

Shell UK Oil Products Limited

Shell Whitemare Pool Fuel Retail Station

Remedial Strategy Plan

355792-R02 (04)

RSK GEOSCIENCES

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RSK GENERAL NOTES

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Where field investigations have been carried out, these have been restricted to a level of detail required to achieve the stated objectives of the work.

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1 INTRODUCTION

1.1 Background and context

RSK Environment Limited (RSK) was commissioned by Shell (UK) Oil Products Limited (Shell) to prepare a remedial strategy plan (RSP) for the operational retail filling station at Shell Whitemare Pool, Gateshead, Tyne & Wear, NE10 8YB. A figure showing the site location is presented as **Figure 1**.

The work has been carried out to support Shell with their site asset management and the planning application relating to the proposed redevelopment. The proposed construction works at the site include decommissioning and removal of the existing fuel tanks and installation of new underground fuel tanks, replacement of canopy and associated works.

A plan showing the current site layout is present as **Figure 2** and the proposed redevelopment works is presented as **Figure 3**.

This report is preceded by the following environmental consultant reports produced by AECOM and RSK:

- RSK Soil Verification Report, (ref. 310714-R1 (01)), April 2009
- AECOM Phase 1 Environment Site Assessment, (ref. GB-10019383-20190820-SA-1), August 2019
- AECOM Comprehensive Environmental Site Assessment (CESA) Report, (ref. GB-10019383-20200929-SA-CESA0, September 2020
- RSK Comprehensive Groundwater Monitoring Event (CGME), (ref. GB10019383-20220329-MON-CGME DQRA), March 2022
- RSK CGME, ref. GB10019383-20221020-MON-CGME DQRA), October 2022
- RSK – Update to Phase 1 Assessment, ref. GB-10019383-20241217-CORext, December 2024.

These reports will be referred to as the “AECOM Phase 1 Report” and “AECOM CESA Report” etc. within subsequent sections.

This Remediation Strategy Plan (RSP) should be read in conjunction with the reports listed above which describe development of the initial and refined conceptual site models respectively, present the results of risk assessment on completion of this process, and conclude with an assessment of potential environmental issues at the site relating to soil and groundwater.

This RSP has been prepared to meet the potential conditions of a pending planning application (ref: ST/0662/24/FUL) and in consideration of a planning consultation letter issued by the Environmental Agency, dated 13 December 2024.

1.2 Purpose of the remedial strategy plan

The purpose of this RSP is to support the environmental aspects of the planning process related to soil and groundwater and to include provisions for managing potential environmental liabilities associated with soil and groundwater at the site during the redevelopment.

The AECOM CESA Report and subsequent groundwater monitoring event (GME) reports completed by RSK did not identify a requirement for specific remedial action (such as preparation of options appraisal, remedial strategy and implementation documents) as a result of the investigation's findings. Therefore this RSP sets out the approach to be adopted during redevelopment of the site to manage potential environmental risks associated with soil and groundwater which might arise and which were not identified by the previous investigations for the reasons set out below.

It is understood by RSK that the proposed redevelopment works at this site involve the removal and replacement of the underground fuel storage tanks. This work provides an opportunity during redevelopment to observe and record the presence (or absence) of historical hydrocarbon impact related to the site's existing fuel infrastructure, and to undertake validation sampling and testing from locations precluded whilst the site was operational. It is feasible that during the redevelopment works, hydrocarbon impact may be encountered in the ground that was not identified, or inferred, during the various phases of previous investigation.

A major function of this RSP is to make provision for dealing with the eventualities described above.

This report is subject to the RSK service constraints given in **Appendix A**.

2 PLANNING CONDITIONS RELATING TO SOIL AND GROUNDWATER

Planning permission was GRANTED by South Tyneside Council on 3 March 2025, (ref: ST/0662/24/FUL) with conditions, relevant conditions are detailed below. The full planning permission notice is included as **Appendix C**.

Condition 4: The installation of the underground tanks shall not commence until an investigation and risk assessment is completed in accordance with a scheme to assess the nature and extent of any contamination on the site, whether or not it originates on the site. The contents of the scheme are subject to the approval in writing of the Local Planning Authority. The investigation and risk assessment must be undertaken by competent persons and a written report of the findings must be produced. The written report is subject to the approval in writing of the Local Planning Authority. The report of the findings must include (i) a survey of the extent, scale and nature of contamination, (ii) an assessment of the potential risks to human health, property (existing or proposed) and (iii) an appraisal of remedial options, and proposal of the preferred option(s). This must be conducted in accordance with DEFRA and the Environment Agency's 'Land Contamination: Risk Management'.

A suitable site investigation and risk assessment was undertaken on the site by AECOM in 2020:

- AECOM Comprehensive Environmental Site Assessment (CESA) Report, (ref. GB-10019383-20200929-SA-CESA, September 2020)).

With two further RSK reports assessing risks to controlled waters:

- RSK Comprehensive Groundwater Monitoring Event (CGME), (ref. GB10019383-20220329-MON-CGME DQRA), March 2022
- RSK CGME, ref. GB10019383-20221020-MON-CGME DQRA), October 2022.

The above reports have all been submitted to the Local Planning Authority. Discussion of remedial options was outside the scope of these reports, and is addressed within this report, however no complete pollutant linkages were identified at the site following the 2022 assessment.

Condition 5: Unless otherwise agreed in writing by the Local Planning Authority, installation of the underground tanks shall not commence until a detailed Remediation Strategy for the proposed remedial works is submitted to and approved by the Local Planning Authority prior to commencing remedial works. The scheme must include all works to be undertaken, proposed remediation objectives and remediation criteria, timetable of works and site management procedures. The scheme must ensure that the site will not qualify as contaminated land under Part 2A of the Environmental Protection Act 1990 in relation to the intended use of the land after remediation. Where remediation of gas has been identified as necessary by the site investigation a gas verification plan shall be submitted for the proposed gas protection measures.

This remedial strategy plan addresses the works to be undertaken on the site, the remediation objectives and criteria, as well as an indicative timetable for works and details how contaminated land will be managed, including contingency measures to address any previously unencountered contamination.

Condition 6: Following completion of measures identified in the approved remediation strategy, a verification report that demonstrates the effectiveness of the remediation carried out must be produced and is subject to the approval in writing of the Local Planning Authority prior to the site being occupied.

A verification report will be compiled following completion of the site works.

Condition 7: In the event that contamination is found at any time when carrying out the approved development that was not previously identified, it must be reported in writing immediately to the Local Planning Authority alongside details identifying how the unexpected contamination will be dealt with. Following completion of measures identified in the approved details, a Verification Report that demonstrates the effectiveness of the remediation carried out must be produced and is subject to the approval in writing of the Local Planning Authority prior to the development to which it relates being brought into use.

This report details how contaminated land will be managed, including contingency measures for addressing any previously unencountered contamination. This includes communication with the local authority if such contamination is encountered, and all remediation measures subsequently undertaken would be included within the verification report.

3 BACKGROUND

3.1 General

This section summarises the site's setting and existing information including a list of geo-environmental investigation reports available for the site. For detail, the relevant reports should be consulted.

3.2 The site setting

The site comprises an operational petroleum retail station located at a service station area adjacent to the A419 with a hotel and restaurant located to the south of the site. The site covers an area of approximately 4,600 square metres (m^2) and is located at an approximate elevation of 50m above ordnance datum (AOD). The site has been petroleum retail station since c.1987 with five of the current tanks installed in 1987 and one in 1990. Historical reports indicated eight storage compartments were previously in operation at the site, with the baffle removed from tanks 2,3, 7 and 8 in 2008 to create the current layout with six single compartment tanks.

A previous intrusive ground investigation completed by AECOM in September 2020 confirmed the presence of made ground to a maximum depth of 1.70 meters below ground level (m bgl) underlain by superficial deposits of the Pelaw Clay Member which comprised of brown, sandy gravelly clay. Beneath the Pelaw Clay Member, the bedrock geology comprised the Pennie Middle Coal Measures to a maximum drill depth of 15.00m bgl, which comprised predominantly brown grey interbedding horizons of sandstone, siltstone, grey mudstone and shale in the north of the site and brown sandstone within the south of the site.

The site is not located within a groundwater Source Protection Zone (SPZ). There are no potable groundwater abstractions within 2km radius of the site. The nearest surface water feature is a drain located approximately 70m west which possibly extends to approximately 30m north west of the site, Monkton Burn (creek) is 280m south of the site and ponds are located 155m south west and 300m north east.

During the groundwater monitoring events completed by AECOM in September 2020, groundwater was encountered within all six installed monitoring wells. The report confirmed that groundwater is present beneath the site at a depth of between approx. 4.18m bgl (MW106) to 9.25m bgl (MW101) the monitoring wells were installed in the Pennine Middle Coal Measures, with perched groundwater encountered within MW103 between 0.40m and 0.47m bgl, installed in the Pelaw Clay.

This is interpreted as perched, in line with previous reporting, due to the variation in depth to groundwater encountered across the site. Due to large variations in groundwater elevations during the return monitoring visits, AECOM were unable to determine the groundwater flow direction within the bedrock and suggested that the bedrock may be influenced by the Claxheugh Fault, which is understood to run east to west through the northern part of the site.

During the RSK CGMEs groundwater was encountered at depths of between 40.11m and 49.34m AOD with water levels within the monitoring wells installed in the bedrock geology

ranging between 40.11m and 47.08m AOD. The groundwater flow direction was subsequently interfered to flow to the north east in February and June 2021 and May 2022.

3.3 Environmental assessment summary

As detailed in the AECOM CESA Report (2020), AECOM installed six groundwater monitoring wells (MW101 to MW106), drilled to a maximum depth of 10.00m bgl and three vapour monitoring wells (VP101 to VP103), which were installed to a maximum depth of 1.20m bgl, in November/December 2019. Selected soil and groundwater samples were submitted for laboratory analysis of a range of constituents of potential concern (COPC).

During the AECOM CESA, the maximum photoionisation detection (PID) reading, in excess of the instrument limit of detection (LOD), of 4.8 ppm was recorded in MW106 between 4.95 - 5.00m bgl and 5.70 - 6.60m bgl with damp black staining noted in the soils. In addition, a hydrocarbon odour and PID reading of 66.2ppm recorded during the December 2019 groundwater monitoring event observed in this location.

Hydrocarbon odours were observed during the return monitoring events in MW102 with a maximum PID reading of 178.2ppm.

Light non-aqueous phase hydrocarbons (LNAPL) were not encountered during the intrusive investigation or subsequent GMEs.

The AECOM CESA Report (2020) reported the following findings with respect to potential risk to human health and controlled waters:

Human Health

Soil, groundwater, and soil vapor laboratory analysis results reported COPC concentrations below applicable human health generic assessment criteria (GACs) protective of human health for a continued petroleum land use.

Seven soil samples collected from the made ground, were screened for asbestos, no asbestos fibres were detected.

The characteristic ground gas situation is classified as characteristic situation (CS)1 for the site, with a risk classification of very low. Ground gases have therefore not been considered further in the risk assessment for the site.

COPC concentrations in the potable water samples did not exceed drinking water standards (DWS) and, therefore, did not require further assessment.

Based on the above information, AECOM did not identify an unacceptable risk to human health.

Controlled waters

The following GAC exceedances of the drinking water standard (DWS) were reported by AECOM in the CESA report (2020):

- benzene, MTBE and DIPE exceeded the DWS in one soil sample (MW103 at 1.60m bgl). No other soil samples were found to exceed the BTEX or fuel oxygenate DWS GAC. MW103 is located in the eastern area of the site, with no visual or olfactory evidence of COPC reporting during drilling or subsequent groundwater monitoring

- benzene and MTBE were not detected in the water samples collected from MW103 during the GMEs. DIPE was reported to be marginally above the DWS GAC in the groundwater sample collected in February 2020. COPC exceedances are considered likely to represent limited localised impact and are unlikely to represent an unacceptable risk to controlled waters given that perched water is discontinuous on site
- benzene and TPH aromatic C5 – C7 and ethylbenzene were found to exceed the DWS GAC for both groundwater samples collected from MW102 and benzene exceeded the GAC in MW106 in December 2019. Benzene was reported below the laboratory method detection limit (LMDL) at this location in February 2020
- COPC concentrations in MW102 and MW106 groundwater samples were both reported to exceed the TPH C8 – C12 aromatic and aliphatic GAC by a maximum factor of 7.6 in MW102
- MTBE and DIPE exceeded the DWS GAC for the groundwater samples collected from MW102 by a maximum factor of 9.34, results were within the same order of magnitude as the GAC. The DIPE concentration was marginally above the DWS GAC in the groundwater sample collected from MW106 in February 2020
- arsenic was found to exceed the DWS GAC within MW106 during both GMEs by a maximum factor of 2.16, no other metal exceedances were recorded. As such, it is considered that leaching of metals from the shallow soil into the groundwater is likely to be limited.

After the completion of the intrusive site investigation and GMEs, the GQRA within the ACEOM CESA identified the following linkages to be potentially complete:

- COPC in soils – leaching into groundwater in the Pennine Middle Coal Measures Formation (Secondary A Aquifer)
- COPC in groundwater – lateral and vertical migration in the dissolved phase – towards the identified down gradient surface water receptors (drain 70m west, but potentially as close as 30m north west, Monkton Burn 280m south east at its closest point (however 470m north east in the direction of hydraulic flow) and ponds 155m south west and 300m north east of the site).

Further monitoring carried out by RSK in 2021 and 2022 (RSK CGME March & October 2022) provided an update on groundwater conditions at the site. The further monitoring and comparison with current controlled waters GAC show marginal exceedances of the DWS for the benzene, toluene and xylenes in MW102 in samples collected in February 2021. However, due to insufficient groundwater in May 2022, samples were unable to be collected at this location.

RSK undertook a detailed quantitative risk assessment (DQRA) of the site as a part of the RSK CGME in March 2022. Following the RSK DQRA assessment, groundwater was not considered to be a potential drinking water resource receptor as the aquifer beneath and in the vicinity of the site is not a principal aquifer or an aquifer of strategic importance. In addition, the AECOM CESA report indicates that there are no potable water abstractions within 2km of the site. Furthermore, the identified presence of perched water at the site (i.e. a discontinuous water body during dry periods) indicates that only small volumes of

water are likely to be migrating offsite. Therefore, the pollutant linkage in regard to groundwater was considered no longer applicable to the site.

The DQRA considered the risks of dissolved phase COPC migrating in groundwater towards the identified surface water receptors. Concentrations of benzene, toluene and xylene were modelled and were identified to exceed their respective Environmental Quality Standards (EQS) at a theoretical compliance point of 50m down hydraulic gradient of the site. However, the nearest surface water receptor in the inferred groundwater flow direction is the Monkton Burn, located 470m to the north east of the site. The DQRA calculated benzene, toluene and xylene concentrations to be at least eight orders of magnitude lower that their respective EQS based on a theoretical compliance point located at the Monkton Burn. Therefore, the potential pollutant linkage from dissolved phase migration of COPC from groundwater beneath the site to the nearest surface water was considered incomplete.

Waste

Based on the analytical results obtained during the AECOM CESA (2020) investigation, the COPC concentrations in soil at the site indicated that it is likely to be classified as non-hazardous. However, site conditions may vary across the wider site and the final classification of waste materials will be dependent on the requirements of the selected end disposal site.

4 ENVIRONMENTAL STRATEGY

4.1 Introduction

The strategy described below presents a selection of tasks which are either planned to be carried out, or which serve as contingency in the event that circumstances at the site indicate they should be performed. Note that issues related to health and safety of workers during development, and/or potential health and safety issues arising from the redevelopment works are covered by the health and safety plan of the main contractor undertaking the redevelopment works. Management of waste generated by the redevelopment works is the responsibility of the main contractor under the provisions of their site waste management plan (SWMP).

The RSP provides for the following tasks:

- review of existing wells at the site and evaluation of the need to decommission, or protect and maintain groundwater monitoring wells
- once the site is non-operational, undertake additional validation soil sampling and chemical analyses
- undertake decommissioning of the relevant wells
- establish protection to those wells to be maintained (if applicable)
- undertake sampling and chemical analyses of soils from the limits of excavations carried out for redevelopment purposes (such as excavations to remove and replace underground fuel storage tanks)
- evaluation of the data obtained from redevelopment excavations using a risk-based approach
- if necessary, undertake further risk assessment to evaluate the condition of soils remaining at the limits of redevelopment excavations in the event that COPC are found which require re-assessment
- preparation of a validation report.

In the event that conditions are revealed during redevelopment which cannot be dealt with under the provisions of this RSP, it may be necessary to prepare a remedial strategy to appropriately manage COPC in soil and/or groundwater.

4.2 Constituents of potential concern (COPC)

The suite of soil testing for the site redevelopment programme is based upon the existing conceptual site model (CSM), and the findings of previous site assessments.

It is anticipated that all soil samples (validation samples at the limits of redevelopment excavations and samples of imported material/material intended for re-use) would be tested for a suite of potential petroleum hydrocarbon related COPC, associated with the site's current and historical use as a retail service station.

- **Fuel COPC**

- speciated total petroleum hydrocarbons (aliphatic and aromatic fractions - TPHCWG)
- benzene, toluene, ethyl benzene and xylenes (BTEX compounds)
- methyl tertiary butyl ether (MTBE)
- naphthalene.

Additionally, samples of made ground (where encountered at an validation location), and samples of imported material/material intended for re-use would be tested for the following potential non-fuel related COPC:

- **Non-fuel COPC**
  - asbestos no asbestos has previously been detected at the site.

4.3 Site decommissioning and demolition

The proposed redevelopment works include the decommissioning, removal and replacement of the existing underground fuel storage tanks. The work will be carried out as specified by the Shell UK Retail Engineering Construction Project Management Consultant (PMC) (Artelia Group) on behalf of Shell.

4.4 Groundwater monitoring wells

Monitoring wells present at the site are identified in Table 1 below.

Wells are allocated to one of the following groups which reflect their potential importance at the site, vulnerability to construction works, or potential to form a preferential pathway.

Protect: *Wells designated as "protect" are significant installations at the site which are not in an area where they are at risk from excavation work and should be protected throughout the redevelopment works from physical damage and/or ingress of substances into the well from the surface. The redevelopment contractor will develop a method statement for protection of designated wells.*

Keep: *Wells designated as "keep", are wells which may form part of ongoing future monitoring at the site if required, and as such should be maintained in a working condition wherever practicable during redevelopment. However, these wells may be vulnerable to construction activities, and it may not be feasible to maintain these wells throughout construction works. Consequently, RSK and the redevelopment contractor will liaise with respect to the condition of these wells, and should the contractor identify that these wells have the potential to be damaged by construction or redevelopment activities, then RSK will be informed in advance and measures will be put in place to decommission relevant wells. Following completion of the redevelopment works if ongoing future monitoring is not required then these monitoring wells shall be decommissioned.*

Decommission: *Wells designated as "decommission" will be rendered inoperable by methods appropriate to the ground conditions and well construction. The decommissioning methodology will be in accordance with Environment Agency guidance (Ref 1), to prevent the creation of preferential pathways on site. Methods may involve over drilling and removal of installations to full depth and subsequent grouting or grouting of wells via the existing well pipe, which is left in situ. Over drilling or grouting works will be*

carried out by RSK employing a qualified site investigation contractor with experience of similar works.

Sacrificial: *Wells identified as "sacrificial" are typically shallow and may be permitted to be damaged or dug up (and abandoned) as part of the redevelopment as they do not represent viable preferential pathways to sensitive receptors.*

In consideration of the above, Table 1 below indicates the proposed monitoring well designation for the site.

Table 1: Monitoring well designation

Well ID	Action			
	Protect	Keep	Decommission	Sacrificial
MW101	X			
MW102	X			
MW103	X			
MW105	X			
MW106	X			
MW109	X			
VP101	X			
VP102	X			
Notes: Although no potentially complete pollutant linkages were found to be present, these wells are unlikely to be affected by construction activity due to the nature of the works and it should therefore be possible to retain most / all of the wells until after the works are completed.				

In consideration of the site redevelopment planned, it is unlikely that any of the wells in the above table will be affected by the planned redevelopment works due to their location outside of the redevelopment area. It is therefore proposed that all monitoring wells are protected and retained wherever practicable at this stage. As the previous phase of assessment completed at the site by RSK (October 2022) did not identify any potentially complete pollutant linkages with respect to concentrations of COPC in groundwater it may be possible to decommission the wells at a later date, provided that acceptable soil validation sample results are obtained.

Should verification soil sampling from around the existing fuel infrastructure indicate that further groundwater monitoring is likely to be required, then it may be pertinent to retain some / all of these monitoring wells or replacement groundwater monitoring wells may be installed to allow post – development monitoring to be undertaken.

Aspects associated with identification of unexpected impact are dealt with in Section 4.5.

5 VALIDATION WORKS

As part of the validation works, once the site is closed to trading and made safe, following any preparatory decommissioning and clearance works, there is contingency in the RSP to undertake excavation of trial pits to allow observations of the ground conditions and to obtain soil samples for chemical testing. These would be located (subject to any applicable site constraints) in areas of the forecourt that were not accessible during the site investigations undertaken to date, including the vicinity of the former tank farm.

The trial pits may be carried out in advance, or concurrent with, redevelopment excavations or may be carried out in advance at the proposed limits of redevelopment excavations to provide information as to the likely limits of these and the condition of soils and groundwater at these locations. Where engineering constraints (e.g. sheet piling or other temporary works) are likely to prevent access to the sides of an excavation, the soil samples obtained from the validation trial pits will provide an important source of soil quality data that will inform the validation assessment.

All works will be technically managed by RSK, who will direct trial pitting and undertake sampling for chemical analyses. A PID will be used to screen for the presence of volatile organic compounds, and together with visual and olfactory evidence, will assist in determining depths and locations of soils to undergo chemical testing to identify COPC. It is envisaged that representative soil samples will be obtained primarily from the unsaturated zone.

Information collected as part of this phase of works will be included within the final validation report, and will be provided to the Environmental Health Officer in a timely manner during the validation exercise.

5.1 Redevelopment excavations

Excavations for redevelopment purposes, such as to allow removal of below ground infrastructure, such as fuel tanks, will be carried out according to method statements and to a temporary works design provided by the redevelopment Principal Contractor. Excavations will be observed by an environmental consultant from RSK for the following purposes:

- observation of the condition of the soil and any perched water exposed during excavation
- identification of excavated soils within the excavation that exhibit visual and/or olfactory evidence of hydrocarbons
- obtaining an appropriate number of samples for testing for COPC at the proposed limits of redevelopment excavations to provide evidence of the soil conditions to be left in situ
- where deemed necessary (as determined by lines of evidence based assessment of data, including comparison of soil laboratory data with assessment criteria), RSK will supervise the enlargement (as far as is practicable and safe to do so within the site's constraints) of proposed redevelopment excavations to remove soils exhibiting

hydrocarbon impact and failing risk assessment criteria beyond the excavation's originally proposed limits

- provide information to the redevelopment contractor, where required, in order that remedially excavated soils are appropriately handled, stored, re-used (if suitable) and disposed of to an appropriately licensed soil reprocessing centre or authorised landfill.

The nominal frequency of soil validation testing at the limits of excavations is presented in **Appendix B**.

Where temporary works (e.g. sheet piling) is to be employed by the contractor (if required), then these engineering constraints may prevent sampling from the sides of the excavation. In such circumstances, the validation report will focus on a lines of evidence approach to demonstrate that the site does not pose unacceptable risks to the environment using laboratory data obtained from samples taken from the base of the excavations, samples taken from validation trial pits at the extents of the excavations and the existing data from the previous AECOM investigation. This assessment will also assess whether any new data or site observations are consistent with the Conceptual Site Model (Figure 5 in the RSK 2022 CGME).

In the event that redevelopment works encounter previously unanticipated and potentially significant hydrocarbon impact during the works, in the absence of an environmental professional's presence on site, a protocol agreed in advance with the redevelopment contractor will manage such an eventuality. This will require the contractor to contact RSK for attendance at site to inspect the findings and advise on how to appropriately manage the presence of unanticipated hydrocarbons.

Should significant concentrations and/or amounts of hydrocarbon impacted material be encountered that cannot be practicably excavated during the site works, then the Local Planning Authority will be informed, and an assessment made of the extent and potential risks associated with the material and, if necessary, revisions made to this strategy.

Waste Acceptance Criteria (WAC) testing has already been undertaken by AECOM. Additional WAC testing can be undertaken by RSK, if RSK are requested to do so.

Soils designated as waste and destined for offsite disposal fall within the provisions of the Site Waste Management Plan (SWMP).

In the event that redevelopment works encounter previously unanticipated and potentially significant hydrocarbon impact or asbestos containing materials during the works, in the absence of an environmental professional's presence on site, a protocol will be agreed in advance with the redevelopment contractor to manage such an eventuality. This will require the contractor to contact RSK for attendance at site to inspect the findings and advise on how to manage the presence of unanticipated COPC going forward. Should significant concentrations and/or amounts of hydrocarbon impacted material or asbestos containing materials be encountered that cannot be practicably excavated during the site works, then the Local Planning Authority will be informed, and an assessment made of the extent and potential risks associated with the material and, if necessary, revisions made to this ESP.

Excavated soils will be managed on site in accordance with the contractor's method statements. Soils may be temporarily stored on site prior to off-site disposal, or where

there are significant restrictions on available space for temporary storage, soils may be excavated and removed from site immediately.

Where practicable, excavated soils will be segregated into different stockpiles reflecting:

- potential waste streams for further characterisation and eventual disposal
- soils with potential suitability for re-use, subject to confirmatory testing and an approved mechanism for re-use compliant with waste regulations.

It should be noted that there might be restrictions on the ability of the site to accommodate temporary stockpiles of excavated soils due to space restrictions. Therefore, it may be necessary for soils to be disposed of off-site to an authorised and appropriate soil processing facility and/or landfill without temporary stockpiling.

5.2 Backfilling of excavations

Depending on the engineering plans for the site, reuse of site won material may be possible. Feasibility for reuse of such materials is dependent on the contractor's programme, method of working, available space for temporary stockpiling, an approved mechanism for material reuse as well as chemical and geotechnical suitability of the soils.

Chemical suitability of soils excavated at the site for reuse is to be confirmed by chemical testing as follows:

- one test for a suite of COPC analyses per 50 m^3 with a minimum of three tests on soil destined for reuse
- analytical results to be compared against the same risk-based criteria used to assess the soils at the limits of excavations representing soils left in situ.

Soils which fail the risk-based criteria will not be allowed for reuse and will be disposed of from site under the provisions of the SWMP.

Determining geotechnical suitability of excavated soils for reuse is the responsibility of the redevelopment contractor.

Where materials for backfill are imported, then chemical suitability of soils is to be confirmed by chemical testing as follows:

- analysis for COPC in imported backfill material at a minimum of three tests per virgin quarried material source type
- analytical results to be compared against the same risk-based criteria used to assess the soils at the limits of excavations representing soils left in situ.

Backfill material for some excavations may comprise pea gravel (or similar as specified by the designer/contractor). It is not generally possible to undertake chemical testing of this granular material. However, all imported pea gravel (or similar) material will be derived from an approved stated source (e.g. virgin material from a natural source) and will be visually inspected by the Principal Contractor prior to use on site.

To minimise the potential for imported backfill material to be rejected at site, chemical testing of imported material may be demonstrated by provision of appropriate chemical testing certificates obtained from the source, or may be confirmed by written statements as to the origin of the material and its suitability for use at the site. Confirmatory testing

may be undertaken on soils at source prior to its import if there is any doubt relating to information provided by the contractor and/or the source of the imported material. It should also be noted that there may be space restrictions on stockpiling of imported materials at site to allow confirmatory testing for suitability.

The Principal Contractor will be required to keep a record of waste material transfer movements in accordance with their Duty of Care obligation.

5.3 Validation of excavations

The nominal frequency of soil sampling at the limits of redevelopment excavations is set out in **Appendix B**. A nominal frequency of sampling is adopted based on the predicted size of the excavations, however this may be influenced by observations of the excavations made in the field (visual/olfactory or based on PID sample head space measurements).

Sampling will be undertaken where appropriate during the removal of fuel related underground structures and the sides and base of the excavations will be visually inspected for hydrocarbon impact. Where temporary works involve installation of temporary support to excavations which inhibit inspection of excavation faces, RSK and the contractor will devise a method of working to allow safe inspection and where appropriate, sampling. This work may invoke the provisions for undertaking additional trial pits.

5.4 Methods of sample collection and analysis

RSKs proposed method for soil sampling are outlined within **Appendix B**. With respect to the provisions of British Standard BS10176 (2020): *Taking soil samples for determination of volatile organic compounds (VOCs) — Specification,* the following comments are made:

Sampling in strict alignment with the provisions of BS10176 is not considered likely to be appropriate at the site, primarily due to the following considerations:

- the granular components within unsaturated zone soils to be tested, restricting viable field sampling methods for sample collection
- with reference to the specific conditions at the site (access constraints, health and safety considerations, depth of sample collection) the necessary access method/exploration method to be employed during redevelopment works and soil sampling, is sampling from disturbed soils with a granular component, recovered using a mechanical excavator. It is noted that this is not considered a “suitable” access method within BS10176.

‘Conventional’ soil sampling is proposed, in line with best practice recommendations for minimising loss of VOCs outlined within Annex C of BS10176.

5.5 Groundwater during temporary works

The AECOM CESA report confirmed that groundwater is present beneath the site at a depth of between approx. 4.18m bgl (MW106) to 9.25m bgl (MW101) with perched groundwater encountered within MW103 between 0.40m and 0.47m bgl.

It is possible therefore that groundwater management may be required to facilitate the required redevelopment excavations.

LNAPL product, if encountered within excavations, will be removed, and disposed of off-site.

The treatment and disposal of earthworks generated groundwater (and LNAPL if found) is the responsibility of the redevelopment earthworks subcontractor (including all related licensing).

5.6 Groundwater monitoring

On completion of the redevelopment works, the condition of the site will be evaluated, taking into account observations during excavation and the results of validation sampling. As outlined in Table 1, it is planned to retain all existing monitoring wells as far as practicable during redevelopment. However, based on the currently available data, while RSK do not foresee the need to conduct further groundwater monitoring this should be further assessed on completion of the validation sampling described above. Following confirmation that no further ongoing monitoring works are required, it may be possible to decommission the wells. Decommissioning methods would follow the procedures outlined in Section 4.4 and will follow Environment Agency guidance.

5.7 Reporting

A validation report which presents the tasks described in this RSP and the results of the proposed testing will be produced on completion of the works, with a copy provided to the Local Planning Authority prior to the site opening. The report will present the following information:

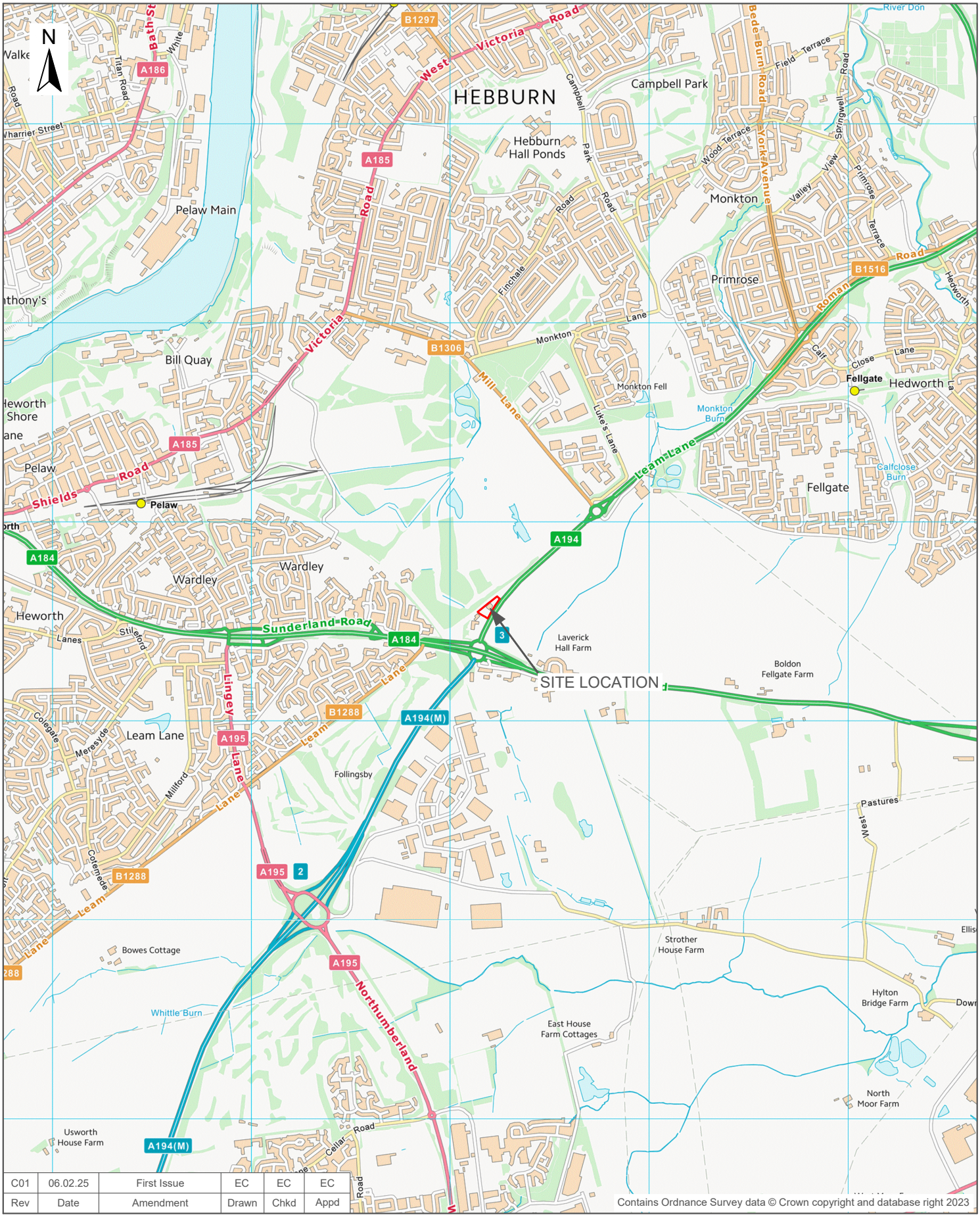
- the locations of validation trial pits and additional boreholes (if completed) to delineate identified hydrocarbon impact (if encountered) or to provide advance information to contractors
- the extents of redevelopment excavations
- the results of analytical chemical testing at the limits of excavations (i.e. representative samples of soils left in situ)
- the results of chemical testing for waste classification and waste disposal purposes (if required)
- the results of chemical testing of soils used as backfill, either site won material suitable for re-use and/or imported soils
- records of waste disposal and import of materials for backfilling held by the contractor
- an assessment of soils remaining in situ at the site against risk-based criteria
- if necessary, the results of any site-specific risk assessment carried out to assess the condition of the site after redevelopment.

6 REFERENCES

1. Good practice for decommissioning redundant boreholes and wells – Environment Agency guidance document Ref: LIT 6478 / 657_12, dated October 2012.

FIGURES

Figure 1 SITE LOCATION PLAN



Rev	Date	Amendment	Drawn	Chkd	Appd
C01	06.02.25	First Issue	EC	EC	EC

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Client: Shell Oil Products UK Ltd

Project Name: Shell Whitemare Pool

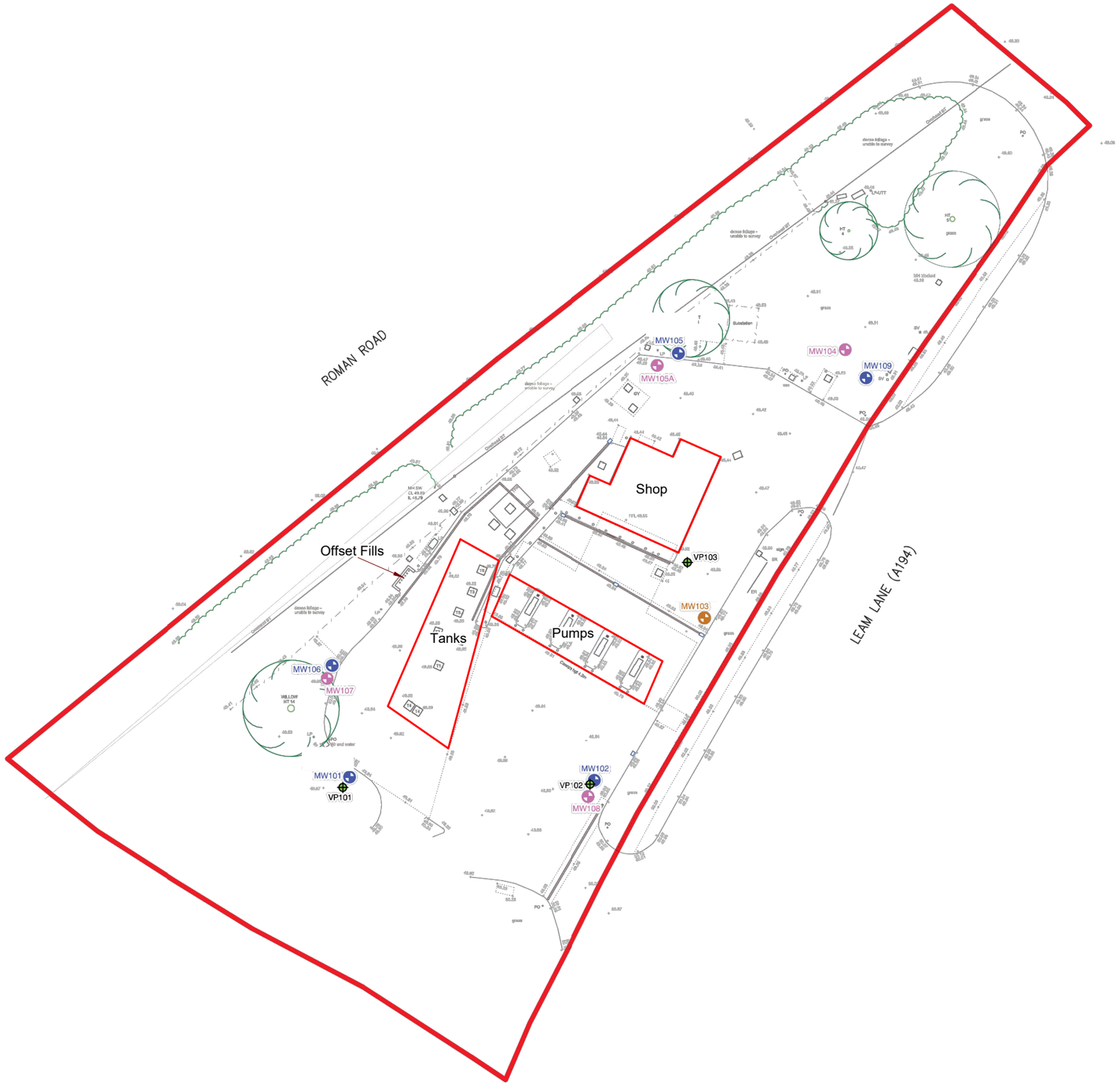
Description: Site Location Plan

Dimension	Size	Scale	Geolocation	Project ID	Drawing no.	Rev	File name
m	A4	1:25,000	431199,561567	355792	11101	P01	355792-GL-111-XX-D-G-11101-C01

Figure 2 CURRENT SITE LAYOUT PLAN

DO NOT SCALE FROM THIS DRAWING

N



LEGEND

- MW103 — Groundwater Well Installation (Superficial Perched Groundwater)
- MW101 — Groundwater Well Installation (Pennine Middle Coal Measures Formation)
- VP101 — Vapour Well Installation
- MW105A — Shallow Borehole to investigate superficial deposits, no installation
- mAOD — Metres Above Ordnance Datum

Notes:

Base plan provided by AECOM, drawing ref: Figure 6, Groundwater Elevation Plot (March 26th 2020)

Rev	Date	Amendment	Drawn	Chkd	Appd
C01	06.02.25	First Issue	EC	EC	EC

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Client: Shell Oil Products UK Ltd

Project Name: Shell Whitemare Pool

Description: Site Layout Plan

Project ID	Drawing no.	Revision
355792	11201	C01

File name: 355792-GL-112-XX-D-G-11201-C01

Dimensions	Scale	Size
m	1:500	A3

0 5 10 15 20 25m

Figure 3 PROPOSED SITE LAYOUT PLAN

DO NOT SCALE FROM THIS DRAWING

N



LEGEND

Notes:

Base plan provided by the client
Drawing Ref: Whitemare Pool - 10019383 - Tank Replacement - PLNG - 06 - Schematic Drainage

Rev	Date	Amendment	Drawn	Chkd	Appd
C01	06.02.25	First Issue	EC	EC	EC

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Client
Shell Oil Products UK Ltd

Project Name
Shell Whitemare Pool

Description
Proposed Site Layout Plan

Project ID	Drawing no.	Revision
355792	11601	C01

File name
355792-GL-116-XX-D-G-11601-C01

Dimensions	Scale	Size
m	NTS	A3

APPENDICES

APPENDIX A
SERVICE CONSTRAINTS

1. Service Constraints for all Reports

1.1. This Report (the “Report”) and any study, inspection, investigation, sampling, testing and or interpretation carried out in connection with the Report (together the "Services") were compiled and carried out by RSK Environment Limited (RSK) trading as Carbon Zero Consulting, Leap Environmental or RSK Geosciences, for the Client named in the first paragraph of the Report (the "Client") in accordance with the terms of an RSK Fee Proposal including RSK Environment Standard Terms and Conditions (the “Appointment”) between RSK and the Client, unless otherwise stated in the first paragraph of the Report. The Services were performed by RSK with the reasonable skill and care ordinarily exercised by a geo-environmental consultant at the time the Services were performed. Nothing in this Report shall be construed as imposing any fitness for purpose obligation. Further, and in particular, the Services were performed by RSK taking into account the limits of the scope of works required by the Client, the time scale involved and the resources, including financial and manpower resources, agreed between RSK and the Client.

1.2 Other than that, expressly contained in paragraph 1 above, RSK provides no other representation or warranty whether express or implied, in relation to the Services. RSK shall not be liable in respect of any action or proceedings arising out of or in connection with this Report whether in contract, in tort, for breach of statutory duty or otherwise after the expiry of six (6) years from either (i) the date of the Report or (ii) such earlier date as prescribed by law, unless varied in the terms of the Appointment.

1.3 Unless otherwise agreed in writing, the Services were performed by RSK exclusively for the purposes of the Client. RSK is not aware of any interest of or reliance by any party other than the Client in or on the Services. Unless expressly provided in writing, RSK does not authorise, consent, or condone any party, other than the Client relying upon the Services. Should this Report or any part of this Report, or details of the Services or any part of the Services, be made known to any such party, and such party relies thereon, that party does so wholly at its own and sole risk, and RSK disclaims any liability to such parties. Any such party would be well advised to seek independent advice from a competent geo-environmental consultant and/or lawyer.

1.4 The Client shall not, without the prior written consent of RSK, assign, transfer, charge, mortgage, subcontract, or deal in any other manner with all or any of the benefits provided in this Report. Unless specified in the Appointment, RSK shall not be obliged to assign the benefit of the Report whether by collateral warranty, third party rights pursuant to the Contracts (Rights of Third Parties) Act 1999, letter of reliance or otherwise. If RSK agrees to any assignment of the benefit of this Report, in whatever form, benefits to third parties through collateral warranties, third party rights or letters of reliance shall not be provided unless a fee for each right, warranty or letter is agreed. The form of wording used in the warranty or letter shall be provided by RSK for agreement by the Client. Any reasonable changes to the form of wording will be implemented by mutual agreement, however the terms in the warranty or letter cannot offer the third party any greater benefit than the Appointment offered to the Client.

1.5 It is the understanding of RSK that this Report is to be used for the purpose described in the introduction to the Report. That purpose was a significant factor in determining the scope and level of the Services. Should the purpose for which the Report is used, or the proposed use of the site change, this Report may no longer be valid and any further use of or reliance upon the Report in those circumstances by the Client without the review and advice of RSK shall be at the Client's sole and own risk. RSK shall not be liable for any use of this Report for any purpose other than that for which it was provided.

1.6 The passage of time may result in changes in site conditions, regulatory or other legal provisions, technology or economic conditions which could render the Report inaccurate or unreliable. The information and conclusions contained in this Report should not be relied upon in the future without the written advice of RSK. In the absence of such written advice of RSK, reliance on the Report in the future shall be at the Client's own and sole risk.

1.7 The observations and conclusions described in this Report are based solely upon the Services which were provided pursuant to the agreement between the Client and RSK. RSK has not performed any observations, investigations, studies or testing not specifically set out, or required by the Appointment between the Client and RSK. RSK is not liable for the existence of any condition, the discovery of which would require performance of services not otherwise contained in the Services. For the avoidance of doubt, unless otherwise expressly referred to in the introduction to this Report, RSK did not seek to evaluate the presence on or off site of asbestos, invasive plants, electromagnetic fields, lead paint, heavy metals, radon gas, fuel storage, persistent bio-accumulative or toxic chemicals (including PFAS and related compounds) or other radioactive or hazardous materials, unless specifically identified in the Services.

1.8 The Services are based upon RSK's observations of existing physical conditions at the Site gained from a visual inspection of the site together with RSK's interpretation of desk based publicly available information, including documentation, obtained from third parties and from the Client on the history and usage of the site, unless specifically identified in the Services and the limitations below:

a. The Services were based on information and/or analysis provided by independent testing and information services or laboratories upon which RSK was reasonably entitled to rely.

b. The Services were limited by the accuracy of the information, including documentation, reviewed by RSK and the observations possible at the time of the visual inspection.

c. The Services did not attempt to independently verify the accuracy or completeness of information, documentation or materials received from the Client or third parties, including laboratories and information services, during the performance of the Services.

d. The Client has identified in writing to RSK, the information, reports, findings, surveys and preliminary works RSK may not rely upon when providing the Services.

RSK is not liable for any inaccurate information or conclusions, the discovery of which inaccuracies required the doing of any act including the gathering of any information which was not reasonably available to RSK, and including the doing of any independent investigation of the information provided to RSK, save as otherwise provided in the terms of the Appointment between the Client and RSK.

1.9 Any site drawing(s) provided in this Report is (are) not meant to be an accurate base plan for scale measurement but is (are) used to present the general relative locations of features on, and surrounding, the site. Features (intrusive and sample locations etc) annotated on site plans are not drawn to scale but are centred over the approximate location. Such features should not be used for accurate setting out and should be considered indicative only.

1.10 Should RSK be requested to review the Report after the date of issue of this Report, RSK shall be entitled to additional payment at the existing rates, or such other terms as agreed between RSK and the Client.

2. Service Constraints where the Report provides an intrusive assessment of ground conditions:

2.1 The intrusive environmental ground investigation aspects of the Services are a limited sampling of soil from the site, at pre-determined locations based on the known historic / operational configuration of the site. The conclusions given in this Report are based on information gathered at the specific test locations and can only be extrapolated to an undefined limited area around those locations. The extent of the limited area depends on the properties of the materials adjacent and local conditions, together

with the position of any current structures and underground utilities and facilities, and natural and other activities on site. In addition, chemical analysis was carried out for a limited number of parameters (as stipulated in the scope agreed between the Client and RSK, based on an understanding of the available operational and historical information) and it should not be inferred that other chemical species (not tested) are not present.

2.2 The comments given in this Report and the opinions expressed are based on the ground conditions encountered during the site work and on the results of tests made in the field and in the laboratory. The extent of the exploratory holes, laboratory testing and monitoring undertaken may have been restricted due to a number of factors including accessibility, the presence of buried or overhead services, current development, site usage, timescales or the Client's specification. The exploratory holes only assess a small proportion of the site area with respect to the site as a whole, and as such may only provide an indicative assessment of ground conditions on site. There may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account. In particular, it should be noted that there may be areas of made ground not detected due to the limited nature of the investigation or the thickness and quality of made ground across the site may be variable. In addition, groundwater levels and ground gas concentrations and flows, may vary from those reported due to seasonal, or other, effects and the limitations stated in the data should be recognised. The presence of hotspots of undisclosed contamination or exceptional and unforeseen ground conditions cannot be discounted.

2.3 Where the Services include Investigation of an exploratory nature or relating to physical ground works, any costings and prices provided in the Report are estimated and provided for guidance purposes only. The actual cost and time quantities shall be remeasured and shall be dependent upon the ground or other conditions, constraints present, and number and depth of the investigation locations, which shall influence the number of samples and tests required, and the quantities of soil being classified.

2.4 Asbestos is often observed to be present in soils in discrete areas. Whilst asbestos-containing materials may have been locally encountered during the fieldworks or supporting laboratory analysis, the history of brownfield and demolition sites indicates that asbestos fibres may be present more widely in soils and aggregates, which could be encountered during more extensive ground works. However, this Report does not constitute an asbestos survey. On this basis, the presence of asbestos on site cannot be discounted and a full asbestos survey should be undertaken.

2.5 Unless stated otherwise, only preliminary geotechnical recommendations are presented in this Report and these should be verified in a Geotechnical Design Report, once proposed construction and structural design proposals are confirmed. Eurocode 7 gives guidance on the type of sampling, sample quality, number and spacing of intrusive investigations, and number of laboratory tests required. It is intended that the Geotechnical Information section of this Report will fulfil the general requirements of the Ground Investigation Report as set out in section 6 of Eurocode7, although this is subject to the restrictions imposed on the investigation, as listed above. For geotechnical design, Eurocode 7 requires the Geotechnical Design Report to address both the geotechnical and structural aspects of the geotechnical design for both the limit and serviceability states. The Geotechnical Appraisal section of this Report will not meet the requirements of a Geotechnical Design Report (GDR) and should therefore be used for preliminary guidance only.

3. Service Constraints where the Report relates to Surface Water Management:

3.1 The Surface Water Management Inspection (SWMI) Report, documents provided, observations, actions, and recommendations, with respect to the management of potential pollution issues to surface waters, made during the site Inspection visit, are those present at the time of the visit, and may not represent those recorded by others on the same day.

3.2 The comments given in this Report and the opinions expressed are based on the weather, ground and ground water conditions encountered during the site work and on the results of tests made in the field and in the laboratory. However, there may be conditions pertaining to the site that have not

been disclosed by the inspection and therefore could not be taken into account. In addition, groundwater levels and flows, may vary from those Reported due to seasonal, or other, effects and the limitations stated in the data should be recognised.

3.3 RSK places a degree of dependence upon oral information provided by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this Report was prepared.

3.4 This Report is a live document, to be continually reviewed and updated as the development progresses or other changes occur on site. RSK can only maintain the currency of this Report through the Client requesting support with supplementary site visits or attendance at meetings ahead of key stages of the development in relation to surface water management. Our risk rating assesses a number of risk factors in line with the source-pathway- receptor model and is therefore subject to constant change.

3.5 Standard design drawings are indicative. Material types, dimensions and construction details will need to be adjusted by the Client to suit the specific conditions / flows on Site.

3.6 The full responsibly for implementing the site-specific protection and maintenance measures to protect the surface water system as stated in this Report, remains with the Client and their site management team. Additional control measures may be required to achieve the objectives set out in the Surface Water Management Plan to be implemented and financed by the Client.

4. Service Constraints where the Report relates to Waste Management:

4.1 In accordance with the definition provided in the Waste Framework Directive (WFD), materials are only considered waste if 'they are discarded, intended to be discarded or required to be discarded, by the holder'. Naturally occurring soils are not considered waste if re-used on the site of origin for the purposes of development. Soils such as made ground that are not of clean and natural origin (irrespective of whether they are contaminated or not) and other materials such as recycled aggregate, do not necessarily become waste until the criteria above are met. Excavation arisings from the development may therefore be classified as waste if surplus to requirements and/or unsuitable for re-use.

4.2 It is the duty of the waste producer, to ensure that all waste is accurately classified prior to waste disposal. Technical Guidance WM3 (EA, 2018) sets out in its Appendix D requirements for waste sampling. It is a legal requirement to correctly assess and classify waste. The level of sampling should be proportionate to the volume of waste and its heterogeneity. Unless otherwise stated, the waste assessment presented in this Report should be considered as preliminary and further testing and assessment of the waste under the provisions of a Waste Sampling Plan may be required to obtain the necessary level of data required for basic characterisation of the waste in support of disposal.

4.3 Unless stated otherwise in the Report, information relating to historical operations at the site was not reviewed as part of the assessment by RSK. In addition, unless otherwise stated in the Services, RSK was not present during the collection of the samples nor had any input on the chemical testing suite. Therefore, the waste assessment and classification detailed in this Report are based solely on any information that were provided to RSK (e.g., laboratory chemical data, exploratory hole records) and were completed without prejudice for our Client.

4.4 RSK's assumes that any ground investigation data, chemical testing results etc., that were provided by the Client to inform the waste assessment and supporting review were carried out in accordance with current best practice and relevant guidance/ standards, where applicable. Thus, the comments given in this Report and the opinions expressed are based solely on the information provided by the Client. However, it is noted that there may be conditions pertaining to the site that have not been disclosed by the investigation and therefore could not be taken into account as part of the RSK assessment.

5. Service Constraints for Construction Environmental Management Plan Reports:

5.1 This Report should be considered in the light of any changes in legislation, statutory requirement or industry practices that may have occurred subsequent to the date of issue.

5.2 The measures and comments outlined in this Report and any opinions expressed are based on the plans provided at the time and discussions with relevant parties. However, there may be conditions pertaining to the site that have not been disclosed by investigations and therefore could not be taken into account.

5.3 This CEMP is a live document and is subject to change throughout the project, as and when necessary, to ensure management of environmental aspects remains relevant, and to ensure continued compliance with legislation and commitments as they may change. RSK understands that this CEMP will be reviewed by the Client every six months and updated as and when necessary.

5.4 It is the full responsibility of the Principal Contractor/ Client to ensure that their works do not contravene legal requirements, and adherence to this CEMP alone cannot be a full defence regarding legal action against the Principal Contractor.

6. Service Constraints where the Report relates to Ground Gas Membrane Verification:

6.1 This Report is limited to the verification of the gas resistant membrane/vapour membrane/ radon barrier after installation and no inspections were undertaken of the substrate (i.e. prepared ground). The Report therefore does not constitute as a full verification of ground gas protection system.

6.2 The comments given in this Report and the opinions expressed, are based on the condition of the ground gas membrane as encountered at the time of inspection by suitably qualified personnel. RSK cannot accept liability for any subsequent change to the status of the gas membrane by follow-on trades or other construction activity.

6.3 Where not designed by RSK, the verification of protection measures is carried out with reference to the gas protection design provided by the Client. RSK assume the scope of gas protection measures as determined by third parties to be correct and to have achieved any required approval from authorities.

6.4 The Ground Gas Design Report/Remediation Strategy and Verification Plan contains details of the procedures to be adopted for inspection and validation of the works. However, it should be noted that responsibility for the correct implementation of the strategy lies with the appointed contractor. RSK cannot be held responsible for any remedial works that are carried out without the agreed procedures involving either direct supervision by RSK, or inspection and validation of the works by a representative from RSK.

7. Service Constraints for Environmental Due Diligence (EDD)Reports:

7.1 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the site, therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information.

7.2 This Report describes the results of the EDD exercise. The scope of this EDD Report, where appropriate, covers legal or regulatory compliance with respect to UK or international regulations associated with environmental matters.

7.3 As with any EDD exercise, there is a certain degree of dependence upon information provided by the target company. The EDD does not include a site walkover / visit or liaison with site representatives unless identified in the Services. Therefore, the assessment is based on the available desk study information. Also, there is a certain degree of dependence upon oral information provided

by site representatives, which is not readily verifiable through visual inspection, or supported by any available written documentation. RSK shall not be held responsible for conditions or consequences arising from relevant facts that were not fully disclosed by facility or site representatives at the time this EDD exercise was performed.

7.4 This Report, including all supporting data and notes (collectively referred to hereinafter as "information"), was prepared or collected by RSK for the benefit of its Client.

7.5 The comments given in this Report and the opinions expressed are based on the information obtained and reviewed as part of the desk-based assessment and the site inspection visit. However, there may be conditions pertaining to the Site that have not been disclosed by the assessment and therefore could not be taken into account. Furthermore, no intrusive investigations, monitoring or sampling have been undertaken to confirm the environmental status of the Site therefore any comments relating to ground conditions and subsurface contamination are based solely on a review of desk-based information and observations collected during the site inspection visit.

8. Service Constraints for Ground source heat energy Reports:

8.1 It is understood that this is a desktop survey only and that there are no requirements for a site walkover, service utility survey, or provision of service plans. These services can be provided upon request if required.

8.2 At a later stage, it is possible that a thermal response test (TRT) will need to be completed, for which a test borehole will have to be drilled, and these would be costed at the time. RSK can provide all aspects of subsequent site work for a GSHP system if required.

9. Service Constraints for Water Abstraction Borehole Reports:

9.1 The Report aims principally to only identify and assess the suitability of the site for a water abstraction borehole. This Report should be considered in the light of any changes in legislation, statutory requirements, and industry practices, that have occurred subsequent to the date of the Report.

9.2 Unless stated in the Report, the opinions expressed in this Report including all comments and recommendations provided are on the basis of the information obtained from a desk-based assessment.

APPENDIX B SAMPLING METHODOLOGY

SAMPLING METHODOLOGY

INTRODUCTION

This method statement describes RSK's procedures adopted during excavation works at Shell petroleum retail sites. It does not form a substitute for preparation of, separate site specific health and safety plans, job hazard analyses and safety risk assessments. Such aspects of the works are dealt with via RSK and Shell procedures and are not reproduced herein.

The method statement is applicable to attendance at a Shell owned petroleum retail site by a RSK environmental consultant engineer during excavation works for purposes such as removal of underground storage tanks (USTs), interceptors and other underground fuel infrastructure, which have the potential to act as primary sources of hydrocarbon release into the ground.

The objective of RSK's attendance is to provide an oversight of the works by a competent environmental professional at a time when ground conditions below the surface are revealed by excavations for redevelopment or civil engineering purposes, in particular at locations that could not safely be investigated during a phase 2 ground investigation whilst the site was operational.

The excavation work affords an opportunity to obtain information to supplement ground investigation data, including:

- geological information
- observations of groundwater
- information on the presence (or not) of hydrocarbons in the ground immediately surrounding sub surface fuel infrastructure
- the opportunity to obtain samples of soil at the limits of excavations, and for waste disposal purposes.

SAMPLING AND FIELD TESTS

Plant will be supplied by the contractor undertaking groundwork at the site, and for the purposes of soil sampling will be under the direct supervision of the RSK engineer.

Samples will be taken by the RSK engineer and headspace analyses will be screened on site with a photo ionisation detector (PID). The data will be used, along with visual and olfactory evidence to focus subsequent laboratory analytical testing on those samples apparently most representative of the soils exhibiting hydrocarbons at the limits of excavations or for waste disposal purposes.

Samples obtained at the limits of excavations (i.e. representing the condition of the ground left in situ) have depth and position recorded. Sample positions are recorded either by surveying or by triangulation from fixed features which can be related to site plans.

RSK's technical procedures govern sampling and the packaging and shipment of samples to the appointed analytical laboratory. The recovered soil samples are placed in containers suitable for the intended analyses and stored in a cool box with ice-packs to minimise temperature and volatilisation. Samples are forwarded to the laboratory as soon as practicable (but typically daily) to minimise holding times prior to analysis.

Each soil sample will be given a unique identifier and entered onto the chain of custody documentation. A copy of the chain of custody documentation accompanies the samples with a copy being retained by RSK.

Samples are not obtained by person entry to excavations under any circumstances, unless the groundwork contractor's methods involve temporary works to support excavations suitable for person entry. Under such circumstances the contractor will be required to demonstrate that temporary works are suitable and have been properly designed and that suitable precautions and permits are in place to allow entry.

Under most circumstances, soil samples will be obtained by excavator operating from the surface. It is envisaged that the samples will be representative of the conditions of the soils at the limits of excavations after removal of hydrocarbon impacted material under the provisions in the main text of this document.

Measures to minimise cross contamination of soils destined for analyses are enacted in accordance with RSK's technical procedures, but as a minimum include cleaning of the engineer's sampling tools between sampling events. Samples obtained from the excavator bucket are obtained from material within that excavated (i.e., is not obtained from the outside of the material, such that it should not (as far as is reasonably practicable) include material which may have contacted the bucket itself.

Sampling frequency for different purposes is based on that set out in table 1. It should be noted that sampling will be targeted such that the most apparently impacted soils will be tested, and that there may be limitations on sampling due to safety, engineering constraints, water ingress and access. The sampling frequency set out below is guidance as to the typical minimum quantity of samples, but site specific circumstances will dictate the actual numbers of samples obtained at a specific site.

Table 1

Task/Location	Nominal frequency of sampling at the limits of excavations
General Excavation	One per 25 m^2 of excavation wall and base area (1 per face and 1 per base minimum)
Above ground Storage Tank Bunded Area	Two per tank & two per bund, or one per 25 m^2, whichever is greater
Underground Storage Tank Pit Floor	Two per tank, or one per 25 m^2, whichever is greater
Underground Storage Tank Pit Walls	One per pit wall, or one per 25 m^2, whichever is greater
Dispenser/Pump Area	One per dispenser/pump island (for natural soil; two where there is fill and natural soil)
Underground Fuel Pipeline	One per 7 metres of pipeline
Aboveground Fuel Pipeline	One per 15 metres of line
Waste Oil Underground Storage Tank	Two per tank, or one per 25 m^2, whichever is greater
Used Battery Storage Area	One per 25 m^2
Waste Disposal Area	One per 25 m^2
Interceptor and In-ground Hoist Pit	One per pit wall and one per pit floor, or one per 25 m^2, whichever is greater

APPENDIX C PLANNING PERMISSION STATEMENT

South Tyneside Council

NOTICE OF GRANT OF PLANNING PERMISSION

Town and Country Planning Act 1990
Town and Country Planning (Development Management Procedure) (England) Order 2015

Contact Name and Address:
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Application No: ST/0662/24/FUL
Date of Issue: 03/03/2025

In pursuance of their powers under the above mentioned Acts, South Tyneside Council as Local Planning Authority hereby **GRANT** planning permission for the following:

Proposal: De-Commissioning and Removal of Old Fuel Tank and Installation of New Underground Fuel Tanks and Associated Works
Location: White Mare Pool Filling Station, Leam Lane, West Boldon, NE10 8YB

SUBJECT TO THE FOLLOWING CONDITION(S) AND REASON(S):

1 The development to which this permission relates must be commenced not later than 3 years from the date of this permission.

As required by Section 91 of the Town and Country Planning Act 1990 and to ensure that the development is carried out within a reasonable time.

2 The development shall be carried out in accordance with the approved plan(s) as detailed below

Proposed Site Layout Plan Drg. No. 10019383-PLNG03 A received 20/02/2025
Proposed Site Elevations Plan Drg. No. 10019383-04 A received 20/02/2025
Schematic Drainage Plan Drg. No. 10019383-06 received 19/12/2024

Any minor material changes to the approved plans will require a formal planning application under S73 of the Town and Country Planning Act 1990 to vary this condition and substitute alternative plans.

In order to provide a procedure to seek approval of proposed minor material change which is not substantially different from that which has been approved.

3 The underground tanks hereby approved shall not be installed until a methodology for their installation has been submitted to and approved in writing by the Local Planning Authority (in consultation with the Environment Agency). The methodology shall include the full structural details of the installation, including details of excavation, the tanks to be installed, the tank surround, and the associated pipework and monitoring system.

The scheme shall be fully implemented and subsequently maintained, in accordance with the approved details.

To ensure that the underground storage tanks do not harm the water environment in line with Policy DM1 (M) of the South Tyneside Local Development Framework and paragraph 180 of the National Planning Policy Framework and Position Statement D1 - General Principles of pollutant storage and transmission of the 'The Environment Agency's approach to groundwater protection'.

4 The installation of the underground tanks shall not commence until an investigation and risk assessment is completed in accordance with a scheme to assess the nature and extent of any contamination on the site, whether or not it originates on the site. The contents of the scheme are subject to the approval in writing of the Local Planning Authority. The investigation and risk assessment must be undertaken by competent persons and a written report of the findings must be produced. The written report is subject to the approval in writing of the Local Planning Authority. The report of the findings must include (i) a survey of the extent, scale and nature of contamination, (ii) an assessment of the potential risks to human health, property (existing or proposed) and (iii) an appraisal of remedial options, and proposal of the preferred option(s). This must be conducted in accordance with DEFRA and the Environment Agency's 'Land Contamination: Risk Management'.

To ensure that risks from contamination are minimised in accordance with South Tyneside Local Development Framework Policies EA5 and DM1.

5 Unless otherwise agreed in writing by the Local Planning Authority, installation of the underground tanks shall not commence until a detailed Remediation Strategy for the proposed remedial works is submitted to and approved by the Local Planning Authority prior to commencing remedial works. The scheme must include all works to be undertaken, proposed remediation objectives and remediation criteria, timetable of works and site management procedures. The scheme must ensure that the site will not qualify as contaminated land under Part 2A of the Environmental Protection Act 1990 in relation to the intended use of the land after remediation. Where remediation of gas has been identified as necessary by the site investigation a gas verification plan shall be submitted for the proposed gas protection measures.

To ensure that risks from contamination are minimised in accordance with South Tyneside Local Development Framework Policies EA5 and DM1.

6 Following completion of measures identified in the approved remediation strategy, a verification report that demonstrates the effectiveness of the remediation carried out must be produced, and is subject to the approval in writing of the Local Planning Authority prior to the site being occupied.

To ensure that risks from contamination are minimised in accordance with South Tyneside Local Development Framework Policies EA5 and DM1.

7 In the event that contamination is found at any time when carrying out the approved development that was not previously identified, it must be reported in writing immediately to the Local Planning Authority alongside details identifying how the unexpected contamination will be dealt with. Following completion of measures identified in the approved details, a Verification Report that demonstrates the effectiveness of the remediation carried out must be produced and is subject to the approval in writing of the Local Planning Authority prior to the development to which it relates being brought into use.

To ensure that risks from contamination are minimised in accordance with South Tyneside Local Development Framework Policies EA5 and DM1.

NOTES TO APPLICANT:

In accordance with Article 35(2) of the Town and Country Planning (Development Management Procedure) (England) Order 2015, the Local Planning Authority has, without prejudice to a fair and objective assessment of the proposals, issues raised and representations received, sought to work with the applicant in a positive and proactive manner with the objective of delivering high quality sustainable development to improve the economic, social and environmental conditions of the area in accordance with the NPPF (National Planning Policy Framework).

1 Approval of a Biodiversity Gain Plan NOT REQUIRED before development commences

The effect of paragraph 13 of Schedule 7A to the Town and Country Planning Act 1990 is that planning permission granted for the development of land in England is deemed to have been granted subject to the condition "(the biodiversity gain condition") that development may not begin unless:

(a) a Biodiversity Gain Plan has been submitted to the planning authority, and
(b) the planning authority has approved the plan.

However, based on the information available, this permission is considered to be one which will not require the approval of a biodiversity gain plan before development is begun because one or more of the statutory exemptions or transitional arrangements are considered to apply - please refer to Biodiversity net gain: exempt developments - GOV.UK (www.gov.uk).

2 Petrol filling station/fuel distribution in secondary aquifer A-advice to applicant Good practice should be followed in the location, design, construction and maintenance of petrol stations and other fuel dispensing facilities. Due regard should be given to 'The Environment Agency's approach to groundwater protection' document, in particular the position statements and guidance in the section on the storage of pollutants (chapter D).

You should also refer to the following pollution prevention and mitigation guidance including:

• Guidance on Environmental Management at Petrol Filling Stations – Energy Institute
• Design, construction, maintenance and decommissioning of filling stations (also known as the Blue Book (APEA/EI) – Energy Institute – 2011
• Groundwater Protection Code – Petrol stations and other fuel dispensing facilities involving underground storage tanks – Defra Code of Practice
• CIRIA C736: Design of Containment Systems for the Prevention of Water Pollution

The Blue Book provides detailed information on the decommissioning (and investigation) of redundant tanks, risk assessment, the design and construction criteria and maintenance procedures which we expect to be implemented.

Please note that our comments are only in relation to environmental issues. Others may need to be consulted with respect to Health and Safety or amenity issues.

Further guidance can be found on the water management pages of gov.uk.

3 The proposed development lies within a coal mining area which may contain unrecorded coal mining related hazards. If any coal mining feature is encountered during development, this should be reported immediately to the Mining Remediation Authority on 0345 762 6846 or if a hazard is encountered on site call the emergency line 0800 288 4242.

Further information is also available on the Mining Remediation Authority website at: Mining Remediation Authority - GOV.UK

A Inch

Andrew Inch
Senior Manager Planning

Your attention is drawn to the attached schedule of notes which form part of this notice

NOTES

1 This certificate is issued under the Town and Country Planning Acts, Regulations and Orders and does not constitute a permission, approval or consent by South Tyneside Council for any other purpose whatsoever. Applications must therefore be made to the appropriate Departments of the Council for any other permission, approval or consent (including Building Regulations approval or approval of South Tyneside Council as ground landlord where appropriate) which may be necessary in connection with the proposed development or anything incidental thereto, or the use to be made of the premises which form the subject of such development.

2 You may also require permissions, approvals or consents under other legislation, or from bodies other than South Tyneside Council. This could include works affecting a public sewer, gas main, or electricity line, works within the adopted highway, works affecting a public right of way, property covenants, legislation relating to disabled persons, land drainage consent, waste management consent, scheduled monument consent or works affecting protected habitats or species.

3. Any non-material change to the approved plan(s) that form part of this permission would require the submission of an application for a non-material change under section 96A of the Town and Country Planning Act 1990. Whether changes to a proposed development are considered non-material is a matter for Planning Authority discretion.

4 The approved development should be implemented in strict compliance with all of the planning conditions, and in particular any which require details to be approved prior to the commencement of the development. Failure to do so may result in any commencement of development being unauthorised, which could be liable to enforcement action.

5 If you wish to change, or not comply with, any of the planning conditions attached to the permission, then you will need to submit a new application for planning permission under section 73 of the Town and Country Planning Act 1990. This does not affect your statutory rights of appeal against any of the planning conditions. This includes if you wish to not comply with a condition attached to a permission which details the approved plan(s), so as to make a minor material change to the approved plan(s). A minor material change is defined as one whose scale and nature results in a development that is not substantially different from that which has been approved.

6 Your attention is drawn to your responsibilities under the Chronically Sick and Disabled Persons Act 1970 and the Equalities Act 2010 relating to disabled persons, to ensure that adequate attention has been paid to their needs. If the proposed development involves new or existing buildings to which the public are to be admitted, or offices, shops, railway premises, factories or educational buildings, provision should be made for the means of access, parking and sanitary conveniences to meet the needs of disabled people. In addition, appropriate signposting of the facilities should be provided. In carrying out these statutory obligations your attention is drawn to the "Code of Practice for Access for the Disabled to Buildings" (BS5810:1979). You are advised to seek professional advice to ensure that you meet your legal obligations under the Equalities Act 2010, especially with regard to Part III thereof.

APPEALS TO THE SECRETARY OF STATE

7 **Only the applicant possesses the right of appeal**

If you are aggrieved by the decision of your local planning authority to refuse permission for the proposed development or to grant it subject to conditions, then you can appeal to the Secretary of State under section 78 of the Town and Country Planning Act 1990.

If you want to appeal against your local planning authority's decision then you must do so within 6 months of the date of this notice unless:

- If this is a decision on a planning application relating to the same or substantially the same land and development as is already the subject of an enforcement notice [reference no. if applicable], if you want to appeal against your local planning authority's decision on your application, then you must do so within 28 days of the date of this notice; or

- If an enforcement notice is served relating to the same or substantially the same land and development as in your application and if you want to appeal against your local planning authority's decision on your application, then you must do so within 28 days of the date of service of the enforcement notice, or within 6 months of the date of this notice, whichever period expires earlier.

Appeals must be made using a form which you can get from the Secretary of State at Temple Quay House, 2 The Square, Temple Quay, Bristol BS1 6PN (Tel: 0303 444 5000) or online at https://www.gov.uk/appeal-planning-decision

The Secretary of State can allow a longer period for giving notice of an appeal but will not normally be prepared to use this power unless there are special circumstances which excuse the delay in giving notice of appeal.

The Secretary of State need not consider an appeal if it seems to the Secretary of State that the local planning authority could not have granted planning permission for the proposed development or could not have granted it without the conditions they imposed, having regard to the statutory requirements, to the provisions of any development order and to any directions given under a development order.

If you intend to submit an appeal that you would like examined by inquiry then you must notify the Local Planning Authority and Planning Inspectorate (inquiryappeals@planninginspectorate.gov.uk) at least 10 days before submitting the appeal. Further details are on GOV.UK.

PURCHASE NOTICES

8 If permission to develop land is granted subject to conditions, whether by South Tyneside Council as local planning authority or by the Secretary of State for Communities and Local Government, the owner may claim that he can neither put the land to a reasonably beneficial use in its existing state nor render the land capable of reasonably beneficial use by the carrying out of any development which has been or would be permitted. In these circumstances the owner may serve a purchase notice on the Council, requiring the Council to purchase his interest in the land in accordance with the provisions of Part VI of the Town and Country Planning Act 1990.