dredging spoil containing dangerous (hazardous) substances
- 17-05-07* track ballast containing dangerous (hazardous) substances

The tipping of inert waste in this area and under this section of the permit is an unpermitted activity and should not be carried out at all. Furthermore, the 'white van man' wastes that get tipped here cannot be guaranteed

as being inert and so should not be tipped on this area as it lacks the appropriate infrastructure. If the waste that gets tipped here is one of the wastes detailed above or within Table S2.4, then the infrastructure needs to be improved to an impermeable surface with sealed drainage. NRW have seen first-hand that this waste doesn't get checked before being tipped off on all occasions and so contaminated wastes could get through to be tipped in this area that does not benefit from compliant infrastructure.

Actions

- As detailed within CAR NP3336FD/0251267 - remove the wastes, namely sewage grits, road sweepings, low grade metal and transfer station fines from site or store on required infrastructure before 1st April 2016.
- The leachate needs to be tankered away and disposed of at a facility licenced to accept it.
- Install required infrastructure of an impermeable surface with sealed drainage in the transfer station area, and comply with permit restrictions for this area. CAR form NP3336FD/0255273 has already requested that either waste be stopped from being tipped in this area or infrastructure improvements need to be made before 1st March 2016.

Observation 2 - Unknown discharge and sump

Contaminated water from the ditch mentioned above was seen entering a sump within the drainage ditch and into an operational pump (*location identified in Plan A*). At the time of this inspection the end destination was unknown. The operator informed NRW following the onsite audit that the pump was the top up feed for the wash plant water. This water was very odorous and sewage fungus could even be seen within the sump and around the inlet of the pump.



Permit condition 1.1.1 and *IMS WI05 section 1.45* in relation to the wash plant top up water states '*..it is considered appropriate with concentrations similar to the water quality before treatment or better (considering that the water is originally tap water augmented by additions sourced from the local surface water collected in the interceptor ditch surrounding the wash plant)*'. Furthermore, *Section 1.47* states that '*The washing activities are considered to represent Best Available techniques within the context of BREF and Section 2.1.4 of the EA sector technical guidance note.*'

Testing of the wash water has not been carried out since May 2014, and therefore based on the contamination observed above no confidence can be given that that the water meets the standards detailed in the IMS.



As noted in CAR NP3336FD/0251267 on the 19th October 2015 an unknown discharge flowing from a submerged pipe into a cut off ditch to the west of the wash plant storage yard has been observed (*location identified in Plan A*). During the onsite audit a black odorous discharge was seen actively flowing out of this pipe at a consistent rate. This cut off ditch does not benefit from any standard of infrastructure which would be expected to receive a discharge of this type. As of the date of this audit no investigation works have been carried out to locate the source of the discharge, despite requests. The flow

from the pipe was stronger on the date of this audit than previously seen. It is also worth noting that the pump mentioned above was switched off during the inspection on the 19th October but was operational during the audit inspection, suggesting that there may be a link between the wash plant operating and the discharge.

Actions/comments

- Ensure that the water used to top up the wash plant is of the quality detailed in the IMS
- Investigate the source of the discharge from the submerged pipe.

Observation 3 - Chemical Storage

The storage of the chemicals for the wash plant treatment are currently being held in the transfer station area of the site, which does not benefit from any standard of infrastructure. It is expected that storage of these chemicals would be on sufficient infrastructure to prevent any pollution occurring or harm to human health – for example, an impermeable surface with sealed drainage and secondary containment.



Actions/comments

- Ensure these chemicals are stored in an appropriate manner.

Observation 4 - Duty of Care

Under Section 34 of The Environmental Protection Act 1990 you are required to comply with the standards identified with regards Duty of Care and the transportation and disposal etc of waste in order to comply with the requirements determined in Section 33.

A random sample of duty of care transfer notes, on a range of dates were audited. In many cases the incorrect code and/or description was being used for the acceptance of waste, in other cases the wastes from the producer were identified differently to the description used by NSS for the waste accepted. It was also found that in some cases no tonnages were provided for the accepted waste. Duty of care and related transfer notes are a key part to any waste business and enable waste to be tracked. If the notes that are presented at the weighbridge are erroneous then waste input types and quantities will be inaccurate and can result in waste return submissions being incorrect, this can have implications to the wider recycling target figures.

Issues identified are as follows:

- Outgoing wastes to the Aldi Distribution Centre are coded as 17-01-07 (mixtures of concrete, bricks, tiles and ceramics), but are described as being both a subbase and capping on the waste transfer notes.
- A file of CA Site & Skip yard inerts were checked. Waste from Atlantic Recycling Ltd was being accepted as 17-01-07 (mixtures of concrete, bricks, tiles and ceramics), however they were leaving Atlantic as 19-12-12 (other wastes (including mixtures of materials) from mechanical treatment of wastes), described as transfer station fines. Wastes of this type would not be coded under chapter 17 because they are not from Construction and Demolition Wastes (including excavated soil from contaminated sites). Transfer station fines are the residual wastes left from the mechanical treatment of mixed wastes. They contain all the fractions of mixed waste which cannot be removed during a mechanical process and so include plastics, wood, metals and other wastes which will break down and can cause pollution. They are not inert, as inert wastes are only those which will not undergo any significant changes.
- Wastes from Cardiff Demolition Ltd have been accepted under 17-01-07 and described as hard core. There were numerous tickets accepted for the waste on the same day (13/02/15) and the majority of them had no tonnage recorded.
- Waste road sweepings coded as 20-03-03 were accepted from Viridor Somerset, no tonnage was provided by NSS despite a tonnage being provided by Viridor.
- There were a large number of notes containing the description of 'mixed inert'. This is too broad a description for accurate waste classification and should not be used to such an extent on a facility of this type.
- Wastes should not be leaving site as a 17 code because that means they are still classified as Construction & Demolition wastes. Coding waste in this way indicated that no treatment of this waste has occurred at NSS at all.

It is evident from this audit of the paperwork, and has been confirmed by the operator, that there is no differentiation on site between the three sections of the permit with regards to waste acceptance. Your permit allows the following

- The wash plant is permitted to accept a throughput of 350,000 tonnes per annum,
- The soil and aggregate processing facility is permitted to accept a throughput of 649,000 tonnes per annum;
- The waste transfer station is permitted to accept a throughput of 4,999 tonnes per annum.

Despite being one permit, the waste acceptance tonnages are clearly separate within the permit conditions and records need to be kept detailing this. It is ok for one waste return to be submitted to NRW but for permit compliance you must be able to identify the individual waste acceptance tonnages detailed within the permit.

Actions

- Improve the duty of care system for recording accurate descriptions, tonnages and coding of wastes
- Correctly identify and code wastes entering and leaving the site

- Implement a system that enables NSS to check its own compliance against tonnages accepted on site across the separate activities

Observation 5 - Use of CL:AIRE and the Aggregates Protocol

CL:AIRE CoP

Neal Soil Suppliers Ltd (NSS) have several jobs ongoing that are utilising the CoP;

- Works at the Aldi distribution centre,
- Lamby Way landfill site,
- Baglan Energy Park and
- Tabbs Gout Flood defence work.

Evidence of a Qualified Person (QP) sign off has been seen for phase 1 (only) of the Lamby Way Landfill site (phase 2 has not been received), the Baglan energy park and the Tabbs Gout Flood defence work. No QP declaration has been seen for the Aldi distribution Centre. The process for waste to be used under the CL:AIRE CoP is that the declaration is signed and sent to CL:AIRE, who inform NRW of its arrival before any waste is used on the receiving site. This process is in place to ensure that protection of the environment is maintained and that if NRW have any issues with the treatment site, the donor site or the receiver site then these issues can be raised pre waste acceptance in an attempt to remove the potential for retrospective waste removal. This process is not happening.

The process for the submission of the declarations can be seen within the *'Definition of Waste: Development Industry Code of Practice (DoWCoP)'* document produced by CL:AIRE. Within section 3.3.3- 'Submission of the Declaration' it clearly states in subsection 3.27 that *'The signed declaration must be submitted to the EA before the use of materials on the Site of origin or prior to dispatch in all other scenarios. This should be as soon as practicable ideally no later than one week prior to use/dispatch'*.

With regards to the Aldi distribution centre, no declaration has been submitted to NRW prior to the waste being delivered to site. Without the signed declaration from a qualified person the CL:AIRE CoP cannot be used for the transfer and use of waste, therefore any receiving site requires a permit if the conditions within the CoP cannot be met.

Within the above mentioned document a series of parameters are identified that must be followed to ensure compliance against the CoP. A materials management plan (MMP) tracking system must be adopted. Section 3.2.1 subsection 3.11 states that *'all materials subject to excavation, disposal, treatment and/or re-use must be tracked throughout and evidence generated to provide an auditable trail. In the case of wastes this is achieved via compliance with the Duty of Care requirements e.g. Description of waste and EWC code, completed transfer or consignment notes and accepted at appropriately authorised facility(ies) with waste acceptance procedures set out in the Environmental Permit and Waste Exemption.'* This section also states that the movement through any authorised treatment facility will also have to be tracked to ensure materials accountability. As detailed below the tracking system at NSS is non-existent across the site.

In addition to this the QP sign off will look for certain criteria to be met and obtained before the declaration will be signed. This is inclusive of a site specific risk assessment that will take into account that the use of the materials will not cause pollution of the environment or harm to human health in the proposed location. The requirement for this risk assessment to be carried out can be seen within section 3.3.2 Box B of the DoWCoP. NRW have not seen site specific risk assessments, and the operator was unaware of the requirement to undertake the risk assessments.

Section A3.3, *DoWCoP*, details the requirements of the Fixed Soil Treatment Facilities. The section details the standards that the treatment facility is to operate at in order to comply with the requirements of CL:AIRE and so produce material that is fit for purpose under the scheme. For example, section A3.19 comments that the wastes are treated as appropriate at the facility and that the level of treatment is at the discretion of the facility. It details that the wastes are tracked from acceptance, through treatment and subsequent stockpiles.

There is no tracking system in use at NSS and so wastes that are not subject to a working tracking system should not form part of any CL:AIRE CoP project.

Section A3.22 requires that *'the MMP must be completed in relation to the hub site, the material to be treated and dispatched and the receiving development site. A declaration has to be completed and submitted to the EA (NRW) prior to dispatch from the STP, for each two site Cluster project. A Verification report has to be produced for each receiving development site'*.

When considering that the treatment and tracking systems are both failing on site, it is evident that NSS are sending waste out as CoP compliant material that does not meet the standards set within the *DoWCoP*. This may result in an illegal deposit of waste that would require an environmental permit to be in place at the development site.

Small Site Strategy

Documented in the permit and your *IMS Section 17-02* the Small Site Strategy, agreed between NSS and our predecessor organisation the Environment Agency, allows waste which meets a specific criteria to be exported to small sites without the need for waste authorisations to be in place. A small selection of sites were selected and checked for compliance against the small site strategy, allowed in the permit. The notes checked appeared to be compliant with the spreadsheets submitted each quarter for compliance. The spreadsheet that is submitted contains details of both residential and commercial customers that require CoP compliant soils up to a total of 8,450 tonnes.

The small site strategy requires that NSS be compliant against set criteria in order for the strategy to be allowed. One set criteria is that of batching of soils when they are accepted into NSS. The strategy in *IMS 17-02* states that *'each waste received from a site will be given a designated batch number. A batch sheet is attached as appendix 3. This includes the customer number, their site, quantity, testing etc'* further to this it outlines the need for *'an audit trail to be maintained with regards the soils that make up the respective batches and stockpiles, including batches that are treated, re-stockpiled and tested accordingly'*.

As expanded upon in observations 6 and 10 of this audit report, the audit trail through the batching and tracking system is not being implemented for the waste on site and so as a result the small site strategy is now non-compliant against the required criteria agreed. Therefore, it should no longer be used until such a time as the on-site processes are working more effectively. This is highlighted within Section 3.6 that confirms *'Given the small volumes involved and the detailed audit trail that will exist a verification report for each small site has not been proposed in the scheme. If a problem was to arise then an investigation of the procedure can be easily and quickly carried out. Remediation in the form of re-excavation and re-instatement relating to soils supplied by Neal Soil Suppliers will be undertaken'*.

The strategy also highlights that all contracts must have a pre-agreed tonnage for the delivery to take place. This is absolute and is detailed within the document that has been agreed to. The quantity of soils required must be stated upfront and recorded. A running tally will be maintained to ensure the quantity is not exceeded i.e. excess soil is not dispatched. When questioned on this in the audit, the operator confirmed that the tonnages are rarely agreed upfront as they are very often wrong and so more soils are delivered to the receiving site. NRW were informed that when the figure is agreed before deliveries are carried out, they are not adhered to and more waste is often sent from site. This is a fundamental breakdown of the Small Site Strategy agreement between the regulator and the operator.

Aggregates Protocol

The material produced under the aggregates protocol, when inspected, was seen to be heavily contaminated with plastics. Testing results were provided for November 2015 as requested by NRW, and the results met standards required. However, the levels of plastic contamination seen (in excess of 1% total mass) suggest that material being produced is not to the standard required under the protocol. The process on site has been questioned previously during an audit of Atlantic Recycling Limited (ARL) on 20th May 2015. The audit at ARL identified that the sub base material being used in the field one area of the site was not suitable to be used or to be classed as a non-waste due to the levels of plastic, wood and metal contamination. NSS were informed of

this at the time and requested that the factory control system adopted for the production of quality protocol aggregates be improved. This improvement still needs to be actioned.

Actions/comments

- Familiarise yourselves with the requirements of the CoP and improve on site practices to meet the CL:AIRE CoP requirements. You should cease sending waste out under the CoP until such a time as you can prove compliance with the CoP through the utilisation of on-site tracking systems etc.
- The small site strategy is also non-compliant with the agreement made between NSS, Ged Duckworth (QP) and the EA (now NRW). As with the main CoP material, please refrain from using the strategy as a process for exporting soils without the receiving site having waste authorisations in place. This must remain the case until such a time as when you can prove (and subsequently get approval off NRW) that on site activities have been improved as to comply with the requirements of the strategy agreed.
- Improve the factory control system for the production of quality protocol aggregates

Observation 6 - Tracking system implementation

Within *IMS W102-Material Recovery*, it is described that *'the Production Manager has the responsibility to ensure that the material is managed from delivery to treatment, tipping and storage using the site specific approved methods'*.

IMS 17-05-Site Management Manual (Neal's) section 4.4 traceability states that *'to ensure traceability of input, a record system will be maintained connecting the sources of waste with delivery dates and weights. The record will contain the following information: Record of material movement including details of dates, location, size (weight or volume), nature of material (descriptive) throughout all stages of delivery, storage location, blending in a batch, treatment of a batch and output of the batch'*.

The requirements to appropriately document and track waste on site are to enable the compliant and effective storage, treatment and onward use of waste. The operator has confirmed to NRW that no tracking system has been adopted due to the amounts of waste stored on site. The operator informed NRW that several national consultancies have been employed in an attempt to produce a tracking system and implement it on site. All of these consultancies have failed as the task cannot be done with the current volumes of waste on site.

The site management admitted that the site is out of control and no system is being used to maintain a track of where waste goes, what field it is in and how long it has been on site. NRW were told that the older material is at the base of each stockpile and does not get rotated, the newer material gets excavated first and the older waste is left. Waste is tracked (by waste transfer notes from 3rd party companies) until it reaches the weighbridge at NSS, after waste reception the site have no record of what goes where across the storage and treatment fields. The operator indicated that the reason for the lack of on-site knowledge for waste movement is the fact that there is too much on site and have requested help from NRW in the way of suggestions to reduce total tonnage on site. Unfortunately this is not the place of the Regulator and this is a business management decision that needs to be made by the staff and consultants of NSS. NRW have in the past served a Regulation 36 Notice to remove all waste older than 3 years being held on site.

The IMS also details that the estimated current quantity of waste on site is in excess of 1,000,000 tonnes against a maximum permitted tonnage of 250,000, confirming NSS do not have an implemented tracking system for waste storage and treatment, and are out of compliance with the permitted limits.

The permit clearly states a waste storage time of one year prior to disposal or three years prior to recovery. Due to the lack of tracking system on site, there is no way of knowing how old the waste is on site. If the older waste gets left on site and the newer waste is processed, then that would suggest significant quantities of waste on site is in excess of 3 years old. This is a failure of *"IMS-W102 Material Recovery"* where it is described that the waste is received/processed will be stored in designated areas highlighted within *W103*, material movement will be as per *IMS17-04* and that all final products (through wet and dry process) will be subject to final testing to ensure their suitability for recovery. Furthermore, the failure across the site to implement the tracking system results in the CL:AIRE Code of Practice not being able to be utilised for the recovery of waste on

site. W102 states 'A tracking system will be employed to monitor materials movement to ensure that only suitable materials are processed under the CoP, that cross contamination doesn't take place on site during storage and/or treatment of the material and that waste is properly characterised and meet the specification before dispatch.'

Without a tracking system, there can be no certainty of input material quality, storage locations, blending principles across the fields, age of material and consequently output quality.

Actions

- Implement a tracking system for waste inputs, treatment, storage and outputs.
- Reduce waste quantities on site and obtain an accurate storage tonnage of waste currently onsite (committed to within the IMS through survey).

Observation 7 - Ineffective implementation of a management system

The root cause of the issues identified in this audit are attributed to the ineffective implementation of the management system. Permit condition 1.1.1 states;

'The operator shall manage and operate the activities;

*(a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and
(b) using sufficient competent persons and resources.'*

The IMS held by the site details procedures that, if followed, would aid in the compliant operations of the site and the protection of the environment. Unfortunately the failings of the site operator to implement the documented procedures has resulted in serious non-compliance. Certain aspects of this audit have uncovered such serious failings and breaches of the permit that have the potential to cause serious environmental harm.

Actions

- The operations on site need to change significantly if you are to become compliant with the permit and operate permitted activities to the standards required. You must implement and follow the procedures in your IMS.

Observation 8 - Compliance with Sector Guidance Note 5.06

When applying for the variation of the permit to include the soil washing facility you signed a declaration (attached) agreeing that the site will be operated in accordance and in line with the requirements set out within various sections of Sector Guidance Note 5.06 (SGN 5.06). This declaration confirms that operations at NSS will be operated in accordance with sections 2.1.1, 2.1.2, 2.1.3 and 2.1.4 of the SGN 5.06 and hold a maximum tonnage of waste detailed at the time of application. The SGN also forms part of the permit as seen in Table S1.2 and is referred to in permit condition 2.3.1.

There are many areas where NSS are failing to comply with the requirements of the SGN 5.06 and so are non-compliant with the permit condition 2.3.1. The SGN highlights many areas where the relevant processes must be followed to allow for the best available techniques to be adopted.

Section 2.1.1-Pre acceptance procedures

This section of the SGN details that the operator must obtain certain information from the customer before the waste is to be accepted onto site. The operator must obtain the nature of the process producing the waste, including the variability of the process and the composition of the waste detailing both the chemicals present and the individual concentrations. In addition to this the operator must ensure that a representative sample of the waste should be taken from the production process and analysed. For each new waste enquiry, a comprehensive characterisation of the waste and identification of a suitable treatment method is undertaken.

Based on the evidence seen throughout the audit, this waste identification and classification of chemicals and concentration is not occurring, in addition to this the waste that is accepted on to site comes from many different customers and each new production site needs to have a treatment process pre-identified. NRW saw no evidence of this happening on site. The operator confirmed that the treatment processes for the wash plant have not changed since at least 2012. Therefore suitable treatment methods for new wastes/customers are not being identified and is in breach of the basic pre-acceptance procedures required by SGN 5.06. It is the responsibility of the producer and operator of the receiving site to ensure that reliable and comprehensive information has been provided to determine the suitability of the waste for the treatment (or recovery) process in question.

As the circumstances of waste production may vary, sound professional judgement is required in ensuring the relevant questions are asked. Operators should ensure that technical appraisal is carried out by suitably qualified and experienced staff who understand the capabilities of the site, independent of sales staff responsible for obtaining the customer's business. NRW considers that a minimum qualification of a degree in chemistry (or equivalent) will be required in order to equip staff to carry this assessment out correctly.

This information is necessary to:

- screen out unsuitable wastes
- confirm the details relating to composition, and identify verification parameters that can be used to test waste arriving at the site
- identify any substances within the waste (for example, by-products) that may affect the treatment process
- identify any substances within the waste that may react with other reagents
- accurately define the range of hazards exhibited by the waste
- identify any substances within the waste that may be unaffected by the treatment process and transfer in an unaltered state as a residue in the effluent
- determine the cost of the disposal option identified

The operator informed NRW that when soils are accepted onto site the determination on whether the waste is suitable for treatment and how it is to be treated is made by site personnel, who are also responsible for the commercial aspects of the business. SGN 5.06 clearly identifies that this is not the most desirable set up as commercial needs and gains may be placed above the environmental requirements and process controls that need to be in place such as waste disposal and the costings involved. There must be a clear distinction between sales and technical staff roles and responsibilities. If non-technical sales staff are involved in waste disposal enquiries, then a final technical assessment prior to approval should be made. It is this final technical checking that should be used to avoid build-up of accumulations of wastes on site. The large waste volumes on site demonstrate that the site operations are not being efficiently managed. The process of securing sales and contracts needs to be reviewed and kept separate from the technical assessment of the waste management.

Also within this section, the SGN states that waste should not be accepted at the installation without a clear method or defined treatment and disposal route with a full costing. NRW have seen evidence that not all of the waste put through the soil washing facility has a defined disposal and treatment process. Each batch that is received onto site is not separated into contaminants that are of similar characterisation and so the treatment methods are not adjusted to suit. It appears that the wash plant operates in the same way from batch to batch regardless of composition and concentrations of the chemicals within the waste. With reference to the lack of consignee returns for the hazardous filter cake and effluent from the wash plant it is also clear that the disposal route for the waste is not pre-determined.

2.1.2 Acceptance procedures when the waste arrives at the installation

According to the SGN a waste tracking system should begin at the pre-acceptance stage. With every enquiry a record should be raised (given a unique reference number) which, if the waste disposal enquiry results in waste arriving at site, should "follow" the waste during its acceptance, checking, storage, treatment or removal off-site. If the waste is a regular arising, then the document should be unique to that waste stream. To further the importance of the tracking system across the site SGN 5.06 highlights that for the treatment of wastes through the plant the 'Operator should be able to identify where a specific waste is, length of storage time and

actual/proposed treatment route', in addition to this, it states that, the waste tracking system should hold all the information generated during pre-acceptance, acceptance, storage, treatment and/or removal off-site. Records should be made and kept up to date on an ongoing basis to reflect deliveries, on-site treatment and despatches. The tracking system should operate as a waste inventory/stock control system and include as a minimum:

- date of arrival on-site
- producers details
- all previous holders
- a unique reference number
- pre acceptance and acceptance analysis results
- package type and size
- intended treatment/disposal route
- record accurately the nature and quantity of wastes held on site, including all hazards and identification of primary hazards
- where the waste is physically located in relation to a site plan
- where the waste is in the designated disposal route
- identification of operators staff who have taken any decisions re acceptance or rejection of waste streams and decided upon recovery / disposal options

Through the inspection of the paperwork held at NSS it is clear that the above processes and stages of tracking waste are not occurring in a uniform and consistent manner and in accordance with the requirements of SGN 5.06.

2.1.3 Waste Storage

This section of the SGN encompasses the required information highlighted within the application for the permit variation to include the wash plant. It states that *'the total maximum storage capacity of the site should be clearly and unambiguously stated in writing, accompanied with details of the method used to calculate the volumes held against this maximum and set out in the site plan. The stated maximum capacity of storage areas should not be exceeded and the site plan updated to reflect any changes before they are implemented'*.

The maximum total storage capacity at any one time for the site has been provided upon application, this figure, as detailed above and within the permit is 250,000 tonnes. This tonnage has been provided based on the capability of NSS to actively process, treat and turnover this volume of waste. Any waste over this quantity will fall outside of the ability of the operator to run an effective facility. NSS are currently holding 4 times this quantity on site.

The requirements for the turnover of waste through the tracking system adopted for site comments that; *'all waste should be treated or removed off site within a maximum of 6 months from date of receipt.'* This is not happening on site across all waste types and has resulted in waste being stored on site for excessive periods of time (greater than 3 years).

2.1.4 Treatment-general principles

These treatment processes may involve displacement and transfer of substances between media resulting in a liquid effluent sent to sewer (or other disposal outlet) and a solid residue sent to landfill. According to the IMS and in particular *WI05 'Process description-washing plant'*, the treatment process for soils through the wash plant includes the production of a filter cake and the dirty water element. The filter cake is to be tested for hazardous chemicals and disposed of as required and the process water will be subject to regular testing.

Cardiff University labs are to be used (as detailed within the IMS) to allow a fast turnaround of results, the water is to be tested at the end of each batch. This is not happening on site as the water has not been tested since May 2014. Further to this, *section 1.45 of IMS WI05* states that the *'water will not be recycled for treatment of other materials unless it is considered appropriate with concentrations similar to the water quality before treatment or better'*. It has been confirmed to NRW that the water is currently being recirculated without any knowledge of its composition as no testing has been carried out. The contaminated elements of the water such as the floatable oils, metals and grease etc are to be scraped off the surface of the settlement

tanks as they are dissolved out in suspension and disposed of. NRW have not seen any hazardous waste paperwork, or duty of care paperwork, for these wastes.

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).

Actions

- Implement and adopt procedures in order to comply with the requirements of SGN 5.06 and your permit
- Provide an assessment of the efficiency of the treatment process for the removal of metals within the filter cake as per the requirement of SGN 5.06.

Observation 9 – Technically Competent Manager

Permit condition 1.1.4 requires that the site shall comply with the requirements of an approved competence scheme and so is managed by suitably qualified person, and as noted above Permit condition 2.3.1 requires compliance with SGN 5.06. *Section 2.1.1* of SGN 5.06 requires that for a facility of this type a suitably qualified person (usually with a degree in chemistry or equivalent) is used to determine and assess the waste and its treatment/acceptance onto site. This suitably qualified person should make the assessment on whether the wash plant will be able to cope with the hazards identified on the incoming waste streams.

The Technically Competent Manager holds a WAMITAB certification which, although should assist in the compliant execution of operations, is not considered a suitably qualified person for a facility of this nature. This is due to the waste types, and the technical treatment techniques that should be employed on site to successfully and compliantly carry out activities. It was emphasised to NRW that the TCM does not have the required knowledge to act as the permit level required sufficiently competent person due the lack of knowledge and understanding of technical and some non-technical site processes.

Actions

- Use sufficiently competent persons to run the site, in order to comply with Permit Conditions 1.1.4 and 2.3.1

Observation 10 - Batching processes

Batching processes on site are minimal. Permit condition 2.3.1 requires that the measures submitted within the methodology used to satisfy pre-operational conditions, as listed within Table S1.4A are complied with. The IMS held by the site has an entire section (*IMS W107*) for the batching and blending of wastes on site within the wash plant, this is a fundamental part of the on-site activity and must be operated in accordance with the management system.

IMS section W107 states that 'batches prepared for the treatment will be formed from a single or a combination of appropriate waste input materials. Once a decision is made by the treatment engineer on the loads that can go into a batch, the type (s) of waste, quantities and date of formation of the batch and its storage location will be recorded on a batch sheet. Following the completion of the treatment of any batch, the finish date will also be recorded on the batch sheet with the details of the outputs and their destiny included.'

This audit has identified the following:

- Some batching of the hazardous waste has been undertaken on batch references H1 to H12.
- It must be noted that the correct procedure and the batching sheet was only used for H1-H4.

- Batch references H5-H12 have no information surrounding the composition, location, input analysis or output testing and destinations at all.
- There is no record of any batching taking place for H13-H15
- H16-H18 all of have a recording sheet.
- The wording of the cover sheets used are not specific to the waste within the batch and the output results obtained.
- H18 has output filter cake results. These results (both samples) were sampled before the batch processing took place, meaning that the actual outgoing filter cake hazard was not accounted for. This is a huge failing of the batch process on site. In addition no hazardous waste paperwork has been seen for this waste.
- Waste accepted under the soil and aggregate processing activity is not batched, including the wastes that exit the wash plant.

The failure to correctly implement the batching procedures is intrinsically linked to the tracking system that has been discussed above. The operator discussed that a difficulty with implementing the batching procedures is due to the length of time jobs can last for.

Filter cake must be tested following the completion of treatment of individual batches and this is detailed as a required step within IMS Section *W107*. From the 15 'H' batches identified on site, only 7 of them had any testing of the filter cake and of the 7 only 3 returned as being non-hazardous, emphasising the importance for the filter cake analysis to be carried out.

It is also important that the wash water is tested for all contaminants that potentially existed within the waste during treatment, this procedure is also identified within the IMS. As already discussed, the audit identified that the only evidence of wash water testing being carried out was on 20th May 2014. This is a further failure to comply with the batching processes identified within the IMS.

In addition to this, *W104* gives details of the process description for the soil and aggregate processing areas of the site. It has been highlighted by NSS that no batching system is in place for the soil and aggregate processing facility and so NRW would question whether the soils produced across the site can conform consistently with the required criteria as there is no evidence of what soils are blended together to produce them. A factory control system should be adopted that would enable the identification of input soils and their chemical analysis so that an accurate batch can be made to suit the customer requirements. With no controls in place the chemical analysis of the soils is not being monitored and so overall concentrations are potentially unknown.

This area of the site management needs to be improved in order for an efficient site to be operated. Not all of the jobs that are undertaken have a length of a number of years to complete. Many jobs that are accepted onto site have a relatively short time period for completion and so could be batched if the site were managing waste flows effectively and in line with the management systems. Based on the waste returns inspected, there are clearly many small scale projects undertaken and accepted onto site, NRW would expect that batching of soils can be done based on this in accordance with the IMS. The batching and blending of unknown wastes is a practice that occurs every day on site as wastes are moved. If they are not batched correctly and are not clearly identifiable then there is no way of knowing where the soils have originated from and what the composition of each section of the waste on site is, as not all loads are tested when they leave site.

Actions

- Implement correct procedures for Batching and Blending as identified in the IMS

Observation 11 - Hazardous Waste Treatment

The batching of the hazardous waste on site is incomplete and not functioning as it should. Evidence has only been seen for batches H1-H3 as having all the required information within the batch. This information includes the batch cover sheet (with information such as contamination type, destination of output, stockpiling and

processing dates as well as field storage location), a composition/information log, incoming sample logs, outgoing consignment notes and filter cake analysis for the entire load. This is the information that is required to be seen when batching hazardous waste correctly.

Batch tonnages and filter cake output percentages:

Batch	Total Quantity (approx. T)	Filter Cake Quantity Removed (approx. T)	Filter Cake (%) of Total Quantity
H1	500	60	12
H2	995	144	14.5
H3	4016	203	5
H4	2855	0	0
H5	2876	0	0
H6	2900	0	0
H7	880	0	0
H8	1560	0	0
H9	3514	0	0
H10	563	0	0
H11	399	0	0
H12	1328	0	0
H16	3237	0	0
H17	1289	0	0
H18	3910	0	0
30/06/14 – 09/07/14	1680	0	0
14/08/14 – 19/03/15	3830	0	0
20/03/15 – 18/06/15	2468	0	0
13/10/15 – 27/10/15	637	0	0
28/10/15 – 06/01/16	3118	0	0
	42,555	407	0.96

The table above shows that only approximately 0.96% of the accepted hazardous waste has been processed into filter cake and consigned off site for correct disposal. Within IMS WI02-‘Material Recovery’ and also within the methodology to satisfy pre-operational condition 1 of table S1.4A of the permit it states, when referring to the output from the washing plant ‘*assuming that a batch of 1000 tonnes, the filter cake will be 500 tonnes being 50% of the total mass*’. This process is not working as effectively as detailed within the documented IMS procedure for filter cake production. NSS staff informed NRW that the hazardous waste is fully treated within the wash plant as it ‘neutralises’ the waste throughout the process.

In addition to this, the filter cake analysis indicates that the washing process is not as effective as would be expected. For example, H1 (despite being consigned as hazardous) displays signs that the process is defective. The input of lead contamination was between 1000-3000mg/kg before processing and the filter cake results show lead contamination as being only 660mg/kg. This has resulted in an amount of between 340-2340mg/kg of lead that cannot be accounted for. Potentially more concerning is the PAH levels recorded within the filter cake analysis for H2. The results show that only 40mg/kg were present in the output material, but the input contaminations show PAH levels of 13,000mg/kg, Oils of <20% and unknown levels of oil contamination have been added into the process. This has resulted in extremely high levels of oil contamination and PAH contamination being unaccounted for.

Batches H5-H12 have no structure at all. There are no batch sheets, no information as to the composition of the batch, no hazard compositions and concentrations, no input analysis and no output analysis. H13-15 do not exist on file, NRW are extremely concerned about this as the waste that has been accepted on site for these batches has not been recorded in any way at all.

The batches H16-H18 are also included within the issues that have been identified but improvements can be seen to have been made. These batches have been attributed a batch information sheet, a composition sheet and an output analysis. No hazardous waste input analysis has been seen for H16 and H17 but is present for H18.

Of particular concern is that H16 filter cake analysis has been returned as non-hazardous, yet the input material (identified through NRW's study of the consignee notes), has some of the more hazardous waste accepted on to site across all the batches. For example, a total of approximately 2,160 tonnes of metal contaminated waste was accepted within this batch at concentrations of greater than 33,000mg/kg and this has been blended with oil contamination of greater than 5,000mg/kg across a tonnage of approximately 800 tonnes. The filter cake analysis shows that the highest concentration of metal is 394mg/kg and the oil concentration is 310mg/kg with no hazardous waste removal from site associated with this batch.

Similar results can be seen throughout the metals analysis for H17, an input concentration of greater than 5,000mg/kg has been accepted and an output of 304mg/kg can be seen in the filter cake. The oils however are showing as being hazardous with a concentration of 2330mg/kg against an input concentration of greater than 1,600mg/kg. This shows the highly inconsistent operation and processing capability of the wash plant with more hazardous filter cake being produced than the input material itself.

NRW were told within the audit that the hazardous waste received from Clariant is still awaiting processing and is being stockpiled on the concreted area of the wash plant and that this waste forms the bulk of H18. The H18 stockpiling dates are detailed as between 11th September and 20th October 2015 with the processing dates for the batch being 27th September to 29th September 2015. The filter cake analysis taking place on the 29th September 2015 and 20th October 2015.

In summary, the batch H18 was processed as per the batch information sheet, but the waste within the batch is still awaiting processing on the concrete pad as of the date of this audit, furthermore, the first output filter cake analysis was carried out before the batch processing had begun and half way through the stockpiling dates, the second filter cake batch was received by the lab on the last day of stockpiling and before any processing of the waste had started.

The results of the H18 filter cake provided are once again extremely concerning. They show that the filter cake waste is hazardous with levels of oil contamination ranging between 1,554-4,140mg/kg for TPH and the benzo(a)pyrene levels being high enough to be classed as hazardous. However, no consignee returns have been submitted for this waste to be disposed of at a licensed facility. As with other batches, an input concentration of 100,000mg/kg of TPH within a 15 ton quantity was accepted for this batch. This results in 95,860mg/kg of TPH contamination being unaccounted for.

As part of the audit NRW took the hazardous waste batch files away from site to analyse them in order to gain some information as to the composition and concentrations of the hazardous waste accepted and input to the washing plant. From this analysis it is clear that hazards of a different nature and concentration are mixed and treated together. This is not the ideal form of treatment as the process required to remove the hazard will be different based on contamination and concentration of contamination. Throughout the batches NRW have witnessed that many of the quantities and concentrations that have been accepted are classed as unknown or have been left blank on the paperwork received by NSS. No supporting analysis has been done by NSS to identify the concentrations nor has the weighbridge been used to gain an idea of the quantities received. This will have implications not only on the waste returns and recycling figures for the facility but implications on the treatment methods required for the wash plant to process the hazardous waste.

The inspection of the consignment notes noted that multiple loads received from UK remediation Ltd, Unit 11a Burton Business Park, St. Mary, Devon, EX5 1DR between 30th June 2014 to 9th July 2014 were received all night. This also occurred a second time between 14th August 2014 and 19th March 2015. These loads were accepted on to NSS overnight and outside of the allowed operating hours as granted by planning permissions (08/01714/E), they were accepted as EWC 19-13-01 (solid wastes from soil remediation containing hazardous

substances). This waste code and description suggests that this is a filter cake from a soil processing plant similar to NSS.

A report submitted to satisfy the pre-operational condition 1 of your permit detailed within table S1.4A, headed as *'The Washing Plant-washing characterisation, batching and monitoring'* outlines the following within the batching and blending section:

3.61 *Each of the accepted wastes will be treated separately if considered necessary. However wastes of the same nature and characteristics requiring same treatment may be batched together depending on the size of the batch and available loads as long as the batching will not negatively affect the outputs of the process.* The treatment, for example, of lead and zinc would not be appropriate as one will dilute the other. If NSS could show that if the mixing of these types of hazard were treated together and that the treatment resulted in a hazardous filter cake and, the 'clean' fraction of the waste being produced at the outlet of the wash plant was below the thresholds, then NRW would be happy for this mixing of hazardous waste to occur. Unfortunately, the filter cake is not showing the required hazard removal for this to be an effective option of treatment.

3.69 *Hazardous soils that require similar treatment due to their containing substances requiring similar treatment methods and same agents will be batched together for treatment in the washing plant.* If NSS could show that the mass balance of the treatment process is working then NRW would be satisfied that this is an option that could be considered. For example if similar wastes of different concentrations were batched together then you must show a sufficient oil level as an identifiable output, if a concentration of 20,000mg/kg and a concentration of 5,000mg/kg were treated together then the output needs to show a reduction containing the mass balance reducing from the 20,000 to less than 1000mg/kg. Unfortunately, the filter cake is not showing the required hazard removal for this to be an effective option of treatment.

3.71 *If the washing process was designed to include chemical treatment of the filter cake (ie., by means of pH adjustment or change of redox potential to treat metal contamination) mixing of only hazardous soils requiring similar chemical treatment will take place. The soil metal analysis will be used to compare compatibility of the metals to be batched together for the intended treatment.*

3.72 *Hazardous material containing other contaminants such as oil contamination of the same nature (TPH speciated analysis will be used to compare the nature of contamination) will be mixed together for treatment.*

3.73 *Hazardous material containing both metal and oil contamination of the same nature (metal analysis and TPH speciated analysis will be used to compare the nature of the contamination) will be mixed together for treatment.*

The mixing of metal and oil contaminated wastes would only be acceptable in 2 situations. The first being that the soil has been excavated from the same source site and has mixed contamination and that separation is not possible. The second being that if the output analysis of the filter cake shows that all hazards of both types are being removed and not diluted then the mixing of hazards would be acceptable as a treatment method. If the filter cake shows that the contamination has not been removed and purely diluted then this approach to the mixing of different types of hazardous waste will not be acceptable. Unfortunately, the filter cake is not showing the required hazard removal for this to be an effective option of treatment.

In addition to this, the same reports also specifies that;

3.76 *The batching will be decided by a professional who will ensure that the batching and treatment will be in accordance with Article 4 of the Waste Framework Directive which requires that waste is recovered or disposed of without endangering human health and without using processes or methods that could harm the environment.*

NRW were informed throughout the audit that site representatives decide this when the waste collection/excavation is contracted to NSS. NRW are unaware of any relevant qualifications that operatives have on site that would allow them to assess the chemical composition and potential reactions that may occur when treating the waste to avoid human health and the environment being put at risk.

3.77 Batching and mixing will not be carried out:

- * Where waste is mixed so as to compromise the necessary treatment of the added or receiving wastes
- * Where waste is mixed so as to reduce/hide the identity of one or more of the wastes; or
- * Where hazardous waste is mixed with non-hazardous waste with the sole purpose of diluting the hazardous waste; or where to do so would prevent the recycling or recovery of the waste.

Throughout the audit it was discovered by NRW that waste soil is being blended with non-hazardous wastes within the soil and aggregate processing facility after the waste has been through the washing plant. As outlined above, the process adopted on site for washing hazardous waste is not working as effectively as it should be and that the hazards within the soils are not being removed in the filter cake and so this is potentially contaminating the waste it is mixed with.

NSS have confirmed that no hazardous waste is being detected within the filter cake and the analysis returns within the limits for non-hazardous. It has been confirmed that the filter cake then gets blended with the soils being stored across the fields on the site, of which there are approximately 1,000,000 tonnes. Due to the fact that there is no batching and tracking system being adopted across the expanse of the site, this is extremely worrying as there is no way of knowing, firstly how much waste now contains hazardous elements and where these hazardous elements are within the site.

NSS staff also confirmed that in many instances the hazardous waste becomes non-hazardous even before it gets to the weighbridge at NSS. It was described that the soil analysis carried out by the contractor at the excavation site returns as hazardous but when it gets to the NSS site, the testing returns results showing that the hazard has been eliminated in transport. This is clear blending of hazardous waste to dilute the hazard at excavation stage. This is an illegal activity and must not continue. The excavated load needs to be quarantined from the rest of the waste on site, if only hotspots are identified as hazardous. These hotspots must not be excavated with the non-hazardous material as the result will be dilution across the entire waste stockpile and this all must then be considered as hazardous, there has been no treatment of this waste and therefore the hazardous element of the waste remains.

3.85 *All the filter cake will be tested following the completion of a treatment. If there was any indication that cross contamination from previous batches has taken place, a full investigation will be carried out to assess the situation and identify appropriate mitigation measures.*

As outlined within this audit the filter cake does not routinely get tested as there are no results held for this process and no evidence that any filter cake has even been produced as part of the washing process. The pre-operation condition 6 set out within table S1.4A of the permit held for the site requires that *'the operator shall submit a report to the EA outlining the sampling and analysis of the sampling of the filter cake prior to any incorporation of this material to any soil produced as part of the soil processing operations on site'*. This requires that for each load of filter cake produced by the treatment of waste through the wash plant, the regulator (previously the EA and now NRW) should be consulted and given the results of the analysis of the filter cake to make a judgement as to its suitability for use through blending with other soils on site, this does not happen.

In addition to this, permit condition 2.3.3 part (b) states that *'Waste shall only be accepted if it conforms to the description in the documentation supplied by the producer and holder'*. If, as described above, the site of production are testing and subsequently consigning the waste as hazardous, it then gets blended and diluted in transit by NSS so it is accepted as non-hazardous, the site should reject the waste under the above permit condition. The acceptance of waste that differs to the classification attributed by the waste producer is a breach of permit condition and so falls outside of the parameters of the permit.

The above 3 points are listed within the report to give assurance to the regulator that the soil wash will be operated correctly and that the hazardous waste will be treated correctly and that nothing will happen to the hazardous waste that could result in an underperforming process or an illegal activity. This formed part of the pre-operational conditions of the permit and only when these are satisfied can operations begin at the site. At present it is evident that these pre-operational conditions are not being satisfied and so the permit condition 2.3.1 is being breached.

Permit condition 2.1.1 refers to table S1.1 of your permit, within the wash plant section A1 it details the treatment operations that are authorised under the permit and these operations are listed as manual and mechanical sorting/separation, screening, crushing and washing of hazardous waste for the purpose of recovery using the wash plant. This section of the permit is not being complied with as hazardous waste is not being recovered correctly through the wash plant.

You are out of compliance with your permit and the directly applicable legislation which is detailed below:

The Hazardous Waste (Wales) Regulations 2005 states;

'19. (1) Subject to paragraphs (2) and (3), no establishment or undertaking which carries out the disposal or recovery of hazardous waste, or which produces, collects or transports hazardous waste, may mix any hazardous waste.

(3) Paragraph (1) does not apply to the extent that the mixing is part of a disposal or recovery operation and is authorised by, and is conducted in accordance with, the requirements (howsoever expressed) of a waste permit or a registered exemption.'

The Permit held for the site states;

'2.4.1 Hazardous waste shall not be mixed, either with a different category of hazardous waste or with other waste, substances or materials, unless it is authorised by schedule 1 table S1.1 and appropriate measures are taken'.

'2.3.1 (a) The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless agreed in writing by the Environment Agency'

Table S1.1 states;

'Blending of hazardous waste prior to being submitted to the wash plant process is only permitted provided it is in line with approved blending and batching methodology as set out in pre-operational condition 1 of table S1.4A'.

Table S1.2 states;

'In line with pre-operation condition 1 of Table S1.4A.'

Table S1.4A states;

'1 The operator shall submit a methodology for the batching and blending of wastes prior to submission to the wash plant process, to the Environment Agency for written approval. The methodology should include details of why blending of different waste types, especially hazardous waste is necessary. The washing activities shall not commence until the Environment Agency has approved the methodology.'

The submitted methodology states;

'3.77 Batching and mixing will not be carried out:

- Where it will result in an incompatible mix-in that an undesired reaction (that may result in pollution of the environment or harm to human health) or a phase separation would occur after mixing; or*
- Where waste is mixed so as to compromise the necessary treatment of the added or receiving wastes; or*
- Where waste is mixed so as to reduce/hide the identity of one or more of the wastes; or*
- Where hazardous wastes is mixed with non-hazardous waste with the sole purpose of diluting the hazardous waste; or where to do so would prevent the recycling or recovery of the waste.'*

Filter cake results;

The filter cake analysis do not support the blending and mixing of hazardous wastes. The processes adopted on site are not adequately removing the hazardous components of the waste to enable the mixing of hazardous wastes to continue. This therefore does not satisfy the bullet points listed within the submitted methodology.

Actions/comments

- Implement the wash plant process correctly and treat hazardous waste as per the regulation requirements, sector guidance notes and as detailed within the permit/IMS held for site. The treatment of hazardous waste is a process that needs to be taken seriously as the implications to both human health and to the environment are potentially extremely severe and present a serious risk. You must start complying with your permit immediately by operating your activities on site in line with your permit requirements and the procedures identified in your IMS.
- Stop blending the filter cake with other wastes
- Stop blending the soil output from the wash plant with other wastes
- NRW require you to submit a report, by the 29th April 2016, detailing:
 - the failings of the current treatment process and reasons for this
 - details of actions that will be taken to rectify the offending, including timescales by which they will be achieved
 - details of what has happened to all the incoming hazardous waste, including specifics for example - such as that from batches H5-H18?
 - explanation as to why loads are being accepted after the allowed operating hours
 - define the term or phrase of 'neutralising hazardous waste' and explain how the wash plant does this
 - an explanation for how the treatment at the NSS site differs from the plant in Exeter (from which filter cake waste has been accepted) so that it can remove the hazardous nature from the filter cake, and detail where this waste has gone.
 - the locations on site where (as has been explained to NRW) the filter cake is blended – i.e. has this been done on field 1 only as described during the audit, or has the happened elsewhere across the site?

In this report you must detail corrective actions to ensure permit compliance and the competent and compliant treatment of hazardous wastes. For example, you should consider including actions such as ceasing hazardous waste input whilst you correct your operating techniques to ensure that further offending does not take place. The wash plant and associated processes are designed to concentrate the hazard into smaller and dryer fragments into the filter cake to dispose of correctly. The aim of all corrective actions should be to produce a hazardous filter cake that has removed the hazard from the input material to be disposed of at a facility licensed to accept it. Within the report consideration should be provided to the hazardous elements that will be present in the water itself.

Observation 12- Treatment of Road Sweeping waste

As detailed above the road sweeping waste is being stored incorrectly and outside the requirements of the permit. In addition to this the road sweeping treatment is being carried out incorrectly on site.

During the audit NRW identified, and the operator confirmed, that the road sweeping waste gets treated through the washing plant and then is blended with both aggregates and the soils across the facility. This recovery and blending of the road sweepings can only be done when certain and set criteria have been met to ensure that the waste is fully recovered and is usable. Even when this has been carried out the road sweeping waste must only be used in certain ways and in certain land use situations.

As a facility that accepts road sweeping waste, you must ensure that:

- no disposal of untreated street sweepings and/or gully emptyings occurs at inert landfills
- all street sweepings and gully emptyings must be treated prior to recovery
- all outputs/products from the process is being legitimately recovered
- all Compost Like Output (CLO) produced from the organic fraction produced through biological treatment is only spread to non-agricultural land.

The correct treatment is likely to involve manual picking, mechanical separation, screening, washing & dewatering and biological treatment of organic fractions. These treatments can be undertaken at a single facility or through two or more facilities. Only when all of these separate treatments have occurred can the

road sweepings be fully recovered. The separate fractions can be recovered however without requiring all of the treatments listed above (other than the CLO as will be detailed below).

Following treatment that changes the nature of the waste (as detailed above), there may be a biologically treated organic fraction which can be recovered. This is considered to be the CLO, this means a compost or digestate derived from non-source segregated biodegradable waste. This element of the road sweepings can only be recovered if a biological treatment has been undertaken.

Once all the relevant treatments have been undertaken and a CLO is produced, this can then only be spread for restoration, reclamation or improvement purposes to non-agricultural land. This CLO cannot be blended with soils that are destined for any other purpose.

The fines, grits and sands can be recovered and added to the process to mix to produce a soil substitute. However, the aggregates produced from the road sweepings are never able to be recovered to the Aggregates Protocol as they are not a listed waste type.

The filter cake can potentially be recovered but is dependent upon sample results. As detailed within the hazardous waste section of this audit, NRW has no confidence that the wash plant is being operated correctly and consequently the filter cake is not showing the required hazard removal to allow re-use to occur.

It is worth noting that the CLO always remains waste and can only be spread to non-agricultural land for reclamation under an environmental permit. The receiving site must be permitted to accept the waste type produced.

NRW were also told on site that the wood gets screened out of the road sweeping and is sent to Atlantic Recycling for inclusion in the RDF process. If NSS and Atlantic Recycling were following the waste hierarchy then the wood waste would not be part of the RDF process at all, this would in fact be sent for further processing to be recycled.

Actions

- Cease blending of the road sweeping wastes with other wastes on site. This is particularly important for the CLO, filter cake and aggregates as NRW have been informed within the audit that these are being blended with soils (for commercial and residential use, potentially utilising CL:AIRE CoP) and aggregates that are being used under the quality protocol.
- Treat street sweepings in a correct and compliant manner

Observation 13 - Annual report

For completeness, the annual report for NSS provided by RPS will be included within this audit as many of the issues raised coincide with what has been mentioned throughout. Justification for some of the submitted results can possibly be provided and explained, this is required as RPS detail that in all but one exceedance off site activities are to blame.

Firstly, the report submitted does not offer the required data within the criteria submitted to satisfy the requirements of the permit. As stated within the permit condition 4.2.3:

‘For the following activities referenced in Schedule 1, Table S1.1 A1. A report or reports on the performance of the activities over the previous year shall be submitted to the Environment Agency by 31 January (or other date agreed in writing by the Environment Agency) 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 performance parameters set out in schedule 4 table S4.2 using the forms specified in table S4.3 of that schedule.

RPS have suggested that to satisfy (a) of the above permit condition that the monitoring required in Table S4.1 will be submitted, NRW agree that this is an important part of the requirements of this section but it is not outlined in Table S1.1 A1. Within S1.1 A1 there is the requirements under the wash plant facility to conduct sampling of the outputs from the wash plant. NRW would expect an analysis of these results within the submitted report as per the permit condition highlighted above. There has been no mention of any sampling results from the wash plant whether it be the process water, soils produced or the filter cake. This is to be expected within a report of this type and detail to gain an understanding of the efficiency of the wash plant in removing hazardous substances from the soils.

Surface Water

This section of the report seeks to justify the exceedances seen across the site and fails to look for reasons why they have occurred. No corrective actions have been proposed. The annual report is a combination of the reports/results submitted for the year and any actions picked up across the 12 month period would be expected to be input into this report.

Breaches of the trigger level at SW20 have been justified within 2.2.4 of the annual report as 'other sources' and that 'may be a source if significant overflowing took place in the vicinity of SW20'. SW20 is in the vicinity of the stockpiles of road sweepings and sewage grits, identified above as being stored out of compliance with the permit. These wastes are producing a leachate which is pooling on the made ground and overflowing into the cut off ditch near SW20. In addition to this, transfer station fines are being stored directly to the south of SW20 in a large stockpile, again without the compliant infrastructure.

Point 2.2.5 and 2.2.6 detail that the haul road constructed by a water company is constructed using steel slag and that this slag, when placed in contact with water could result in the release of Sulphate. The recent exceedances of the trigger levels have been attributed to the washing of the remaining Sulphate within the slag material during heavy rainfall events, and due to the heavy geology of the area this wash water has migrated laterally into the SSSI. NRW would dispute this final point as exceedances of Sulphate has been identified within the groundwater results (discussed further below). RPS have informed NRW through this report (2.2.6) that lateral migration has occurred and as a result the contaminated rainwater has caused a pollution of the SSSI, it is the responsibility of NSS (under permit condition 3.1.1) to prevent this lateral migration of contaminated water entering the SSSI.

In paragraph 2.2.7 RPS highlight that the treatment process of NSS is not operating to the required standard as '*the potential presence of small inclusions of plasterboard in construction products may contribute to increased leachability/run off with elevated sulphate concentration from such materials*'. If plasterboard and gypsum wastes are still present in the recycled aggregate used on site then this is a complete failure of the recycling process and an illegal disposal of the plasterboard through blending activities. This is especially true if the levels are to the degree that allows leachate to result in surface water pollutions in the SSSI. This needs to be investigated further. In addition to this, RPS detail that '*if there was any contribution from the site, the interceptor ditch is providing a control mechanism to reduce the level of sulphate in this location. It is possible that either aerial disposition or overflow from the operational areas is the cause of the minor exceedance at SW24*'. Firstly, if the contamination was being collected in the interceptor ditch then NRW would not expect any pollution to be seen within the SSSI if the system was fully impermeable, as previously identified it is not and therefore infiltration is entirely possible. Also, if overflow from the operational area has occurred and caused the minor exceedance, then this overflow should not have been allowed to occur and an investigation into why it had been allowed to occur should have been undertaken. This is another example of the operator not managing the on-site activities correctly. NRW are not sure what is meant by aerial disposition in relation to exceedances of Sulphate in the SSSI.

Point 2.2.13 suggests that a pollution by way of BOD exceedance has resulted due to off-site activities and that the activities carried out by NSS have had no impact on this parameter. RPS have informed NRW that no activities are currently taking place in this area of the site. However, NRW are aware that this area is being used for the storage of waste soils that have been in situ for many years. The storage of waste pending recovery or disposal is an activity listed within the permit (R13) and so would suggest that the statement made by RPS is

erroneous. Furthermore, the issues raised within this audit suggest that it is entirely possible, due to the failure of the wash plant process to treat hazardous waste, that these stockpiles contain varying degrees of hazardous material that have the potential to leach out and wash into the surface water collection system. NRW would also like to see evidence of a source-pathway-receptor model for the accusation that third party companies/properties are causing the pollution of the SSSI. It is not enough for RPS to simply discount on site activities as a potential source without correct investigation especially considering the findings of this audit, even for elimination purposes.

The discharge pipe referred to within 2.2.14 is not a new discharge pipe, this pipe has been in place for several years and NRW have investigated it approximately 2 years ago and found that it was not discharging. If RPS have further information and evidence to the contrary then please submit this to NRW so that we can look into it once more.

Regarding the Ammoniacal Nitrogen exceedances picked up at SW18 it is said '*no site activities were identified as potential sources of this exceedance*'. It is not clear what investigation has taken place to support this statement. This is of importance as this is the last surface water monitoring point before a discharge to the estuary occurs. Point 2.2.18 refers to a 'flow to the west' occurring and that is brining water into the site from a settlement lagoon. NRW find this unlikely as if the flows were occurring to the west then this water quite clearly would flow off site away from SW18. In addition to this the point 2.2.19 refers once more to the adjacent site being the cause of the exceedance. There is a large stockpile of transfer station fines that have the potential to contain many different contaminants being stored in the vicinity of SW23. There should be a source-pathway-receptor analysis carried out for this breach that takes into account all potential sources.

The exceedance of Carbon Banded Petroleum Hydrocarbons C10-C40 has yet again been attributed to the adjacent site. External sources appear to be the response from RPS on all exceedances across the site without any consideration as to the potential impacts of the on-site activities. The permit at NSS allows for the treatment of hazardous waste through the wash plant. The hazardous waste accepted on site ranges in type and concentration but generally comprises of metals and oils. This audit has identified that the operations and treatment of hazardous waste is not being carried out effectively and that hazardous waste is being blended and mixed with the soils across the soil and aggregate processing facility. Therefore, it is entirely likely that the exceedance of this trigger level is down to the large scale and prolonged storage of waste containing hazardous substances in the fields surrounding the SSSI and surface water monitoring points.

The conclusion section attributes the cause of pollution to off-site sources or natural causes rather than site based activities at NSS. The external monitoring carried out off site does not adequately justify the exceedances as RPS detail. This is especially true of SW20 where an over topping of the on-site interceptor ditch has been linked to the possible exceedance figures. SW24 and SW18 can both be linked to potential on-site activities and waste storage practices and should have triggered further investigation into both on site and off site sources of pollution. Within 2.2.36 RPS detail that the pollutants are mostly associated with organic pollutants and not related to the on-site activities including the storage and treatment of soil. However, NRW have highlighted that there are significant tonnages of wastes on site that have the potential to cause organic pollution, if RPS were to carry out a proper survey of the site and the waste held then this would have been recognised.

Groundwater

This section of the report once again seeks to justify the exceedances seen across the site and fails to look for reasons why they have occurred. Again, no corrective actions have been proposed. Throughout this section of the report there is limited/poor discussion surrounding the source-pathway-receptor linkages and no clear understanding of the site is demonstrated. A technical analysis and assessment of groundwater exceedances must be undertaken in terms of source-pathway-receptor modelling.

As previously mentioned the groundwater pollution of increased sulphate levels may be attributed to the haul road and its construction materials of steel slag. As mentioned within the RPS report the steel slag can leach out sulphate when it comes into contact with water, the haul road has been in place for many years and has been subject to rainfall for this time period. It is entirely likely that the haul road is a direct source of the ground water pollution. As the land owner and legal entity to the permit being operated on this area of land,

the haul road is owned and therefore maintained by NSS and its directors. RPS have suggested that this fact was known as early as 2012 because a report was published by them titled 'Water Quality Assessment-Neal Soils- February 2012'. Since this report, ground water pollutions caused by exceedances of Sulphate have been known and recorded in all but one report since May 2012.

Point 3.2.4 states that a damaged casing has caused the exceedance at this monitoring point. This is extremely unlikely. The damage to the casing may prevent a representative sample being taken but will not in all likelihood cause the exceedance of groundwater trigger levels. It is not clear if the damage caused to the casing occurred before or after the sample was taken. It is important to highlight that this trigger level was exceeded in November 2014 also. Again, it is not clear if any investigations have been carried out on site to identify what the cause of the 'marked increase' could have been across both of 2014 and 2015.

RPS suggest that the pollution of the groundwater across these locations is of minimal concern as there are no drinking water resources within the site boundary. The only sensitive receptors are that of the field ditches and reens. It must be emphasised here, to both NSS and RPS, that groundwater is protected under the Groundwater Daughter Directive (2006/60/EC) and the Water Framework Directive and that any hazardous substances should be prevented from entering them in order to protect the environment.

Point 3.2.9 as with the surface water monitoring section comments that *'there are no activities taking place or have taken place throughout the year at WS07 to the south side'*. The area in the immediate vicinity of the WS07 location has a significant tonnage of waste that has been stored there for many years and has the potential to leach contaminants into the ground. There are transfer station fines stored in this area and these could contain contaminating substances as they originate from non-source segregated waste. NRW would suggest that this stockpile of waste is a potential source of pollution to the groundwater at WS07.

Can RPS provide any further evidence to support the view the elevated levels may be due to the natural levels in the Flat Deposits (3.2.11), for example background concentrations or literature reviews?

For points 3.2.15 – 3.2.18 NRW recommend that this area should be further investigated to delineate potential source and plume associated with exceedances of ammoniacal nitrogen detected at WS07 since they are apparent since 2014 and earlier. If there is a hotspot identified or secondary source (shallow groundwater contamination for example) encountered then consideration must be given for remediation if it has not improved.

Within point 3.2.21 RPS set out to justify the decrease in TPH and PAHs are positive figures. Any decrease in fixed borehole results (WS14 and WS10) could be an indication of the pollution migrating, this suggests that a downward or horizontal migration of contamination has occurred. This should be investigated further. In addition to this, point 3.2.22 states that the results may have picked up natural hydrocarbons, this is highly unlikely as the natural occurring concentrations are usually non-detectable in ground water monitoring.

Point 3.2.27 is contradictory. RPS state that the results do not indicate highly elevated levels of TPH and these are not considered to constitute any significant risk to controlled waters. Within the next sentence RPS state that the concentrations are substantially above the trigger level of **20ug/l**. A maximum concentration of **0.73mg/l** was recorded and so is elevated by a substantial amount, especially considering this is a ground water pollution.

Again, NRW would like to reiterate that hazardous substances should be prevented from entering groundwater under the Groundwater Daughter Directive (2006/60/EC) and the Water framework Directive, the presence of TPH at the concentrations found is extremely concerning for NRW. It is of particular concern that there is evidence that the soil and aggregate processing facility has had hazardous waste blended with the soils and stored on the fields for a prolonged period of time increasing the risk of ground water pollution and pollution to the made ground.

Actions/Comments

NRW would like to request that further investigations be carried out to address the points raised in Observation 13 and carry out further investigations of the surface water areas in the immediate vicinity of the impacted groundwater areas.

Part 5: Conclusion

This audit has identified a number of serious permit breaches, the majority of which are attributed to the lack of competence shown by the operator in their failure to implement the management system and operate their activities in accordance with relevant requirements. The audit has assessed the site operators IMS in detail, and has found that the procedures detailed, if followed, would ensure the effective operations of activities allowed under the permit. Therefore, a number of the non-compliances could be addressed by changes in on site management and processes.

In summary, the audit has found:

- Infrastructure in certain areas for specific waste types is sub-standard, and not in line with permit requirements
- Duty of Care requirements are not being followed, and waste is being miscoded on input and output
- The lack of a tracking system for waste inputs and outputs is resulting in inadequate onsite waste management. This means that the quality of outgoing wastes being sent for use under CL:AIRE, Small Site Strategy, Aggregates protocol etc is questionable.
- Failure to comply with the requirements of SGN5.06, is leading to failure to operate compliant and competent onsite activities
- Batching processes are not being implemented
- Hazardous waste treatment and disposal is not being correctly or effectively carried out, and less than 1% of hazardous waste has been sent off site since the permit for the wash plant was approved.
- Hazardous waste is being illegally disposed of at the site through the blending of filter cake amongst other wastes
- Other wastes are not being treated correctly – including waste under the aggregates protocol, CL:AIRE, and road sweeping waste.
- Surface water and ground water failures identified in the annual report require improved investigation into the causes and solutions need to be identified.
- Follow up work will be required to work towards compliance with the operator

The actions required from this audit have been detailed throughout each observation in Part 4. NRW require the operator to submit a report by the 29th April 2016, addressing how they intend to rectify the breaches. Details of what this report must contain are listed in Part 4. Based on the evidence detailed within this audit, NRW must now consider that the entire site has been potentially contaminated with hazardous waste to varying degrees. As a result of this NRW would like the waste stored within the fields to be treated once more through the wash plant before being sent off site for recovery. However, this must only be done when the wash plant process is being operated correctly and NRW can be confident that the hazardous elements of the waste are being removed.

Part 6

Plan A

KEY:

- 1—Road sweeping storage
- 2— Sewage grit storage
- 3—Metal waste storage
- 4— Transfer station fines storage
- 5—Pooling leachate
- 6—Bleached banking
- 7—Sump and pump
- 8—Submerged pipe and discharge
- 9—Transfer station area

