



EAST WICK AND
SWEETWATER

REMEDICATION STATEMENT

BRIDGES H14 & H16 RESERVED MATTERS
OCTOBER 2016

Table of contents

Chapter	Pages
1. Introduction	1
1.1. General	1
1.2. Objectives and Scope	1
1.3. Report Limitations	2
2. Site Setting and Background	3
2.1. Site Location and Description	3
2.2. Proposed Legacy Development	3
2.3. Relevant Documentation	3
2.4. Site History	3
2.5. Geology and Hydrogeology	3
2.6. Remediation Statement Overview	4
3. Summary of Previous Works	6
3.1. Ground Investigations	6
3.2. Remediation History and Status	6
3.3. Radiological Materials	8
3.4. On-Going Groundwater Monitoring	9
3.5. Retained Areas	9
3.6. Residual Actions	9
4. Legacy Communities Scheme Global Conceptual Site Model	10
4.1. Assessment of Pollutant Linkages	12
5. Protection and Maintenance of Existing Remediation	13
5.1. Introduction	13
5.2. Typical Marker Layer and Human Health Separation Layer Requirements	15
5.3. Validation Sampling Strategy	15
5.4. Groundwater and Surface Water Management	16
5.5. Unexpected Contamination	16
5.6. Typical Quality of Imported Fill Requirements	16
5.7. Typical Validation Reporting Requirements	17
Drawings	20
Appendices	21
Appendix A. Remediation Planning Conditions	22
A.1. LCS Planning Conditions (Remediation)	23
A.2. GCSM Validation Checklist	27
Appendix B. PDZ4 Relevant Approved Documentation	28
B.1. Site Wide Documents	29
B.2. PDZ4 Site-Specific Documents	30
B.3. PDZ4 Remediation Method Statements	32
B.4. PDZ4 Validation Reports	35
B.5. PDZ4 Transformation Phase Validation Reports	42
Appendix C. Gas Protection Measures	44
C.1. PDZ4	45
Appendix D. Works for Incoming Projects and Restrictions on Future Works	46
Appendix E. Generic Assessment Criteria and Generic Water Assessment Criteria Summary Tables	50

Tables

Table 2.1	Summary of Previous Land Uses in PDZ4	3
Table 2.2	Summary of the Sweetwater Development (PDZ4) Geology	3
Table 3.1	Summary of Numbers of Ground Investigations in PDZ4	6
Table 4.1	GCSM: Post-Remediation Works Undertaken under the 2007 Permissions	10
Table 5.1	General Controls	13
Table 5.2	Import of Fill Submission Requirements	17

Drawings

Drawing Title	Drawing Number
Planning Delivery Zones and Construction Zones Boundaries	Figure 1
Site Investigation Locations in Planning Delivery Zone 4 (PDZ4)	2DD-ENL-CK-ZZZ-OLP-SP1-E-0355
Extent of Marker Layer within Planning Delivery Zone 4	0241-ENW-PWD-C-DGA-0406*
Extent and Thickness of Human Health Separation Layer (PDZ4)	0241-ENW-PWD-C-DGA-0407*
PDZ4 Retained Areas	0241-ENW-PWD-C-DGA-0409*
FoP exceedances requiring action in legacy transformation	0241-ENW-PWD-C-DGA-0410*
CZ4 – Location of Exempt Radioactive Waste Disposal Cell	2DD-ENL-CK-04Z-OLP-SP1-E-0513
Enabling Works as Built for L03B Exempt Fill Deposition Area Exempt Fill Level Survey	2DD-MOR-CK-04Z-OLP-SP1-E-0007
Enabling Works as Built for L03B Exempt Fill Deposition Area Cross Section B-B	2DD-MOR-CK-04Z-OLP-SP1-E-0010

* taken from Stage 2 CVR (Ref. 8). Drawings to be updated upon approval of Stage 4 CVR.

Glossary of Terms

Term	Definition
CFA	Continuous Flight Auger
Cofely	Cofely CDF Suez
CSM	Conceptual Site Model
CVR	Consolidated Validation Report
CZ	Construction Zone
DHC	District Heating and Cooling
DQRA	detailed quantitative risk assessment
FoP	Follow-on Project
FFL	final finished level
GCSM	Global Conceptual Site Model
GAC	generic assessment criteria
GQRA	generic quantitative risk assessment
GRS	Global Remediation Strategy
GWAC	generic water assessment criteria
HHSL	Human Health Separation Layer
IIMS	Intrusive Investigation Method Statement
LCS	Legacy Communities Scheme
LLDC	London Legacy Development Corporation
LOCOG	London Organising Committee of the Olympic and Paralympic Games
LTP	Legacy Transformation Phase
m AOD	metres above Ordnance Datum
MMP	Material Management Plan
ODA	Olympic Delivery Authority
PAH	polycyclic aromatic hydrocarbons
PID	Photo Ionisation Detector
PDT	Planning Decisions Team (part of ODA, the former Local Planning Authority)
PDZ	Planning Delivery Zone
PPDT	Planning Policy and Decisions Team (the current Local Planning Authority, formerly PDT)
PtP	Permit to Proceed
QEOP	Queen Elizabeth Olympic Park
QoF	Quality of Imported Fill
RARAR	Retained Areas Risk Assessment Report
RMS	Remediation Method Statement
RPMS	Remediation Protection Method Statement
RTD	River Terrace Deposits
SSAC	site specific assessment criteria
SSRS	Site Specific Remediation Strategy
TPH	total petroleum hydrocarbons
WRAP	Waste and Resources Action Programme
WSA	White Space Area

1. Introduction

1.1. General

This Remediation Statement has been prepared on behalf of East Wick and Sweetwater Projects Ltd to support the Sweetwater Legacy development. The Sweetwater Legacy development area is part of Planning Delivery Zone (PDZ) 4, within the Queen Elizabeth Olympic Park (QEOP), Stratford, London.

A PDZ is an area of the QEOP for which planning permission had been granted with respect to the London 2012 Olympic and Paralympic Games ('the Games'). The boundaries of these areas generally follow the main geographical features at the QEOP. A Construction Zone (CZ) is an area of the QEOP for which ground investigation, risk assessment, remediation strategies and subsequent implementation have been completed as part of the Enabling Works phase of the development in the lead up to the Games. PDZ and CZ boundaries are provided in Figure 1.

Generally speaking, the timeline for the works undertaken at the QEOP can be divided into five phases:

- Enabling Works – these works were carried out under the Olympic Delivery Authority (ODA) and generally comprised ground and groundwater remediation works as identified following the relevant land contamination risk assessments, as well as cut and fill for re-profiling the site and constructing the development platform in preparation for the construction of the Games venues and infrastructure;
- Follow-on Projects – these works were carried out under the ODA and generally comprised construction of the Games venues, infrastructure and landscape and public realm;
- London Organising Committee of the Olympic and Paralympic Games (LOCOG) – LOCOG works related to temporary venues, infrastructure and over-lay to facilitate the running of the Games;
- Post-Games/Legacy Transformation Phase (LTP) – these works were carried out under the London Legacy Development Corporation (LLDC) and generally comprised transformation works to the existing infrastructure and landscape areas in preparation for the long term legacy built environment; and
- Legacy Communities Scheme (LCS) – currently being carried out on behalf of the LLDC and generally comprises the built environment and associated infrastructure for the long term QEOP legacy works.

The Enabling Works, Follow-on Projects and Post-Games Transformation were undertaken under the Site Preparation and Olympic, Paralympic and Legacy Transformation planning applications (and any related 'slot-in' planning applications) which are referred to herein as the '2007 Permissions' (Refs. 1 and 2).

PDZ4 has previously been remediated as part of the ODA development works, which was based on the land uses, both Olympic Games and Legacy, proposed for the site under the 2007 Permissions. Details of the remedial activities undertaken to date are summarised in Section 3 of this report.

The Sweetwater Legacy development follows the LTP as the next stage of regeneration of these parts of the QEOP, and includes the development of the areas within PDZ4 into residential housing, education facilities, a health centre and employment space, associated infrastructure, landscaping and bridges.

Significant additional remediation works are not expected to be required to facilitate the Sweetwater Legacy development. However, further assessment is required, in particular where the scheme either introduces new pollutant linkages to the site (including through the introduction of more sensitive end uses) or where changes are made to the existing remediation formation levels such that works extend beneath the previously validated sub-grade completed for the Olympic scheme under the 2007 Permissions.

Where 'new pollutant linkages' are referred to hereafter in this document, the term implicitly includes 'more sensitive end uses' (i.e. even if a pollutant linkage has previously been identified, if a change to a more sensitive end use makes the receptor in that linkage more sensitive, this effectively constitutes the introduction of a new pollutant linkage that will trigger the appropriate actions described herein).

1.2. Objectives and Scope

The objectives of this Remediation Statement are to provide relevant information on the previous remediation works undertaken within the footprint of the proposed Sweetwater Legacy development, and to confirm the

remediation planning requirements associated with the LCS Planning Conditions (Ref. 11/90621/ OUTODA, Ref. 3). In particular, this document is required to satisfy the specific requirements of the LCS planning condition relating to Remediation Statements, as clarified below. Details of the wider remediation related planning conditions required to be discharged by East Wick and Sweetwater Projects Ltd during the scheme are provided in Appendix A:

- **LCS0.95 Remediation Statement.** Each application for approval of Reserved Matters shall be accompanied by a remediation statement and no Development shall be commenced pursuant to the Reserved Matters approval until the remediation statement has been approved by the Local Planning Authority. The remediation statement shall relate to the whole of the Planning Delivery Zone in which the site of the Reserved Matters is located (or such other area as may be agreed with the Local Planning Authority in writing). The remediation statement shall include as a minimum the following:
 - consideration of the consolidated validation reports for the Olympic Consents within the relevant Planning Delivery Zone (or such other area as may have agreed with the Local Planning Authority);
 - consideration and confirmation of the measures and controls needed to maintain the integrity of the remediation works undertaken under the Olympic Consents within the relevant Planning Delivery Zone (or such other area as may have been agreed with the Local Planning Authority);
 - an assessment of the Global Conceptual Site Model against the land uses proposed in the Reserved Matters application based on the validation checklist set out in Annexure 5 which should be read in conjunction with the approved global remediation strategy; and
 - the use of a technical methodology and analytical model which are in accordance with the statutory requirements, UK guidance and best practice current at the time of the Reserved Matters application.

This reports provides the Remediation Statement for the Sweetwater development area including the two bridges spanning the River Lee Navigation (H14 and H16).

1.3. Report Limitations

This Remediation Statement is based upon the current understanding of the site status, the ground conditions at the site following remediation completed under the 2007 Permissions and the proposed Legacy development plans. It is expected that this work has been completed to prevailing statutory legislation, guidance and best practice. Should conditions at the site be found to be different during any future intrusive ground investigations or earthworks, the assessments made within this document may be liable to change. Assessment, investigation, and/or validation sampling may be necessary to validate groundworks or any other works that materially alter the existing remediation profile on site. Any remedial activities undertaken after the date of this report should be designed and completed in accordance with the most contemporary statutory legislation and guidance current at the time of development.

This report draws upon previous data from both intrusive investigation and validation testing, both of which rely upon the testing of a relatively small proportion of the sub-surface conditions at the site. Inferences drawn from these assessments are subject to the limitations of any such study.

2. Site Setting and Background

2.1. Site Location and Description

The Sweetwater Legacy development is located within PDZ4, which is in the western part of the QEOP. The site is located to the south of the proposed East Wick development (PDZ5), which forms a separate development package. The site is located approximately 1.2 km to the west of Stratford town centre in East London and is bounded on the west by the River Lea Navigation.

The development will also include two bridges in the west of PDZ4.

A summary of the site background is presented below. For a more complete background for the wider site and the wider environmental context please refer to the Enabling Works (Stage 1) CVR for PDZ4 (Ref. 4).

2.2. Proposed Legacy Development

The current proposed masterplan for the Sweetwater development includes up to 67,700 m² residential space (approximately 650 homes), up to 1,000 m² of employment (use class B1a) space, up to 2,500 m² of retail (A1-A5) space and up to 8,400 m² of community (use class D1) space including a new primary school, two nurseries and a health centre.

2.3. Relevant Documentation

A list and summary of relevant documentation for PDZ4 and relevant planning references has been included in Appendix B. This includes references to ground investigations, remediation strategies and validation reports.

2.4. Site History

The wider QEOP has an extensive industrial legacy of potentially contaminative land use ranging from, but not limited to; uncontrolled landfills, chemical works, bus depots/garages, glue factories and match works. A detailed site history is outlined in the original Site Specific Remediation Strategies (SSRS, Ref. 5) and is summarised below in Table 2.1.

Table 2.1 Summary of Previous Land Uses in PDZ4

Planning Zone	Historical Land Use
PDZ4	Clarnico confectionary factory, a number of Engineering works, dairy yard, timber yard, bone works, a reservoir with associated channels which was subsequently infilled and industrial units.

2.5. Geology and Hydrogeology

In summary, the ground conditions encountered during site investigations carried out prior to and during the Enabling Works comprised Made Ground overlying Alluvium, which in turn overlay the River Terrace Deposits (RTD). The solid strata comprised the Lambeth Group overlying the Thanet Sand Formation, with White Chalk present at depth. A more detailed description of each geological stratum is presented in Table 2.2 below:

Table 2.2 Summary of the Sweetwater Development (PDZ4) Geology

Stratum	Generalised Description	Approximate Thickness Range (m)	Aquifer Classification
Made Ground	Dark brown silt, clay and sands with brick, concrete, clinker and flint gravels	3.0 – 6.5	Not Classified
Alluvium	Dark grey to light brown, very soft to firm clay with sand and silt lenses and some flint gravel.	0.3 – 6	Non-Productive

Stratum	Generalised Description	Approximate Thickness Range (m)	Aquifer Classification
River Terrace Deposits	Medium dense brown to dark grey sand and sandy gravel.	0.5 – 6	Secondary Aquifer
Upper Lambeth Group (Woolwich and Reading Formations)	The formation comprises of shelly, laminated and mottled units. These formations comprise of laminated beds of very stiff fissures light grey silt and clay, with sparse subangular gravel and fine to medium off-white shell fragments.	2.6 – 5.9	Non-Productive
Lambeth Group (Upnor Formation)	Various interbedded lithologies comprising stiff mottled sandy laminated clay, very dense silty sand, flint gravel, rare shell fragments, occasional pockets of silt and rare amorphous fibrous organic lenses.	11 – 17	Secondary Aquifer
Thanet Sand	Very dense speckled silty sand with occasional flint gravel.	13.5	Secondary Aquifer
Upper Chalk	Structureless white sandy silt with gravel of low density chalk and flint.	Base not proven	Principal Aquifer

It should be noted that the Made Ground was subject to previous remediation works and in parts replaced with validated fill material, as detailed in Section 3.

Water encountered within the Made Ground is referred to as perched water (which was discontinuous), groundwater within the River Terrace Deposits (RTD) is referred to as shallow groundwater and groundwater within the Thanet Sand and the Upper Chalk is referred to as deeper groundwater. Groundwater in the Thanet Sand is generally in continuity with the Chalk. The shallow groundwater within the RTD was identified as flowing south eastwards beyond PDZ3 and PDZ2 towards the Waterworks River.

Discontinuous lenses of groundwater were recorded within the interbedded Lambeth Group in CZ4. The Lambeth Group is generally considered to behave as an aquitard across the QEOP, limiting downward migration to the Thanet Sands and Upper Chalk, due to the presence of clays and silts of relatively low permeability interbedded with sand lenses of greater permeability. The primary groundwater flow within the Thanet Sand and Upper Chalk is generally in a southerly direction

The nearest groundwater abstraction is recorded in PDZ3, approximately 750m to the south, within the area known as Old Ford Well. Adits associated with this well are shown to encroach onto the south part of PDZ4. This abstraction is currently licensed to Thames Water for the potable abstraction of groundwater from the White Chalk Aquifer, although it has not been in continuous use since 1953. It is Atkins' current understanding that the well is used intermittently as a compensation borehole.

2.5.1. Hydrology

The Lea Navigation/Hackney Cut is a lined canal that forms the western boundary of PDZ4. The River Lea forms the eastern boundary of PDZ4 (Ref 4). The Waterworks River and City Mill River branch from the River Lea along the north-eastern boundary of PDZ4.

2.6. Remediation Statement Overview

The QEOP is a brownfield site, which has been subject to earthworks remediation. Remedial works were undertaken in order to facilitate the London 2012 Games and the subsequent LTP/LCS development of the site, the latter as understood at the time of the works, and to discharge the relevant conditions of the 2007 Permissions.

The earthworks remedial design was established by the ODA via an initial Global Remediation Strategy (GRS, Ref. 6), which was subsequently augmented by Site Specific Remediation Strategies (SSRS) and (Ref. 5). The GRS is a high level roadmap that was further developed by CZ specific SSRS documents. Within the SSRS and SSRS Addenda, a Conceptual Site Model (CSM) was developed for each zone presenting potential

sources of contamination, pathways by which the identified contaminants could migrate and receptors (generally grouped as human health or controlled waters receptors) which could potentially be affected. Individual contaminant concentrations protective of either/both controlled waters or human health, termed Site Specific Assessment Criteria (SSAC), were derived through the SSRS risk assessment process. These remediation strategies (which were informed by site investigation works completed in accordance with the Intrusive Investigation Method Statement (IIMS, Ref. 7)) set out the background to and requirements for remediation in individual CZ's or sub-zones based on the known Legacy uses at the time.

Following on from this, the ODA issued a series of Remediation Method Statements (RMSs) that set out how the remedial design was to be implemented and subsequently validated to achieve discharge of the prevailing planning conditions.

On completion of the remediation works, validation reports for each of the construction projects were produced and submitted for approval by the ODA Planning Decisions Team (PDT), which has now been replaced by the LLDC Planning Policy and Decisions Team (PPDT). Validation reports were also summarised within PDZ-wide Consolidated Validation Reports (CVRs), which were prepared for the various stages of works. The CVRs provided a consolidated summary of works undertaken under the 2007 Permissions and reference relevant planning design documents including the above-mentioned SSRS and RMS. The initial three stages of CVRs were approved by PDT. The CVRs produced to date were prepared and issued in stages, as noted below, to provide clarity and ensure progressive regulatory approval is achieved. The CVR and associated documents referenced herein should be consulted for further detail of the remediation works undertaken.

- **Stage 1** – High level summary of the earthworks and remediation undertaken during the ODA Enabling Works to mitigate existing pollutant linkages and ensure no unacceptable risks remain to the receptors defined within the SSRS report (Ref. 5).
- **Stage 2** – Summary of the validation reports completed by the ODA Follow-on Projects (FoP) on completion of these works to verify that no unacceptable risks remain to the defined receptors and appropriate remediation measures were installed/maintained as part of these works (Ref. 8).
- **Stage 3** – Summary of the remediation related activities carried out by LOCOG immediately prior to the Games (Ref. 9). These works were typically limited to the installation of piles and hard standing.

Stage 4 CVRs have also been produced for the LTP works and these are currently subject to PPDT review and agreement. The Stage 4 CVR for PDZ4 is required to be approved prior to commencing intrusive LCS phase works in the Sweetwater Legacy development site.

3. Summary of Previous Works

3.1. Ground Investigations

A number of ground investigations have taken place across the site and a summary of the exploratory holes is presented in Table 3.1 below. The locations of the exploratory holes are shown in drawing 2DD-ENL-CK-ZZZ-OLP-SP1-E-0355.

Table 3.1 Summary of Numbers of Ground Investigations in PDZ4

Site	Made Ground	Alluvium	RTD	Lambeth Group	Thanet Sands	Chalk
Exploratory Holes in PDZ4 (Sweetwater Development)	84	2	29	20	11	4

3.2. Remediation History and Status

3.2.1. Introduction

Remediation across the site was undertaken to be protective of future users and controlled waters, as defined under the 2007 Permissions. With respect to the protection of future users, the remediation was designed to support a legacy end use as defined at the time of remediation. For areas designated as legacy residential, this comprised a notional residential without garden end use. Remediation for the protection of selected surface water features across parts of the site and the underlying Chalk aquifer was undertaken. Remediation works were undertaken and validated in accordance with the requirements of the SSRS documents for PDZ4 and pollutant linkages mitigated in relation to human health and controlled waters. A summary of the relevant documentation associated with the site is presented in Appendix B.

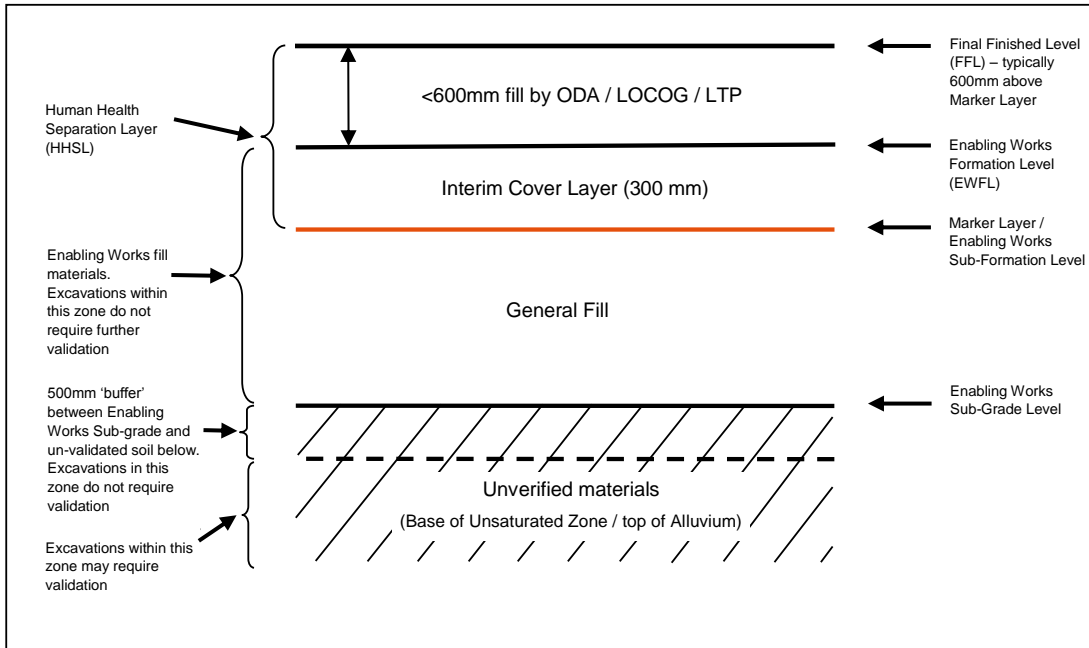
The general remediation strategy within PDZ4 included excavation of hotspots, treatment of groundwater, and placement of a Human Health Separation Layer (HHSL) which complied with the above-Marker Layer SSAC. The HHSL was underlain, in most cases, by a brightly coloured geotextile Marker Layer that served as a visual indication of the boundary between underlying General Fill and/or *in situ* soils and the HHSL.

Several key Earthworks terms have been used in this report, as defined below and summarised in Figure 3.1 below:

- **Human Health Separation Layer (HHSL)** – PPDT approved thickness of surface materials placed above the General Fill/*in-situ* undisturbed material. The HHSL provides the main barrier to prevent direct contact with the underlying materials in terms of potential risks to human health. This HHSL typically comprises topsoil, subsoil and/or hardstanding and the overall thickness varies based on the defined end use of an area. Unless otherwise agreed with PPDT the thickness of the HHSL is not less than 600 mm. In addition, PPDT subsequently agreed that in areas of hardcover, the HHSL thickness could be reduced should there be justification to do so and with explicit PPDT agreement prior to carrying out the works.
- **Marker Layer** – a brightly coloured (typically orange) geogrid and/or geotextile placed immediately below the HHSL (including hard cover in most cases) to mark the base of the separation layer (unless otherwise stated).
- **Enabling Works Formation Level (EWFL)** – the platform that the Enabling Works was completed to, which was typically 500mm below the Final Finished Level and included an interim 300 mm cover layer.
- **Final Finished Level (FFL)** – the final finished surface which human health receptors are exposed to. In general this comprised either soft cover surfaces (landscaping etc.) or hard cover (including buildings). It forms the top of the HHSL.
- **General Fill** – chemically and geotechnically acceptable backfill materials placed by the ODA teams (Enabling Works and FoPs) below the HHSL and Marker Layer. The majority of these materials were placed during the Enabling Works and comprised predominantly treated Made Ground soils demonstrated to be compliant with the prevailing SSRS/RMS requirements.

- **Chemically compliant import** – material, meeting the chemical and geotechnical criteria, imported and stockpiled in designated clean areas of the site. These materials were subject to the Quality of Imported Fill (QoIF) Framework Letter in order to discharge Condition OD.0.39/LTD.1.14.
- **Sub-formation** – the level at which the Marker Layer was installed (or where it would have been installed if it was agreed with PPDT that it can be omitted).
- **Sub-grade** – the lowest level of ODA/LLDC excavations in cut areas. This is always underlain by undisturbed materials and may be coincident with sub-formation in areas of excavation.

Figure 3.1 Summary of Earthwork Terms



3.2.2. Sweetwater Development (CZ4)

As a part of the previous earthworks and remediation design in this area there was a requirement for a minimum of 600 mm HHSL to be placed unless specifically agreed with PDT that an alternative such as hard standing could be utilised.

The HHSL forms the upper section of the cover system across PDZ4 and is compliant with above-Marker Layer SSAC, based on the known Legacy use and SSRS assumptions. Whilst the minimum thickness of the HHSL is 600 mm, this varies in accordance with the ground build up and agreed variations (Ref. 4). The thickness of HHSL placed within PDZ4 varies between 150 mm to a maximum of 800 mm in the soft landscaping areas. Areas within PDZ4 where the thickness of HHSL is less than the default thickness (600 mm) are shown on Figure 0241-ENW-PWD-C-DGA-0407 and comprise:

- White Space Area (WSA) 24: This area is located in the western section of PDZ4, along the South Loop road. It typically comprised placement of 150 mm topsoil underlain by existing ground. The southern section, however, comprised placement of 150 mm limestone gravel; and
- WSA 52: This area is located in the north western section of PDZ4 and comprises approximately 150 mm topsoil and 250 mm Type 1 limestone.
- Permanent hard landscape area (main concourse): Within this area between 165 and 225 mm Type 1 sub-base and 115 mm tarmac has been placed.

Any development works undertaken in these areas require a full thickness of HHSL unless otherwise agreed with the PPDT.

The default position across the QEOP is that the Marker Layer is located a minimum 600 mm below the Final Finished Level (FFL). However, variations in the placement of the Marker Layer have been agreed for a number of projects within PDZ4. The extent of the Marker Layer across PDZ4 is shown on Drawing 0241-PWD-C-

DGA-0406. Variations in the placement of the Marker Layer have been agreed for a number of projects within PDZ4, as shown on Figure 0241-ENW-PWD-C-DGA-0406 and listed below:

- Nuttall SBH areas: Marker Layer was omitted in a section of the PDZ4 South Loop road following completion of construction works;
- WSA 24: Marker Layer was not placed in WSA 24 located in the western section of PDZ4;
- Bridge F06: Marker Layer was omitted within the 'bowl' of the bridge to be placed during Legacy transformation phase, however a Marker Layer will be placed in this area by Skanska as part of the Transformation Phase of works; and
- Primary sub-station: Within this area, Marker layer was omitted below hardstanding within the area surrounding the site.

General backfill was placed beneath the HHSL and Marker Layer during deeper excavations in PDZ4 including as part of drainage installation, foundation works for bridge abutments and structures, and to raise site elevations in accordance with the Legacy design e.g. beneath permanent hard standing.

Specific details of ground gas protection measures implemented within PDZ4 can be found in Appendix D.

In addition, one of the key SSRS assumptions for PDZ4 was that the cohesive Alluvium underlying the Made Ground across the site provides a barrier to the migration of overlying contamination to the River Terrace Deposits aquifer. Where works compromised or breached the Alluvium the remedial strategy called for consideration of replacement of cohesive fill or a suitable substitute to the Alluvium, for example, an impermeable membrane or other appropriate seal.

The LOCOG Scope of Works included the completion of the Final Build Layer, where required (and thus the completion of the HHSL), the appropriate reinstatement of any excavations on site using chemically and geotechnically compliant materials such that the integrity of the existing remediation works is maintained.

The Transformation Phase of works transformed the QEOP from Games to Legacy mode, by removing any temporary features utilised in Games mode, carrying out any residual remedial works and completing works to FFL. As per previous phases of works, the Transformation Phase included appropriate reinstatement of excavations on site using chemically and geotechnically compliant materials such that the integrity of the existing remediation works was maintained.

3.3. Radiological Materials

The SSRS for PDZ4 did not give evidence to suggest the presence of radiological materials in PDZ4; this was confirmed through field observations during the site investigations and Enabling Works. The risk from radiological materials in soils at the site is considered low.

However, during the Enabling Works, limited areas of radioactively contaminated soils were discovered in CZ3a, CZ6a and CZ6d. All the radioactive contamination discovered contained naturally occurring radioactive material (NORM) but at concentrations enhanced above natural levels (Ref. 1010). A Remediation Change Note was produced for CZ3a (Ref. 11) and CZ6a and CZ6d (Refs. 12 and 13).

Radiological NORM material, classified as being exempt has been deposited within the bridge abutments in PDZ4. This position was agreed with the PDT subject to the implementation of future development controls. A disposal cell for the exempt radiological material waste is located in the north-eastern corner of CZ4 in the south abutment to bridge L03B (2DD-ENL-CK-04Z-OLP-SP1-E-0513). The waste cell is covered on its sides and top with an orange geotextile marker layer and capped with a chemically compliant, 300 mm Class 1A granular fill area. There is then a further orange geotextile marker layer, which is approximately 1.6 m above the former and covers all of the cell's projected area. The minimum thickness of the clean cover over the top surface of the waste cell is 2.54 m with an average of 2.73 m (Drawings 2DD-MOR-CK-04Z-OLP-SP1-E-0007 and 2DD-MOR-CK-04Z-OLP-SP1-E-0010 illustrate the cell construction). The clean cover includes a road and its bitumen top surface will restrict water infiltration. A Radiological Safety Assessment Report (Ref. 10) was undertaken which showed that the radiological exempt waste in the constructed disposal cell presented a negligible risk to roadway maintenance staff, general site workers or visitors to the QEOP in the next 1000 years. Potential exposures were determined to be much below the lower threshold for optimisation of 2×10^{-2} mSv/a and, should the disposal cell area be used for housing, the same conclusion would generally apply.

There are two precautionary restrictions imposed as a result of this deposition cell. The first relates to radon ingress mitigation measures should this discrete area ever been used for housing in the future and secondly, groundwater abstraction from the River Terrace Deposits should not be allowed within 50 m of the deposit area. With regard to any future potential excavation works in and around the radiological depository in the L03 approach embankment, it is recommended that this work is undertaken under the supervision of a Radiation Protection Advisor (RPA). The RPA would be responsible for producing method statements and risk assessments associated with the work as well as supervising the monitoring that will be undertaken as part of these works.

3.4. On-Going Groundwater Monitoring

Groundwater monitoring was undertaken in PDZ4 throughout the ODA works as detailed in the Stage 1 and 2 CVRs (Ref.4 and 8). Remaining boreholes located within the Sweetwater Legacy development were removed as part of a site-wide programme of borehole decommissioning by LLDC during the LTP works. It is not anticipated that ongoing groundwater monitoring or assessment will be undertaken as part of the Sweetwater Legacy development, although this will be discussed further in the SSRS.

3.5. Retained Areas

An assessment of Retained Areas was undertaken in the Retained Areas Risk Assessment Report (RARAR) and its subsequent addendum (Refs. 14 and 15, Drawing 0241-ENW-PWD-C-DGA-0409). The reports identified areas on the QEOP where it was not possible to undertake any intrusive investigations or earthworks during the Enabling Works and FoP phases of the development. These Retained Areas were qualitatively assessed for potential risks to human health and controlled waters arising from potential contamination, considering the nature of the retained features, adjacent contamination and the final land use.

Retained areas within the Sweetwater development (PDZ4) mostly consist of areas where remediation works were constrained by services and utilities, retained buildings and retained vegetation, with some third party boundary and batter exclusion zone features, an area of retained road and a canal lock structure.

In instances where RARAR areas do interact with the development, such as Features S1, S2, RB2, RB1, RV1, RV2, a Marker Layer and full thickness of HHSL shall be placed.

3.6. Residual Actions

Outstanding works generated from the ODA and LOCOG pre-Games scope that were subsequently transferred to LTP and Legacy development of PDZ4 are presented in Appendix D with full details provided in the Stage 3 CVR for PDZ4 (Ref. 9). The residual actions are shown on Drawing 0241-ENW-PWD-C-DGA-0410. Updated versions of these tables will be provided in the Stage 4 CVRs, once completed. The Phase-specific SSRS/RMS documents will provide further information regarding which residual actions will be addressed during the LCS works, and how these will be implemented. Further updates to these residual actions will be presented in the Validation Reports for the Sweetwater Legacy development upon completion of the works.

4. Legacy Communities Scheme Global Conceptual Site Model

The LCS current Global Conceptual Site Model (GCSM), summarised in Table 4.1, has been developed in the LCS Revised Global Remediation Strategy (Ref. 16 and 17). The GCSM is based on the remediation works undertaken, validated and approved and the land uses adopted under the 2007 Permissions and is valid unless the proposed development introduces new potential pollutant linkages, including the introduction of more sensitive end uses. If a pollutant linkage has previously been identified, a change to a more sensitive end use makes the receptor in that linkage more sensitive and will trigger the appropriate actions described herein.

Table 4.1 GCSM: Post-Remediation Works Undertaken under the 2007 Permissions

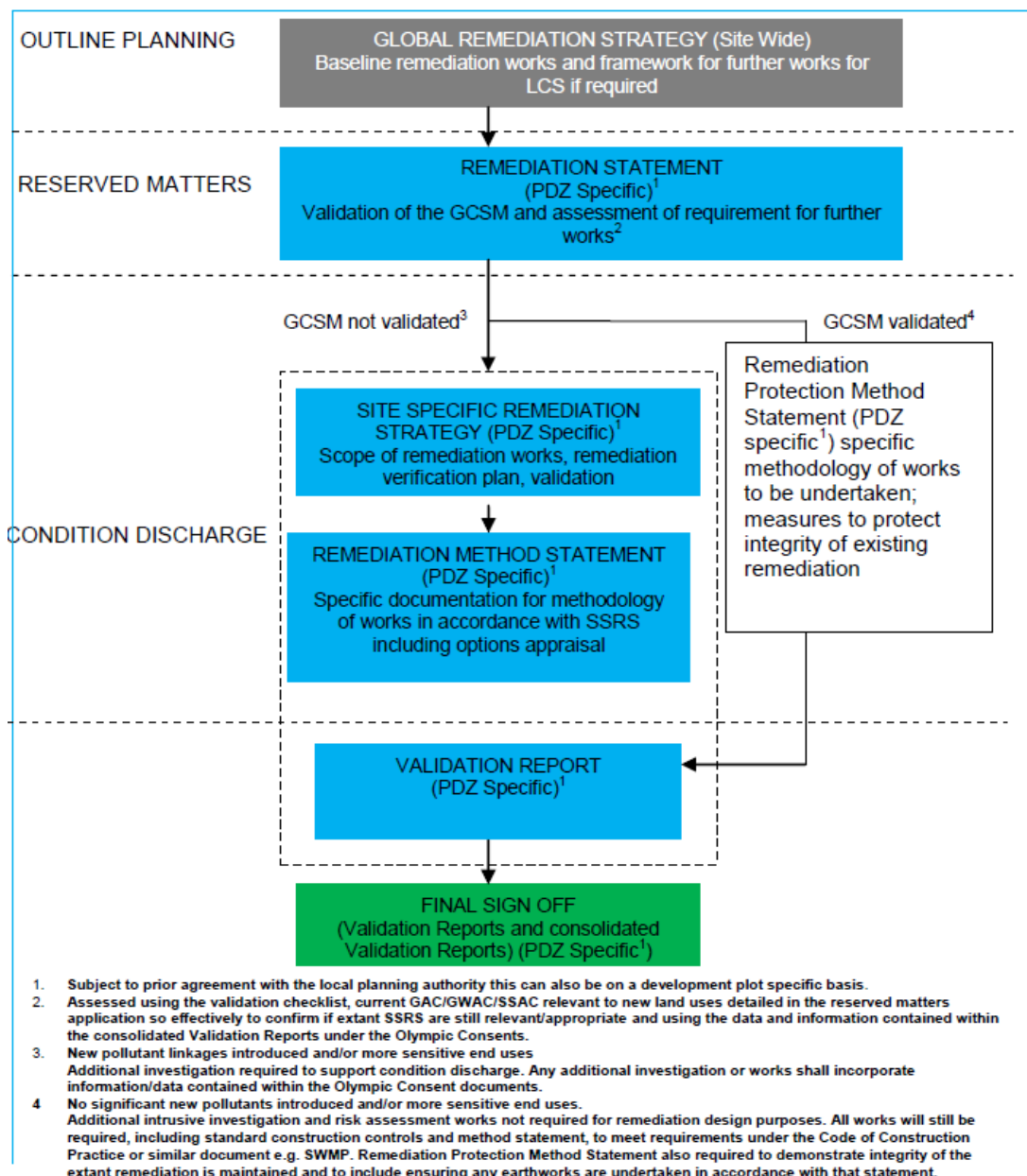
Receptor	Source	Pathway	Status	Pollutant Linkage
Human Health (Site User)	Contaminated soil – top 1 m	Dermal contact, ingestion, particular inhalation	Pathway removed through provision of separation layer/hotspot removal	No – provided full thickness of specified/approved separation layer provided as part of follow on works
	Contaminated soil/ ground gas	Volatile gas inhalation (indoor/outdoor)	Pathway removed through hotspot removal/provision of vapour membranes	No (*)
Human Health (Construction Worker)	Contaminated soil	Dermal contact, ingestion, inhalation	Pathway relevant during any groundworks below the marker layer.	No – provided relevant H& S mitigation used during ground works.
Surface water	Contaminated soil/perforated water	Vertical soil leaching	Source reduction through soil hotspot treatment	No
	RTD groundwater	Lateral migration	Source reduction through direct treatment of RTD groundwater via pump and treat. Pathway locally removed through installation of cut off wall. Modified receptor through impoundment scheme	No
Groundwater	Contaminated soil	Vertical soil leaching to perched water and vertical migration to RTD groundwater	Source reduction through soil hotspot removal	No
	RTD Groundwater	Lateral and vertical migration of RTD groundwater	Source reduction through direct treatment	No

* note that the GCSM is reproduced exactly as presented in LCS Revised Global Remediation Strategy (Ref. 17). The Developer will assess the prevailing ground gas and volatile conditions that may impact the proposed development as part of the relevant SSRS.

As per the requirements of Condition LCS0.95, an assessment of the GCSM has been undertaken against the proposed Sweetwater Legacy development using the validation checklist provided in Appendix 2 of the LCS Revised Global Remediation Strategy (Ref. 17).

This assessment demonstrates that the Sweetwater Legacy development introduces new pollutant linkages, principally via the increased sensitivity of receptors if private residential gardens are proposed in the final masterplan. In addition, a reduction in level will occur around Bridge abutments which will breach the Marker Layer installed during previous phases of works. As such, additional risk assessment and remediation design will be completed by the Developer to support the discharge of conditions LCS0.98 (SSRS) and LCS0.99 (RMS), as detailed in Figure 4.1. Reporting requirements for the LCS can be found within the PPDT LCS Remediation Discharge Guidance (Ref. 18). Radiological materials were deposited within PDZ4 during previous phases of works, if excavation in the area occurs during the Sweetwater development additional risk assessments and method statements will be required.

Figure 4.1 Proposed Planning Approval Process: Ground Contamination & Remediation



4.1. Assessment of Pollutant Linkages

The assessment methodology for the proposed development will focus on the review of existing site investigation/validation soil and groundwater chemical analytical data established during earlier phases of the site development. Existing data for use during the assessment in the phase-specific SSRS will be obtained from several phases of earlier works, including; original Enabling Works site investigation, Enabling Works validation data for sub-grade and fill materials, and validation data from both ODA Follow-on Project and LTP works.

Additional intrusive investigation for remediation purposes is not currently scheduled but will be considered as part of the SSRS. This is subject to the availability and suitability of the existing data with a particular focus on shallow soils, which will provide the cut surface at Marker Layer level in the proposed development. Data collated from existing sources will be screened against the generic screening criteria specified in the Revised GRS (Ref. 17). Where these data are considered insufficient to determine fully whether pollutant linkages remain, further intrusive investigation may be instructed. A programme of gas/vapour monitoring may also be included using targeted vapour wells to assess potential risks to future users following initial assessment as part of the SSRS. The SSRS will also include justification for the thickness, composition and chemical criteria to be adopted for the HHSL.

The SSRS will incorporate a review of the GAC in the Revised GRS and their suitability for use within the Sweetwater Legacy development. Where these criteria are considered overly sensitive for particular land uses/scenarios, additional modelling will be undertaken, with revised SSAC presented for approval in the SSRS.

The assessment will be conducted using the technical methodologies and risk assessment models in accordance with statutory requirements, UK guidance and current best practice.

It should be noted that in parts of the site, the GCSM remains valid and no additional remediation will be required. It will, however, be necessary to incorporate measures and controls during design and construction to maintain and enhance the integrity of the remediation works undertaken under the Olympic Consents. In addition, the GCSM does not cover potential impacts associated with piling works, which are also considered to be new potential pollutant linkages in relation to the GCSM and as such will be discussed in a separate Foundation Details report under planning condition LCS0.104.

5. Protection and Maintenance of Existing Remediation

5.1. Introduction

General mitigation measures will be required during the Legacy works to ensure that the integrity of the existing remediation is not compromised. The table below details the general controls required during construction activities.

Table 5.1 General Controls

Receptor	Impact	Control of Construction Activities
Construction Workers	Control of exposure to dust inhalation on removal of hard-standing areas	LCS Code of Construction Practice (Ref. 19)
	Control of direct exposure to soils during earthworks excavations	
End Users	Control of exposure to dust inhalation on removal of hard-standing areas	Permit to Proceed (PtP) Protocol (Ref. 20) Materials Management Plan(s) (MMP) (Ref. 21)
	Control of exposure to sub-grade unremediated soils	
	Control of exposure to soils due to potential reduced thickness of HHSL	
	Control of introduction of new sources by fill deposition	
Controlled Waters [#]	Control of site works with the potential to damage any active monitoring wells and/or cut off walls	LCS Code of Construction Practice (Ref. 19) PtP Protocol (Ref. 20) MMP (Ref. 21)
	Increase in surface water infiltration upon removal of hard-standing areas	
	Control of excavations breaching alluvium which could create preferential pathways to surface water	
	Control of introduction of new sources by fill deposition	

Note: [#]Controlled waters refers to groundwater / perched water or surface waters which may be deemed a 'receptor' to potential contamination on site.

5.1.1. Code of Construction Practice

The LCS Code of Construction Practice (Ref. 19) for the QEOP sets out the construction management principles to be followed during construction works on the QEOP Legacy phase. Section 8 of the LCS Code of Construction Practice primarily relates to contaminated land management and includes the following key actions which will be adhered to as part of the Sweetwater Legacy development works:

- preparation and submission of a Remediation Statement (this document) for the development parcel outlining any new pollutant linkages and setting out principles for managing ground contamination. Where new pollutant linkages are introduced then additional site investigation may be required together with preparation of a SSRS and RMS outlining the required additional remediation works and assessment criteria. Satisfactory completion of remediation works are then recorded via an applicable Remediation Validation and Protection Report;
- removal and re-deposition of materials in accordance with applicable waste management legislation;
- no materials or wastes will be brought onto the site requiring treatment on-site prior to their reuse;
- PtP Protocol shall be operated for the placement of any treated or acceptable excavated materials to include management of the existing HHSL and General Fill;
- soil movements need to be carefully controlled and an MMP in place where movements occur between PDZ's or from outside the site boundary;

- unexpected contamination (that which has not previously been identified/assessed), wherever encountered, must be recorded and an approach agreed with PPDT in terms of a method to address the contamination;
- provision of appropriate controls to be implemented during earthworks and construction activities to provide adequate pollution prevention; and
- appropriate validation sampling and testing is to be completed and reported, together with as-built records, within a Remediation Validation and Protection Report for onward submission to PPDT.

5.1.2. Permit to Proceed Protocol

In order to ensure protection of the preceding projects remediation works and to maintain the existing environmental protection measures, all works will be undertaken in accordance with the Park-wide PtP Protocol (Ref. 20). The PtP Protocol is an internal control methodology for works undertaken in previously remediated ground, to demonstrate that construction works will be carried out appropriately and to ensure that they will not adversely impact the existing remedial provisions.

Where works are proposed to be undertaken in the vicinity of a defined LLDC asset, a suitable PtP application must be prepared and submitted to the PtP team for approval/comment. Following approval, the works will continue in accordance with agreed criteria stipulated within the application. Following completion of the works, suitable details will be provided to the PtP team, including volumes of materials excavated/re-used, as-built and photographic records and material tracking data. After the PtP manager has reviewed and signed off the applications, reference to these completed PtP applications will be provided within the Validation Reports.

5.1.3. Materials Management

An MMP will be developed in accordance with the CL:AIRE Definition of Waste: Development Industry Code of Practice (Ref. 21) to maximise the reuse of materials at the site and define how materials shall be managed during development works. The MMP will consider the proposed earthworks and materials management at the design stage and provide the risk-based approach to the characterisation of arisings and control of material re-use. The criteria for any re-use of materials will be based upon the criteria presented in the Revised GRS taking into account any previously completed or proposed remediation undertaken at the site. This will include the designation of a Qualified Person, who must review evidence relating to the proposed reuse of materials and sign a Declaration, which confirms the site can be redeveloped according to the MMP and established codes of practice. Closure of the MMP is linked to the Validation Report defined in LCS0.102. Chemical and geotechnical reuse criteria associated with the MMP will comprise the prevailing criteria either as defined in the Revised GRS or following additional risk assessment during the production of the SSRS, along with an appropriate testing regime to be defined in the SSSR and RMS.

As part of the MMP process, all materials either excavated on site or brought to site from either on- or off-site sources will be stockpiled in an area close to the proposed final placement location, dependent on the type of material. The stockpile will be referenced, and materials moved from it will be logged to include the proposed final location of placement. All off-site disposal will be tracked and recorded in accordance not only with the requirements of the MMP, but also the Duty of Care regulations associated with the Environmental Protection Act 1990. All off-site disposal or treatment shall be at licensed facilities and associated waste disposal notes shall be held for a minimum of two years and should be available for inspection by the Environment Agency if required.

Previous site information including the PDZ4 CVRs and individual validation reports indicated that existing HHSL materials comprise a combination of chemically compliant construction materials including imported topsoil and sub soil, tarmac surfacing, crushed Brick, Type 1 virgin crushed limestone, quarry fines and sands, class 6N/6P virgin aggregate, re-used site won materials from the soil hospital and lime stabilized natural soil (Thanet Sand). Where excavated, these materials will be segregated and stockpiled in managed conditions, and assessed for reuse within the Sweetwater Legacy works where possible. Below Marker Layer materials typically comprise site won chemically compliant General Fill materials. Arisings from excavations within this profile will be assessed using existing chemical analytical data, segregated according to materials types and either stockpiled in an appropriate, controlled manner or scheduled directly for off-site disposal to an appropriate facility.

Any arisings from excavations below existing sub grade levels will be stored temporarily in a designated stockpiling area for testing. Where possible, soils will be re-used within the development works, typically as General Fill materials. Where this material is not compliant with the GAC/SSAC for the development works, or is not required based on the necessary fill requirements for the site, it will be scheduled for off-site disposal to

an appropriate soil treatment facility. In addition, stockpiled materials will be managed to minimise potential leaching and migration of contaminants to ground, surface waters and limit vertical / lateral migration, including storage on hard standing or an impermeable membrane and potential leachate capture via drainage or sheeting to minimise infiltration.

Further details of the proposed re-use/disposal strategy for soil arisings will be provided in the RMS for the development works which will be submitted to the PPDT for approval pursuant to condition LCS0.99 prior to works commencing,

5.2. Typical Marker Layer and Human Health Separation Layer Requirements

The existing Marker Layer and HHSL, where present, which forms part of the remedial cover system across the site, must be maintained or replaced as part of the works. In most cases, the existing cover system will be excavated, segregated and stockpiled as part of the works, and replaced in line with the appropriate land use materials. Where new cover systems are required within any remedial works, a Marker Layer will be installed at an appropriate depth, unless a variation is pre-agreed with PPDT. Marker Layer will be consistent with and tied into existing Marker Layers, where present. Marker Layer specification will be detailed within the RMS and will be in compliance with statutory requirements, guidance and best practice.

Materials placed above the Marker Layer will meet the HHSL requirements for the relevant LCS land use category. Where appropriate, areas of permanent hard cover will be assessed in accordance with the requirements outlined in the Site Wide RMS Addendum (Use of Hardcover as a Substitute to the Separation Layer, Ref. 22), subject to PPDT approval in advance of implementation.

In all areas of soft landscaping the remediation profile will be completed with a HHSL of not less than 600 mm thickness. Tree pits will require the placement of a Marker Layer at the base and the sides and linkage with the surrounding Marker Layer, and will be detailed further in the SSRS and RMS.

For asbestos only, criteria for the upper section of the separation layer (which should not be less than 150 mm thick) and the lower section of the separation layer, will be as presented in the Asbestos Management Plan (Ref. 23) and summarised in the GAC and GWAC tables within Appendix E.

5.3. Validation Sampling Strategy

5.3.1. Validation of Sub-Grade

Where excavations are required >500mm below the existing sub-grade levels (as defined in the prevailing CVR), the base of the excavation will be inspected for visual/olfactory indicators of potential contamination. In addition, validation sampling and testing will be undertaken to demonstrate compliance with the relevant assessment criteria. Validation samples will be taken at a minimum of 1 sample per 625 m² (based on a 25 x 25 m grid). In the event that contamination is identified through visual/olfactory indicators or exceedance of the assessment criteria, PPDT will be notified to agree an appropriate course of action. In the majority of cases, where visual/olfactory indicators of potential contamination are encountered, it is envisaged that further action will include additional, targeted validation sampling/testing followed by subsequent assessment and potentially additional excavation of identified contamination hotspots.

Sub-grade validation sampling is not considered to be required where excavations associated with the works are within 500 mm of the existing sub-grade level, and where existing validation data are available. For linear excavations (e.g. utility trenches), it is not proposed to collect sub-grade validation samples where existing surrounding Enabling Works sub-grade validation data exists which demonstrate compliance. The exception to this approach would be where visual/olfactory indicators of potential contamination are identified within linear excavations.

In certain areas, validation samples may be required to address Enabling Works sample exceedances which require action as part of this proposed Legacy development (drainage excavations in particular). Where collected, sub-grade samples will be tested for a full verification suite of contaminants with a human health and controlled waters criteria which are protective of future site uses and the surrounding environment. The method limit of detection for each chemical analysis will be lower than the prevailing chemical criteria. Validation

samples will typically be taken at a minimum of 1 sample per 625 m² (based on a 25 x 25 m grid) for the sub-grade.

5.3.2. Validation of Existing Fill Materials

Where works are undertaken below the previous ODA/LOCOG/LTP Formation Level, but above existing sub-grade levels, materials have already been validated and approved. However, confirmation of the suitability of these materials, based on existing data and associated documentation (preceding Validation Reports) shall be provided within the LCS Validation Reports for each works area in order to substantiate that this material is suitable for reuse within the proposed development.

Validation sampling and testing will be undertaken with reference to the LLDC guidance document 'Process for the Discharge of Remediation Related Planning Conditions (Validation Reporting)' (Ref. 24). The results of the testing will be compared against GAC summary tables for the relevant zone and the relevant site usage which can be found in Appendix E, or SSAC if required.

5.4. Groundwater and Surface Water Management

Shallow groundwater/perched water encountered within excavations will be removed, tested and discharged to foul sewer wherever possible, under an appropriate discharge consent.

5.5. Unexpected Contamination

In the event that unexpected contamination (materials not previously identified during site investigation/validation works) is encountered, a Remediation Change Note will be completed and submitted to PPDT. This will include an assessment of the contamination encountered and a method to contain, treat and/or remove the contamination. This Remediation Change Note shall be produced and issued within seven days of the unexpected contamination being encountered and any related works will be agreed with PPDT in advance.

5.6. Typical Quality of Imported Fill Requirements

Where material is imported from outside of the QEOP, the approach to importation will be in accordance with the previously agreed Framework for Quality of Imported Fill (Ref. 25). Where fill materials previously validated during earlier works are re-used within the works within the same area (i.e. use of validated as dug materials), and previous validation data are available, these are not considered to require subsequent validation testing.

Re-used existing virgin HHSL material will be validated through the use of appropriate field records (including observations and site photographs) and reference to preceding ODA/LOCOG/LTP documents to demonstrate they are from a virgin source.

Newly imported virgin material will not be tested for validation purposes, in accordance with the agreed Framework for Quality of Imported Fill (Ref. 25).

Imported Waste and Resources Action Programme (WRAP) compliant material including, but not limited to, recovered aggregates, demolition materials and topsoil materials require details to be provided pertaining to the source of material, source testing and on-going testing during placement (as topsoil materials will always require chemical testing including determination of asbestos levels), along with details of quantity and timing (dates for importation, placement and works commencement date for subsequent works).

Validation of all other unbound fill materials placed will be undertaken by sampling materials *in situ* (post-placement). Samples will be taken and tested for the full verification suite of contaminants, which will comprise all of the contaminants with human health and controlled waters compliance criteria for the relevant work area, to be detailed within the SSRS. Validation samples will typically be collected at a minimum of one sample per 200 m³ for HHSL materials (placed above the Marker Layer). Validation of General Fill materials (beneath the Marker Layer) will be at a minimum one sample per 1000 m³ of material placed *in situ*. Sampling strategies will be discussed further in the RMS and confirmed via liaison with PPDT.

Verification sampling and testing will be undertaken with reference to the LLDC guidance document 'Process for the Discharge of Remediation Related Planning Conditions (Validation Reporting)' (Ref. 24). The results of the testing will be compared against relevant acceptance criteria as defined in the SSRS. Details of the generic acceptance criteria provided in the Revised GRS are presented in Appendix E.

A summary of the submission requirements for each of the classifications of imported fills is shown in Table 5.2 below.

Table 5.2 Import of Fill Submission Requirements

Material Category	Importation Submission	Information Requirements
1. As produced crushed or broken rock	Yes	Source of material, quantity, timing ¹ , placement ³
2. As dug sands, gravels and naturally occurring topsoil ⁵	Yes	Source of material, desk based risk assessment to determined quality ^{2,4} , quantity, timing ¹ , placement ³
3. Manufactured topsoil	Yes	Source of material, testing and on-going testing regime ⁶ , quantity of timing ¹
4. British Board of Agreement Engineering Materials	Yes	Source of material, quantity, timing ¹
5. WRAP materials	Yes	Source of material, testing and on-going testing regime ^{5,6} , quantity, timing ¹
6. Aggregate for bound materials	x	n/a

Notes.

- 1 Date for importation, placement and works commencement date for subsequent works
- 2 Chemical testing is required if the desk based information demonstrates a potential risk. Chemical testing to be at source (or based on stockpile testing as long as material is held in a separate quarantined area on site and results are known prior to placement). Chemical testing must be notified to the PPDT for written approval in advance prior to importation (or in the case of fill imported to a quarantine area, results notified to PPDT prior to placement of the material).
- 3 A drawing showing the placement of such materials to be included in the Validation Report
- 4 Some testing may be required depending on the reliability of the source. If it can be shown that the source is quite clearly a pit or quarry in a natural deposit, this will be treated in the same manner as material Category 1.
- 5 Topsoil materials will always require chemical testing including determination of asbestos levels.
- 6 Results to be notified to PPDT prior to placement of material.

5.7. Typical Validation Reporting Requirements

Validation reports will be produced for each phase of the development works, detailing all relevant information to demonstrate that the works have been undertaken in accordance with the approved Remediation Statement, SSRS, RMS and other technical documentation/guidance as appropriate. This will be based on best practice and current guidance available at the time of the works, and will be submitted to the PPDT no later than two months after the completion of the relevant works. The reports will comprise as a minimum:

- details of the remediation/remedial protection scope and objectives;
- a summary of the works completed;
- the validation criteria;
- lines of evidence to demonstrate that remedial objectives have been met (such as field record sheets, waste transfer notes and chemical test results, including those available data from previous works, screened against the applicable SSAC);
- details of any unexpected contamination encountered and how this was managed (in agreement with PPDT);
- details of any residual actions;
- requirements for ongoing monitoring; and
- Regulatory agreement/sign-off.

Phase specific reports may be prepared as works progress. In accordance with LCS Condition LCS.0.102 of 11/90621/OUTODA, when remedial works are completed, all Remediation Validation and Protection reports (both interim and final) will be compiled as a CVR and submitted to PPDT for approval.

References

1. Planning Application Approval (Olympic, Paralympic and Legacy Transformation Planning Applications: Site Preparation Planning Application, Application No – 07/90011/FUMODA, Date of Application - 7th February 2007).
2. Planning Application Approval (Olympic, Paralympic and Legacy Transformation Planning Applications: Facilities and their Legacy Conditions Planning Application, Application No – 11/90313/VARODA (formerly 07/90010/OUMODA), Date of Application - 7th February 2007).
3. Planning Application Approval Legacy Communities Scheme, Application No – 11/90621/OUTODA, Date of Application – 5 October 2011.
4. Atkins. REP-ATK-PM-ZZZ-ZZZ-ZZZ-E-0195. Enabling Works (Stage 1) Consolidated Validation Report – Planning Delivery Zone 4. June 2012.
5. Capita Symonds. REP-CSP-VZ-04Z-OLP-XXX-E-0048. Full Site Specific Remediation Strategy, Planning Delivery Zone 4 (Construction Zone 4). December 2007.
6. Capita Symonds. REP-CSP-VZ-ZZZ-OLP-XXX-E-0076. Global Remediation Strategy, (Version 2.0, Rev B). January 2007. (Decision Notice Ref: 07/90011/FUMODA).
7. Capita Symonds. MST-SP-CM-ZZZ-OLP-XXX-E-0040. Intrusive Investigation Method Statement (IIMS), November 2006. (Decision Notice Ref. 07/90216/AODODA).
8. Atkins. REP-ATK-PM-04Z-ZZZ-ZZZ-Z-0001. Follow-on Project (Stage 2) Consolidated Validation Report – Planning Delivery Zone 4. January 2013.
9. Atkins. ATK-WI-O-XX-XX-OPK-REP-XX-0004. Consolidated Validation Report (Stage 3) – Planning Delivery Zone 4. June 2013.
10. Nuvia. 87216/TR/053 Issue 8. Radiological Safety Assessment for the Disposal Cell in Bridge L03B Approach containing the Site's Arising of Exempt Waste. November 2011.
11. Atkins. REP-ATK-CM-03a-OLP-SP 1-E-0001. Construction Zone 3a Change Notice Report Discovery of Radioactive Substances. May 2010.
12. Atkins. REP-ATK-CM-06a-OLP-SP 1-E-0003. Remediation Change Note for Construction Zone 6a and 6d. May 2010.
13. Atkins. 0241-ENW-ATK-LET-00854. Addenda to the Remediation Change Notes under Planning Applications 09/90048/AODODA and 08/90363/AODODA. February 2012.
14. Atkins. REP-ATK-CM-ZZZ-OLP-XXX-E-0007. Retained Areas Risk Assessment. May 2012. (Decision Notice Ref: 11/90102/AODODA).
15. Atkins. 0241-ENW-PDW-CM-REP-0001. Retained Areas Risk Assessment – Addendum Report. December 2012. (Decision Notice Ref: 11/90102/AODODA).
16. Capita Symonds. LCS-GLB-ACC-REM-003. Olympic Park Legacy Company, Legacy Communities Scheme, Regulation 22 and additional information submission Revised Global Remediation Strategy. April 2013.
17. Capita Symonds. LCS-GLB-CON-APP-GRS-001-V02 LLDC Legacy Communities Scheme: Revised Global Remediation Strategy. July 2013
18. PPDT/Hydr. LCS Remediation Condition Discharge Guidance. Annex 6.
19. Olympic Park Legacy Company, Legacy Communities Scheme: Code of Construction Practice. LCS-GLB-ACC-CON-001. September 2011.

20. Atkins. LC810-LTR-PWD-CM-REP-0001. The Permit to Proceed Protocol: Protection of Assets on the Olympic Park. November 2011.
21. CL:AIRE. Definition of Waste: Development Industry Code of Practice. Version 2. ISBN: 978-1-905046-23-2. March 2011.
22. Atkins. 0241-ENW-ATK-LET-00269. Site Wide RMS Addendum (Use of Hard Cover as a Substitute to The Separation Layer). February 2009. (Planning Decision Ref. 08/90292/AODODA).
23. Atkins. REP-ATK-CM-ZZZ-OLP-XXX-E-0008. Maintenance of Final Build Layer and Topsoil (Asbestos in Soils) Management Plan. September 2009.
24. LLDC. LC001-XXX-XXX-Z-PRO-0003. Process for the Discharge of Remediation Related Planning Conditions (Validation Reporting).
25. Atkins. 0241-ENW-ATK-LET-00328. Condition SP.0.37 and OD.0.39: Quality of Imported Fill - Framework: Quality of Import Fill – Framework Letter. November 2009.