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Sandvik Osprey, Margam

Construction and Environment Management Plan (CEMP)



April 2023

Version 1

Construction and Environment Management Plan

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PRESENTED TO

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1.0 INTRODUCTION

1.1 BACKGROUND

A Construction Environmental Management Plan (CEMP) has been completed to support the development of a new metal processing facility at Land off J38 M4, Margam, SA13 2NR. Planning permission for the development was granted by Neath Port Talbot Council on the 13th of January 2023, under planning reference P2021/1255.

Planning condition 7 requested that the Draft CEMP (submitted as part of the planning application's Environmental Statement) be updated to incorporate additional details and environmental mitigation measures:

"Prior to the start of construction on site and notwithstanding the submitted Draft Construction Environmental Management Plan, a Construction Environmental Management Plan (CEMP) shall be submitted to and approved in writing by the Local Planning Authority..."

... The approved CEMP shall be adhered to and implemented throughout the construction strictly in accordance with the approved details."

The CEMP incorporates environmental protection measures which need to be considered when planning construction works at the site, particularly since implementing mitigation measures may impact the standard approach by a contractor to specific tasks and by extension the associated cost. This CEMP provides the basis for communicating how construction activity during the development works will be controlled to minimise potential environmental impact.

1.2 AIMS AND OBJECTIVES

The main aim of this CEMP is to manage the construction phase of the redevelopment works in an environmentally acceptable and sustainable way, with consideration given to the risk to nearby environmental receptors such as adjacent watercourses and designated sites.

Site-specific recommendations made in the planning application ES chapters and specialist discipline reporting are incorporated into this CEMP document. In the case of environmental specialisms that have not required a site-specific assessment, we have incorporated several 'good practice' measures, which if implemented at the site, should mitigate the risk of complaints or the requirement for intervention by statutory bodies. The CEMP has been developed to ensure mitigation measures put forward within the environmental reports are fully implemented and to make sure sensitive environmental receptors are adequately protected.

Provided the mitigation measures presented in the CEMP are implemented at the site, the contractor will be in a strong position to demonstrate that they have adopted best practice at the site and protect themselves against complaints and reputational damage.

The CEMP is intended to act as a live document and should be routinely updated to reflect best practice guidance for construction methods, and any additional mitigation measures required following the review of the ES by relevant parties. The appointed Principal Contractor (PC) will be required to adhere to the mitigation and best practice methods outlined in this CEMP. The contractor may need to prepare its own, more detailed, method statements in accordance with the framework set out in this CEMP for specific tasks.

1.3 DESCRIPTION OF PROPOSED DEVELOPMENT

Sandvik Osprey are to develop a new industrial site at Land off J38 M4, Margam, SA13 2NR. The site comprises 6 hectares and is allocated under Policy EC1/2 of the Neath Port Talbot LDP as a Strategic Employment Site.

It is proposed to construct a new metal / alloy powder processing facility (Use Classes B1, B2 and B8), similar to Sandvik Osprey's existing facility in Neath, to operate 24-hours a day, 5 days a week.

1.4 BRIEF

If left uncontrolled, the construction phase of a development could result in significant impacts to the environment and/or the local community. Both the client and the appointed Principal Contractor (PC) shall have key responsibilities in ensuring that these environmental risks are adequately controlled and mitigated.

This CEMP sets out a framework for how environmental issues that arise will be handled to ensure compliance with relevant legislation. This CEMP is a live document that will be updated as necessary to reflect the project requirements. The PC, and suitably qualified consultants (e.g. ecologist and arboriculturist) on this project will update and revise this plan in line with the proposed construction methodology and programme. If required, any changes proposed by the PC will be reviewed and agreed with NRW prior to site works commencing.

The key areas identified for consideration within this assessment are as follows:

- Ecology;
- Transport;
- Trees;
- Visual Impact;
- Drainage;
- Flooding;
- Contaminated Land;
- Noise and vibration;
- Storage of materials, including parking of plant and equipment;
- Hazardous materials;
- Pollution, Waste and Materials Management; and
- Emergency / Contingency measures.

1.5 ENVIRONMENTAL MANAGEMENT FRAMEWORK

This CEMP has been prepared by Tetra Tech on behalf of the Client (Sandvik Osprey) to inform employees and contractors on-site of the environmental risks associated with the scheme in a systematic way such that the PC can effectively manage the environmental risks.

The CEMP has been prepared in accordance with relevant UK legislation and regulations, environmental guidelines, approved codes of practice and industry standards (where appropriate) and with the general guidance provided in the CIRIA document Environmental Good Practice on Site (CIRIA Report C650, published 2005).

The CEMP recommends specific measures that should be taken to control and manage the environmental impacts that may otherwise occur to the environment at site.

The performance of the PC in implementing the requirements of the CEMP should be monitored through the completion of regular environmental audits during the construction period. The appointed PC will be required to develop and implement an Environmental Management System to take full account of the environmental issues and to manage those accordingly.

2.0 CONSTRUCTION STAGES AND KEY PHASES

2.1 KEY PHASES

It is anticipated the phasing of construction works on site will follow the general sequence detailed below:

- Site preparation / enabling works;
- Site earthworks;
- Site access works;
- Main site drainage (including surface water discharge);
- Construction of foundations;
- Construction of structures; and
- External landscaping.

The above will be updated to reflect the key construction phases of the development (including anticipated timeframes) once this has been programmed.

2.2 PLANT AND EQUIPMENT

It is anticipated the main plant to be utilised for each of the key construction phases will include:

- Site preparation / enabling works – Tracked excavator, dumpers and concrete saws;
- Site earthworks – Tracked excavator and dumpers;
- Site access works – Tracked excavators, dumpers, rollers and vibrating plates;
- Main site drainage infrastructure works – Tracked excavators, dumpers, concrete mixers, concrete saws and vibrating plates;
- Foundations – Piling rigs, tracked excavators, dumpers, concrete mixers, vibrating pokers and concrete saws;
- Structures – Tracked excavators, dumpers, concrete mixers, vibrating pokers, rollers, vibrating plates and concrete saws;
- External landscaping – Tracked excavators and dumpers.

The above will be updated to reflect the key construction phases of the development (including anticipated timeframes) once this has been programmed.

2.3 SITE ACCESS AND TRAFFIC MANAGEMENT

It is anticipated that access to the site will be via the adjacent unadopted road to the north, with the access roads designed in accordance to current roads service standards. Segregated pedestrian and vehicular access will be provided; whilst internal access roads and parking arrangements will ensure sufficient capacity for all incoming site traffic is maintained.

All deliveries to the site, i.e. plant, materials and other equipment, will be offloaded at the designated areas within the site boundary. Speed limits for internal access roads will be stipulated for health and safety purposes, and to reduce risk of off-site emissions (noise and dust).

2.4 HOURS OF OPERATION

Work activities will be restricted to the following normal site working hours:

- Monday to Friday: 0700hrs to 1800hrs
- Saturday: 0800hrs to 1300hrs

It is not anticipated there will be any activity on Sundays or Bank Holidays.

3.0 GENERAL ENVIRONMENTAL MANAGEMENT POLICY

3.1 INTRODUCTION

In addition to the discipline-specific environmental management requirements detailed in Section 4, the Client and PC will be required to implement general environmental management roles, policies and procedures throughout the construction period.

3.2 ENVIRONMENTAL POLICY

The Client and PC will ensure that their Environmental Policy is clearly displayed on site notice boards throughout the construction period.

3.3 ENVIRONMENTAL TEAM STRUCTURE AND RESPONSIBILITIES

The Principal Contractor's Environmental Team shall comprise the following:

- Project Manager – To be completed following appointment of PC;
- Site Manager – To be completed following appointment of PC;
- Site Health, Environment and Safety (SHES) Officer – To be completed following appointment of PC;
- Environmental Manager – To be completed following appointment of PC; and
- Site Personnel (including sub-contractors).

Responsibilities associated with each of the above roles are detailed in the following sections.

If the PC identifies any conflict between the advice given in this CEMP and the contract documents the PC should inform the Client's Project Manager.

All site personnel, including sub-contractors, will also have responsibilities under the CEMP, as detailed in subsequent paragraphs.

3.3.1 Project Manager

The Project Manager shall be responsible for:

- Nominating a Project Environmental Manager;
- Ensuring that the required environmental consents are in place before work starts;
- Reporting incidents and non-conformances to the Client;
- Liaising with Statutory Authorities and the Client as required and ensure records of communication (including verbal communication) are kept;
- Monitoring environmental performance including regular review of Contract Objectives and Targets (including Environmental) and the review of incidents and non-conformances at contract review meetings;
- Approving any PC Construction Method Statements (CMS) and ensuring its implementation throughout the project by all employees and subcontractors;
- Verify that materials management within the scheme is carried out in accordance with the Materials Management Plan and any associated consents;
- Verifying that actions raised during regular environmental audits, are completed by the relevant deadline.

3.3.2 Site Manager

It is the Site Manager's responsibility to:

- Ensure that they are aware of any existing environmental issues on-site prior to site mobilisation;
- Ensure environmental and waste requirements are included on requisitions and in subcontracts and orders;
- Ensure oil, including diesel, is stored on-site according to relevant environmental legislation and in appropriately bunded tanks / drip trays;
- Ensure compliance with the Site Waste Management Plan and any associated consents;
- Report incidents and non-conformances to the PC Project Manager;
- Ensure Statutory Authorities are always appropriately accompanied on site visits;
- Ensure employees and subcontractors receive induction training (including training with respect to environmental issues associated with the project and any specific tasks) and toolbox talks, as appropriate;
- Maintain the maintenance of training records for all site staff.

3.3.3 Site Health, Environment and Safety (SHES) Officer

It is the responsibility of the SHES officer to:

- Ensure that they are aware of any existing environmental issues on-site prior to site mobilisation;
- Ensure that if a suspected environmental issue, incident or non-conformance is identified during the works that it is addressed in accordance with the CEMP. All such instances should also be reported to the Site Manager and recorded and monitored;
- Ensure that any environmental issue, incident or non-conformance identified during the works (including those reported through the PC's safety observation report system or equivalent) is recorded within site records and if required in the Pre-Construction Information, Construction Phase Health and Safety plan and Site Health and Safety file;
- Ensure that controls within the discipline / task-specific Management Plans and the Construction Phase SHES plan are implemented on site.

3.3.4 Environmental Manager

The Environmental Manager shall be responsible for:

- Identifying significant environmental impacts for the project and assisting in setting up contracts and procedures to include the necessary controls;
- Ensuring the identified environmental aspects and hazards are addressed within the construction process and that any design changes consider the impacts to the environment;
- Implementing processes to monitor compliance with the CEMP through regular inspections and audits;
- Periodically reviewing and updating the CEMP (at least once every 6 months);
- Providing up to date environmental information to the Site Manager and SHES Officer to meet the requirements for weekly SHES meetings;
- Reporting incidents and non-conformances to the Site Manager and SHES Officer immediately, and to Statutory Authorities where required;
- Disseminating information, including changes to legislation, to the Project Manager, Site Manager, SHES Officer and other relevant employees;

- Identifying employees who require environmental training, and providing appropriate training where applicable;
- Ensuring all records are retained and readily available;
- Update the Site Waste Management Plan (if applicable) on a regular basis (at least quarterly) and monitor compliance with the Materials Management Plan (if required);
- Providing advice and dealing with queries and correspondence concerning environmental issues;
- Detailing post-construction environmental monitoring and management where required and identify the parties responsible for implementation.

During construction, the PC will appoint an Environmental Manager who would initially be responsible for co-ordinating and managing all of the environmental activities during the construction phase.

The Environmental Manager will be responsible for reviewing the CEMP, CMS, Work Instructions and other specialist procedures.

It will be the Environmental Manager's responsibility to develop and maintain the CEMP during the course of the project.

The Client's site representative may inspect the CEMP at any time.

3.3.5 Site Personnel

All plant operators and labourers will have appropriate Construction Skills Certification Scheme (CSCS) qualifications or appropriate training and supervision in place. The PC will identify Personal Protective Equipment (PPE) requirements for personnel, which shall include as a minimum:

- High visibility clothing;
- Safety footwear; and
- Safety helmets.

All plant operators, earthwork foremen and labour charge-hands will be trained in the use of spill kits. All site personnel shall:

- In the case of an environmental incident, stop work, implement control procedures and report it to the Site Manager;
- Pass any queries or correspondence on environmental issues to the Environmental Representative;
- Work in accordance with Environmental Procedures, Project Environmental Management Plan and associated Method Statements.

3.3.6 Sub-Contractors

All sub-contractors shall:

- In the case of an environmental incident, stop work, implement control procedures and report it to the Site Manager;
- Pass any queries or correspondence on environmental issues to the Environmental Representative;
- Work in accordance with Environmental Procedures, Project Environmental Management Plan and Method Statements;
- Develop and submit Method Statements which are to include Environmental Controls for review by the designated Environmental Team.

3.4 TRAINING

Training will be provided to site personnel throughout the construction period and shall include:

- Induction training, including training with respect to site-specific environmental issues, requirements and expectations;
- Toolbox talks, with the content depending on the type of work being undertaken and the environmental impacts that may result from each activity; and,
- Detailed training for staff with specific environmental responsibilities, including waste management, recycling, spills etc.

3.4.1 Induction Training

All project personnel will be required to pass a Safety, Health, Environment and Security induction before being allowed to work on-site. This will ensure that site personnel are fully aware of key environmental issues associated with the scheme, and the management and control procedures that have been established to prevent or mitigate any potential environmental impacts.

All project personnel will be appropriately briefed about project-specific environmental impacts and mitigation measures at an induction course before they are allowed onto the site.

Some of the topics the briefing should cover are:

- Guidance on the significant and sensitivity of environmental features near the proposed development site;
- The environmental objectives and policies of the Client and the PC;
- The potential environmental effects of construction;
- The identification / management of soil and / or groundwater contamination;
- Responsibilities for environmental monitoring and reporting; and
- Procedures for responding to environmental incidents and emergencies.

3.4.2 Tool-box Talks

All foremen will be briefed on specific Method Statement requirements before work commences. The appointed Environmental Manager will also give a series of toolbox talks to all staff during the course of the project. The programme will be adjusted to suit any site-specific issues that may arise.

Typical tool-box talk topics are listed below:

- Safe handling and refuelling of plant and machinery;
- Surface and ground water pollution prevention, including precautions to prevent sediment-laden run-off from entering watercourses;
- Precautions to prevent / reduce sedimentation of the watercourse during the construction works at the river bank;
- Waste Management, including waste storage and segregation and the potential planning and waste management licensing implications of materials re-use;
- Spill control;
- Air quality & dust; and
- Noise & vibration.

3.5 MONITORING

Monitoring of the environmental effects of construction enables the effectiveness of the implemented environmental protection / mitigation measures to be evaluated. It also allows environmental issues to be identified and responded to at an early stage. Monitoring will also help to identify and implement environmental improvements, which will contribute to the overall environmental performance of the project.

The Client / PC will ensure that a programme of monitoring, both during and after construction, is instigated in order to determine whether or not any observed changes are the result of the completed development (and, therefore, may potentially require additional mitigation measures) or are a result of natural variation. Monitoring requirements are outlined along with the specific site pollution control measures in Section 4 of this document.

Environmental near misses and incidents will be recorded and investigated, and appropriate corrective actions put in place. The PC will operate a policy of self-reporting of environmental incidents and be responsible for ensuring that any non-conformances are recorded and dealt with in accordance with the procedures detailed in the CEMP.

3.6 ENVIRONMENTAL AUDITS

The PC and operational phase manager will undertake a programme of regular environmental inspections and quarterly environmental audits to record performance and identify any corrective actions required.

The client will carry out appropriate environmental inspections and monitoring of the contractor's environmental performance in the form of monthly audits. Formal audits will be against an audit checklist.

Audit results will be reported to the PC; they will play an important part in reviewing and updating the Environmental Management Plan as the project develops.

3.7 COMMUNICATION

At project review meetings and Operational Project Reviews (OPRs), the following shall be reviewed:

- Environmental requirements;
- Objectives and targets (including environmental) to determine if they are being met;
- Environmental incidents and non-conformances to verify that actions are completed by the relevant deadlines and to identify trends and any further actions required; and,
- Audit Project Improvement Notices (PINs) to ensure actions are completed by the deadlines.

The Project Manager, in conjunction with the Environmental Manager, will be responsible for receiving, documenting and responding to any environmental communication from third parties. All verbal communication from third parties will be logged in the Project Communication Log. Environmental risk summaries, bulletins and other relevant information shall be placed on the site notice boards.

3.8 SECURITY AND PUBLIC VIEWING

Security hoarding will be placed around the site prior to the commencement of construction works. This will be monitored and maintained on a regular basis to ensure a safe working environment and prevent risk to the general public.

Hoardings should be frequently inspected and repaired and repainted as necessary by the contractor. Cleaning of hoardings should only take place during normal working hours. Offensive graffiti shall be removed as quickly as practicably possible. The hoarding will clearly display publicity material including information on the site programme, the telephone contacts for complaints and/or enquiries, the name of the site manager (daytime) and an emergency out of hours contact. Signs to indicate any changes to pedestrian/cycle routes around the site will be displayed.

Fencing may be used in areas of low security risk to reduce visual impact on the environment and aid security patrol management of the area. The Contractors may use Heras fencing as an interim measure to secure a site or adapted site boundary prior to installing permanent hoarding, or likewise when demobilising from an area.

4.0 SITE CONTROLS

The site controls specified in this section are designed to:

- Highlight the most significant environment risks related to the site activities;
- Identify site controls related to those risks; and
- Provide a method of recording and documenting site control measures.

Site specific risks and relevant mitigation measures that are most likely to impact on the scheme are considered in more detail within this section. Monitoring, weekly SHES meetings and Environmental Inspections and Audits will record the implementation of mitigation measures and site controls for the majority of environmental risks.

Risk Assessments and Method Statements will be created during the works to manage specific risks as they arise. It is essential that these risks are highlighted to project team and actively managed during construction.

4.1 REFERENCED PUBLISHED DOCUMENTS AND GUIDANCE

In developing the pollution control recommendations for the site, the following published documents were reviewed as part of this report:

- CIRIA C753, The SUDS Manual, 2015;
- CIRIA Report C532 Control of Water Pollution from Construction Sites: Guidance for Consultants and Contractors;
- CIRIA C648, Control of Water Pollution from Linear Construction Projects: Technical Guidance, 2006;
- CIRIA Handbook C741 Environmental Good Practice on Site, 2015;
- IEMA (2008) Practitioner Series No.11 Waste Management: A Guide for Business in the UK. Institute of Environmental Management and Assessment;
- The Environment Agency's Approach to Groundwater Protection, Version 1.0, March 2017;
- NetRegs (2009) Site Waste – It's Criminal: Simple Guide to Site Waste Management Plans (accessible at http://www.netregs.org.uk/media/1114/swmp_simple_guide.pdf);
- DAERA Standing Advice – WTR – Discharge to the Water environment, Published April 2015 and updated November 2017;
- DAERA Standing Advice – WTR – Pollution Prevention Guidance, Published April 2015 and updated November 2017.
- Wales and West Utilities - Specification for safe working in the vicinity of pipelines and associated installations operating above 2 bar gauge - requirements for third parties, Published October 2001 and updated April 2013.

Although Pollution Prevention Guidelines (PPGs) jointly published by the Environment Agency, Natural Resources Wales (NRW) and Scottish Environmental Protection Agency (SEPA) have been withdrawn, where they have not been replaced by revised Guidance for Pollution Prevention (GPP) documents¹, they are still considered a source of information on good practice. Consequently, the following PPGs and GPPs have been reviewed and referenced in this report where applicable:

- GPP 01: Understanding your environmental responsibilities – good environmental practices;
- GPP 02: Above Ground Oil Storage Tanks;

¹ Guidance for Pollution Prevention, [online] accessed 18th May 2020 - <https://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-ppgs-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/>

- PPG 03: The use and design of oil separators in surface water drainage systems;
- GGP 04: Treatment and disposal of wastewater where there is no connection to the public foul sewer;
- GPP 05: Works and maintenance in or near water;
- PPG 06: Working at construction and demolition sites;
- PPG 07: Safe Storage – The safe operation of refuelling facilities;
- GGP 08: Storage and disposal of used oils;
- PPG 11: Preventing pollution at industrial sites;
- PPG 18: Managing fire water and major spillages;
- GPP 21: Pollution incident response planning;
- GPP 22: Dealing with Spills;
- GPP 26: Safe storage - Drums and Intermediate Bulk Containers.

4.2 IDENTIFICATION OF POTENTIAL SITE RISKS

The identification of site-specific environmental risks has been identified by the ES chapters and reviewed by consultees as part of the planning process. Following identification and agreement on the principal site environmental risks, this CEMP has been updated to incorporate the control measures required to ensure protection of sensitive local receptors.

The points below are considered the predominant potential environmental risks at the development site:

- Damage to the existing high pressure gas pipeline located under the site;
- Damage to trees that are to be retained at the site;
- Disruption to priority species and habitats;
- Spreading of invasive Japanese knotweed;
- Leaks or spillage of fuel oil and lubricants during refueling/maintenance of plant or the use of chemicals during construction works;
- Contamination of controlled waters from general on-site activities (plant movements, moving equipment etc.);
- Contamination of controlled waters from sewage (from onsite facilities e.g., welfare cabins and portable toilets);
- Deterioration of Groundwater Quality due to construction activities;
- Disposal of waste spoil to landfill rather than reusing or recycling; and
- Dust / noise / light / visual impact from construction works.

Potential impact arising from each of these components and associated proposed mitigation and control measures (if required) will be discussed further in the following sections. In addition, a 'Live Environmental Risk Register' should be produced and updated throughout the development.

4.3 MANAGEMENT OF RISK ASSOCIATED WITH THE ON SITE HIGH PRESSURE GAS PIPELINE

A high pressure gas pipeline is located on site. The Wales and West document “*Specification for Safe Working in the Vicinity of Pipelines and Associated Installations Operating Above 2 Bar gauge - Requirements for Third Parties*” sets out requirements to be complied with when working near to a high pressure (above 2 bar gauge) pipeline. The specification is included within this document as Appendix A.

If any work is considered by Wales & West Utilities to be in breach of the requirements stipulated in this document then the Wales & West Utilities have the authority to suspend the work until the non-compliances have been rectified.

As noted in the specification, no work shall be undertaken in the vicinity of the pipeline without the formal written consent of Wales & West Utilities and any documents handed to contractors on site shall be signed for by the Site Manager. Further measures to address the risk are as follows:

- All personnel working on site must be made aware of the potential hazard of the pipeline and the actions they should follow in case of an emergency;
- Wales and West utilities should be given 7 working days' notice prior to commencement of work on-site. This will allow for the pipeline to be suitably located and marked out.;
- Any requirement for trial holes to locate the pipeline must be determined on site by the Wales & West Utilities responsible person and the excavation of all trial holes must be supervised by the Wales & West Utilities responsible person;
- Third parties must not excavate unsupervised, with a powered mechanical excavator closer than 3 metres to the Wales & West Utilities located pipeline or with hand held power tools closer than 1.5 metres;
- Where existing roads cannot be used construction traffic should only cross the pipeline at previously agreed locations;
- No piling will be allowed within 15 metres of a pipeline without an assessment of the vibration levels at the pipeline and
- No demolition should be allowed within 150 metres of a pipeline without an assessment of the vibration levels at the pipeline;

If the Wales & West Utilities pipeline is damaged, even slightly, and even if no gas leak has occurred then the following precautions must be taken immediately:

- Shut down all plant and machinery and extinguish any potential sources of ignition;
- Evacuate all personnel from the vicinity of the pipeline;
- Notify Wales & West Utilities using the free 24-hour emergency telephone number 0800 111 999;
- Notify the Wales & West Utilities responsible person or his office immediately using the contact telephone number provided;
- Ensure no one approaches the pipeline; and
- Do not try to stop any leak.

4.4 CONTROL OF POLLUTION OF GROUNDWATER AND SURFACE WATERS

In considering the potential for impact to groundwater and surface waters as a result of construction activities at the site, the main potential receptors are as follows:

- Groundwater resource contained within the underlying bedrock aquifer and superficial aquifers (local groundwater abstractions within wider vicinity);
- Surface water features include the drainage ditches to the south of the site, and the Mother Drain to the west;

A summary of the site control measures to be implemented during the construction phase of the development is outlined in the following sections.

4.4.1 Site Excavations

Where practicable, no excavation of existing natural ground beneath the water table will be carried out on site. In the event that excavation depths are concurrent with the water table or subsurface conditions vary to that anticipated, requirements to continue excavation should be reassessed.

4.4.2 Site Welfare

Management of site welfare provisions, such as toilets, site personnel recreation / rest areas will be situated in an appropriate location within the development boundary. Chemical toilets which do not require connection to a drainage / sewer network will be used on site during the construction phase and will be serviced by a hire company. Any other welfare facilities will be provided with appropriate drainage and supply provisions.

4.4.3 Management of Sediment Laden Surface Water

Due to the presence of surface water drains close to the southern boundary, specific control measures to reduce the risk to the watercourses and to manage any off-site surface water flows will be implemented during the construction phase, which will include the following:

- No construction activities shall take place within 10m of surface waters;
- During extended periods of heavy rainfall, undertaking earthworks to expose ground and movement of plant close to designated watercourses should not be carried out;
- All building materials and aggregates, and in particular those which have a potential to add to potential silt/suspended solids in surface water (e.g. sand, loose aggregates, cement, dusty aggregates and blocks) should be stored in an appropriate manner and at least 10 metres from a designated water course and covered where possible;
- No aggregates or building materials should be stored within an identified flood plain;
- The use of silt fences/ bunds along the boundary of the watercourse/ drainage channels on site if required;
- Daily visual inspection of silt fencing should be carried out, with any required repairs made as soon as practicable. The frequency of visual inspections may be increased during period of excessive rainfall;
- Temporary drainage features, other drainage, silt traps etc. must be inspected regularly throughout the construction, operation and decommissioning phases to ensure they are clear and capable of performing their functions

4.4.4 Management of Surface Water Flows

Inadequate management of silt suspended in surface water run-off will impact on water quality of adjacent watercourses, harm and even kill aquatic life, and potentially cause obstructions to flow. The mitigation measures proposed in this CEMP are intended to address the potential risk by controlling the generation of silt and controlling the flow of surface water so that it does not impact on the identified receptor. The following measures should therefore be implemented at the site.

4.4.4.1 Restricting Site Groundworks During Periods of Heavy Rainfall Where Possible.

During extended periods of heavy rainfall, undertaking earthworks to expose ground and movement of plant close to designated watercourses should not be carried out where possible to minimise ground disruption which can lead to excessive levels of suspended solids (silt) in surface water run-off.

4.4.4.2 Restricting the Removal of Vegetation

Only vegetation removal required for construction works should be completed. Excessive vegetation should not be removed if not deemed necessary to facilitate site works. The removal of vegetation should be completed only if and when necessary to reduce the amount of time that soils are exposed.

4.4.4.3 Restricting Plant Washing to Designated, Controlled Areas.

Washing of plant and equipment should be carried out off-site where possible. Any washing of plant and equipment undertaken on-site should only be carried out within a designated hardstanding area, situated at least 10 metres from any watercourse or surface water drain. Any run-off from such activities should be appropriately collected and disposal managed in accordance with the requirements of the local sewerage undertaker.

4.4.4.4 Storage of Building Materials, Stockpiles and Aggregates in Designated, Controlled Areas

All building materials and aggregates, and in particular those which have a potential to add to potential silt / suspended solids in surface water (e.g. sand, loose aggregates, cement, dusty aggregates and blocks) should be stored in an appropriate manner and at least 10 metres from a designated water course and covered where possible. No aggregates or building materials should be stored within a flood plain. Stockpiles should be covered or seeded if stockpiles are to remain on site for the duration of works.

4.4.5 Uncured or Wet Concrete Use on Site

The quantities of wet concrete required on site are not currently known. It is recommended that the control measures detailed in this section are implemented across areas of the development in the event that wet concrete is required, in order to provide the optimum level of protection to the hydrogeological and hydrological environment.

The volume of uncured or wet concrete at the site will be minimised by using pre-cast concrete materials where possible. In the event wet concrete is required to be used during the construction of foundations, the PC will be responsible for ensuring that concrete and cement mixing and washing areas will be sited at least 10m from any watercourse or surface drain to minimise the risk of run-off entering a watercourse.

If wet concrete is required, the following practices will also be implemented to ensure that contamination from concrete works to the environment does not occur:

- High Density Poly-ethylene (HDPE) membranes will be used where concrete is to be laid in sensitive areas of the site (i.e. close to watercourse or retained trees), providing a barrier to uncontrolled migration;
- Concrete will be carefully poured to minimise spillage;
- Proper housekeeping practices and appropriate work isolation techniques will be employed to minimise potential for spills;
- Appropriate spill clean-up materials will be readily available and easily accessible;
- Contractors will be aware of the materials required to clean up a concrete spill; and
- Maintaining a safe distance from water courses.

4.4.6 Management of On-Site Chemicals, Substances and Spillages

Minimising spillages and making sure there are suitable storage facilities for chemicals, lubricants and fuels is essential to reduce impact of pollution due to such and, for specific amounts of certain liquids, necessary to comply with associated regulations. The following is therefore recommended to be implemented at the development site during the construction phase:

4.4.6.1 Vehicle and Plant Refuelling and Maintenance

Vehicle refuelling or maintenance will be carried out off site when possible. These activities should only be undertaken within the development boundary when necessary and no other alternative exists. In these instances, refuelling shall not be undertaken adjacent to the watercourse and only be carried out at designated areas which incorporate an appropriate level of control measures which, as a minimum, will incorporate drip trays and an impermeable surface. Vehicles will not be left unattended during refuelling.

4.4.6.2 Appropriate storage of fuels, lubricants and chemicals

All drums of lubricants, additives, cleaning products and other chemicals will be stored in an appropriate, clearly designated area with a hardstanding base and walls to contain any leaks or spills. Provision of secondary containment is also recommended, with the following capacities for such recommended:

- At least 25% of the capacity of storage containers up to 205 litres capacity;
- At least 110% of the capacity of storage containers over 205 litres capacity;
- Any secondary containment provisions should be suitable for the substances stored, including its size and construction.

In the event oils including petrol, diesel, kerosene and lubricating oils are stored on site, and not within a building, the Control of Pollution (Oil Storage) Regulations 2001 may apply and will require secondary containment of at least 110% of the capacity of the tank to be provided.

All storage containers should be suitable for the contents and clearly labelled to allow correct identification of their contents.

When identifying location of storage areas for fuels, chemicals and lubricants, the following should also be considered:

- Situated a minimum of 10m away from watercourses, open drains, gullies, unsurfaced areas or porous surfaces;
- Situated a minimum of 50m from wells, springs or boreholes;
- No storage of materials and substances within a flood plain area;

Daily monitoring of storage arrangements and any secondary containment measures should be carried out, with any repairs carried out, if necessary, as soon as practicable.

4.4.6.3 Specific Management Procedures to Deal with Use of Substances and Spillages

The development of Method Statements specific to the use and storage of fuels, lubricants and chemicals will be carried out to ensure health, safety and environmental protection requirements relating to such are maintained (refer to Section 4.11). Method statements should be reviewed periodically, or when a change in working practices and / or regulatory requirements drives such.

In addition, a pollution spillage response plan should be developed for the site, with staff made aware of such and made readily available if the need arises. The details of a pollution response plan are outlined further in Section 4.10.

4.4.6.4 Restriction of Plant Washing to Designated, Controlled Areas

Washing of plant and equipment should be carried out off-site where possible. Any washing of plant and equipment undertaken on-site should only be carried out within a designated hardstanding area, situated at least 10 metres from any watercourse or surface water drain. Any run-off from such activities should be appropriately collected and disposal managed in accordance with the requirements of the local sewerage undertaker.

4.4.6.5 Provision of Spill Kits

Spill kits suitable for the substances stored and used on site should be retained, ideally as close as possible to the point of storage and use of the substances. Proprietary spill kits are commercially available, but will generally contain absorbent material / granules, a shovel, gloves, and drain covers. Any waste materials arising from use of spill kits should be disposed of in an appropriate manner. All spill kits should be inspected on a weekly basis and resupplied where necessary as soon as practicable.

Use of the spill kits should follow the emergency and pollution response principles outlined in Section 4.10.

4.4.7 Site Drainage

4.4.7.1 Installation of Surface Water Drainage

Surface water drainage across the site will be dealt with via an engineered drainage system that will direct all run-off from various parts of the site to an engineered safe discharge point via attenuation tanks, or infiltration features (dependent on findings of drainage assessment).

Due to the intended purpose of the site, it will have to comply with PPG 3 through the use of an oil interceptor as the carpark will have 50 or more car parking spaces. It is suggested that a Class 1 oil interceptor is installed prior to the attenuation tank and controlled discharge to ensure adequate removal of potential contamination prior to discharge to the watercourse.

4.4.7.2 Connections to Surface Water Drainage

Specific management protocols will be developed and disseminated to all concerned staff personnel to ensure any connections to the surface water drainage is carried out to an appropriate standard and to specifically reduce risk of any misconnections to the respective networks.

4.5 CONTROL OF IMPACTS TO ECOLOGY

4.5.1 Ecological Features and Potentially Damaging Operations

The ecological baseline conditions at the site were established via a desk study and an Extended Phase 1 Habitat survey undertaken in 2021 (SBE, 2022²). The desk study consultation confirmed that the application site does not hold any designation for nature conservation however, the site is located within 500m of the Eglwys Nunydd Reservoir Site of Special Scientific Interest (SSSI), which is also locally designated as a Site of Interest For Nature Conservation (SINC). The site is also located within 100m of the Junction 38 Wetland Complex SINC. The site has potential hydrological links to both the Eglwys Nunydd Reservoir SSSI and Junction 38 Wetland Complex SINC via a small number of ditches within the application boundary and surrounding area.

The Extended Phase 1 Habitat survey identified a range of habitats present at the site including parcels of marshy, improved, poor semi-improved and semi-improved neutral grassland, dense scrub, semi-natural broadleaved woodland and hedgerows. The parcels of semi-improved neutral and marshy grassland, scrub, woodland and boundary hedgerows were the features considered to hold the highest ecological value at the site, suitable of supporting a number of protected otherwise notable species including foraging/commuting/roosting bats, nesting birds, priority listed terrestrial invertebrates and common reptiles. The occasional use of the application site by Badger could also not be precluded. Targeted bat surveys also undertaken at the site in 2021 revealed the site is subject to low levels of bat activity, with at least 7no. different bat species recorded commuting/foraging across the site. The bat surveys also identified a single roost at the site, within a mature Sycamore tree (T422) that is located within the woodland copse.

In accordance with the CEMP Condition (No. 7) an updated site walkover survey was undertaken in March 2023 (SBE, 2023³) to establish if there have been 'any material changes in the presence and/or abundance of S7/SINC habitats and species, protected species, reptiles, birds, terrestrial invertebrates, and bats; and identify any likely new ecological impacts that might arise from any changes. This survey confirmed that the conditions on-site are still consistent with those seen in March 2021. As such, the sites potential to support protected and priority species remains unchanged. The findings of this survey have been included within Appendix B.

Whilst the majority of the valuable habitats on site are to be retained within the development layout, construction operations such as the removal of vegetation, topsoil stripping, storage of materials, movement of heavy plant and creation of deep excavations, have potential to impact protected species present on site. In addition, within appropriate avoidance or mitigation measures, movement of heavy plant, soil/material storage and surface run-off may pollute water features in the surrounding landscape and result in soil compaction and/or root damage to retained trees and hedges, reducing their biodiversity value. The following sections set out how protection of the habitats and protected/notable species described above will be achieved and is based on strategy identified within Chapter 10 of the submitted Environmental Statement (ES)⁴. A separate document has also been produced (by Soltys Brewster) to inform discharge of Condition 10 and sets out the site activities where ecological supervision will be required.

4.5.2 Biodiversity Protection Zones

A series of 'Biodiversity Protection Zones' (BPZs) will be instated at the site, and these shall incorporate the retained areas of semi-improved neutral and marshy grassland in the northern extent of the site, sections of woodland copse and the retained boundary hedgerows. A physical barrier will be implemented along the specified features (e.g. single heras fencing), and Root Protection Areas (RPAs) will be encompassed within

² Soltys Brewster Ecology (2022). Land off Junction 38, M4, Margam. Ecology Note to Inform EIA Scoping. Document Reference: E21102201/DOC01. Dated: 02 February 2022.

³ Soltys Brewster Ecology (2023) Land off Junction 38, M4, Margam – Planning Conditions. Ecology Summary Note. Document Reference: E21102203/DOC01. Dated March 2023

⁴ Boyer Planning. 2022. *Environmental Statement: Land off Junction 38 of the M4, Margam. Chapter 10. Ecology & Nature Conservation.*

the above stated buffers as defined by the Tree Constraints Plan (ArbTS, 2022⁵). The BPZs will function as contractor exclusion areas and will be clearly demarcated using appropriately robust fencing and signage at the outset of site preparation/clearance works. No activities associated with the construction of the scheme will be undertaken in the BPZs, including stockpiling of materials or waste, storage, vehicular/plant access, welfare facilities etc. and fencing will be maintained until construction activities at the site are complete. Access tracks will be sited as far from BPZs as practical. A plan showing the location/arrangement of the BPZs is included within Appendix C and within the Ecology Supervision Note that has also been produced by Soltys Brewster Ecology⁶

In order to allow works to proceed for the installation of some site features e.g., attenuation basins, drainage connections etc., the BPZs may need to be adjusted based on in situ assessments. In such cases compensatory widening of buffer zones can occur in nearby suitable areas and any such changes will first be agreed between the site manager and project ecologist. In addition, the alignment of the protective fencing will be reviewed by an ecologist on site during the installation process and throughout the construction period. Precise routing will be subject to minor repositioning (and considered, in relation to biodiversity) to accommodate site facilities and construction works as the development progresses.

4.5.3 Vegetation Clearance

Badger

Whilst the 2021 Extended Phase 1 Habitat survey and 2023 Updated Walkover Survey (SBE, 2021; SBE, 2023) found no evidence to suggest current use of the site by Badger (e.g., setts, latrines, or footprints), the occasional use of the site by foraging/commuting Badgers could not be precluded. In the unlikely event a badger sett is discovered within the construction zone during vegetation clearance works (e.g., within parcels or scrub or hedgerow boundaries), all works will immediately cease, and the project ecologist or National Resources Wales (NRW) will be contacted for advice on how to proceed.

Bats

The Extended Phase 1 Habitat and Updated Walkover surveys (SBE, 2022; SBE, 2023) identified several mature trees within the application site boundaries. While the intention is to retain the majority of the trees with bat potential, including tree T422 (known bat roost), Tree T409 is to be removed under the agreed layout plan. This tree was assessed to hold Moderate Potential to support roosting bats (see Target Note 7 – SBE, 2021). However, roost emergence/re-entry surveys undertaken between July and August 2021 found no evidence of a roost within this tree, and as such tree T409 was subsequently downgraded to Low Potential. In accordance with best practice guidance (BCT, 2016⁷) this tree will require no further survey work, but a precautionary approach will be taken towards its removal. Under direct ecological supervision, the tree will be section felled by a suitably qualified arborist in October/November 2023 or early spring (March) 2024, with sections lowered to the ground by rope and retained in-situ for 24- 48hrs to allow any bats present to escape. In the unlikely event roosting bats are found, all works will immediately cease, and the project ecologist or National Resources Wales (NRW) will be contacted for advice on how to proceed. Any work to this tree during nesting bird season (i.e., between March and August) will be preceded by a thorough check for nesting birds as described in the following sections.

Breeding Birds

Clearance of woody vegetation at the site (including broadleaved trees, hedgerows and scrub) will be undertaken outside the breeding bird season wherever possible (i.e., clearance possible September – February inclusive). Where works within the breeding season are unavoidable, clearance will be immediately (within 24

⁵ Arboricultural Technician Services Ltd (ArbTS) (2022). *Site – Steel Proposal J38. Arboricultural Report*. Project Reference – ArbTS_1171.3_Steel Proposal J38. Dated: 8th November 2022.

⁶ Soltys Brewster Ecology (2023). *Land of Junction 38, M4, Margam – Planning Conditions. Ecological Supervision Note*. Document Reference: E21102203/DOC03. Dated March 2023

⁷ Bat Conservation Trust (2016). *Bat Surveys – Good Practice Guidelines*. Bat Conservation Trust, London.

hours) preceded by a thorough check for the presence of nesting birds by a suitably experienced ecologist. In the event an active bird nest is discovered, an appropriate exclusion zone (minimum 3m) around the nest will be determined and clearly demarcated by the ecologist. No works will be carried out within the exclusion zone until the ecologist confirms the nest is no longer in use.

Reptiles & Amphibians

The majority of habitats found at the site (i.e., grazed improved and poor SI grassland) were considered unsuitable to support common reptiles however, the smaller areas of more species-rich grassland to the north, as well as the hedgerow and woodland margins, were considered to have greater suitability to support small populations of common reptiles such as Slow Worm *Anguis fragilis*. Under the agreed layout plan, most of the habitats at the site holding the greatest suitability to support common reptiles will largely be retained and protected within the abovementioned BPZs however, a sensitive approach to vegetation clearance across the rest of the site shall be adopted in order to encourage dispersal of any individuals present toward retained habitat and minimise the potential risk of injury to any reptiles (and amphibians) that may be present. This would include cutting of fringe grassland and boundary vegetation via a two-stage directional process.

Initially, any woody vegetation will be cut to ground – if undertaken during nesting bird season this clearance will be preceded by a thorough check for nesting birds by a suitably qualified ecologist. Remaining grass/non-woody vegetation of areas to be cleared along hedge bases/field margins etc. will then be strimmed to a height of 50mm in phases as follows. Vegetation will initially be cut to a height of 150mm and all arisings will immediately be removed and composted/disposed of off-site. Cutting will be undertaken using hand tools (strimmers, brushcutters etc.) and undertaken in one direction towards retained habitat to allow any reptiles present to disperse into the retained area outside the construction footprint of the development. No less than 48 hours after the initial cut, remaining vegetation will be cut to a height of 50mm in the manner described above and all arisings immediately removed from site. This directional cutting will be undertaken under direct ecological supervision and only during the period when reptiles are active – i.e. possible from April to September/October 2023 or from March/April 2024. Should any reptiles (or amphibians) be encountered during these sensitive clearance works, the ecologist will be at hand to safely capture and transport any individuals to a suitable habitat found elsewhere at the site (e.g. retained grassland habitat in northern extent of the site).

Invasive Species

The 2021 Extended Phase 1 Habitat survey and 2023 Updated Walkover survey identified Japanese Knotweed growing along the boundary of the northernmost field parcel. This species is listed as an invasive species under Schedule 9 of the Wildlife and Countryside Act (1981) (as amended). Clear demarcation and treatment / removal of the knotweed in this location should be progressed.

4.5.4 Excavation Works and Storage of Materials

Badgers and Hedgehogs

No setts were identified within the application site boundaries during the 2021 Extended Phase 1 survey or 2023 Updated Walkover survey although numerous mammal runs were identified along the boundary hedgerows. The occasional presence (for foraging etc.) of mammals such as Badger, fox, rabbits and hedgehogs cannot be precluded. The following measures will therefore be implemented in order to protect mammals from killing/injury and to allow their continued movement around the site. In the unlikely event a badger is discovered within the construction zone, all works will immediately cease, and the Project Ecologist or Natural Resources Wales (NRW) will be contacted for advice on how to proceed.

Materials such as netting, wiring or cutting tools and any toxic materials or chemicals will not be left in the works area where they might cause injury or poisoning to mammals. Any such materials will be stored overnight in an appropriate location which is inaccessible to mammals e.g., a locked storage unit. Any chemical spills will be cleaned up immediately, and measures to minimise the risk of spillage are set out in the relevant sections of this document.

Any open excavations, trenches etc. deeper than 300mm and with a bank of 45° or greater will be covered up at night or installed with a mammal escape ladder. The escape ladder will be a wooden board (minimum 300mm wide), set at a shallow angle that would allow any trapped animal to easily climb out of excavations.

Any temporary exposed open pipe will be capped in such a way as to prevent Badgers or other wildlife gaining access. At the start of each working day any such pipe will be checked to ensure that caps have remained in place and no animals are present prior to their movement or use.

No piles of brash, cut vegetation or similar will be left in the works areas, or areas where they are likely to be disturbed to avoid inadvertent creation of potential nest/hibernation sites for hedgehogs (and other wildlife).

4.5.5 Lighting for Nocturnal Wildlife

The site has been shown to support several species of bat, with the boundary hedgerows and woodland edge used as a foraging and commuting resource by at least 7no. different bat species, including several which are particularly susceptible to disturbance from lighting. Night working will therefore be avoided as far as is reasonably practical in order to reduce potential disturbance to bats and other nocturnal wildlife (e.g. Badger). Should working at night be unavoidable, disturbance to light sensitive species will be prevented by implementing the following:

- Do not illuminate boundary vegetation such as hedgerows or treelines;
- Do not use excess lighting;
- Avoid using reflective surface under lighting;
- Hoods should be fitted to direct light below the horizontal plan, at preferably an angle less than 70 degrees;
- Ensure only the target area is illuminated;
- Use flat cut-off lanterns or accessories to shield or direct light; and
- Light Column height should be considered to balance the requirement and mitigation.

4.5.6 Ecological Mitigation

As per the submitted Ecological Statement (ES) (Boyer, 2022), bird boxes are to be provided onto retained trees in order to provide replacement for loss of nesting resources at the site. A total of 10no. bird boxes⁸ will be installed on suitable retained trees situated along the eastern site boundary and within the retained hedgerow corridor running from east to west throughout the site. The boxes will be orientated away from direct sunlight (i.e. will not face southwards) and will be installed at a minimum height of 3 metres from ground level. The boxes will be installed prior to works commencing under the direction of the ecologist.

Additional bird and bat boxes will also be provided on retained trees and new buildings to further enhance nesting/roosting opportunities at the site, as set out in the Ecological Enhancements Plan (SBE, 2023⁹). Once installed, all bat boxes at the site will be treated as an active bat roost and therefore cannot be disturbed unless under a licence from NRW, while all bird boxes will not be disturbed during the bird breeding season (March – August).

Management of Retained Grassland

The retained areas of marshy and semi-improved grassland within the BPZ's (as illustrated on the Ecology Mitigation Plan) will be managed over the course of the construction period in order to maintain their existing

⁸ 5no. Vivara Pro Seville 32mm WoodStone Nest Boxes (or similar design for use by hole nesting species) and 5no. Vivara Pro Barcelona WoodStone Open Nest Boxes (or similar open-fronted design).

⁹ Soltys Brewster Ecology (2023) Land off Junction 38, M4, Margam – Planning Conditions. Ecological Enhancement Plan. Document Reference: E21102203/DOC 02. Dated March 2023

ecological interest and prevent scrub encroachment/succession. Management will be undertaken annually via a cut in later summer (Aug/Sept) using a tractor-mounted mower (or similar). Grass/rushes will be cut to a height no lower than 100mm with all arisings removed (within 48h) following the cut. Removal of arisings will **prevent build up of a 'thatch' layer** which could suppress grasses/herbs.

4.5.7 Appropriate Planting

To maximise the sites' post development utility to local wildlife a number of measures can be taken to attract a wide array of native fauna:

- Use native species where at all possible or species which produce strong scent and abundant supplies of nectar;
- Use mixtures of flowering plants, fruiting and standard trees and shrubs;
- Plant a wide range of flowers which vary in shape, colour, fragrance and flower timing;
- Pale flowers will attract more insects during dusk as they are easily seen in low light;
- Single flowers produce more nectar than double varieties;
- Provide a number of specially designed grass mixtures which provide a compromise between increasing a sites ecological benefit and meeting the requirement for rugged amenity grassland areas; and
- Should post development plans include hedgerows and treelines these should be created by use of native and woody species. Hawthorn, Elder, Buckthorn, Rose and Dogwood are all species which can be implemented.

4.6 CONTROL OF VISUAL IMPACT

To control and limit visual impact of the development in areas which may be visually prominent numerous landscaping strategies have been implemented including tree, shrub and herbaceous planting of a variety of sizes and species. A 12 month maintenance period will be covered by the landscape contractor to allow for the landscape to establish. Periodic review will be implemented to ensure the landscape maintenance is meeting the desired objectives for the site. The landscape will be control through the following activities:

- Weeding of unwanted plant material;
- Litter removal;
- Watering as necessary;
- Fertilising of plants for continual stable growth
- Pruning of dead and diseased wood or thinning of overcrowded shrub and woodland plantings;
- Supports;
- Plant replacement as necessary;
- Grass cutting as necessary.

4.7 CONTROL OF NOISE, VIBRATION AND AIR QUALITY

It is anticipated disturbance / nuisance factors associated with the proposed development activities (including dust, noise, visual impact and light impact) will be within the normal range of construction / operational activities and future noises are already present within the existing ambient noise climate.

Construction traffic on any proposed haul route will have a minor to negligible impact on noise sensitive receptors when considered in context of the volume of traffic expected and transient nature of this increase. Disturbance issues related to health and safety will be dealt with primarily in the Construction Phase Health and Safety Plan, the Construction Management Plan and site-specific risk assessments and method statements.

All plant equipment to be utilised during construction phase will be located, operated and maintained to prevent transmission of unnecessary noise / vibration / dust / odours / fumes to nearby premises. A summary of site control measures is provided below.

4.7.1 Noise and Vibration

The objectives are, as far as reasonably practicable, to control and limit noise and vibration levels so that affected properties and other sensitive receptors are protected from excessive noise and vibration levels associated with construction activities.

Best Practicable Means (BPM) as defined by the Environmental Protection Act 1990 will be applied to all activities. Any conditions outlined in the planning approval for the development specifically relating to the control of noise and vibration will be adhered to by site personnel.

With regards to general construction activities, it is assumed that the contractor will follow BPM to reduce the noise effect on the local community, including the following:

4.7.1.1 Source Noise and Vibration Control

Wherever possible noise will be controlled at source using the following guidelines:

- Minimise drop height of materials;
- Vehicles and mechanical plant employed for any activity associated with the construction works and operational phase will, where reasonably practicable, be fitted with effective exhaust silencers and will be maintained in good working order and operated in a manner such that noise emissions are controlled and limited as far as reasonably practicable;
- Each item of plant used on site during construction and operational phases will comply with the noise limits quoted in the relevant European Commission Directive 2000/14/EC/United Kingdom Statutory Instrument (SI) 2001/1701;
- The use of barriers to absorb and/or deflect noise away from noise sensitive areas will be employed where required and reasonably practicable; and,
- As far as reasonably practicable, sources of significant noise will be enclosed or screened. The extent to which this can be done depends on the nature of the machine or process to be enclosed and their ventilation requirements. For maximum benefit, screens will be close to the source of noise.

4.7.1.2 Working Methods

The following work practices will be employed to minimise risk of impact due to noise and vibration:

- Work activities will be restricted to the permitted site working hours. It is not anticipated there will be any activity on Sundays or Bank Holidays. Deliveries to and removal of plant, equipment, machinery and waste from site will take place within these permitted hours.

- Machines and vehicles in intermittent use will be shut down or throttled down to a minimum during periods between work;
- Start-up plant and vehicles sequentially rather than all together;
- There will be a 15mph speed limit within site boundaries;
- Careful selection of quiet plant and machinery to undertake the required work where available;
- All major compressors should be sound reduced models fitted with properly lined and sealed acoustic covers which should be kept closed whenever the machines are in use;
- Any ancillary pneumatic percussive tools should be fitted with mufflers or silencers of the type recommended by the manufacturers;
- Machines in intermittent use should be shut down in the intervening periods between work;
- Ancillary plant such as generators, compressors and pumps should be placed behind physical barriers and the direction of noise emissions from plant including exhausts or engines should be placed away from sensitive locations, in order to cause minimum noise disturbance. Where possible, in potentially sensitive areas, acoustic barriers or enclosures should be utilised around noisy plant and equipment;
- Handling of all materials should take place in a manner which minimises noise emissions;
- Audible warning systems should be switched to the minimum setting required by the Health & Safety Executive;
- The recommendations set out in Annex B of Part 1 of BS 5228 and Sections 7.3 and 9.2 of Part 4 of BS 5228 with regard to noise and vibration options will be adopted unless agreed in advance with the relevant local authority.

4.7.1.3 Maintenance

Regular and effective maintenance by trained personnel is essential and will do much to reduce noise from plant and machinery. Increases in plant noise are often indicative of future mechanical failure.

4.7.1.4 Training

Operatives will be trained to employ appropriate techniques to keep site noise to a minimum and will be effectively supervised to ensure that best working practice in respect of noise reduction is followed. All employees will be advised regularly of the following, as part of their training:

- a) The proper use and maintenance of tools and equipment;
- b) The positioning of machinery on site to reduce the emission of noise to the neighbourhood and to site personnel;
- c) The avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment; and
- d) The protection of persons against noise and vibration.

Special attention will be given to the use and maintenance of sound-reduction equipment fitted to power tools and machines.

4.7.2 Management of Dust and Airborne Pollutants

Dust control procedures will be implemented to avoid as far as is reasonably practicable the emission of dust and other particulates that would adversely affect the air quality to ensure there is no significant deterioration of current air quality as a result of the works. The following procedures are recommended as best practice for the site works.

Dust monitoring will typically be completed through visual inspections of the site and site activities, and particularly at site boundaries or near to local receptors. Such inspections will be recorded and will be available to view upon request.

The emission of dust and other particulates during the construction phase will be controlled by implementing the following measures:

- Plan site layout so that machinery and dust causing activities are located away from receptors, as far as possible;
- Keep site fencing, barriers and scaffolding clean using wet methods;
- Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used. If being re-used on-site cover the materials;
- Ensure all vehicles switch off engines when stationary – no idling vehicles;
- Avoid the use of diesel or petrol-powered generators and use mains electricity or battery power where practicable;
- Imposition of a maximum speed limit of 15 mph on surfaced and 10 mph on un-surfaced haul roads and work areas (signposts will be erected outlining such);
- Minimisation of drop heights from conveyors, loading shovels and other loading or handling equipment;
- Un-surfaced haul routes will be subject to dust suppression during dry periods;
- Deliveries to and removal of plant, equipment, machinery and waste from site will take place within permitted working hours;
- Inspection of haul routes for integrity and instigate necessary repairs;
- Earthworks undertaken during dry weather will be subject to dust suppression, e.g. dampening;
- Access / approach roads will be inspected and where soil or earth has been deposited on these roads a road sweeper will be deployed to sweep the roads;
- All vehicles carrying loads presenting risk of dust will be appropriately sheeted;
- If used on site, bulk cement and other fine powder materials will be delivered in enclosed tankers and stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery;
- Large quantities of cement, grouts and other similar materials will be mixed in designated areas which will be enclosed or shielded;
- Materials with the potential to produce dust will be stored away from sensitive receptors where reasonably practicable;
- Sand and other aggregates will be stored in bunded areas and will not be allowed to dry out;
- All dust control equipment will be maintained in good condition and a record of maintenance activities will be kept;
- Dust covers and dampening down methods will be used to suppress dust from stock piles;
- Wheel wash facilities will be provided at the site entrance/egress point if deemed necessary. No detergents should be used in the wheel wash. It is recommended that water from the wheel wash be recycled and a silt trap fitted to prevent suspended solids entering a soakaway/water environment. The silt trap should be properly maintained and cleaned to ensure it functions effectively.

4.7.3 Emissions Monitoring

Daily visual and aural monitoring of dust and noise emissions from the site will be carried out by specified site personnel. The qualitative observations will be recorded in an appropriate format and will include, as a minimum, date; time; observations; weather conditions; and any remedial action taken if required.

4.7.4 Complaints Management

Good relations can be developed by keeping people informed of progress and by treating complaints fairly and expeditiously. All complaints will be recorded, identifying cause(s) and appropriate measures to reduce emissions in a timely manner, and record measures taken. The complaints log will be made available to the local authority when requested.

Records of any exceptional incidents that cause high dust / air / noise / vibration emissions, either on or off site will be kept in the log book along with the action taken to resolve the situation.

Access to the site will be facilitated at all reasonable times for inspection and/or noise measurements by the local authority environmental health personnel in response to complaints received, following appropriate site-specific induction and / or health and safety training.

4.8 CONTROL OF FLOODING

Most of the site is located within flood Zone B with a small patch in Zone C2. The development use class is not classified as vulnerable development as per Technical advice note (TAN) 15: development and flood risk.

A SuDS scheme will be incorporated into the development to ensure it is protected against fluvial flooding.

4.9 CONTROL OF IMPACTS TO TREES

Control procedures to protect retained trees will be implemented as far as is reasonably practicable. A tree survey and Arboricultural impact assessment has been undertaken by Arboricultural Technician Services Ltd. Trees identified within this report are to be protected throughout the construction phase of the development via a combination of tree protection methods outlined in the sections below. These will ensure that retained trees are protected and that the development complies with Policies SP15 and BE1 of the Neath Port Talbot Local Development Plan.

4.9.1 Protective Fencing

Protective fencing shall be erected to form a Construction Exclusion Zone (CEZ) and will be erected before any site works. As per BS5837:2012, this is an area based on the root protection area from which access is prohibited for the duration of a project. It is defined as a square of length and breadth equal to the diameter of the Root Protection Area (RPA). This barrier will comprise of a vertical and horizontal framework, well braced to resist impacts with vertical tubes spaced at a maximum interval of 3m. Onto this, weld mesh panels will be fixed securely with wire or scaffold clamps. An arboriculturalist should be consulted prior to taking down the CEZ.

Ground protection within an RPA can take the form of scaffold boards or trakway, allowing the provision of working space and allow pedestrian movements.

Removal of existing surface, built forms or other excavations within the CEZ of retained trees, must be done by hand to avoid any surface root damage and shall be supervised on-site by the retained arboricultural consultant.

If the area of the zone of protection around the retained trees is to be left following the removal of the existing hard surface, before a new hard surface is laid, or the area receives soft landscaping treatment, then ground/tree protection must be correctly re-established immediately after the hard surface removal work has been completed. If there is a delay, then a temporary surface must be implemented or Hessian sacking placed over any exposed roots.

4.9.2 Root Protection Area

RPAs will be established on site as outlined in the Arboricultural Report. Damage to an RPA can all be managed through the installation of tree protective fencing as above and also by an Arboricultural watching brief for excavation works within small areas of RPA, air spade trench excavation for pipes and the installation of a no dig cellular confinement system (Cell web) for footpath construction at the site. These methods will ensure that no significant long term adverse impact will occur to any of the retained tree root system or associated soil structure.

4.9.3 Utility Service Connections

Utility services, e.g. surface water drains and electricity, should avoid RPAs. If this is not possible, service runs will be installed using air spade trench excavation techniques or possible use of a small excavator (no greater than 3500kg) with a toothless bucket under the constant supervision of the appointed Arboriculturist. Roots found are not to be ripped, pulled or crushed during excavation and the arboriculturist will advise on actions to retain roots greater than 25mm in diameter that are uncovered. . These services should be installed following the guidelines as set out in National Joint Utilities Group Technical Publication, Vol 4 (2007) – “Guidelines for the planning, installation and maintenance of utility services in proximity to trees”.

4.9.4 Damage to Trees

Care shall be taken to ensure that wide or tall loads or plant with booms, jibs and counterweights can operate without coming into contact with retained trees. As such, any transit or traverse of plant in close proximity to trees should be conducted under the supervision of a banksman to ensure adequate clearance from retained trees is maintained at all times.

Should any damage occur to trees noted for retention, the damage should be reported to the site supervisor immediately who will report to the consultant arboriculturist to enable remedial measures to be implemented. If protective fencing is damaged, therefore impairing its function, all work shall cease in the vicinity until the fence has been returned to standard.

Where root damage is unavoidable, it is appropriate to reduce a tree by pruning.

4.9.5 Removal of Protective Fencing

When the development phase is complete, all drainage and service runs are in place, all site machinery removed and landscaping for the principal area has been implemented, the protective fencing will be dismantled. Hoarding, scaffolding and other fencing materials will need to be removed from site immediately.

4.10 DISPOSAL OF SURPLUS MATERIALS AND WASTES

The construction project will produce waste and surplus materials which will be managed appropriately as per the details in the following section. Management of waste produced by the project in general and by the construction phase in particular will follow the waste minimisation hierarchy:

- **Reduce** waste at source, e.g. delivery in bulk rather than bags;
- **Reuse**, e.g. re-use bags on-site for other purposes / materials;
- **Recycle**, e.g. recycle delivery bags to an off-site or off-project destination, for re-use by others; and,
- **Recover**, e.g. recover some value / energy from materials in an energy-to-waste recovery plant rather than disposing to landfill.

Domestic refuse produced as part of construction activities will be stored in an appropriate location, protected from wind, rain and animals. Facilities will be provided to segregate waste into appropriate waste streams and minimise volumes of stored material (e.g. folding and/or use of balers for cardboard waste). All waste will be

transported from site at an appropriate frequency by a registered waste carrier to prevent overfilling of waste containment facilities and will be reused / recycled where practical.

An appropriately licensed waste disposal contractor will be engaged to regularly uplift waste and recyclable waste materials.

4.11 ENVIRONMENTAL EMERGENCY RESPONSE

A set of standardised emergency response procedures will govern the management of environmental incidents. Construction contractors and operational personnel will be required to adhere to and implement these procedures and ensure that site operatives are familiar with the emergency arrangements.

The emergency procedure will contain emergency phone numbers and the method of notifying local authorities and statutory authorities. Contact numbers for key personnel will also be included.

4.11.1 Pollution Incident Response

A site drainage plan will be kept on site, showing the location of surface water drains. Spill kits will be kept and maintained. The precise contents and capacity of the spill kits will depend on the inventory of products that will be stored and handled on the site; however, they are likely to contain:

- Oil-absorbent granules;
- String;
- Floating “booms” or “sausages”;
- Gloves;
- Absorbent mats;
- Knives;
- Drain covers; and
- Shovels.

A number of specialist spill contractors will be identified that can be called upon should this be required to manage a major spill.

In the event a spill occurs the following actions will be taken:

- The Natural Resources Wales (NRW) incident hotline – 0300 065 3000 – shall be contacted within 30 minutes, unless it is not safe to do so;
- When a spill occurs the Site Manager will be informed immediately;
- In dealing with the spillage the personal safety of the site-workers and the general public will not be compromised;
- Where required to stop or contain the spillage, work will be halted;
- The cause of the spillage will be stopped;
- The spill will be contained. Particularly pathways to any drains and water courses will be blocked as soon as possible;
- The spilled materials will be removed and disposed of in accordance with the waste regulations.

In the event of major or complicated spills, the following additional actions will be taken;

- The site manager will assess the incident and if appropriate request a specialist spill contractor to attend the site.

4.11.2 Staff Training

Details of trained staff to be contacted in the event of an incident, including location, responsibilities, key-holder information and 24-hour cover, are to be provided as part of the site induction for site workers and for all visiting delivery drivers.

4.11.3 Contact List

The PC shall prepare a contact list and notification procedure for alerting the emergency services, relevant environmental regulators, the Health and Safety Executive (HSE) and specialist clean-up contractors; and,

This contact list shall be issued to all site workers as part of their induction and to all visiting delivery drivers.

4.12 CONSTRUCTION & ENVIRONMENT METHOD STATEMENTS

Method statements will be completed by or on behalf of the PC by trained engineers or other appropriately experienced personnel, in consultation with on-site environmental staff, and, where necessary, environmental specialists. Their production will include review of the environmental risks and commitments, as identified in this CEMP, so that appropriate control measures are developed and included within the construction process.

As a minimum, it is expected that method statements will be produced for the following key construction activities and site procedures:

- Ground excavation works;
- Construction of below-ground structures;
- Laying and installation of surface water collection and transmission infrastructure (including jointing and testing of integrity);
- Connections to surface water collection and transmission infrastructure;
- Use of concrete and tarmac;
- Site landscaping;
- Storage of materials, chemicals and other substances;
- Dealing with spills and leakages;
- Pollution incident response.

Method statements will be reviewed by the Environmental Manager, the Main or Sub Contractors appointed environmental manager and, where necessary, by an appropriate environmental specialist. Where necessary, method statements will be submitted to authorities as appropriate.

5.0 CONCLUSION

This CEMP provides a framework for the protection of environmental receptors during the development and operational phases, whilst simultaneously promoting good environmental practices, benefiting the local and wider community.

It is intended that this document will be reviewed and updated regularly during the construction and operational phases, to align with the specific to the construction and operational techniques and methodologies to be adopted

APPENDIX A – WALES AND WEST - HIGH PRESSURE GAS PIPELINE WORKS SPECIFICATION



SPECIFICATION FOR

**SAFE WORKING IN THE VICINITY OF PIPELINES AND
ASSOCIATED INSTALLATIONS OPERATING ABOVE 2
BARG - REQUIREMENTS FOR THIRD PARTIES**

JUNE 2013

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FOREWORD

This Specification was approved, by Chris Clarke, Director of Asset Management and HS&E Dept on 21st June 2013 for use by managers, engineers and supervisors throughout Wales & West Utilities Limited.

Documents are revised, when necessary, by the issue of new editions. Users should ensure that they are in possession of the latest edition by referring to the document library available on the company intranet.

Compliance with this document does not confer immunity from prosecution for breach of statutory or other legal obligations.

BRIEF HISTORY

First published as T/SP/SSW22 Editorial update to reflect merger October 2002 Revised and reissued. Revised and Reissued as T/SP/SSW/22 Editorial update to comply with GRM	October 2001 November 2002 November 2003 June 2004 August 2004	EPSG/L01/283 EPSG/A03/10125 EPSG/T04/1209
Document revised to remove reference to Transco and replace with WWU Ltd.	May 2006	
Document revised to reflect WWU management structure, include IP pipelines and update letters	April 2013	

KEY CHANGES (Identify the changes from the previous version of this document)

Section	Amendments
1	Scope extended from any pipe operating above 7bar to above 2bar gauge
5 & 6	References added to T/PR/P/18
8	References added to wind turbine development near pipelines

USE

This document is provided by Wales & West Utilities Limited for information and reference.

MANDATORY AND NON-MANDATORY REQUIREMENTS

In this document:

must: indicates a mandatory requirement.

should: indicates best practice and is the preferred option. If an alternative method is used then a suitable and sufficient risk assessment must be completed to show that the alternative method delivers the same, or better, level of protection.

SPECIFICATION FOR SAFE WORKING AND DEVELOPMENT IN THE VICINITY OF PIPELINES AND ASSOCIATED INSTALLATIONS OPERATING ABOVE 2 BARG - REQUIREMENTS FOR THIRD PARTIES

INTRODUCTION

This specification is for issue to third parties carrying out work in the vicinity of high pressure gas pipelines (above 2 bar gauge) and associated installations and is provided to ensure that individuals planning and undertaking work take appropriate measures to prevent damage.

Any damage to a high-pressure gas pipeline or its coating can affect its integrity and can result in failure of the pipeline with potential serious hazardous consequences for individuals located in the vicinity of the pipeline if it were to fail. It is therefore essential that the procedures outlined in this document are complied with when working near to a high pressure, above 2 bar gauge, pipeline. If any work is considered by Wales & West Utilities to be in breach of the requirements stipulated in this document then the Wales & West Utilities responsible person will suspend the work until the non-compliances have been rectified.

The Pipelines Safety Regulations state that “No person shall cause such damage to a pipeline as may give rise to a danger to persons” (Regulation 15). Failing to comply with these requirements could therefore also result in prosecution by the Health and Safety Executive (HSE).

The requirements in this document are in line with the requirements of the IGE (Institution of Gas Engineers) recommendations IGE/SR/18 Edition 2 - Safe Working Practices To Ensure The Integrity Of Gas Pipelines And Associated Installations and the HSE’s guidance document HS(G)47 Avoiding Danger from Underground Services.

It is the responsibility of the third party to ensure that any work carried out also conforms with the requirements of the Construction and Design Management Regulations and all other relevant health and safety legislation.

**WHEN CARRYING OUT WORK IN THE VICINITY OF A HIGH PRESSURE PIPELINE
FOLLOW THE FOLLOWING PROCESS**

CONTACT WALES & WEST UTILITIES

Contact Wales & West Utilities to obtain formal consent - Section 2 of this document.

Note: at least 7 days' notice prior to commencement of the work is normally required



CONSIDER SAFETY

Consider the safety requirements - Section 3 of this document.



INFORM Wales & West Utilities AND REQUEST PIPELINE LOCATION

Inform Wales & West Utilities prior to carrying out work and arrange for Wales & West Utilities to locate the pipeline - Section 4 of this document

Note: at least 7 days' notice is normally required



OBSERVE RESTRICTIONS

Observe Wales & West Utilities restrictions on the allowed proximity of mechanical excavators and other power tools and the measures to protect the pipeline from construction vehicles when carrying out the work – Sections 5, 6 and 7 of this document.

Note: Wales & West Utilities may wish to supervise the work, consult Wales & West Utilities to confirm whether or not this is the case.



SPECIFIC ACTIVITIES

If work involves any of the following activities:

- No-Dig Techniques
- Increase in Cover
- Piling
- Demolition
- Hot Work
- Blasting
- Surface Mineral Extraction
- Deep Mining
- Landfilling
- Pressure Testing
- Seismic Surveys
- Wind Turbines

Comply with the requirements in Section 8 of this document



CONSULT WALES & WEST UTILITIES

Consult Wales & West Utilities prior to any backfilling over, alongside or under the pipeline and obtain Wales & West Utilities agreement to proceed. Normally Wales & West Utilities require 48 hours notice prior to backfilling - Section 9 of this document.

IMPORTANT: This flowchart should be used in conjunction with the entire SSW22 document and not in isolation, AND if at any time during the works the pipeline is damaged even slightly then observe the precautions in Section 10 of this document.

IF IN DOUBT CONTACT Wales & West Utilities

1. SCOPE

This specification sets out the safety precautions and other conditions affecting the design, construction and maintenance of services, structures and other works in the vicinity of Wales & West Utilities pipelines and associated installations operating at pressures greater than 2 bar gauge, located in both negotiated easements (see Section 12), in public highways and within the wider area of interest around a pipeline.

2. FORMAL CONSENT

High pressure pipelines are generally laid across country within an easement agreed with the landowner or within the highway.

As the required arrangements for working within an easement and working within the highway differ, this document has been structured to highlight the specific requirements for these two types of area where work may be carried out.

Generally, normal agricultural activities are not considered to affect the integrity of the pipeline, however consult Wales & West Utilities prior to undertaking deep cultivation in excess of 0.5m.

In all other cases no work shall be undertaken in the vicinity of the pipeline without the formal written consent of Wales & West Utilities.

Any documents, handed to contractors on site by Wales & West Utilities must be signed for by the site manager. Wales & West Utilities will record a list of these documents using the form in Appendix A, and the contractor should maintain a duplicate list.

2.1 Within an Easement

The promoter of any works (see Section 12) within an easement must provide Wales & West Utilities with details of the proposed works including a method statement of how the work is intended to be carried out.

Work must not go ahead until formal written consent has been given by Wales & West Utilities. This will include details of Wales & West Utilities protection requirements, contact telephone numbers and the emergency telephone number.

On acceptance of Wales & West Utilities requirements the promoter of the works must give Wales & West Utilities 7 working days' notice, or shorter only if agreed with Wales & West Utilities, before commencing work on site.

2.2 Within the Highway

Work must be notified to Wales & West Utilities in accordance with the requirements of The New Roads and Street Works Act (NRSWA) and HS(G)47.

The promoter of any works within the highway should provide Wales & West Utilities with details of the proposed works including a method statement of how the work is intended to be carried out. This should be submitted 7 working days before the planned work is to be carried out or shorter, only if agreed with Wales & West Utilities. If similar works are being carried out at a number of locations in close proximity a single method statement should be adequate.

Work should not go ahead until formal written consent has been given by Wales & West Utilities. This will include details of Wales & West Utilities' protection requirements, contact telephone numbers and the emergency telephone number.

2.3 Within the Area of Interest

Certain other activities, such as the development of adjacent land with buildings, or other constructions which may have an impact on the safe operation of above 2 bar gauge pipelines, must also be notified to Wales & West Utilities, for example the construction of wind turbines, masts or aerials.

Developers should ensure early consultation with Wales & West Utilities in respect of such development, rather than relying on local authority planning consultation, which may lead to substantial late changes to design or constraints on the planned development.

3. HS&E CONSIDERATIONS

3.1 Safe Control of Operations

All working practices must be agreed by Wales & West Utilities prior to work commencing. All personnel working on site must be made aware of the potential hazard of the pipeline and the actions they should follow in case of an emergency. The Site Document Control Form (Appendix A) should be used to record the list of relevant documents that have been provided by Wales & West Utilities to the contractor.

3.2 Deep Excavations

Special consideration should be given to the hazards associated with deep excavations. The HSE document CIS08 'Safety in Excavations' provides further guidance and is available on the HSE web site www.hse.gov.uk

3.3 Positioning of Plant

Mechanical excavators must not be sited or moved above the pipeline unless written authority has been given by the Wales & West Utilities responsible person.

Mechanical excavators must not dig on one side of the pipeline with the cab of the excavator positioned on the other side.

Mechanical excavators and other traffic must be positioned far enough away from the pipeline trench to prevent trench wall collapse.

3.4 General

Activities associated with working in the vicinity of pipelines operating above 2 bar gauge may have impact on the safety of the general public, Wales & West Utilities staff and contractors, and may affect the local environment. Contractors must carry out suitable and adequate risk assessments prior to the commencement of work to ensure that all such issues are properly considered and risks mitigated.

4. PIPELINE LOCATING

The third party should give 7 working days' notice (or shorter as agreed with Wales & West Utilities) to ensure that the pipeline is suitably located and marked out by Wales & West Utilities prior to the work commencing.

Prior to work commencing on site the pipeline must be located and pegged or suitably marked out by Wales & West Utilities personnel. In exceptional circumstances with the prior agreement of Wales & West Utilities the locating and marking out of the pipeline could be carried out by competent third parties on behalf of the contractor as long as Wales & West Utilities is assured of their competence and the procedures to be followed.

Safe digging practices, in accordance with HSE publication HS(G)47 should be followed as both direct and consequential damage to gas plant can be dangerous both to employees and to the general public.

Previously agreed working practices should be reviewed and revised based on current site conditions. Any changes must be agreed by the Wales & West Utilities responsible person.

The requirements for trial holes to locate the pipeline or determine levels at crossing points must be determined on site by the Wales & West Utilities responsible person.

The excavation of all trial holes must be supervised by the Wales & West Utilities responsible person.

5. SLABBING AND OTHER PROTECTIVE MEASURES

No protective measures including the installation of concrete slab protection should be installed over or near to the Wales & West Utilities pipeline without the prior permission of Wales & West Utilities. Wales & West Utilities will need to agree the material, the dimensions and method of installation of the proposed protective measure. The method of installation must be confirmed through the submission of a formal written method statement from the contractor to Wales & West Utilities.

Where permanent slab protection is to be applied over the pipeline Wales & West Utilities should carry out a survey (Pearson or DCVG Survey) of the pipeline to check that there is no existing damage to the coating of the pipeline prior to the slab protection being put in place. In addition the pipeline records should be consulted to determine whether any other investigations or remedial works would be needed in advance of the slab construction, e.g. reference to T/PR/P/18. Wales & West Utilities must therefore be contacted prior to the laying of any slab protection to arrange this survey. The Safety precautions detailed in Sections 3 and 6 of this document should also be observed during the installation of the pipeline protection.

6. EXCAVATION

6.1 In Proximity to a Pipeline in an Easement

Third parties must not excavate unsupervised, with a powered mechanical excavator closer than 3 metres to the Wales & West Utilities located pipeline or with hand held power tools closer than 1.5 metres. Any fitting, attachment or connecting pipework on the pipeline must be exposed by hand. All other excavation must be by hand.

Consideration may be given to a relaxation of these limits by agreement with the Wales & West Utilities responsible person on site and only whilst he remains on site. In this case a powered mechanical excavator must not be allowed to excavate closer than 0.6 metres to the nearest part of the pipeline.

Where sufficient depth of cover exists, following evidence from hand dug trial holes, light tracked vehicles may be permitted to strip topsoil to a depth of 0.25 metres, using a toothless bucket.

No topsoil or other materials should be stored within the easement without the written permission of Wales & West Utilities.

No topsoil or materials should be stored over the pipeline.

No fires should be allowed in the easement strip or close to above ground gas installations.

After the completion of the work the level of cover over the pipeline should be the same as that prior to work commencing unless agreed otherwise with the Wales & West Utilities responsible person.

No new service shall be laid parallel to the pipeline within the easement. In special circumstances, and only with formal written agreement from Wales & West Utilities, this may be relaxed for short excursions where the service shall be laid no closer than 600 mm to the side of the pipeline.

Where work is being carried out parallel to the pipeline within or just alongside the easement a post and wire fence must be erected as a protective barrier between the works and the pipeline.

6.2 In Proximity to a Pipeline in the Highway

Removal of the bituminous or concrete highway surface layer by mechanical means is permitted to depth of 300 mm, although the use of chain trenchers to do this shall not be permitted within 3 metres of the pipeline. The Wales & West Utilities responsible person may want to monitor this work.

Where the bituminous or concrete highway surface layer extends below 0.3 metres deep it should only be removed by handheld power assisted tools under the supervision of the Wales & West Utilities responsible person. In exceptional circumstances, and following a risk assessment, these conditions may be relaxed by the Wales & West Utilities responsible person.

Third parties should not excavate, unsupervised, with a powered mechanical excavator closer than 3 metres to the located Wales & West Utilities pipeline or with hand held power tools closer than 1.5 metres. Any fitting or attachment must be exposed by hand.

In special circumstances consideration may be given to a relaxation of these rules by agreement with the Wales & West Utilities responsible person on site and only whilst he remains on site only whilst he remains on site and only whilst he remains on site to supervise this work..

The use of 'No dig' techniques is covered in Section 8.1.

Any new service running parallel to the pipeline should be laid no closer than 600 mm to the pipeline (see Section 6.4).

6.3 Crossing Over a Pipeline

Where a new service is to cross over the pipeline a clearance distance of 600 mm between the crown of the pipeline and underside of the service must be maintained. If this cannot be achieved the service must cross below the pipeline with a clearance distance of 600 mm.

In special circumstances this distance may be reduced at the discretion of the Wales & West Utilities responsible person on site.

6.4 Crossing Below a Pipeline

Where a service is to cross below the pipeline a clearance distance of 600 mm between the crown of the service and underside of the pipeline should be maintained.

The exposed pipeline must be suitably supported. The Wales & West Utilities responsible person must be consulted and a stress analysis may be required in order to establish support requirements. The stress analysis should be carried out by individuals with demonstrated expertise in this area, Wales & West Utilities can be consulted for advice on suitable specialists. Wales & West Utilities may request a copy of the stress analysis to confirm its adequacy.

Specific additional constraints apply to Wales & West Utilities pipelines that fall under the requirements of T/PR/P/18.

All supports must be removed prior to backfilling.

The exposed pipelines must be protected by matting and suitable timber cladding.

6.5 Cathodic Protection

Cathodic Protection is applied to all of Wales & West Utilities above 2 bar gauge buried steel pipelines and is a method of protecting pipelines with damaged coatings from corrosion by maintaining an electrical potential difference between the pipeline and anodes placed at strategic points along the pipeline.

Where a new service is to be laid and similarly protected, Wales & West Utilities will undertake interference tests to determine whether the new service is interfering with the cathodic protection of the Wales & West Utilities pipeline.

Should any cathodic protection posts or associated apparatus need moving to facilitate third party works reasonable notice, typically 7 days, should be given to Wales & West Utilities. Wales & West Utilities will undertake this work and any associated costs will be borne by the third party.

7. CONSTRUCTION TRAFFIC

Where existing roads cannot be used construction traffic should ONLY cross the pipeline at previously agreed locations. All crossing points will be fenced on both sides with a post and wire fence and with the fence returned along the easement for a distance of 6 metres. The pipeline shall be protected at the crossing points by temporary rafts of either sleeper or reinforced concrete construction, constructed at ground level. The Wales & West Utilities responsible person will review ground conditions, vehicle types and crossing frequencies to determine the type and construction of the raft required.

Notices directing traffic to the crossing points should be erected.

8. SPECIFIC ACTIVITIES

This section details the precautions that need to be taken when carrying out certain prescribed activities in the vicinity of the pipeline. Consult Wales & West Utilities if you are intending to undertake one of the listed prescribed activities and/or you require further advice on whether the work that you are intending to undertake has the potential to affect the pipeline.

8.1 No-Dig Techniques

Where the contractor intends using no dig techniques then a formal method statement must be produced for all work that would encroach (either above or below ground) within the pipeline easement. This method statement must be formally agreed with Wales & West Utilities prior to the commencement of the work. Wales & West Utilities may wish to be present when the work is being carried out and must therefore be given adequate advance notice before the commencement of the work.

8.2 Increase in Cover

A pipeline integrity assessment must be provided for situations involving a final cover depth exceeding 2.5 metres. This assessment should take due account of both soil 'dead' loading and ground settlement due to earthworks. Embankment design and construction over pipelines must give consideration to prevention of any instability. Expert advice may need to be sought which can be arranged through Wales & West Utilities.

8.3 Piling

No piling will be allowed within 15 metres of a pipeline without an assessment of the vibration levels at the pipeline. The peak particle velocity at the pipeline should be limited to a maximum level of 75 mm/sec. In any event the ground vibration shall be monitored by the contractor and the results available to the Wales & West Utilities Responsible person at their request. A typical monitoring device would be the Vibrock V801 seismograph and tri-axial geophone sensor.

Where ground conditions are of submerged granular deposits of silt and sand, an assessment of the effect of vibration on settlement and liquefaction at the pipeline shall be made.

Expert advice may need to be sought which can be arranged through Wales & West Utilities.

8.4 Demolition

No demolition should be allowed within 150 metres of a pipeline without an assessment of the vibration levels at the pipeline. The peak particle velocity at the pipeline must be limited to a maximum level of 75 mm/sec. In any event the ground vibration shall be monitored by the contractor and the results available to the Wales & West Utilities Responsible person at their request.

Where ground conditions are submerged granular deposits of silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the pipeline shall be made.

Expert advice may need to be sought which can be arranged through Wales & West Utilities.

8.5 Blasting

No blasting should be allowed within 250 metres of a pipeline without an assessment of the vibration levels at the pipeline. The peak particle velocity at the pipeline must be limited to a maximum level of 75 mm/sec. In any event the ground vibration must be monitored by the contractor and the results available to the Wales & West Utilities Responsible person at their request.

Where ground conditions are of submerged granular deposits of silt or sand, an assessment of the effect of vibration on settlement and liquefaction at the pipeline shall be made.

Expert advice may need to be sought which can be arranged through Wales & West Utilities.

8.6 Surface Mineral Extraction

An assessment must be carried out on the effect of surface mineral extraction activity within 100 metres of a pipeline. Consideration should also be given to extraction around groundbeds and other pipeline associated plant and equipment.

Where the mineral extraction extends up to the pipeline easement, a stable slope angle and stand-off distance between the pipeline and slope crest must be determined by Wales & West Utilities. The easement strip should be clearly marked by a suitable permanent boundary such as a post and wire fence, and where appropriate, slope indicator markers shall be erected to facilitate the verification of the recommended slope angle as the slope is formed, by the contractor. The pipeline easement and slope needs to be inspected periodically to identify any signs of developing instability. This may include any change of slope profile including bulging, the development of tension cracks on the slope or easement, or any changes in drainage around the slope. The results of each inspection should be recorded.

Where surface mineral extraction activities are planned within 100 metres of the pipeline but do not extend up to the pipeline easement boundary, an assessment, by Wales & West Utilities must be made on whether the planned activity could promote instability in the vicinity of the pipeline. This may occur where the pipeline is routed across a natural slope or the excavation is deep. A significant cause of this problem is where the groundwater profile is affected by changes in drainage or the development of lagoons.

Where the extraction technique involves explosives the provisions of section 8.5 apply.

8.7 Deep Mining

Pipelines routed within 1 km of active deep mining may be affected by subsidence resulting from mineral extraction. The determination of protective or remedial measures will normally require expert assistance, which can be arranged through Wales & West Utilities.

8.8 Landfilling

The creation of slopes outside of the pipeline easements may promote instability within the vicinity of the pipeline. An assessment should therefore be carried out, by Wales & West Utilities, on the effect of any landfilling activity within 100 metres of a pipeline. The assessment is particularly important if landfilling operations are taking place on a slope in which the pipeline is routed.

8.9 Pressure Testing

Hydraulic pressure testing will not be permitted within 8 metres of the pipeline unless suitable precautions have been taken against the effects of a burst. These precautions should include limiting of the design factor to 0.3 for the third party pipeline for a distance of 6 metres either side of the Wales & West Utilities pipeline, and the use of mill tested pipe or sleeving.

8.10 Seismic Surveys

Wales & West Utilities must be advised of any seismic surveying work in the vicinity of pipeline that will result in Wales & West Utilities' pipeline being subjected to peak particle velocities in excess of 50 mm/sec. In any event the ground vibration near to the pipeline shall also be monitored by the contractor whilst the survey work is being carried out.

Where the peak particle velocity is predicted to exceed 50 mm/sec, the ground vibration should be monitored by the contractor and the results available to the Wales & West Utilities Responsible person at their request.

8.11 Hot Work

The Wales & West Utilities responsible person on site should supervise all welding, burning or other 'hot work' that takes place within the easement.

8.12 Wind Turbines

Wales & West Utilities must be advised of any planned development of wind turbines in the vicinity of an above 2 bar gas pipelines to ensure the development does not impact on the future safe operation of the pipeline. Industry guidance states that any wind turbine must be sited no closer than 1.5 times the proposed height of the turbine mast away from the nearest edge of the pipeline.

9. BACKFILLING

Third parties must provide Wales & West Utilities with 7 days' notice, or shorter notice only if agreed with Wales & West Utilities, of the intent to backfill over, under or alongside the pipeline. This requirement should also apply to any backfilling operations alongside the pipeline within 3 metres of the pipeline. Any damage to the pipeline or coating must be reported to the Wales & West Utilities responsible person in order that damage can be assessed and repairs can be carried out.

Minor damage to pipe coating and damage to test leads will normally be repaired by Wales & West Utilities free of charge.

No backfilling should be undertaken without Wales & West Utilities agreement to proceed. When backfilling, the pipeline should be surrounded by at least 300mm of soft fill (i.e. stone dust) containing no stones, bricks, lumps of concrete, etc. The Wales & West Utilities responsible person will stipulate the necessary consolidation requirements.

If the pipeline has been backfilled without the knowledge of the Wales & West Utilities responsible person then he will require the material to be re-excavated in order to enable the condition of the pipeline coating to be confirmed.

10. ACTION IN THE CASE OF DAMAGE TO THE PIPELINE

If the Wales & West Utilities pipeline is damaged, even slightly, and even if no gas leak has occurred then the following precautions must be taken immediately:-

- ◆ Shut down all plant and machinery and extinguish any potential sources of ignition.
- ◆ Evacuate all personnel from the vicinity of the pipeline.
- ◆ Notify Wales & West Utilities using the free 24 hour emergency telephone number **0800 111 999***¹
- ◆ Notify the Wales & West Utilities responsible person or his office immediately using the contact telephone number provided.
- ◆ Ensure no one approaches the pipeline.
- ◆ Do not try to stop any leak.

¹ * All calls are recorded and may be monitored

11. REFERENCES

NRSAWA	New Roads & Street Works Act
HS(G)47	Avoiding Danger from Underground Services
IGE/SR/18	Safe Working Practices to Ensure the Integrity of Gas Pipelines and Associated Installations
T/PR/P/18	Working on Pipelines Containing Defective Girth Welds or Girth Welds of Unknown Quality
CIS08	Safety in Excavations (HSE document)

12. GLOSSARY OF TERMS

Contractor:	the person, firm or company with whom Wales & West Utilities enters into a contract to which this specification applies, including the Contractor's personal representatives, successors and permitted assigns.
Easement:	Easements are negotiated legal entitlements between Wales & West Utilities and landowner and allow Wales & West Utilities to lay, operate and maintain pipelines within the easement strip. Easement strips may vary in width typically between 6 and 25 metres depending on the diameter and pressure of the pipeline. Consult Wales & West Utilities for details of the extent of the easement strip where work is intended.
Liquefaction:	Liquefaction is a phenomenon in which the strength and stiffness of the soil is reduced by earthquake shaking or other rapid loading. Liquefaction occurs in saturated soils, that is, soils in which the space between individual particles is completely filled with water. When liquefaction occurs, the strength of the soil decreases and the ability of the soil to support pipelines or other components is reduced.
Pearson Survey:	a survey used for locating coating defects on buried pipeline services.
DCVG Survey:	Direct Current Voltage Gradient, a survey for locating and grading coating defects on buried pipeline service
Promoter of new works:	the person or persons, firm, company or authority for whom new services, structures or other works in the vicinity of existing Wales & West Utilities pipelines and associated installations operating above 7 bar gauge are being undertaken.
Wales & West Utilities responsible person:	the person or persons appointed by Wales & West Utilities with the competencies required to act as the Wales & West Utilities representative for the purpose of the managing the particular activity.
Wayleave:	general term which is considered equivalent to 'easement' in this document.

APPENDIX A

SITE DOCUMENT CONTROL FORM - SAMPLE

Emergency Telephone No. **0800 111 999***

Plant Protection Telephone No. **02920278912**

SITE DOCUMENT CONTROL FORM

Activity Reference:

Activity Location:

Site Manager:

(name & telephone number)

Wales & West Utilities Contact:

(name & telephone number)

The following documents were issued to *(individual's name)*

..... **of**
(company name and address)

by *(Wales & West Utilities representative)*

..... **on**
(date).....:-

Documents:-

(List of documents)

Signed : *(by the recipient)*

Date of signature :

SITE DOCUMENT CONTROL FORM

Emergency Telephone No. 0800 111 999*

Plant Protection Telephone No. 02920 278912

SITE DOCUMENT CONTROL FORM

Activity Reference:

Activity Location:

Site Manager:

(name & telephone number)

Wales & West Utilities Contact:

(name & telephone number)

The following documents were issued to (Individuals Name)

.....**of**
(company name and address)

by *(Wales and West Utilities representative)*

.....**on**
(date) :-

Documents:-

Signed :

Date of signature :

ENDNOTE

Comments

Comments and queries regarding the technical content of this document should be directed to:

Asset Management & HSE Dept
Wales & West Utilities Ltd
Wales & West House
Spooner Close
Celtic Springs
Coedkernew
Newport
NP10 8FZ.

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APPENDIX B – ECOLOGICAL WALKOVER SURVEY, MARCH 2023

SANDVIK OSPREY LTD

LAND OF JUNCTION 38, M4, MARGAM – 2023 ECOLOGY SUMMARY NOTE

Background

Soltys Brewster Ecology (SBE) were commissioned by Sandvik Osprey Limited to undertake an updated site walkover survey of a parcel of land found near Junction 38 of the M4 in Margam (central grid reference: SS 79275 86280). The site has received outline planning approval for a new metal processing facility (Planning reference: P2021/1255). As required under Condition 8, a Construction Environment Management Plan (CEMP) is to be produced by Tetra Tech, with SBE providing some ecological input.

In accordance with the wording of the CEMP Condition (No. 8) an updated site walkover survey was undertaken to establish if there have been *‘any material changes in the presence and/or abundance of S7/SINC habitats and species, protected species, reptiles, birds, terrestrial invertebrates and bats; and identify any likely new ecological impacts that might arise from any changes’*.

The updated walkover survey was undertaken on 2nd March 2023 by a suitably experienced ecologist¹. The summary note sets out the findings of the walkover survey as well as identifying any appropriate avoidance, mitigation and enhancement measures or the need for any further survey work associated with the metal processing plant development at the site. Site photos and accompanying target notes are included in Appendix I along with an annotated site plan. For ease of comparison, the habitat mapping prepared in 2021 is included in Appendix II.

Habitats and Features

The updated walkover survey confirmed that the conditions at the site have remained consistent with those previously recorded in 2021 (SBE, 2022), with no major changes noted in the types or extents of habitats present (including any S7 Priority listed habitats). The 2021 Extended Phase 1 Habitat map (see Appendix II) is therefore still considered to be representative of the site.

The majority of the site is still covered by several poor semi-improved and improved grassland pastures which are characterised by their short sward height and low floral diversity, with small parcels of semi-improved neutral grassland (an S7 Priority Listed habitat under Lowland Meadows) and marshy grassland also present in the northern extent of the site. The field pastures are bordered by a series of defunct species-rich hedgerows (S7 Priority Listed habitats under Hedgerows), fences and woodland edges, none

¹ Associate member of the Chartered Institute of Ecology and Environmental Management (CIEEM) with experience of protected species and habitat surveys.

Sandvik Osprey Ltd

Land of Junction 38, M4, Margam – Planning Conditions

Ecology Summary Note, March 2023

E21102203 / Doc01

of which appear to have significantly changed since the previous survey. In the centre of the site lies a small block of woodland which, other than a small number of trees which have since fallen over, remains consistent with what was recorded in 2021. Japanese Knotweed was noted growing along the north-eastern boundary of the site (see Target Note 2). This was also noted in the same location during the 2021 survey visit. This species is listed as an invasive species under Schedule 9 of the Wildlife and Countryside Act (1981) (as amended).

Protected Species

Given that the conditions at the site have remained consistent with what was previously recorded in 2021, the site's potential to support protected and priority species also remains unchanged as set out in the 2022 Ecology Note and Chapter 10 of the Environmental Statement (ES) (Boyer Planning, 2022).

Badger

During the current survey several new mammal pathways were observed around the site (see Target Notes 10 & 12) however, no evidence to confirm use of these pathways by Badger *Meles meles* (e.g. guard hairs) was found and neither was any other evidence found to suggest the current use of the site by Badger (e.g. setts, footprints or latrines). Despite this the use of the site by Badger on an irregular basis could still not be precluded and so their potential presence at the site will still need to be considered during the construction and operational phases of the development as set out within Chapter 10 of the ES (Boyer Planning, 2022) and the CEMP.

Bats

The parcels of semi-improved neutral and marshy grassland, scrub and woodland continue to represent suitable foraging habitat for bats, with the boundary features still likely to be used as commuting corridors for bats in the local area - activity surveys undertaken at the site in 2021 revealed that the site is subject to a low level of bat activity with at least 7no. different bat species recorded commuting/foraging across the site. All of the trees which were previously recorded as having potential to support roosting bats remain present at the site, and with no obvious changes to their condition, these continue to be suitable of supporting roosting bats - this includes the mature Sycamore found on the edge of the woodland (see Target Note 17) in which a Pipistrelle roost was confirmed during the 2021 bat activity surveys. All other trees found within the site boundaries remain in similar condition and so are still considered to hold Negligible Potential to roosting bats. The derelict building/farmhouse found on the eastern boundary (see Target Note 5) also remains in similar condition as to what was recorded during the previous survey visit

and so is still considered to hold Low Potential to support roosting bats. The avoidance and mitigation measures for bats set out in Chapter 10 of the ES remain applicable.

Birds

During the current survey a small number of birds were seen/heard flying over and within the habitats at the site including Robin *Erithacus rubecula*, Long-tailed Tit *Aegithalos caudatus*, Wren *Troglodytes troglodytes*, Blackbird *Turdus merula*, Magpie *Pica pica* and Dunnock *Prunella modularis* – of the species noted only Dunnock is of particular conservation concern and is listed as a Priority Species under Section 7 of the Environment Act (Wales) 2016. No new evidence of nesting was found at the site however the broadleaved trees, hedgerows and scrub are all still considered suitable of supporting a range of tree/shrub nesting bird species. A mature Sycamore found on the woodland edge was also considered suitable of supporting Barn Owl *Tyto alba* (as noted in the 2021 survey) although no evidence of this species was found (e.g. pellets, droppings or feathers). The avoidance and mitigation measures for birds set out in Chapter 10 of the ES remain applicable.

Reptiles

The heavily grazed improved and poor semi-improved grassland parcels remain of poor suitability for common reptile species as they continue to be heavily disturbed by livestock and are lacking in suitable cover/shelter opportunities. However, the boundary hedgerows and scrub and parcels of semi-improved and marshy grassland in the north of the site do represent suitable habitat for common reptiles, with these areas likely to contain a greater abundance/diversity of invertebrate prey resources as well as ample shelter/cover/hibernacula opportunities. As described for other protected/notable species, the mitigation measures set out in Chapter 10 of the ES remain applicable.

Consideration of Development Impacts

The updated walkover survey undertaken in March 2023 confirmed that conditions at the site had remained consistent with what was previously recorded in 2021, with no significant changes in habitat types/extents or their potential to support priority and protected species. As such, the avoidance, mitigation and enhancement measures set out in Chapter 10 of the Environmental Statement (Boyer Planning, 2022) remain applicable to the development of the new metal processing plant at the site and these are listed below:

- Retention (as far as practical) and protection of priority habitats (semi-improved neutral grassland, semi-natural broadleaved woodland and hedgerows);

- Vegetation clearance within the site boundary (trees and scrub) to be undertaken outside of the bird nesting season (i.e., clearance possible between September – February);
- Habitats of suitability for common reptiles and amphibians (e.g., fringe grassland) to be cleared via a phased directional process. Works to be undertaken during the active reptile season (between April – September);
- Any large excavations will be covered overnight or a means of escape provided (e.g., rough sawn timber board of 300mm width placed at an angle of $\leq 45^\circ$) to minimise the risk that Badger or any other small mammals that may become trapped;
- Retention of known bat roost (T422 or Target Note 17) and provision of replacement roosting opportunities onto retained trees;
- Soft felling approach to removal of trees with Moderate and Low potential to support roosting bats;
- Provision of bird boxes onto retained trees to provide replacement for loss of nesting resource at the site;
- Clear demarcation and/or treatment/removal of invasive species (e.g., Japanese Knotweed);
- Protective measures to safeguard retained habitats and trees to be detailed within a Construction Environmental Impact Plan (CEMP);
- The design of site lighting to minimise artificial light spill onto retained hedgerows and other linear habitat features at the site (in particular the site's eastern boundary to Tyn Y Caeau). These features are to be maintained as 'dark corridors' for bats and other nocturnal wildlife;
- Drainage strategy (Pollution prevention strategy) to minimise potential run-off from the site during construction and operation phases to prevent adverse impacts to designated sites with hydrological connections (i.e., Egwlys Nynydd Reservoir SSSI & SINC). To ensure the delivery of appropriate mitigation measures during the construction phase a CEMP will be prepared by the appointed contractor. The CEMP would be agreed with the Local Planning Authority prior to the commencement of construction works;
- New hedgerow, tree and woodland planting across the site, to include native species or those with a known biodiversity benefit (approx. 632m² of new woodland, 257no. new tree planting and 1,256m²/ 305 linear metres new hedgerow planting);
- Native wetland planting within attenuation features (approx. 1,228m² wet grassland mix);
- Landscape plan to include approx. 1,022m² new meadow grass mix;
- Management of retained and created woodland as appropriate through selective thinning, coppicing and supplementary planting as well as restricted access via dedicated footpaths, signs and fencing;

- Bird boxes for species such as House Sparrow and Swallow positioned on new office building;
- Management of retained and created hedgerows as appropriate through trimming, hedge laying, coppicing and supplementary planting (approx. 80 linear metres) to improve structural integrity and species diversity;
- Management of retained and created grassland (marshy and neutral grassland and meadow grass mix) as appropriate to maintain structural integrity and species diversity – e.g., grassland to be cut twice on an annual basis (in early spring and once in late summer) with all arisings removed after each cut;
- Sensitive timings of site lighting during operational phase to minimise artificial light spill onto retained habitats e.g., timing restrictions during summer months when bats are active. And;
- Surface water quality for site runoff will be managed via infiltration and attenuation measures, through the construction of new SuDS features.

References

Boyer Planning. 2022. *Environmental Statement: Land off Junction 38 of the M4, Margam*. Chapter 10. Ecology & Nature Conservation.

Soltys Brewster Ecology (2022). *Land off Junction 38, M4, Margam. Ecology Note to Inform EIA Scoping*. Document Reference: E21102201/DOC 01 – 02 FEBRUARY 2022.

APPENDIX I ANNOTATED SITE PLAN AND TARGET NOTES

Target Note	Description/Comment
1	Small parcel of Semi-improved Neutral grassland found in northern extent of site along verge of the A48 roundabout. Species present include Cocksfoot Grass <i>Dactylis glomerata</i>, Common Bent <i>Agrostis capillaris</i>, Hard Rush <i>Juncus inflexus</i>, Creeping Buttercup <i>Ranunculus repens</i>, Common Dandelion <i>Taraxacum officinale</i>, Common Nettle <i>Urtica dioica</i>, Red Campion <i>Silene dioica</i>, Creeping Thistle <i>Cirsium arvense</i>, Common Sorrel <i>Rumex acetosa</i>, Hairy Bittercress <i>Cardamine hirsuta</i>, Bristly Oxtongue <i>Helminthotheca echioides</i>, Herb Robert <i>Geranium robertianum</i>, Canadian Fleabane <i>Erigeron canadensis</i>, Common Vetch <i>Vicia sativa</i>, Mouse-ear Hawkweed <i>Hieracium pilosella</i>, Ox-eye Daisy <i>Leucanthemum vulgare</i>, Common Knapweed <i>Centaurea nigra</i>, Cleavers <i>Galium aparine</i>, Broadleaved Dock <i>Rumex obtusifolius</i>, Smooth Sow-thistle <i>Sonchus oleraceus</i>, Daffodil <i>Narcissus sp.</i>, Lords-and-Ladies <i>Arum maculatum</i>, Ragwort <i>Jacobaea vulgaris</i>, Ribwort Plantain <i>Plantago lanceolata</i>, Hogweed <i>Heracleum sphondylium</i>, Bush Vetch <i>Vicia sepium</i> and Subterranean Clover <i>Trifolium subterraneum</i>. As noted during the 2021 survey visit (SBE, 2022), the grassy parcel contained a noticeably damper area which is covered by marshy grassland. Here Rush <i>Juncus sp.</i> grasses dominated, with several other species typically associated with damper environments also present including Marsh Thistle <i>Cirsium palustre</i>, Hemlock Water Dropwort <i>Oenanthe crocata</i>, Water Mint <i>Mentha aquatica</i> and unidentified Sedges <i>Carex sp.</i> 
2	Japanese Knotweed is still present in the north-eastern extent of the site.

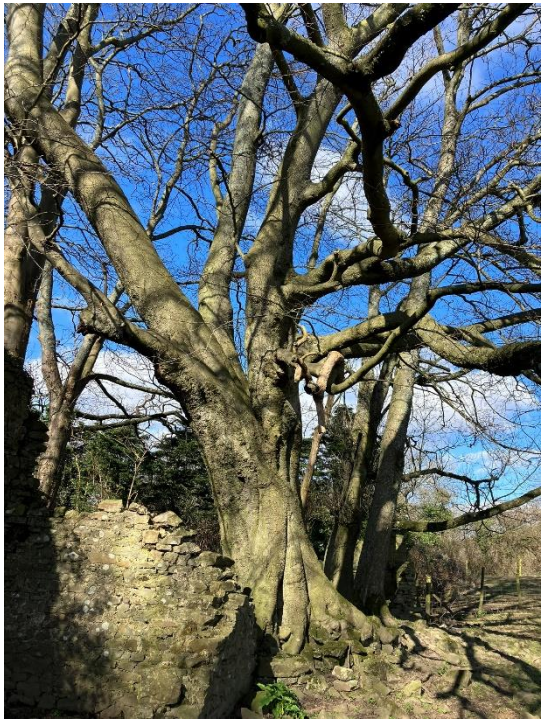
		
3	The north-western and north-eastern field parcels comprise of sheep-grazed improved grassland that contains a low diversity of species including Perennial Ryegrass <i>Lolium perenne</i>, Cocksfoot Grass, Common Dandelion, Common Daisy <i>Bellis perennis</i> and Creeping Buttercup. 	
4	Pair of Ash trees on eastern boundary of north-western field parcel. Both trees are covered in a dense layer of Ivy <i>Hedera helix</i> which may be concealing potential roosting features that cannot be assessed from ground level. Both trees were considered to hold Low Potential to support roosting bats - this is consistent with the 2021 survey findings (see Target Notes 2 & 3 of 2022 Ecology Note).	

		
5	Derelict building/farmhouse on eastern boundary of north-western field parcel (offsite). Building contains several potential roosting features and access points which bats could utilise to gain entry. There have been no obvious changes to the building's condition since the 2021 survey (see Target Note 11 in 2022 Ecology Note) and as such the building continues to hold Low Potential to support roosting bats. 	
6	Small ditch leading through strip of marshy grassland and dense scrub. The ditch was dry at the time of the current survey although the species present indicate it is likely to hold water at least part of the year.	

		
7	Small derelict animal shelter/shed found within north-western field parcel. No obvious changes since 2021 survey (see Target Note 4 of 2022 Ecology Note) and structure still considered to hold Negligible Potential to support roosting bats, although the structures frame may provide nesting opportunities to a number of bird species. 	
8	A defunct species-rich hedgerow can be found separating the northern and southern field parcels. The hedgerow continues to appear unmanaged and comprises of Hawthorn <i>Crataegus monogyna</i>, Blackthorn <i>Prunus spinosa</i>, Holly <i>Ilex aquifolium</i>, Hazel <i>Corylus avellana</i>, Willow <i>Salix</i> sp. and Sycamore <i>Acer pseudoplatanus</i>, with a 'gappy' and bare understory that has been heavily grazed by livestock.	
9	The southern and largest field parcel at the site continues to contain poor semi-improved grassland with species present including Perennial Ryegrass, Cocksfoot Grass, Yorkshire Fog <i>Holcus lanatus</i>, Sweet Vernal Grass <i>Anthoxanthum odoratum</i>, Soft Rush <i>Juncus effusus</i>, Creeping Buttercup, Common Dandelion, Mugwort <i>Artemisia vulgaris</i>, Cinquefoil <i>Potentilla</i> sp., Red Clover <i>Trifolium pratense</i>, Ribwort Plantain, Common Sorrel and Silverweed <i>Potentilla anserina</i>. This field was previously used for hay cutting (SBE, 2022) however is now grazed by sheep.	

		
10	Small mammal pathway leading under fence marking western site boundary. a small amount of hair was found stuck in the bottom of the fence although this was not characteristic of Badger guard hair and was instead considered to have likely been left by Rabbit <i>Oryctolagus cuniculus</i>, with a number of Rabbit droppings also noted along the pathway. 	
11	A species-rich hedgerow with trees marks much of the site's southern and eastern boundaries. These hedgerows contained a number of woody species including Ash <i>Fraxinus excelsior</i>, Sycamore, Hawthorn, Blackthorn, Holly, Rose <i>Rosa sp.</i>, Buddleia <i>Buddleja davidii</i>, Willow, Hazel and Oak <i>Quercus sp.</i>, while the ground flora along these boundaries consisted of Ivy, Red Campion, Lords-and-ladies, Cleavers, Common Nettle, Bramble <i>Rubus fruticosus</i>, Herb Robert, Daffodil, Common Foxglove <i>Digitalis purpurea</i>, Bracken <i>Pteridium aquilinum</i>, Hart's-tongue Fern <i>Asplenium scolopendrium</i> and Male Fern <i>Dryopteris filix-mas</i>.	

		
12	Small mammal pathway leading under fence marking southern boundary. 	
13	Dead tree on woodland edge. The condition of the tree appears to have deteriorated since the 2021 survey (see Target Note 7 in 2022 Ecology Note) but it still contains a number of features suitable of supporting roosting bat. Tree continues to hold a Moderate Potential to support roosting bats.	

		
14	Mature Beech <i>Fagus sylvatica</i> tree on edge of woodland directly adjacent to stone wall. No obvious changes to tree since the 2021 survey (see Target Note 8 of 2022 Ecology Note) and so the tree is still considered to hold Low Potential to support roosting bats. 	
15	Parcel of woodland remains in central region of the site although several trees appear to have fallen since the 2021 survey. The woodland consists mostly of mature Sycamore and Beech trees with a heavily grazed understory comprising of Lesser Celandine <i>Ficaria verna</i>, Lords-and-ladies, Ivy, Common Nettle, Common Bramble.	

		
16	Mature Beech tree in block of woodland. Tree is covered in a dense layer of Ivy which may be concealing potential roosting features which could not be assessed from ground level. Tree continues to hold Low Potential to support roosting bats. The 2021 survey also identified a number of bird nests within the tree canopy (see Target Note 6 of 2022 Ecology Note). 	
17	Mature Sycamore tree on edge of woodland block with a number of potential roosting features. Targeted bat emergence/re-entry surveys undertaken at the site in 2021 confirmed the presence of a bat roost within this tree, with Pipistrelle bats observed entering/leaving a cavity within the trunk on two separate survey visits. There have been no obvious changes to the tree's condition since the 2021 survey (see Target Note 5 of 2022 Ecology Note) and as such the tree is still considered to be suitable of supporting roosting bats and so the continued presence of a roost within the tree must be assumed. The tree was also still considered to be suitable of supporting Barn Owl <i>Tyto alba</i>.	





○ Target Notes

— Survey Area

PRELIMINARY	PLANNING	DESIGN	TENDER	CONSTRUCTION
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Sandvik Osprey Ltd
**Land of Junction 38, M4, Margam – Planning
Conditions**

2023 Updated Walkover Survey -
Annotated Plan

E21102203 / DR01

BS

MW

09 March 2023

soltysbrewster

4 Stangate House
Stanwell Road
Penarth
Vale of Glamorgan
CF64 2AA

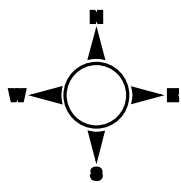
Telephone:- 033 00 13 00 12

e-mail:- enquiry@soltysbrewster.co.uk

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APPENDIX II

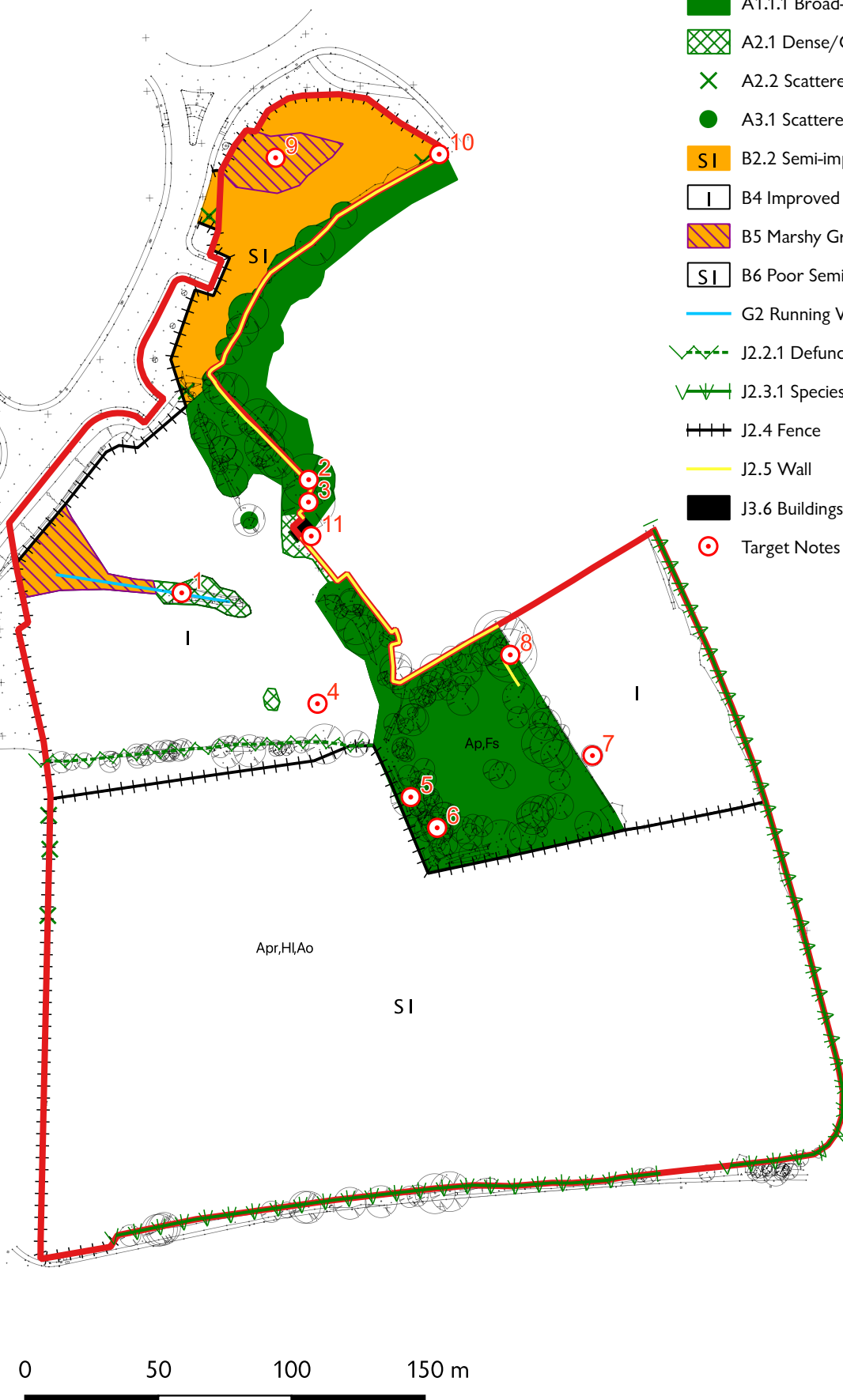
PHASE 1 HABITAT MAPPING (2021)



Key

- Site Boundary
- A1.1.1 Broad-leaved Semi-natural Woodland
- A2.1 Dense/Continuous Scrub
- X A2.2 Scattered Scrub
- A3.1 Scattered Broad-leaved Trees
- B2.2 Semi-improved Neutral Grassland
- B4 Improved Grassland
- B5 Marshy Grassland
- B6 Poor Semi-improved Grassland
- G2 Running Water
- ~ J2.2.1 Defunct Species-rich Hedgerow
- ~ J2.3.1 Species-rich Hedgerow with Trees
- + + + J2.4 Fence
- J2.5 Wall
- J3.6 Buildings
- ⊙ Target Notes

Ac = *Acer pseudoplatanus*
Ao = *Anthoxanthum odoratum*
Apr = *Alopecurus pratensis*
Fs = *Fagus sylvatica*
Hl = *Holcus lanatus*



0 50 100 150 m

PRELIMINARY	PLANNING	DESIGN	TENDER	CONSTRUCTION
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Sandvik Osprey Ltd

Land off Junction 38, M4, Margam

Extended Phase 1 Habitat Survey Plan

E21102201/DR01

DJ

MW

21 May 2021

soltysbrewster
E C O L O G Y

4 Stangate House
Stanwell Road
Penarth
Vale of Glamorgan
CF64 2AA

Tel: 033 00 13 00 12

Email: enquiry@soltysbrewster.co.uk

APPENDIX C – ECOLOGICAL MITIGATION PLAN



- Existing Category A Tree
- Existing Category B Tree
- Existing Category C Tree
- Existing Category U Tree
- Root Protection Area
- Retained Tree
- Removed Tree
- Retained marshy grassland
- Retained semi-improved meadow

 Proposed Native Woodland Mix
 Proposed Native Hedge Mix
 Proposed Meadow Mix
 Proposed Grass

1 Proposed Bird Box Type 1
2no. Vivara Pro Woodstone Swift Next Box (or similar design for use by Swifts)

2 Proposed Bird Box Type 2

3 Proposed Bird Box Type 3

1 Proposed Bat Box Type 1
2no. Beaumaris Woodstone Bat Boxes (or similar design for use by crevice dwelling bat species)

2 Proposed Bat Box Type 2
3no. Large Multi Chamber Woodstone Bat Box (or similar design for use by crevice dwelling bat species)

Native Woodland Mix (W1)		
1 per m ² squared randomly planted in single species of between 3-5 species		
%	Latin Name	Common Name
5	<i>Alnus glutinosa</i>	Black alder
10	<i>Betula pendula</i>	Silver Birch
5	<i>Cornus sanguinea</i>	Common Dogwood
10	<i>Corylus avellana</i>	Common Hazel
10	<i>Crataegus monogyna</i>	Common Hawthorn
5	<i>Ilex aquifolium</i>	Common Holly
5	<i>Malus sylvestris</i>	Crab Apple
15	<i>Pinus sylvestris</i>	Scots Pine
5	<i>Prunus padus</i>	Bird Cherry
15	<i>Quercus robur</i>	Common Oak
5	<i>Salix cinerea</i>	Grey Willow
10	<i>Sorbus aucuparia</i>	Rowan

Code	Latin Name	Common Name
T1	<i>Acer rubrum</i> 'Armstrong'	Red Maple 'Armstrong'
T2	<i>Alnus glutinosa</i>	Common Alder
T3	<i>Betula utilis</i> var. <i>jacquemontii</i>	Himalayan Birch
T4	<i>Castanea sativa</i>	Sweet Chestnut
T5	<i>Fagus sylvatica</i>	Common Beech
T6	<i>Malus</i> 'Evereste'	Crab Apple 'Evereste'
T7	<i>Pinus sylvestris</i>	Scots Pine
T8	<i>Prunus avium</i>	Gean or Wild Cherry
T9	<i>Quercus robur</i>	Common Oak
T10	<i>Tilia cordata</i> 'Streetwise'	Small Leaved Tree 'Streetwise'

central 300mm zone. Plant in random groups between 3 & 8 of the	%	Latin Name	Common Name
10		<i>Cornus sanguinea</i>	Common Dogwood
20		<i>Corylus avellana</i>	Common Hazel
40		<i>Crataegus monogyna</i>	Common Hawthorn
5		<i>Ilex aquifolium</i>	Common Holly
5		<i>Lonicera periclymenum</i>	Honeysuckle
5		<i>Prunus spinosa</i>	Blackthorn
5		<i>Rosa canina</i>	Dog Rose
10		<i>Sorbus aucuparia</i>	Rowan

Code	Name	Specification	Additional Information
MM1	Seasonal flood tolerant meadow mix	Emorsgate Seeds EC1	Sown at 2g/m ²
		Emorsgate Seeds EM8	Sown at 4g/m ²
MM2	Standard general purpose meadow mix	Emorsgate Seeds EC1	Sown at 2g/m ²
		Emorsgate Seeds EM2	Sown at 4g/m ²

PL01	22.03.23	Planning Issue				BS Approved	CC Drawn
PRELIMINARY	PLANNING	DESIGN	TENDER	CONSTRUCTION			

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○ client

Sandvik Osprey Ltd

☐ project

Land off Junction 38, M4, Margam

○ drawing title

Ecological Enhancement Plan

☐ scale	☐ drawn	☐ approved	☐ date
.....			

□ drawing no. □ revision

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of the work to which it relates which has not been referred to them and their approval obtained.