PROJECT DETAILS	
Client	**SSEN**
Project Title	**SSEN ASTI – Loch Buidhe to Spittal – Carnaig Substation**
Project Number	**1002-001577**
Business Unit	**Energy**

MANAGEMENT PLAN

SSEN ASTI SSEN ASTI – LOCH BUIDHE TO SPITTAL – CARNAIG SUBSTATION ENVIRONMENTAL MANAGEMENT PLAN

ISSUE CONTROL		
CONTROL COPY NO.	**ISSUED TO**	**JOB TITLE**

APPROVAL

Alex Hemming Senior Environment & Sustainability Manager **30/07/2024**	**Andrew Wilkinson** Senior SHES Manager 30/07/2024	**Liam Cooke** Senior Project Manager 30/07/2024	
Main Author	**Reviewer**	**Approver**	**Accepted on behalf of Client (*if applicable*)**

DOCUMENT CONTROL		
DOCUMENT NUMBER	CAAI4-LT470-JMS-XX-XX-PLN-EO-0001	
CURRENT REVISION	**CURRENT STATUS CODE**	**SECURITY CLASSIFICATION**
01	**draft**	**Internal**

REVISION HISTORY

REVISION	STATUS CODE	DATE	DESCRIPTION OF CHANGE
01	draft	30/07/24	First version for Planning submission

Controlled Copy Distribution List

CONTROLLED COPY NO.	JOB TITLE
01	Senior Project Manager
02	Project Manager
03	Construction Manager
04	Senior SHES Manager
05	Senior SHES Advisor
06	Environment Manager
07	Client Copy
08	Environmental/Ecological consultant(s)

Contents

1 Introduction

1.1 Integrated Management System

1.1.1 This Project Environmental Management Plan is part of the J. Murphy & Sons Limited (Murphy) Integrated Management System (MIMS) which is certified to ISO14001: 2015. It describes how environmental requirements will be managed for the contract and specifies controls that will be implemented on site. The purpose of this Project Environmental Management Plan is:

- To help ensure compliance with legal and contract requirements.
- To control and where possible minimise, the environmental impacts of the construction works.
- To minimise the risk of causing pollution or a nuisance and associated costs and delays.

1.1.2 All standard procedures, controls and systems referred to in this plan are described in detail in the Murphy Integrated Management System. Information from Group Procedures and Controls relevant to this contract as well as any contract-specific requirements are detailed in this plan.

2 Project Details

2.1 Scope

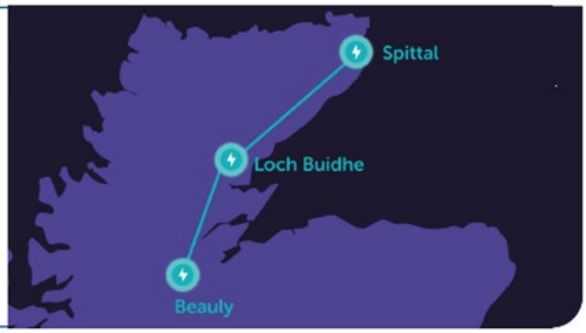
2.1.1 The overall project scope covers construction of new 400kV Substations at Loch Buidhe and Spittal and the associated 400kV Overhead Line connection:

Based on the requirements outlined in the ESO's Pathway to 2030 Holistic Network Design, we have developed proposals to reinforce the onshore corridor between Spittal and Beauly, via Loch Buidhe. To facilitate this connection, and others as part of the wider strategy, new additional 400kV substations and associated infrastructure is also required in these three locations.

Due to the criticality of these works, there is a requirement for accelerated development and delivery to meet the 2030 connection dates.

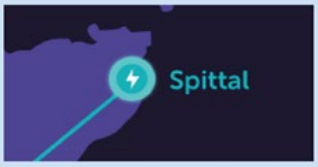
Spittal – Loch Buidhe – Beauly 400kV connection

This reinforcement project spans a significant length of the north of Scotland and will involve the construction of a new 400kV overhead line connection, between the new proposed substations at Spittal, Loch Buidhe and Beauly.



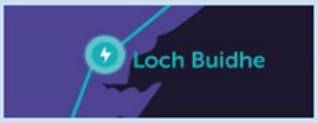
New Spittal area 400kV substation and HVDC converter station

A new 400kV substation is essential to enable the existing substation to connect onto the new Spittal – Loch Buidhe – Beauly 400kV overhead line (OHL) and provide a reinforcement for the Spittal – Peterhead HVDC subsea cable link. A High Voltage Direct Current (HVDC) converter station is also required in the vicinity of the new Spittal substation site to connect the Spittal – Peterhead HVDC subsea link project.



New Loch Buidhe area 400kV substation

A new 400kV substation is required near the existing 275kV substation at Loch Buidhe to provide a connection for the existing transmission infrastructure onto the new Spittal – Beauly 400kV OHL.



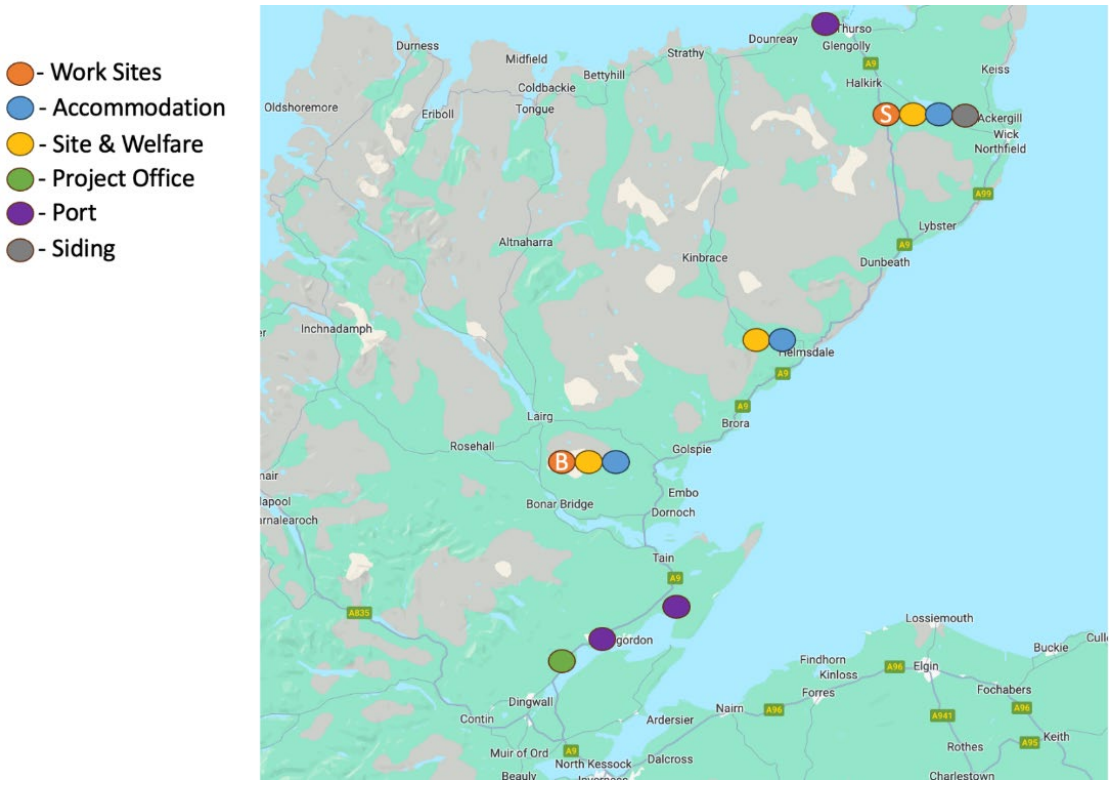
This plan covers the scope for the Loch Buidhe/Carnaig Substation (and associated works) only.

2.2 Project Particulars

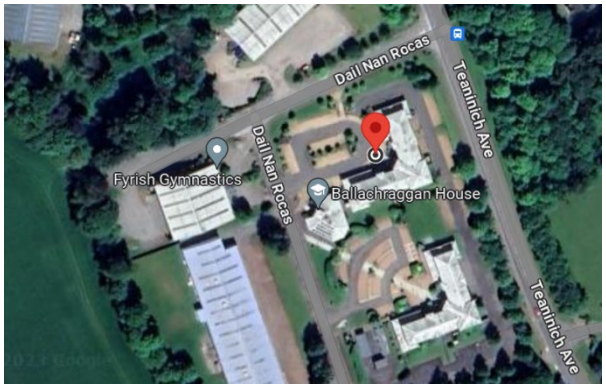
No.	Particular	Detail
2.2.1	**Project Name**	SSEN ASTI
2.2.2	**Murphy Project Number**	1002-001577 – Carnaig 400kV substation
2.2.3	**Address and Telephone Nos. of Site Office(s)**	Fyrish House, Dail Nan Rocas, Teaninich Industrial Estate, Alness, IV17 0SX **WHAT3WORDS: ///mixes.estimate.massive**
2.2.4	**Client**	SSEN
2.2.5	**Contract Start Date**	2023
2.2.6	**Contract Completion Date**	2030
2.2.7	**Scope of Works**	The project scope covers construction of new 400kV Substations at Carnaig and associated works

2.3 Location

2.3.1 The construction phase covers various locations between Loch Buidhe and Spittal.



2.3.2 The main project office is located at Fyrish House, Dail Nan Rocas, Teaninich Industrial Estate, Alness, IV17 0SX:



2.4 Environmental Goals (Objectives and Targets/ Environmental KPIs)

2.4.1 The Murphy Group 75 Year Anniversary Objectives and Targets and Environmental KPIs are applicable on this contract. **The Murphy Group Objectives and Targets and Environmental KPIs are:**

- Invest **£75m in Green Plant** over the next 5 years to reduce our emissions. About 90% of our emissions come from use of fuel, in vehicles, plant and equipment.
- A **50% net reduction** in emissions by 2026 against a 2019 baseline.
- 100% **renewable energy** for our business by 2025.
- **Turning Waste to Wealth**: Smarter use of our resources, more recycling and less to landfill with a target of 100% of waste diverted from landfill by 2025.
- **Plant trees**: we will plant 5,000 trees a year totalling 150,000 trees by 2050.
- We will engage with **75 schools** by 2026 to educate the next generation on climate action as part of our Murphy Roots programme.

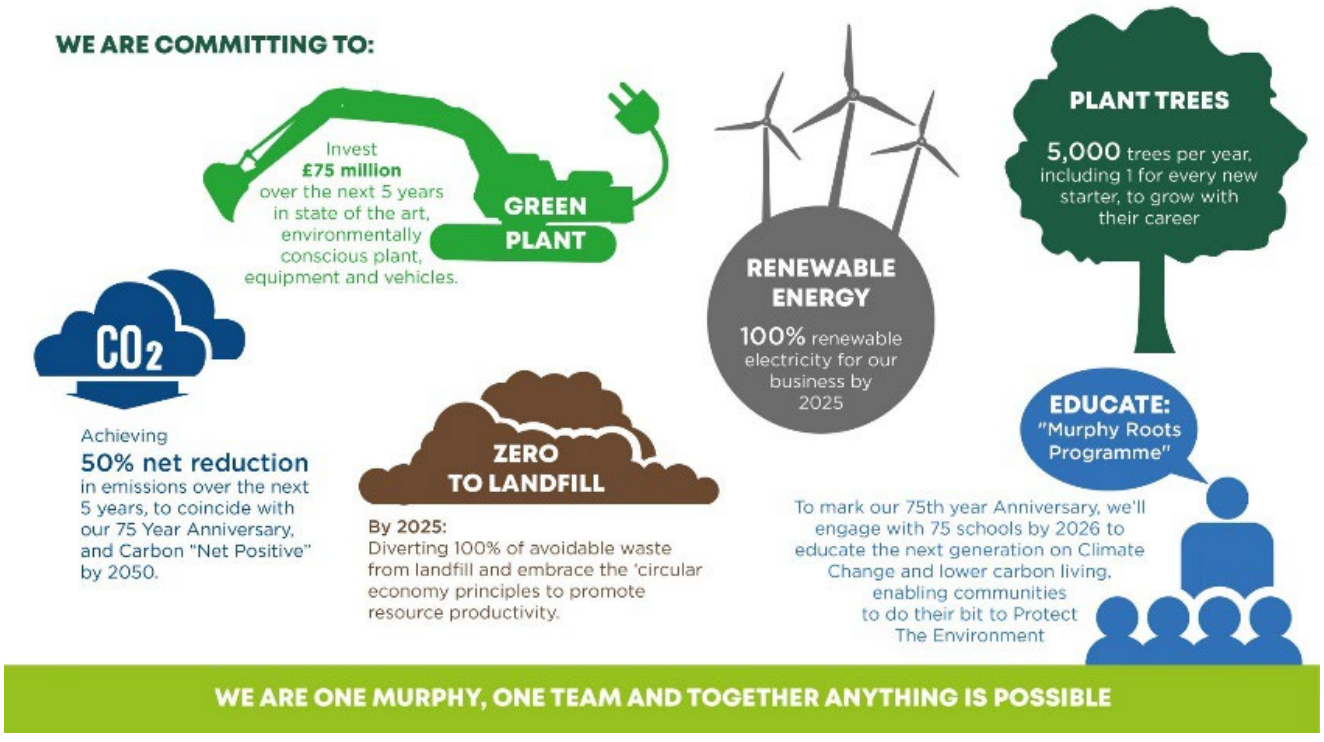


Figure 1 – Murphy environmental commitments.

3 Appointments

3.1 Project Appointments

APPOINTMENTS		
Director (Special Projects)	Graham Carr	*Tel: 07786 334 970*
Senior Project Manager (OHL)	Mark Williams	*Tel: 07511 646 377*
Project Manager (OHL)	Francisco Gomez	*Tel: 07840 708188*
Senior Project Manager (Substations)	Liam Cooke	*Tel: 07712 303 231*
Senior Project Manager (SSEN Transmission)	Rebecca Gay	*Tel: 07443 174763 Rebecca.gay@sse.com*
Lead Consents & Environmental Manager (SSEN Transmission)	Simon Hall	*Tel: 07584 011 934 simon.hall@sse.com*
Senior Land Manager (SSEN Transmission)	Rod Andean	*Tel: 07827 047093 Rod.Andean@sse.com*
Safety Officer (SSEN Transmission)	James Rushton	*Tel: 07423 242099 James.rushton@sse.com*
Consents & Environment Manager (SSEN Transmission)	Teresa Jackson	*Tel: 07467 654681 teresa.jackson@sse.com*
Consents & Environment Manager (SSEN Transmisssion)	Tara Cowley	*Tel: TBC teresa.jackson@sse.com*
Operations Manager	Guy Stevenson (IGNE)	*Tel: 07876 036412*
Project Delivery Manager	Steven Daily (IGNE)	*Tel: 07753 892066*
Project Manager	Stewart Peacock (IGNE)	*Tel: 07919 004111*
Site Agent	Katie Forrest (IGNE)	*Tel: 07733 121235*
Senior SHES Manager	Andrew Wilkinson	*Tel: 07739 938 684*
SHES Manager	Steve Barker	*Tel: 07710 168 348*
SHES Advisor	Robert McKay	*Tel: 07858 303411*
SHES Advisor	Michael Sanders	Tel: 07709 847072
Senior Environment & Sustainability Manager	Alex Hemming	*Tel: 07745 645 692*
Environment Manager	Werner Kriel (RSK)	*Tel: 07712 342864*
Environmental Advisor (Interim)	Joe Dangerfield	*Tel: 07935 348134*
Environmental Consultant(s)	Roberta Epps (RSK)	*Tel: 07717 518109*
Ecological Clerk of Works (ECoW)	Werner Kriel (RSK)	*Tel: 07712 342864*
Ecological Clerk of Works (ECoW)	David Knox (RSK)	*Tel: 07754 774076*
Archaeological Clerk of Works (ACoW)	Kirsty Dingwall (RSK)	*Tel: 07795 540865*
Archaeological Clerk of Works (ACoW)	Steve Cox (RSK)	*Tel: 07795 540854* steve.cox@headlandarchaeology.com

3.2 Responsibilities

3.2.1 For this project, the main roles with environmental responsibilities are:

The Project Manager will:	1. Provide information on contract requirements, including scope of works and forecast of waste quantities to Environment Manager following contract award and prior to start of works on site and also when any changes occur. 2. Nominate the following as required, Waste Rep(s), person to produce and maintain Site Waste Management Plan, person to undertake environmental inspections in line with the inspection schedule, person to check drip trays and bunds and person to supervise refuelling of tanks and bowsers, person complete Watercourse Monitoring Booklet, person to complete Pumping and Dewatering Booklet. 3. Ensure required consents are obtained before associated works start in liaison with the Client. Hold point to obtain express permission from the Client before site entry. 4. Ensure environmental waste minimisation and environmental mitigation measures are incorporated into design, construction method and/ or materials employed, where possible. 5. Ensure environmental and waste requirements are included on Requisitions and in Subcontracts and Orders. 6. Ensure a current version of the Contract Organisation Chart is displayed on site notice boards and individuals with environmental responsibilities are named on the Authorised Signatures List where appropriate. 7. Liaise with Statutory Authorities and the Client as required and ensure records of communication (including verbal) are kept. Ensure Statutory Authorities are always accompanied on site (preferably by the Project Manager and the Environment Manager and especially a Client representative). 8. Ensure all residents are notified of noisy works before they begin. 9. Ensure environmental performance including review of Incidents and Nonconformances, Waste arisings and any Contract Objectives and Targets are included as part of Contract Review Meetings. 10. Approve the Project Environmental Management Plan and ensure employees and subcontractors implement the environmental controls. 11. Ensure staff needed for audits are available when required. 12. Ensure actions resulting from Corrective Action Requests and Observations raised during audits are completed by the deadlines and signed off copies of Corrective Action Requests are forwarded to the relevant Environment Manager.
The Environment Manager/Environmental Advisor will:	~~1.~~ Report Environmental Incidents (Category 3 or above) ~~to the Statutory Authorities if necessary.~~ to theClient who will inform the Statutory Authorities if necessary. 2. Log and monitor Environmental Incidents and Nonconformances. 3. Obtain prior agreement from the Head of Systems & Assurance in writing for any deviations from Group Environmental Procedures (e.g. use of client procedures or forms). 4. Refer to the Client for any deviations from GEMPs/SPPs as per the SSEN GI Contract Environmental Specification. 5. Disseminate information issued by Head of Systems & Assurance, including changes to legislation, to relevant employees. 6. Identify employees that require environmental training, provide training and maintain training records. 7. Provide advice and deal with queries and correspondence on environmental issues. 8. Identify significant environmental impacts for contracts and help set-up contracts and site compounds to include necessary controls. 9. Identify any environmental consents that are required and ensure they are obtained in liaison with the employer. 10. Produce and update the Project Environmental Management Plan and / or Site-Specific Information.

	11. Produce/ maintain or ensure production/ maintenance of all aspects of Site Waste Management Plan 12. Ensure a forecast of waste types, quantities and disposal routes is produced before works start on site. 13. Undertake contract environmental inspections to ensure controls are in place and working. 14. Monitor progress in closing out Corrective Action Requests and Observations raised during audits. 15. Undertake regular reporting to senior management and the Client on the Contract in line with the Client's CES. 16. Ensure all environmental records are kept and readily available. 17. As required to carry out and supervision / monitoring of works 18. Environmental team may be required to complete a post Site visit walkover to ensure no impact has been caused and / or restoration works are completed as per the agreed specification. 19. Notify the Environmental Health Officer of any particularly noisy works or any works outside the contract hours within proximity to sensitive receptors before construction begins.
Site/Construction Manager/Team Leader/Supervisor	1. Ensure oil, including diesel, is stored in properly bunded tanks/ bunded mobile bowsers/ drip trays. 2. Report Incidents in accordance with the 2-1-2 reporting system. 3. Report Nonconformances via the nonconformance tool. 4. Report Incidents and Nonconformances to the Environment Manager as soon as possible. 5. Ensure the Environment Manager is informed of environmental complaints. 6. Ensure employees and subcontractors receive Induction Training (including environment) and Toolbox Talks as appropriate.
Ecological Clerk of Works (ECoW)	1. Review baseline ecology data and identify medium/high risk sites. 2. Visit all sites in Stage 1 with a potential for interaction with protected animal species or designated sites & assist in RAG scoring. 3. 5 visits per week depending on the proximity to environmental sensitivity (including along access to GI sites). Cover should be for full period of works where sensitivities exist/buffer zones required. Where multiple teams are undertaking stage 2 GI works there may be a requirement for multiple ECoW's. 4. Ensure that any ecology licensing requirements are identified and approach agreed with Murphy & the Client. Complete licence applications and supervise works as required by the Client's CES and SPPs. 5. Undertake ecology watching briefs in medium to high-risk locations to ensure no encroachment. 6. Review any protected or invasive plants and advise on control measures accordingly. 7. Develop ecology mitigation plans as required. 8. Provide site reports and/or site diaries documenting any findings. 9. Brief site operatives on ecology risks and mitigation.
Archaeological Clerk of Works (ACoW)	1. Review baseline archaeology data and identify medium/high risk sites. 2. Visit all sites in Stage 1 with a potential for interaction with archaeology or historic environment features & assist in RAG scoring. 3. Site walkover to agree mitigations: 3-5 per week (during ground-breaking/trial pits). Where multiple teams are undertaking Stage 2 GI work there may be a requirement for multiple ACoW's. 4. Ensure that any formal archaeology requirements (e.g. Written Scheme of Investigation) are identified and agreed with Murphy & the Client. 5. Undertake archaeological watching briefs in medium to high-risk locations to ensure no encroachment.

	6. Review any sites and features of historic environment significance and advise and oversee on control measures accordingly. 7. Provide site reports and/or site diaries documenting any findings. 8. Brief site operatives on historic environment risks and mitigation.
Method Statement Authors will:	1. Include environmental controls in Method Statements, obtaining advice from the Environment Manager, ECoW and ACoW when unsure of requirements.
Quantity Surveyor/ Commercial Manager will:	1. Monitor waste quantities and costs and provide information to assist in the production of Site Waste Management Plan Reports.
Murphy Waste (Central Procurement) will:	1. Check with SEPA that Waste Carriers are registered and Waste Management Sites are licensed before subcontracts or orders are placed. 2. Ensure environmental and waste requirements are included on Requisitions/ Subcontracts or Orders. 3. Reconcile waste invoice against Waste Transfer Notes/ Consignment Notes and tip receipts before authorising payment.
Waste Rep. will:	1. Arrange for collection of waste through Murphy Waste (Central Procurement) 2. Keep an up-to-date record of waste removed from Site 3. Confirm with Murphy Waste (Central Procurement) that Carrier Licences/ Disposal Site Licences are valid and either keep a record of confirmation or obtain copies for site files 4. Complete and sign Waste Transfer Notes/ Hazardous Waste Consignment Notes. Give copies to Drivers, send top copy to invoicing and keep photocopy on file. 5. Inform SEPA at least 3 days prior to removing any special/ hazardous waste from site 6. Ensure waste storage/ segregation/ recycling activities are correctly implemented and appropriate waste records and statistics are maintained. Monitor waste related housekeeping (i.e.. adequately segregated, not overflowing, prompt removal, contained within receptacles etc).
Subcontract Buyers will:	1. If a subcontractor is to act as a Waste Carrier and dispose of waste provide details of their Carrier Licence and the intended disposal sites Waste Management Licence or Exemption Number to the Murphy Waste dept. before placing subcontract. 2. Include environmental and waste requirements in subcontracts.
Drivers will:	1. Inform the Waste Rep. what waste they are removing and where it is being taken prior to removing any waste from site. 2. Collect Waste Transfer Note/ Consignment Note from Waste Rep when collecting waste or confirm 'Season Ticket' is already in place. 3. Only take waste to a licensed Waste Management Site as instructed by the Waste Rep 4. Get Waste Management Site to sign Waste Transfer Note/ Consignment Note and give to Murphy Waste dept. along with all associated receipts (unless 'Season Ticket' is already in place). 5. If a 'Season Ticket' is in place, complete Drivers Daily Tipping Log and give it to the Murphy Waste dept. along with all associated receipts.
All Staff will:	1. If there is an incident, or discovery of any ecology or archaeological features, stop work, contain it and report it to the Site Manager. 2. Contact the Waste Rep when waste needs to be removed. 3. Pass any queries or correspondence on environmental issues to Environment Manager. 4. Work in accordance with Group SHES Procedures, Project Environmental Management Plan and Method Statements & SSEN policies and procedures as per part 3.5.2 of the CES 5. If contamination is encountered unexpectedly stop work, cover over the suspected contamination and seal off the area. Notify the Murphy Environment Manager and/or Project Manager for further escalation.

4 General Environmental Management

4.1 Policy

4.1.1 The Environment Manager will ensure that the Murphy SHES Policy Statement is posted on the site noticeboards.

4.2 Aspects and Impacts

4.2.1 Environmental Aspects and Impacts relating to this contract have been assessed and the Environmental Aspects & Impacts Register is included as Appendix A.

Form: 0000-JMS-ZZ-XX-FM-Z-0099 Environmental Aspects & Impacts Register

4.2.2 The significant potential impacts relating to this contract are:

- **Peat Management**
- **Protected Animal Species**
- **Legally Protected Environment sites**
- **Accidental spills and silt runoff**
- **Inadvertent damage to a heritage asset**
- **Damage to trees and hedgerows**
- **Visual impact**

4.2.3 For shorter-term, lower impact works in different geographical locations (such as GI) the following, site specific, form can be used to determine any location specific environmental and ecological constraints and any resultant controls or consent requirements.

Form: 0000-JMS-ZZ-XX-FM-Z-0118 Environmental Impacts Checklist

GIS system

4.2.4 Environmental and ecological constraints will be captured following further surveys and findings and communicated via the GIS system so appropriate mitigation controls and planning can be implemented during the site works. Link to GIS system:

SSEN - Spittal to Loch Buidhe - 400KV Overhead Line (arcgis.com)

Commitments Register

4.2.5 Murphy will ensure compliance with the Client's Commitments Register. This Register encompasses environmental mitigations, consent conditions, and other relevant environmental agreements. Murphy will demonstrate compliance through the use of Environmental Risk Assessment Method Statements (RAMS) and ensure the Register is updated and maintained as necessary when relevant consents and licenses are obtained. Additionally, Murphy will regularly review the Register to reflect any new consents and licenses. Both Murphy and any sub-contractors involved will adhere to all commitments listed in the Register, undertaking all specified activities as part of the Works.

Legal and Other Requirements

4.2.6 All personnel within the Company have access to an Environmental Legislation Register via the Murphy Intranet. The Register is up-dated monthly. Changes to existing legislation, proposed new legislation and industry best practice to interested parties is disseminated via email to the SHES team.

4.2.7 Consents required for this contract have been identified on the Consents and Authorisations Checklist. Progress on obtaining consents will be tracked using the Consents Register and will be included as Hold Points on Inspection and Test Plans.

Form: 0000-JMS-ZZ-XX-FM-Z-0102 Consents and Authorisation Checklist (incl. Consents Register)

Form: 0000-JMS-ZZ-XX-PD-Z-0077 Inspection and Testing

4.2.8 For all works requiring an environmental consent no works will commence until a copy of the Consent or written confirmation that consent is not required has been received from the Client. Murphy shall provide the Client Project Manager with a copy of any emails, letters, other written correspondence and records of telephone discussions with consenting bodies and statutory authorities.

4.2.9 Approvals prior to construction will include:

Consent Type	Legislation	Consent coverage and timescale	Responsibility
Permitted Development Confirmation	Town and Country Planning (Scotland) Act 1997, as amended		Employer (SSEN)
HRA / Appropriate Assessment	Conservation (Natural Habitats, &c.) Regulations 1994	Stage 2 - following submission to NatureScot (nominally 4 months but subject to confirmation).	Employer (SSEN)
SSSI Consent	Nature Conservation (Scotland) Act 2004	Stage 2 - following submission to NatureScot (nominally 4 months but subject to confirmation).	Employer (SSEN)
Protected Species Licensing	Conservation (Natural Habitats, &c.) Regulations 1994	As identified by Contractor survey	Contractor
Felling Licence	Scottish Forestry	GI Works access and GI Locations following submission to Scottish Forestry (nominally 5 months but subject to confirmation).	Employer (SSEN)

4.2.10 The following documents have been reviewed and requirements applicable to this contract are included within this Plan:

- GIS data obtained from existing public data;
- This will later be supplemented with other specific surveys such as ecology & Archaeology as they are conducted throughout the EIA and GI phase;
- SSEN Environmental Standards including:
  - Consents & Environmental Specification – Ground Investigation Works
  - General Environmental Management Plans (GEMP's)
  - Species Protection Plans (SPP's)

4.3 Environmental Ground Rules

4.3.1 Murphy will comply with the employers environmental ground rules, which are as follows:

Keep a tidy site:

- Maintain a clean, tidy and secure site.
- Minimise and segregate waste for re-use and recycling.

- Reinstate works areas promptly.

Prevent silty run-off

- Keep clean and silty water separate.
- Settle all silty water before leaving site.
- Ensure site drainage is properly designed and maintained.

Contain oil and fuel

- Store fuel and oil in bunded containers.
- Ensure spill kits are available.
- Use plant nappies on mobile plant.

Respect wildlife

- Be aware of local wildlife.
- Adhere to exclusion zones.

Respect neighbours

- Be aware of nearby sensitive noise and dust receptors.
- Ensure noise levels do not exceed permitted levels.
- Comply with agreed working hours.

Assess environmental risks

- Assess the environmental risk of all activities.
- If in doubt, ask.

Report incidents

- Report ALL environmental incidents.
- Pass on learning for future works.

4.4 Environmental Management Programmes

A Project Environment meeting will be held on a weekly basis to discuss the following as a minimum:

- Any current environmental issues
- Close calls & incidents
- Progress towards objective and targets
- Consents and licenses (and compliance requirements)
- Update on any key environmental documents
- Upcoming environmental training

4.5 Training

4.5.1 Training on this contract will include:

- Induction Training including environmental requirements for all operatives and subcontractors.
- Toolbox Talk: 0000-JMS-ZZ-XX-TT-Z-0001 Environmental Dos & Don’ts
- More detailed training for staff or subcontractors with specific environmental responsibilities (if competence cannot be otherwise shown) e.g. Waste Reps. This will be documented in the training requirements matrix.
- Induction Training including environmental requirements & general environment RAMS for all operatives and subcontractors.
- Pre-works briefing for GI staff on site specific RAMS and requirements prior to entry and works commencing.
- SHES Managers, Advisors & Project Managers shall undergo the IEMA Construction Environmental Management course
- Toolbox Talk: 0000-JMS-ZZ-XX-TT-Z-0001 Environmental Dos & Don’ts

- More detailed training for staff or subcontractors with specific environmental responsibilities (if competence cannot be otherwise shown) e.g. Waste Reps. This will be documented in the training requirements matrix.
- Toolbox Talks, depending on the type of works being undertaken and the environmental impacts that may result from these activities e.g. training on water pollution prevention before works near watercourses. Training to be given may include the following and delivered when and where the risk is greatest:

Toolbox Talk Topic	Month											
	January	February	March	April	May	June	July	August	September	October	November	December
Spring Animal Activity												
Protected Species												
Badgers												
Invasive Species	Work location, risk and scope dependant											
Water Voles												
Trees & Hedgerows	Work location, risk and scope dependant											
Japanese Knotweed	Work location, risk and scope dependant											
Great Crested Newts												
Himalayan Balsam	Work location, risk and scope dependant											
Nesting Birds												
Bats												
Spill Control	To be done at the start of project mobilisation onto site											
Working Near Watercourses	Work location, risk and scope dependant											
Discharging Water												
Concrete Washout												
Plant Nappies	To be done at the start of project mobilisation onto site											
Fuel & Oil	To be done at the start of project mobilisation onto site											
Management of Silt												
Cement & Concrete												
Pumping & Overpumping												
Bentonite	Work location, risk and scope dependant											
Incident Reporting	To be done at the start of project mobilisation onto site											
Environmental Consents												
Waste Hierarchy												
Segregation of Waste												
Storage of Waste												
Waste Management for Cable Jointers	Scope dependant (prior to Cable jointing works)											
Waste Management												
Contaminated Land	Work location, risk and scope dependant											
Soil Management	Work location, risk and scope dependant											
Noise & Vibration												
Dust & Air Quality												
Archaeology	Work location, risk and scope dependant											
Do's & Don'ts	To be done at the start of project mobilisation onto site											
Energy & Resource Conservation	Not Mandatory but can improve staff behaviours											
HVO	Not Mandatory but can improve staff behaviours											
Hussh pod	Not Mandatory but can improve staff behaviours											

Ecology Topics
Water & Pollution Risk
Waste & Materials
Air Quality
Carbon Reduction

4.5.2 Contract specific information will be displayed on notice boards and briefed to all staff.

4.5.3 All toolbox talks will be shared with all on-site personnel, including subcontractors. Toolbox talk sessions will be held at least once per week to cover specific relevant issues appropriate to the works being undertaken. Attendance sheets will be made available at each talk and submitted to the client weekly to confirm distribution. Site-specific Environmental Do's & Don'ts, which list the key controls from Section 3 of this Plan, will be issued to site operatives and subcontractors.

Toolbox talk: 0000-JMS-ZZ-XX-TT-Z-0001 Environmental Do's & Don'ts

4.5.4 Training will be provided in accordance with the Business Unit Safe Start Matrix. A Training Attendance Form will be completed for each training session and an Environmental Training Matrix will be maintained.

Form: 0000-JMS-ZZ-XX-TM-Z-0005 Safe Start Matrix (M4)

Form: 0000-JMS-ZZ-XX-FM-Z-0444 Training Attendance Form

4.6 Communication

Internal

4.6.1 Environmental issues will be reviewed at the weekly Contract Review meeting, in accordance with the Murphy Group Integrated Management System. The issues covered will include:

- Compliance with Group IMS and any contract specific environmental requirements.
- Legal compliance e.g. consent requirements.
- Environmental Incidents & Nonconformances.
- Audit Corrective Action Requests to ensure actions are completed by deadlines.

External

4.6.2 The Project Manager (in conjunction with the Environment 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 contract Communication Log.

Form: 0000-JMS-ZZ-XX-FM-Z-0044 Communication Log

4.6.3 The Environment Manager will meet as required and as agreed with the Client**,** with statutory agencies such as SEPA and Local Authority, and with the local community.

4.6.4 Complaints from the public will be logged on a Complaint Record form and a recorded on the Complaint Register and logged with SSEN with a plan of action as to the response.

Form: 0000-JMS-ZZ-XX-FM-Z-0301 Complaint Record

Form: 0000-JMS-ZZ-XX-FM-Z-0445 Complaint Register

4.7 Document Control

4.7.1 All environmental documents will be controlled by the Group Procedures - Document & Data Control and Document Numbering.

Procedure: 0000-JMS-ZZ-XX-PD-Z-0019 Document and Data Control

Procedure: 0000-JMS-ZZ-XX-PD-Z-0006 Document Numbering

4.8 Design

4.8.1 Environmental impacts of design will be managed in accordance with the Design Management. This involves including Environmental Design Aims in the Design Brief and monitoring these through the Design Review meetings.

Policy: 0000-JMS-ZZ-XX-PY-Z-0112 Design Management

Guidance: 0000-Jms-Zz-Xx-Gn-Z-0327 Environmental Design Aims

4.9 Project Checks and Inspections

4.9.1 The following inspections will be undertaken:

- Risk Based Inspections (SHES Inspections) (0000-JMS-ZZ-XX-PD-Z-0192)
- Supervisor Weekly Checklist (0000-JMS-ZZ-XX-FM-Z-0200)
- Simple Actions Tours (2-1-2 Reporting System)

4.10 Records

4.10.1 Records will be maintained in accordance with the Records and Archiving Procedure kept as listed in the Filing Index.

Procedure: 0000-JMS-ZZ-XX-PD-Z-0055 Records and Archiving

Form: 0000-JMS-ZZ-XX-FM-Z-0112 Filing Index

4.11 Audits

4.11.1 Internal audit of this contract will be undertaken in accordance with the Group Procedure – SHES Audits and client requirements.

Procedure: 0000-JMS-ZZ-XX-PD-Z-0011 SHES & Q Audits

4.11.2 Management Review

4.11.3 A Contract Management Review will be undertaken every 12 months.

4.11.4 Management reviews will be undertaken in accordance with the Group Procedure – Management Reviews.

Procedure: 0000-JMS-ZZ-XX-PD-Z-0036 Management Reviews

5 Site Controls

5.1.1 Controls specified in this section are designed to:

- Meet legal and contract requirements especially the SSEN Consents & Environmental Specification (TME-NET-ENV-501)
- Limit the significant impacts identified in the Aspects and Impacts Register (see Appendix A).
- Deal with unexpected environmental issues e.g. unanticipated contaminated land.

5.1.2 Environmental controls (e.g. consent conditions) that are more specific to certain activities will be discussed and agreed in advance with the Project Manager and the appropriate public bodies including local authorities and SEPA. The controls will then be included in site specific Method Statements in accordance with the SHES Operations Procedure. The GEMP's and Species Protection Plans will also be complied with.

Procedure: 0000-JMS-ZZ-XX-PD-Z-0131 SHES Operations

Environmental and Ecological constraints are detailed within the project GIS system which, along with existing open data, will be supplemented with updated information from further surveys (especially ecological) and any other constraints as they are identified so this is visible to the whole project team, including the client and supply chain: SSEN - Spittal to Loch Buidhe - 400KV Overhead Line (arcgis.com)

5.2 Subcontractors

Subcontractors will be appointed in accordance Stage 2 Prequalification of the Supply Chain.

Procedure: 0000-JMS-ZZ-XX-PD-Z-0229 Stage 2 Prequalification of the Supply Chain

5.2.1 Subcontractors are required to work in accordance with this Project Environmental Management Plan and Method Statements will be developed to include relevant risks and controls depending on the nature of the works and particularly their locations.

5.3 Resource Use

Measures to reduce resource usage during the planning and operational phases of the works will include the actions given in the table below.

TASK	RESPONSIBILITY
Fuel Combustion (Transport/Plant)	
Collect data on quantities of diesel/ petrol used in vehicles and plant.	Environment Manager
Collect data on quantities of gas oil used.	Environment Manager
Collect data on modes of transport to and from work and business miles travelled.	Environment Manager
Explore options to reduce the amount of car travel to and from work and minimise the adverse environmental effects of business-related travel.	Environment Manager
Promote good practise by encouraging use of sustainable modes of transport and where feasible use minibuses/ vans to transport staff.	Environment Manager
Promote fuel efficiency and good driving practices	Environment Manager
Ensure the correct vehicle, plant & equipment is provided and used for the work being undertaken. I.e. do not select equipment that is over-powered for the task being carried out.	Project Manager / Environment Manager
Ensure vehicles, mobile plant, generators and other equipment are serviced regularly to maintain their efficiency.	Team Leader / Supervisor
Switch off vehicles and other mobile plant when not in use.	All staff
Electricity	

TASK	RESPONSIBILITY
Minimise the use of generators to provide electricity. Wherever possible connect to mains electricity as soon as possible.	Project Manager
Collect data on quantities of directly purchased electricity.	Project Manager / Environment Manager
Install energy efficient devices/ renewable energy where reasonably practicable e.g. Infrared sensors linked to lighting, air conditioning and heating controls.	Project Manager
Promoting energy efficiency with all staff. Identifying where energy savings can be made and implement them. E.g. turning off computers/ photocopiers when not in use.	Environment Manager
Water	
Measure per capita water use in the site offices. All office water used will be metered.	Project Manager / Environment Manager
Install water efficient devices in washrooms e.g. push taps, flow regulator/ restrictors, low flush toilets, cistern devices e.g. hippo, save-a-flush to reduce flush volumes	Project Manager
Promoting water efficiency with all staff and encourage good behaviour. e.g. maintaining hoses, pipes and water using equipment in good condition and checking for leaks regularly	Environment Manager
Fit trigger nozzles on hosepipes and flow restrictors and automatic shut off devices to hoses and water supply pipes where appropriate	Team Leader / Supervisor
Use recycled or grey water for damping down dust where possible	Team Leader / Supervisor
Use scrappers to clean up mud rather than washing down with water	Team Leader / Supervisor
Waste	
Minimise waste by ensuring materials are stored properly and used efficiently.	Project Manager/ Team Leader / Supervisor
Consider waste when purchasing materials. Where possible/ practicable select materials that can be re-used or recycled.	Project Manager
Recycle materials where possible.	All staff
Collect data on quantities of waste produced and percentage recycled (diverted from landfill).	Project Manager / Environment Manager
Materials	
Procure timber from Forest Stewardship Council or Programme for Endorsement of Forest Certification (FSC / PEFC) certified sources.	Project Manager / Procurement
Designing out unsustainable materials where possible and minimising waste.	Designers
Specifying materials/ products that have less impact on the environment.	Designers
Specifying the use of peat free product for landscaping.	Project Manager
Procure recycled materials where possible.	Project Manager / Procurement
Introduce a '*take-back policy*' on suppliers, so where possible, no delivery will leave the site without taking associated waste and packaging with them.	Project Manager / Procurement

5.4 Waste Management

5.4.1 All waste arising on the Contract, including that generated by sub-contractors will be managed in accordance with the Group Procedure – Waste, the Waste Information (Scotland) Regulations 2010; the Waste (Scotland) Regulations 2011; and the Environmental Protection (Duty of Care) (Scotland) Regulations 2014.

Procedure: 0000-JMS-ZZ-XX-PD-Z-0065 Waste Management

5.4.2 All waste removed from site will be covered by a Waste Transfer Note or Special Waste Consignment Note, containing all the legally required information. Most inert and non-hazardous waste will be transferred under a single movement 'Waste Transfer Note' but 'Season Tickets' may be used where there are multiple movements of the same waste to the same destination. Hazardous wastes will be transferred using a 'Special Waste Consignment Note'. Waste Transfer Notes will be kept for two years and Special Waste Consignment Notes for three years.

5.4.3 All waste will be transported using registered waste carriers and all waste will be disposed of at licensed waste disposal sites or under an SEPA waste exemption or permit. All waste services will be procured through the Murphy Waste (Central Procurement), who will ensure that Waste Carrier Licences and Waste Management Licences are valid and appropriate, by checking details on the relevant Public Registers.

5.4.4 A Site Waste Management Plan will be produced using the web-based BRE SMARTWaste Tool to ensure accurate contract waste data is readily available. A forecast of waste quantities and opportunities to reduce, re-use and recycle will be identified prior to works commencing to help reduce the amount of waste disposed of to landfill. The Plan will be updated whenever waste is removed from site with information on the waste type, quantity, recycling rates and disposal site.

Waste Controls

5.4.5 The following environmental controls and monitoring activities will be implemented on site:

TASK	RESPONSIBILITY
Ensure all waste disposal is arranged via the Murphy Waste dept.	Project Manager / Environment Manager
Plan to segregate waste as far as technically, environmentally and economically practicable.	Project Manager / Environment Manager
Introduce a '*take-back policy*' on suppliers, so where possible, no delivery will leave the site without taking associated waste and packaging with them.	Project Manager / Procurement
Documentation:	
Ensure that copies of the following are retained on site: ■ Evidence of all relevant Waste Carriers Registrations and associated SEPA validity checks. ■ All relevant Waste Management Licences / Exemption Certificates and associated SEPA validity checks. ■ Waste Transfer Notes and Consignment Notes. ■ Site Waste Management Plan / Special Waste Register.	Environment Manager / Waste Rep.
Site Controls:	
Do not accept damaged skips/ waste containers on to site	Team Leader / Supervisor OR Waste Rep
Locate skips/ waste containers away from drains, watercourses and heavily trafficked areas.	Team Leader / Supervisor OR Waste Rep
Ensure special waste containers are covered and located on hardstanding.	Team Leader / Supervisor OR Waste Rep

TASK	RESPONSIBILITY
Locate non-hazardous skips/ waste containers on hardstanding if possible.	Team Leader / Supervisor OR Waste Rep
Ensure that waste is segregated and placed in the right skip/bin	Team Leader / Supervisor OR Waste Rep
Ensure all waste is stored securely so that it cannot escape (wind/ vermin).	Team Leader / Supervisor OR Waste Rep
Remove waste, disused materials, packaging and other debris at frequent intervals to ensure the site is kept clean and tidy.	Team Leader / Supervisor OR Waste Rep
Ensure all special waste containers are covered.	Team Leader / Supervisor OR Waste Rep
Ensure all skips and bins are labelled with their contents (incl. EWC Code).	Team Leader / Supervisor OR Waste Rep
Place the correct waste in the correct skip.	All staff
Report skips that are leaking or overfull to your supervisor.	All staff
Report fly-tipping to the Team Leader / Supervisor/ Environment Manager	All staff
Eliminate unnecessary wastage by: ■ storing materials neatly on flat solid ground to avoid damage and loss; ■ keeping materials in their packaging for as long as possible to protect them from damage; ■ protecting materials from the weather to avoid loss from exposure to the elements; ■ ensuring existing material containers are empty before opening new ones; and ■ keeping significant off-cuts for use elsewhere.	Team Leader / Supervisor OR All staff

5.4.6 Should any contaminated land be encountered, it will be stockpiled separately; covered to prevent wind or water spreading contaminants to the wider environment; tested, at a UKAS accredited laboratory and sent for remediation/ disposed of in accordance with 'Duty of Care'.

5.4.7 Other aspects of waste management such as inspections and waste training requirements are addressed in the relevant sections elsewhere in this Project Environmental Management Plan.

Training

5.4.8 Training will be provided in accordance with the Technical Training Management Procedure.

5.4.9 Waste training on this contract will include:

- Contract-specific requirements for waste management/ waste targets will be included in the Site Induction given to all staff, operatives and subcontractors.
- A Waste Champion training package will be delivered to the Waste Champion(s).
- Toolbox Talks on Waste Management and Minimisation

Waste Carriers

5.4.10 Details of the waste carriers to be used on the project are given on the Waste Forecast (0000-JMS-ZZ-XX-FM-Z-0181). Subcontractors will be appointed in accordance with the Stage 2 Pre-qualification of the Supply Chain (0000-JMS-ZZ-XX-PD-Z-0229), which includes environmental criteria, and will be required to work in accordance with the Contract Environmental Management System and Method Statements.

5.4.11 The validity of a waste carrier's licence and whether the receiving premises are licenced, or exempt will be checked with the SEPA prior to waste being allowed off site.

Waste Forecast

5.4.12 An initial forecast of the types of waste that will arise from this contract and how they will be reduced, reused, recycled or disposed of has been made and recorded on the Waste Forecast (0000-JMS-ZZ-XX-FM-Z-0181) (Appendix A).

Murphy Subcontractor waste will also be captured and added to the data on SMARTWaste (digital version of the SWMP)

Recording Waste Movements

5.4.13 Throughout the course of the Contract, whenever waste is removed from Site, information on the identity of the person removing the waste, the type and quantity of the waste and the site where the waste is being taken to will be recorded using a Waste Transfer Note / Hazardous Waste Consignment Note issued to the site by the driver collecting the waste. A season ticket may be used for standard waste being removed under a schedule that is being collected from the same point of production to the same disposal/recycling point. This information will be retained on site and used when producing the Quarterly Waste Report (0000-JMS-ZZ-XX-FM-Z-0184).

Quarterly Waste Report

5.4.14 The actual waste arisings, disposal routes, percentages recycled, and costs will be reviewed every calendar quarter and recorded on the Quarterly Waste Report (0000-JMS-ZZ-XX-FM-Z-0184).

5.4.15 The review will monitor performance against the Waste Forecast and identify opportunities for improvement.

5.4.16 The review will be discussed at a project management meeting.

Performance Review

Contract Waste Report

5.4.17 The waste arising on this Contract has been monitored in accordance with the Waste Management Procedure (0000-JMS-ZZ-XX-PD-Z-0065).

5.4.18 The total waste produced on the Contract, the costs associated with its disposal, the disposal locations and the percentage recycled is summarised of the Contract Waste Report (0000-JMS-ZZ-XX-FM-Z-0184).

5.5 Fuel and Oil Storage

5.5.1 Fuel and oils will be stored in accordance with the Water Environment (Oil Storage) (Scotland) Regulations 2006 and the controls specified in the Environmental Management Guide to minimise the risk of pollution.

Guidance: 0000-JMS-ZZ-XX-GN-Z-0323 Environmental Management

5.5.2 Secondary containment will be provided for all oil and diesel tanks:

- For a single tank, the secondary containment will be at least 110% of the maximum storage capacity.
- For two or more tanks in one secondary containment system, the secondary containment will be at least 110% of the biggest tank's maximum storage capacity or 25% of the total maximum storage capacity of all the tanks, whichever is the greatest.

5.5.3 The Oil and Diesel Tank Check Form will be completed providing an additional compliance check.

Form: 0000-JMS-ZZ-XX-FM-Z-0046 Oil and Diesel Tank Check Form

5.5.4 The types of fuel and oil that will be stored on this contract and how and where they will be stored are given in the table below:

TYPE OF MATERIAL	HOW AND WHERE IT WILL BE STORED
Diesel & HVO	■ To be stored in bunded tanks or bowsers, which meet the specifications laid out in the Environmental Management Guide. ■ Fuel tanks and mobile bowsers must be kept locked when not in use and overnight. ■ Where a bulk tank is used, a 130-litre spill kit will be stored near the bunded area. ■ Metal jerry cans are to be used for hand carrying of fuel around the site. ■ Where practicable, only restricted hand carrying of fuel should be allowed on the site. ■ Metal jerry cans must be stored in a bund or drip tray when not in use. **In vans:** ■ To be stored secure & upright in jerry cans – maximum 20 litres (2 x 10 litre jerry cans)
Oil	■ To be stored in original container or in an appropriate container designed for the storage of oils. ■ Metal jerry cans are to be used for hand carrying of oil around the site. ■ Where practicable, only restricted hand carrying of fuel should be allowed on the site. ■ Metal jerry cans must be stored in a bund or drip tray when not in use.

5.6 Materials Storage

5.6.1 Materials and waste will be stored in a manner that minimises risk to the environment and reduces the potential for wastage due to exposure to the elements or damage. Storage will be in accordance with the controls specified in the Environmental Management Guide.

Guidance: 0000-JMS-ZZ-XX-GN-Z-0323 Environmental Management

5.6.2 The types of potentially polluting materials associated with these works and how and where they will be stored is given in the table below:

TYPE OF MATERIAL	HOW AND WHERE IT WILL BE STORED
Topsoil	■ To be stored beside the works to a height of no more than 3m. ■ Do not compact. ■ To be stored separately from subsoil. ■ Topsoil must be stored at least 3 metres away from any trees (canopies & root protection zones) and hedgerows.
Subsoil	■ To be stored beside the works to a height of no more than 5m. ■ Do not over compact. ■ To be stored separately from topsoil. ■ Subsoil must be stored at least 3 metres away from any trees (Canopies & root protection zones) and hedgerows.
Peat	■ In line with Section 5.7
Contaminated Material	■ To be stockpiled separately and tested to ascertain if it is classed as special waste ■ To be covered to prevent wind or water spreading contaminants to the wider environment.
Empty drums / containers	■ In a designated area prior to disposal. ■ Away from sensitive boundaries and watercourses ■ Screening from external receptors, if possible
Inert waste	■ To be kept separate from non-hazardous and special waste in a clearly designated area/ skip located on hardstanding where possible. ■ Storage area to be located away from sensitive boundaries and watercourses and screened from external receptors if possible.

TYPE OF MATERIAL	HOW AND WHERE IT WILL BE STORED
Non-Hazardous waste	■ To be kept separately from inert and hazardous waste. ■ To be segregated into its component streams where technically, environmentally and economically practicable. ■ To be kept in clearly labelled containers/ skips. ■ Containers/ skips to be in good condition, covered and located on hardstanding. ■ Containers/ skips to be located away from sensitive boundaries and watercourses. ■ Containers/ skips to be screened from external receptors if possible.
Special waste	■ To be kept separately from inert and non-hazardous waste. ■ To be segregated into its component streams and kept in clearly labelled containers/ skips. ■ Containers/ skip to be in good condition, covered and located on hardstanding. ■ Containers/ skips to be located away from sensitive boundaries and watercourses. ■ Containers/ skips to be screened from external receptors if possible.

5.7 Soil and Peat Management

The substation works will have an impact on peat deposits. Soil is a vulnerable and essentially non-renewable resource. One hectare of topsoil, the most productive soil layer, can contain up to 5 tonnes of living organisms and because it can take more than 500 years to form a 2cm thickness, it is in practical terms non-renewable.

Some of the most significant impacts on soil properties occur as a result of activities associated with construction. Construction activity can have adverse impacts on soil in a number of ways by:

- Covering soil with impermeable materials, effectively sealing it and resulting in significant detrimental impacts on soils' physical, chemical and biological properties, including drainage characteristics;
- Contaminating soil as a result of accidental spillage or the use of chemicals;
- Over-compacting soil through the use of heavy machinery or the storage of construction materials;
- Reducing soil quality, for example by mixing topsoil with subsoil; and
- Wasting soil by mixing it with construction waste or contaminated materials, which then have to be treated before reuse or even disposed of at landfill as a last resort.

Careful management of peat, topsoil and subsoil is an important aspect of sustainable use of materials that are being stripped for later landscape preparation.

ERM have produced a Peat Reinstatement Technical Noe (LT470 400kV Carnaig Substation) to:

- Define the materials that will be excavated as a result of the Proposed Development, focussing specifically on the excavation of peat.
- Develop peat reinstatement and /or enhancement proposals to utilise excavated peat generated by the development.
- Outline best practice for peat management during construction including site
- management, stripping, transporting, temporary storage and reinstatement.

5.7.1 NATIONAL PLANNING FRAMEWORK 4

The Scottish Government's National Planning Framework 4 (NPF4)2 published in February 2023 aims to 'protect carbon rich soils, restore peatlands and minimise the disturbance of soils from development' in Policy 5 (Soils) of the document. Under NPF4 development proposals on peatland, carbon rich soils and priority peatland will only be supported if they are:

- Essential infrastructure and there is a specific locational need and no other suitable site.
- The generation of energy from renewable sources that optimises the contribution of the area to greenhouse gas emissions reductions targets.
- Small-scale development directly linked to a rural business, farm or croft.

- Supporting a fragile community in a rural or island area or involve the restoration of
- peatland habitats.

Where development on peatland, carbon-rich soils or priority peatland habitat is accepted, a detailed site-specific assessment is required, which under Policy 5(d) 'should inform careful project design and ensure, in accordance with relevant guidance and the mitigation hierarchy, that adverse impacts are first avoided and then minimised through best practice. A peat management plan will be required to demonstrate that this approach has been followed, alongside other appropriate plans required for restoring and/ or enhancing the site into a functioning peatland system capable of achieving carbon sequestration'.

5.7.2 SCOTTISH ENVIRONMENT PROTECTION AGENCY

The Scottish Environment Protection Agency (SEPA) published Guidance on the Assessment of Peat Volumes, Reuse of Excavated Peat and Minimisation of Waste. In line with SEPA's statutory duty to ensure that where peat is generated during construction, it is stored, re-used, treated or disposed of correctly, the guidance states that the preferred management option for excavated peat is the prevention of its production, by seeking to minimise peat excavation and disturbance. Where this is unavoidable, developers should attempt to re-use as much of the peat produced on-site as possible, following justifiable and environmentally beneficial methods.

Where on-site reuse opportunities are exhausted, off-site peat reuse activities can be explored. SEPA's preferred off-site use of peat is for peatland restoration, however such activities are likely subject to environmental authorisations and associated peat management plans must detail 'the estimated volumes for each use, destination, final intended outcome and justification of suitability of the peat material and the need for the specified quantities of peat material'.

5.7.3 PEAT MANAGEMENT: GENERAL PEAT CLASSIFICATION

Peat is a sedimentary material, which is dark brown or black in colour, and comprises partially decomposed remains of plants and organic materials preserved in anaerobic conditions, essentially within a waterlogged environment. There are two typical types of peat.

Acrotelmic peat is the upper layer of peat consisting of living and partially decomposed material with a higher hydraulic conductivity and a variable water table. These deposits are generally found to exist in the upper 0.5 m of peat deposits and is typically suitable for re-instatement because it contains viable plant life to assist in the regeneration of peatland vegetation and carbon sequestration.

Catotelmic peat is variable in characteristics, with decomposition of fibres generally increasing with depth. Water content can be highly variable and affects the structural strength of the material. Suitability for re-use generally depends on fibre and water content. The upper catotelm is commonly deemed as being appropriate for re-use in restoration due to its relatively high fibre content.

Generally, excavated semi-fibrous catotelmic peat from the Site will have sufficient structural strength to be able to be used in the lower layers of verge restoration as it will not be 'fluid'. The catotelmic peat would be capped with a surface layer of acrotelm to re-establish the peat vegetation. If any fluid like wet catotelmic peat is encountered then it would be placed in more appropriate locations such as low-lying concave deposition areas, where practical.

The following assumptions have been made in classifying peat excavated during the construction work:

- Where the total peat depth was found to be less than 0.5 m, this peat material is assumed to be 100% acrotelmic.
- Where the total peat depth is between 0.5 m and 1.0 m, the upper acrotelmic peat is at least 0.5 m deep.
- Where the total peat depth is found to be greater than 1.0 m, acrotelmic peat is assumed to account for at least 30% of the total depth but generally applying minimum of 0.5 m thick.

Existing topography drives the design of the SSE infrastructure with due consideration given to potential construction risk and effects on environmentally sensitive receptors including deep peat, watercourse buffers and any GWDTEs. Further micro-siting post-consent would take place in such a way as to avoid where possible the excavation of deep peat.

5.7.4 SUPERFICIAL SOILS

Published mapping by the British Geological Survey (BGS) records peat to comprise the majority of superficial deposits in the northern sector of the Site, with additional pockets of peat recorded in the southeast of the Site. Superficial deposits in the southern Site area and pockets of the northern Site area consist of till and morainic deposits comprising sand and gravel.

5.7.5 BEDROCK GEOLOGY

Published BGS mapping indicates that the vast majority of the Site is underlain by the Altnaharra Psammite Formation, comprising psammite and micaceous psammite. The Migdale Pluton comprising monzogranite is present in the bedrock geology along the southwestern boundary of the Site as well as in very small pockets throughout the Site. There are no faults recorded beneath the Site.

5.7.6 CARBON-RICH SOILS, DEEP PEAT AND PRIORITY PEATLAND HABITATS

The Carbon and Peatland Map 2016 was consulted to determine likely peatland classes present at the Site. The map is a predictive tool that provides an indication of the likely presence of peat at a coarse scale. The Carbon and Peatland map has been developed as a high-level planning tool to promote consistency and clarity in the preparation of spatial frameworks by planning authorities. It identifies areas of “nationally important carbon-rich soils, deep peat and priority peatland habitat’ as Class 1 and Class 2 peatlands. Class 1 peatlands are also “likely to be of high conservation value” and Class 2 “of potentially high conservation value and restoration potential”.

According to the predictive tool and map, the vast majority of the Site contains Class 5 peatlands. Class 1 and Class 2 peat is recorded in northern and northwestern areas of the Planning Advice Note (PAN) boundary, however no development is proposed in these areas, therefore only Class 5 peat is present in the area of the Proposed Development. Peatland types encountered within the PAN boundary are defined as follows:

- Class 1 Peatlands - Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas likely to be of high conservation value.
- Class 2 Peatlands - Nationally important carbon-rich soils, deep peat and priority peatland habitat. Areas of potentially high conservation value and restoration potential.
- Class 5 Peatlands - Soil information takes precedence over vegetation data. No peatland habitat recorded. May also include areas of bare soil. Soils are carbon-rich and deep peat.

As the Carbon and Peatland Map is a high-level tool, detailed habitat and peat depth surveys were carried out to inform siting, design and mitigation and the detailed Site assessment on peatland and associated habitats.

Habitat surveys conducted by ERM in 2023 recorded that the Class 5 peatland recorded across the area proposed for development, reflects the modified nature of the Site. The underlying peat has been drained in order to maximise the future yield of commercial coniferous plantation, and needle drop has carpeted the woodland floor inhibiting peatland plant communities from growing under the trees. Woodland Rides are less impacted by this management therefore peatland habitats endure in narrow corridors, albeit in a modified state that is unlikely to be actively peat forming.

5.7.7 INVESTIGATIONS

Peat depths have been determined across the Site through peat probe surveys undertaken as recommended in the Scottish Government, SEPA and NatureScot (formerly Scottish Natural Heritage (SNH)) guidance on developments on peatland13. The survey was initiated to inform the EIA and help identify potential areas for peat reinstatement.

The survey was completed in April 2024, comprising a 100 m by 100 m grid across areas proposed for infrastructure or to be considered for potential peatland reinstatement. It should be acknowledged that natural variations in peat depth/thickness could occur between probe positions.

A total of 410 probes were recorded during the survey with peat depths ranging between no peat and 3.9 m. Peat depths of 0.5 m or less were recorded at nearly 65% of survey locations and depths of 1.0 m or less were recorded at over 84% of survey locations, indicating that the majority of the Site is underlain by shallow peat. It should be noted that the Site has varying topography with significant slopes present across a majority of the Site, shallow peat depths are generally present in these sloped areas with deeper peat recorded in flatter and lower lying areas. The average depth of peat across the Site was calculated as 0.60 m.

The distribution of peat deposits across the Site are displayed in Figure 2: 'Interpolated Peat Depths', which illustrates the interpolated areas of deep peat across the Site and infrastructure footprint (determined using the Inverse Distance Weighting (IDW) method of interpolation).

5.7.8 ESTIMATION OF PEAT RE-USE REQUIREMENTS

The principles of peat reinstatement should be adhered to for all elements of the infrastructure, comprising of the following:

- In the event that deep peat (>1.0 m) is subject to excavation, reinstatement of the peat is required in a way that will prevent the loss of the resource.
- Any wet catotelmic peat will be placed at the bottom of any restoration profile, followed by semi fibrous catotelmic peat and then acrotelmic peat should be placed on top with turves capping the material at surface.
- Reinstatement activities will be overseen by a suitably qualified person, such as an Environmental Clerk of Works (ECoW) to ensure methods are properly adhered to.

5.7.9 PEATLAND RESTORATION POTENTIAL

The outline objectives in proposing the restoration of peat resources on the Site is to:

- Ensure residual volumes of excavated peat from the Proposed Development are re-used in areas where ecological benefits and carbon sequestration can be maintained or increased.
- Promote the re-use of excavated peat materials on-site and avoid the need for transporting off-site.
- Promote use of best practice and guidance to ensure that benefit is made from reusing peat and peaty soils for ecological enhancement.

5.7.10 PEAT RE-USE CALCULATION

Peat volumes requiring re-use as a result of the Proposed Development have been minimised through multiple design iterations, however given the scale of the development and the topographical constraints on the Site, deep peat will be disturbed as a result of the Proposed Development and a significant volume of peat will require reinstatement.

In accordance with SEPA guidance outlined in Section 2.1.2 of this PRTN, re-use of peat on-site has been prioritised. In order to achieve this, two peat reinstatement designs have been advanced, one incorporating bunding into the design and another without bunding.

5.7.11 PEAT REINSTATEMENT DESIGN WITHOUT USE OF BUNDING

BASELINE PARAMETERS

- 4% (2.29°) maximum gradient of the reinstated peat
- 2.0 m maximum depth of reinstated peat
- Peat is feathered into existing ground levels. Due to the feathering technique, there would be no requirement for retaining features as the reinstated peat will tie into existing ground levels with a maximum slope gradient of 4% following reinstatement.

METHODOLOGY:

Ordnance Survey Terrain 5 5m Digital Terrain Model (DTM) data was utilised to gain an accurate insight into the existing topography at the Site and identify areas that could potentially suit the baseline parameters. Peat reinstatement areas were initially identified via preliminary cross-section/profile work, looking for large areas where the existing ground level does not exceed a gradient of 4% (2.29°).

Firstly, topographical depressions were identified, however during this initial review phase, it became apparent that limited areas meeting the baseline parameters were present due to the absence of formed depressions across a majority of the Site, limiting the potential for material placement.

The Site's elevation typically peaks at Meall Mor and for the purposes of the design exercise this can be considered the centre point of the site, with the land extending downwards from this point, decreasing in elevation as the Site boundary is approached.

On this basis, and in applying the baseline parameters, the identification of potential areas for peat reinstatement was possible. This was achieved by designing the peat to be in convex dome like structures rather than in depressions.

As a result of this, some reinstatement areas may have limited fill in naturally forming depressions with a majority of the area comprising a convex placement of material.

5.7.12 PEAT REINSTATEMENT DESIGN WITH USE OF BUNDING

BASELINE PARAMETERS:

- 4% (2.29°) maximum gradient of the reinstated peat
- 2.0 m maximum depth of reinstated peat
- 1.0 m Retaining bund applied (where appropriate) to allow placement of greater volumes of peat.

METHODOLOGY:

Ordnance Survey Terrain 5 5m DTM data was utilised to gain an accurate insight into the existing topography at the Site and identify areas that could potentially suit the baseline parameters. Peat reinstatement areas were initially identified via preliminary cross-section/profile work, looking for large areas where the existing ground level does not exceed a gradient of 4% (2.29°).

Firstly, topographical depressions were identified, however during this initial review phase, it became apparent that limited areas meeting the baseline parameters were present due to the absence of formed depressions across a majority of the Site, limiting the potential for material placement.

The Site's elevation typically peaks at Meall Mor and for the purposes of the design exercise this can be considered the centre point of the site, with the land extending downwards from this point, decreasing in elevation as the Site boundary is approached.

Aiming to achieve a greater volume of material placement than is naturally available at the Site when applying the baseline parameters, the option to apply a 1.0 m bund to the foot of any peat reinstatement area was explored. By expanding areas previously identified for the non-bunded design, it was possible to increase the volume potential by extending the edges of the reinstatement areas whereas a maximum gradient of 4% could be achieved, in line with the baseline parameters.

This again owed itself to convex dome like placement of the peat material and it should be noted that in both designs the maximum reinstatement depth would be 2.0 m, greater volumes are achieved in the bunded design due to extending the edges of the areas where reinstatement depths would be typically around 1.0 m.

5.7.13 PEAT RE-USE POTENTIAL

The table below shows the opportunities for re-use of peat within the Site, with an additional reinstatement area (G) included as an off-site option to achieve the required re-use volumes when bunding is not incorporated into the design.

A volume is not included for reinstatement area G when bunding is applied as all excavated peat could be re-used within on-site reinstatement areas.

Reinstatement Area	Potential Volume of Peat Reinstatement Without Bunding (m³)	Potential Volume of Peat Reinstatement With Bunding (m³)
A	44,000	65,000
B	15,000	38,000
C	22,000	50,000
D	60,000	90,000
E	65,000	150,000
F	50,000	73,000
G (off-site)	133,000	Not Required
TOTAL	**389,000**	**466,000**

The Peat depth and proposed peat reinstatement drawing are shown below:

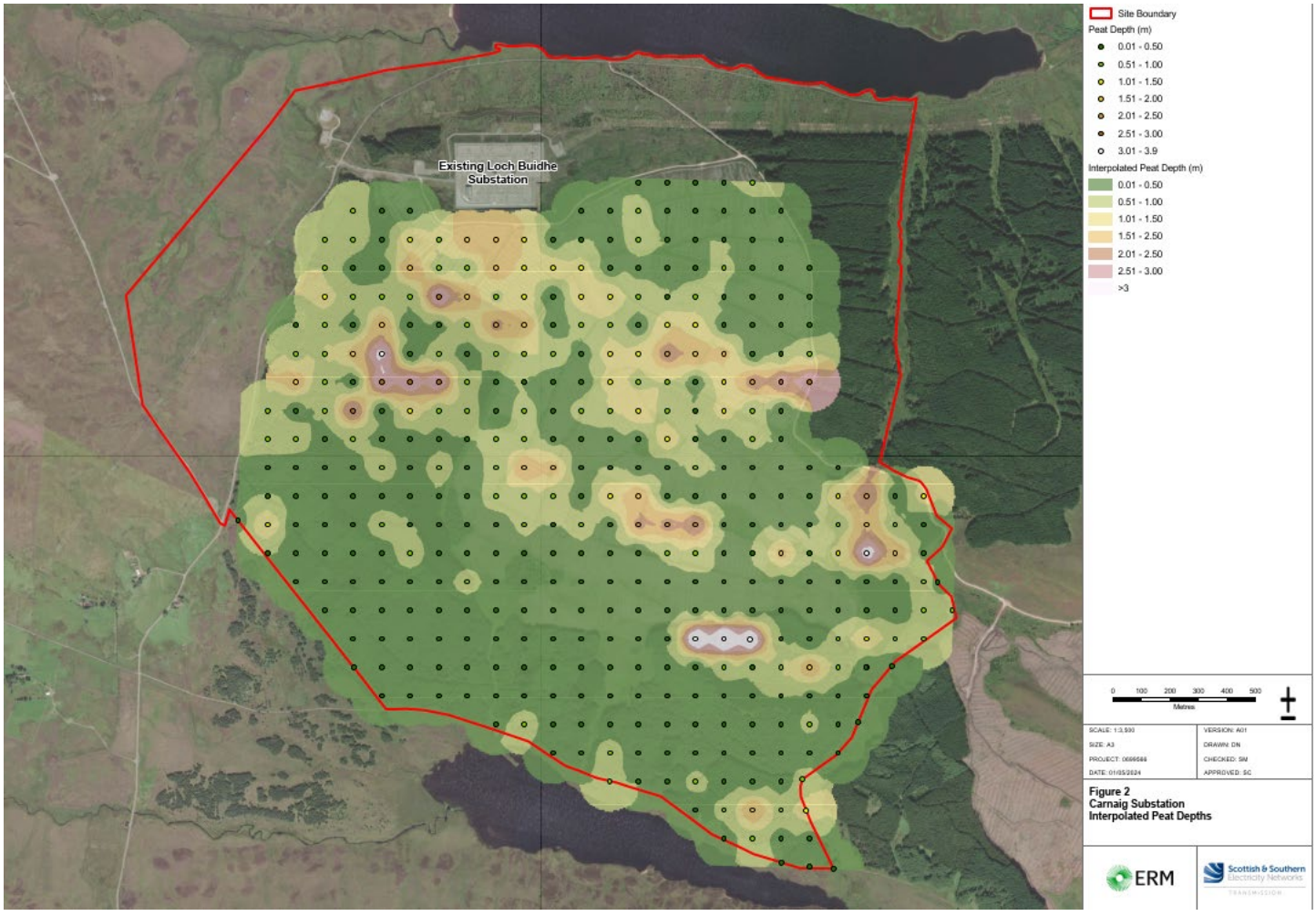


Figure 2 - Interpolated Peat depths

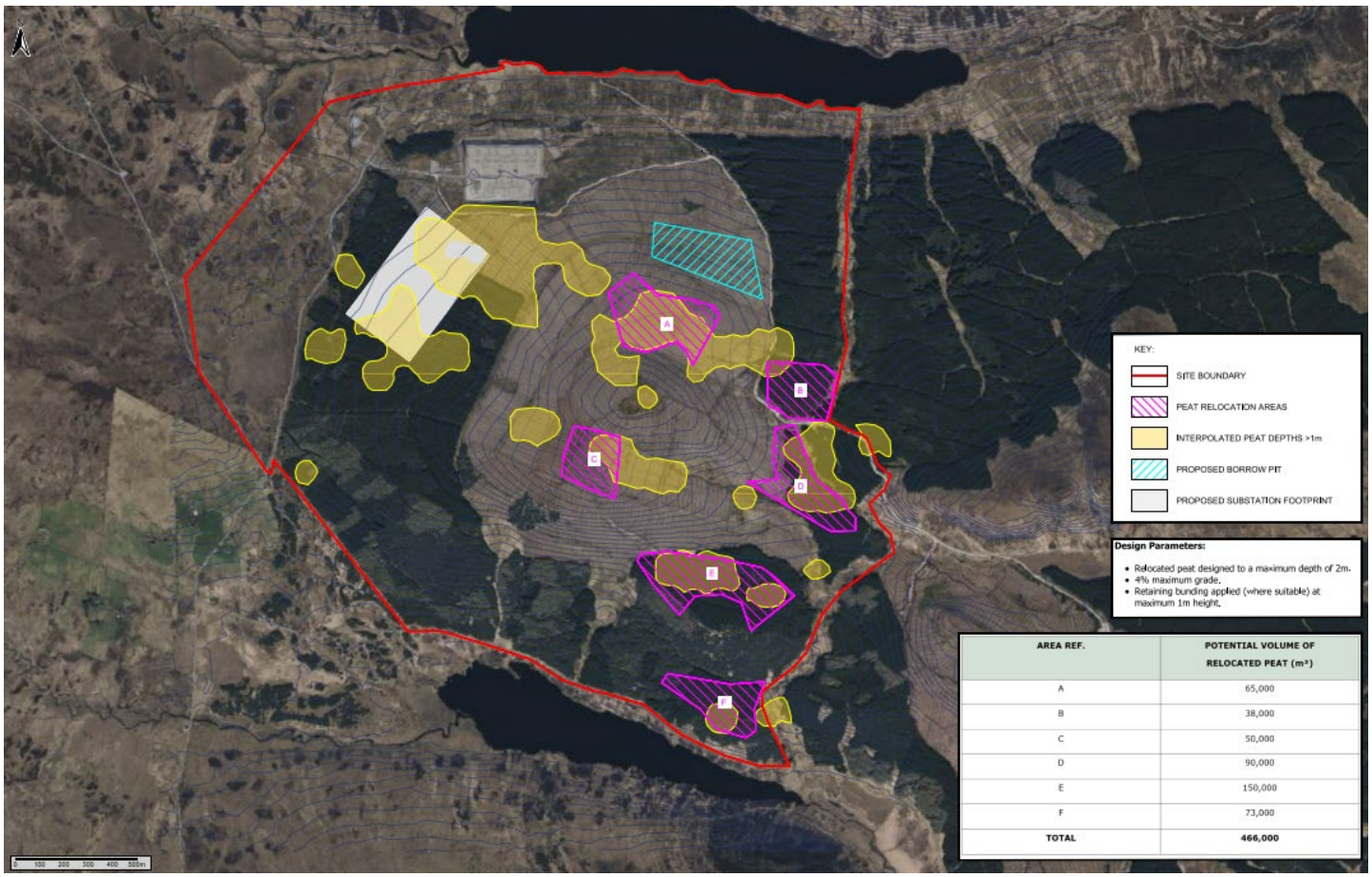


Figure 3 - location of potential peat relocation areas

5.7.14 PEAT REINSTATEMENT TECHNIQUES

Peat reinstatement at the Site will comprise a variety of techniques such as drain infilling and regrading, with the specific techniques to be applied in each reinstatement area to be determined through further ecological assessment of the areas.

All reinstatement areas, with the exception of area G, are on-site and are located on either felled areas or afforested areas which would be subject to felling ahead of peat reinstatement. Due to topographical constraints and the largely afforested nature of the Site, suitable reinstatement areas in currently felled areas are limited, therefore the felling of commercial forestry plantation would allow for the on-site reinstatement of excavated peat associated with the Proposed Development. Given the abundance of artificial drains associated with commercial forestry plantation, drain infilling is likely to be a key reinstatement technique within the majority of reinstatement areas. Artificial drains act as an important means of more rapidly removing water from peatlands, relative to natural processes, e.g. groundwater flow through peat. The consequent removal of water results in longer term declines in water levels, which limit/prevent the survival of peat accumulating plant communities. Positive peat impacts prove most intense immediately adjacent to drains, where groundwater and surface water level fluctuations often prove greatest. Infilling of drains aims to raise and stabilise water levels, thus restoring conditions favourable for the re-establishment/expansion of peat accumulating vegetation.

In addition to drain infilling, treatment of the reinstatement areas, the majority of which will have been subject to felling would include stump grinding, stump removal or flipping, ground smoothing, and brash clearance. Following the addition of peat to the reinstatement areas, plant plugs, re-seeding and mulching would be an effective way to re-vegetate bare peat. Materials acquired in clearing the reinstatement areas could also be used to form part of the bunds at the foot of the reinstatement areas where these are to be applied.

5.7.15 METHOD FOR REMOVING, STORING AND REINSTATING NON-PEAT SOILS

This methodology has been developed in accordance with DEFRA's "Construction Code of Practice for the sustainable Use of Soils on Construction Sites". Murphy recognises the importance of correct soil management and wherever possible during construction follow the principles below:

- When stripping, stockpiling or placing soil, do so in the driest condition possible and use tracked equipment to reduce compaction.
- Confine traffic movement to designated routes.
- Keep soil storage periods as short as possible.
- Clearly define stockpiles of different soil materials.
- Maintain the landscape and promote habitat creation
- Ensure that the entire soil profile is in a condition to promote sufficient aeration, drainage and root growth.
- Safeguard and utilise on-site soil resources wherever possible.

Project specific RAMS will be developed for the project and will be adhered to at all times. Any deviation from this method will be discussed and raised formally with SSE:

5.7.16 Preparation for Topsoil Strip

The easement will have been fenced off and all right of way activities complete. Ensure that ground / weather conditions are suitable for topsoil strip to proceed. The advice of the Environmental Manager shall be sought if there is any doubt regarding weather conditions. Underfoot conditions to be assessed. Monitor the working route for the presence of mammals / nesting birds.

Water management on the strip will be assessed prior to commencement of works, and throughout the topsoil strip to ensure water is effectively removed from the working area and channelled into low-risk areas. All supervisory personnel will have successfully undergone the SEATS training course, any further advice necessary on water management can be obtained from the site Environmental Manager.

5.7.17 Setting Out

The Project Engineer will set out the centre line of the route using GPS surveying equipment and placing wooden setting out pegs in the ground. The pegs will be spaced at approximately 100m intervals and at changes in direction. The purpose of setting out the centreline is to ensure the team know where to store the topsoil.

GPS coordinates and ground height will be taken at 25m intervals along both sides of the easement. Once the topsoil is stripped the AOD height is again taken at these positions to record the depth of topsoil removed.

5.7.18 Haul Road Installation

A floating haul road will be installed along the length of the spread in order to minimise vehicle movements on unprotected ground. This also allows the minimum area to be stripped, reducing environmental impact throughout the working spread.

Specification and design for the haul road and general working width arrangements are available as separate documents.

5.7.19 Topsoil Strip

Topsoil will be stripped to subsoil level using hydraulic excavators fitted with wide ditching buckets to the required depth, generally there is a noticeable change in the soil structure at the subsoil layer.

Once stripped the topsoil will be adequately stored at the edges of the easement.

For topsoil stripping, an archaeological watching brief may be required – in this case, no topsoil stripping should proceed without the presence of an Archaeological Advisor.

All known services crossing the easement will have been trial holed to confirm their position and depth. This information will be available to the topsoil team prior to their start.

Two excavators work approximately 20m ahead of each other and both lift off the topsoil across the easement. The topsoil will then be moved to the side of the easement. Each machine will be monitored by a banksman. The topsoil is stacked no more than 2m high at the side of the easement and capped off to prevent over compacting of soils.

Topsoil will be stripped and stacked in a manner to avoid contamination with sub soil and/or other foreign materials. The depth of topsoil will be recorded by the site engineer in each plot. At no point is topsoil to be transferred between plots unless at the landowners written consent

No topsoil will be stacked between GS6 poles on either side of overhead power lines where present. Excavators working under overhead lines to remove the topsoil will be fitted with height limiters. Where excavator work is required a banksman will be present. Trafficking and multiple handling will be avoided wherever possible.

Where there is a requirement to strip the topsoil over existing services then, in these areas it will be completed by hydraulic excavator making sure that there are no unnecessary loads induced upon the buried services. This will be done with the approval of the asset owner.

Where possible, all topsoil will be stored a minimum of 10m from adjacent watercourses. All watercourses will be monitored to ensure to run off into ditches due to e.g. inclement weather.

Gaps will be left in the topsoil stacks, where necessary, to allow for surface water drainage and wildlife movement. Trenches will be dug using a tracked excavator and the runoff directed into the pre-construction drainage

The topsoil heap will be compacted using an excavator and ditching bucket into a mound formation. This will limit the amount of rainwater penetrating the topsoil and help maintain its condition.

Should the topsoil be stored for an excessive amount of time, it may be preferential to seed the bund to allow growth to protect from deteriorating as required.

The removal of top / sub soil will in no way impact upon preconstruction / construction drainage.

5.7.20 **Subsoil Removal**

Subsoil will be removed to the required depth and stored separately from topsoil to prevent mixing. Storage arrangements will be as per topsoil. Ongoing monitoring by the site team (including Project Manager and project Environmental Manager) will ensure adequate segregation distance is in place.

5.7.21 **Topsoil Replacement**

5.7.22 Prior to the replacement of the topsoil the easement may first be ripped using a tined ripper over the 50m of exposed subsoil to a depth of 18” (450mm) to loosen any potential compaction caused during construction activities if deemed necessary. The depth of ripping will be reduced to 250mm in areas directly any buried assets.

All previous topsoil that has been placed at the side of the easement will be re-used to reinstate the easement. Any weeds present will be first sprayed off with agreed chemical sprays. The topsoil will be removed from the side of the easement using a 360 excavator. The driver will proceed to move the material from the side of the easement and spread it on the subsoil to match existing levels.

The excavator will then get behind the topsoil and spread it and grade it across the full easement. The excavator will profile the topsoil to blend into the ground either side of the easement. The topsoil is then tracked in using the excavator to compact it and therefore protect it from rainfall ingress. Depth of topsoil checked with GPS against previous measurements to ensure correct depth is reinstated.

The Client's Land Agent will agree with the landowner and furnish the project team with the specific seeding requirements.

5.8 Water

Water Consents

5.8.1 It is likely that consents that are required for this contract relating to watercourse crossing, possibly watercourse diversions and discharge of construction site runoff. As these are identified the relevant consent application will be made to SEPA. Agreement with SSE will be sought as to who applies for and holds these permits.

Water Pollution Prevention Controls

5.8.2 Water pollution will be prevented in accordance with the controls specified in the Environmental Management Guide. Specific controls that will be in place on this contract are given in the table below.

Guidance: 0000-JMS-ZZ-XX-GN-Z-0323 Environmental Management

Further detail can be found in the Water Management & Pollution Prevention Plan.

TASK	RESPONSIBILITY
General:	
Plant nappies of suitable size must be placed under static plant & equipment at all times.	Team Leader / Supervisor
Plant nappies of suitable size must be placed under mobile plant when left stationary for prolonged periods e.g., overnight / weekends etc.	Team Leader / Supervisor
Oils and diesels must be stored on drip trays (incl. when in vans).	Team Leader / Supervisor
Locate plant, equipment as far away as possible from drains.	Team Leader / Supervisor
Do not refuel near drains.	Team Leader / Supervisor
Regularly check the plant, equipment & vehicles for leaks.	All Staff
Stand small plant that is leaking in drip trays.	All Staff
If plant & equipment is leaking report to your Supervisor.	Team Leader / Supervisor
Arrange for leaking plant to be taken out of service and maintained.	Project Manager
Dewatering (Excavations & Groundwater):	
Check for underground services before starting to excavate.	Project Manager/ Construction Manager
Never pump silty water into a watercourse.	All Staff
Do not disturb water in excavations to prevent stirring up silt.	All Staff
Use the lowest corner of the excavation as a pump sump.	All Staff

TASK	RESPONSIBILITY
Position the pump off the bottom of the excavation.	All Staff
Remove light contamination with absorbent pads from your spill kit.	All Staff
Store water heavily contaminated with oil in containers & tanker off-site.	Project Manager / Team Leader / Supervisor
When disposing of silty water from pumping out excavations/ dewatering: ■ Pump via a settlement tank/ lagoon (with sufficient retention time to settle any silt) ■ Obtain permission from the landowner and then pump onto grasslands / fields. ■ Obtain consent from Commercial undertaker and discharge to foul sewer. ■ Obtain permission from SEPA and discharge to surface watercourse/ surface water drain. *Note:* It is recommended the Environment Manager is contacted for advice first.	Project Manager / Team Leader / Supervisor
Dewatering (Structures):	
When disposing of water from pumping water out of built structures such as tanks, basements etc.: ■ Check water for signs of contamination prior to pumping. ■ Obtain permission from SEPA and discharge to surface watercourse/ surface water drain. ■ Obtain consent from Commercial undertaker and discharge to foul sewer. ■ Obtain permission from the landowner and the SEPA, and then pump onto grasslands / fields. *Note:* It is recommended the Environment Manager is contacted for advice first.	Project Manager / Environment Manager
Never dewater from structures, particularly to a surface watercourse / surface water drain without first testing the water quality.	All Staff
Never dewater from concrete structures without first testing the pH	All Staff
When working near a watercourse:	
Never pump silty water into the watercourse.	All Staff
Keep all materials, plant & equipment over 10m away from the watercourse.	All Staff
Do not re-fuel within 10m of a watercourse or 50m of a borehole without the prior agreement of the SEPA.	All Staff
Prevent vehicles & plant from entering the watercourse.	Team Leader / Supervisor
Where possible, place a boom across the watercourse directly downstream of where you are working.	Team Leader / Supervisor
Keep a spill kit handy.	All Staff.
When concreting:	
Allocate a designated wash-out area.	Team Leader / Supervisor
Only wash-out concrete in the designated wash-out area.	All Staff.
When de-oiling cables:	
Do not de-oil cable near any watercourses or drains.	All Staff
Always use a plant nappy or similar.	All Staff
Keep plenty of spill kits available.	All Staff

TASK	RESPONSIBILITY
When a consent has been obtained:	
Forward a copy of the Consent to the Project Manager.	Environment Manager/ Client (if applicable)
Inform the Agent / Team Leader of the consent conditions and any required controls.	Environment Manager
Follow the additional controls as required.	Construction Manager / Team Leader / Supervisor

Water Monitoring

5.8.3 The water monitoring that will be undertaken on this contract is to be confirmed depending on discharge consent requirements buts is likely to consist of the following for discharge to watercourses:

TASK	RESPONSIBILITY
When working near a watercourse:	
Check the watercourse and discharge point twice daily for: ■ Change in water colour. ■ Change in water transparency. ■ Oily sheen on water surface. ■ Scums & foams. ■ Dead / decaying plants, animals & fish. ■ Total Suspended Solids (TSS) ■ pH ■ Quantity (daily discharge in m3 and/or litres per second)	Environment Manager / Team Leader / Supervisor / Nominated Person
Keep a record of these checks in the Watercourse Monitoring Booklet.	Appointed Person(s)
When working near roadside gullies:	
Ensure gullies/ drains are kept free from ingress of stone, spoil, tarmac and other material by checking daily.	Team Leader / Supervisor
When dewatering:	
All staff to receive Toolbox Talk on pumping before the dewatering activities begin.	Environment Manager / Team Leader / Supervisor
Ensure suitable discharge filter media is provided with each pump.	Project Manager / Team Leader / Supervisor
Nominate someone to check the dewatering	Project Manager / Team Leader / Supervisor
Check the water being discharged regularly for evidence of silt or other contaminants.	Nominated Person
Record these checks in the Pumping & Dewatering Monitoring Booklet – detailing the date, time, who checked it, and a description of the water (clear, no signs of silt etc.).	Nominated Person
If the water being discharged is silty or looks contaminated in any way - STOP pumping immediately and contact the Environment Manager.	Nominated Person

5.8.4 **Private Water Supply (PWS)**

5.8.5 A more detailed PWS Risk Assessment shall be undertaken prior to the main construction works in line with the CES requirements and actions will be determined based on risk factors. Due regard for existing PWS will be taken prior to site

access to determine if there are any within 250m of the works area or accesses of GI area which could be affected by the works. There will be engagement with the PWS owner, and any extra mitigation required during the works.

5.9 Noise and Vibration

Noise and Vibration Consents

5.9.1 The Consents required are as follows: Section 61 consents may be required in sensitive areas and at sensitive times, these will be determined on a case for case basis in consultation with the Local Authority.

Noise and Vibration Controls

5.9.2 Noise and vibration will be minimised in accordance with the controls specified in the Noise and Vibration Procedure and Environmental Management Guide. Controls that will be in place on this contract are given in the table below.

Procedure: 0000-JMS-ZZ-XX-PD-Z-0040 Noise and Vibration

Guidance: 0000-JMS-ZZ-XX-GN-Z-0323 Environmental Management

5.9.3 Contract working hours will be confirmed once the CoCP has been agreed as part of the EIA planning permission.

TASK	RESPONSIBILITY
No working outside contract hours without consent from the Project Manager.	All Staff
Notify the Environmental Health Officer of any particularly noisy works or any works outside the contract hours before construction begins.	Project Manager / Environment Manager
Do not plan noisy activities first thing in the morning or last thing at night in consideration of local residents.	Project Manager / Team Leader / Supervisor
Locate accesses away from public areas.	Project Manager / Team Leader / Supervisor
Ensure all deliveries to site are within the specified working hours	Project Manager / Team Leader / Supervisor
Locate stationary plant and equipment as far away as possible from sensitive receptors and away from walls. Orientate away from receptor.	Project Manager / Team Leader / Supervisor
Provide acoustic housing around noisy equipment or equipment that is required to run continuously.	Project Manager / Team Leader / Supervisor
Use hoarding, housings and temporary stockpiles to screen noise.	Project Manager / Team Leader / Supervisor
Make sure plant such as Generators, Pumps and Compressors are CE marked and marked with the sound power level,	Project Manager / Team Leader / Supervisor
Ensure plant is well maintained. Arrange for any excessively noisy plant & equipment to be removed from site for maintenance.	Project Manager / Team Leader / Supervisor
When working at night, ensure silenced generators are used.	Project Manager / Team Leader / Supervisor
Break out hard material using hydraulic nibbler and bursters and diamond stitch drilling or sawing. Minimise use of percussive methods.	Project Manager / Team Leader / Supervisor
Use electrically powered plant rather than diesel if possible.	Project Manager / Team Leader / Supervisor
Minimise noisy assembly practices – fabricate off site where possible.	Project Manager / Team Leader / Supervisor

TASK	RESPONSIBILITY
Report any excessively noisy plant & equipment to your Supervisor.	All Staff
Keep doors on plant & equipment closed.	All Staff
Switch off engines on plant & equipment when not in use.	All Staff
No shouting.	All Staff
No loud radios.	All Staff

Noise and Vibration Monitoring

5.9.4 Noise and vibration monitoring will be undertaken as necessary to ensure compliance with required limits stipulated in Section 61 consents (where they are in place).

5.9.5 A Type 1 portable noise meter will be available for use on site.

5.9.6 The Noise & Vibration monitoring to be undertaken is given in the table below.

TASK	RESPONSIBILITY
Prior to work starting on site nearby noise sensitive receptors will be identified and noise monitoring carried out to establish baseline levels.	Environment Manager
Noise monitoring will be undertaken at the site boundaries and 1m from the façade of sensitive receptors to confirm compliance with contract/ consent requirements.	Environment Manager
Vibration survey in adjacent buildings to be carried out by specialist subcontractor during piling works.	Project Manager

5.10 Air

5.10.1 Air pollution will be prevented in accordance with the controls specified in the Environmental Management Guide. Controls that will be in place on this contract are given in the table below.

Guidance: 0000-JMS-ZZ-XX-GN-Z-0323 Environmental Management

TASK	RESPONSIBILITY
General Activities:	
Prior to site clearance erect plywood hoardings around the site boundaries to reduce windblown dust affecting nearby residences and vegetation. Consider using suitable re-used materials in preference to new.	Project Manager/ Team Leader / Supervisor
Ensure, when possible, that all vapour and odour generating processes are kept away from receptors.	Project Manager/ Team Leader / Supervisor
Site and shape stockpiles to minimise potential for dust generation.	All Staff
Protect very fine or dry material from the wind.	All Staff
Mix grout in enclosed / shielded area.	All Staff
Keep drop heights into hoppers and lorries to a minimum.	All Staff
Make sure exhausts do not discharge directly at the ground.	All Staff
No burning on site.	All Staff
Provide dust screens to shield residential and other sensitive areas.	Project Manager/ Team Leader / Supervisor

TASK	RESPONSIBILITY
Haul Roads & Traffic:	
Enforce site speed limits.	Team Leader / Supervisor
Ensure vehicles do not queue at the site entrance.	Project Manager/ Team Leader / Supervisor/Drivers
Sheet vehicles carrying spoil to prevent dust nuisance and cross contamination.	Project Manager/ Team Leader / Supervisor/Drivers
Check site accesses and local roads daily for mud and arrange for it to be cleaned up immediately.	Team Leader / Supervisor
Provide wheel washing facilities at site entrances to remove mud from haulage vehicles and to ensure mud is not transferred onto the surrounding road network (detergents will not be used and washes will incorporate appropriate containment systems).	Project Manager
Provide a road sweeper for use on public roads used by site traffic.	Project Manager
Plant, Equipment, Vehicles:	
Turn off engines when not in use. If any plant or equipment is emitting black / heavy smoke, cease use and send for servicing.	All Staff/ Team Leader / Supervisor

5.11 Wildlife

Wildlife Consents

5.11.1 The following consents and/ or licences are required for the contract works: This is yet to be confirmed based on extensive ongoing ecology surveys and design and construction development. However, there are a number of designated sites which will need approval from NatureScot prior to entry. The map below indicates the boundaries of the SSSI and SPA designations:

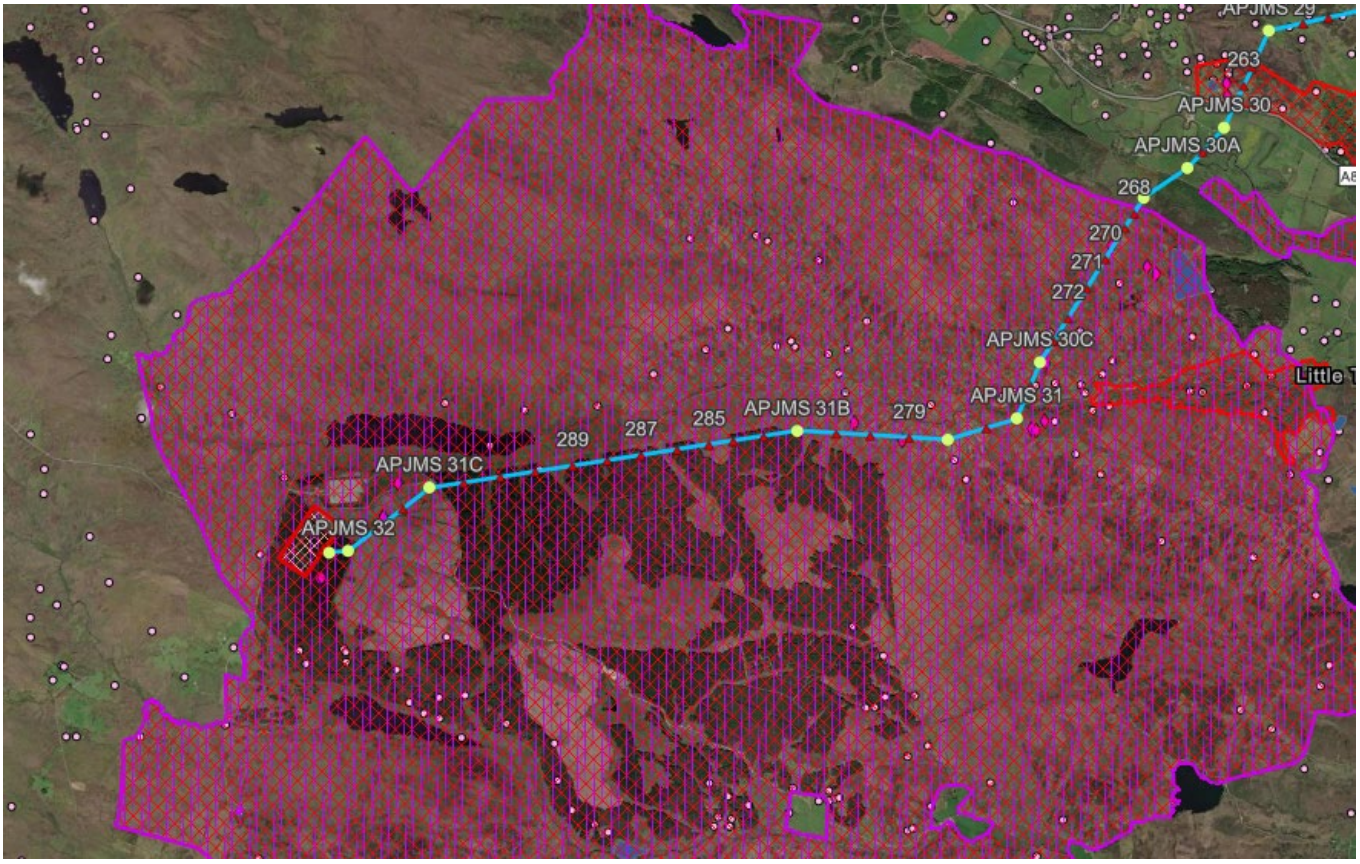


Figure 4 - Strath Carnaig & Strath Fleet Moors SPA & SSSI designation (red & purple hatched)

Wildlife Protection Measures

5.11.2 Wildlife will be protected in accordance with the controls specified in the Environmental Management Guide. Mitigation measures that will be in place on this contract are given in the table below.

Guidance: 0000-JMS-ZZ-XX-GN-Z-0323 Environmental Management

TASK	RESPONSIBILITY
General:	
Prior to works commencing on site arrange for wildlife surveys in areas affected by or adjacent to the works as part of the Stage 1 pegging out. Apply for licences as necessary and implement any attached conditions. Site walkover no greater then 48 hours prior to works to confirm ecology site conditions.	Project Manager / Environment Manager / Ecology consultant
Ensure all staff are aware of any conditions/ requirements attached to consents/ licences and of the controls detailed below.	Project Manager / Environment Manager
If any wildlife is found unexpectedly (e.g., reptiles, badgers or bats), contact your Ecologist. If ECoW supervision is not present then stop works until an ECoW is available	All Staff
Implement controls as instructed by the Ecologist or Environment Manager.	Project Manager/ Team Leader / Supervisor
Where non-native flora and fauna is identified during pre-ground investigation surveys or the ground investigation works the Contractor will inform the Project Manager within one day and employ the appropriate level of risk minimisation	Project Manager
Nesting Birds:	
Check the site for nesting birds (including ground nesting birds). Make a record of this survey.	ECoW
If any nesting birds are found, ECoW to fence off the area and inform all staff of their location. Do NOT conduct works in this area.	Project Manager/ Team Leader / Supervisor
Inform your Environment Manager and Client representative	Project Manager/ Team Leader / Supervisor
Check trees for nesting birds before removing them or trimming any branches	ECoW
Do not disturb any nesting birds.	All Staff
When working near trees:	
Inform the Environment Manager so that the council may be contacted to ensure there are no Tree Preservation Orders in the area.	Project Manager / Team Leader / Supervisor
If tree felling is required this shall be assigned a red in the RAG assessment to ensure that required licenses and agreements are obtain ed by SSEN in a timely manner	Project Manager
Ensure ancient woodlands are identified and managed in accordance with legislation	Project Manager / Environment Manager
Do not damage or interfere with any tree or hedge unless permission has been obtained from the Council.	All Staff
Ensure where practicable young trees are relocated rather than removed	Project Manager / Team Leader / Supervisor
If trees that are suitable as bat roosts are to be removed or lie within 30m of a GI location arrange for inspection by a bat license holder.	Environment Manager / ECoW

TASK	RESPONSIBILITY
If bats are present obtain a derogation licence from NatureScot prior to works / felling and supervise the work.	ECoW (Licensed Bat Specialist)
Undertake any pruning, crown lifting or removal of trees at an appropriate time of year (i.e. outside the bird-breeding season, which is February to July). Employ specialist contractors to carry out all tree cutting/surgery.	All Staff
Only remove the minimum of branches to allow access.	All Staff
Where branches must be lopped, make a clean cut above a joint.	All Staff
Ensure all site staff are briefed regarding the NJUG Guidelines on working in close proximity to trees and that the guidelines are implemented on site.	Project Manager / Environment Manager/
Work as far away from the trees as possible. Where trees are in close proximity to the works set up protection zones around the trees to prevent damage to their branch and root system.	Environment Manager / ECoW
Ensure the tree protection zone is cordoned off and if possible is large enough to prevent access under the canopy of the tree.	Project Manager / Team Leader / Supervisor
Do not lean any materials up against tree trunks.	All Staff
If excavation under the canopy is required: ■ Hand-dig around tree roots ■ Retain as many roots as possible ■ If a root must be severed, make sure it is a clean cut ■ If roots are to be left exposed overnight cover with damp sacking	All Staff
Invasive Plants:	
When removing any plants & shrubs, check that they are not Japanese knotweed, Giant Hogweed or Himalayan Balsam. If these plants are present, contact your Ecologist or Environment Manager for instructions on how to proceed.	Project Manager / Team Leader / Supervisor
If invasive plants are identified, contact your Ecologist or Environment Manager.	All Staff
Implement controls as instructed by the Ecologist or Environment Manager.	Project Manager / Team Leader / Supervisor
Biosecurity measures to be implemented to prevent the spread of seeds onto other sites as instructed by the ECoW and Client's land team, this may include vircon disinfectant washing stations for boots and equipment at site access points. In high-risk areas a biosecurity management plan will be prepared and implemented.	ECoW / All staff
Badgers, Great Crested Newts, reptiles or other protected species:	
Check the site and its surroundings for badger setts. If a sett may be affected by the works the ECoW should monitor to determine if it is active. If works cannot be located outwith the buffers in the SPP, obtain a relevant licence from NatureScot.	Project Manager / ECoW / Environment Manager
Do not undertake construction activities within 50m of an active badger sett (or 150m if pile driving) during the breeding season (December to June inclusive)	All Staff
Identified and mitigated in accordance with legislation	Project Manager / Environment Manager
Works on Rivers:	
Ensure no works are carried out on rivers with salmonids present between November and June.	Project Manager / Ecologist / Environment Manager

TASK	RESPONSIBILITY
Ensure no works are carried out on rivers with lamprey species present between March and July.	Project Manager / Ecologist / Environment Manager

5.12 Archaeology and Heritage

Archaeology and Heritage Consents

5.12.1 The requirements for consent will be established following archaeology investigations.

5.12.2 SSEN will be consulted as to consenting requirements and further control measures/investigations that may be required such as a Written Scheme of Investigation (WSI). The WSI shall be prepared in accordance with guidance in Scottish Planning Policy (SPP), Planning Advice Note (PAN) 2/2011 and Scottish Historic Environment Policy (SHEP) and works shall be overseen by an ACoW to ensure control measures are complied with.

5.12.3 Archaeological work will be conducted with regard to the local authorities' standards for archaeological work (where applicable) and the Chartered Institute for Archaeologists' Standards and Code of Conduct. Recording of all elements will be done following established methods. The requirements detailed within the WSI shall be undertaken in full by the appointed Archaeological Clerk of Works (ACoW).

5.12.4 If any consents are required agreement will be sought from SSEN in advance. Known heritage assets are detailed within the GIS system which will be used as the baseline; however, this will not negate the need for further site investigations. Potential consents, depending on findings, may include the following:

Archaeology and Heritage Protection Measures

5.12.5 Archaeology & Heritage will be protected in accordance with the controls specified in the Environmental Management Guide. Protection measures that will be in place on this contract are given in the table below. Appropriate ACoW supervision will be enforced in areas of known (or suspected) heritage assets

Guidance: 0000-JMS-ZZ-XX-GN-Z-0323 Environmental Management

TASK	RESPONSIBILITY
Implement working practices which safeguard monuments, structures and features in the vicinity of the works.	Project Manager / Team Leader / Supervisor
If archaeological remains, human remains, coins, gold or silver objects are found, stop work and notify your Environment Manager.	All Staff
Contact the Local Authority Archaeological Officer/ English Heritage and agree appropriate control measures.	Environment Manager
Implement controls as instructed by the Environment Manager or Archaeologist.	Project Manager / Team Leader / Supervisor

5.13 Contaminated Land

Contaminated Land Controls

5.13.1 Contaminated Land will be handled to prevent pollution in accordance with the Environmental Management Guide. Controls that will be in place on this contract are given in the table below. Murphy is responsible for determining the risk from historic and current land contamination (e.g. asbestos, hydrocarbons, sheep dip, landfill, tips, infilled gravel pits, etc). It is for Murphy to identify areas at risk and provide details of proposed risk minimisation; e.g. micro siting, decontamination, exclusion zones to address the risk. For the discovery of unknown contamination, Murphy shall provide mitigation measures within the RAMS and the Environmental Emergency Response Plan to address any environmental risk from discoveries.

Guidance: 0000-JMS-ZZ-XX-GN-Z-0323 Environmental Management

TASK	RESPONSIBILITY
Look out for signs of contamination such as: ■ Discoloured soil ■ Fibres in the soil ■ Presence of old chemical containers ■ Evidence of previous soil workings ■ Evidence of underground structures, tanks, pipework, drains ■ Waste pits ■ Unusual smells	All Staff
If contamination is encountered unexpectedly stop work, cover over the suspected contamination and seal off the area. Notify the Environment Manager.	All Staff
Implement controls as instructed by the Environment Manager.	Project Manager / Team Leader / Supervisor
If contaminated land is discovered, the contaminated spoil/ waste will be stored in a way that contains the contamination, e.g. in a bunded area and stored away from drains, and watercourses.	Project Manager / Team Leader / Supervisor
Dewatering measures from contaminated areas will be agreed with the SEPA and/ or Sewerage Undertaker and Consents/ Agreements obtained as required.	Environment Manager
Ensure that contaminated material is not mixed with uncontaminated (inert) material during the site works.	Project Manager / Team Leader / Supervisor
Arrange for removal and disposal of asbestos/ asbestos contaminated material by specialist contractor	Project Manager / Team Leader / Supervisor
Dispose of the contaminated soil as Hazardous Waste if necessary.	Waste Rep
Where the works may mobilise areas of historic contamination carry out risk assessments and include appropriate control measures in Method Statements.	Project Manager / Team Leader / Supervisor

Contaminated Land Testing/ Monitoring

5.13.2 The requirements for testing and/ or monitoring of material excavated or removed during the contract works are given in the table below.

TASK	RESPONSIBILITY
Before works begin undertake a review of existing data to identify areas of known contamination or areas where additional testing is considered necessary.	Project Manager / Environment Manager
If necessary, arrange for a survey of the work site by a Specialist Contractor to establish if any asbestos / asbestos waste is present. Ensure appropriate confinement / removal / disposal.	Project Manager
If contaminated land / material is discovered unexpectedly arrange for it to be sampled and sent for testing.	Project Manager / Team Leader / Supervisor
Ensure all testing is carried out in a UKAS/ MCERTS accredited laboratory.	Environment Manager
Ensure contaminated material is not sent for disposal until the results from testing are available.	Team Leader / Supervisor
Periodic sampling of material excavated during the works will be undertaken, particular when soil characteristics are observed to change, to check for possible contamination.	Project Manager / Team Leader / Supervisor
Excavated material will be tested every 100m to establish disposal criteria	Project Manager / Team Leader / Supervisor

5.14 Traffic Management

5.14.1 Strict traffic management measures will be implemented to ensure that the inconvenience to the public arising from increased traffic flows and the disruptive effects of construction traffic on local and main roads is minimised and that continuing site activities have a minimal effect on the surrounding environment.

5.14.2 The principal traffic management activities include:

- Movement of vehicles, equipment and materials on the highway in the immediate vicinity of the site, including wheel-washing and sheeting of vehicles
- Works in the carriageway
- Transfer of spoil and waste

Traffic Controls

5.14.3 Traffic Management controls will include the routing of vehicles to maintain the free flow of public traffic, access for pedestrians and strict management of works vehicles, including the issues of increased congestion, mud and dust and parking of workers vehicles. Examples of controls that will be implemented on the contract are given in the table below. More detail will be provided in the Traffic Management Plan.

TASK	RESPONSIBILITY
Before works start on site meet with the Police and Local Council to discuss any requirements regarding vehicle movements.	Project Manager
Provide sufficient advance notice to the Council and Emergency Services regarding any planned closures or diversions of roads and footpaths and/ or movements of outsized vehicles.	Project Manager
Ensure vehicles only access the sites via the specified routes.	Project Manager / Team Leader / Supervisor
Plan works to ensure Heavy Goods Vehicles (HGV) do not arrive or depart outside the permitted core working hours of 0800 to 1800 Monday to Friday.	Project Manager / Team Leader / Supervisor
Advise all companies visiting site of access routes, accesses and delivery times and restrictions on parking by including information with the order.	Project Manager / Procurement
Explore options to reduce the amount of car travel to and from work and minimise the adverse environmental effects of business-related travel.	Project Manager/ Environment Manager
Promote good practise by encouraging use of sustainable modes of transport and where feasible use minibuses/ vans to transport staff.	Project Manager/ Environment Manager
Provide wheel washing facilities at site entrances to remove mud from haulage vehicles and to ensure mud is not transferred onto the surrounding road network (detergents will not be used and washes will incorporate appropriate containment systems).	Project Manager
Provide a road sweeper as necessary for use on public roads used by site traffic.	Project Manager
Where possible, route site traffic to avoid the need for reversing.	Project Manager / Team Leader / Supervisor
Check site access routes daily for damage resulting from the construction activities and arrange for the repairs necessary to ensure a high level of maintenance.	Team Leader / Supervisor
Check site accesses and local roads daily for mud and arrange for it to be cleaned up immediately.	Team Leader / Supervisor
Ensure vehicles carrying spoil are sheeted to prevent dust nuisance	Team Leader / Supervisor
Ensure vehicles enter and leave site in a forward direction.	Team Leader / Supervisor
Ensure vehicles crossing footways to enter or leave the site only do so under supervision of a suitably trained Banksman	Team Leader / Supervisor
Ensure vehicles manoeuvring on site or in the public highway outside the site are supervised by a Banksman	Team Leader / Supervisor

TASK	RESPONSIBILITY
Ensure all construction vehicles are operated efficiently, well maintained, not left running while they are not operating.	Team Leader / Supervisor

5.15 Outdoor Access

5.15.1 An outdoor access plan will be developed for the construction phase to review existing access to open spaces in and around the worksites and longer-term how these will be maintained and improved (where feasible). Initially, the following shall be implemented as a minimum:

- Existing forest roads not to be upgraded will be accessible before, during and after construction. Signage used will be clear and consistent throughout.
- Clear signage will be installed detailing how long the public access will be suspended for during the upgrading of any existing road/track and construction of any new road/track.

5.16 Site Compound

5.16.1 A compound will be established in the vicinity of the Carnaig substation.

Guidance: 0000-JMS-ZZ-XX-GN-Z-0323 Environmental Management

5.16.2 Specific controls that will be in place on this contract are given in the table below:

TASK	RESPONSIBILITY
Before site set up works begin photograph the condition of the site compound area (to help avoid erroneous claims after the works have been completed).	Project Manager / Team Leader / Supervisor
Provide perimeter hoarding at each site such that the environment in the area is not blighted by the construction site.	Project Manager
Provide signage with out of hours contact details.	Project Manager
Ensure that hoardings are regularly checked and kept free of graffiti.	Team Leader / Supervisor
Position site lighting to prevent intrusion into neighbouring properties	Project Manager
Locate site toilets / waste skips away from site neighbours.	Project Manager
Ensure that the sites are kept clean, tidy and safe.	Project Manager
Lay hardstanding over all operational areas.	Project Manager
Store plant, equipment & materials at least 10m away from drains, if possible.	Project Manager / Team Leader / Supervisor
Keep cabins/containers locked outside working hours	Team Leader / Supervisor
Provide site drainage / dewatering arrangements that comply with the requirements of any trade effluent / discharge consents	Project Manager/ Team Leader / Supervisor
Prevent materials, waste, and dust from blowing around.	Team Leader / Supervisor
Allocate a person to supervise all fuel deliveries.	Project Manager / Team Leader / Supervisor
Display a notice giving details of safe delivery and storage procedures.	Environment Manager
Supervise all deliveries at all times.	Nominated person
Check level in tank prior to delivery to prevent overfilling.	Nominated person

TASK	RESPONSIBILITY
Check delivery before discharge to ensure the correct fuel is being delivered.	Nominated person
Ensure that valve on bunded tank is closed and kept locked when not in use	All staff
Only re-fuel in designated areas within the site compound, using drip trays.	All staff
Ensure that hose is kept within bund at all times	All staff
Never leave a vehicle/ plant unattended during re-fuelling.	All staff
Ensure any emergency vehicle maintenance is carried out using drip trays.	Fitters/ Team Leader / Supervisor
Appoint a member of staff to be responsible for liaising with local groups	Project Manager
Consult with local resident groups about planned activities that may cause a nuisance, e.g. piling, major deliveries etc.	Appointed person

5.17 Emergency Preparedness/Environmental Incidents

5.17.1 Environmental Incidents and Nonconformances will be dealt with in accordance with Group Procedure –Emergency Preparedness and Response, Group Procedure – Control of Nonconformance and Group Procedure – Accident/Incident Classification and Reporting This will ensure that rapid and effective corrective action is taken, actions to prevent recurrence are identified and recorded, statistics are gathered and where appropriate lessons learnt are disseminated across the Group.

Procedure: 0000-JMS-ZZ-XX-PD-Z-0024 Emergency Preparedness and Response

Procedure: 0000-JMS-ZZ-XX-PD-Z-0054 Control of Nonconformance

Procedure: 0000-JMS-ZZ-XX-PD-Z-0007 Accident/ Incident Classification and Reporting

Definition of Environmental Incidents

5.17.2 The Murphy Group define environmental incidents/ nonconformances as follows:

- **Environmental Incident:** A failure to implement adequate environmental controls that has resulted in pollution of water, air or land, damage to wildlife and ecosystems (habitats) or nuisance to a local community.
- **Environmental Near Miss:** something that occurs that has the potential to cause an environmental incident but didn't.
- **Nonconformance:** failure to comply with a requirement or set of requirements.
- **Complaint:** A significant grievance, dissatisfaction or accusation made by a client, member of the public or other third party relating to activities or product being completed by Murphy, its Subcontractors or Suppliers.

Categories of Incident

5.17.3 There are five categories of environmental incident:

Category 5:	Environmental incidents which are not under control and/ or have caused significant harm or damage to the environment and human health. E.g. requiring external involvement to clean-up (high likelihood of regulatory action including likely prosecution).
Category 4:	Environmental incidents which are not under control and/ or have caused significant harm or damage to the environment e.g. requiring external involvement to clean-up (high likelihood of regulatory action including civil sanctions).
Category 3:	Environmental incidents that have or may have caused harm or damage to the environment but have been controlled (high likelihood of regulatory action including receipt of a statutory notice or other intervention by enforcing authority).

Category 2:	Environmental incidents that have or may cause minor harm or damage and/ or near misses with significant potential of harm or damage (very low likelihood of regulatory action, no intervention by enforcing authority).
Category 1:	An event, prevented from occurring through effective implementation of arrangements described in the Murphy IMS, Contract Environmental Plan(s) & contract documents (low level near miss).

Types of Incident

5.17.4 To help with trend analysis incidents should be classified according to the type of incident. Incidents can usually be classified under one of the ten types listed below. However, this is not a definitive list, and a different classification can be used if the incident does not fit within one of these.

- Air
- Archaeology & Heritage
- Contaminated Land
- Ecology
- Groundwater
- Noise & Vibration
- Oils & Chemicals
- Surface Water
- Waste

5.17.5 To aid with classification of environmental incidents examples of each type and category are included in Appendix 3 of the Group Procedure – Accident/ Incident Classification and Reporting.

Procedure: 0000-JMS-ZZ-XX-PD-Z-0007 Accident/ Incident Classification and Reporting

Planning

5.17.6 Potential environmental problems and emergencies are considered as part of the project planning, and the appropriate prevention and control measures put into place. These measures are communicated to all people working on the project including subcontractors through the Contract Environmental Induction, Toolbox Talks and Method Statement briefings.

5.17.7 The Emergency Contacts List, Drainage Plan/ Site Plan (including the location of spill kits) will be posted on notice boards. Spill kits will be located within the stores in the site compound, at strategic points around the site and within all working vehicles. Vehicles will carry enough spill kit to clean up the amount of diesel/ oils they are carrying. Where works are very close to or in a watercourse boom will be placed across the watercourse immediately downstream of the works as a precaution.

Form: 0000-JMS-ZZ-XX-FM-Z-0121 Emergency Contacts List

5.17.8 The minimum stock of spill kit held at a particular site will depend on the activities, equipment and risks associated with the individual location. The Minimum Stock required on each site will be assessed by the Environment Manager. The type(s)/ quantities of pollution control equipment held as minimum stock is given below:

SPILL KITS AND OTHER POLLUTION PREVENTION MATERIAL	MINIMUM QUANTITY	
	SITE STORES	VANS
Oil Spill Kit	2 No. 130 litre packs	1 No. 130 litre pack
Chemical Spill Kit	1 No. 25 litre packs	1 No. 25 litre pack
Oil absorbent granules	6 No. bags	2 No. bags
Oil absorbent pads	1 No. box (100 pads)	N/A
Chemical absorbent pads	1 No. box (100 pads)	N/A
Absorbent booms	1 No. 12’ boom and 4 No. 3’ booms	N/A
Dirt bag – for 2” pumps	1 per pump	1 per pump

SPILL KITS AND OTHER POLLUTION PREVENTION MATERIAL	MINIMUM QUANTITY	
	SITE STORES	VANS
Plant Nappy	Small (60cm x 50cm) – 1 per small pumps / generators, storing Gerry cans and refuelling	Small (60cm x 50cm) – 1 per small pumps / generators, storing Gerry cans and refuelling
	Medium (69cm x 100cm) – suitable for permanent refuelling areas	Medium (69cm x 100cm) – suitable for permanent refuelling areas
	Large - 137cm x 200cm – 1 per pump, compressor or large item of static plant	Large - 137cm x 200cm – 1 per pump, compressor or large item of static plant
Metal Jerry Cans	Labelled for any red diesel or diesel containers	Labelled for any red diesel or diesel containers
Funnel	Per filling device	1 per van

5.17.9 The 'minimum stock' for spill kits will be included on the weekly inspection checklist.

Testing and Review of Emergency Preparedness & Response

5.17.10 Testing and review of the emergency preparedness and response arrangements, including its effectiveness and suitability will be undertaken at the start of each contract and at 6 monthly intervals as a minimum. The testing may include a desk-top review of the arrangements and emergency drills etc.

Response to an incident or imminent threat of an incident

5.17.11 All employees will be instructed to bring any environmental incidents they identify to the immediate attention of the Project Manager and Environment Manager, after first taking what steps, they can to contain/ remediate the incident **(without putting the health and safety of themselves or others at risk)**.

Spill Response:

- Stop the spill at the source e.g. put the drum upright, if this can be done safely.
- Contain using sand bags or booms or bunds – stop it going into drains/ditches/watercourses
- Use spill kit or sand to mop up
- If the spill is heading towards a watercourse: dig a trench downhill from the spill, line it if possible, and place absorbent material in the trench
- If the spill is in or near a watercourse: put a boom downstream of the spill and across the entire watercourse. Angle the boom to direct the spill towards one of the banks
- In watercourses, use skimmers or absorbent pads (not granules) to absorb the spill
- For large spills, call in a clean-up contractor to use a tanker to suck-up spill but ensure that the spill is bunded to stop any migration of spill towards watercourses/ditches/drains
- Put used spill kits/oily sand in heavy-duty labelled plastic sacks in Hazardous Waste skip/bin. If you do not have one, ask your Waste Rep to arrange disposal

NEVER HOSE SPILLS DOWN – ALWAYS CONTAIN THEM

Reporting and Investigation

5.17.12 All incidents will be reported using the Murphy 2-1-2 online reporting system. Reporting timescales are:

TIMESCALES	ACTION
Immediately	Report the incident to project, site or line manager.
Within 2 hours	Project, site or line manager logs initial details of the incident online via 2-1-2.
Within 1 day	Project, site or line manager completes an initial incident report and logs it on 2-1-2.
Within 2 weeks	Depending on the severity of the incident, the Operations Director and SHES Advisor/ Manager complete a full investigation report and upload it to 2-1-2.

5.17.13 If appropriate/ necessary the Project Manager/ SHES Advisor/ Manager will also inform the Client / Statutory Authorities and liaise with their personnel in investigations, assessments and the implementation of appropriate corrective and preventive actions.

5.17.14 In line with the clients reporting system Murphy will report all environmental incidents to the Client Project Manager within 30 minutes and will provide a copy of an incident investigation report (where required) within 2 weeks of the incident occurrence.

6 References

POLICIES / PROCEDURES / GUIDANCE	
0000-JMS-ZZ-XX-PD-Z-0007	Accident and Incident Reporting
0000-JMS-ZZ-XX-PY-Z-0112	Design Management
0000-JMS-ZZ-XX-PD-Z-0019	Document and Data Control
0000-JMS-ZZ-XX-PD-Z-0006	Document Numbering
0000-JMS-ZZ-XX-PD-Z-0077	Inspection and Testing
0000-JMS-ZZ-XX-PD-Z-0036	Management Reviews
0000-JMS-ZZ-XX-PD-Z-0055	Records and Archiving
0000-JMS-ZZ-XX-PD-Z-0192	SHES Inspections
0000-JMS-ZZ-XX-PD-Z-0011	SHES and Q Audits
0000-JMS-ZZ-XX-PD-Z-0131	SHES Operations
0000-JMS-ZZ-XX-PD-Z-0065	Waste Management
0000-JMS-ZZ-XX-PD-Z-0229	Stage 2: Prequalification of the Supply Chain
0000-JMS-ZZ-XX-GN-Z-0323	Environmental Management
0000-JMS-ZZ-XX-GN-Z-0327	Environmental Design Aims
FORMS / TOOLBOX TALKS	
0000-JMS-ZZ XX-FM-Z-0044	Training Attendance Form
0000-JMS-ZZ XX-FM-Z-0112	Filing Index
0000-JMS-ZZ XX-FM-Z-0200	Supervisor Weekly Checklist
0000-JMS-ZZ-XX-FM-Z-0099	Environmental Aspects and Impacts
0000-JMS-ZZ-XX-FM-Z-0102	Consents and Authorisations Checklist
0000-JMS-ZZ-XX-FM-Z-0118	Environmental Impacts Checklist
0000-JMS-ZZ-XX-FM-Z-0121	Emergency Contact List
0000-JMS-ZZ-XX-FM-Z-0301	Complaint Record
0000-JMS-ZZ-XX-FM-Z-0445	Complaint Register
0000-JMS-ZZ-XX-TM-Z-0005	Safe Start Matrix (M4)
0000-JMS-ZZ-XX-TT-Z-0001	Environmental Dos & Don'ts

APPENDIX A – Aspects and Impacts

GUIDANCE NOTES		
Evaluation of Impacts:	Pre/ Post Control Significance Colour Code:	
A. Likelihood of Occurrence (5 = very likely 1 = very unlikely)		Impacts scoring over 50 are considered to pose a significant risk
B. Ease of Detection (5 = very difficult 1 = very easy)		Impacts scoring between 30 and 50 are considered to pose a m
C. Ease of Resolution (5 = very difficult 1 = very easy)		Impacts scoring between 5 and 30 are considered to pose a lov
D. Severity of Consequence (10 = very severe 2 = very minor)		

Project:	SSEN ASTI - Carnaig Substation
Prepared By:	Alex Hemming
Last reviewed/	30/07/2024

Aspect	Activity	R – Routine (normal) NR – Non-routine (abnormal) E – Emergency	Impact	Evaluation of Impacts (Pre-Control)				Significance (A+B+C)*D	Control Measures	Evaluation of Impacts (Post-Control)				Significance (A+B+C)*D
				A	B	C	D			A	B	C	D	
Peat Management	Stripping of Peat layers, particularly substation footprint and associated temporary works	R	Disturbance of important peat areas, particularly Class 1& Class 2 Peat as they are Carbon-rich soils which can lead to massive Carbon emissions back into the atmosphere. Also they can form important habitats	4	3	4	8	88	Limit peat disturbance, particularly high-value peat and develop a plan in liaison with SEPA to minimise disturbance and Carbon release. For unavoidable disturbance seek to utilise in a local peat restoration project and habitat enhancement	3	3	3	5	45
Protected Animal Species	Clearance works, soil stirpping and works in close proximity to sensitve animal species,	R, NR, E	Disturbance or direct harm to species (such as badgers, bats, birds & reptiles) or their habitats, pollution leading to indirect impacts	4	3	4	8	88	ECoW to oversee works in sensitive areas, method statements to be developed to control works, licenses submitted and complied with where needed. Ecology surveys to be updated to ascertain presence and details to be added to GIS system for visibility to all.	3	3	3	5	45
Protected Environment Sites	Clearance works, soil stirpping and works in close proximity to protected environment sites such as SPA's/SSSI's, pollution leading to indirect impacts	R, NR, E	Air or Water Pollution leading to indirect impacts on protected sites or inadvertent removal of habitat within protected sites	4	3	4	7	77	Any works required in legally designated environment sites to be consulted with NatureScot in advance to understand consenting requirements and resultant controls. Works to be overseen by an ECoW. Locations identified on GIS system.	3	2	3	5	40

Soil Quality	Soil handling & storage, topsoil & subsoil stripping for site establishment and substation building groundworks	R	Damage to soil structure and fertility leading to a lower agriculatural quality value post-construction	3	3	4	7	70	Following best practice in soil handling in line the Murphy Environmental Management Guidance document (0000-JMS-ZZ-XX-GN-Z-0323) & the DEFRA Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. Soil Management Plan to be developed.	2	2	3	6	42
Accidental spills or leaks, Discharge of wastewater, Discharge of rainwater run-off, Change in water level or flow	Works in, over, under or near watercourses, ditches or drains that lead to controlled waters, construction site runoff. River crossings and diversions, overpumping.	E	Potential damage to water resources and water habitats with rsultant impact on water-bound species and general water quality and visual amenity	3	3	3	7	63	Drainage system and attenuation ponds for silt control in line with drainage designs and the surfacewater management plan. Pollution prevetion measures in place and checked regularly. Procedure for piped crossing to be developed as part of the Water Management and Pollution Prevention Plan. Detailed plans to be developed for watercourse diversions where required including overpumping procedure and permit to pump process.	3	2	3	5	40
Air Quality	Dust emissions from soil stripping, handling & storage, use of haul roads, air pollution from traffic movements for site access and deliveries, storage of materials and waste in compounds	R & NR	Nuisance to local communities as well as ecological receptors such as bats, badgers and birds (particularly Schedule 1 listed species)	3	3	3	7	63	Dust emission reduction measures AQ01 to AQ37 as detailed in Section 3.10 Air Quality of the Code of Construction Practice. Implementation and assurance of Traffic Management Plan.	3	2	3	6	48
Visual	All activities, devegetation, construction of new substation buildings, compound construction	R	Visual impact to the local community either temporary or permanent	3	3	4	6	60	Leave in situ landscape screening where possible, where visual impacts are expected implement barriers or site hoarding for longer-term sites such as compounds and the substation construction areas.	2	2	3	5	35

Accidental spills or leaks, Change in groundwater levels	Works in or near Groundwater Source Protection Zones or Major Aquifers, storage of polluting chemicals on site, potential to impact if dewatering is required or structures that could impede the flow of groundwater body, mobilising of any existing ground contamination through strata into groundwater body	E	Potential to pollute groundwater which could impact, protected environment sites, water habitats and species (such as Salmon and Otters) as well as potential impacts on drinking water quality	3	3	3	6	54	Pollution prevetion measures in place and regularly checked. Emergency response plan in place and drills carried out. Emergency spill contractor in place and details communicated.	2	3	3	5	40
Trees & hedgerows	Works near trees/ hedges, removal due to clash with permanent and temporary works	NR	Damage to protected trees such as TPO designated, damage to special hedgerows and subsequent impact on nesting birds or bats, reduction in biodiversity value, impact on landscape screening for local residents and businesses	3	3	3	6	54	Tree & Hedgerow protection strategy, Tree protection plan, clear signage and exclusion zones around retained trees and, hedgerows and associated root protection areas, ECoW presence when working in close proximity, root protection matting.	2	3	3	5	40
Vibration	Piling activities and HDD	R	Nuisance to local communities, listed buildings, Scheduled Ancient Monuments and other sensitive assets	3	3	3	6	54	Minimise percussion piling, monitoring of sensitive assets and buildings where required.	2	3	3	5	40
Contaminated Land	Groundworks potentially interacting with existing ground contamination	E	Pollution of water resources such as groundwater and watercourses, further contamination of land, Air pollution during dry periods, odour impacts on the local community	3	3	3	6	54	GI survey to determine areas of potential contamination and management plan in place to manage contaminated areas which may either be remediated onsite or removed offsite as contaminated waste. Cotaminated sites to be added to GIS system for visibility in design and construction.	2	3	3	5	40

Invasive Non-Native Species (INNS)	Works near invasive plants such as Himalayan Balsam and Japanese Knotweed, either targetted management or inadvertantly interacting with their zone of influence	NR	Spreading of INNS listed in Schedule 9 of the Wildlife & Countryside Act leading to legal offence and reduction in biodiversity of the surrounding habitat	3	3	3	6	54	Assess all areas for potential INNS by a competent Ecologist, fence off and sign to ensure they are not inadvertently spread. Location to be highlighted on GIS system. If INNS can be avoided then longer-term management not required, however, if they conflict with the works they should be removed. INNS Management Plan to be developed with full details of management to ensure full erradication.	2	3	3	5	40
Waste Management	Management of construction waste	R	Poor management of waste leading windblown litter, fly tpping and legal breach if waste duty of care reuirements are not met. Misclassification of waste leading to breach of environmental permit at receiving site and potential legal action on Murphy	3	3	3	6	54	Waste streams identified. Waste storage control onsite (segregate, store and dispose of waste legally and responsibly). Compliance with Duty of Care & Legal requirements. Waste Hierarchy application, minimisation efforts. Waste movements via "Murphy Waste" - WTN / Consignment note & recycling data stored centrally. Permits / exemptions in place - compliance with relevant consents, permits and licences. Adherence to quantities / types of waste stored / transferred to comply with NWFD exemption limits. Use of Waste opportunities to bring value. Simple Action compliance.	2	3	2	5	35

Noise emissions	Piling and drilling in residential areas. Night-time working (if required). Traffic movements to and from sites.	R & NR	Nuisance to local communities	3	2	3	6	48	Working hours, BPM noise controls such as barriers and silenced equipment, no idling policy. Section 61 consents - comply with relevant consents, permits and licences. Simple Action compliance.	2	2	3	5	35
Heritage assets	Works near Listed Buildings or other heritage assets such as Scheduled Ancient Monuments or other archaeological discoveries	NR	Irreversible damage to heritage asset leading to legal breach and prosecution	2	3	3	6	48	Archaeology surveys and trial trenching in areas withint the footprint of works to identify any constraints. Investigation into anything discovered and heritage asset recording and removal if required. Watching brief to be implemented in higher risk areas and potentially overseen by an Archaeologist where assets are know. Identify any heritage assets and barrier off land to prevent unauthorised access or inadvertant damage.	2	2	3	5	35