APPLICATION SITE CONDITION REPORT

ASPHALT WASTE RECYCLING FACILITY
HD RICKETTS
WEEFORD QUARRY
LONDON ROAD
SUTTON COLDFIELD
B75 5SY

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Executive Summary	
Site Address	AsphaltWaste Recycling Facility HD Ricketts, Weeford Quarry, London Road, Sutton Coldfield, B75 5SY
Site National Grid Reference (NGR)	SK 13970 02329
Site Operator	Tarmac Trading Limited
Proposed Activity	Tarmac Trading Limited are seeking to operate an asphalt waste recycling facility at Weeford Quarry. The waste treated at the recycling facility will be limited to that arising directly from Local Authority roads, consisting namely of asphalt and road planings containing tar. The operation will consist of the storage and subsequent treatment of this material by sorting, separation, screening, crushing and blending of waste for recovery purposes to a secondary aggregate. This secondary aggregate will be utilised as a constituent part of foamed Asphalt (cold mix) for use on civil engineering schemes on the same local authority network.
Site History and Current Use	The development history of the application site has been limited to agriculture and horticulture in the form of pine tree plantations. Historical maps indicate areas of the application site and surrounding areas have been worked for there mineral reserve since the late to mid-20th century. BGS records indicate the made/artificial ground exists across the application site and surrounding areas, which replicate the boundary of an EA licensed landfill record that authorised the landfilling of non-degradable wastes at the quarry site from 1977.
Ground Conditions	The application site will be fully engineered with an impermeable surface, which extends into the adjacent industrial units. Historical borehole records indicate the site is underlain by ~0.40-0.50m of artificial ground comprising black sandy silty topsoil with pebbles. There are no recorded superficial deposits in the area. The application site is directly underlain by the Lower Triassic Sherwood Sandstone Group, comprised regionally of the Chester Formation and present the productive horizon extracted in the wider Weeford Quarry area. Site investigations carried out at Weeford Quarry between 1966-1994 show the Chester Formation was proven in boreholes to range in thickness between 1.9 - 11m. To the east of the Site, the Chester Formation had a maximum proven thickness of 9.55m. The underlying bedrock aquifer is classified as a Principal Aquifer. The site lies within a Groundwater Source Protection Zone (SPZ) III - Total Catchment. The DEFRA Groundwater Vulnerability Map shows the groundwaters beneath the site are classed as high vulnerability due the permeability of the bedrock. BGS borehole records within the wider site area to the east suggest groundwater levels could be ~20mBGL. However, quarrying below the water table at Weeford Quarry to date has not occurred. Currently the maximum depth of quarry is approximately 126 mAOD and the water table has not been encountered. There are no private water supplies or licensed abstractions within 500m of the site.
Environmental Review	The risk posed to the condition of the site is considered to be low providing that the integrity of the impermeable pavement and drainage systems are maintained throughout the life of the facility, which is expected to be of relatively short duration. The leaching potential of the wastes are also low. It is considered that site-specific baseline data is not required owing to the containment measures and pollution prevention controls to be installed and / or maintained at the site meaning the risk of contamination of soil and groundwater is **low.**

Executive Summary
This summary should be read in conjunction with the main report and reflects an assessment of the Site based on the information available at the time.

1.0 SITE CONDITION REPORT CONTEXT

1.1 Sirius Environmental Limited ('Sirius') has been commissioned by Tarmac Trading Limited ('Tarmac') to prepare and submit a Site Condition Report to support an application for an Environmental Permit to support the operation of an Asphalt Recycling Facility at Weeford Quarry, Sutton Coldfield. The relevant documentation is submitted in accordance with the Environmental Permitting (England & Wales) Regulations 2016 (referred to hereafter as the EP Regulations).

1.2 An Asphalt recycling facility is currently operating at Weeford Quarry under a Deployment Permit which was prepared by Sirius in June 2022. Due to an increase in the production of recycled Asphalt materials beyond the means of the Deployment Permit Tarmac is now seeking an appropriate site based Environmental Permit to continue the operation of the facility.

1.3 This Site Condition Report (SCR) has been compiled in accordance with the EP Regulations and with Horizonal Guidance Note 5, Site Condition Reports – Guidance and Templates (v2.0, 4th August 2008). Information has been gathered based on a desk study review of publicly available information, including an Environmental Statement (Volume 1) prepared by Tetra Tech as part of a Planning Application for Weeford Quarry.

1.4 The purpose of an Application Site Condition Report is to provide a factual statement of the condition of the site at the time of permit issue. The Site Condition Report must describe the nature and distribution of potentially polluting substances in the ground and groundwater at the site prior to the commencement of operations under the Environmental Permit, and those handled during the course of activities on the site. The potentially polluting substances of interest are those which are to be handled at the site under the Permit.

2.0 SITE DETAILS

Site Setting

2.1 The recycling facility will be located within the footprint of Weeford Quarry, London Road, Sutton Coldfield, B75 5SY. The proposed site is situated approximately on National Grid Reference: SK 13970 02329 as shown on **Drawing No.: TA1061/10/01**. The Weeford Quarry depot is situated in a rural area on the outskirts of the town of Sutton Coldfield. Weeford village lies approximately 1.8km north east of the site. The small village of Little Hay lies approximately 1.7km west of the site. The village of Hints is situated approximately 2km east-northeast. The specific area where the material will be treated is shown on **Drawing No.: TA1061/10/02.**

2.2 The nearest road is London Road (A38) which is located ~245m to the west of the site. The M6 Toll is ~115m adjacent to London Road. Access to and egress from the site is gained from one designated route through Weeford Quarry between the HD Ricketts site located off London Road (A38). London Road subsequently connects to Weeford interchange to the north and Bassetts Pole roundabout to the south.

2.3 The closest residential properties to the recycling facility are Brockhurst Park Farm which is located approximately 750m east-southeast of the site and two unnamed properties situated ~770m east and 900m east of the site.

3.0 CONDITION OF THE LAND AT PERMIT ISSUE

Environmental Setting

Made Ground

3.1 Information on the published geology of the site area from the British Geological Survey (BGS) 1:50,000 scale map shows the application site and wider quarry area are underlain by artificial or made ground. A regulated landfill facility is recorded across the application site and surrounding areas since 1977, which authorised the landfilling of non-degradable wastes at the site. The landfill is currently in closure. There are no published records to suggest the thickness or characteristics of the made ground/wastes, but typically wastes deposited in these landfills of this age include a range of materials including, soils, concrete, ceramics, bricks, ash and tarmacadam.

3.2 Historical borehole records indicate the site is underlain by ~0.40-0.50m of artificial ground comprising black sandy silty topsoil with pebbles.

Natural Soils

3.3 According to the UK Soil Observatory the site is underlain by freely draining slightly acidic sandy soils. However these soils will have been stripped from the application site and surrounding areas prior to historic extraction of the mineral reserve beneath.

Geology

3.4 Information on the published geology of the site area has been collated from the British Geological Survey (BGS) 1:50,000 scale map and the Tetra Tech Environmental Statement. **Table 1**, below, summaries the regional geology and approximate thickness of strata in the vicinity of the site.

Table 1: Stratigraphic Succession of the Regional Geology

Epoch	Strata	Description	Approximate Thickness	Aquifer Characteristics
Pleistocene	Drift	Peat, Alluvium, River Gravels and Terrace Deposits	Not located beneath the site	Non-aquifer
Triassic	Mercia Mudstone	Red Marls with sandy bands	183m	Aquitard
	Upper Sherwood Sandstone Group: Helsby Sandstone Formation	Fine grained, well cemented and upward fining pebbly sandstone units passing up into mudstone	24 to 121m	Principal Aquifer
	Lower Sherwood Sandstone Group: Chester Formation.	Well rounded, sandy quartzite gravel and conglomerate, with interbedded soft sandstone and sand horizons. Silty beds towards the middle and base. Base marked by poorly sorted cemented breccia	30 – 91m	Principal Aquifer
Upper Coal Measures	Warwickshire Group	Red marls, red brown silts and dark brown clays and red sandstones	Unknown	Minor aquifer

3.5 In the region around the wider site area of Weeford Quarry, bedrock is found to be outcropping. The application site is directly underlain by the Lower Triassic Sherwood Sandstone Group, comprised regionally of the Chester Formation

which presents the productive horizon extracted in the wider Weeford Quarry. The Hopwas Breccia forms the base of the Chester Formation and is uplifted immediately to the east of the Site, where it outcrops in isolated outliers. Both the Chester Formation and the Hopwas Breccia dip gently to the north west. The base of the Sherwood Sandstone forms a regional unconformity resting on the underlying Carboniferous Strata.

3.6 Information on local geology beneath the site and the immediate vicinity has been obtained from a number of site investigations carried out at Weeford Quarry between 1966-1994. The Chester Formation was proven in boreholes to range in thickness between 1.9 - 11m. To the east of the Site, the Chester Formation had a maximum proven thickness of 9.55m and was found to dip at approximately 4º to the north. There are no recorded superficial deposits beneath the site.

Hydrogeology

3.7 The underlying bedrock aquifer is classified as a Principal Aquifer, which are defined as aquifers with high permeability and water storage potential which may support water supply and / or river base flow on a strategic scale.

3.8 The site lies within a Groundwater Source Protection Zone (SPZ) III - Total Catchment. The DEFRA Groundwater Vulnerability Map shows the groundwaters beneath the site are classed as high vulnerability due the permeability of the bedrock. The site is also located within a Nitrate Vulnerable Zone (NVZ) as designated by DEFRA for surface and groundwater.

3.9 The geological data indicates that the Lower Sherwood Sandstone Group is stratified, and likely to comprise high permeability sands and soft sandstones, gravels and conglomerates and interbedded, lower permeability silts, clay and marls. The greater proportion of lower permeability strata towards the base of the Chester Formation, and the presence of the lower permeability, cemented Hopwas Breccia are likely to limit vertical movement of groundwater through the base of the Chester Formation. The underlying low permeability marls, clays and silts of the Warwickshire Group are likely to further restrict vertical movement of groundwater from or to the Lower Sherwood Sandstone Formation.

3.10 Although the dip of the Chester Formation is shown to be to the west (BGS, 1970), mineral investigations at Weeford Quarry indicate that the local dip of the Chester Formation is actually to the north and north west. It is likely, therefore, that groundwater will flow northwards within higher permeability strata within the Chester Formation to intercept the Black Brook. In the immediate vicinity of Weeford Quarry, the Chester Formation is largely unsaturated, and the water table is found at the base of the Chester Formation or within the top part of the Hopwas Breccia.

3.11 RMC (1995) reports that groundwater is expected to lie at some depth within the Upper Carboniferous strata and RMC (1989) reports that, during the drilling of thirteen boreholes at Weeford Quarry in 1985 and 1988, completed to depths between 155.6 mAOD and 126 mAOD, within the Chester Formation, no groundwater was encountered.

3.12 In the absence of current local piezometric data, the desk study evidence indicates that the Chester Formation is likely to have an unsaturated zone of ~20m beneath the site.

3.13 Quarrying below the water table at Weeford Quarry to date has not occurred. Currently the maximum depth of quarry is approximately 126 mAOD and the water table has not been encountered.

Surface Waters

3.14 There are several surface water ponds located ~10m to the west, ~200m to the south east and ~295m to the north east of the facility site. The ponds are situated within the Quarry footprint. There are several more surface water ponds located beyond the Quarry footprint ~790m to the north west, beyond the A38 and M6 Toll.

3.15 The nearest river is the Black-Bourne Brook which is located ~1.2km to the northeast, north, and west of the site. From its source near Aldridge where it is known as the Black Brook, it flows north, to the west of the village of Shenstone, then flows east past Weeford towards Fazeley, where the name changes to the Bourne Brook. It then continues flowing through to the confluence with the River Tame.

3.16 With regard to flood risk the site has a chance of flooding by surface waters of between 0.1% and 1% each year, with a low risk of flooding. The site also has a very low risk of flooding from rivers and sea which means the site has a chance of flooding of less than 0.1% each year.

3.17 There are no water abstraction licences located within 500m of the site.

3.18 There are two consented discharges located within 1 km of the site. Both are located to the north east of the site, one is for trade discharge - site drainage and the other is for sewage trade effluent.

Pollution History

Pollution Incidents Which May Have Affected the Land

3.19 Desk study evidence suggests there have been no recorded pollution incidents reported at the site.

Historical Land-Uses and Associated Contaminants

3.20 Publicly available historical maps have been examined to determine the historical land uses for the site and surrounding areas.

3.21 Based on historic Ordnance survey mapping and plans of the area dated from 1888 - 1913, the site location and surrounding areas were rural and primarily used for agriculture and tree plantations. There is a gravel pit located in the north western corner of the site. The map shows a road located on the existing footprint of London Road. Beyond London Road, ~500m to the west of the application site is Moneymore which the historical maps depict as a small gravel quarry which ultimately develops into Weeford quarry.

3.22 There are various farmsteads located within the wider areas of the site such as Brockhurst Cottages located ~879m to the south east, Blackbrook Farm located ~1.3km to the north and Weeford Park Farm located ~1.4km to the south west and Brockhurst Farm located ~1.4km to the south east of the site. Weeford Park is located ~860m to the south of the proposed site.

3.23 Historic Ordnance Survey maps dated between 1945 – 1965 show the site footprint and wider land area uses did not significantly change. Historical maps

between 1949-1972 illustrates a sand pit next to the gravel pit in the north western corner of the site. The site remains largely undeveloped.

3.24 Construction of the M6 Toll began in 2000 and was completed in 2003.

3.25 Overtime the mineral workings have expanded to the south of the gravel and sand pits to become the now existing footprint of Weeford Quarry in which the proposed site location is situated. In the wider quarry footprint the CEMEX Weeford Concrete Plant & Recycling facility is located to the north of the application site. HD Ricketts Limited currently occupy the majority of the quarry complex for the quarrying and processing of aggregate. In 2010 Tarmac submitted an application to operate an Asphalt recycling facility under a Deployment Permit on the proposed application site.

3.26 BGS records indicate the made/artificial ground exists across the application site and surrounding areas, which replicate the boundary of an EA licensed landfill record that authorised the landfilling of non-degradable wastes at the quarry site from 1977. No details relating to characteristics and depth of the materials deposited has been identified. However, typically wastes deposited in these landfills of this age include a range of materials including, soils, concrete, ceramics, bricks, ash and tarmacadam.

Visual / Olfactory Evidence of Existing Contamination

3.27 The current asphalt recycling operations carried out under a mobile plant deployment authorisation are undertaken over engineered impermeable surfacing. The nature and condition of the underlying stratum/wastes has not therefore been established.

3.28 There has been no evidence of historic leaks or spills associated since the existing recycling operations or with previous occupants of the application site.

Evidence of Damage to Pollution Prevention Measures

3.29 There is no evidence of damage to the engineered impermeable surfacing or sealed drainage system at the site.

4.0 EVIDENCE OF HISTORIC CONTAMINATION

4.1 A desk-based review of the environmental setting and development history of the application site and immediately surrounding areas has identified the potential presence of unknown thickness of imported, non-degradable waste deposited within the application site and surrounding areas. The characteristics and depth of the deposits has not been established.

5.0 BASELINE SOIL AND GROUNDWATER DATA

5.1 No previous intrusive investigation information or monitoring data have been identified for review to establish the baseline condition of the underlying soils and groundwaters.

6.0 PROPOSED PERMITTED ACTIVITIES

Proposed Permitted Activities

6.1 This section of the document considers the proposed operation for the treatment and recycling of Asphalt and tar-bound Road Planings to produce a secondary aggregate for use back in road improvement schemes. The materials to be

treated are sourced via the Local Authority road network as part of a term contract with Birmingham City Council.

6.2 Once sufficient materials are stored at the site the plant shall be brought into operation. Various quality protocols will be in place to ensure the material is manufactured to meet the standards required for highway use, therefore avoiding the need to dispose of the material. An EA Regulatory Position Statement (RPS 075) accepts the re-use of this material in engineering schemes.

6.3 The asphalt and tar bound road planing materials will be delivered to the site in Heavy Goods Vehicles (likely to be rigid six or eight wheeled tippers). All loads delivered from the waste producer to site will have the requisite Duty of Care paperwork in place upon receipt at site, and will include information such as;

- Waste description, including European Waste Catalogue (EWC) code;
- Description of the process producing the waste;
- Method of transport / delivery; and
- The typical composition of the waste.

6.4 Waste tonnages will be accounted for using a calibrated lorry on board weighing system and a Waste Transfer Note documentation system. Records will be kept allowing for accurate tracking of input tonnages to ensure treatment rates are as stipulated within the Environmental Permit.

6.5 All proposed activities associated with the Asphalt Recycling Facility will accord with the latest published BREF document for Waste Treatment (August 2018) and the associated Best Available Techniques (BAT) conclusions.

Proposed Non-Permitted Activities

6.6 The waste facility will be located within the wider Weeford Quarry site where a number of complementary activities are ongoing. All operations undertaken at the site are supported by office accommodation, service roads, weighbridge, wash down area, sheeting areas and welfare facilities that are located outside of the permit application boundary. These supporting elements will not be subject to the requirements of the Environmental Permit.

Pollution Potential

6.7 A selection of raw materials, waste and by-products will be used, produced and stored onsite during the processing of waste materials. An assessment of the pollution potential of these materials treated and stored at the site is presented in **Table 2.**

Table 2: Assessment of the pollution potential of materials proposed to be treated and stored at the site.

Substance	Chemical Composition	Quantity	Environmental Behaviour & Fate	Potential Environmental Impact	Treatment and Storage Arrangements	Assessment of Alternatives
Asphalt planings	Non-hazardous waste Complex mixture of heavy hydrocarbons	Up to 200.000 tonnes per annum.	Chemically stable at ambient temperatures. Low leaching potential and solubility at ambient temperatures Generates hydrocarbon and hydrogen sulphide gases/vapours when heated. Potential dust generated by dry materials during mechanical processing and storage	No significant environmental risk in cold state. Vapours can cause eye irritation and can generate flammable environment in high concentrations. Dust causing nuisance to site workers, visitors and neighbouring land users.	Water spray techniques to be implemented as necessary to control dust emissions Cold treatment processes being used only.	None – waste material forms primary purpose of facility.
Coal Tar bound planings	Hazardous wastes Various hydrocarbons, principally comprising PAHS and phenolics.		Chemically stable at ambient temperatures Low leaching potential and solubility at ambient temperatures Potential dust generated by dry materials during mechanical processing and storage Generates hydrocarbon vapours when heated.	No significant environmental risk in cold state. Vapours can cause eye irritation and can generate flammable environment in high concentrations. Dust causing nuisance to site workers, visitors and neighbouring land users.	Water spray techniques to be implemented as necessary to control dust emissions Cold treatment processes being used only. Wastes to be stored and processed over impermeable pavement.	None – waste material forms primary purpose of facility.
Gas oil	Hydrocarbons with trace additives.	c.500tpa for mobile and semi mobile plant.	Dangerous for the environment. Toxic to most invertebrates. Slightly toxic to fish. Some soil mobility. Floats on water. Biodegradable. Lighter fractions volatile. Potential to bioaccumulate. Fate is 100% to air via the process.	Significant, but air impacts from emissions standards required by combustion processes within plant engines. Low sulphur gas oil is used. Leaks and spillages controlled by detailed operational procedures.	Double bunded above ground storage tank within site infrastructure area. Engineered containment measures for contaminated surface waters. Refuelling of mobile plant will occur upon the engineered impermeable surface with suitable refuelling precaution measures	Gas oil is used as fuel to the mobile plant. No viable alternatives currently available. use of electrical powered plant to be considered in the future.

Substance	Chemical Composition	Quantity	Environmental Behaviour & Fate	Potential Environmental Impact	Treatment and Storage Arrangements	Assessment of Alternatives
Lubricating Oils /Greases	Hydrocarbons with trace additives.	Not known – likely to be <1000 litres / yr <500 litres	Insoluble and floats on water. Low biodegradation in soil. Fate is ultimately 100% to air – low volatility	Contamination of land and controlled waters and health risk to end users (i.e. humans, wildlife)	All containers to be stored in designated areas with impermeable surfacing and drip/spills trays. Spill kits to be located in strategic locations across the facility. Engineered containment measures for contaminated surface waters.	Essential for operation of various items at the facility. No readily available alternatives with equivalent properties exist.
Spill Granules	Various grades of absorbent material, chemically inert.	c.500kg	For use in emergency spill clean-up. Does not readily biodegrade. Fate is collected for appropriate disposal after deployment and use.	If not removed after use could result in general risk to humans and wider environment, although this is considered low as any contaminants should be 'locked in' to the product.	Covered pallet of 25kg sealed bags, located in store.	Alternatives exhibit similar properties, no advantage in considering another material as it offers no additional benefit.

7.0 SUMMARY STATEMENT OF THE SITE CONDITION

7.1 The development history of the application site and surrounding areas consist of mineral quarrying following by restoration through the landfilling with non-degradable wastes. Landfill activities were licensed at the site from 1977, in which the waste deposits are most likely to comprise a range of wastes that principally consist of soils, concrete, bricks, ceramics, ash and tarmacadam. The characteristics and depth of the waste deposits have not been established.

7.2 The wastes materials being handled at the facility will comprise hazardous and non-hazardous road planings. Both waste types present a low-leaching potential for potentially polluting substances in the form that they will be stored and treated at the facility i.e. 'cold' processes. All wastes, other potential polluting substances (e.g. fuels, oils) will be handled on engineered impermeable surfacing with a sealed drainage system. Fuels and oils will be stored in bunded areas of the site. The containment systems will be routinely inspected and repaired during the operational life of the facility, which is currently not proposed to extend beyond a period of ~5 years. On this basis, the containment measures are considered appropriate to mitigate any potential significant risk that the potentially polluting materials handled at the site pose to the baseline condition of the underlying site soils and groundwaters.

7.3 This SCR will be reviewed routinely and the details of any incidents that result in the release of any potentially polluting substances included, together with the results of any investigations and remedial actions.