

Appendices



Appendix A. ISO14001:2015 Certification



CERTIFICATE OF REGISTRATION

This is to certify that

**G.Walters (Holdings) Limited t/a Walters Group
(Incorporating Walters UK Ltd,
Walters Plant Ltd, Walters Resources Ltd,
Walters Environmental Ltd,
Gorrel Equipment Solutions Ltd)**

Hirwaun House
Hirwaun Industrial Estate
Aberdare
Mid Glamorgan
CF44 9UL

has been audited and found to meet the requirements of standard
ISO 14001:2015 Environmental Management System

Scope of certification

Design and Construction of Building and Civil Engineering Works and
Demolition Environmental Enhancement and Regeneration, Work Plant
Provision, Operation and Maintenance for Hire and Contracting Supply and
maintenance of self-operated plant and associated equipment Acting as
Principal Contractor, Principal Designer & Contractor.

Certificate number: 276

Issue number: 2021-03

Certificate effective date: 22 September 2021

Certificate expiry date: 9 October 2024

Date of initial certification: 10 October 2003

Robert Velitch
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Appendix B. Consents Register

[Phase 1a Consent Register](#)

Revision 1

Internal Ref:	Licence/Consent	Issuing Authority	Details (location, asset ID, etc.)	Submission Date	Consent/Licence Ref.	Date Consent/Licence Obtained	Key Conditions	Link
PRoW Closures/Diversions								
No PROW closure / diversion is required for Phase 1A works								
TTRO								
1A_TTRO_01	TTRO	NPT	Road closure application will be made to close the Onllwyn road to enable SW drainage to be installed					
1A_TTRO_02	TTRO	Powys	Road closure application will be made to close the Onllwyn road to enable SW drainage to be installed					
Section 61								
No Section 61 license is required for Phase 1A works								
Discharge Permits								
1A_OWDP_01	Discharge Permit	NRW	Nant Camant (SN 853 105) via Outlet D and Outlet B	Transfer requested 29/11/2022	BB 4027001	Transfer to GCRE received !12/12/2022. Transfer notification PAN-020035.	Discharge activity to be undertaken in compliance with permit BB 4027001. Outlet D discharges to be of treated surface water run-off with a pH not less than 6 or more 9, with suspended solids below 100mg/l and oil below 10mg/l. The rate of discharge shall not exceed 90l/sec. Outlet B discharges to be of untreated surface water run-off. Outlet B is only to be used within flow to treatment lagoons are greater than 90l/sec.	
Waste Exemption/Permit								
Requirements be confirmed - Works to be undertaken under a Mining Waste Directive or DoWCoP MMP.								
Material Management Plan								
Requirements be confirmed - Works to be undertaken under a Mining Waste Directive or DoWCoP MMP.								
Waste Carriers Licence								
WCL_01	Waste Carriers License	NRW	Waste Carriers License	19/10/2020	CBDU018753	19/10/2020	Expiry 18/10/2023	
Hazardous Waste Producer								
1A_HWP_01	Hazardous Waste Registration	NRW	Hazardous Waste Registration	06/12/2020	CAG400	06/12/2023	05/12/2023	
Land Drainage/Ordinary Watercourse Consent								
1A_OWLD_01	Land draiange consent	LPA	The outfall of the permanent drainage system in the Afon Dulais The realignment of the existing watercourse and construction of a new attenuation pond and environmental pond to the North of the proposed works the Realignment of the existing ditch to the Northwest of the proposed development					
Protected Species								
No EPSL required for Phase 1A works								

Appendix C. REAC

Global Centre of Rail Excellence

Register of Environmental Actions and Commitments

GCRE

7th September 2022

Doc Ref:

Notice

This document and its contents have been prepared and are intended solely as information for GCRE and use in relation to REAC.

Atkins Limited assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has 40 pages including the cover.

Document history

Document title: Register of Environmental Actions and Commitments

Document reference: REAC

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	Initial Draft	GM	HLA	CB	AK	07/09/2022
2.0	Update to address Walters' comments.	GM	HLA	HLA		

Client signoff

Client	GCRE
Project	Global Centre of Rail Excellence
Job number	5209796
GCRE signature/date	

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Abbreviations

Abbreviation	Term
BPM	Best Practice Means
CEMP	Construction Environmental Management Plan
CLO	Community Liaison Officer
CifA	Chartered Institute for Archaeologists
CPAT	Clwyd Powys Archaeological Trust
COSHH	Control of Substances. Hazardous to Health
CTMP	Construction Traffic Management Plan
DEFRA	Department for Environment, Food and Rural Affairs
DMPWO	Development Management. Procedure) (Wales) Order 2012
ECow	Ecological Clerk of Works
EMMP	Ecological Management and Monitoring Plan
EMP	Ecological Management Plan
EMS	Environmental Management System
EPP	Ecological Protection Plan
ES	Environmental Statement
GGAT	Glamorgan Gwent Archaeological Trust
GCRE	Global Centre of Rail Excellence
GPP	Guidance for Pollution Prevention
INNS	Invasive Non-Native Species
KPI	Key Performance Index
LPA	Local Planning Authority
NVC	National Vegetation Classification
NRW	Natural Resources Wales
NPTCC	Neath Port Talbot County Council
NVMP	Noise and Vibration Management Plan
PAWS	Planted Ancient Woodland
PCC	Powys County Council
PPW	Planning Policy Wales
PRoW	Public Rights of Way
SINC	Sites of Importance for Nature Conservation
SSSI	Site of Special Scientific Interest
SAC	Special Area of Conservation
SQE	Suitably Qualified Ecologist
WFD	Water Framework Directive
WSI	Written Scheme of Investigation

1. Introduction

1.1. Background

The Welsh Government (WG), together with Local Authorities and industrial partners are developing a rail testing and storage facility, known as the Global Centre of Rail Excellence (GCRE) at the site of the Nant Helen surface mine, together with the adjacent Onllwyn Washery. The site is located within the Dulais Valley, straddling the Neath Port Talbot and Powys border, with the Brecon Beacons National Park Authority boundary immediately to the north.

To facilitate GCRE, a scheme of comprehensive earthworks, known as the Nant Helen Complementary Earthworks Scheme, are being implemented. The earthworks scheme will provide a flexible and adaptable landform across the entire site, including an earthworks formation along with associated drainage and landscaping required for development of two of the key components of GCRE, the high speed and infrastructure test loops and rail line connections.

The Nant Helen Complementary Restoration Earthworks and associated GCRE development are both subject to planning approvals, with the complimentary earthworks being awarded in full by both Neath Port Talbot (P2020/0362) and Powys (20/0738/FUL) Councils, and outline planning permission for the wider GCRE scheme, again with Neath Port Talbot (P2021/0327) and Powys (21/0559/OUT) Councils.

The redline boundaries associated with both Projects are illustrated in Appendix A of this document.

1.2. Register of Environmental Commitments and Actions

1.2.1. Overview

This Register of Environmental Actions and Commitments (REAC) has been prepared to consolidate environmental mitigation commitments associated with the earthworks and as defined within the Environmental Statements for both the Nant Helen Complimentary Earthworks and the GCRE development, in addition to those realised through consultation with relevant stakeholders and pre-construction surveys.

Table 1 details environmental commitment actions associated with the Nant Helen Complimentary Earthworks and general environmental mitigation commitments which apply to both the Nant Helen Complimentary Earthworks and the GCRE development. Table 2 details further environmental commitment actions associated with the GCRE development only.

Environmental commitments detailed within the REAC are to be implemented during the design, construction and operational phases of the scheme and have been incorporated into the Construction Environmental Management Plan.

1.2.2. Guide to REAC Table

The REAC is presented in Table 1 and Table 2 with headings setting out:

- a) A unique reference number to facilitate cross reference with the ES and other environmental documents/reports
- b) The source of the commitment/action e.g., ES Chapter, Regulator Consultation, Survey Outcomes
- c) Objective of the commitment/action i.e., what is the action/commitment aiming to achieve
- d) Details of the commitment/action
- e) Achievement criteria and reporting requirements
- f) Relevant stage of the scheme e.g., design, construction, operation
- g) Responsible person(s)
- h) Confirmation of achievement

Where the achievement criteria are self-explanatory the phrase ‘implementation of commitment action’ is used. As with all commitment items in the REAC, the procedures to implement these measures will be developed throughout the lifetime of the scheme.

2. Register of Environmental Actions and Commitments

Table 1: Nant Halen Complimentary Earthworks REAC

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
Planning							
PL01	Earthworks Decision Notice	Notice of intention to commence development	Prior to commencement of works: - The LPAs are to be notified in writing of intention to commence development by submitting a Formal Notice under Article 24B of the Town and Country Planning (Development Management Procedure) (Wales) Order 2012; and - A Site Notice in the form set out in Schedule 5B (a newly inserted Schedule) of the DMPWO is to be displayed at site boundary.	Pre-construction	Submission of a formal Notice as set out in Schedule 5A of DMPWO to LPAs and display of site notice as set out in Schedule 5B of DMPWO.	GCRE	
PL02	Earthworks Decision Notice	Implementation of plans/designs/methods of work approved by LPAs	All works are to be carried out in accordance with documents and plans submitted at application or as otherwise modified as agreed with the LPAs.	Construction	Delivery of works in compliance with designs and methods of work approved/agreed with the LPAs. Please see ES.	GCRE/Walters	
PL03	Earthworks Decision Notice	Management of environmental impacts associated with the construction of the development in accordance with the ES	The following documents are to be submitted and approved by the LPAs prior to the commencement of the development: - Dust Management Action Plan - Noise Monitoring and Management Action Plan - WSI - Construction Environmental Management Plan (CEMP) - Ecological Protection Plan (EPP) - EMMP - Materials Handling Strategy - Preliminary Investigation and Assessment of Contamination, including methodology for site investigations - Contaminated Land Report - Contaminated Land Remediation Scheme (if required) - Landscape Strategy - Surface Water Strategy	Pre-Construction	Production, submission and approval of listed documents prior to the commencement of any activities which may constitute development.	GCRE/Walters/Atkins	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
PL04	Earthworks Decision Notice	Management of environmental impacts associated with the construction of the northern embankment in accordance with the ES	The following documents are to be submitted and approved by the LPAs prior to the construction of the northern embankment: - Geotechnical Engineering Design Specification for the Embankment Construction - Design and construction of 5 m noise fence	Pre-Construction	Production, submission and approval of designs prior to the construction of the northern embankment. Noted that a noise assessment is being submitted to LPAs to negate need for 5m noise fence. If approved by LPAs, Noise Monitoring and Management Action Plan will require updating.	Walters/Atkins	
PL05	Earthworks Decision Notice	Protection of environmentally sensitive receptors	Prior to commencement of construction, signs and fencing to be installed in accordance with the approved CEMP and EPP.	Pre-construction	Installation of signs and fencing in compliance with the CEMP and EPP.	Walters	
PL06	Design & Access Statement	Slope stability	Track gradients are to be no steeper 1:100 gradient, whilst the connection from the main railway line is to be no steeper than 1:50.	Pre-construction	Consideration of commitment action within design.	Rail Systems Designer	
PL07	CEMP	Fulfilment of planning conditions and commitments	Any planning conditions and commitments made following submission and award of planning permission to be incorporated within the CEMP.	Pre-construction	Production of a CEMP that takes account of planning conditions and commitments.	Walters/Atkins	
Public Rights of Way and Common Land							
PRCL01	ES Chapter 4 PRoW/Common Land	Appropriate and fair treatment of Commoners	Development of a Common Land Strategy. Commoner's rights will be restored across the site following construction. Therefore, it is assumed no management is required during construction itself as commoners' rights will not be returned until construction is complete	Construction	Issuing of a Common Land Strategy by Powys County Council.	Powys County Council.	
PRCL02	ES Chapter 4 PRoW/Common Land	Protection and enhancement of PRoW network	On completion of the earthworks, all PRoWs to be reinstated as close to the definitive map as possible, in agreement with the LPAs. Due to the new terrain introduced by earthworks, the steepness of the PRoWs that cross the embankments may have to be modified to avoid excessive inclines. This will not alter the overall routing but is likely to make some of the paths longer as they are modified to zig-zag up and down the embankments to reduce steepness.	Construction	Reinstatement of all PRoWs in compliance with the definitive map. Definitive map is to be requested from PCC and NPTC.	Walters	
PRCL03	ES Chapter 4 PRoW/Common Land	Protection of PRoW	A PRoW notice is to be prepared by PCC and NPTC in collaboration with Celtic Energy.	Pre-construction	Preparation and implementation of PRoW notice.	GCRE/LPAs	
PRCL04	ES Chapter 4 PRoW/Common Land Earthworks Decision Notice	SUSTRANS National Cycle Route 43	No development is to take place upon the SUSTRANS National Cycle Route 43 Celtic Trail East without the provision of an alternate route, which is to be approved by the LPA.	Pre-construction	Design, approval and provision of alternate route for SUSTRANS National Cycle Route 43.	Walters/Atkins	
Water Environment							
WE01	ES Chapter 5 Water Environment	Prevention of bank failure, erosion and scouring	Mitigation measures to prevent bank failure, erosion and scouring to be embedded within the scheme design.	Pre-construction	Inclusion of appropriate mitigation measures in design.	Design Team	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
WE02	ES Chapter 5 Water Environment	Mitigation of flood risk associated with site run-off	Establishment of system of attenuation features, which are discharged at greenfield run-off rates or lower if specified.	Pre-construction	Consideration of commitment action within design.	Design Team	
WE03	ES Chapter 5 Water Environment	Flood risk management	Baseline flood risk will be used to inform emergency evacuation plans and placement of materials.	Pre-construction	Implementation of an Emergency Response Plan for Flood Events, which includes details on the placement of materials and equipment to mitigate against the risk of flooding. To be included within the CEMP.	Walters	
WE04	ES Chapter 5 Water Environment	Prevention of local scour, and impairment of floodplain connectivity and fish passage	New or extended culverts are to be designed with: - The base of the culvert set >150mm below the existing bed of the watercourse. - Gradients that minimise flow velocities within the culvert to aid fish passage; and - Scour protection at the inlet or outlet using bioengineering methods wherever practicable to maximise habitat potential. The design and construction supervision of mitigation measures will be led by a qualified geomorphologist.	Pre-Construction	Consideration of commitment action within culvert design.	Design Team	
WE05	ES Chapter 6 Ground Conditions	Protection of ground and surface waters	Any discharge into the ground or controlled water environment during construction will be undertaken in line with regulatory requirements and any relevant consents and permits.	Construction	Implementation of pollution prevention/water management best practices as detailed within CEMP and compliance with regulatory/permitting requirements.	Walters/Atkins	
WE06	ES Chapter 6 Ground Conditions	Flood risk management and protection of surface waters	Site compounds to be located a minimum of 10m from surface water features, 30m if possible, and outside the flood plain.	Construction	Siting of compounds in compliance with commitment action.	Walters	
WE07	ES Chapter 6 Ground Conditions	Reduction of water run-off and the requirement to discharge, and improvement of water efficiency	Where possible, grey water systems will be used at site compounds.	Construction	Implementation and use of grey water systems within compounds.	Walters	
WE08	ES Chapter 6 Ground Conditions	Identification of drainage systems present on site	A drainage plan is to be prepared in advance of construction works, identifying the location of all watercourses, drains and drainage paths, and highlighting mitigation measures to be implemented to protect receiving water environment. Drainage is to be colour coded and marked on site to distinguish between surface water, foul sewer and combined drainage.	Pre-construction	Production of a site drainage plan in compliance with the commitment action. Identification and marking of drainage systems on site in compliance with commitment action. Site drainage plan to be included within CEMP.	Walters	
WE09	ES Chapter 6 Ground Conditions	Prevention of localised flooding and prevention of pollution	Temporary surface water management systems to be designed and installed during construction. The systems are to be recorded on drawings that detail: Soil/sediment settlement rate,	Pre-construction	Consideration of commitment action within temporary surface water management designs and inclusion of specified detail within drawings.	Design team	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
			- Drainage system capacity, - Details of systems installed to intercept and treat contaminated water; and Details of steps to prevent the bypassing of drainage systems.				
WE10	ES Chapter 6 Ground Conditions	Prevention of sediment of contaminated water entering watercourses	Silt fencing, cut-off ditches and soil bunds to be constructed downslope of stripped areas and excavations to retain and convey water to adequately sized treatment areas. Sediment laden water will be treated to allow suspended solids to settle out prior to discharge.	Construction	Implementation of best practice measures to effectively manage and treat run-off and water from excavations.	Walters	
WE11	ES Chapter 6 Ground Conditions	Protection of exposed soils	Areas of exposed soil deemed at risk of sediment mobilisation is to be protected using appropriate measures, for example sheeting and coir matting. Where possible, topsoil will be left in place to minimise the amount of ground exposed. Where topsoil removal is required, it is to take place immediately prior to the commencement of works in that area. Areas of exposed ground are to be reseeded as soon as practicable.	Construction	Management and protection of exposed soils to prevent mobilisation of sediment.	Walters	
WE12	ES Chapter 6 Ground Conditions	Treatment of sediment laden water	Settlement ponds to be constructed to promote the removal of sediment from site run-off. Ponds to be sufficient in size to allow sediments to settle out prior to discharge.	Construction	Construction of settlement ponds in compliance with commitment action.	Walters	
WE13	ES Chapter 6 Ground Conditions	Protection of ground and surface water	All in-stream works to follow GPP5.	Construction	Works completed in compliance with GPP5 .	Walters	
WE14	ES Chapter 6 Ground Conditions	Flow management	Temporary works to divert watercourses during instream works will include suitable provisions to pass high flows.	Construction	Works to divert watercourses to ensure over-pumping provisions are efficient to manage high flows.	Walters	
WE15	ES Chapter 6 Ground Conditions	Prevention and management of sediment laden water	Soil is to be stored 10m from any watercourse and outside of the floodplain. Topsoil and subsoil stockpiles are to be managed in compliance with best practice guidance, with the sides of the stockpiles bladed to prevent ponding and to shed rainwater. Stockpiles that are to remain for long periods of time are to be seeded within Rye Grass seed mix upon completion and during suitable weather conditions. Silt fencing is to be installed around the margins of stockpiles	Construction	Implementation of commitment actions.	Walters	
WE16	OEMP	Compliance with land drainage regulations	No works to take place within 10m of any ordinary watercourse or drain without consent/approval from the LPAs.	Construction	Obtainment of appropriate consent for works within 10m of any ordinary watercourse or drain.	Walters	
Material Management							

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
MM01	ES Chapter 6 Ground Conditions	Material/resource management	It is proposed that the embankments will largely be constructed using materials present on site associated with the current mining activities and with materials excavated to create the cuttings. No foundation work such as piling are required for the proposed works.	Pre-construction/ construction	Implementations of a MMP that allows the reuse of site won material in the construction of the embankments. Recording material movements and uses within site, in addition to on and off site.	Walters/Atkins	
MM02	ES Chapter 6 Ground Conditions	Appropriate management and handling of materials during construction	A materials handling strategy is to be developed. The strategy will include the reuse and storage of soils and overburden from within the redline boundary of the scheme. Only materials considered suitable for use within the development will be imported and used.	Pre-construction	Production of a material handling strategy – Also requirement of planning.	Walters/Atkins	
MM03	ES Chapter 6 Ground Conditions	Appropriate management and handling of materials	Detailed requirements with respect to management of materials during earthworks will be set out in the Earthworks Specification.	Pre-construction	Inclusion of details on the management of materials within the earthworks specification.	Atkins	
Ground Environment							
GE01	ES Chapter 6 Ground Conditions	Health & safety management and pollution control	During construction, or any intrusive maintenance works, good health and safety management and pollution control will be undertaken in accordance with current legislation. It is assumed that measures would include groundwater management during excavations and management of dust generation.	Construction	Implementation of measures to meet commitment action. Mitigation measures detailed within CEMP.	Walters	
GE02	ES Chapter 6 Ground Conditions	Management and control of contaminated materials	Chemical testing of made ground will be undertaken to inform the identification of adequate health and safety mitigation measures. Materials constituting on-going sources of contamination will be removed/remediated as during construction in line with current legislation.	Pre-construction Construction	Chemical testing to be undertaken as part of GIs and subsequent RA produced by design team. Remediation verification reports and consignment notes to demonstrate management of materials in line with legislation.	Walters/Atkins	
GE03	ES Chapter 6 Ground Conditions	Identification of ground hazards	Design to consider ground hazards associated with historical mine workings and subsidence due to potential change in groundwater conditions.	Pre-construction	Production of a detailed mining and hydrological impact assessment.	ARUP/Atkins	
GE04	ES Chapter 6 Ground Conditions	Unexpected contamination	An action plan to deal with unexpected contamination to be developed and implemented. The action plan is to include provisions to appoint a suitably qualified and experienced contaminated land practitioner to provide a watching brief and supervisory role should unexpected contamination be encountered. This role shall include assessment of the risks to the construction works and workers.	Pre-construction	Production and implementation of an action plan for the management of unexpected contamination in compliance with commitment action – To be detailed within land contamination report and CEMP. Appointment of a suitably qualified and experienced contaminated land practitioner.	Walters/Atkins	
GE05	CEMP	Minimising the leachate of contaminants into underlying groundwater	Vegetation to be introduced into landscape, as soon as reasonably practicable, to mitigate the leachate of contaminants into underlying groundwater.	Construction	Identification of areas for early replanting and habitat establishment/creation.	Walters	
GE06	CEMP	Protection of workforce	Good hygiene practices to be implemented for the duration of the works with no smoking, eating, or drinking in the locale of excavations or in potentially contaminated areas.	Construction	Implementation of good hygiene practices in compliance with the commitment action.	Walters	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
Biodiversity							
B01	ES Chapter 7 Biodiversity	Compliance with CIEEM Guidance	Ecological surveys are valid for a minimum of 18 months and maximum of 3 years. If more than 18 months lapses between surveys and commencement, the requirement for repeat surveys are to be reviewed.	Pre-construction	Completion of relevant pre-construction ecological surveys.	Walters	
B02	ES Chapter 7 Biodiversity	Mitigation of habitat loss	Creation of new onsite and off-site habitats as detailed within the ES Chapter 7. Newly established habitats are to replace those lost, and in line with PPW and the Environment Act (Wales) 2016. Potential for temporary habitats to be created during construction to allow the movement of species around and across the site until permanent habitats are created.	Construction	Creation/establishment of new habitats in compliance with commitment action. Identification of areas for temporary habitat creation during construction – to be detailed in EPP. Maintenance/establishment of wildlife corridor during construction – To be detailed in EPP.	Walters	
B03	ES Chapter 7 Biodiversity	Management of Invasive Non-Native Species (INNS)	An INNS Management Plan is to be developed and submitted to the LPA for approval. The Plan is to detail how INNS will be eradicated from the site, and long-term management to ensure INNS do not re-establish. The INNS will sit alongside the EPP and EMMP.	Pre-Construction	Production, submission and approval of INNS Management Plan – To be detailed in CEMP.	Walters	
B04	ES Chapter 7 Biodiversity	Protection of retained habitats and control of INNS	Sensitive/retained habitats and areas of INNS to be demarcated using fencing.	Construction	Establishment of ecological exclusion zones using fencing – to be detailed in EPP.	Walters	
B05	ES Chapter 7 Biodiversity	Management of Invasive/Non-Native Species	Where disturbance of INNS is requires, additional control measures to be implemented, including, but not limited to: • Identification of management and disposal methods • Cleaning of plant/equipment and footwear Post-construction monitoring and management	Pre-construction	Consideration of the commitment action within INNS Management Plan.	Walters	
B06	ES Chapter 7 Biodiversity	Improving the rate of fungi re-establishment	Translocation of notable fungi habitats/species and establishment of a long-term management and monitoring plan.	Pre-construction Construction	Completion of fungi survey to identify notable species and development of a strategy for their translocation and long-term management. Translocation and effective management of notable fungi species/habitats – To be detailed within EPP and EMMP.	Atkins/Dalcour Maclaren/Walters	
B07	ES Chapter 7 Biodiversity	Biodiversity enhancement and the promotion of ecosystem resilience.	Habitats to restore and new habitats to be created as detailed in ES Chapter 7, Section 7.20 and ES Figure 7.9, and to meet creation and enhancement figures detailed within Table 7.13 of ES Chapter 7. Habitat creation to be designed to create more diverse and species rich habitats.	Construction Post-Construction	Restoration/creation of habitats in compliance with commitment action. Further detail on implementation to be included within EMMP and SBP. Provision of ecological enhancement through landscape/habitat design.	Dalcour Maclaren/Walters	
B08	ES Chapter 7 Biodiversity and CEMP	Protection of notable habitats	Ecological Protection Plan to detail mitigation measures required during construction to protect notable habitats.	Pre-Construction	Inclusion of mitigation measures to protect notable habitats – To be detailed within EPP.	Atkins/Walters	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
			Fencing and buffer zones to be implemented to protect areas adjacent to construction.	Construction	Installation of protection fencing.		
B09	ES Chapter 7 Biodiversity	Protection of habitats during stripping and translocation	An Ecological Protection Plan to detail methods for the translocation (flora and fauna) and management of notable species and habitats. Plan to highlight the requirement for long-term temporary storage.	Pre-Construction	Consideration of requirements of commitment action within EPP.	Atkins	
B10	ES Chapter 7 Biodiversity	Protection of notable plant species	Notable plant species to be subject to translocation prior to vegetation works include, but are not limited to: • Common wintergreen, • Lesser bulrush, • Floating bur-reed, • Greater tussock, sedge and spiked water milfoil, • Royal fern; and • Viviparous fescue	Pre-Construction Construction	Identification of notable plant species and agreement of areas for translocation. Translocation and management/monitoring of notable plant species. Further detail to be included within EPP and EMMP.	Atkins/Walters	
B11	ES Chapter 7 Biodiversity	Enhancement of ecological value of habitats	An Ecological Monitoring and Management Plan is to be produced and is to detail long-term monitoring and management requirements to enhance ecological value of retained, existing and newly established habitats. EMMP to consider opportunities for controlled grazing in aim of maintaining low swards and detail measures for the management of the broadleaved woodland and wetland habitats through methods such as rotational thinning, invasive species removal and clearance of built-up sediment. EMMP also to include: • Details of ecological baseline, including survey results, landownership, management and use, geology/ground conditions, hydrology and topography. • How habitats are to be enhanced. • Specific management measures for notable species (methods, equipment, timings). • A programme detailing the duration of each survey/habitat creation/management activity, what time of year it's to be undertaken, and how frequently. Full details of the monitoring of the site post-construction, including redial measures, in addition to feedback mechanisms (Ecological Management Committee of relevant stakeholders).	Pre-Construction	Production of EMMP in compliance with commitments action.	Dalcour Maclaren	
B12	ES Chapter 7 Biodiversity	Enhancement of conifer woodland	Conifer plantation to be managed through removal of mature conifer trees to increase light levels, facilitating the maturation of broadleaved species.	Construction Operation	Management of conifer plantation in compliance with commitment action.	GCRE/Walters	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
B13	ES Chapter 7 Biodiversity	Identification of protected and notable species	Pre-construction surveys to include: - Breeding birds; - Otter; - Badger; and - Bats	Pre-Construction	Completion of required ecological surveys prior to the commencement of construction.	Walters/Atkins	
B14	ES Chapter 7 Biodiversity	Establishment of ecological buffer zones	Ecological buffer zones to be established as required. Noted that for works resulting in significant vibration, a 60 m buffer is required for bats. All buffer zones to be agreed with the LPAs.	Construction	Installation of ecological buffer zones across the site under direction of ECoW – to be detailed in EPP	Walters	
B15	ES Chapter 7 Biodiversity	Protection of reptiles	Implementation of a reptile trapping and relocation programme, in accordance with a reptile method statement.	Pre-Construction	Identification and agreement with the LPA of suitable receptor sites. Development of reptile trapping and translocation method statement. Implementation of programme of trapping and translocation in compliance with method statement.	GCRE/Atkins/ Dalcour Maclaren	
B16	ES Chapter 7 Biodiversity	Compliance with ecological mitigation, method statements and licences	Ecological Clerk of Works (ECoW) to provide supervision as required to monitor the implementation of ecological mitigation in line with method statements and ecological licences. Prior to commencement to works the ECoW is also to provide personnel with relevant toolbox talks.	Construction	Appointment of an ECoW (individual or team). Completion of ecological works under ECoW and evidenced in site diaries. Provision of recorded ecological toolbox talks – to be detailed in EPP.	Walters	
B17	ES Chapter 7 Biodiversity	Access limitation to protect of retained habitats from incidental damage	Retained habitats are to be identified, clearly marked, fenced off where appropriate.	Construction	Installation of ecological exclusion fencing. Location of fencing to be detailed in EPP.	Walters	
B18	ES Chapter 7 Biodiversity	Protection of retained trees and woodland habitat	All retained trees will be treated in accordance with British Standard BS5837 (2005) Guidance for the Treatment of Trees in Relation to Construction. Damage to mature trees, as well as tree and scrub understorey and ground flora within mature woodland, should be avoided.	Construction	Management of trees in compliance with commitment actions.	Walters	
B19	ES Chapter 7 Biodiversity	Mitigation of construction impacts on nesting birds	Where possible vegetation clearance will take place outside nesting bird breeding season (generally March to August inclusive). If this is not possible, pre-construction nesting bird checks are to be undertaken by an ecologist.	Construction	Programming of large scale vegetation clearance outside of nesting bird season. Completion of recorded nesting bird checks for vegetation taking place within nesting bird season.	Walters	
B20	ES Chapter 7 Biodiversity	Mitigation of construction impacts on invertebrates	In areas of notable invertebrate species, vegetation clearance is to be undertaken between October and March, where possible.	Construction	Vegetation clearance programmed with consideration of the commitment action.	Walters	
B21	ES Chapter 7 Biodiversity	Minimisation of effects of lighting on habitats that support	Any task lighting or security lighting, which may be required on site during the winter months, is to be designed in consultation in consultation with an ecologist to ensure that there is no disturbance	Pre-construction	Production and implementation of a Sensitive Lighting Plan – to be detailed in CEMP.	Walters/Atkins	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
		crepuscular or nocturnal species	to habitats which are likely to support crepuscular or nocturnal species such as otter or bat. Where practicable, daytime working hours will be adopted for construction works, with the works commencing no sooner than one hour after sunrise and finishing no later than one hour before dusk.				
B22	ES Chapter 7 Biodiversity	Reduction of risk to species from construction materials/wastes	All materials/wastes that may constitute a hazard to otters, other Section 7 mammals, roosting bats and reptiles to be removed from the site daily.	Construction	Material/wastes removed each day in compliance with commitment action.	Walters	
B23	ES Chapter 7 Biodiversity	Prevention of trapping of terrestrial species within excavations	Excavations are to be covered at night-time or a means of escape provided (such as a plank of wood) for otter, badger or other animals.	Construction	Covering/installation of mammal boards within open excavations.	Walters	
B24	ES Chapter 7 Biodiversity	Confirmation of the delivery and success of the objective of habitat reinstatement and creation	Ecological monitoring to be undertaken in compliance with ES Chapter 7, Section 7.23. Monitoring results will be reported through a Steering Group, led by the site owner in partnership with NPTC and PCC, NRW, and invited interested parties.	Construction Post-Construction	Monitoring undertaken in compliance with commitment action – to be detailed in EMMP. Establishment of a Steering Group in compliance with commitment action, with ecological monitoring included as a standing item on the agenda.	GCRE/Walters	
B25	CEMP	Mitigation of construction effects on ecological receptors	Contractor to be responsible for minimising and managing impacts from construction on ecological receptors, including, but not limited to: - Statutory designated sites connected to the site, including Nant Llech SSSI - Non-statutory sites, including ancient woodland, PAWS and adjacent habitats, - Other notable habitats, - Notable species; and Invasive non-native species.	Construction	Implementation of ecological/environmental mitigation measures and sensitive methods of work. Protection/mitigation measures to be implemented - To be detailed in EPP.	Walters	
B26	CEMP	Protection of notable/protected habitats and species	Where notable/protected habitats and species are identified, suitable buffer zones are to be implemented in line with best practice, and no works will be permitted until a suitable qualified ecologist has confirmed otherwise.	Construction	Development and implementation of an EPP. Appointment of a qualified ecologist.	Atkins/Walters	
Cultural Heritage							
CH01	ES Chapter 8 Cultural Heritage	Mitigation of the impacts to the Tramroad at Ystradgynlais (CH001), Scheduled Monument (SM)	Scheduled Monument Consent (SMC) to obtained for any works within the boundary of the Scheduled Monument. No topsoil to be removed during the construction of the embankment and the SM and any benches required to provide the necessary gradient to be cut outside of the scheduled area.	Construction	Obtainment of SMC from CADW. Compliance with commitment action.	GCRE/Walters	
CH02	ES Chapter 8 Cultural Heritage	Mitigation of impacts to non-designated	Core transects across Area C (see ES Appendix 8.4) will be required to record any peat present. If peat is identified, it is to be analysed for paleoenvironmental remains.	Pre-construction	Core transects of Area C completed, with peat identified and subject to paleoenvironmental sampling.	Atkins/Walters	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
		archaeological remains/assets.	Strip, map and sample prior to the commencement of construction focused on areas of recorded archaeological features (CH072, CH025, CH064, CH015-6) with a watching brief over the remainder of Areas B and C. The watching brief should include the recording of field boundaries (CH075), trackways (CH071) and mining features (CH015-6, CH068, CH073-4). Please refer to Appendix 8.2A and 8.4 of the ES.		Compliance with strip, map and sample requirements – To be detailed in WSI.		
CH03	ES Chapter 8 Cultural Heritage	Confirmation of archaeological programme of works.	Written Scheme of Investigation to be agreed with GGAT, CPAT and where relevant CADW. WSI to detail survey methods and mitigation measures.	Pre-construction	Submission and approval of WSI.	Atkins	
CH04	CEMP	Minimisation of cultural heritage impacts.	The GCRE and contractor are to be responsible for minimising and managing the impacts from construction on cultural heritage assets within and in proximity to the site, including, but not limited to: - The Scheduled Monument, - Undesignated heritage assets; and - Unrecorded archaeological remains potentially present within areas not subjected to open cast mining.	Construction	Compliance with the WSI and implementation of appropriate archaeological mitigation.	Walters	
CH05	CEMP	Compliance with best practice and approved WSI	All works to be managed in accordance with relevant Standards and Guidance of the Chartered Institute for Archaeologists and guidance from GGAT and CPAT, in addition to the WSI approved by the archaeological trusts.	Construction	Appointment of Archaeological Clerk of Works and compliance monitoring.	Walters	
CH06	CEMP	Management and monitoring of archaeological works.	Archaeological contractor who is ClfA registered to be appointed. All archaeological intervention, recording, analysis, dissemination and archiving to be undertaken by a suitably qualified and demonstrably experienced organisation.	Construction	Appointment of an appropriately registered and qualified Archaeological Clerk of Works. Monitoring/recording undertaken in compliance with commitment action.	Walters	
CH07	CEMP	Awareness of heritage assets.	The location and a description of all archaeological/cultural heritage assets and required mitigation and construction method restrictions to be provided to the contractor prior to the commencement of construction.	Pre-construction	Provision of detailed WSIs.	Atkins	
CH08	CEMP	Identification and planning of archaeological works.	A programme detailing the implementation of cultural heritage survey works prior to and during construction, addressing measures set out in the ES to be developed.	Pre-construction	Provision of detailed WSIs	Atkins	
CH09	CEMP	Implementation and compliance with archaeological mitigation.	Suitably qualified environmental management personnel to monitor compliance with cultural heritage mitigation and works with the potential to impact cultural heritage interests to be supervised by a suitably qualified archaeologist.	Construction	Appointment of qualified environmental management personnel and suitably qualified archaeological clerk of works.	Walters	
CH10	CEMP	Archaeological stakeholder management.	CADW, GGAT and CPAT to be consulted as appropriate throughout the programme of cultural heritage works.	Pre-construction/construction	Establishment of lines of communication with archaeological stakeholders, provision of regular updates (monthly/milestones) and consultation meetings.	GCRE/Walters	
CH11	CEMP	Uncovering human remains.	Should human remains be located during the earthworks, works are to stop, and archaeological contractor consulted.	Construction	Implementation of procedure for uncovering human remains in compliance with commitment action - To be detailed in WSI.	Walters	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
CH12	CEMP	Uncovering unexpected heritage assets.	Should cultural heritages assets be unexpectedly revealed during construction, works are to stop, and archaeological contractor consulted. Where appropriate the archaeological contractor will consult GGAT. CPAT and CADW.	Construction	Implementation of procedure for uncovering unexpected heritage assets in compliance with commitment action – To be detailed in WSI.	Walters	
Landscape and Visual							
LV01	ES Chapter 9 Landscape and Visual	Integration of the engineered earthworks at the Northern Embankment into the adjacent wooded and habitat compensation	Landscape design to take consideration of the proposed locations for woodland creation detailed in ES Appendix 9.16. Landscape design also to detail woodland species planting mix to be used, noting that broadleaved native woodland mixes are preferential, with a proportion of selected standard trees.	Pre-construction	Landscape design developed with consideration of commitment action.	Atkins	
LV02	CEMP	Mitigation of the impacts of construction on landscape and visual receptors	Where possible, trees to be retained and protected in accordance with BS 5837. Trees to be replaced and planted with suitably sized plants, as agreed with the LPA Tree Officer. Planting to commence within the first available planting season. Use of well-maintained and different types of fencing and hoarding to provide screening and prevent visual intrusion. Temporary lighting to avoid intrusion into wider environment. Good housekeeping to be practiced, keeping the site in a clean and tidy condition. Road sweepers and other methods to be used as required.	Construction	Consideration/implementation of practices detailed within commitment action.	GCRE/Walters	
LV03	CEMP	Control of pests, disease and non-native species.	Sourcing of plants and seed to be in accordance with current DEFRA/NRW and industrial guidance to prevent the spread of pests and diseases and non-native invasive species. Contractor to refer to the UK Plant Health Information Portal and NRW's latest publications on the topic.	Construction	Procurement of seeds in line with DEFRA/NRW and industrial guidance.	Walters	
LV04	CEMP	Off-site planting.	If 'off-site' planting is proposed, it is to be planted prior to the commencement of construction, if reasonably practicable.	Pre-construction	Off-site planting undertaken prior to commencement of construction.	Walters	
LV05	CEMP	Compliance with landscape mitigation.	A record of the implementation of how works meet landscape protection measures/ mitigation to be maintained and regularly reviewed.	Construction	Appointment of an Landscape Clerk of Works (LCoW). Completion of regular recorded inspections of compliance with landscape protection/mitigation measures.	Walters	
LV06	CEMP	Landscape stakeholder management.	The GCRE, LPAs, NRW, other relevant statutory bodies and adjacent landowners are to be consulted as appropriate on landscape and planting proposals.	Construction	Establishment of lines of communication with stakeholders, provision of regular updates (monthly/milestones) and consultation meetings.	Walters	
LV07	CEMP	Successful establishment of landscape mitigation.	Inspection, monitoring and maintenance of seeding works to be undertaken by the contactors throughout construction.	Construction/post-construction	Establishment of inspection, monitoring and maintenance procedure for seeding works and landscape mitigation in line with compliance action.	Walters	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
			Contractors to undertake appropriate maintenance of seeding works and other landscape mitigation measures throughout construction, with remediation/replanting undertaken as required and in line with approved specifications/requirements. Contractors will be responsible for the maintenance of seeding throughout the defects liability period.				
Noise, Vibration and Environmental Nuisances							
NV01	CEMP	Control of environmental nuisances associated with vehicle and plant/equipment	The contractor is to implement vehicle and plant/equipment behavioural policy, which is to include requirements for: • Car sharing or use of the site bus • Avoidance of part load deliveries • A pre-booked delivery process to minimise holding of vehicles whilst unloading and loading • Switching off vehicles and plant/equipment when not in use and avoiding idling; and • Using hybrid generators where feasible.	Construction	Development and implementation of a Vehicle and Plant/Equipment Behavioural Policy.	Walters	
NV02	CEMP	Minimise duration of impact associated with the construction of northern embankment.	The northern embankment will be constructed from both ends simultaneously.	Construction	Construction to be planned /undertaken in compliance with commitment action.	Walters	
NV03	CEMP	Management of noise effects on Receptor 1.	Design and construction of a temporary noise fence, 150 m in length and 5 m in height, as agreed with the LPAs, prior to the commencement of construction at the Northern Embankment.	Pre-construction	Production and submission of a design for temporary noise fence at the northern embankment to the LPAs. Noted that noise assessment is being submitted to LPAs to negate need for 5m noise fence. If approved by LPAs, Noise Monitoring and Management Action Plan will require updating.	Walters/Atkins	
NV04	CEMP	Dust prevention.	During prolonged periods of dry weather, haul road and areas of exposed soil to be dampened down. Areas of hard standing are to be installed at site accesses, where necessary. The areas inspected daily and cleaned as required. Loads are to be covered during onsite and off-site transport.	Construction	Implementation of dust management practices in compliance with commitment action. Further detail to be provided in DMP.	Walters	
NV05	CEMP	Noise management and monitoring.	Noise and vibration to be controlled by introducing management and monitoring processes to ensure that best practicable means (BPM) are planned and employed during construction.	Construction	Establishment and compliance with Noise Management and Monitoring Action Plan (NMMAP).	Walters/Atkins	
NV06	CEMP	Excrescence of noise criteria.	If situations arise where despite the implementation of BPM, the noise exposure levels exceed the criteria defined in the contractors' detailed Noise and Vibration Management Plan (NVMP), the contractor may offer: a) Noise insulation; or ultimately	Construction	Provision of further mitigation in compliance with commitment action if noise exposure limits are exceeded. Further detail in NMMAP.	Walters	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
			b) Temporary re-housing.				
NV07	CEMP	Section 61	The contractor will seek to obtain consents from the relevant local authority under Section 61 of the Control of Pollution Act 1974 for the proposed construction works, excluding non-intrusive surveys. Applications will be made to the relevant local authority for a Section 61 consent at least 28 days before the relevant work is due to start or earlier if reasonably practicable.	Pre-construction	Submission and receipt of Section 61 consent application.	Walters	
NV08	Planning Decision Notice	Limitation of noise effects.	Noise arising from operations at the site as measured at any noise sensitive location shall not exceed background (LA90) plus 10dB LAeq,1hr or 55dB LAeq,1hr (free field), whichever is the lesser, during normal working hours (0700 to 1900 hours Monday to Friday excluding Bank/Public Holidays and 08.00 and 12.00 hours on Saturdays). At all other times the noise arising from operations at the site shall not exceed 42dB LAeq, 1hr (free field) at any noise sensitive location.	Construction	Implementation of appropriate noise mitigation to maintain compliance with stipulated noise levels. Monitoring in compliance with NMMAP to demonstrate adherence to commitment action. Noted that noise assessment is being submitted to LPAs to amend noise limitations stipulated in ES and decision notice. If approved by LPAs, Noise Monitoring and Management Action Plan will require updating.	Walters	
NV11	Planning Decision Notice	Limitation of noise effects from construction of northern embankment.	The level of noise from operations consisting of the construction of the northern embankment, shall not exceed the following levels, measured as dB LAeq,1hr (free field), at the noise sensitive locations specified below (as identified on ES Figure 10.1: Noise Sensitive Receptors for Northern Embankment). These levels shall apply only between 08.00 to 18.00 hours Mondays to Fridays (excluding Bank/Public Holidays) and 08.00 to 12.00 hours on Saturdays: - Receptor 1 - 61 - Receptor 2 - 57 - Receptor 3 – 60 Receptor 4 – 54	Construction	Implementation of appropriate noise mitigation to maintain compliance with stipulated noise levels. Monitoring in compliance with NMMAP to demonstrate adherence to commitment action. Noted that noise assessment is being submitted to LPAs to amend noise limitations stipulated in ES and decision notice. If approved by LPAs, Noise Monitoring and Management Action Plan will require updating.	Walters	
NV12	Planning Decision Notice	Limitation of disturbance resulting from construction activities.	Except in an emergency which shall be notified to the Local Planning Authority as soon as practicable, development, which includes the starting up of plant and machinery, or other activities associated with the development (other than water pumping, servicing, environmental monitoring, maintenance and testing of plant) authorised or required by this permission shall be limited to 0600 – 2200 hrs Monday to Friday and 0700 – 1300 hrs on Saturdays. Notwithstanding the above, works related to the construction of the northern embankment, including all ground works involving excavations, shall be limited to the following times, between 07.00 to 18.00 hours Mondays to Fridays (excluding Bank/Public Holidays) and 08.00 to 13.00 hours on Saturdays.	Construction	Construction works only undertaken within hours stipulated within commitment action. Noted that noise assessment is being submitted to LPAs to remove additional restrictions on working hours at the northern embankment. If approved by LPAs, Noise Monitoring and Management Action Plan and CEMP will require updating.	Walters	
Pollution Prevention							
PP01	CEMP	Pollution incident response.	Contractor to develop a Pollution Incident Control Plan (PICP). PICP to be in accordance with GPP21 Incident Response Planning.	Pre-construction	Development and implementation of a PICP – Detailed within CEMP	Walters	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
PP02	CEMP	Availability of pollution prevention and response equipment.	Appropriate pollution prevention and response equipment to be readily available and stored within the Contractor's compound.	Construction	Procurement and maintenance of appropriate pollution prevention and response equipment.	Walters	
PP03	CEMP	Vehicle washing facilities.	Vehicle/equipment washing facilities to be positioned a minimum of 10 m from any watercourse and are to have a drainage system that will capture run-off/effluent, allowing it to be treated as required. Guidance GPP13 will be followed for vehicle/plant washing and cleaning.	Construction	Establishment of vehicle/equipment washing facilities in compliance with commitment action.	Walters	
PP04	ES Chapter 5 Water Environment	Management of Hazardous Substances	Fuel is to be stored within compounds and a singular COSHH store for the project is to be established to avoid the creation of individual stores and ensure correct level of control. COSHH stores are to be bunded and locked when not in use. Storage tanks for potentially polluting substance are to be sited within areas of hardstanding, and to be contained within a suitably sized bun with a sealed drainage system. All pipework, valves, filters, sight gauges, vent pipes and other ancillary equipment are also to be above ground, within the bund and protected from accidental damage. Other storage bowsers or containers for the storage of potentially polluting substances are to be doubled skinned and bunded. Bund to have sufficient volume to contain 100% of the contents of the largest container or is to be over 25% of the total storage capacity of all containers – whichever is greater. When in use, containers are to be kept on drip trays/bund away from traffic and a minimum of 10 m from any watercourse or drain. COSHH storage areas, storage tanks and fuel stores are to be inspected regularly and inspection records maintained.	Construction	Establishment of a singular fuel and COSHH storage area and in compliance with commitment action.	Walters	
PP05	ES Chapter 5 Water Environment	Availability of appropriately sized spill equipment.	Excavation plant to be fitted with fuel spill kits. Spill kits of an adequate size are to be made available at all points of work and personnel are to be trained in their use.	Construction	Appropriately sized spill kits to be available on all excavation plant and at all work fronts.	Walters	
PP06	ES Chapter 5 Water Environment	Treatment of potentially contaminated water prior to release into the environment	Settlement tanks and oil interceptors to be utilised as required.	Construction	Establishment of settlement tanks and interceptors are required.	Walters	
PP07	CEMP	Protection of watercourses	No refuelling or potentially polluting materials or substances to be stored within: • 50 m of a spring, well or borehole; • 10 m of a watercourse; • 10 m of open drains;	Construction	Identification of suitable refuelling areas that comply with the commitment action. Implementation of daily check to ensure plant and equipment is moved 10m from any watercourse or drain.	Walters	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
			- Permeable ground; or - A floodplain At the end of each day, plant and equipment to be moved a minimum of 10 m from any watercourse or drain.				
General Environmental Requirements							
GR01	CEMP	Compliance with environmental requirements.	Celtic Energy to appoint a Project Manager on their behalf to oversee the earthworks. Project Manager is to be responsible for managing the earthworks within agreed environmental constraints and other management processes. The Project Manager will also be responsible for the implementation of the CEMP.	Pre-Construction	Appointment of a Project Manager by Celtic Energy.	GCRE	
GR02	CEMP	Compliance with environmental requirements.	An Environmental Manager shall be appointed by the Contractor. The Environmental Manager will be responsible for implementation of the CEMP and environmental procedures/control measures, in addition for monitoring, measuring and reviewing environmental performance.	Pre-construction	Appointment of an Environmental Manager. Implementation of an environmental performance monitoring procedure.	Walters	
GR03	CEMP	CEMP documentation and records.	Two electronic copies of the CEMP are to be held. One by the Contractor's Environmental Manager and the other by GIL. Both copies are to be maintained and kept up to date by the Contractor's Environmental Manager. The Environmental Manger is to host internal and external and undertake audits to assess performance and the effectiveness of the CEMP. The results are to be communicated to the Project Manager during monthly construction progress meetings.	Construction	CEMP to reviewed and updated as required on a monthly basis by the Environmental Manager. Implementation of environmental auditing and production of monthly environmental performance reports.	Walters	
GR04	CEMP	Maintaining community relations and keeping community informed of project progress.	GCRE and contractor to prepare a procedure for Local Community Liaison and to undertake regular community forum meetings. The GCRE shall also provide contacts for general enquiries and emergencies.	Construction	Implementation of a Local Community Liaison Procedure and establishment of quarterly community forum meetings. Implementation and circulation amongst local community of a general enquiries contact number and 24hr emergencies contact number. Contact umbers to be documents within CEMP and PICP.	GCRE/Walters	
GR05	CEMP	Community and stakeholder management.	Contractor to provide a site-based Community Liaison Officer (CLO). The CLO will facilitate a dynamic and effective communication procedure. The CLO will log and respond to all general enquiries and/or complaints in an effective and timely manner, reporting up when required.	Construction	Appointment of a CLO. Development and implementation of a communications procedure. Implementation of communication log and communications reporting procedure.	Walters	
GR06	CEMP	Communication with statutory bodies.	Contractor to facilitate regular meetings with statutory environmental bodies to provide project updates.	Construction	Establishment of quarterly meetings with statutory environmental bodies and record of meetings through formal minutes.	Walters	
GR07	CEMP	Considerate Construction Scheme (CSS).	The Contractor and site are to be registered with the CCS.	Construction	Attainment and maintenance of CSS.	Walters	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
GR08	CEMP	Training, awareness and competence.	Environmental Manager will develop an induction and a programme of training to ensure all personnel are aware of environmental risks, management and best practice. Inductions to be used to inform all personnel of content and location of CEMP, method statements, policies, procedures, best practice and legislation. Inductions to emphasise the sensitivity of the watercourses, surrounding habitats and methods of work to be implemented to protect the water environment.	Construction	Development of environmental induction. All attendees to be recorded via training records. Development of an environmental training matrix.	Walters	
GR09	CEMP	Training, awareness and competence.	Specified personnel, including Construction Site Foreman and Environmental Manager, to be provided with practical training in the use of spill/pollution prevention and control, appropriate PPE and waste management.	Construction	Recording of completed training within training records.	Walters	
GR10	CEMP	Training, awareness and competence.	Regular environmental awareness toolbox talks to be delivered to site teams to provide updates on relevant environmental issues. Changes to environmental, method statements, policies, procedures, best practice and legislation, and/or the CEMP to be communicated to site teams via toolbox talks.	Construction	Development of project specific environmental toolbox talks. Monthly delivery of environmental toolbox talks to be recorded within training records.	Walters	
GR11	CEMP	Training, awareness and competence.	An environmental notice board is to be established and maintained.	Construction	Establishment and maintenance of an environmental notice board.	Walters	
GR12	CEMP	Provision of welfare.	Welfare facilities will be provided on site and maintained.	Construction	Provision of appropriate welfare facilities.	Walters	
GR13	CEMP	To manage weather and climate change associated risks.	The contractor is to consider impacts of extreme weather events on construction and is to use short to medium-range weather forecasting from the Met Office or other approved weather forecast provider. The contractor's EMS is to account for all measures deemed necessary and appropriate to manage extreme weather events.	Construction	Short to medium-range weather forecasting checked, with any extreme weather events noted, allowing appropriate measures to be implemented. Development and implementation of procedure for management of extreme weather events.	Walters	
GR14	CEMP	Vehicle/plant management	All vehicle, plant and equipment to be inspected and maintained.	Construction	Records of inspection and maintenance.	Walters	
GR15	CEMP	Monitoring of environmental impacts/effects	A programme of environmental monitoring to be developed. The monitoring programme shall be prepared by the Contractor and agreed with regulators. The programme is to detail baseline monitoring requirements, during and post construction, and is to account for the monitoring of controlled water receptors.	Construction	Establishment of a programme of environmental monitoring in compliance with commitment action.	Walters	
GR16	Planning Decision Notice	Protection of sensitive habitats/receptors and establishment of exclusion zones.	No development, demolition, earth moving is to take place or material or machinery brought onto the site until protective fencing and warning signs have been erected on site in accordance with the approved Construction Environmental Management Plan and Ecological Protection Plan.	Pre-construction	Installation of protective fencing and warning signs in compliance with the CEMP and the EPP.	GCRE	

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
			All protective fencing and warning signs will be maintained during the construction period in accordance with the approved details.				
GR17	CEMP	Management and investigation of environmental incidents.	All environmental incidents and accident to be reported to the Site Foreman, Project Manager and Environmental Manager and recorded. All incidents and accidents to be reviewed and investigated by the Environmental Manager, with appropriate corrective action and procedure amendments made as necessary.	Construction	Development and implementation of an incident and accident reporting and investigation procedure.	Walters	

Table 2: GCRE - Additional Requirements REAC

REAC Ref.	Source	Issue/Objective	Action/Commitment	Phase	Achievement Criteria	Person(s) Responsible	Date Achieved
Planning							
PL08	GCRE Decision Notice	Reserved Matters	Details of the reserved matters (access, appearance, landscaping, layout, and scale) are to be submitted to and approved in writing by the local planning authority before any development begins and the development shall be carried out as approved. Any application for approval of the reserved matters is to be made to the local planning authority not later than three years from the date of this permission. Prior to the submission of any application for the approval of reserved matters, a plan sub-dividing the overall site area into phased development areas is to be submitted to and had approved in writing by the Local Planning Authority. As part of the submission of the first reserved matters application for each phase of development as agreed under Condition 7 the following are to be submitted and approved in writing by the LPA: • A schedule of external materials (including samples where requested) • Detailed light pollution/dark skies assessment • Site wide Energy Strategy • Site wide/overarching waste management strategy/Plan • Scheme detailing the phasing approach reflecting the car parking (including a minimum of 10% spaces with Vehicle Charging Points for Ultra Low Emission Vehicles (ULEV)), delivery and manoeuvring requirements on site for that phase	Pre-construction	Submission and approval of reserved matters prior to the commencement of each phase of the development in line with the requirements of the commitment action.	GCRE	
PL09	GCRE Decision Notice	Notice of intention to commence development	Prior to commencement of works: • The LPAs are to be notified in writing of intention to commence development by submitting a Formal Notice under Article 24B of the Town and Country Planning (Development Management Procedure) (Wales) Order 2012; and • A Site Notice in the form set out in Schedule 5B (a newly inserted Schedule) of the DMPWO is to be displayed at site boundary.	Pre-construction	Submission of a formal Notice as set out in Schedule 5A of DMPWO to LPAs and display of site notice as set out in Schedule 5B of DMPWO.	GCRE	
PL10	GCRE Decision Notice	Implementation of plans/designs/methods of work approved by LPAs	All works are to be carried out in accordance with documents and plans submitted an application or as otherwise modified as agreed with the LPAs.	Construction	Delivery of works in compliance with designs and methods of work approved/agreed with the LPAs.	GCRE/GCRE Contractor	

PL11	GCRE Decision Notice	Management of environmental impacts associated with the construction of the development in accordance with the ES	The following documents are to be submitted and approved by the LPAs prior to the commencement of the development: • Boundary treatments • Construction Method Statement and Traffic Management Plan • Strategy for Maintenance and Enhancement of Wildlife Corridors • Scheme for the Conservation of Reptiles • Barn Owl Compensation Scheme • Strategic Biodiversity Plan • Phased Biodiversity Plan • WSI • Foul Water Drainage Scheme • RAMS for the Protection of the Structural Condition of Public Sewers and Watermains • Hard and Soft Landscape Design • Landscape Strategy and Landscape Mitigation Planting • Report into Mine Entries and Shallow Coal Mine Workings and Remediation Works/Mitigation measures to Address Land Instability Arising from Coal Mining. *Requires completion of intrusive investigations. • Construction Environmental Management Plan • Ecological Protection Plan • EMMP • Preliminary Investigation and Assessment of Contamination, including methodology for site investigations • Contaminated Land Report • Contaminated Land Remediation Scheme (if required)	Pre-Construction	Production, submission and approval of listed documents prior to the commencement of any activities which may constitute development.	GCRE	
PL12	GCRE Decision Notice	Management of environmental impacts associated with the construction of the development in accordance with the ES	The following documents are to be submitted and approved by the LPAs prior to the beneficial use of the development: • 25-year Ecological Management and Monitoring Plan • Scheme detailing predicted nature and type of trains using the facility, updated air quality modelling and assessments relating to statutory, non-statutory sites	Construction	Production, submission and approval of documents prior to the beneficial use of the development.	GCRE	

			and ancient woodland; and any necessary mitigation and long-term monitoring measures to be implemented to minimise adverse impacts upon the ecology of these sites. Operational Noise Management Plan				
PL13	GCRE Decision Notice	Hours of construction	Construction and demolition work on the site of the former washery (also applying to the starting up and/or warming up of any vehicles, equipment and machinery) is not to occur outside of the following times: 07.00 to 18.00 hours Mondays to Fridays (excluding Bank/Public Holidays) and; 08.00 to 13.00 hours on Saturdays No construction or demolition activities shall occur on Sundays or Bank/Public Holidays.	Construction	Works completed in compliance with commitment action.	Walters	
PL14	GCRE Decision Notice	Limitation of operations within the washery	During the hours of 19.00 and 07.00 hours the following activities shall not take place within the former washery site; - Use of the train wash facility - Use of the maintenance shed without the air curtain switched off and doors closed During the hours of 19.00 and 07.00 hours all train movements within the former washery site are to be electric-powered, unless the operator has first had submitted to and approved in writing a scheme (supported by appropriate noise assessment) dealing with the number, speed and specification of movement of trains during such defined period.	Operation	Works completed in compliance with commitment action.	GCRE	
Public Rights of Way and Common Land							
PRCL05	CEMP	Protection of PRoWs.	All PRoWs to be protected from all construction activity. Alternative walking routes to be provided with appropriate signage and crossings where necessary to ensure safe accessibility.	Construction	Protection and exclusion of PRoWs from construction activity. Provision of PRoW diversions as required.	Walters/GCRE Contractor	
PRCL06	ES Chapter 5 Traffic Management	Enhancement of existing footpaths and PRoWs.	GCRE to provide safe pedestrian infrastructure if there is conflict between the PROWs and the proposed development or proposed rail alignment. Appropriate footpaths will be provided along Onllwyn Road to the site entrance, allowing for a safe pedestrian crossing around Onllwyn Road and Wembley Avenue priority junction. Within the site, pedestrian footpaths will be provided with clear wayfinding signage. Footpaths will be kept separate from the internal road and rail network. A direct shared pedestrian/cycle route from Ystradgynlais to Onllwyn to be provided, making use of the existing PROWs	Operation	Provision of safe pedestrian infrastructure in compliance with commitment action.	GCRE	

			within the site area, and be designed to active travel standards.				
Water Environment							
WE17	ES Chapter 11 Water Environment	Ensuring water discharged from site is of an acceptable quality.	Separate drainage systems, pollutant interceptors and further measures if required are to be incorporated into the washery site at detailed design. Slab tracks, separate drainage systems and further measures if required to intercept pollutants and detergents to be incorporated into the washery site at detailed design. These measures are to be secured at the reserved matters stage and agreed in consultation with NRW, PCC and NPTCBC.	Pre-construction	Inclusion of water management/pollution control measures included within the detail design submitted to the LPAs under reserved matters.	GCRE design team	
W18	ES Chapter 11 Water Environment	Mitigation of the effects of the realignment upon hydromorphology	The following design principles are to be implemented during the detailed design: - Provision of naturalistic features of an equivalent or greater value to that of the existing watercourses - Incorporation of bioengineering techniques within channel design over traditional hard engineering where feasible - Flow regime of realigned watercourses to be as similar as the existing flow regime - Overseeing of the detailed design would be overseen by an experienced fluvial geomorphologist	Pre-construction	Production of the detailed drainage design in compliance with the principles of the commitment action.	GCRE design team	
Ground Environment							
GE07	CEMP	Health and safety of workers	Health and safety risk assessments will consider available chemical testing results for soils, groundwater and surface water and will inform identification of adequate mitigation measures.	Construction	Chemical testing results for soils, groundwater and surface water testing incorporated into health and safety risk assessments.	Walters/GCRE Contractor	
GE08	GCRE Decision Notice	Site remediation	No part of the development hereby approved (or such phase that may be approved under condition 7) is to be brought into beneficial use until a signed statement or declaration prepared by a suitably competent person confirming the completion of remedial works and/or mitigation necessary to address the risks posed by past coal mining activity, and confirming that the site is, or has been made, safe and stable for the approved development, has been submitted to and approved in writing by the Local Planning Authority.	Construction	Completion, submission and approval of a statement/declaration confirming completion of ground remediation works and further mitigation.	GCRE	
Biodiversity							
B27	CEMP ES Chapter 7 Biodiversity	To compensate for the potential loss of one breeding barn owl pair.	At least one barn owl nest box will need to be installed in suitable habitat further than 3 km from the Site in accordance with guidance, A suitable location will be provided as part of the reserved matters application, further to discussions with the local bird groups, Wildlife Trust and LPA ecologists to identify a	Pre-construction	Installation of barn owl nest box in compliance with commitment action. Location of barn owl nest box discussed with relevant stakeholders and agreed with the landowner.	GCRE/Dalcour Maclaren	

			suitable location and agreement being obtained with the landowner.				
B28	CEMP	Minimisation of lighting impacts on sensitive receptors.	A lighting design and associated plan will be produced in accordance with Bat Conservation Trust's (BCT) 'Bats and Lighting' publication, and will avoid light disturbance to bats, and other nocturnal or crepuscular species such as otter and badger. The plan will aim to avoid lighting of key wildlife corridors such as tree lines, waterbodies, rivers and streams, used by these species. Any lighting will be directional with minimal upwards or backwards light spill and minimising light spill onto adjacent, retained habitat features. Lighting onto any associated landscaping which is designed to direct species through culverts, will also need to be considered within this lighting plan.	Pre-construction	Development and implementation of a lighting design and plan in compliance with commitment action.	GCRE	
B29	CEMP ES Chapter 7 Biodiversity	Badger connectivity.	Suitable underpasses for badger are to be constructed within the test tracks, in addition to suitable connecting landscaping.	Construction	Construction of badger underpasses and establishment of connecting landscape features.	GCRE/Walters/ GCRE Contractor	
B30	CEMP	Creation of an otter breeding site	An artificial otter holt will be provided along the Afon Dulais, at least 100 m west of the development, or an alternative site to be identified by the Ecological Clerk of Works (ECoW) in consultation with NRW.	Construction	Construction of artificial otter holt in compliance with commitment action.	GCRE/Dalcour Maclaren	
B31	CEMP	Protection of bats.	No less than 20 bat boxes and/or bat bricks in buildings and bridges are to be provided, within the Site, and or adjacent habitats (subject to landowner agreement). The number and location of the boxes/bricks will be selected by the ECoW and informed by the number of appropriate trees, buildings and bridge structures within/adjacent to the Site. Boxes/bricks are to be of woodcrete construction, such as Schwegler models.	Pre-construction/ construction	Installation of bat boxes/bricks in compliance with commitment action.	GCRE/Dalcour Maclaren	
B32	CEMP	Protection of birds	No less than 30 bird boxes are to be installed on mature trees, and where possible on buildings and bridge structures, within the Site, and or adjacent habitats (subject to landowner agreement). The number and location to be selected by the ECoW and informed by the number of appropriate trees and buildings within/adjacent to the Site. Swift (Apus apus) boxes and house sparrow boxes should be prioritised for buildings, and grey wagtail / dipper (Cinclus cinclus) boxes for bridges. Boxes should be of woodcrete construction, such as Schwegler models.	Pre-construction/ Construction	Installation of bird boxes in compliance with commitment action.	GCRE/Dalcour Maclaren	
B33	CEMP	Provision of suitable reptile refugia	At least 15 artificial reptile refugia, which provide shelter to hibernating and active reptiles, to be created using materials available post site clearance / construction such as timber	Construction	Construction of reptile refugia in compliance with commitment action.	GCRE/Dalcour Maclaren	

	ES Chapter 7 Biodiversity		logs, brash, grubbed up tree roots, inert hardcore, bricks or building rubble. The number and location will be selected by the ECoW and would be informed by available suitable habitat.				
B34	CEMP	Protection of notable habitats	Condition monitoring of newly established/enhanced habitats to be carried out on an annual basis for a period of 5 years. The specific attributes of each habitat for monitoring, will include the extent, vegetation composition, vegetation structure and physical structure. Targets for each attribute will also be detailed. Where habitats aim to support notable species, attributes and targets will also account for this. Methods of monitoring to be determined once the attributes / targets have been set but will follow published methods. Monitoring to also include notable species, of County value, including vascular plants, fungi, invertebrates, breeding birds and bat activity in year 1, 3 and 5 post construction. Species, attributes, targets and monitoring methods will be agreed, in consultation with the LPA and NRW	Post-Construction	Establishment of a monitoring regime for newly established/enhanced habitats in compliance with commitment action – To be detailed within EMMP and SBP. Monitoring undertaken as detailed within monitoring regime.	GCRE/Dalcour Maclaren	
B35	ES Chapter 7 Biodiversity	Pre-construction ecological surveys.	Pre-construction surveys to be undertaken for badger and otter, where suitable habitat occurs within 50 m of the construction works Pre-construction checks to also be undertaken of vegetation clearance areas where it is likely to support nesting birds, reptiles, or any Section 7 mammals such as West European hedgehog. Prior to site clearance/construction commencing, bat surveys of buildings and trees within 60 m of the development to be undertaken. Where there is a delay to site clearance / construction, and more than 18 months has lapsed, the LPA will need to confirm whether any of the ecological surveys undertaken will need to be repeated.	Pre-construction	Pre-construction ecological surveys completed in compliance with commitment action.	Walters/Dalcour Maclaren/Atkins	
B36	ES Chapter 7 Biodiversity	Habitat restoration and creation.	Habitat creation and restoration to be undertaken in compliance with Figure 7.9. and as detailed within ES Chapter 7, Section 7.22.1.	Construction/ Post-construction	Habitat creation and restoration undertaken in compliance with commitment action.	GCRE/Dalcour Maclaren	
B37	ES Chapter 7 Biodiversity	Wildlife connectivity – Bats	Wildlife crossings for bats, otter and badger, wildlife to be provided in the final design. New culverts to provide passage to bats known to occur in the local area, at least in locations where they are likely to travel across the tracks. A number of the culverts are to be at 3 m to accommodate pipistrelles and other generalist bat species. The minimum height of other culverts designed to accommodate bat passage are to be 2 m. Lighting of culverts to be avoided and landscaping to be designed to encourage species through culverts from the adjacent habitats.	Pre-construction /Construction	Culverts designed and constructed in compliance with commitment action.	Walters/Atkins	

			ES Figure 7.9 details indicative locations, which are confirmed at the reserved matters stage of the application, along with details of the culvert design (including technical drawings) and associated planting, based on likely bat foraging / commuting corridors.				
B37	ES Chapter 7 Biodiversity	Wildlife connectivity – Otter	Culverts designed to accommodate bat passage, are also facilitate otter movement, using similar designs to Welsh Government Road Schemes. Otter ledges to be located 150 mm above the 1 in 100-year flood level including 25% for climate change. Due to the low number of otter recorded it is not considered necessary to provide ledges in all culverts.	Pre-construction /Construction	Culverts designed and constructed in compliance with commitment action.	Atkins	
B38	ES Chapter 7 Biodiversity	Wildlife connectivity – Badger	Culverts adapted for bats and otter, due to being largely dry, are also to provide passage to badger. Culverts to a length of 20 m are to comprise at least a 600 mm cylindrical pipe, to accommodate badgers and otter. In crossings over 20 m in length, the width of the pipe is to increase to 900 mm.	Pre-construction /Construction	Culverts designed and constructed in compliance with commitment action.	Atkins	
B39	ES Chapter 7 Biodiversity	Protection fencing	Fencing to prevent crossing of tracks by wildlife, in particular otter and badger, consistent with similar specifications used in other road schemes in Wales. The fencing is to be at least 1.6 m high, without any crank on the top. A drawing is to be provided at the reserved matters stage of the application, with fencing location, and tie in with the culvert locations detailed.	Pre-construction /Construction	Fencing design produced in compliance with commitment action and submitted to the LPAs under reserved matters.	Dalcour Maclaren/GCRE Contractor	
B40	ES Chapter 7 Biodiversity	Prevention of light disturbance.	A lighting design and associated plan to be produced in accordance with Bat Conservation Trust's (BCT) 'Bats and Lighting' publication. The plan is to aim to avoid lighting of key wildlife corridors such as tree lines, waterbodies, rivers and streams, with any lighting directed upwards or backwards, minimising light spill Lighting onto any associated landscaping designed to direct species through culverts, is also to be considered within this lighting plan.	Pre-construction	Production of a lighting plan in compliance with commitment action.	GCRE/Dalcour Maclaren	
B41	ES Chapter 7 Biodiversity	Mitigation for the loss of nesting opportunities.	At least ten house sparrow nest boxes to be provided in the area of the washery.	Construction	Installation of ten house sparrow boxes within washery.	GCRE/Dalcour Maclaren	
B42	ES Chapter 7 Biodiversity	Protection of notable species.	Long-term management to target retained and newly created habitats for notable species known to occur within and adjacent to the site including vascular plants, fungi, invertebrates (particularly dingy skipper, six belted clearwing, small blue and scarce blue tailed damselfly), breeding/wintering birds, foraging bats, reptiles, amphibians and notable mammal species. Specific details for management to enhance the nature conservation value of the site to be provided within an EMMP.	Post-construction	Long-term management of habitats in compliance with commitment action. Inclusion of habitat management and enhancement measures within the EMMP.	GCRE/Dalcour Maclaren	

B43	ES Chapter 7 Biodiversity	Habitat enhancement	Habitat enhancement and creation to meet the requirements of PPW 11 and the Environment Act (Wales) 2016, for biodiversity enhancement and the promotion of ecosystem resilience.	Design/Post-construction	Design for habitat enhancement and creation produced and implemented in line with PPW 11 and the Environment Act (Wales) 2016.	De GCRE/Dalcour Maclaren	
B44	ES Chapter 7 Biodiversity	Creation of green/brown roofs.	Opportunities to be sought to create green/ brown roofs on buildings within the Washery, where this does not compromise other requirements of the buildings; it is anticipated that roof spaces of the decommissioning building and carriagewash will support essential services, and roofs of the larger depots will provide a rainwater harvesting function. The creation of green/brown roofs would not be suitable if it compromises the main objective of sustainable drainage. Smaller roof spaces such as those of the staff accommodation and control block, are not anticipated to house any additional infrastructure and or services and as such are likely to provide opportunities for the creation of green/brown roofs. Planting will include food plants for notable invertebrates such as six-belted clearwing, small blue and dingy skipper.	Pre-construction	Where possible, green/brown roofs incorporated into building designs.	GCRE/Dalcour Maclaren	
Landscape and Visual							
LV09	ES Chapter 9 Landscape and Visual	Provision of landscape mitigation.	Landscape mitigation planting to be completed in compliance with ES Chapter 9 Landscape and Visual, Section 9.8.	Construction/Post-construction	Landscape mitigation planting undertaken in compliance with ES Chapter 9 Landscape and Visual, Section 9.8.	GCRE contractor/GCRE	
Noise, Vibration and Environmental Nuisances							
NV13	CEMP	Community engagement and compliant management	The name and contact details of person(s) accountable for air quality and dust issues to be displayed at development boundary, in addition to head or regional office contact information.	Construction/ Operation	Display contact details at site boundary as detailed within commitment action.	GCRE	
NV14	CEMP	Complaint management and remedial action	All dust and air quality complaints to be recorded and used to identify cause(s). Appropriate measures to reduce emissions are to be implemented in a timely manner, and record. Complaint records to be made available to the local authority on request.	Construction/ Operation	All complaints recorded and action taken in a timely manner to address complaints. Evidence of action taken and outcomes also to be record.	GCRE/Walters/ GCRE Contractor	
NV15	CEMP	Dust monitoring.	Undertake daily on-site and off-site dust inspections, where receptors (including roads) are nearby, recording inspection results. Inspections to include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100m of site boundary, with cleaning to be provided if necessary. Undertake regular site inspections to monitor compliance with the DMP, recording inspection results. Frequency of site inspections to increase when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions.	Construction	Dust monitoring and inspections completed in compliance with commitment action.	Walters/ GCRE Contractor	

NV16	CEMP	Dust prevention.	Site layout to be planned so that machinery and dust causing activities are located away from receptors, as far as is possible. Erect solid screens or barriers around dusty activities or the site boundary that are at least as high as any stockpiles on site. Avoid site runoff of water or mud. Keep site fencing, barriers and scaffolding clean using wet methods. Remove materials that have a potential to produce dust from site as soon as possible, unless being re-used on site. If materials are being re-used on-site, they are to be covered, seeded or fenced to prevent wind whipping. All vehicles to switch off engines when stationary. Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable. Impose and signpost a maximum-speed-limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas. Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction Ensure an adequate water supply on the site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. Use enclosed chutes and conveyors and covered skips. Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. Ensure equipment is readily available on site to clean any dry spillages and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. No bonfires or burning of waste materials. Ensure effective water suppression is used during demolition operations. Avoid explosive blasting using appropriate manual or mechanical alternatives. Bag and remove any biological debris or damp down such material before demolition. Avoid scabbling (roughening of concrete surfaces) if possible and ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required	Construction	Compliance with commitment actions. To be evidenced through DMP compliance inspections.	Walters/ GCRE Contractor	
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			for a particular process, in which case ensure that appropriate additional control measures are in place. Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. Avoid dry sweeping of large areas. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport Record all inspections of haul routes and any subsequent action in a site logbook. Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable).				
NV17	CEMP ES Chapter 10 Noise and Vibration	Minimisation of noise impacts.	Acoustic barriers of a height 2 m above the test track rail level to be installed on the northern, eastern and southern sides of the track – except where the earthworks are high enough to provide equivalent noise shielding. Acoustics barriers to be provided along the southern perimeter of the washery, and to the south of the new railway sidings. Note: Location of acoustic barriers are marked on Figures 10.4 of the ES.	Construction	Installation/construction of acoustic barriers in compliance with commitment action.	GCRE/ GCRE Contractor	
NV18	CEMP ES Chapter 10 Noise and Vibration	Reduction of noise associated with night-time train movements in the washery.	All train movements at night-time in the washery area to be powered with electric (non-diesel) traction; either by the trains themselves, or through the use of an electric shunter.	Operation	Train movements undertaken in compliance with commitment action.	GCRE	
NV19	CEMP ES Chapter 10 Noise and Vibration	Reduction of noise from operational activities.	During the day, when shed doors are open, an air curtain is to be active. Shed doors to be closed at night. Outdoor dismantling works to occur during daytime only. Nosie barrier 3 m above rail height to be located alongside southern perimeter.	Operation	Compliance with commitment action.	GCRE	
NV20	ES Chapter 10 Noise and Vibration	Mitigation of noise and visual impacts in Area A.	A 3 m noise fence barrier to be placed close to the rolling stock test track. The noise fence barrier is to be opaque and solid, with a timber outer finish, providing visual mitigation by shielding some of the scheme infrastructure, including blocking the glare of the train headlights which would otherwise produce potential visual impacts during the hours of darkness. The embankment slopes to be planted with woodland.	Construction/ Operation	Implementation of mitigation in compliance with commitment action.	GCRE	
NV21	Chapter 10 Noise and vibration 10.7	Mitigation of noise and visual impacts in Area B.	A 5m landscape bund placed to the east of the rolling stock test track.	Construction/ Operation	Implementation of mitigation in compliance with commitment action.	GCRE Contractor/GCRE	

NV22	ES Chapter 10 Noise and Vibration	Mitigation of noise and visual impacts in Area C.	Shallow engineering cuttings in which the test tracks sit to be enhanced with additional landscape bunds to provide noise mitigation by acting as a noise barrier.	Construction/ Operation	Implementation of mitigation in compliance with commitment action.	Walters/GCRE	
NV23	ES Chapter 10 Noise and Vibration	Mitigation of noise and visual impacts in Area D.	A 3 m noise fence barrier to be installed alongside the facility.	Construction/ Operation	Implementation of mitigation in compliance with commitment action.	GCRE Contractor/GCRE	
NV24	ES Chapter 10 Noise and Vibration	Mitigation of noise and visual impacts in Area F.	A noise barrier to be provided alongside the facility.	Construction/ Operation	Implementation of mitigation in compliance with commitment action.	GCRE Contractor/GCRE	
NV25	ES Chapter 10 Noise and Vibration	Mitigation of noise and visual impacts in Area G.	A noise barrier to be provided alongside the facility.	Construction/ Operation	Implementation of mitigation in compliance with commitment action.	GCRE Contractor/GCRE	
NV26	GCRE Decision Notice	Mitigation and management of operational noise impacts.	Prior to the installation of any fixed plant or machinery an updated BS4142 assessment is to be submitted to and approved in writing by the Local Planning Authority, demonstrating that the approved noise criteria specified in Table 10.1 of the Environmental Statement will be achieved. During the first 12 months of operation GCRE, at its expense, is to employ a consultant approved by the Local Planning Authority to assess the level of noise emissions from the site, demonstrating compliance with the "Total overall predicted scheme noise level with noise fence barriers" stated in Table 10.5 of the Environmental Statement No later than 13 months after the development is first brought into beneficial use, a noise emissions assessment completed at the expense GCRE is to be submitted to the Local Planning Authority for approval. Should the assessment conclude that the predicted noise levels as identified within Table 10.5 of the Environmental Statement are being exceeded, then a scheme for further mitigation shall accompany any assessment and is to be implemented within three months following the written approval from the Local Planning Authority. Prior to the beneficial use of the development, a scheme for the ongoing monitoring of noise is to be submitted to and approved in writing by the Local Planning Authority. Once approved the scheme is to be implemented for the duration of the operation of the site.	Operation	Completion of BS4142 assessment in compliance with commitment action prior to installation of fixed plant and machinery. Appointment of noise specialist in compliance with commitment action to demonstrate effectiveness of noise barriers within first 12 months of operation. Completion of noise assessment in compliance with commitment of action within the first 13 months of operation, and implementation of any further mitigation to meet noise levels stipulated within the ES. Development, submission, approval and implementation of a noise monitoring scheme in compliance with commitment action.	GCRE	
NV27	GCRE Planning Decision	Mitigation of light impacts on sensitive receptors.	A lighting scheme is to be submitted and approved by the Local Planning Authority prior the installation of any external The lighting scheme is to: - Take into account the Dark Skies Assessment - Identify the minimum lighting required to perform the relevant lighting task.	Pre-construction/ operation	Development, submission, approval and implementation of a lighting scheme in compliance with commitment action.	GCRE	

			- Be specifically designed to minimise the risk of light spillage beyond the development site boundary and within ecologically sensitive areas. The lighting scheme is to include: - A report, prepared by a lighting engineer, setting out the technical details of the luminaires and columns, including their location, type, shape, dimensions and, expected luminance output and specifically explaining what design attributes have been chosen to minimise light pollution. - A plan illustrating illuminance levels across. The level of illuminance should be appropriate to the character of the surrounding area as a whole. - A statement which demonstrates how the lighting scheme will be viewed against the wider landscape and, where appropriate, the potential role of landscaping in minimising the day and night-time visual impact of the installation. - An Environmental Lighting Impact Assessment against conservation requirements for protected species and designated landscapes. All lighting installed at the site is to be in full accordance with the approved details.				
General Environmental Requirements							
GR18	CEMP	Compliance with environmental requirements.	Celtic Energy to appoint a Project Manager on their behalf to oversee the earthworks. Project Manager is to be responsible for managing the earthworks within agreed environmental constraints and other management processes. The Project Manager will also be responsible for the implementation of the CEMP.	Pre-Construction	Appointment of a Project Manager by Celtic Energy.	GCRE	
GR19	CEMP	Community engagement.	Develop and implement a stakeholder communications plan that includes community engagement before work commences on site.	Pre-construction	Production and implementation of a Stakeholder Communications Plan in compliance with commitment action.	GCRE	
GR20	ES Chapter 3 Project Description	Construction of buildings in compliance with Project Description	Buildings to be designed and constructed within specified limits: - Control building - up to (l)10m x (w)30m x (h)10m with a floorspace of 600m². - Staff facilities building- During Phase 1 to be modular style, up to 120m², one storey, up to (L)20m x (w)6m x (h)15m. - Research and development centre - up to 480m², (l)20m x (w)12m x (h)10 m (2 storeys). - Final building to be constructed during Phase 3 - up to 1000m², (l)50m x (w)10m x (h)10m (2 storeys).	Design/ Construction	Design and construction of buildings in compliance with commitment action.	GCRE Design Team/GCRE contractor	

			- The two storey sheds - divided into two “roads” with mirrored facilities. Two roads would be (h)12m x (w)40m x (l) 400m and two roads would be (h)12m x (w)40m x (l)250m. - Decommissioning shed of one storey (up to (l)35m x (w)10m x (h)12m) and up to 350m². - Carriage wash facility - one storey up to (l)35m x (w)10m x (h)12m, 350m² and able to service trains up to 400m.				
GR21	ES Chapter 3 Project Description	Review of air quality impacts.	A review of the final design to be undertaken prior to submission of reserved matters, specifically relating to factors likely to affect air quality such as levels of diesel emissions, train speed / frequency of use and annual hours of operation in order to determine the requirement for updating the existing air quality assessment.	Pre-construction	Completion of review of air quality impacts prior to submission of reserved matters.	GCRE	
GR22	ES Chapter 15 Climate Change	Climate change mitigation.	The design to take into account climate change requirements including effects of increased in temperature. Track work to be restricted and maintenance staff deployed ahead of any hot weather event to assess rail infrastructure, in accordance- with Network Rail standards. Climate change allowances are also considered for steel material selection (including stressing for continuous welded rail (CWR)). Maintenance and monitoring measures to be put in place with particular focus on preventing derailment due to a track fault. Specific maintenance to adjustment switch gaps and overlaps, expansion joints, insulated joints, ball and claw settings in switch and crossing (S&C) and alignment monitoring to be undertaken ahead of cold weather events. Design of track system to ensure that all vehicles meet or exceed the minimum acceptable intrinsic roll-over wind speed, as defined within Railway Group Standards.	Design/Operation	Climate change effects considered in design and implementation of commitment actions during operation.	GCRE Design Team/ GCRE	
GR23	ES Chapter 15 Climate Change	Climate change mitigation	An adaptive pathway approach is to be taken for monitoring and managing climate risks in the future. A clear plan, with climate related trigger points for review to be developed to support this, including an understanding of interdependencies.	Operation	Development and implementation of a climate risks monitoring and management plan.	GCRE	
GR24	GCRE Planning Decision	Community engagement	Three months prior to the first operation of the site, a community liaison scheme is to be submitted and approve by the Local Planning authority. The community liaison scheme is to include: Mechanism for dealing complaints	Operation	Development, submissions, approval and implementation of community liaison scheme.	GCRE	

			- Details of a nominated representative of the operator liaising with local residents and the relevant planning authority - The composition and operation of a regular Stakeholder Meeting				
GR25	GCRE Planning Decision	Welsh language.	Six months before the beneficial use of the development, a Welsh Language Impact Assessment/Strategy and Action Plan is to be submitted to the Local Planning Authority for its approval in writing.	Operation	Development, submission, approval and implementation of a Welsh Language Impact Assessment/Strategy and Action Plan.	GCRE	
GR26	GCRE Planning Decision	Site management	Prior to the beneficial use of the development, a scheme addressing any required areas of external storage, together with those area(s) identified for decommissioning of trains or similar rail related items is to be submitted and approved by the Local Planning Authority. There is to be no external storage of materials or parts (including those arising from the decommissioning of trains or similar rail related items) other than in accordance with such agreed details.	Operation	Development, submission, approval and implementation of a scheme of storage requirements and rail works in compliance with commitment action.	GCRE	
Traffic Management							
TM01	ES Chapter 5 – Transport CEMP	Mitigation of impacts arising from construction traffic.	A CTMP to be prepared. CTMP to outline a range of measures to minimise potential traffic impacts arising from the construction of the GCRE development proposals. The CTMP will: - Seek to enable safe walking within and surrounding the development: - Detail provisions for pedestrians regarding level crossings along the existing railway - Encourage active travel accessibility to/from the development - Provide detail on the potential provision of bus services for construction workers. - Ensure correct signage and wayfinding - Detail parking measures. - Ensure all reasonable steps are taken to minimise and mitigate any possible adverse effects of the construction process. - Detail monitoring regime for traffic associated with the proposed development during the construction.	Pre-construction	Development and implementation of a CTMP in compliance with commitment actions.	GCRE Contractor	
TM02	ES Chapter 5 – Transport CEMP	Promotion of cycle to work.	Temporary cycle storage facilities to be provided for construction workers.	Construction	Provision of cycle storage facilities.	GCRE	

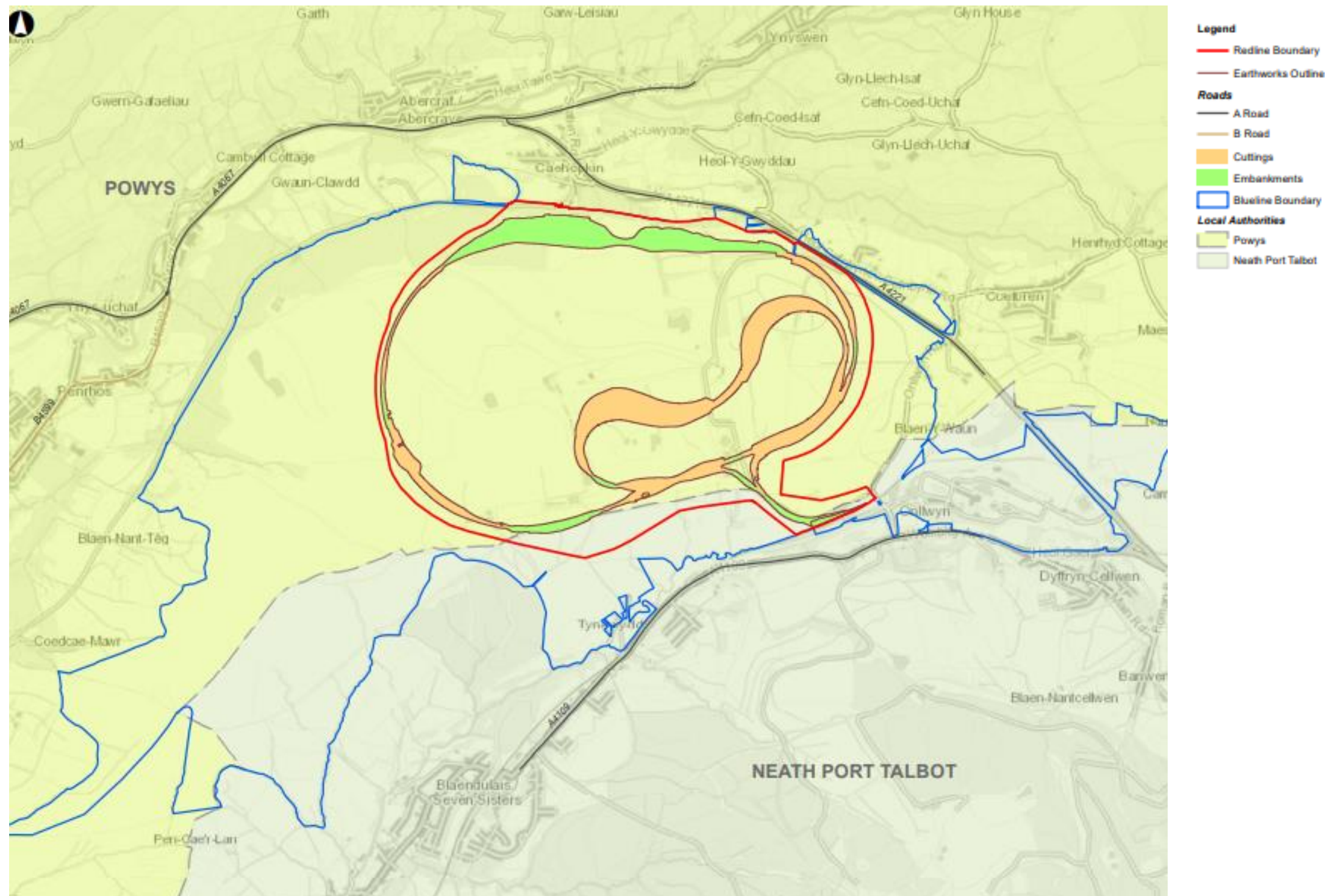
TM03	ES Chapter 5 – Transport CEMP	Sustainable delivery of goods and materials.	Produce a Construction Logistics Plan.	Construction	Production and implementation of a Construction Logistics Plan.	GCRE	
TM04	ES Chapter 5 – Transport CEMP	Promotion of sustainable travel and minimisation of vehicular traffic impact.	Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing). The provision of facilities for vehicle users including clear way finding signage should be specified within the Travel Plan. The provision of facilities for pedestrians to be specified within the Travel Plan to promote Active Travel to/from the GCRE. GCRE to collaborate with existing bus operators and NPTCBC to provide a service that benefits workers in key neighbouring towns. If possible, GCRE will co-ordinate with the existing bus service timetable to minimise disruption during construction and the existing bus operations.	Construction/ Operation	Development and implementation of Travel Plan in compliance with commitment action. Provision of a bus service to GCRE site.	GCRE	
TN05	ES Chapter 5 – Transport CEMP	Provision of cycle facilities.	<u>Construction</u> Temporary cycle storage facilities to be provided for construction workers. <u>Operation</u> GCRE to provide cycle parking at all points of pedestrian access excluding the existing A4221 Washery and Distribution centre access which will be used by HGVs only. The number of cycle stands should be determined by NPTCBC parking standard guidance. Cycle parking will include covered cycle parking, light and CCTV to cater for long stay parking requirements.	Construction/ Operation	<u>Construction</u> Provision of temporary cycle storage facilities. <u>Operation</u> Provision of appropriately sized cycle facilities in compliance with commitment actions.	Walters/ GCRE Contractor/GCRE	
TN06	ES Chapter 5 – Transport	Provision of car parking facilities.	GCRE to provide a carpark within the site boundary of suitable size and according to local standards due to the rural location of the development. It is recommended that 5% of the total car park capacity is dedicated for blue badge holders. A minimum of 10% of car parking spaces to have ULEV charging points.	Operation	Provision of car parking facilities in compliance with commitment action.	GCRE	
TN07	ES Chapter 5 – Transport	Mitigation of unplanned visitors to site.	GCRE to consider implementation the following: - A specific visitor allocation in the day given in a non-peak hour which allows visitors and train enthusiasts to park within the GCRE site and view the facility; - Parking regulations applied to surrounding local highways to discourage on street parking;	Operation	Compliance with commitment actions.	GCRE	

			- Provision of a Park and Ride facility for visitors which performs a bus tour of GCRE on set days.				
TN08	GCRE Planning Decision	Traffic assessment and management	At twelve months, three years and five years after the first beneficial use of the development, further traffic impact surveys are to be undertaken to ascertain the actual traffic flows, providing further or additional traffic management or orders if required. One month following the survey, a report is to be submitted to the Local Planning Authority for its approval in writing. At twelve months and five years after the first beneficial use of the development, a survey of the highways surrounding the site is to be undertaken to ascertain whether unplanned visitors to the facility are causing problems on the local highway network, with the results submitted to the Local Planning Authority for approval in writing. If the monitoring identifies adverse impacts, a scheme shall be submitted to the Local Planning Authority for its approval in writing within one month of the survey date detailing potential mitigation measures (which could include parking provision or regulations, or other visitor-related proposals).	Operation	Surveys and reports completed and submitted to the LPAs in compliance with commitment action.	GCRE	
TN09	GCRE Planning Decision	Improvement local travel infrastructure	Prior to the first beneficial use of the development, a scheme of Active Travel Improvements is to be submitted and approved by the Local Planning Authority. The scheme is to include improvements to bus facilities at Wembley Avenue (NPT) and along NCN43 (Powys), and it to identify wider improvements to transport links to the site.	Operation	Production, submission, approval and implementation of Active Travel Improvements in compliance with commitment action.	GCRE	
T10	GCRE Planning Decision	Access and egress from A4221	The site access onto / from the Intervalley Road (A4221) is to be restricted solely to construction traffic, emergency vehicles and deliveries only, and is not to be used by staff or other persons working on or visiting the site.	Construction	Compliance with commitment action.	GCRE	
T11	GCRE Planning Decision	Improvements to washery access	Prior to first beneficial use of any part of the former washery site, an access is to be provided with permanent gates and signage in accordance with details approved in writing by the Local Planning Authority	Operation	Details of access and signage at the washery submitted and approved by the LPA.	GCRE	

Appendices

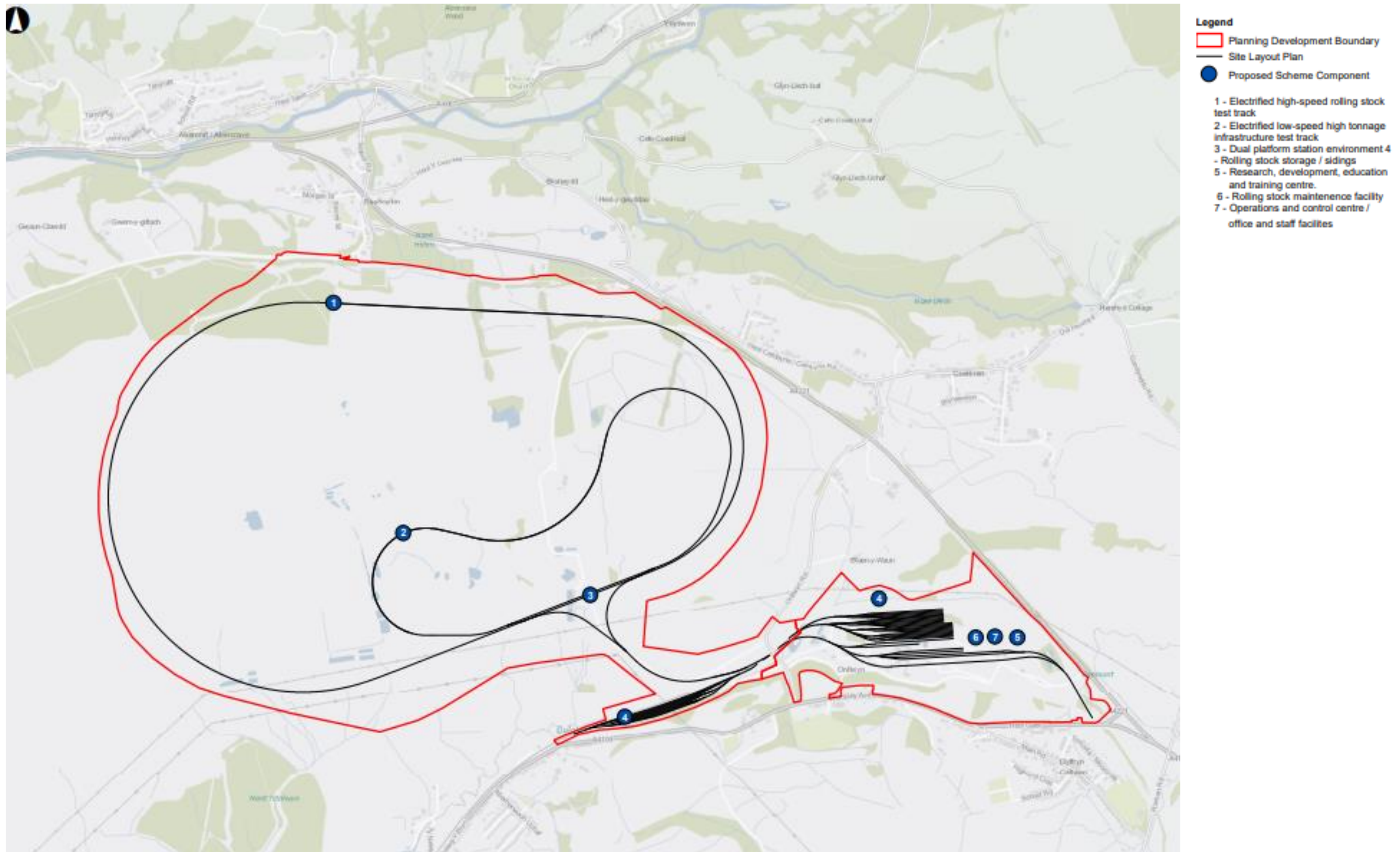
Appendix A – Redline Boundaries

Figure A-1 - Nant Halen Complementary Earthworks Redline Boundary



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Figure A-2 - GCRE Redline Boundary



Appendix D. Environmental Risk Register

Ref.	Environmental Aspect	Environmental Category	Environmental Impact	Pre Mitigation					All Options Considered to Mitigate Risk and Realise Opportunity for improvement	Post Mitigation				
				Severity			Likelihood	Risk Factor		Severity			Likelihood	Risk Factor
				Legal	H&S	Env				Legal	H&S	Env		
1	Working close to archaeological & heritage remains	Archaeology & Heritage	Impact: Damage caused to monuments, artefacts, assets and archaeological sites	3	1	3	3	9	• Archaeological investigation and identification of archaeologically sensitive areas • Implementation of WSIs • Archaeological mitigation; watching briefs, strip map and sample, excavations, buffer zones, site specific method statements • Consultation with archaeological trusts and regulators • Stop work and consult archaeological specialist if damage occurs or if unknown archaeology identified	3	1	3	2	6
2	Working on or close to listed buildings	Archaeology & Heritage	Impact: Potential for damage / disturbance / loss of heritage assets prosecution, delay to works	3	1	3	3	9	• Archaeological investigation and identification of archaeologically sensitive areas. • Follow advice and methodology agreed with a qualified archaeologists. • Consultation with archaeological trusts and regulators • Stop work and consult archaeological specialist if damage occurs	3	1	3	1	3
3	Working close to scheduled monuments	Archaeology & Heritage	Impact: Damage to scheduled monument and visual amenity of the area	3	1	4	3	12	• Archaeological investigation and identification of archaeologically sensitive areas • Obtainment of SMC prior to the commencement of works. All works undertaken in compliance with SMC. • Implementation of WSIs • Archaeological mitigation; watching briefs, strip map and sample, excavations, buffer zones, site specific method statements • Consultation with archaeological trusts and regulators • Stop work and consult archaeological specialist if damage occurs	3	1	4	2	8
4	Vegetation clearance / stripping / management	Ecology & Biodiversity	Impact: Loss of biodiversity / loss of habitat / increasing coverage of invasive species through dispersal / disturbance and damage to protected species and their habitats / soil erosion and runoff.	2	1	4	4	16	• Completion of ecological surveys prior to works • Vegetation clearance and stripping to be kept to a minimum • Where possible , undertake vegetation clearance outside of nesting bird season. • Works to be undertaken with regard to ecological calendar. • Implementation of appropriate and species/habitat specific mitigation. • Ecological supervisor • INNS management plan • Implementation of landscape strategy following completion of works.	2	1	3	3	9

5	Working close to trees	Ecology & Biodiversity	Impact: Potential damage to tree - roots, canopy and trunk / loss of biodiversity / damage to root system affecting stability / disturbance or harm to nesting birds	2	1	3	4	12	• Completion of ecological surveys prior to works • Vegetation clearance and stripping to be kept to a minimum • Where possible , undertake vegetation clearance outside of nesting bird season. • Works to be undertaken with regard to ecological calendar. • Implementation of appropriate and species/habitat specific mitigation. • Obtain felling licence, if required, prior to felling. • Implementation of RPAs around trees. • Works to be undertaken under arboriculturally advisor, if required. • Ecological supervisor • Stop work if damage caused or if unplanned work is required to the tree	2	1	3	2	6
6	Working in ecological sensitive areas.	Ecology & Biodiversity	Impact: Loss of or damage to flora, fauna, habitats, protected areas and species / loss of biodiversity	4	1	3	4	16	• Completion of ecological surveys prior to works • Vegetation clearance and disturbance to be kept to a minimum • Issuing of ecology constraints plan. • Toolbox talks/training • Works to be undertaken with regard to ecological calendar. • Implementation of appropriate and species/habitat specific mitigation. • Ecological supervisor • INNS management plan • Buffer and exclusion zones	4	1	3	2	8
7	Working in close proximity to invasive plants	Ecology & Biodiversity	Impact: Invasive plants grow to the exclusion of native species resulting in a loss of biodiversity	3	2	3	3	9	• Completion of ecological surveys prior to works • Issuing of ecology constraints plan. • Toolbox talks/training • Works to be undertaken with regard to ecological calendar. • Implementation of appropriate mitigation. • Ecological supervisor • INNS management plan • Buffer zones	3	2	3	2	6

8	Working near protected species	Ecology & Biodiversity		4	1	4	4	16	• Completion of ecological surveys prior to works • Vegetation clearance and disturbance to be kept to a minimum • Issuing of ecology constraints plan. • Toolbox talks/training • Works to be undertaken with regard to ecological calendar. • Obtain all required licences prior to the commencement of works. All works to be undertaken in compliance with licences. If any changes, stop work and contact ecological specialist. • Implementation of appropriate and species/habitat specific mitigation. • Ecological supervisor • INNS management plan • Buffer and exclusion zones	4	1	4	2	8
9	Working in peat, including excavation and storage of peat	Ecology & Biodiversity	Impact: Damage to peat habitat / loss of peat habitat / loss of biodiversity	1	1	3	3	9	• Identify peat during planning stages, including depth • Implement peat/material management plan • Method statements specific to working in peat • Toolbox talks	1	1	3	2	6
10	Storage of fuel & oil	Material use & storage	Impact: Contamination of ground / ground water / surface water / damage to habitats / disposal of spill kits and hydrocarbon contaminated waste	4	2	4	4	16	• Toolbox talks • Implementation of pollution prevention measures detailed within the CEMP • Stop works, contain, notify and clean up (if safe to do) • Drainage/site plans • Spill kits to be available across site	4	2	4	2	8
11	Working close to private residences	Nuisance	Impact: Nuisance to neighbours and local stakeholders / impact on access to properties / negative visual impact	3	1	3	3	9	• Implementation of noise management plan • Toolbox talks • compliance with working hours • Notify residents of potentially disruptive works • Complaints procedure	3	1	3	1	3
12	Working outside 'normal' working hours i.e. emergency works	Nuisance	Impact: Nuisance to neighbours and local stakeholders / impact on access to properties / negative visual impact	2	1	3	4	12	• Limit out of hours work to that which is absolutely necessary • Liaison with local residents	2	1	3	1	3

13	Construction of access roads / tracks	Operations	Impacts: Visual impact / pollution to watercourses / negative impact on aquatic ecology / impact on land / disturbance/damage to ecology and archaeology	1	2	3	3	9	• Micro siting of access to avoid environmentally sensitive areas/receptors • Type of access to be considered in line with ground conditions e.g. bog mats, floated stone roads, trackway for vehicular and pedestrian access • Implementation of pollution and dust presentation measures. • Use of recycled aggregate where possible • Implementation of speed limits • Implementation of appropriate ecological and archaeological mitigation	1	2	3	2	6
14	Excavation	Operations	Impact: Nuisance / depletion of natural resources / pollution of watercourses / dust emissions / disturbance/damage to ecology and archaeology	2	3	2	3	9	• Dust suppression measures • Implementation of noise management plan • Material management plan • Implementation of appropriate ecological and archaeological mitigation • Identification of soil/material storage locations	2	3	2	2	6
15	Demolition	Operations	Impact: increased waste to landfill / nuisance caused to neighbours / damage to local buildings / disturbance to livestock / damage to flora and fauna / depletion of fossil fuels / global warming / potential pollution to watercourses / damage to listed buildings and structures / harm or disturbance to protected species	1	3	2	4	12	• Ecological surveys prior to commencement • Archaeological recording of structures during demolition if required • Monitoring • Pollution prevention measures • SWMP	1	3	2	2	6
16	Dewatering ground in order to perform excavation	Operations	Impact: Silt pollution to watercourses / silt blocks drains / discharge to sewers without permission / discharge to surface water drains without permission / depletion of fossil fuels / global warming / reduction in water availability	3	2	3	4	12	• Pollution prevention measures • Discharge/groundwater permits to be obtained prior to commencement • Monitoring • Consultation with NRW	3	2	3	2	6
17	General construction activities	Operations	Impact: Disturbance to wildlife and their habitats / pollution to air / pollution to water / noise nuisance / depletion of natural resources / global warming / climate change / depletion of water resources	2	2	2	3	6	• Identify environmental receptors • Constraints plans • Toolbox talks • CEMP • Method statements	2	2	2	2	4
18	Litter	Waste	Impact: Disposal of waste	1	2	2	2	4	• SWMP • Toolbox talks	1	2	2	1	2

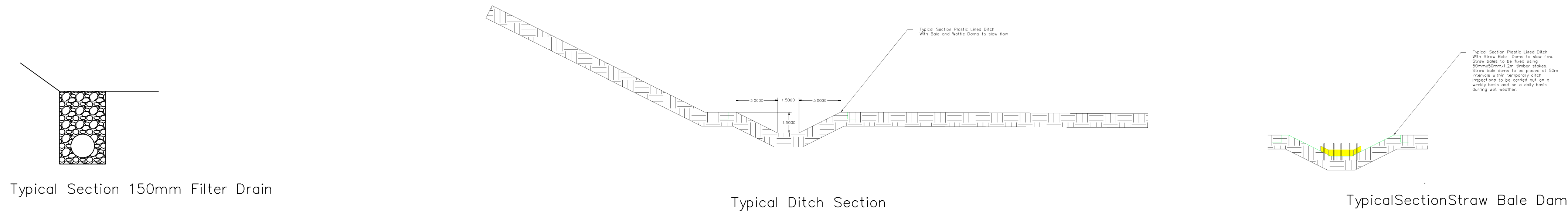
19	Refuelling of plant and vehicles	Operations	Impact: Depletion of natural resources / global warming/ climate change / contamination to watercourses / contamination to land / impact on ecology	2	3	4	4	16	• Pollution prevention measures • Toolbox talks • Spill kits	2	3	4	2	8
20	Spillage	Operations	Impact: Contamination of ground / ground water / surface water	2	2	4	4	16	• Pollution prevention measures • Spill kits • Stop work, contain spill and notify	2	2	4	2	8
21	Use of construction materials	Operations	Impact: Use of natural resources / inefficient use of construction materials / waste disposal	1	2	2	4	8	• Sustainable use of materials • Material management plan • SWMP	1	2	2	3	6
22	Use of COSHH substances	Operations	Impact: Spill or leaks polluting surface water drains, watercourses and ground / production of waste materials including hazardous waste	2	4	2	3	12	• Pollution prevention measures • Implementation of COSHH procedures and registers	2	4	2	2	8
23	Use of plant, equipment, machinery & vehicles	Operations	Impact: Depletion of natural resources / global warming / climate change / nuisance to local stakeholders / disturbance to wildlife / potential pollution to water and ground	2	3	2	4	12	• Maintenance and servicing • Spill kits to be available • Report faulty machinery & equipment • Switch off plant when not in use	2	3	2	3	9
24	Use of site lighting (outside)	Operations	Impact: Depletion of natural resources / disturbance to people in neighbouring properties / disruption to local wildlife by disrupting ecological cycles / complaints from local residents	1	1	2	3	6	• Sensitive lighting plan • Only security and emergency lighting to be permitted,	1	1	2	2	4
25	Soil and vegetation storage	Operations	Impact: Potential mixing of top soil and sub soils / potential loss of habitat and vegetative cover / inability to reinstate appropriately after works are completed	1	1	2	3	6	• Material management plan • Pollution prevention measures • Designated storage areas	1	1	2	2	4

26	Procurement of materials	Procurement	Impact: Depletion of natural resources / air pollution and road congestion from transporting materials / natural resource depletion and associated habitat degradation / potential to procure non-sustainably sourced materials / waste generation from over-ordering / global warming / climate change / waste disposal / potential to source materials from an illegal source / environmental damage caused by extraction and during production	1	1	3	3	9	• Sustainable Procurement Policy in place • Procure locally • Responsible sourcing of materials	1	1	3	2	6
27	Contaminated land management and working in contaminated land	Soil and Groundwater Contamination	Impact: Spread of pollutants causing pollution impact on groundwater & surface water / cross contamination of soil / waste disposal / potential for incorrect waste classification / use of landfill or treatment facilities	4	4	4	4	16	• Stop works, quarantine area/soil and contact HS/contaminated land specialist if contamination is suspected. • Pollution prevention measures • WAC mad waste chrismation testing • Contaminated land GIs • Remediation method statements	4	4	4	3	12
28	Transportation of people & materials	Travel & Transport	Impact: Depletion of natural resources / global warming / climate change / air pollution from higher emissions if one employee per vehicle / nuisance to local stakeholders / dust / pollution of surface water drains	2	3	3	4	12	• Promotion of sustainable travel • Use of local personnel and materials where possible	2	3	3	3	9
29	Disposal of contaminated soil (from contaminated land)	Waste	Impact: Potential for incorrect classification of waste / loss of landfill space / potential for use of disposal sites without the correct environmental permit, exemption or equivalent	4	4	4	4	16	• Stop works, quarantine area/soil and contact HS/contaminated land specialist if contamination is suspected. • Pollution prevention measures • WAC mad waste chrismation testing • Duty of Care	4	4	4	2	8
30	Generation and storage of hazardous waste	Waste	Impact: Potential contamination to ground and water / visual impact / potential to breach waste oil storage limits / operating an aerosol piercing unit without a waste exemption / increased costs of disposal	2	2	3	3	9	• SWMP • Implementation of waste hierarchy • Pollution prevention • Toolbox talks	2	2	3	2	6
31	Generation and storage of inert waste including spoil	Waste	Impact: Potential contamination to surface water / negative visual impact / potential breach of waste storage limits / potential breach of waste treatment legislation / incorrect definition of waste applied / nuisance to local stakeholders	2	1	2	3	6	• SWMP • Implementation of waste hierarchy • Dust management plan • Pollution prevention • Toolbox talks	2	1	2	2	4

32	Generation and storage of non-hazardous waste	Waste	Impact: Potential contamination to surface water / negative visual impact / potential breach of waste storage limits / potential breach of waste treatment legislation / incorrect definition of waste applied / nuisance to local stakeholders	2	1	2	3	6	• SWMP • Implementation of waste hierarchy • Pollution prevention • Toolbox talks	2	1	2	2	4
33	Reusing materials on site	Waste	Impact: Potential for reuse of materials to breach waste legislation / contamination of land from reuse of waste materials	4	1	4	4	16	• Waste characterisation and WAC tests taken • Reuse of material under appropriate permitting regime • Maintain ace of reuse records	4	1	4	3	12
34	Working close to Private Water Supplies (PWS)	Water	Impact: Potential pollution of private drinking water supplies	2	1	4	3	12	• Consultation with local landowners & residents prior to works commencing to determine the presence (or otherwise) of individual PWS • Review and install most appropriate mitigation methodologies prior to work commencing	2	1	4	2	8
35	Working close to a watercourse (river, stream, brook, burn)	Water	Impact: Harm or disturbance to protected species / pollution to watercourse / silting of watercourse / breach of land drainage regulations	2	2	4	4	16	• Completion of ecological surveys prior to works • Issuing of ecology constraints plan. • Toolbox talks/training • Implementation of pollution prevention measures • Ecological supervisor where required • INNS management plan • Buffer and exclusion zones • All require consents to be obtained prior to commencement of works • Monitoring of watercourses	2	2	4	2	8
36	Working close to a pond, lake, loch	Water	Impact: Pollution to surface water / ecological damage / harm or disturbance to protected species	2	2	4	3	12	• Completion of ecological surveys prior to works • Issuing of ecology constraints plan. • Toolbox talks/training • Implementation of pollution prevention measures • Ecological supervisor where required • INNS management plan • Buffer and exclusion zones	2	2	4	2	8
37	Use and disposal of single-use plastics / disposable plastics	Waste	Impact: Depletion of natural resources / global warming and climate change / pollution of our oceans and rivers / harm to aquatic wildlife	1	1	1	4	4	• Encourage reduction in use of single-use / disposal plastics • Implementation of waste hierarchy • Toolbox talks	1	1	1	3	3

38	Waste disposal	Waste	Impact: Potential use of waste contractors without valid waste carriers licences / potential use of disposal sites without correct licences in place / reduction in landfill capacity / nuisance caused to local community through operating waste disposal sites	4	1	4	4	16	• Duty of care checks • SWMP • Implementation of waste hierarchy • Toolbox talks	4	1	4	2	8
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Appendix E. Site Plan



AMENDMENTS				
Rev. Ref.	DETAILS	Date	Made By	Check By

- Temporary Drainage Ditch
- Temporary Filter Drain
- Temporary Piped Connection
- Settlement Lagoon
- Site Access Roads
- Temporary Soil Storage Area

Drawn:
G.C.RE

WALTERS

WALTERS UK LIMITED

HRWALN HOUSE, HRWALN

RHONDDA CYMRU TRAFF

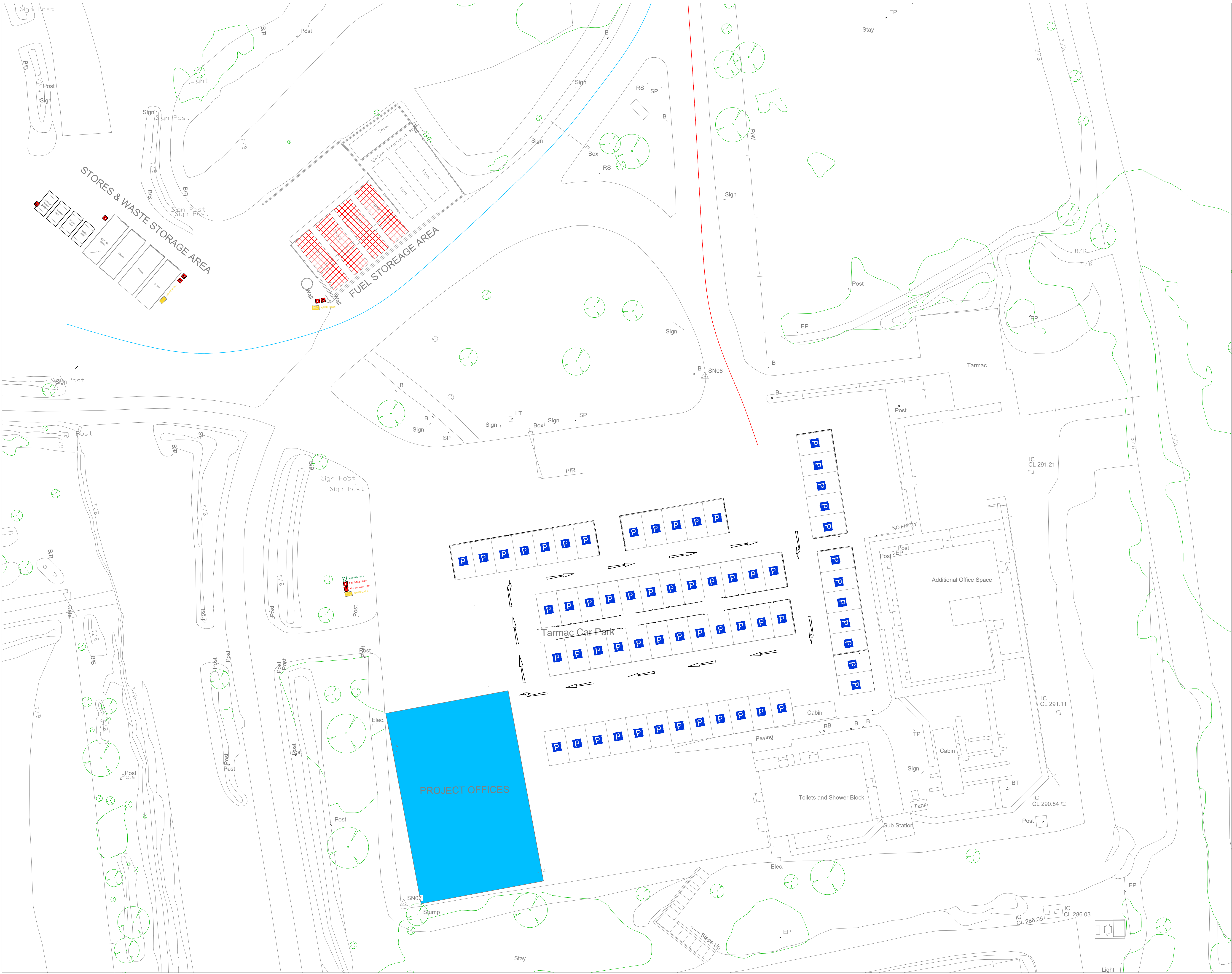
CF44 9JL

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Project:
Global Centre For Rail Excellence

Title:
Temporary Storm Water Drainage Phase 1A

Scale	Drawn A.M.P.	Checked M.G.	Approved R.T.
N.T.S	Date 20.02.23	Date 20.02.23	Date 20.02.23
Original drawing A1	Job No. C1437	Dwg No. C1437/AMP/002	Rev: 1



AMENDMENTS				
Rev. Ref.	DETAILS	Date	Made By	Check By

- PEDESTRIAN ROUTES
- DELIVERIES ROUTES
- WORKFORCE & VISITOR ROUTES
- FIRST AID KIT
- FIRE ASSEMBLY POINT
- FIRE EXTINGUISHERS
- FIRE EVACUATION HORN
- SPILL KIT STATION
- DESIGNATED SMOKING AREA

G.C.RE

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Global Centre For Rail Excellence

Site Offices & Compound Layout

Scale	Drawn	Checked	Approved
N.T.S	A.M.P.	M.G	R.T
Original drawing A1	Date	Date	Date
Job No.	C1437	C1437/AMP/001	Rev.

Appendix F. Site Waste Management Plan

SITE WASTE MANAGEMENT PLAN C1437 GCRE Earthworks Contract

Site Waste Management Plan No C1437/WMP Rev0 Date 25.10.22

Prepared by; Andrew Pope (Site Agent)

Date: 25.10.2022

Reviewed/Approved by: Rob Thomas (Technical Manager)

Date; 26.10.22

Version and Review Control

Revision	Date	Revised by	Approved by	Description
A	25.10.22			Draft
B	26.10.22	RT	RT	Final Copy

Distribution

GCRE Project Team

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SITE WASTE MANAGEMENT PLAN

- 1.0 Introduction**
- 2.0 Site Waste Management Plan (Pre Construction)**
- 3.0 Declaration**

PART B

SITE WASTE MANAGEMENT PLAN (CONSTRUCTION PHASE) (FOR A PROJECT OF £500,000 OR LESS)

- 4.0 Introduction**
- 5.0 Site Waste Management Plan (Construction Phase)**
- 6.0 Declaration**

PART C

SITE WASTE MANAGEMENT PLAN (CONSTRUCTION PHASE) (FOR A PROJECT WORTH MORE THAN £500,000)

- 7.0 Introduction**
- 8.0 Site Waste Management Plan (Construction Phase)**
- 9.0 Declaration**

Schedule of Additional Duties

Appendix

PART A

SITE WASTE MANAGEMENT PLAN

1.0 INTRODUCTION

Any person who intends to carry out a construction/demolition project on one site with an estimated value greater than £300,000 must produce a site waste management plan (pre construction) before work begins.

The value of the project is the total value of materials and labour for the project.

If such a project is started without a site waste management plan, the person in charge of the project and the principal contractor are both guilty of an offence.

In the case of a project that does not use a contractor, a duty placed on the principal contractor must be carried out by the person in charge of the project, and that person is guilty of an offence if he fails to do so.

Part A of this Plan (Pre Construction) is to be completed by the Project Manager or his nominated representative.

Part B and Part C of this Plan (Construction Phase), whichever is applicable, is to be completed by the Principal Contractor.

The principal contractor must ensure that the site waste management plan is kept;-

- (a) at the site office, or
- (b) if there is no site office, at the site.

He must ensure that every contractor knows where it is kept, and must make it available to any contractor carrying out work described in this plan.

The principal contractor must keep the site waste management plan for two years after the completion of the project at his principal place of business or at the site of the project.

Any person who is under an obligation to produce or update this site waste management plan commits an offence if he fails to comply with the obligations stated above and the obligations stated in the Schedule to this Site Waste Management Plan.

2.0 SITE WASTE MANAGEMENT PLAN (PRE CONSTRUCTION)

Contract Name: Global Centre For Rail Excellence

Contract Number: C1437

Location of the Site: Nant Helen Former Opencast Site Onllwyn, Neath Port Talbot

Principal Contractor: Walters Plant Ltd

Client: GCRE

Project Manager: Andrew Pope

Person Drafting the Plan: Andrew Pope

Designation of the Person Drafting the Plan: Project Manager

Contract Duration: TBC

Contract Start Date: TBC

Contract Finish Date: TBC

Contract Type: NEC 3 Option C

Estimated Value of the Project £60 Million

Description of the Works

Development of a Global Centre of Rail Excellence, comprising of two test tracks of loop configuration including an electrified high speed rolling stock test track of 6.9km in length and an electrified low speed infrastructure test track of 4.5km, with overhead line equipment (OLE) and dual platform station test environment; together with operations and control offices (including staff accommodation and welfare), shunter cabins (2 no.), research and development, education and training, rolling stock storage sidings and maintenance/ cleaning/ decommissioning facilities; and associated, drainage, internal vehicular accesses, branch line rail connection, staff and visitor car parking, lighting, electrical infrastructure (including substations and lineside shore supplies and transformers), fencing (perimeter security, acoustic and stock proof), land reformation and hard and soft landscaping, together with demolition of existing buildings/structures.

Nature of the Project

Phase 1 of the GCRE Development is split into two stages and comprises of Stage 1, the detailed design of the Earthworks and Stage 2 the construction of the Earthworks required to develop the two testing loops at the site of the former Nant Helen Opencast Coal site along with ancillary earthworks at the Onllwyn Washery for the installation of Rail Sidings and preparation of ground ready for the construction of buildings and other infrastructure. 1.5.2 The earthworks provide the foundation for the later infrastructure. The works comprise

approximately 3 Million m3 of earth movement including vegetation stripping, soil stripping, overburden excavation and placement to a design specification, associated selection of materials, overburden removal and placement in landscape balancing areas, soil spreading and final rehabilitation of landscaped profiles. The works will also require the provision of temporary drainage during the construction phase together with the installation of permanent drainage during and on completion of construction.

Site Rules

Site Rules to be communicated to contractors for activities on the site that promote compliance with the Site Waste Management Plan:-

General Rules

- Waste must not be buried, burned or dumped.
- Waste must be separated into the correct categories and disposed of in the proper manner.
- Waste should be stored in suitable containers, when appropriate, to protect it from escaping (e.g. by wind blowing). The container must be marked with a sign which indicates its particular contents.
- Waste should be stored such that it is safe against corrosion or wear of waste containers, accidental spilling or leaking, accident or weather breaking contained waste open and allowing it to escape, waste blowing away or falling while stored or transported, scavenging of waste by vandals, thieves, animals etc.
- Different categories of waste should be segregated to prevent mixing of incompatible wastes. Site employees should be aware of the location of tanks, receptacles etc designated for the storage of the various wastes. Waste tanks should be on concrete bases and bunded to prevent the egress of waste oil etc into the ground.
- All containers left outside for collection should be secured or sealed to resist the effects of the weather.
- Ensure that waste products are deposited in the designated receptacles and that the receptacles are not overloaded.
- Do not burn waste on site or in skips.

Site Specific Rules

No specific site rules at present.

Site Security

Details of site security measures required to be in place to prevent the illegal disposal of waste:-

In the daytime, security will be provided by a gateman or site staff who will control access to the site, with all visitors having to report to the site office and sign in. Everyone leaving site will

have to report to the office and sign out. This will include a check as to whether the vehicle needs to be cleaned before using the public highway. Outside working hours, the site access will be locked and site security will be provided based in the offices and compound area.

CCTV monitoring system will be established in the compound, including areas of waste storage pending disposal. If necessary, CCTV will also be installed elsewhere on site.

Site security out of hours

- On at 18:00 (13:00 on a Saturday)
- Off at 07:00
- 24 hours on a Sunday

Estimated Quantities of Waste

Description of each Waste Type	Estimated Quantity (Tonnes)	Waste Management Action			
		Re-using (Tonnes)	Re-cycling (Tonnes)	Recovery (Tonnes)	Disposal (Tonnes)
Timber	2,000	2,000			
Scrap Metal	500		500		
Concrete	3,000	3,000			
General Waste	350		200		150

Waste Management Action

TBC.

3.0 DECLARATION

The person in charge of the project and the principal contractor will take all reasonable steps to ensure that:-

- (a) all waste from the site is dealt with in accordance with the waste duty of care in Section 34 of the Environmental Protection Act 1990 and the Environmental Protection (Duty of Care) Regulations 1991 and
- (b) materials will be handled efficiently and waste managed appropriately.

Signature of Project Manager.....

Date.....

Signature of Principal Contractor.....

Date.....

PART B

SITE WASTE MANAGEMENT PLAN (CONSTRUCTION PHASE) (FOR A PROJECT £500,000 OR LESS)

4.0 INTRODUCTION

If the project has an estimated value of £500,000 or less, whenever waste is removed from the site, the principal contractor must complete, sign and date Part B of this Plan.

5.0 SITE WASTE MANAGEMENT PLAN (CONSTRUCTION PHASE)**Waste Removal Summary**

Date of Waste Removal	Waste Management Contractor	Types of Waste Removed	Destination of Waste	Principal Contractor Signature and Date

Each waste transfer note and consignment note relating to the above waste removal is to be appended to the Plan.

Waste Management Action

TBC

Plan and Actual Performance

The principal contractor is to sign and date the above table for each waste, within one month of the waste removal being completed, ensuring that the above sections on 'waste management action' and 'plan and actual performance' have been completed as necessary.

6.0 DECLARATION

I, the principal contractor, can confirm the following:-

- (a) that the plan has been monitored on a regular basis to ensure that work is progressing according to the plan and that the plan was updated by the timely completion of the table in Section 5.0 above.
- (b) that the lessons learnt from any differences in circumstances between the first draft of the plan and actual performance have been described, by the completion of the 'plan and actual performance,' in Section 5.0 above.

Signature of Principal Contractor.....

Date.....

PART C

SITE WASTE MANAGEMENT PLAN (CONSTRUCTION PHASE) (FOR A PROJECT WORTH MORE THAN £500,000)

7.0 INTRODUCTION

If the project has an estimated value greater than £500,000, whenever waste is removed from the site, the principal contractor must complete, sign and date Part C of this plan.

8.0 SITE WASTE MANAGEMENT PLAN (CONSTRUCTION PHASE)

Waste Removal Summary

Date of Waste Removal	Waste Management Contractor	Reference number of waste transfer note or consignment note.	Principal Contractor Signature and Date

Each waste transfer note and consignment note referenced above is to be appended to the plan.

Waste Management Action

TBC

Plan and Actual Performance

Types and Quantities of Waste

The following table is to be repeated for each type of waste, with all quantities being recorded in kilograms (kg):-

Waste Type:-								
Ref. No of note	Re-used On-site	Re-used off-site	Recycled for use on-site	Recycled for use off-site	Sent to re-cycling facility	Sent to waste licence exempt site	Sent to landfill site	Totals
Totals								

Waste Type:-								
Ref. No of note	Re-used on-site	Re-used off-site	Recycled for use on-site	Recycled for use off-site	Sent to re-cycling facility	Sent to waste licence exempt site	Sent to landfill site	Totals
Totals								

Waste Type:-								
Ref. No of note	Re-used on-site	Re-used off-site	Recycled for use on-site	Recycled for use off-site	Sent to re-cycling facility	Sent to waste licence exempt site	Sent to landfill site	Totals
Totals								

The Plan must be reviewed to ensure that it reflects the progress of the project and the above quantities of waste entered for each type of waste, as often as necessary, and in any event not less than every six months.

If necessary producing a further plan making changes to reflect the progress of the project.

Summary of Actual Quantities of Waste

Summary of actual quantities of waste for comparison to the table of 'estimated quantities of waste' contained in Section 2.0:-

Description of each Waste Type	Actual Quantity (kg)	Waste Management Action			
		Re-using (kg)	Re-cycling (kg)	Recovery (kg)	Disposal (kg)

Comparison of Estimated and Actual Quantities

Principal contractor to sign and date the above waste removal summary table for each waste, within one month of the waste removal being completed, ensuring that the above sections on waste management action and plan and actual performance have been completed as necessary.

Estimate of the Cost Savings

The estimate of the cost savings that have been achieved by completing and implementing this Site Waste Management Plan is stated as follows:-

9.0 DECLARATION

I, the principal contractor, can confirm the following:-

- (a) that the plan has been monitored on a regular basis to ensure that work is progressing according to the plan and that the plan was updated by the timely completion of the table in Section 5.0 above.
- (b) that the lessons learnt from any differences in circumstances between the first draft of the plan and actual performance have been described, by the completion of the plan and actual performance in Section 8.0 above.

Signature of Principal Contractor.....

Date.....

SCHEDULE

Additional Duties

Any person who is under an obligation to produce or update a Site Waste Management Plan commits an offence if he fails to comply with the obligations contained in this schedule.

1. He must plan, design, manage and monitor the construction phase in a way which ensure that, so far as is reasonably practicable, it is carried out without consigning as waste any materials that could otherwise be re-used, recycled or recovered on-site or off-site.
2. He must draw up and communicate to contractors 'site rules' for activities on the site that promote compliance with the Site Waste Management Rules.
3. He must so far as is reasonably practicable, ensure co-ordination of the work, and co-operation among contractors at work during the construction phase.
4. He must give reasonable directions to any contractor so far as is reasonably practicable to enable the principal contractor to comply.
5. He must receive and monitor waste carrier registration details and waste transfer notes to ensure that waste removed from site is transferred to the prescribed destination and is managed in accordance with the Site Waste Management Plan
6. He must ensure that a copy of the Site Waste Management Plan is displayed in a readable condition in a position where it can be read by any worker carrying out the construction work.
7. He must ensure so far as is reasonably practicable that every worker carrying out the construction is provided with:-
 - (a) suitable site induction; and
 - (b) any further information and training which he needs for the particular work to be carried out within the terms of the Site Waste Management Plan.
8. He must review, revise and refine the Site Waste Management Plan as necessary.
9. He must in preparing, reviewing, revising and refining such a plan ensure that any changes in respective roles and responsibilities are clearly communicated to those affected.
10. He must make and maintain arrangements which enable him and the workers engaged, in the construction work to co-operate effectively in prompting and developing measures to ensure that any waste arising on site is managed within the terms of the Site Waste Management Plan and in checking the effectiveness of such measures.

11. He must take reasonable steps to ensure that sufficient site security measures are in place to prevent the illegal disposal of waste produced elsewhere.

APPENDIX

Appendix G. Construction Method Statement

GCRE: Global Centre for Rail Excellence

Overall Construction Method Statement

Global Centre for Rail Excellence (GCRE)

01 December 2022

2022/December/01

Notice

This document and its contents have been prepared and are intended solely as information and use in relation to the handling and movement of materials within the Global Centre for Rail Excellence site.

Walters UK assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has [XX]21 pages including the cover.

Document history

Document title: Overall Construction Method Statement

Document reference: 2022/December/01

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	Draft For Comment	RT	□	□	□	

Client signoff

Client	Global Centre for Rail Excellence
Project	Global Centre for Rail Excellence (GCRE)
Job number	C1437
Client signature/date	

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Executive Summary

The present document represents an overall Construction Method Statement to inform the outline methodology to construct the complementary earthworks to facilitate the Global Centre for Rail Excellence Project.

The overall construction method statement has been developed by the pre-construction team within Walters UK, where methodologies, earthwork quantities, outputs, safety and environmental considerations have been discussed and agreed. These discussions and agreements have informed this overall method statement and programme.

This document will be the key document, from which individual task method statement and the contract programme will be developed.

1. Introduction

In July 2020 a Full Planning Permission has been approved for the Nant Helen Complementary Restoration Earthworks to create 2No looped landform platforms within the Global Centre for Rail Excellence (GCRE), located at the Nant Helen surface mine and Onllwyn coal washery at the head of the Dulais and Tawe valleys. The 2No looped platforms will be constructed from existing material within the site by the creation of a series of cuttings and embankments with associated infrastructure drainage and landscaping.

1.1. Purpose and Scope

The purpose of this Overall Method Statement is to outline:

- How the works will be executed
- The construction of the works are achievable
- The construction of the works are achievable within the project timescales
- The construction of the works can be undertaken within current Health and Safety Regulations
- The construction of the works can be undertaken within current Environmental Regulations

This document will be used as the design develops as the basis for individual task based Method Statements and Risk Assessments.

2. Background to the scheme

2.1. Historic Site use

The Nant Helen site consists of both historic and recently recent restored opencast mine workings.

2.2. Ground Investigation Works to Date

Historic and more recent ground investigation works have been undertaken over the site and have been used to inform the design. The more recent ground investigation works include;

Ove Arup & Partners Ltd have undertaken a Geotechnical and Geoenvironmental Desk Study December 2019.

Quantum Geotech have undertaken Ground Investigation works and included their findings within their Factual Report February 2022.

Ove Arup & Partners Ltd have undertaken a Ground Investigative Report dated October 2022

2.3. Scheme Proposals

Ove Arup & Partners Ltd have under taken an outline design for the scheme which had been developed for the purposes of achieving planning permissions

The GCRE Project requires the construction of 2No looped platforms, and to achieve the platforms, major earthworks are required consisting of the following:

- Excavation of Cuttings to 16m deep
- Construction of Embankments to 42m high
- Permanent and Temporary drainage systems
- Stripping of existing Topsoils and Subsoils
- Placing of existing Topsoils and Subsoils in accordance with Landscape proposals
- Provision of a Landscaping Scheme

Material to construct the embankments will be won from the cuttings, and during the detailed design period, the design has been developed to minimise waste and develop a cut / fill balance to prevent import and export of materials.

Throughout the excavation of the earthwork cuttings, there will be a proportion of unacceptable material due to material size and moisture content, and this material has been designed to be incorporated within the landscape areas.

Recovered topsoils and subsoils from the site will be temporarily stored and utilised to promote the establishment of the Landscaping Scheme.

3. Scheme Requirements

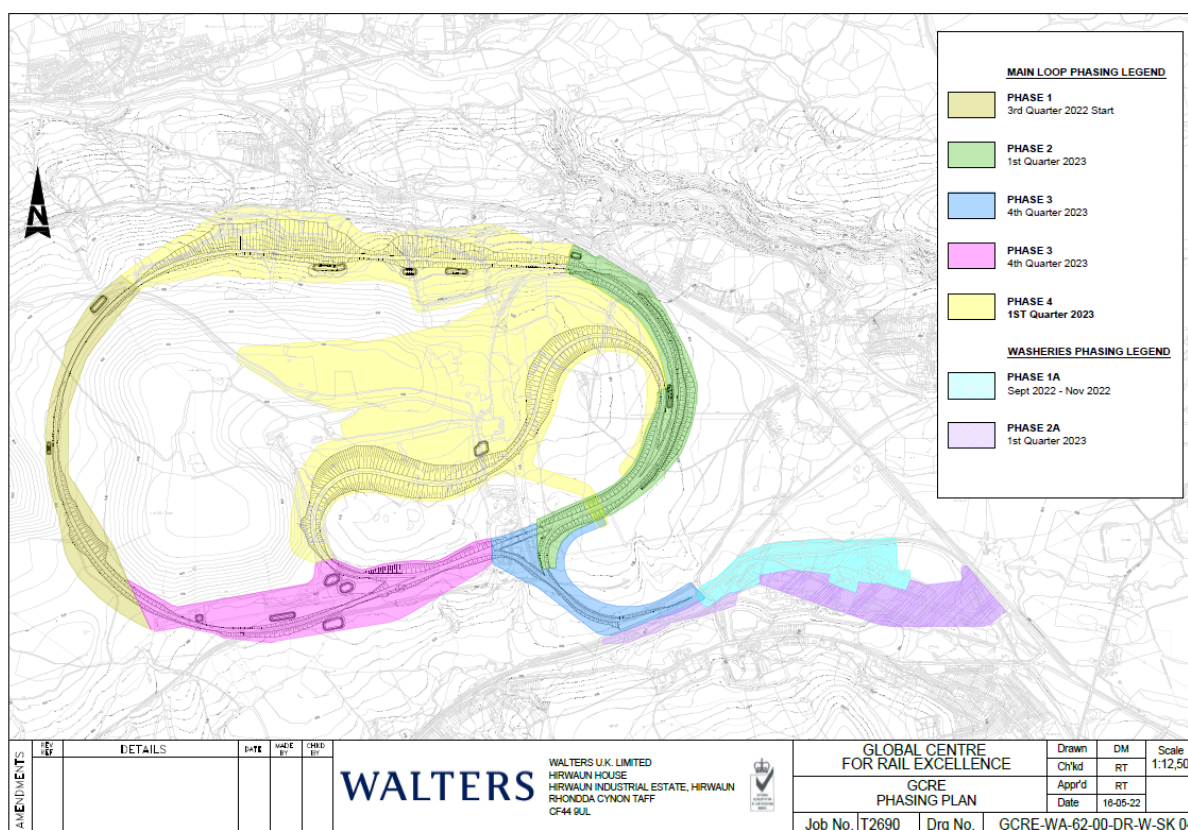
3.1. Earthwork Quantities

The proposed 2No earthwork loops have been 3D modelled using LSS software, and to produce earthwork quantities, the model has been overlayed with the most recent drone topographical survey. These earthwork quantities have been further broken down into:

- Topsoils and Subsoils, informed by the depths recorded within the recent ground investigation
- Volumes of Cut, measured for each cutting
- Volumes of Fill, measured for each embankment
- Volumes of expected natural rock excavation, informed by the recent ground investigation

The summary of the earthwork quantities is found within Appendix A

The earthworks will be undertaken in accordance with the submitted phasing plan as shown below:



The earthworks quantities have informed the earthworks strategy, which has been developed to carry out the excavation, transportation and placement of the earthworks materials in the most efficient manner to reduce the project programme, and the generation of noise and carbon.

The earthworks strategy is found within Appendix B

The earthworks operation will follow the legal requirements and recommendations of:

- DoW COP (Definition of Waste: Development Industry Code of Practice)
- CL:AIRE (Contaminated Land: Applications in Real Environments) Code of Practice, March 2011.
- Revised Waste Framework Directive 2008/98/EC, Detailed geotechnical design

A Material Management Plan (MMP) for the GCRE Project will be raised and registered with National Resources Wales.

3.2. Embankments

To achieve the required alignments, earthwork embankments will be constructed from the opencast spoil and excavated rock to the final designed profiles.

Earthwork trials have been undertaken using the opencast spoil to determine layer thickness and compaction requirements, and these results have been used within the design to inform the Earthworks Ground Design Report and Engineering Specification.

From the trials it was determined the optimum results showed the opencast spoil to be placed in 1000 mm layers using CAT D9 machinery and compacted using a CAT 72 roller with 8no passes. The results of this trial has determined the requirements within the Earthworks Specification.

Opencast spoil material will be placed within the embankments in accordance with the Earthworks Specification, with Quality Assurance and Quality Control maintained using WUK self-certification Inspection and Test plans (ITPs) in accordance with WUK ISO 14001 Accreditation. EV2 plate load tests will be undertaken alongside the embankment filling operation in accordance with the Earthworks Specification to ensure the required compaction has been achieved.

Earthwork filling operations will be undertaken in appropriate weather conditions and suspended in wet conditions. To prevent surface water run off affecting the integrity of the embankments permanent and temporary drainage will be installed prior to the construction of the embankments.

3.3. Cuttings

To achieve the required alignments, earthwork cuttings will be excavated through both opencast spoil and natural ground. The natural ground encountered will be 'rock walls' left in place as part of the historic mine workings and natural ground at the extremities of the site not worked as part of the open cast workings.

Sections of the earthwork cuttings will be through areas of natural undisturbed mudstones. These mudstones will be processed by crushing to reduce the material size to acceptable limits as the outlined within the Earthworks Specification. Oversize mudstones encountered within the previously backfilled material will again be processed to reduce the size into acceptable limits.

3.4. Material Handling

Opencast arisings within the earthworks cuttings will be excavated to finished profiles using 70ton excavators and transported to the deposition areas using 45ton dump trucks. The material will be tipped and levelled using CAT D9 dozers before being compacted using the CAT 72 rollers.

These earthwork operations will be carried out within favourable weather conditions, and adhere to the requirements of the

- GCRE Noise Management Plan
- GCRE Dust Management Plan

During unfavourable weather conditions works will be suspended to prevent the earthworks materials becoming unacceptable due to excessive moisture content.

Materials will be moved along defined haul roads suitably constructed to accommodate the required loads and with suitable drainage to capture any runoff laden with sediments, and direct the waters to settlement lagoons. A drawing of the proposed haul routes is included within Appendix C.

3.5. Contamination

The findings from the ARUP Desktop Study and Ground Investigation Report have not revealed any contamination to be present on site, and further Ground Investigation works are programmed to verify these findings.

From the findings of the further planned Ground Investigation a Materials management Plan (MMP) will be registered with National Resources Wales (NRW) in line with the requirements of

- DoW COP (Definition of Waste: Development Industry Code of Practice)
- CL:AIRE (Contaminated Land: Applications in Real Environments) Code of Practice, March 2011.

As part of the site procedures a remediation method statement will be put in place should any suspect contamination be exposed during the excavation process. As part of the risk assessment process all supervisors and operatives will be made aware of the possibility of encountering contamination, and should any suspect material be encountered works will cease in that area and the area cordoned off, and appropriate procedures adopted.

3.6. Topsoils and Subsoils

Existing Topsoils and Subsoils will be recovered from the site and reused within the proposed Landscape plan to sustain growth of the new landscape plants.

Following site clearance of vegetation, topsoils and any subsoils will be stripped using a Low Ground Pressure (LPG) D6 dozer and loaded into Articulated Dump truck for transportation to temporary stockpile locations. The topsoil stripping operations will be carefully controlled to ensure the depth of the strip does not encroach into the underlying opencast arisings. Topsoil stripping operations will be carried out in favourable conditions and suspended during wet conditions to prevent the ingress of water in the soils which can assist in the structural damage of the soils.

Temporary Topsoil stockpiles will be located at strategic locations throughout the scheme and will be sealed, again to prevent the ingress of water, with soil storage limited to 4m in height to preserve the structure of the soils. Temporary stockpile locations will be located away from any known watercourses, and if required, protected by temporary drainage in the form of cut off ditches. Stockpiles will be located away from the working areas ensuring they do not need to be moved twice, and sealed to prevent water ingress. The locations of the proposed temporary topsoil locations re shown on the drawing enclosed within Appendix C

Where subsoils are present, they will be stripped as a separate exercise but in a similar fashion to the topsoil, and again stored in temporary stockpiles separate from the topsoil to a maximum height of 4m.

Soil placement will take place after earthworks profiles have been trimmed to final profiles using a LPG D6 dozer and placed to required thicknesses as the landscape proposals. This operation will again be undertaken in suitable dry conditions to prevent the ingress of water and compaction of the soils.

Topsoil will be prepared in line with the landscaping specification prior to the grassing and planting in accordance with the landscape drawing GCRE001-AWJV-XX-XX-DR-YL-00001.

4. Site Management

4.1. Health and Safety Roles and Responsibilities

All employees will be responsible for the implementation of the relevant requirements of the Construction Phase Health and Safety Plan and will be familiar with and demonstrate commitment to the implementation of these policies. This will include;

- Take care of the health and safety of themselves and others who may be affected by their acts or emissions
- Co-operate with Walters Employees and Sub-Contractors in fulfilling their statutory obligations
- Co-operate with Walters Employees and Sub-Contractors in its pursuit of continuous improvements of its safety, health and environmental performance
- Implement the relevant arrangements described within the CPP
- Always behave responsibly and work safely, without risk to safety, health or the environment
- Constantly monitor their workplace for potential hazards and risks and alert their immediate line manager if any are observed
- Be responsible for making themselves familiar with the requirements of the staff training matrix and ensure any training requirement is brought to the attention of their line manager.

4.2. Inspections and Audits

A programme of Health, Safety and Environmental audits will be developed for the GCRE project to ensure compliance with legal, company procedures and site-specific documentation. These will consist of internal and external audits, site inspections and monitoring of works activities as per the duties of the management chart.

The Project Health and Safety Manager will brief all project personnel on trends that arise from such reports with clear action plans to prevent reoccurrence.

4.3. Regular Liaison Between Parties on Site

Good co-operation and co-ordination of work is essential if risks are to be identified early on and properly controlled. Liaison between all parties (Designers, Principal Contractors, Contractors and the Client) will be maintained by utilising the following means:

- On site meetings
- Subcontract documentation
- Notice boards
- Committee meetings
- Toolbox talks
- Pre-commencement meetings
- Inductions
- Contractors' seminars

All Sub-Contractors will be provided with a copy of this Construction Phase Health and Safety Plan and will be required to make any necessary allowances to enable full compliance with the content of this plan.

This Construction Phase Health and Safety Plan and all associated documents will be always available on site for review by interested parties.

5. Site Arrangements

5.1. Site Offices and Welfare

The existing Celtic Energy Offices will be utilised as the site offices for the construction of the works. Additional offices will be erected to provide integrated offices for both GCRE and Walters UK staff, mess rooms and washing and toilet facilities, and will be sufficient in size to meet the current COVID legislation.

Again the existing car parking facilities used by Celtic Energy will be used by Walters UK and GCRE in the construction of the works.

5.2. Site Compound

An area adjacent the car park will be used as the site compound and storage facilities.

Storage areas will be fenced with Heras fence with access being made along the access road from the A4221 and along the existing tarmac road. A Construction traffic and Management Plan will be developed to detail these arrangements.

Dedicated fenced pedestrian footpaths will be used for pedestrians to gain access from the office location to the works

Dedicated fuelling areas will be again located adjacent this area in the vicinity of the existing Celtic Energy refuelling area.

5.3. Site Security

The site is currently fenced by the Celtic Energy existing fencing. Heras fencing will be used to locally fence materials and refuelling areas.

Out of hours manned security guards will guard the site.

6. Construction Methodology

6.1. Ground Investigation

The Ground Investigation (GI) Works will be undertaken in advance of the main construction works in the early part of 2023.

These works will inform the design and confirm material properties informing this Method Statement

6.2. Mine Risk Works

Within areas of the site historic mine workings exist and lie in the area between the footprint of the old open cast workings and the red line site boundary.

The GI works will determine and confirm the extent of the proposed mine risk measures, and will consist of a series of schemes including

- drilling and grouting
- excavation and removal of mine workings
- Geotextile capping methods laid beneath the proposed earthwork embankments.

Until completion and examination of the GI these designs cannot be progressed.

6.3. Site Clearance

In advance of the earthworks commencing, the site requires significant site clearance works of coniferous woodland, ancient woodland, hedgerows and fence lines.

These clearance works will be incorporated into the construction programme taking into consideration the requirements of the Ecological Protection Plan (EPP) and the Construction Environmental Management Plan (CEMP)

Ecological mitigation will be carried out in accordance with the EPP prior to site clearance and in line with the appropriate timescales

Cleared coniferous woodland will be harvested and used as a sustainable product. Other cleared trees and hedgerows will be transported to the proposed landscape are within the development where the material will be chipped and used as a product within the soils and landscaping.

6.4. Drainage

The scheme requires the installation of extensive drainage works including

- Pre-earthworks drainage
- Post-earthworks drainage
- Temporary Drainage

Ordinary Watercourse Consents will be obtained from NPT and Powys before any works within the vicinity of the watercourses are undertaken.

6.4.1. Pre-earthworks Drainage

To protect the earthwork cuttings and embankments from the impacts of surface water runoff and reduce the effects of dirty water runoff, the installation of pre-earthworks drainage is required. This includes the installation of cut off ditches to the top of cutting and cut off ditches at the base of embankments.

The pre-earthworks drainage will be the permanently designed solution and will include the construction of the proposed attenuation ponds which will be used as settlement lagoons.

6.4.2. Post-earthworks Drainage

On completion of the construction of embankments and excavation of cuttings, the permanent drainage installation can commence. These will be installed from the outfalls, already constructed as part of the pre-earthworks drainage, working their way upstream. This will ensure an outlet is always available and will not require any overpumping measures.

On completion of the installation and backfill of drainage runs, the drains will be tested and signoff in accordance with Walters Quality Control procedures. Connection points will be installed as required to accommodate the track drainage when installed by others as part of the permanent way installation works.

6.4.3. Temporary Drainage

There will be locations where temporary drainage measures will be required to control and prevent dirty water run off entering local watercourses.

Here temporary lagoons will be constructed on line of the proposed permanent system with a series of baffles and straw bales to allow sediments to be separated from the surface waters before they enter the watercourses. A drawing showing the proposed arrangements is enclosed within appendix D, and will be modified

6.5. Earthworks

The earthworks operation will be split into distinct zones as described within section 3.1 to obtain maximum efficiencies.

Topsoils and subsoils will be stripped and stockpiled in accordance with the CEMP for reuse in the planting schemes.

Earthwork materials will be excavated by 70ton excavator, hauled along preconstructed haul roads by 45ton dump truck, and deposited into fill or landscape by areas where it will be levelled and compacted by D9 blades and CAT 761 rollers.

Haul roads across the site will be constructed prior to earthworks commencing and in accordance with any ecological mitigation requirements as outlined within the EPP document.

Line and level will be controlled by GPS equipment mounted on the primary excavators and D9 blades.

Fill to the embankments will be engineered as the requirements of the Earthworks Specification and tested by plate load tests, again in line with the earthworks specification, and WUK Quality Control processes

A 500mm surcharge will be placed on the formation levels as a protection layer which will be removed by the others as part of the permanent way installation.

Topsoils and subsoils will be spread to thicknesses as set out by the Landscape drawings and specification.

6.6. Cycle Track Realignment

As part of the works a section of the Sustrans cycle track will require realignment to move the cycle track outside of the proposed Northern Embankment Footprint.

Powys Local Authority require the proposed alignment to support the discharge of a Planning Condition, and on receipt of this approval, it is proposed to carry out the works early on within the project programme.

6.7. Landscaping

Subsoils and topsoils will be prepared in accordance with the landscape drawings and specification. Grassing and planting works will be carried out in accordance with the correct seasons and weather conditions.

7. Utilities

7.1. Western Power Distribution

Currently crossing the site are both 33 and 11kv overhead services under the ownership of Western Power Distribution (WPD), these will require diverting as part of the permanent works.

Discussions with WPD are ongoing to determine the preferred route for the diversion works. Dependant on when these diversion works are programmed will determine whether the earthworks will be carried out before the cable diversions have taken place with protection measures in place, or after the diversions

Crossing the site are 132kv cables on pylons under the ownership of WPD. The construction of the earthwork cuttings will impact on 2No pylons on the site and retaining structures will be required to prevent the earthwork cuttings encroaching on the pylon easements. The form and design of these structure is currently ongoing with WPD.

7.2. Dwr Cymru Welsh Water

There is a an existing 20inch potable water main to the North of the site under the ownership of Dwr Cymru Welsh Water (DCWW), which lies outside the footprint of the earthworks and no proposed diversion works are planned. Engineering calculations are required by DCWW to demonstrate the earthworks to the Northern embankment do not impact on their asset.

7.3. British Telecom

There is a telephone line under the ownership of British Telecom (BT), which currently supplies the phone lines to the existing Celtic Offices. This will require diverting to undertake the construction of the proposed earthworks.

[INSERT AUTHOR NAME]

Walters UK Limited

Hirwaun House

Hirwaun Industrial Estate

Hirwaun

Aberdare

CF33 9UL

[INSERT CONTACT INFO]

Appendix A – Earthwork Quantities

GLOBAL CENTRE FOR RAIL EXCELLENCE

Walters Initial Earthworks volumes Review

GCRE-WAL-06-00-SH-X-00-0001 TASK 003 13/07/22

VOLUMES BASED ON ATKINS MODEL ARUP POND MODELS				Excavation															
Earthworks Zone Area	From	To	Description	Total Volume of Surface Strip		Existing HARD Breakout	Bulk Exc to Formation (Note)	Of which General Cut	(Note)	Total of Which is Rock (+)	Of Which is ACCEPTABLE (+)	Of Which is UNACCEPTABLE (+)	Total 2nd stage box Exc (Note)	Of which is Box Cut in Cutting (note)	Of which 1st stage fill (Protection) to be cut (+)	Bulk Exc Excluding 1st stage box fill (Note)	Bulk Exc Including 1st stage box fill (+)	2nd Stage Additional Excavation in Box (+)	Total Exc.
				Total Volume of Topsoil	Total U/S Volume	Total Hard strip volume	Volume	Volume	Volume	Volume	Volume	Volume	Volume	Volume	Volume	Volume	Volume	Volume	Volume
				m³	m³	m³	m³	m³	m³	m³	m³	m³	m³	m³	m³	m³	m³	m³	m³
Ph 1			PHASE 1	10,926	0	0	426,045	261,308	164,737	235,177	26,131		8,472	7,538	934	426,045	426,979	953	427,932
Ph 2			PHASE 2	44,380	6,438	710	382,628	319,049	63,579	287,144	31,905		20,793	17,527	3,266	382,628	385,894	2,339	388,233
Ph 3			PHASE 3	39,029	1,280	451	364,257	352,198	12,059	316,978	35,220		21,045	11,159	9,886	364,257	374,143	2,368	376,510
Ph 4			PHASE 4	80,106	80,344	945	1,681,805	1,569,347	112,458	1,412,412	156,935		19,616	10,587	9,029	1,681,805	1,690,834	2,207	1,693,041
Ph W			PHASE WASHERY	4,241	3,938	6,305	188,489	188,489	0	169,640	18,849	0	0	0	0	188,489	188,489	0	188,489
TOTAL				178,682	92,000	8,411	3,043,224	2,690,390	352,834	2,421,351	269,039		69,926	46,811	23,115	3,043,224	3,066,339	7,867	3,074,205

				Soil & US Strip			Hard Strip		Total Cut Excluding 5A											
1001			PHASE 1 (mostly Cut)	10,594	0	0	415,846	251,109	164,737	225,999	25,111	8,472	7,538	934	415,846	416,780	953	417,733		
1301			POND - NORTH PHASE 1	0	0	0	7,838	7,838	0	7,054	784	0	0	0	7,838	7,838	0	7,838		
1302			POND - CENTRE PHASE 1	0	0	0	2,081	2,081	0	1,873	208	0	0	0	2,081	2,081	0	2,081		
1303			POND - SOUTH PHASE 1	332	0	0	279	279	0	251	28	0	0	0	279	279	0	279		
2001			PHASE 2 - CUT	26,390	5,603	603	380,031	316,452	63,579	284,806	31,645	20,399	17,133	3,266	380,031	383,297	2,339	385,636		
2101			PHASE 2 BUND (FILL)	17,275	56	107	62	62	0	55	6	394	394	0	62	62	0	62		
2301			POND - NORTH PHASE 2	0	779	0	55	55	0	50	6	0	0	0	55	55	0	55		
2302			POND - CENTRE PHASE 2	715	0	0	2,481	2,481	0	2,233	248	0	0	0	2,481	2,481	0	2,481		
3001			PHASE 3 - CUT	18,453	17	34	325,842	313,783	12,059	282,405	31,378	11,633	11,115	518	325,842	326,360	1,309	327,668		
3101			PHASE 3 - FILL	7,124	0	335	6	6	0	6	1	2,924	3	2,921	6	2,927	329	3,256		
3102			PHASE 3 - FILL - WASHERY ACCESS	9,166	1,263	0	323	323	0	291	32	6,488	41	6,447	323	6,770	730	7,500		
3301			POND - CENTRE SOUTH PHASE 3	1,302	0	82	9,189	9,189	0	8,270	919	0	0	0	9,189	9,189	0	9,189		
3302			POND - WESTERN SIDE PHASE 3	925	0	0	3,193	3,193	0	2,874	319	0	0	0	3,193	3,193	0	3,193		
3303			POND - NORTH CENTRE OF PHASE 3	2,060	0	0	25,703	25,703	0	23,133	2,570	0	0	0	25,703	25,703	0	25,703		
4001			PHASE 4 - INNER LOOP WEST CUT	38,590	1,887	124	1,319,309	1,259,369	59,940	1,133,432	125,937	6,689	6,689	0	1,319,309	1,319,309	753	1,320,062		
4002			PHASE 4 - INNER LOOP EAST CUT	12,589	2,634	0	348,826	296,308	52,518	266,677	29,631	3,679	3,679	0	348,826	348,826	414	349,240		
4101			PHASE 4 - MAIN LOOP WEST FILL	15,416	42,635	821	2,622	2,622	0	2,360	262	5,377	219	5,158	2,622	7,781	605	8,386		
4102			PHASE 4 - MAIN LOOPEAST FILL	10,091	32,195	0	792	792	0	713	79	3,671	0	3,671	792	4,663	435	5,098		
4301			POND - INNER LOOP PHASE 4	1,158	0	0	10,255	10,255	0	9,230	1,028	0	0	0	10,255	10,255	0	10,255		
4302			POND - EASTERN POND IN EMBANKMENT	708	169	0	0	0	0	0	0	0	0	0	0	0	0	0		
4303			POND - CENTRAL POND IN EMBANKMENT	0	816	0	0	0	0	0	0	0	0	0	0	0	0	0		
4304			POND - WESTERN POND IN EMBANKMENT	1,554	7	0	0	0	0	0	0	0	0	0	0	0	0	0		
W001			WASHERY PHASE 1A	4,241	3,938	6,305	188,489	188,489	0	169,640	18,849	0	0	0	188,489	188,489	0	188,489		
				178,682	92,000	8,411	3,043,224	2,690,390	352,834	2,421,351	269,039	69,926	46,811	23,115	3,043,224	3,066,339	7,867	3,074,205		

Deposition							Hard Construction Totals						Re-soil																
Bulk Fill to Protection	Bulk fill to formation (+)	1st Stage Box Fill	2nd Stage Additional Fill after Box (+)	Additional Fill for Settlement	Total Fill (+/-)	of which General Fill	Total Subbase Import	Total Formation Area	Of which formation area in rock	subbase area	2nd Stage Additional Excavation in Box	2nd Stage Additional Fill after Box	Re-soil to POND (Topsoil) (150mm)			Re-soil to POND (subsoil) (150mm)			Re-soil to Ditch (topsoil) (200mm)			Re-soil to Swale (150mm)			Re-soil to Batters (100mm)			Total Subsoil Volume	Total Topsoil Volume
All Classes											Volume	Volume	Area	Depth	Vol	Area	Depth	Vol	Area	Depth	Vol	Area	Depth	Vol	Area	Depth	Vol	Vol	Vol
m3	m3	m3	m3	m3	m3	m3	m3	m2	m2		m3	m3	m2	mm	m3	m2	mm	m3	m2	mm	m3	m2	mm	m3	m2	mm	m3	m3	m3
13,870	12,936	934	635	0	14,505	14,505	8,472	18,727	7,130	18,727	953	635	3,235	150	485	3,235	150	485	0	2,000	0	14,268	150	2,140	35,774	150	5,366	485	7,981
268,706	265,440	3,266	1,559	19,244	289,510	289,510	20,793	45,963	12,057	45,963	2,339	1,559	2,244	150	337	2,244	150	337	0	2,000	0	16,342	150	2,451	99,562	150	14,934	337	17,722
227,105	217,219	9,886	1,578	15,771	244,454	244,454	21,045	46,520	1,110	46,520	2,368	1,578	9,084	150	1,363	9,084	150	1,363	0	2,000	0	19,825	150	2,974	69,818	150	10,473	1,363	14,809
2,023,388	2,014,358	9,029	1,471	101,935	2,126,794	19,616	43,362	5,887	43,362	2,207	1,471	8,619	1,200	1,293	8,619	1,200	1,293	0	1,600	0	32,997	1,200	4,950	363,799	1,200	54,570	1,293	60,812	
61,739	61,739	0	0	0	61,739	61,739	0	0	0	0	0	0	2,685	150	403	2,685	150	403	10,783	1,000	2,157	0	150	0	13,150	150	1,973	403	4,532
2,594,808	2,571,693	23,115	5,244	136,950	2,737,003	2,737,003	69,926	154,573	26,185	154,573	7,867	5,244	25,867		3,880	25,867		3,880	10,783	10,600	2,157	83,432	2,100	12,515	582,103	2,100	87,315	3,880	105,867

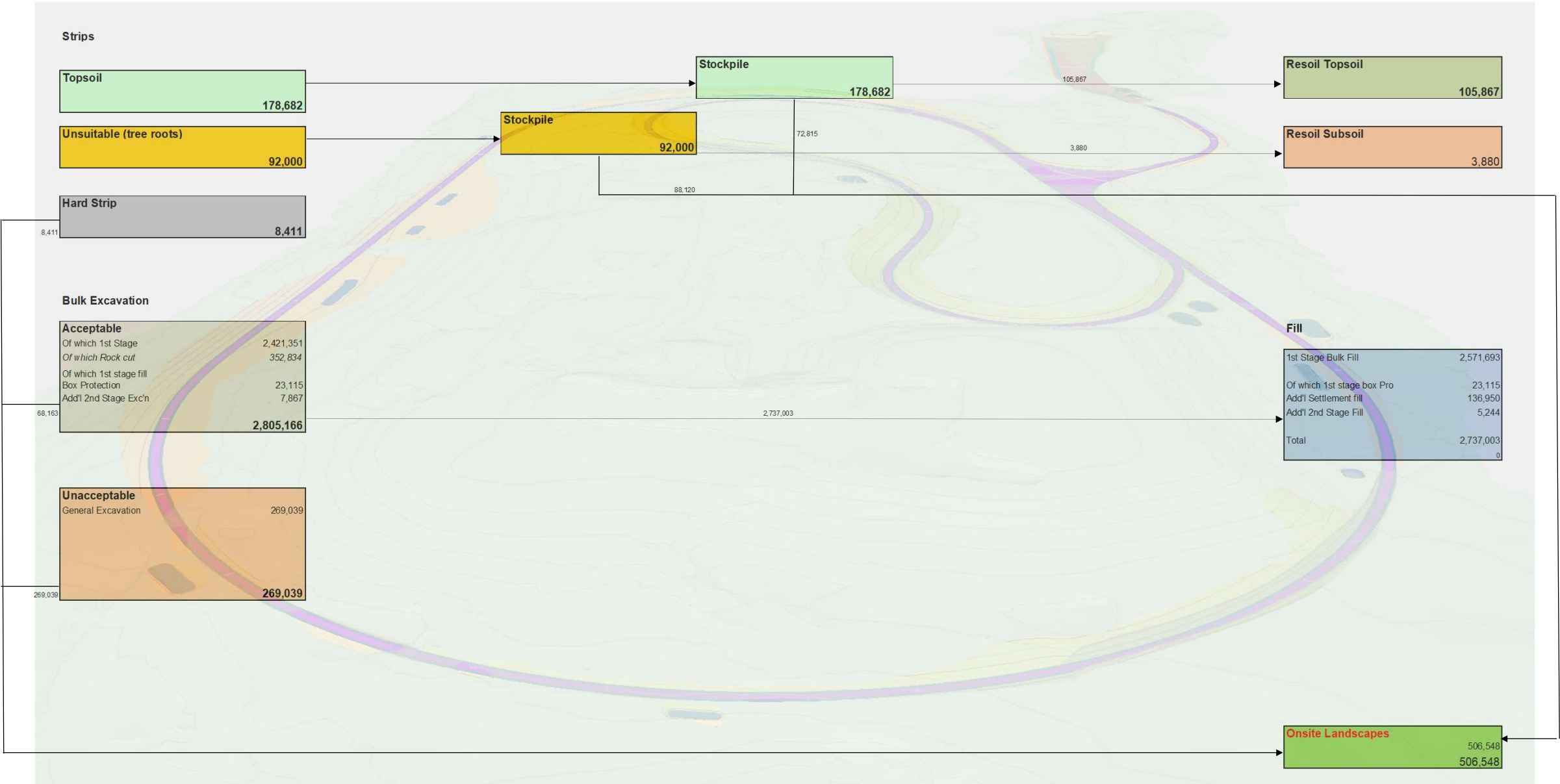
12,672	11,737	934	635	0	13,307	13,307	8,472	18,727	7,130	18,727	953	635	0	150	0	0	150	0	0	200	0	14,268	150	2,140	32,881	150	4,932	0	7,072
328	328	0	0	0	328	328	0	0	0	0	0	0	2,014	150	302	2,014	150	302	0	200	0	0	150	0	1,591	150	239	302	541
149	149	0	0	0	149	149	0	0	0	0	0	0	594	150	89	594	150	89	0	200	0	0	150	0	822	150	123	89	213
722	722	0	0	0	722	722	0	0	0	0	0	0	626	150	94	626	150	94	0	200	0	0	150	0	480	150	72	94	166
16,949	13,683	3,266	1,559	669	19,177	19,177	20,793	45,963	12,057	45,963	2,339	1,559	0	150	0	0	150	0	0	200	0	16,342	150	2,451	42,730	150	6,409	0	8,861
248,856	248,856	0	0	18,575	267,431	267,431	0	0	0	0	0	0	0	150	0	0	150	0	0	200	0	0	150	0	54,962	150	8,244	0	8,244
2,666	2,666	0	0	0	2,666	2,666	0	0	0	0	0	0	806	150	121	806	150	121	0	200	0	0	150	0	926	150	139	121	260
236	236	0	0	0	236	236	0	0	0	0	0	0	1,439	150	216	1,439	150	216	0	200	0	0	150	0	945	150	142	216	358
957	439	518	872	0	1,829	1,829	11,633	25,715	1,110	25,715	1,309	872	0	150	0	0	150	0	0	200	0	8,825	150	1,324	32,394	150	4,859	0	6,183
83,085	80,164	2,921	219	6,072	89,376	89,376	2,924	6,464	0	6,464	329	219	0	150	0	0	150	0	0	200	0	4,831	150	725	14,181	150	2,127	0	2,852
142,265	135,818	6,447	487	9,699	152,450	152,450	6,488	14,341	0	14,341	730	487	0	150	0	0	150	0	0	200	0	6,169	150	925	17,765	150	2,665	0	3,590
264	264	0	0	0	264	264	0	0	0	0	0	0	3,199	150	480	3,199	150	480	0	200	0	0	150	0	1,414	150	212	480	692
514	514	0	0	0	514	514	0	0	0	0	0	0	2,112	150	317	2,112	150	317	0	200	0	0	150	0	972	150	146	317	463
21	21	0	0	0	21	21	0	0	0	0	0	0	3,773	150	566	3,773	150	566	0	200	0	0	150	0	3,093	150	464	566	1,030
196	196	0	502	0	698	698	6,689	14,786	3,699	14,786	753	502	0	150	0	0	150	0	0	200	0	11,303	150	1,695	103,479	150	15,522	0	17,217
100	100	0	276	0	376	376	3,679	8,132	2,189	8,132	414	276	0	150	0	0	150	0	0	200	0	6,238	150	936	30,562	150	4,584	0	5,520
1,289,252	1,284,094	5,158	403	56,465	1,346,120	1,346,120	5,377	11,887	0	11,887	605	403	0	150	0	0	150	0	0	200	0	9,011	150	1,352	132,135	150	19,820	0	21,172
667,450	663,579	3,871	290	40,527	708,267	708,267	3,871	8,557	0	8,557	435	290	0	150	0	0	150	0	0	200	0	6,446	150	967	92,096	150	13,814	0	14,781
328	328	0	0	0	328	328	0	0	0	0	0	0	2,453	150	368	2,453	150	368	0	200	0	0	150	0	1,804	150	271	368	639
19,162	19,162	0	0	1,368	20,529	20,529	0	0	0	0	0	0	1,795	150	269	1,795	150	269	0	200	0	0	150	0	941	150	141	269	410
15,715	15,715	0	0	977	16,693	16,693	0	0	0	0	0	0	1,258	150	189	1,258	150	189	0	200	0	0	150	0	697	150	105	189	293
31,185	31,185	0	0	2,599	33,784	33,784	0	0	0	0	0	0	3,113	150	467	3,113	150	467	0	200	0	0	150	0	2,085	150	313	467	780
61,739	61,739	0	0	0	61,739	61,739	0	0	0	0	0	0	2,685	150	403	2,685	150	403	10,783	200	2,157	0	150	0	13,150	150	1,973	403	4,532
2,964,808	2,571,693	23,115	5,244	136,950	2,737,003	2,737,003	69,926	154,573	26,185	154,573	7,867	5,244	25,867	10,350	3,880	25,867	7,950	3,880	10,783	10,600	2,157	83,432	7,950	12,515	582,103	7,950	87,315	3,880	105,867

Appendix B – Earthwork Strategy

DRAFT

Imports

Flexible	#REF!
Sub base (Rail Track)	69,926
Capping	#REF!
Subsoil	0

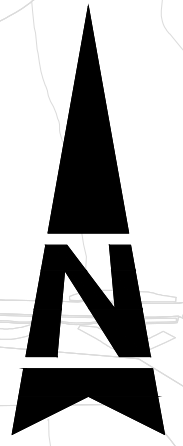


WALTERS

These Quants are based on the Clients design model.

Please refer to notes on GCRE-WAL-06-00-SH-X-00-0001 TASK 003 13/07/22

Appendix C – Proposed Haul Routes and Topsoil Storage Locations



Key	
	Haul Route (Max Grade 1 in 6)
	Potential Soil Stockpile (capacity based on 4m height)
	Planning Boundary
	Permanent Design outline

DRAFT

Rev	Description	Date	By	CHK'd	Auth.

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BS11 0YT

Client:

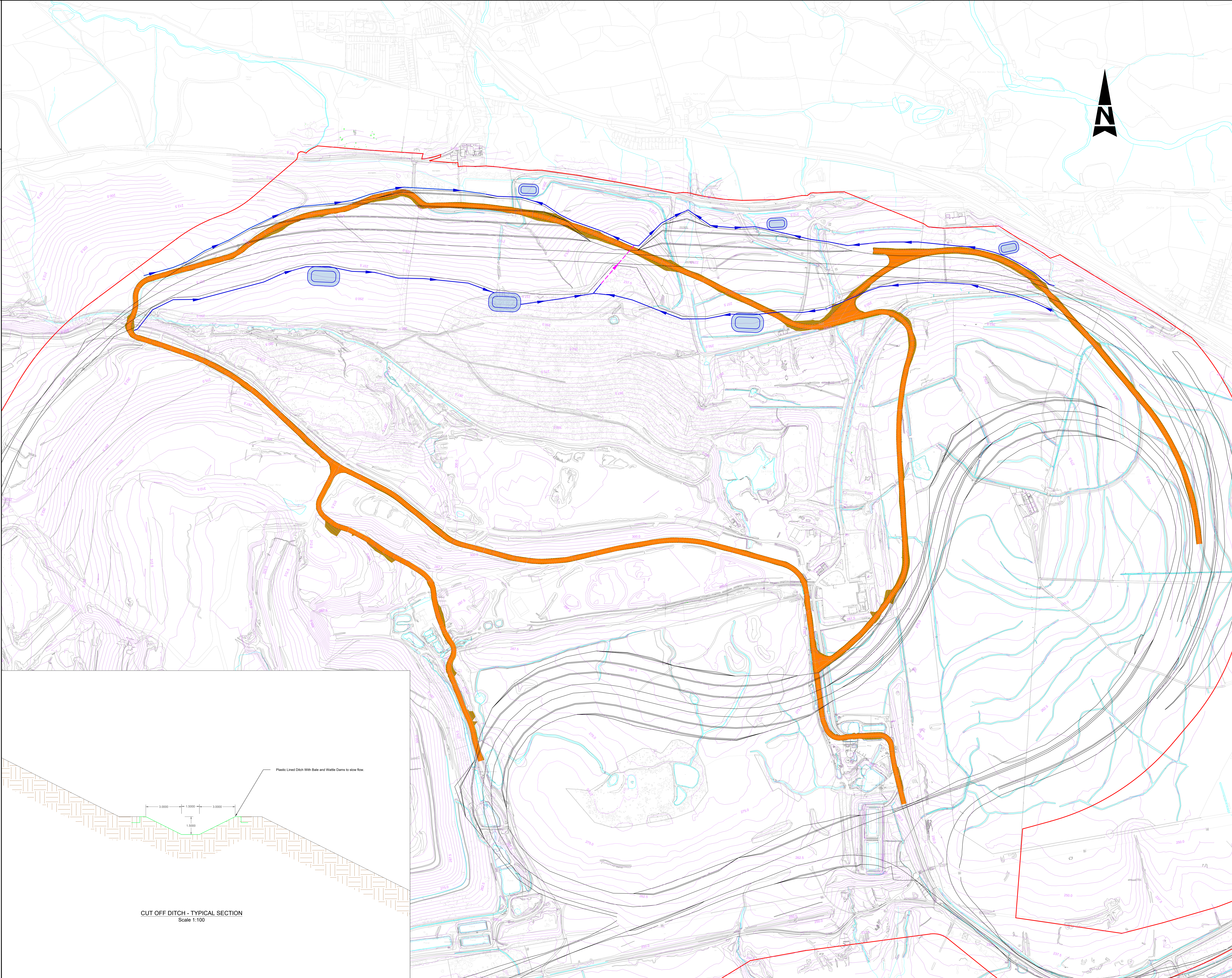
Project: GLOBAL CENTRE FOR RAIL EXCELLENCE

Title: NORTHERN EMBANKMENT
PROPOSED HAUL ROUTES &
SOIL STORAGE AREAS

Scale 1:2500	Drawn DM Date 03/11/22	Checked AP Date 03/11/22	Authorised RT Date
Original drawing AO	Walters Ref C1437		

Unibase identifier GCORE -WAL -HSP -NE -DR -W -0001 -	Project	Originator	Volume / System	Level / Location	Type	Role	Number	Revision
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Appendix D – Temporary Surface Water Management



Key

- Cut off Ditch
- Temporary culvert
- Temporary Lagoon
- Existing Contours
- Existing Water features
- Proposed Haul Routes
- Planning Boundary
- Permanent Design outline

Rev	Description	Date	By	CHK'd	Auth

WALTERS

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Avonmouth, Bristol.
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Client:

Project: GLOBAL CENTRE FOR RAIL EXCELLENCE

Title: NORTHERN EMBANKMENT
TEMPORARY DRAINAGE
MANAGEMENT PLAN

Scale 1:2500	Drawn DM	Checked AP	Authorised RT
Original drawing AO	Date 03/11/22	Date 03/11/22	Date
Drawn Draft	Walters Ref C1437		

UNSPEC IDENTIFIER					
Project	Originator	Volume / System	Level / Location	Type	Revision
GC&RE	-WAL	-HDG	-NE	-DR	-W
					-0002
					-

Appendix H. INNS Management Plan

GCRE: Global Centre for Rail Excellence - Phase 1A

Invasive Non-Native Plant Species Management and Treatment Plan

Global Centre for Rail Excellence (GCRE)

13th March 2023

2023/March/13

Notice

This document and its contents have been prepared and are intended solely as information and use in relation to the Management and Treatment of Invasive Non-Native Plant Species within the Global Centre for Rail Excellence site Phase 1A

Walters UK assumes no responsibility to any other party in respect of or arising out of or in connection with this document and/or its contents.

This document has [9]9 pages including the cover.

Document history

Document title: Invasive Non-Native Plant Species Management and Treatment Plan

Document reference: 2023/March/13

Revision	Purpose description	Originated	Checked	Reviewed	Authorised	Date
1.0	First draft	RT	AP	RT	RT	13/03/23

Client signoff

Client	Global Centre for Rail Excellence
Project	Global Centre for Rail Excellence (GCRE)
Job number	C1437
Client signature/date	

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Executive Summary

The present document represents the Invasive Non-native Species Management and Treatment Plan within the washery site for the Phase 1A works only to facilitate the construction of Phase 1A sidings. The purpose of this document is to manage the removal and prevent the spread of the Invasive Non-Native Plant Species, and support the Construction Phase Environmental Management Plan.

This document will be updated as required by pre-construction walk over surveys to ensure any evidence of new plants or spread of existing plants are correctly surveyed and will be used as the basis of site specific Method Statements and Risk Assessments.

This document will be updated throughout the project for Phase 2A works and the Complementary Earthworks Scheme.

This document will be updated should any findings of Invasive Non-native Species be discovered.

Guidance

These works will be carried out in accordance with guidance documents:

NRW Guidance and Advice on Japanese Knotweed [Natural Resources Wales / Japanese knotweed: what you need to know](#)

Welsh Government Advice on weeds and non-native species [Harmful \(injurious\) weeds and invasive non-native species | Sub-topic | GOV.WALES](#)

Japanese Knotweed (GB Non-Native Species Secretariat 2016) [Japanese Knotweed » NNSS \(nonnativespecies.org\)](#)

Managing Invasive Non-native Plants (Environment Agency 2010) [Fact Sheet \(wlma.org.uk\)](#)

1. Invasive Non-native Plant Species

1.1. Introduction

A Construction Environmental Management Plan (CEMP) is required to support the discharge of Planning Condition No11. A CEMP document specifically for Phase 1A has been produced by Atkins.

As part of the CEMP-Phase 1A document, an Invasive Non-Native Plant (INNPS) Management Plan is required.

This INNPS document has been produced to manage the removal and prevent the spread of the known INNPS, and to support the CEMP-Phase 1A document.

An Ecological Protection Plan (EPP) is required to support the discharge of Planning Condition No13. An EPP document has been produced by Dalcour Maclaren and has been used to inform this INNPS document.

Prior to any works on site, a site walkover will be undertaken by the Ecological Clerk of Works (ECoW) to establish the locations of the INNPS identified within the EPP, and to establish whether further INNPS have established within the site.

1.2. INNPS identification

The INNPS identified through the Dalcour Maclaren site surveys have been summarised within their EPP document, and summarised in Figure 1 included within Appendix 2 of the document.

The Schedule 9 invasive plants include;

- *Cotoneaster bullatus*
- *Cotoneaster horizontalis*
- *Cotoneaster integrifolius*
- *Cotoneaster simonsii*
- *Crocosmia crocosmiiflora*
- *Fallopia japonica*
- *Rosa rugosa*

An extract from the EPP document is included within Appendix 1 and shows the location of the above species within Phase 1A of the proposed works.

The location of the INNPS within the EPP document will be verified by a site walkover by the ECoW before the Phase 1A earthworks commence. The ECoW will also undertake a pre-construction survey to ensure no further INNPS species have established themselves.

1.3. INNPS Segregation

Once the INNPS species are identified protection fencing and signage will be erected around the known INNPS plants.

Toolbox talks will be given to the workforce and visitors to warn of the presence of INNPS and not to remove or encroach within the fenced areas.

1.4. INNPS removal

The INNPS species will be excavated, loaded and removed from the works to an offsite licensed landfill site, accompanied by appropriate Waste Transfer documentation, and must comply with section 34 of the Environmental Protection Act 1990. The plant material and soils will be treated as contaminated waste.

This excavation and removal operation will be undertaken under the supervision of the ECoW to establish all the root systems and rhizomes have been removed.

Control measures will be put into place for the excavation and removal which will include;

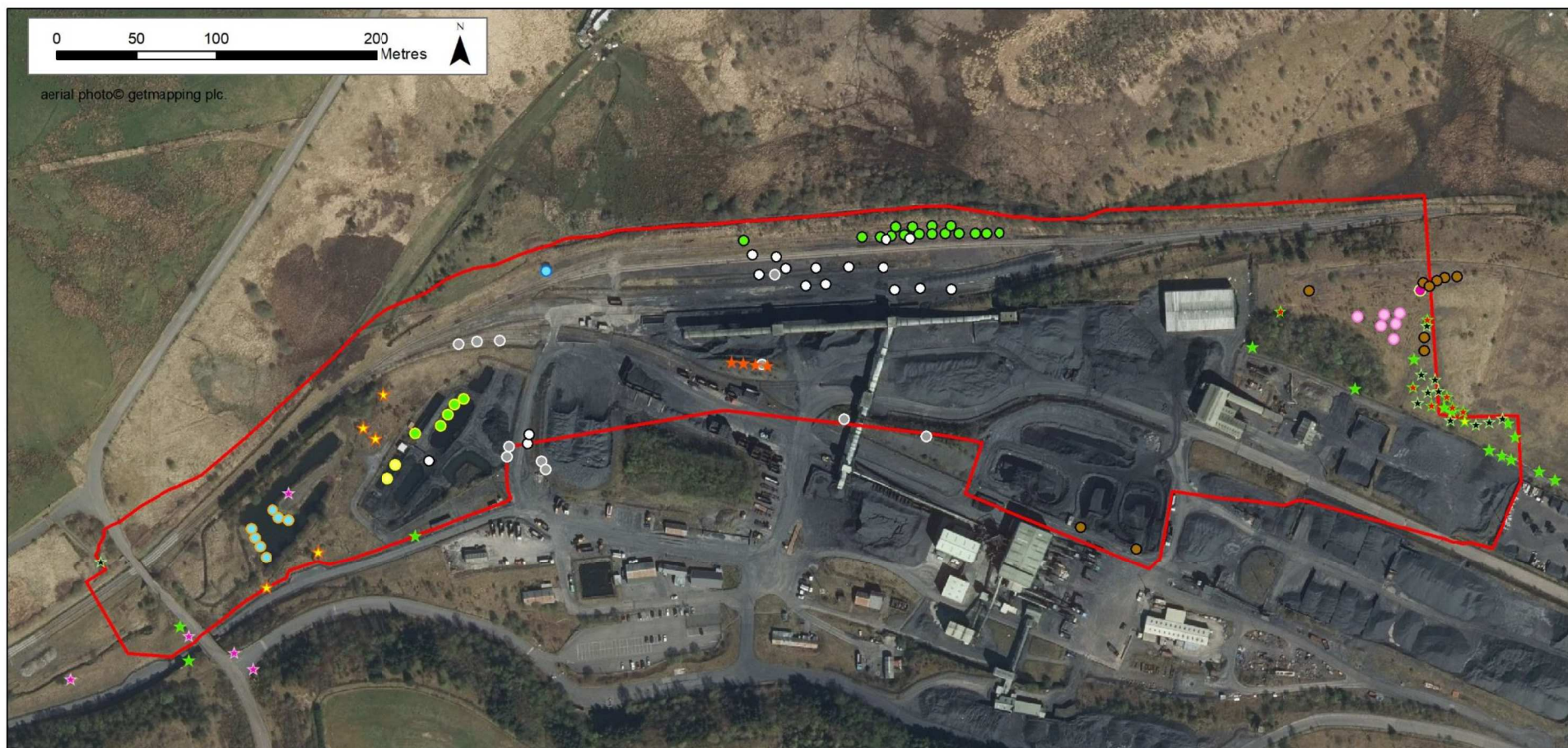
- Working areas will be fenced off prior to the start of any remediation measures commencing.
- The surrounding area will be checked to ensure no surface water run-off will enter any surrounding water courses.
- Works will not be undertaken during adverse rainy conditions.
- If conditions are dry, water mist will be spread over the area to prevent the migration of dust.
- The transportation of any material will be undertaken under sheeted loads.
- Wheel washing facilities will be provided to prevent contaminated soils being spread from the site on site vehicles wheels.
- Excavators will be washed down prior to commencing works elsewhere.
- Operatives will wash down boots prior to leaving any contaminated areas.
- All wash down water will be controlled, collected and discharged into an existing lagoon within the washery facility

1.5. Verification

The ECoW will verify all the INNPS root system has been removed prior to the excavation backfill and fence removal.

Waster facility transfer notes will be included within the Site Waste Management Plan

Appendix 1 – Dalcour Maclaren; Figure 1. Location of notable and invasive species in Phase 1A area



Notable plants

- | | |
|-------------------------------------|-----------------------------------|
| ● <i>Carex disticha</i> | ● <i>Ophrys apifera</i> |
| ● <i>Logfia minima</i> | ○ <i>Sagina nodosa</i> |
| ● <i>Mentha pulegium</i> | ● <i>Samolus valerandi</i> |
| ● <i>Myriophyllum alterniflorum</i> | ● <i>Sparganium angustifolium</i> |
| ● <i>Myriophyllum spicatum</i> | ● <i>Zannichellia palustris</i> |

Schedule 9 invasive plants

- | | |
|------------------------------------|-----------------------------------|
| ★ <i>Cotoneaster bullatus</i> | ★ <i>Crocosmia crocosmiiflora</i> |
| ★ <i>Cotoneaster horizontalis</i> | ★ <i>Fallopia japonica</i> |
| ★ <i>Cotoneaster integrifolius</i> | ★ <i>Rosa rugosa</i> |
| ★ <i>Cotoneaster simonsii</i> | |

Figure 1. Location of notable and invasive species in Phase 1A area

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