APPENDIX B: ENVIRONMENTAL CONTROL PLAN

Environmental Control Plan

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Project Number:	80061379
Client:	United Utilities
Contractor:	C2V+
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1 INTRODUCTION

1.1 PURPOSE OF THE ENVIRONMENTAL CONTROL PLAN

The purpose of this Environmental Control Plan (ECP) is to ensure environmental good practice is carried out throughout the construction works, and to set out appropriate mitigation measures and controls to eliminate or reduce any potential environmental impacts. This will inform the Construction Method Statement.

This ECP is a live document and will be updated, as required, through changes to design (i.e. outline design to final design) and working construction methodology.

The ECP will be reviewed on at least a quarterly basis, or when changes to environmental aspects, potential impacts and controls occur, and updated as necessary. Changes made to the ECP will be logged (i.e. date of review, review person, and summary of updates) on the cover sheet of the ECP.

1.2 UNITED UTILITIES POLICY & COMMITMENTS

UU is committed to ensuring the implementation of environmental and engineering good practice during construction works. UU therefore require that C2V+, and any sub-contractors employed, must comply with UU's Standard Specifications (General, Civil, Mechanical, Electrical, Environmental and Safety management).

UU's Standard Specification S08 – Environmental Management requires C2V+ to:

Comply with this Environmental Control Plan

Produce method statements and risk assessments for significant activities

Comply with national legislation for the protection of the environment

Comply with any agreements made during the consultation process

Comply with any conditions attached to regulatory consents

C2V+ shall demonstrate that this ECP complies with the requirements of Standard Specification S08 by completing a copy of the S08 Compliance Checklist & Signpost Index.

C2V+ shall provide their proposed ECP to the Employer for review at least four weeks prior to mobilisation on site.

Unless otherwise authorised via written instruction to do so by United Utilities, C2V+ shall not mobilise the Works until the ECP has been reviewed and/or accepted by UU.

2 OUTLINE OF PROJECT & PROGRAMME

2.1 PROJECT OVERVIEW

The works shall be undertaken under the United Utilities AMP7 Framework Agreement to design and build the Castleton WwTW project. The condition of the contract are the core clauses and the clauses for main Option C and secondary Options X5, X7, X16 and Y(UK)2 and Z of the NEC3 Contract.

Castleton WwTW is classified as a Batch SE 1 project which is in reference to the South East section of the United Utilities area and from batch 1 of the initial projects from Lot 3.

Project goals: To achieve Water Framework Directive (WFD) 'good status' in the River Irk for Ammonia and Dissolved Oxygen for WFD biological standards and wet weather standards & demonstrate compliance with the WFD 99%ile and Fundamental Intermittent Standards (FIS) wet weather intermittent standards.

Proposed solution: To increase the flow to full treatment (FTFT) from 47l/s to 67l/s to reduce the spills in the network to an acceptable level and improvements at the WwTW site to meet the more stringent effluent permit conditions for Ammonia, BOD and phosphorus. Screening to the overflows of an existing CSO chamber at ROC 0094 is required to meet WFD 'good status'. ROC 0094 is located offsite.

The main elements of permanent work at Castleton WwTW are;

- New inlet pipe.
- Flowmeter chamber.
- Ferric dosing and storage facility.
- 2 new above ground final settlement tanks.
- A new FST distribution chamber.
- A new above ground primary settlement tank.
- New PST distribution chamber.
- New sludge system including 3 new tanks - thickening tank, holding tank and feed tank.
- A new above ground IFAS tank.
- New above ground IFAS distribution chamber.
- IFAS below ground feed pumping station.
- FST below ground feed pumping station.
- Liquor's return pumping station, below ground.
- New compressors kiosk at the IFAS tank (blowers)
- New MCC kiosk.

In addition to the permanent works, and due to the dual use of the access road to the WwTW (the road is also the access road to the Manchester Golf Club), a significant amount of road widening is required prior to construction phase of the works.

Outline Programme

The outline timetable with indicative dates and periods for the construction works can be summarised as follows:

Table 2.2.1

Activity	Dates / Duration	Key Machinery & Materials	Environmental Constraints
Enabling Works (MGC golf club road widening & office/welfare set up).	02/11/2020 – 07/12/2020; 5 Weeks	Excavators Dumpers Wagons Welfare Aggregate Tarmac	Customer impact (golf club members). Tree protection Invasive plant species. Badger setts close by.

Construction Phase	22/03/2021 – 06/04/2023 24 Months	Excavators and Plant Cranes Wagons Welfare Aggregates Concrete (batched) Concrete (pre-cast) Timber Piling Rigs Piles Steel rebar Geogrid Pipework Ducting Manhole Chambers	Water management. Invasive plant species. Badger setts close by. Railway adjacent to WwTW Tree protection O/H electricity lines
Commissioning Phase	10/03/2023 – 26/07/2024 16 Months	NA	

3 PROJECT ORGANISATION

3.1 ROLES & RESPONSIBILITIES

3.1.1 United Utilities

UU shall provide C2V+ with information of all environmental constraints identified and known by UU at the time of the Works' instruction. This information shall detail any potential environmental risks UU believes are reasonably posed by the proposed Works and any actions which will be required to be undertaken by either UU or C2V+, as part of the design and implementation of the Works.

UU will appoint a Project Manager who is responsible for ensuring that the work is carried out to the full satisfaction of UU, in accordance with agreed methods and standards.

UU will be responsible for instructing the contractor to take corrective action in the event of any deviation from good environmental or engineering practice, including failure to comply with the ECP or method statement, or in the event of an incident which may affect these.

If necessary, UU will enforce stoppage of the work and implementation of corrective action before re-commencement.

3.1.2 The Contractor

C2V+ is responsible for all temporary and permanent works design and carrying out all the construction works in compliance with regulatory requirements, this ECP and the method statement, and in accordance with health and safety requirements.

During estimating and design, C2V+ shall consider all potential environmental risks and ensure that these are then documented in this project-specific Environmental Control Plan (ECP).

C2V+ operates under an Environmental Management System certified to ISO 14001:2015 which undertakes Environmental Risk Assessments in the form of an Environmental Aspect and Impact assessment. This categorises and details risks and opportunities that are applicable to the contract.

Environmental Aspects and Impacts relating to this contract have been assessed in accordance with the Group Procedure – Environmental Aspects and Impacts (E01-Environmental Aspects and Impacts). An Environmental Risk Assessment (E01-02-Environmental Risk Assessment) has been completed for this project and is included within Appendix D. Key environmental risks and opportunities for this project can be found in section 4.1 of this ECP.

C2V+ shall prepare more detailed method statements for elements of the works, and contingency plans. C2V+ shall appoint a Site Agent to manage all on-site activities, including inspections and monitoring throughout the duration of the works.

During the construction works, the Site Agent will hold regular progress meetings with the appointed environmental advisor, UU's Project Manager and construction supervisor and other interested persons, to discuss any issues or requirements that may arise. The meetings will include identification of any actions required to comply with the ECP and identification of mitigation measures that may be required to be implemented in accordance with the ECP. The frequency of the meetings will vary according to the criticality of the activities being undertaken.

In the event of an environmental incident the environmental emergency response plan (found in Appendix A) will be implemented.

3.1.3 Environmental Regulators

Environment Agency

The Environment Agency (EA) will need to be consulted for permits (i.e. discharge permit and abstraction license) for dewatering activities.

United Utilities are to be consulted regarding discharge of water from dewatering activities and concrete washout water and the requirement for a trade effluent consent"

3.1.4 Other Parties

A full list of contact details including emergency call out details will be made available to each organisation.

All communications from interested parties shall be directed to UU's Project Manager, who will then ensure an appropriate response and communicate with C2V+ accordingly. In the event of an emergency or incident requiring urgent action, use should be made of the emergency contact details.

UU will maintain a record of all communications to, or from, interested parties.

3.1.5 Responsible persons/Regulators/3rd Parties Contact List

The below table contains contact details of peoples responsible for managing environmental impacts on site and regulators/3rd parties who site is to liaise with when necessary.

Name	Role	Organization	Phone Number(s)	Email
Alison Owen	Senior Project Manager	C2V+	07471 141079	Alison.owen@volkerstevin.co.uk
Dominic Tierney	Project Manager	C2V+	07876 876373	Dominic.tierney@volkerstevin.co.uk
Gary Aldred	Works Manager	C2V+	07718 341355	Gary.aldred@volkerstevin.co.uk
Kevin McCrory	Site Agent	C2V+	07385 374019	Kevin.McCrory@volkerstevin.co.uk
Simon Boniface	Environmental Advisor	C2V+	07392 134 309	Simon.boniface@volkerstevin.co.uk

Lucinda Farrington	Environmental Manager	C2V+	07392 134 470	Lucinda.farrington@volkerstevin.co.uk
Jim Loxam	3rd Party Coordinator	C2V+	07384 234 353	Jim.loxam@volkerstevin.co.uk
Hannah Cooper	Environmental Consultant	C2V+	07508 426466	Hannah.Cooper@Jacobs.com
Leila Payne	Ecologist	C2V+	07419810463	Leila.Payne@jacobs.com
Marianne Dobson	Landscape Architect and Arboricultural Consultant	C2V+	07710 498231	Marianne.Dobson@Jacobs.com
Rob Lingard	Geo-Environmental Engineer	C2v+	07745 625107	Rob.Lingard@Jacobs.com
Ian Stanworth	Noise Consultant	C2V+		Ian.Stanworth@Jacobs.com
Tom Fewster	Project Manager	UU		Tom.Fewster@uuplc.co.uk
Ian Burns	Construction Supervisor	UU	07717 662333	ian.burns@uuplc.co.uk
Christopher Shaw	Process Controller	UU	07795 447812	Chris.shaw@uuplc.co.uk
TBC	Environment Officer	Environment Agency		
TBC	Permitting Officer	Environment Agency		
TBC	EHO	Local Authority		

3.2 REPORTING

Environmental data will be reported, by the projects appointed waste coordinator, via the Elevate tool on a monthly basis; data for the previous month is to be inputted by the third working day of the following month. Required information includes:

- Aggregates (recycled & primary)
- Waste
- Impacts on biodiversity
- Timber, water, energy and fuel consumption
- Environmental incidents

Environmental incidents will be reported via the Elevate system as outlined in *Appendix A – Environmental Emergency Response Plan*.

3.3 AUDITS & INSPECTIONS

A member of the site staff will carry out a weekly HSE-07 Site Safety & Environmental Inspection using the template *Appendix C – HSE-07 Site Safety and Environmental Inspection Record*.

Every 6-8 weeks, the C2V+ Environmental Advisor will carry out an Environmental inspection using EMS-07 Environmental Inspection form, to ensure compliance with operational environmental controls. Frequency of inspections will be adjusted accordingly (i.e. higher risk activities will require more frequent visits).

At least quarterly, the C2V+ Environmental Advisor will carry out an S08 audit to monitor compliance with the client's standard specification: S08-Environmental Management; this will be reported via AIRline and any actions raised will be closed out by the site team and details recorded.

3.4 Environmental Training

The requirements of *Standard Specification S08 – Environmental Management* (Issue 12.2 June 2019) will apply. In addition, the following requirements will apply:

- All on-site personnel including engineers and construction workers will be trained in the requirements of the ECP to ensure that they are fully aware of their responsibilities, and the importance of compliance with the ECP will be explained. This includes (but not limited to):
    - Elevate training; and
    - AIRline training.
    - Emergency response;
    - Ecological constraints/controls;
    - Pollution prevention controls;
    - Contaminated groundwater/ground
    - Waste management;
    - Nuisance impacts (i.e. noise, dust, vibration, light); and
    - Archaeology.
- Visitors to the construction area will be informed of the safeguards they must adopt including exclusion from any sensitive areas and the need to stay with a guide at all times
- Prior to commencement of works, all staff & operatives are to be given an induction that includes details of site-specific environmental risks and the Environmental Emergency Response Procedure
- Toolbox Talks will be provided regularly (and not less than once per month) on:
    - Spill Kit Awareness (including practical spill response training)
    - Waste Management
    - The site-specific Environmental Emergency Response Plan (every 6 months)
    - Presence/location of designated sites
    - Great crested newt
    - Invasive Plant Species
    - Nesting Birds
    - Badgers
    - Contaminated land
    - Dewatering/Discharge Permits
    - Nuisance (I.e. Noise, vibration, dust)
    - Working within a watercourse
    - Flooding/emergency evacuation

3.5 Licenses & Consents

A copy of the planning approval for the project (if applicable) will be obtained and stored on site for the duration of the project. The details of the planning consent for this project are as follows:

Planning Reference:	TBC
Date issued:	
Relevant elements of project:	EIA screening opinion
Planning Conditions:	
N/A Screening opinion requested from the LPA to confirm whether the proposed development at Castleton constitutes EIA development	

Planning Reference:	TBC
Date issued:	
Relevant elements of project:	Widening of entrance at Rochdale Road
Planning Conditions:	
• Schedule of conditions are held within the Conditions Tracker on PW – (to be added)	

Planning Reference:	TBC
Date issued:	
Relevant elements of project:	Ferric Storage Kiosk, MCC Kiosk, Sludge Thickeners Kiosk, Caustic Dosing Kiosk, Polymer Dosing Kiosk, SCADA and Lab Kiosk
Planning Conditions:	
• Schedule of conditions are held within the Conditions Tracker on PW – (to be added)	

The following table lists the environmental consents required during the construction phase (refer to *H03-05 Consents and Licences Checklist*):

Type	Issuing Body	Reference No.	Issue Date	Expiry Date	Conditions / Restrictions
U1, U12, U13, T5, T6, T9, T10, T15 Waste Exemption	EA	WEX245208	TBC	TBC	Refer to government guidance found at: https://www.gov.uk/guidance/register-your-waste-exemptions-environmental-permits#when-you-need-a-waste-exemption
Discharge Permit	EA		TBC	TBC	TBC
Abstraction License	EA		TBC	TBC	TBC

If any permanent consents are required for the project, or amendments needed to existing consents, C2V+ will liaise with UU and supply information as necessary to allow these to be applied for.

4 Environmental Controls

4.1 Key Environmental Risks & Opportunities

Key environmental risks and opportunities (as identified with E01-02-Environmental Risk Assessment found within Appendix D) associated with this project includes:

- Damage/disturbance to protected species and their habitats/refugia (i.e. breeding birds, badger, great crested newt) through construction, including tree felling, de-veg, strimming, excavation, construction;
- Proximity to designated sites (i.e. Rochdale Canal Special Area of Conservation (SAC) and Site of Special Scientific Interest (SSSI);
- Noise nuisance from construction/enabling works close to sensitive receptors;
- Dust/light pollution from construction works;
- Pollution from dewatering of excavations;
- Waste and soil from excavation; and
- Structural damage, via excessive vibration, to properties and trees close to works.

4.2 Environment and Customer Constraints Plan

A Site Environment and Customer Constraints Plan (see appendix E) has been produced to identify all environmental constraints associated with the project. All environmental features are to be identified within the plan including, but not limited to: ecological features (i.e. potential habitat for great crested newt, locations of badger sets, locations of designated areas, nesting bird habitat, non-native invasive species areas, contaminated areas, storage areas (i.e. soil stockpiles, fuel storage, etc.), and location of sensitive receptors (i.e. controlled waters, source protection zones, residents, etc.).

All environmental constraints on site are to be communicated to all site operatives and an A3 copy to be displayed on the site noticeboard.

4.3 Site Security

A temporary compound to house welfare units will be located outside the existing site boundary. There is not enough space within the existing site boundary for car parking and material storage, these shall be outside the site boundary. Security cameras will be used to cover the site cabins, containers and laydown areas.
Existing United Utilities security arrangements will be adhered to.

4.4 Traffic management and logistics

All site personnel and visitors will receive a site induction where it will indicate the traffic management plan for the site. There will be no parking on the grass or by the main access road. There will be different levels of traffic throughout the project depending on programme and resources.

The traffic management plan will be displayed within the site cabins.

4.5 Pollution Prevention

4.5.1 Silt Management

Silt pollution is one of the biggest environmental risks faced by C2V+. The following control measures will be implemented to minimise the risk of silt entering controlled waters or site drainage systems:

- Soil stockpiles to be covered or seeded to minimise run-off;
- Stockpiles to be located at sufficient distance from surface waters and surface drainage;
- Site drainage gullies/grids will be protected during works using drain filters;
- Silt fencing will be utilised on site in appropriate locations and will be indicated on site drainage plan drawing;
- Any identified spoil which is surplus to requirement will be taken off site as it is generated to reduce storage of excess material to a minimum.

4.5.2 Site Drainage Plan

A Site Drainage Plan (Appendix F) will identify all potential drainage routes (including all controlled waters, land drains, foul sewers, surface water and foul drains and soakaways) that could potentially be affected by the works. The plan will include locations of re-fuelling areas (i.e. location of fuel bowsers and chemical storage areas); location of spill kits; material stockpiles, detailing whether they be contaminated stockpiles or not; plant and equipment; location of silt mitigation measures (i.e. silt fencing, silt curtains, straw bales, etc.); concrete wash-out location; and pumping operations (i.e. over pumping, dewatering, etc.).

This Plan is to be displayed on site notice boards and used to apply appropriate pollution prevention measures in the event of a pollution incident.

4.5.3 Refuelling

The C2V+ Refuelling Method Statement (Appendix B) sets out the site-specific refuelling procedure to be followed during fuel deliveries and refuelling of plant & equipment.

Refuelling will be undertaken at least 10m away from any controlled water or drains on site, with a plant nappy or drip tray in place.

4.5.4 Plant & Equipment

Certification for all plant and machinery will be checked prior to arrival on site and a further check will be carried out to identify any fuel or oil leaks. Daily plant checksheet will be undertaken by a competent operative every day.

All items of static plant such as pumps or generators will be placed on Plant Nappy drip trays.

Pollution control and drainage protection products are to be ordered via Volker Stevin's 'Pollution Control & Drain Protection' brochure. Other specialist products not listed within brochure are to be ordered through procurement.

All pollution prevention equipment (i.e. secondary containment, drip trays/mats, spill kits, drainage protection, sediment filters, etc.) that is required for site should be identified and ordered before works begin.

All plant operating within 10m of a watercourse will use biodegradable hydraulic oil.

4.5.5 Storage of Oils, Fuels & Chemicals

Diesel will be stored in a self-bunded, double skinned bowser and located on an interceptor drip tray. This will be padlocked with a pistol grip delivery system.

All fuels and oils will be stored in a secondary containment system in accordance with the requirements of the Oil Storage Regulations, at least 10m away from any controlled water or drain and at least 50m from any potable water wells, boreholes or springs. Contractor COSHH stores will be located beside the site cabins.

Plant Nappy® drip trays will be used under any static plant, mobile equipment and petrol-powered hand tools.

4.5.6 Spill Kits

Spill kits will be located adjacent to the diesel storage area and in each construction vehicle and all operatives will be trained in their use. All vehicle refuelling will be carried out within the site compound, within a bunded area, supervised by a designated, trained individual, in accordance with the Refuelling Method Statement (Appendix B).

A suitable spill kit should be located within 120 seconds' reach of any working area. All staff and operatives will be trained in their use using VWUK Toolbox Talk TBTE-41 Spill Kit Awareness Training. Any used spill kits will be bagged and disposed of as hazardous waste.

4.5.7 Concrete Wash Out

Concrete wash out facilities will be provided for the cleaning of concrete wagon chutes only, in accordance with Environment Agency best practice guidelines: an above-ground skip or other container, lined with polythene and sheeted over when not in use. A dumpy bag will be suspended within the skip for the wash out to be directed into; this will capture the fines for removal to waste concrete skips. The wash-out water is to be treated to reduce pH to acceptable limits (i.e. 6-9 pH). This wastewater will be disposed of to the head of the Castleton treatment works with permission from UU, or may be used to suppress dust along the Castleton WwTW service road.

The concrete wash out will be located at least 10m away from any controlled waters or drains and outside of flood risk zones; the location will be marked on the site drainage plan.

4.5.8 Permit to Pump

An *EMS-29 Permit to Pump* shall be completed for any over-pumping and dewatering operations and approved by the client before pumping works commence. A member of C2V+ staff is to be in attendance and inspect the pumping arrangements at least hourly.

On unmanned sites or long-duration over-pumping (more than 7 calendar days), automated cut-off-and-alarm devices and enough response-time capacity will be included in the design of the over-pumping arrangement.

4.6 Flood Risk

4.6.1 Flood Risk Management

The site does not lie within a flood risk zone.

4.7 ECOLOGY

4.7.1 Protected Species

The following table outlines any protected species present on this project and the measures to be put in place to manage them. The measures and requirement for Ecological Clerk of Works (ECoW) supervision is detailed in the precautionary working method statement (PWMS) for the project:

Species	Location (see Env Constraints Plan)	Management Requirements

Great Crested Newt (GCN)	Vegetation clearance is required within the terrestrial habitat zone (250m) of a pond with assumed GCN presence. The potential for harm to GCN exists should the work take place within the GCN hibernation period.	○ Works to potential hibernation features (i.e. woodland and scrub) should ideally take place between March and October, when GCN are active and outside of potential hibernation periods – de-vegetation works should not take place within the hibernation period (November to February inclusive depending on seasonal variation and where night time temperatures are 5^0C or higher). During the hibernation season GCN are unable to naturally disperse and would be at greater risk of harm if subject to disturbance. This is indicated in the PWMS. ○ Works to potential foraging habitat (i.e. grassland) can take place during the hibernation season, providing the habitat does not provide hibernation features. ○ All work within 250m of ponds will be carried out under ecological supervision, with an Ecological Clerk of Works (ECoW) assigned for the highway widening works. ○ Operatives will be fully briefed by the ecologist prior to the start of works, regarding the potential presence of protected species as outlined in the precautionary working method statement. ○ The area requiring de-vegetation and any potential refuges should be hand searched for great crested newt prior to works taking place. ○ De-vegetation to take place with hand tools only. ○ De-vegetation works within dense areas should in the first instance take place first to ankle height or above, with a thorough fingertip search taking place prior to full de-vegetation. ○ In the event a GCN is found during the hand search prior to the works, then it should be left in situ and allowed to naturally disperse with a clearly demarcated exclusion zone established. ○ If a GCN is observed during the works, works in that area will immediately cease, taking care to avoid disturbing the GCN with a clearly demarcated exclusion zone established. Consultation with Natural England would then be required as to whether a licence will be needed before any further works can take place, if the scope of the works cannot be reduced or adapted to avoid this. ○ De-vegetation works should be kept to a minimum and vehicles kept on hard standing or areas suitable suggested by the on-site ecologist. ○ Avoid disturbing log piles, rubble piles and other potential refuge locations during the works. ○ No excavations will be left open overnight and work to infill excavations shall take place over a single shift. ○ Arisings from the excavation will be removed from site. ○ Any protected species **will not be handled unless it is absolutely necessary for animal welfare**, for example if imminent danger is present to an individual GCN and then only by the supervising ecologist.

Badgers	Two active badger setts have been recorded within 30m of the access track and are subject to a Natural England licence. Additional measures are employed to take into account potential for new/additional badger activity.	○ Workforce to be made aware of potential badger presence during the site induction and toolbox talk given ○ Any badger sightings are to be reported to the site manager who will liaise with C2V+'s environmental advisor. ○ Any temporarily exposed open pipe system shall be capped in such a way to prevent badgers gaining access, as may happen when contractors are off site. ○ Excavations shall be covered overnight or have at least one gently sloping side to allow animals to escape. ○ Any water sources that can be used by badgers shall be safeguarded. ○ Pre-construction badger survey to be undertaken of site prior to start of works and vegetation clearance
Nesting Birds	Mixed semi-natural broadleaved woodland, scattered trees and species poor hedgerow provide suitable habitat for nesting birds throughout site	○ Vegetation removal is to be carried out between September and February (Where possible). Where this is not possible removal of vegetation is to take place under an ecological watching brief. ○ Ecologist to walk-through the site 24hrs prior to vegetation removal works and survey for nesting birds (including ground nesting birds). Make a record of this survey – See (Nesting Bird Inspection Record Form). ○ If any nesting birds are found, work is to stop, and your environmental advisor contacted immediately. ○ An exclusion zone is to be created around the nest advised by the environmental advisor. All site operatives to be informed and toolbox talk given. ○ All newly discovered nesting sites to be marked on environmental constraints plan.
Rabbits	Found across site	○ As rabbit holes are present on site, it is recommended that these holes are avoided. ○ However, should this or any new holes likely be impacted then a check will be undertaken by an ecologist to ascertain likely species, and any rabbit control strategy will be in accordance with Natural England guidelines.
Hedgehog		○ If vegetation clearance occurs over the winter months, there is potential to impact upon hibernating hedgehog Operatives will be briefed on the potential presence of hedgehog when undertaking vegetation removal, and if encountered, no works shall take place until the hedgehog has departed or has been moved from the site to a safe location. If the hedgehog remains in a torpid state, it may be required to seek advice from a wildlife refuge specialist.

4.7.2 Invasive Non-Native Species

Invasive non-native species (INNS) (Himalayan balsam) has identified on site during the extended Phase I habitat survey.

Himalayan balsam was noted within the wider geographical area of the site. All plant/machinery coming to and leaving site will be cleaned and washed down to prevent any import of INNS.

An invasive species management plan and method statement will be required where disturbance of Himalayan balsam cannot be avoided.

4.7.3 Designated Sites

Rochdale Canal SAC and SSSI is located 200m to the east of the junction improvement area. The Rochdale Canal SAC and SSSI is designated for supporting a significant population of floating water-plantain *Luronium natans* in a botanically diverse water-plant community which also holds a wide range of pondweeds *Potamogeton* spp. The railway forms a barrier between the junction improvement area these designated sites. There are no potential pathways present between the site and these designated sites. Standard good industry practice measures will be adopted (as outlined in this document) relating to working near water and pollution prevention measures. No specific avoidance measures are required in relation to these designated sites.

4.8 NUISANCE MANAGEMENT

Statutory nuisance refers to problems caused by noise, vibration, dust, mud on the road, intrusive light and disruption to local people, businesses and other organisations. C2V+ is committed to minimising the impact of these nuisance issues by employing best practice construction techniques.

The agreed working hours for this project are:

- Monday-Friday: 08:00 – 18:00
- Saturdays: 09:00 – 16:00 (By Prior Agreement with LPA and Manchester Golf Club)
- Sundays: 09:00 – 14:00 (By Prior Agreement with LPA and Manchester Golf Club)

Any works outside of these times must be agreed in advance with the client and local authority. These working hours constraints do not apply in the event of an emergency or environmental incident.

Standard Specification S08 – Environmental Management requires that the local Environmental Health Officer is notified of the works at least 2 weeks prior to starting. The local authority EHO has been contacted in relation to this project as follows:

Local Authority	EHO Name & Contact Details	Date & Time Notified & Method of Communication	Response
Rochdale Borough Council	• environmental.health@rochdale.gov.uk 0300 303 8871	TBC	TBC

The following table outlines any nuisance issues identified as significant for Castleton, sensitive receptor sites and the monitoring and mitigation measures to be undertaken (identified with reference to *BS 5228 – Noise & vibration control on construction and open sites*):

Nuisance Type	Affected Receptors	Management Requirements (Inc. monitoring)
Traffic	Road users; businesses; residents; public	○ See section 3.2 for traffic management and logistics.
Noise & vibration	Local communities	○ Liaison with affected parties will take place prior to works starting on site, with face-to-face meetings by the C2V+ Third Party Co-ordinator. Newsletters will follow to provide updates of the works, including any anticipated periods of relatively noisy construction works. ○ No noisy activities will be programmed for first thing in the morning or last thing at night in consideration of local residents. Site working hours will be strictly adhered to, including deliveries.

		○ Static plant, such as the generator and compressor, will be specified as “super-silent” during procurement and will not be over-specified to be as efficient as possible. ○ Make sure plant such as Generators, Pumps and Compressors are CE marked and marked with the sound power level. ○ The generator will be sited at the farthest point residents. ○ Where deemed necessary an acoustic barrier will be erected adjacent to the generator to attenuate any noise pollution further. ○ Use of modern equipment in good working order. Any faulty equipment will be reported and arrange for any excessively noisy plant & equipment to be removed from site for maintenance. ○ Doors will be kept closed on engines e.g. compressor, excavator and generator engine doors. ○ A period of piling is necessary, which will use techniques such as vibratory sheet piling to reduce noise disturbance. ○ Site induction and continued toolbox talk training events will ensure operatives are aware of the noise sensitivity of the area. ○ A strict no idling policy within the site will be enforced to eliminate noise disturbance from running engines. ○ The septic tank and HST tanks are prefabricated off-site which will reduce construction noise. ○ Where possible, reversing alarms will be switched off and a banksman used.
Dust & other emissions to air	Local communities	○ Castleton WwTW is adjacent to the M60 Local Air Quality Management Area (AQMA) which is particularly sensitive to increases in air pollution and is heavily monitored/managed. ○ Where/when necessary dust suppression will be utilised throughout construction, particularly during dry weather, which will be water sprays with a light mist to minimise water runoff throughout the site. ○ The shape of the stockpiles will be so to minimise potential for dust generation. ○ Soil stockpiles will not exceed 3m in height and not be stored for longer than 6 months. If longer than 6 months they will be seeded. ○ Enforce speed limits on site - a speed limit of 5 mph will be enforced. ○ No burning on site. ○ Mix grout in enclosed / shielded area. ○ Sheet vehicles carrying spoil to prevent dust nuisance and cross contamination. ○ Check site accesses and local roads daily for mud and arrange for it to be cleaned up immediately. ○ If any plant or equipment is emitting black / heavy smoke, cease use and send for servicing. ○ Engine and exhaust systems should be maintained/ Vehicle exhausts should be directed away from residents & sensitive receptors areas.

		○ Always keep the number of handling operations to a minimum by ensuring that dusty material isn't moved or handled unnecessarily. ○ Stockpiles of excavated material has been placed to the north of the working area, away from the watercourse. ○ Dusty materials and processes can be damped down using water sprays/ bowsers.
Lighting	Local communities	○ The use of lighting will be of the appropriate lux levels to minimise disturbance. ○ The direction of the lighting will be task specific and not point or reflect into adjacent properties. Where possible lighting should be switched off to avoid disturbance. ○ Using directional lighting to avoid intrusion to sensitive receptors. ○ Avoiding disturbance of protected species e.g. bats and nesting birds.

4.9 Waste Management

All waste will be removed from site for disposal to a licensed waste facility, with copies of Duty of Care documentation always obtained and retained on site. It is anticipated that mixed construction & demolition skips will be taken off-site for segregation.

UU uses a bespoke version of the BRE SMART Waste Tool ('Elevate') to create and maintain SWMP's online. C2V+ shall adopt this system for the purposes of this contract. C2V+ shall use UU's Elevate tool to develop, maintain, update, and review the SWMP and shall regularly review the SWMP with the UU Project Manager throughout the duration of the works.

4.9.1 Materials Storage

The construction industry is a major consumer of natural resources, this use can be minimised through the consumption of recycled materials, and the effects minimised by using sustainably sourced materials. Also, the way materials are used and stored can have an impact where these are damaged and need to be replaced.

- Only timber that is from a demonstrable sustainable source will be used. Delivery tickets will be on file with each line item stating whether it is from an FSC / PEFC source and referencing the chain of custody certificate number. The chain of custody certificate will also be on file showing the list of products covered under the certificate.
- Materials vulnerable to damage through the weather / vehicle movements etc. will be stored in designated areas and suitably protected
- Stockpiles will be protected to prevent soil erosion, nuisance from wind-blown dust and silty run-off
- Ensure site/yard layout for storage of potentially polluting materials (i.e. solvents, antifreeze, Oil, Fuel, etc.) is:
    - Located away (at least 10m) from sensitive receptors (i.e. drains, watercourses, boreholes, wells, etc.)
    - Located away from trafficked areas or otherwise use protection barriers
    - Located away from waste storage areas
    - Secure from potential vandalism
- A site operative will be designated as being responsible for the control of materials storage.
- Hazardous chemicals are to be stored, used and disposed of as stipulated in the COSHH datasheets
- All COSHH materials are to be stored in a secure bunded COSHH store.
- Materials are to be properly packaged and stored to enable handling without any damage.
- Materials are to be protected from the elements to prevent spoiling/damage.

- Bulk materials (i.e. sand, stone, tarmac, etc.) are to be stored:
    - In locations where rainwater run-off will not enter drains or watercourses
    - In location clear of floodplain of watercourse
    - In sheltered location to prevent windblown dust
    - Where walled bays are not available, materials should be stored in neatly stockpiled areas
- Designing out unsustainable materials where possible and minimising waste.
- Specifying materials/ products that have less impact on the environment.
- Specifying the use of peat free product for landscaping.
- Procure recycled materials where possible.
- When ordering materials, contract buyers will introduce a 'take-back policy' on suppliers, so where possible, no delivery will leave the site without taking associated waste and packaging with them.
- Where appropriate, materials (i.e. aggregate) will be reused on site.
- Only the required amounts of material are to be ordered when needed.
- When deliveries arrive on site:
    - Ensure they are off-loaded in a designated area
    - Check materials for correct specification, quantity and damage
    - Do not accept delivery of damaged goods

4.9.2 Reuse of Site-Won Material

Excavated arisings from site will not be regarded as waste if they are clean and uncontaminated, suitable for use without treatment and their reuse is incorporated into the project design.

Where soils contain man-made materials, excavation of such soils should not commence until a risk assessment has been carried out to assess the suitability of such soils for re-use. Where the soil would be classified as hazardous waste or if the predicted total amount of soil to be re-used > 1000 tonnes then the CL:AIRE Definition of Waste Development Industry Code of Practice shall be followed and the risk assessment and development/remediation strategy will require no objections to be received following enquiries from the local authority's contaminated land officer and the Environment Agency, irrespective of whether planning permission is required. A materials management plan will need to have been completed and available on site, prior to excavation of contaminated soils and a declaration shall be sent to the Environment Agency prior to re-use of soils and this declaration shall be for the amount of soils intended to be re-used.

Where feasible, inert waste from demolition and construction will be crushed in line with the appropriate permit and a U1 waste exemption or in cases where the quantities were to exceed 5,000 tonnes, the WRAP Quality Protocol for the Production of Aggregate from Inert Waste and reused either on site or transported for use at other construction sites. This still requires that a risk assessment be carried out to determine if the re-use of such materials presents an unacceptable environmental risk.

Any surplus material arising from the works will be advertised via the Elevate tool and/or CL:AIRE register of materials (https://www.claire.co.uk/projects-and-initiatives/cl-aire-register-of-materials).

4.9.3 Import of Soils and Other Materials

Soil shall only be imported to site if there is no scope to reuse any site-won material. Proposed soils for import shall be tested, handled and stored in accordance with *BS 3882:2015 – Specification for topsoil* or *BS 8601:2013 - Specification for subsoil and requirements for use*. The frequency of testing shall be determined by the source of the material (e.g. greenfield, brownfield, recycled etc.) and site-specific suitability criteria.

If it is proposed to import 'waste' materials to use as fill material (e.g. recycled aggregate or surplus material from another development site), C2V+ will obtain all necessary documentation, mobile plant environmental permits and/or waste exemptions for the use of such materials. Copies of all permits,

exemptions and other documentation will be provided to the client at least one week prior to the use of any 'waste' material.

All import of soil/topsoil to site over 1,000 tonnes will require a permit or CL: AIRE DoWCoP declaration. Speak to the project environmental advisor.

The materials proposed for import, along with any site-specific requirements, are as follows:

Material	Quantity	Site-specific requirements	Proposed source
6F2 aggregate	TBC	All imported stone to be locally sourced non-calcareous washed stone	TBC
Subbase	TBC	All imported stone to be locally sourced non-calcareous washed stone	TBC
Pipe Bedding	TBC	All imported stone to be locally sourced non-calcareous washed stone	TBC

4.10 Contaminated Land & Groundwater

4.10.1 Contaminated Ground

A factual report has been completed by Ian Farmers Associates, the geology beneath the site is recorded as Glacial Till, Alluvium and Glaciofluvial Deposits. Bedrock beneath the site is recorded as Sandstone of the Chester Foundation. A geo-environmental Conceptual Model has been produced.

The WwTW does not lie within a Coal Mining Authority Reporting area.

There have been no previous ground investigations on site to provide more detailed and accurate description of the underlying geology/hydrogeology. The results of recent ground investigations are currently being assessed and the ECP will be updated accordingly.

There are no recorded pollution incidents or historical landfills reported within 500m of the site. Land contamination could be encountered as a result of the historical uses of the WwTW; contingency planning for this will be developed and detailed within the ECP once detailed ground investigation assessment has been completed. All identified waste will be removed in accordance with appropriate waste legislation and classified accordingly.

The table below identifies locations where contamination has been identified:

Site	Location	Contaminants	Potential Impact
TBC			

However, in the event of discovery of unexpected contaminated land:

- The works will be stopped immediately
- The Site Manager will be informed
- The area will be sealed off to prevent the spread of contaminants and ensure there is nothing that could cause a fire or explosion
- A specialist company shall be consulted to arrange further investigation and determine the most appropriate strategy

- The client and the local authority will be notified and works in the area shall not recommence until an agreement is reached on how to proceed
- This document will be updated to include any locations of identified contamination

4.10.2 Contaminated Groundwater

Construction works below ground are likely to encounter inflow of groundwater. Site controls will be implemented in order to dewater excavations and discharge the water to the head of the WwTW (with permission from United Utilities) or to surface water (with permission from the EA under a discharge permit).

Results from groundwater sampling, taken during GI works, will indicate any presence of contamination. The ECP will be updated accordingly and include a more detailed dewatering methodology.

4.11 Energy & Fuel Use

The following table outlines the main sources of energy consumption and carbon emissions on this contract during the construction phase and the measures that will be taken to minimise / reduce them:

Source of Energy / Carbon	Minimisation / Reduction Measures
Plant fuel use (excavators, generators etc.)	• Construction plant and equipment will be regularly maintained and serviced in line with manufacturer and supplier recommendations. • Switch off vehicles and other mobile plant when not in use. • Use energy efficient plant and equipment - ensure that the energy efficiency is considered when discussing options with suppliers/sub-contractors. • Avoid Oversizing – a generator should not be run less than 30% load (preferable higher than 40%) with maximum efficiency typically above 70% load. • Ensure power factor is considered, loads are evenly distributed across the 3 phases, the air is clear and harmonic distortions are minimized. • Fitting fuel and electricity meters to monitor generator efficiency. For small generators, consider using a digital inverter to improve part- load efficiency. • Avoid hiring Air compressor units with rewound motors.

Site offices (heating, lighting, computers etc.)	• Posters reminding staff to switch off computers, lights etc. when not in use.
	• Timer for external lights to ensure switched off overnight.
	• Use mains electricity where available – generator supplied electricity is more than double the cost of grid supplied electricity.
	• Ensure we use Eco Cabins instead of standard portable cabins, to include:
	  ○ Fully insulated floor, ceiling and walls
	  ○ Double glazed windows
	  ○ Lighting with PIR sensors
	  ○ Heating with PIR and timers
	  ○ Waterless features available in wet area
	  ○ Energy Performance Rating of B

Travel and deliveries to and from site.	• Car Share/ Use public transport if possible

4.12 Public Rights of Way

PRoW Ref.	Impact of Works	Closure Required? (Y/N)	Issue Date	Expiry Date
MidFp116	Commences 45m south of the access road but will remain unaffected by the proposed development	N	N/A	N/A

No works are envisaged to affect the PRoW. If this should change during the construction period, Initial closure notices will be obtained by the client and C2V+ will ensure that these are in place before carrying out any work affecting a PRoW.

Copies of closure consents will be retained on site and displayed at the point of the closure.

4.13 Archaeology & Cultural Heritage

The following table sets out any features of archaeological or cultural heritage importance in proximity to the project and their impact on the project:

Site	Location	Listing Status	Potential Impact
Archaeology			
None anticipated			
Cultural Heritage			
Hopwood Hall Icehouse	90m west of access track	Grade II	Unaffected due to distance and extent of works limited to roadworks.

Taking into consideration the likely impacts from previous excavation and construction activities within Castleton WwTW the potential for encountering unknown archaeological assets is considered to be low/negligible.

If any previously unidentified archaeological remains or artefacts are discovered during the works, C2V+ shall immediately notify the client and the relevant regulator and cease all construction-related activities within 10m of the discovery.

Where unexpected archaeological/heritage finds are encountered follow the below:

Any archaeological features or remains that are found the work shall be STOPPED and immediately contact your Environmental Advisor.

- Signs of Archaeological features include:
  - Changes in vegetation (concentrations of poppies or nettles).
  - Grassy humps and lumps in the ground.
  - Concentrations of stones.
  - Dry stone dykes

Archaeological / Heritage finds include:

- Coins or pottery
- Burnt or darkened material.
- Old Brick or tile fragments.
- In-filled ditches
- Bone fragments or skeletons.

- Timber joists or postholes.
- Brick or stone foundations.

Protect any suspected finds by fencing off the area and signed.

Do not assume that any features or remains discovered are unimportant.

Be prepared for unexpected finds whether or not known archaeological or historical features have been identified on your particular site.

4.14 LANDSCAPING

Root Protection Area of all trees likely to be impacted by works shall be protected using exclusion zones. Works relating to trees and hedgerows will adhere to the following documents:

Arboricultural Impact Assessment and Method Statement (document number to be added)

Tree Removal, Retention and Protection Plan (document number to be added)

With reference to the Tree Constraints Report and Plan

WwTW: 80061379-01-C2V-CSTLT-99-RP-I-00007

Access road and unction widening: 80061379-01-C2V-CSTLT-99-RP-I-00010

All land affected by the works (e.g. temporary compound areas, accesses, hard landscape, soft landscape, boundaries, hedgerows, walls and fences, surface water drainage, subsoil and topsoil) shall be reinstated to its original condition unless otherwise agreed. The LANDSCAPE & BIODIVERSITY PROPOSALS (document number to be added) has been produced with the planning application.

Reinstatement of third-party land, where not detailed in the planning application drawings, shall be agreed separately with the landowner through discussions with the Stakeholder and Customer Manager/ Third Party Co-ordinator.

Work affecting topsoil shall be carried out following the recommendations of BS 3882:2015 Specification for Topsoil.

All subsoil, handling and storage shall be undertaken following the recommendations of BS8601:2012 Specification for Subsoil and Requirements for Use.

4.14.1 Topsoil/Subsoil Storage

Any topsoil to be reused in reinstatement must be assumed to be contaminated with Himalayan balsam and all works with regard to soils must be undertaken in accordance with the invasive species management plan and method statement.

Topsoil and subsoil that is required to be stripped will be stored appropriately and reinstated upon completion.

Topsoil stored for reuse must be kept separate from subsoil and other stored materials. If it is to be stored for longer than 6 months, it should be sown with a deep-rooting suitable grass/legume seed mixture.

Other considerations to be considered during soil management includes:

- Control of Himalayan balsam during storage and at reinstatement
- Potential use of stockpiles by badger and GCN and need for stockpiles to be checked by an Ecologist before reinstatement is undertaken
- Where practicable no movement of topsoil shall occur during the months of October to March (inclusive) except where the topsoil is in a dry condition.
- Topsoil's should be stripped and stored within identified areas within the site for re-use.

- All topsoil and subsoil shall be stored in separate mounds which:
    - shall be located away from any plant movements:
    - shall be constructed with only the minimum amount of compaction
    - necessary to ensure stability and so shaped to avoid the collection of
    - water in surface undulations
    - shall not be traversed by heavy vehicles or machinery except where essential for purposes of mound construction, removal or maintenance.
- Topsoil is to be stored at a height no greater than 3m.
- Subsoil is to be stored at a height no greater than 5m.
- After replacement of topsoil and subsoil and after settlement the contours marry in with those of the surrounding land.
- The land is free from ponding and capable of receiving an effective artificial under-drainage system.
- The re-spread topsoil shall not have a lower agricultural land classification.
- Any required replanting and /or reseeding to be undertaken at appropriate times of the year and with the agreement of landowners and the Landscape plan.
- The ground should be re-graded to fit with natural contours.
- Restoration works shall consider the successful integration of the site with surrounding land uses and habitats.
- Construction traffic must not track over stored soils.

Topsoil will to be reinstated to the following consolidated depths:

- Grass – 150mm
- Planting – 300mm

Himlayan balsam control will continue during the landscape reinstatement and maintenance period.

Introduction

This Environmental Emergency Response Plan (EERP) forms part of the Environmental Control Plan for Castleton. The EERP will:

- Outline what constitutes an incident
- Detail the appropriate reporting procedure required for near misses, incident and accidents
- Provide a list of pollution response contractors to be contacted in the case of an environmental emergency

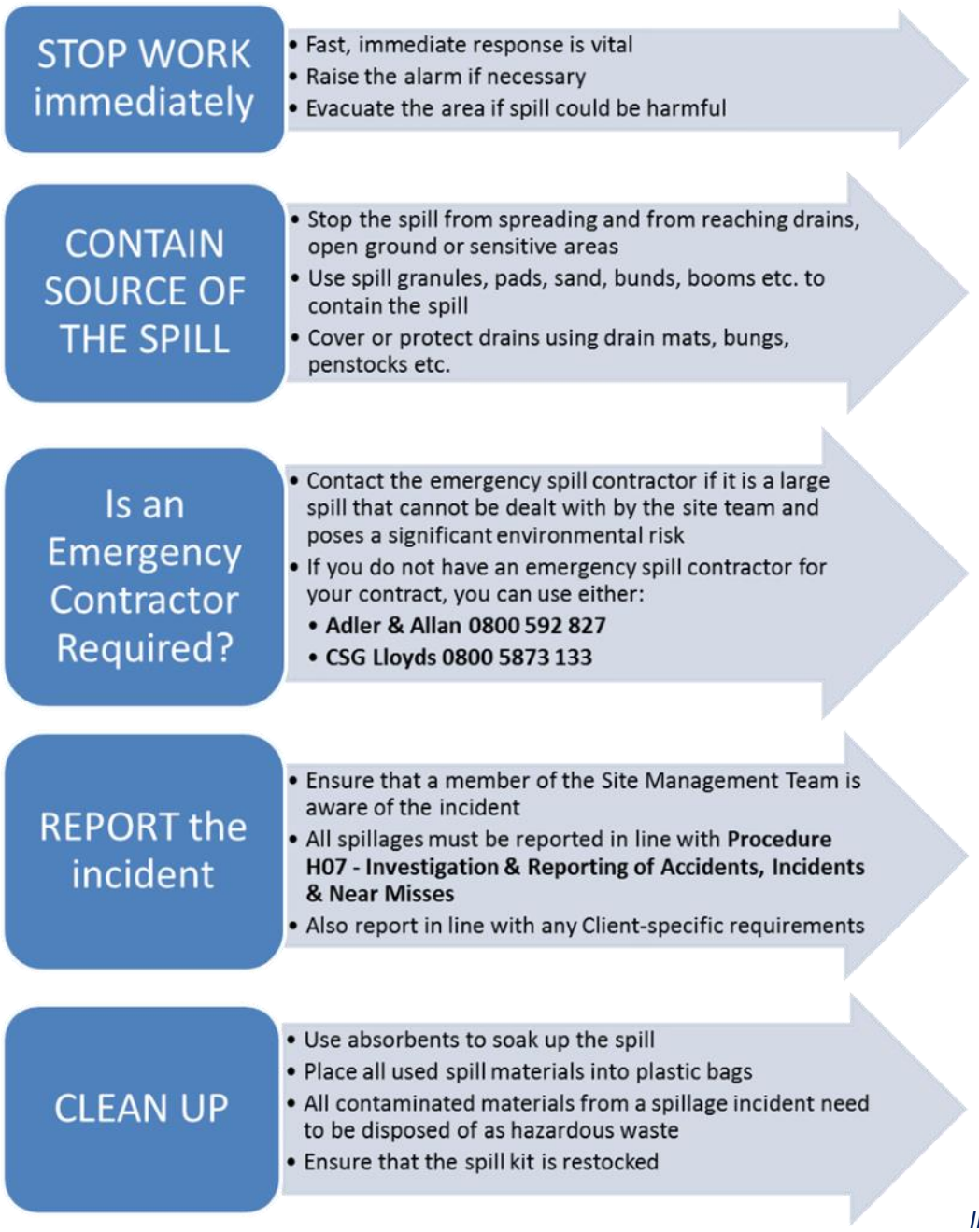
This information will be communicated through a specific toolbox talk and the document will be kept on site at all times.

Definition of Environmental Incidents

The following table outlines a range of occurrences, which are considered to constitute an environmental incident:

CATEGORY	INCIDENT EXAMPLES
Waste management	• Illegal disposal – waste sent to a site not licensed to accept it / not taken by a registered waste carrier / no Waste Transfer Note in place • Illegal use / treatment – import of 'waste' without an exemption/Permit / burning or burial of waste on site • Fly tipping – deposit of waste by a third party (who may or may not be known) • Inadequate storage – wind-blown litter, odour from skips, overflowing skips, wrong waste in wrong skip
Pollution of water / ground	• Spillage of fuel/oil/other pollutant (e.g. concrete, sewage, chemicals) to a watercourse or drain or to the ground • Discharge of anything other than clean surface water to a watercourse without consent e.g. silty water from run-off / pumped excavations
Other water-related incidents	• Illegal abstraction – taking more than the allowed quantity of water ($20m^3$) from a watercourse without consent • Use of a standpipe without consent from the local water authority • Working in a floodplain, or in, near, over or under a watercourse without consent
Wildlife impacts	• Protected Species – removal of structure/tree/vegetation without checking for bats/birds; works in an area before translocation of protected species is complete • Protected Habitat – damage to a protected area (e.g. SSSI, SAC); work outside of consented area • Damage to mitigation measures e.g. newt fencing, vole boards • Damage to vegetation/trees that are protected/to be retained • Causing an invasive plant e.g. Japanese Knotweed to spread
Nuisance issues	• Justified complaints regarding noise, dust, vibration, odour, lighting etc. by a local resident, business, organisation, member of the public or enforcement officer • Serving of an enforcement notice by the local EHO
Other	• Damage to a protected cultural heritage feature • Closure of a public footpath without consent

	• Excavation/storage of contaminated materials resulting in the spread of pollution to other parts of the site



Incident Reporting Procedure

In the event of a potential or actual environmental incident being noticed, the person(s) identifying it shall firstly take immediate steps to prevent or stop the cause and minimise the resulting additional impacts if safe to do so, for example;

- Fix or maintain silt protection measures
- The installation of additional silt protection measures
- Isolate any source of hydrocarbon spill and utilise spill pads
- Deploy an oil boom downstream of any spill in proximity to a watercourse.

The person who identifies the incident shall promptly report the incident to the C2V+ Site Agent, who shall then notify the C2V+ Environmental Advisor and UU Project Manager (and Environmental Clerk of Works, if applicable), in order to relay the details of the incident and to receive any necessary expert guidance and actions.

When safe to do so, the identifying person(s) must attempt to collect as much evidence and details of the incident as possible. This should include photographs and notes, weather conditions, details of substances and equipment involved.

The UU Project Manager shall then notify United Utilities Environment & Sustainability Team. An HSE-31 Incident Notification form will be completed by the C2V+ Site Agent and sent to the C2V+ Environmental Advisor for internal recording.

Within 2 days of the incident, a member of the C2V+ site management shall then upload a 2 Day Report to UU's Elevate tool, detailing the immediate cause of the incident, what it has affected, corrective actions implemented to resolve the incident, follow-up actions (with deadlines and owners) required to prevent a recurrence and all documented evidence (photos, samples, measurements etc.).

The flow diagram below details the reporting chain:

Where the incident has involved a Controlled Water, the person supervising the site on which the incident occurs must notify the Environment Agency Incident Hotline (0800 70 60 50) within 2 hours of the identification of the incident – regardless of the severity, and provide all requested information.

Where the Environment Agency advises that they wish to attend the site of the incident and/or provide corrective guidance, the Contractor shall then fully cooperate and resolve the incident to the Environment Agency's and Construction Project Manager's satisfaction.

Emergency Contact Details

CONTACT:	NAME:	NUMBER:
Emergency Services:	Fire / Police / Ambulance	999
EA Hotline:	Environment Agency	0800 70 60 50
Local Authority:	Rochdale Borough Council	0300 303 8884
Local Water Authority:	United Utilities	0345 672 2888
Specialist Clean-Up Services:	Adler & Allan CSG Lloyds	0800 592 827 0800 5873 133
Contract Manager:	Richard Heaps	07799 435 678
Construction Manager (Site Agent):	Kevin McCrory	07385 374019
Construction Site Foreman	TBC	Number
Environmental Clerk of Works (ECoW):	TBC	Number
C2V+ Environmental Advisor:	Simon Boniface	07392 134309
C2V+ Environmental Manager:	Lucinda Farrington	07392 134470

Fuel Deliveries:

On arrival at site the tanker driver will stop in the site compound, inform C2V+ of their arrival and sign in at the site office. A visitor's induction will be carried out by C2V+

The tanker will reverse to a point adjacent to the bunded fuel tank in the compound under the guidance of a banksman; the tanker driver will familiarise themselves with the tank layout and check their vehicle for any oil leaks. Any leaks will be dealt with using an absorbent spill kit

The tank gauges will be checked to ensure there is sufficient space in the tank to receive the delivery

Absorbent matting will be placed on the ground between the tanker and the fuel tank, covering the pathway of the delivery hose; the hose will be checked for any wear and tear

A C2V+ representative will stand with the tanker and monitor the immediate area for leaks. The tanker driver will set the fuel delivery meter to the required litres and operate the filling procedure using the remote-control delivery device

Ensure that all parties involved in the delivery have arranged a system of communication and have a good line of sight throughout the delivery

Proceed to deliver fuel, checking for leaks and keeping an eye on the gauge

Upon completion of the delivery, close the delivery nozzle and delivery point isolation valve

Remove the delivery hose from refuelling point and rewind the hose to its resting place on the tanker

Clean away any residual drips or leaks using absorbents. All used absorbents must be placed in the labelled hazardous waste bin on site

On completion, C2V+ to provide a signature for the delivery documentation to confirm a satisfactory delivery

Refuelling of Plant (at compound):

Refuelling will only take place in the designated area in the main compound by a named individual who has received training on correct refuelling methods and the use of spill kits

A Plant Nappy will be placed underneath the refuelling point to catch any drips

A fully stocked oil spill kit will be in place in the event of a spillage occurring

Refuelling of Plant (on site):

Refuelling will only take place at least 10m away from any watercourse or drain, by a named individual who has received training on correct refuelling methods and the use of spill kits

A Plant Nappy will be placed underneath the refuelling point to catch any drips

A fully stocked oil spill kit will be in place in the event of a spillage occurring

HSE-07 to be completed on a weekly basis by a member of the site team.

VolkerWessels UK

Site Safety and Environmental Inspection Record — HSE-07

VF-B	VF-C	VF-R	VH	VR	VS	VB	VGE	VL	VI	Shared Services
✓	✓	use HSE-07R	use HSE-07-VH	n/a	use HSE-07-VS	use HSE-07-VS	use HSE-07-VS	✓	use HSE-07-VS	n/a

Business Unit:		**Inspection Date:**	
Contract No. & Name:			

The following items have been inspected at the site above and items requiring attention are detailed in the comments below.

Site Documentation								
1.	Review Site Management Plan	☐	2.	Risk Assessments	☐	3.	Method Statements	☐
4.	COSHH Assessments	☐	5.	Emergency Services Contact List	☐	6.	First Aiders / Map Of Nearest Hospital	☐
7.	Accident Book	☐	8.	Induction Records (Rule, Labels)	☐	9.	Inspection Registers	☐
10.	F10 / H&S Law Poster / EL Insurance Displayed	☐	11.	Tool Box Talk Records	☐	12.	Plant Operator Competences	☐
13.	LOLER (Plant / Equipment) Certificates	☐	14.	Permits To Work	☐	15.	Control Of Subcontractors	☐
16.	Waste Management Records	☐	17.	Trade Occupation Approved Cards	☐	18.	LCV / HGV Records	☐
Site Welfare								
19.	Welfare Facilities	☐	20.	Fire Fighting Equipment	☐	21.	First Aid Equipment	☐
22.	Temporary Electrics	☐	23.	Fire Plan - Offices	☐	24.	Fire Escapes	☐
Site Layout								
25.	Access / Egress	☐	26.	Traffic Routes	☐	27.	Pedestrian Routes	☐
28.	Security / Signs	☐	29.	Public Protection	☐	30.	Storage Areas	☐
31.	Compressed Gas / HFL Storage	☐	32.	Pollution Prevention Bunding / Fuel Storage Etc.	☐	33.	Housekeeping	☐
Construction Operations								
34.	Scaffolding / Access / Ladders	☐	35.	Edge Protection	☐	36.	Excavations	☐
37.	Safety Nets	☐	38.	Hoists	☐	39.	Confined Spaces	☐
40.	Portable Tools	☐	41.	Site Electrical Distribution / Tools	☐	42.	Lighting	☐
43.	Noise	☐	44.	Environmental / Emergency Provisions	☐	45.	Fire Plan - Site	☐
46.	Demolition	☐	47.	Formwork / Falsework	☐	48.	Underground / Overhead Services	☐
49.	PPE (Clean And Used)	☐	50.	Site Transport	☐	51.	Hazardous Materials	☐
52.	Lifting Equipment	☐	53.	Traffic Management	☐	54.	Plant / Machinery	☐
55.	Behavioural Safety Awareness	☐	56.	Programme	☐	57.	Supervision	☐
Other Items *(Enter the topic in boxes below)*								
58.	DSE Assessments	☐	59.	Recurring Items	☐	60.		☐
61.		☐	62.		☐	63.		☐

Issue no.:	7	Date:	Oct 2020	Parent document:	Health and Safety / Environmental / Quality Policy and Practice		
Approved for IMS:	IMS Manager			Document owner:	CR Director	Workspace file: 13.4	Page 1 of 3

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APPENDIX D – ENVIRONMENTAL RISK ASSESSMENT

Buisness Unit:	**C2V+**	**Date:**	**12/10/2020**
Contract Number and Name:	**C13634 - Castleton WwTW**	**Carried out by:**	**P Brolly**

Activity / Aspect	Applies?	Hazard (Source)	Pathway	Receptor	Barriers (Controls)	Likelihood of exposure	Score	Consequences	Score	Multiplied	Residual Risk
Construction - placing of concrete	Yes	Concrete	L, W	Land, Controlled Waters	Method statement, formwork, supervision, manned operation	Low	2	Moderate	3	6	MEDIUM
Construction - concrete washout	Yes	Concrete washout	L, W	Land, Controlled Waters	Chute washout only, lined washout pit or container, emptied frequently	Low	2	Moderate	3	6	MEDIUM
Construction - washing of tools or equipment	Yes	Washings - containing oils, fuel, silt etc	L, W	Land, Controlled Waters	No tools or equipment to be washed near water courses	Negligible	1	Mild	2	2	LOW
Construction - laying of pipework/ducting	Yes	Dust	L, A, W	Humans, Flora & Fauna	Method statement, risk assessment	Negligible	1	Negligible	1	1	LOW
Construction - laying of pipework/ducting	Yes	Jointing compounds	L, W	Land, Controlled Waters	Method statement, risk assessment, suitable containers, COSHH controls	Negligible	1	Mild	2	2	LOW
Construction - piling	Yes	Noise and vibration	L, A, W	Humans, Flora & Fauna	Method statement, risk assessment, working hour restrictions, noise monitoring, letter drops	Negligible	1	Mild	2	2	LOW
Construction - steel erection/fixing	Yes	Noise	A	Humans, Flora & Fauna	Method statement, risk assessment, lifting plan	Low	2	Negligible	1	2	LOW
Construction - dry lining	No	Gypsum-based plasterboard	L, W	Land, Controlled Waters	Minimise offcuts, dedicated skip, disposal to separate landfill cell	Negligible	1	Moderate	3	3	LOW
Construction - use of adhesives and mastics	Yes	Constituent chemicals	L, A, W	Land, Controlled Waters, Humans, Flora & Fauna	Use up each container/tin/tube before starting a new one, dispose of containers correctly	Low	2	Mild	2	4	LOW

Construction - kerb laying (including cutting)	Yes	Dust (and dust suppression effluent)	A, W	Land, Controlled Waters, Humans, Flora & Fauna	Dust suppression, cutting away from sensitive receptors, method statement	Low	2	Severe	4	8	MEDIUM
Demolition - of structures	Yes	Noise and dust	L, A, W	Humans, Flora & Fauna	Method statement, risk assessment, dust sheets, damping down,	Medium	3	Moderate	3	9	MEDIUM
Demolition - reclamation of materials	Yes	Noise and dust	L, A, W	Humans, Flora & Fauna	Reclamation before demolition, minimal destructive action to reclaim materials, method statement	Low	2	Negligible	1	2	LOW
Demolition - crushing & screening	Yes	Noise and dust	L, A, W	Humans, Flora & Fauna	Competent crusher operator, damping down, minimising stockpiles, stockpiles away from receptors	Medium	3	Mild	2	6	MEDIUM
Earthworks - excavation of material	Yes	Arisings	L, A, W	Land, Controlled Waters	Soils report before excavation, storage in accordance with content away from receptors	Low	2	Negligible	1	2	LOW
Earthworks - excavation of material	Yes	Groundwater from excavations	L, A, W	Land, Controlled Waters	Sedimentation tank and metered discharge surface water or discharge consent for foul sewer	Medium	3	Mild	2	6	MEDIUM
Earthworks - excavation of material	Yes	Dust	L, A, W	Humans, Flora & Fauna	Damping down, monitoring of dust levels	Negligible	1	Negligible	1	1	LOW
Earthworks - transport of material offsite or import	Yes	Noise and dust	L, A, W	Humans, Flora & Fauna	Covered wagons, bulk movements outside peak and sensitive hours	Medium	3	Mild	2	6	MEDIUM
Earthworks - lime stabilisation	No	Lime cement	L, W	Land, Controlled Waters, Humans, Flora & Fauna	Competent subcontractor, method statement, supervised operation	Negligible	1	Moderate	3	3	LOW
Highways - planing of existing carriageway	No	Odours, noise and dust	L, A, W	Humans, Flora & Fauna	Competent workforce, method statement, supervised operation, letter drops	Medium	3	Mild	2	6	MEDIUM
Highways - in-situ recycling of planings	No	Odours, noise and dust	L, A, W	Humans, Flora & Fauna	Competent workforce, method statement, supervised operation, letter drops	Medium	3	Mild	2	6	MEDIUM
Highways - laying of asphalt	No	Odours, noise and dust	L, A, W	Humans, Flora & Fauna	Competent workforce, method statement, supervised operation, letter drops	Medium	3	Mild	2	6	MEDIUM

Highways - use of bitumen sealants or binders	No	Bitumen products	L, A, W	Land, Controlled Waters	Bunded storage away from receptors and potential impact, tankers regularly maintained	Medium	3	Moderate	3	9	MEDIUM
Highways - laying of anti-skid surface	No	Odours and noise	L, A	Humans, Flora & Fauna	Competent workforce, method statement, supervised operation, letter drops	Medium	3	Moderate	3	9	MEDIUM
Highways - white lining	Yes	Thermoplastic	L, A	Humans, Flora & Fauna	Competent workforce, method statement	Medium	3	Moderate	3	9	MEDIUM
Highways - cleaning of street furniture	No	Wash down water containing detergents	L, W	Land, Controlled Waters	Non-harmful detergents, completion to cleaning cycle, consideration of water use	Negligible	1	Negligible	1	1	LOW
Highways - gully emptying	Yes	Gully effluent / solids	L, W	Land, Controlled Waters	Competent workforce, compliant gully sucker regularly maintained, disposal in accordance with legislation	Low	2	Mild	2	4	LOW
Materials - batching of mortar	Yes	Mortar, wash down effluent	L, W	Land, Controlled Waters	Metered water supplies, regular inspection and monitoring, established away from receptors, emergency response	Low	2	Moderate	3	6	MEDIUM
Office - cleaning	Yes	Cleaning product	L, A, W	Land, Controlled Waters	Bleach-free products	Low	2	Mild	2	4	LOW
Office - refridgeration	Yes	Old CFC fridges	A	Humans, Flora & Fauna	All fridges now free of CFCs	Negligible	1	Severe	4	4	LOW
Office - air conditioning	No	CFC, HCFC	A	Humans, Flora & Fauna	Competent maintenance company, air conditioning service regularly	Negligible	1	Severe	4	4	LOW
Office - ICT equipment disposal	No	Hazardous waste	L, A, W	Land, Controlled Waters	Site Waste Management Plan, disposal/recycling point authorised to accept, Duty of Care checks	Low	2	Moderate	3	6	MEDIUM
Office - ICT consumables (ink cartridges etc)	Yes	Waste	L, A, W	Land, Controlled Waters	Site Waste Management Plan, disposal/recycling point authorised to accept, Duty of Care checks	Negligible	1	Mild	2	2	LOW
Office - waste water & sewage	Yes	Foul water/waste	L, A, W	Controlled Waters	Approved connections to foul sewer or septic tank / Klargester / Bio-disc	Negligible	1	Moderate	3	3	LOW
Office - waste	Yes	Waste	L, A, W	Land, Controlled Waters	Site Waste Management Plan, disposal/recycling point authorised to accept, Duty of Care checks	Negligible	1	Mild	2	2	LOW

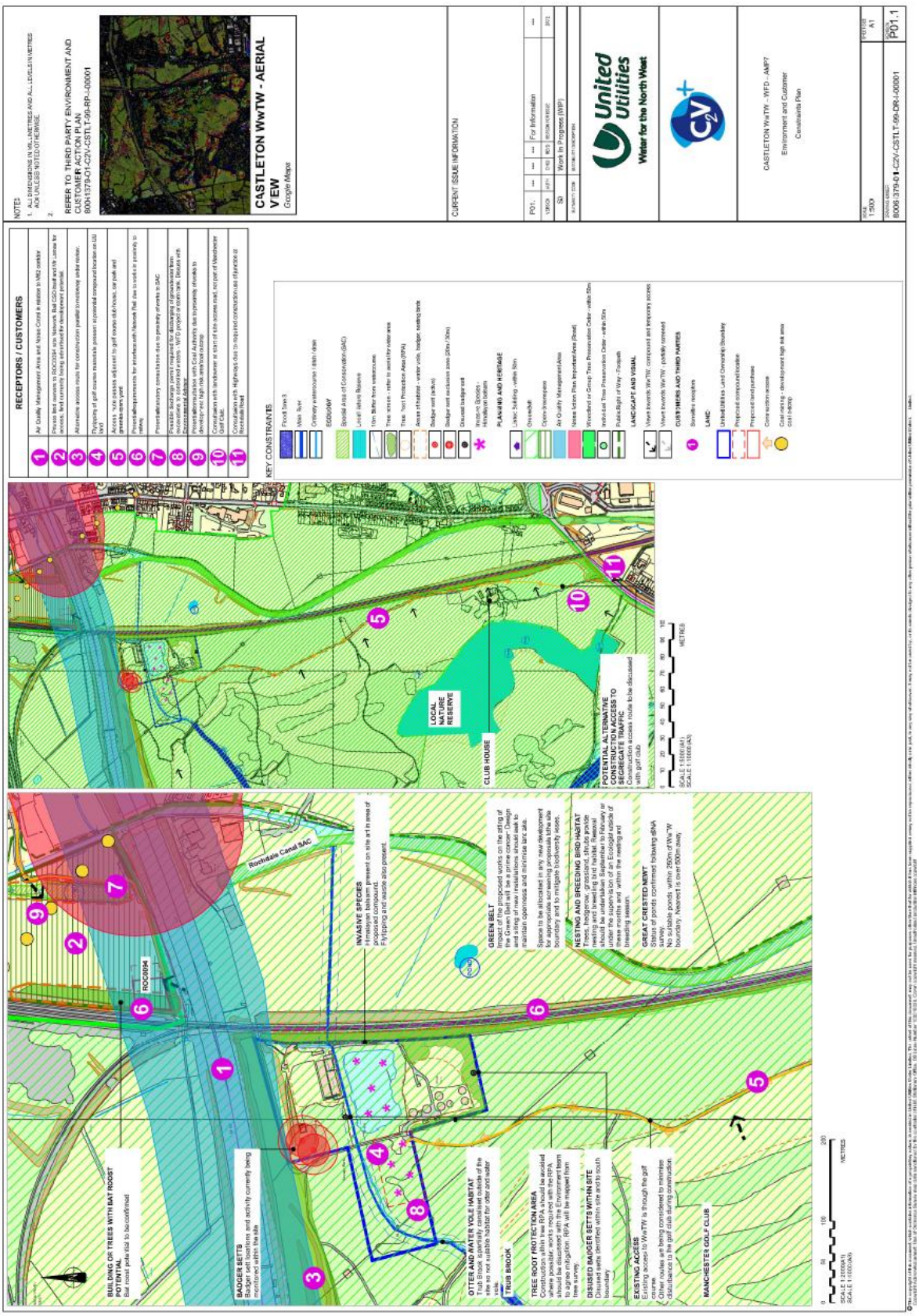
Rail - use of rolling stock	No	Fuel, oil or lubricant	L, A, W	Land, Controlled Waters	Regular maintenance and inspection, emergency response, spill kits	Low	2	Moderate	3	6	MEDIUM
Storage of fuels, oils and other lubricants	Yes	Fuel, oil or lubricant	L, A, W	Land, Controlled Waters	Compliant fuel tank, emergency response, spill kits, Fuel Coordinator, siting away from watercourses	Negligible	1	Moderate	3	3	LOW
Storage of bituminous products	No	Bitumen products	L, A, W	Land, Controlled Waters	Isolated bunded storage area away from controlled waters, spill kits, inspection, emergency response	Low	2	Severe	4	8	MEDIUM
Storage of chemicals	Yes	Chemical	L, A, W	Land, Controlled Waters	Locked dedicated storage facilities, chemsafe, COSHH register, method statement, spill kits, emergency response	Low	2	Moderate	3	6	MEDIUM
Storage of loose material (stone/soil)	Yes	Particulates in runoff	L, W	Land, Controlled Waters	Stockpiled away from surface water systems, inspection	Low	2	Moderate	3	6	MEDIUM
Storage of loose material (stone/soil)	Yes	Dust	A	Humans, Flora & Fauna	Stockpile heights minimised, damping down during dry periods, inspection	Medium	3	Mild	2	6	MEDIUM
Storage and washing of small tools	Yes	Fuel, oil or lubricant	L, A, W	Land, Controlled Waters	No washing into surface water systems, inspection	Negligible	1	Negligible	1	1	LOW
Storage and washing of plant	Yes	Fuel, oil or lubricant	L, A, W	Land, Controlled Waters	No washing down on site, depots (if applicable) to use dedicated wash facilities	Low	2	Moderate	3	6	MEDIUM
Storage of bagged cement	Yes	Cement dust	L, A, W	Humans, Flora & Fauna	Dedicated dry storage area, effective materials storage, split bags used or cleared up	Low	2	Negligible	1	2	LOW
Storage of salt	Yes	Salt	L, W	Land, Controlled Waters	Dedicated storage barns, drainage to foul sewer or holding tanks, discharge consent licenses, inspection	Negligible	1	Moderate	3	3	LOW
Storage of street lighting lamps	No	Constituent chemicals	L, A, W	Land, Controlled Waters	Dedicated dry stores, effective materials storage, inspection	Negligible	1	Severe	4	4	LOW
Storage of street lighting lamps	No	Fire	Land	Humans, Flora & Fauna	Dedicated dry stores, effective materials storage, inspection, emergency response	Negligible	1	Severe	4	4	LOW
Street lighting - column removal	No	Noise, dust and vapour from cutting	A	Humans, Flora & Fauna	Method statement, risk assessment, exclusion zone, power tools fit for purpose	Negligible	1	Negligible	1	1	LOW

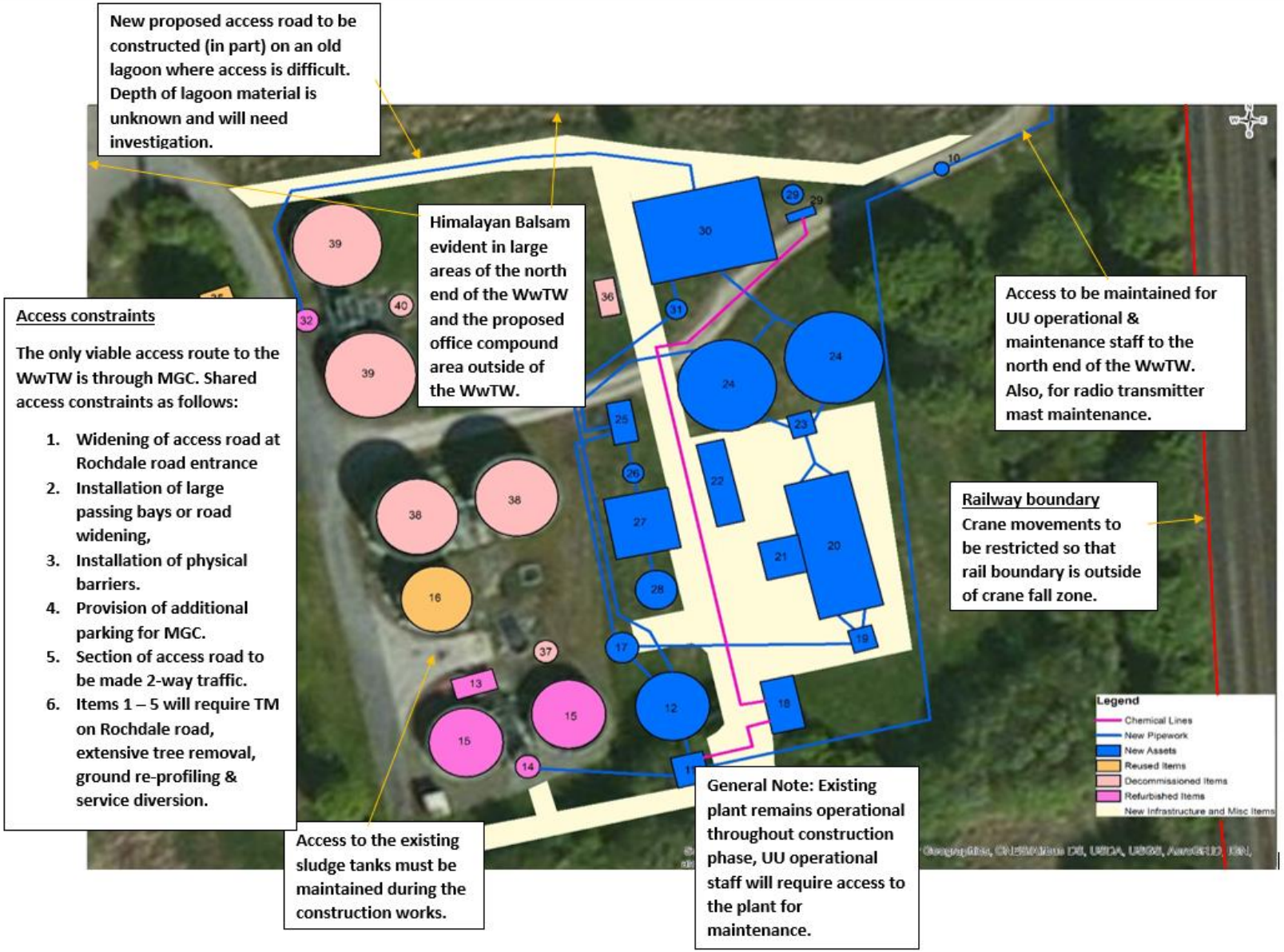
Street lighting - column erection	No	Noise and dust	L, A, W	Humans, Flora & Fauna	Method statement, risk assessment, exclusion zone	Negligible	1	Negligible	1	1	LOW
Street lighting - painting of columns	No	Release of vapours	A	Humans	Paint volume in vehicle fit for day's task, sealed tins when not in use, tins disposed of correctly	Negligible	1	Mild	2	2	LOW
Utility strike - power	Yes	Electricity	L, W, human	Workforce, Humans, fauna	Safe digging practices, buried service location, permit to dig, risk assessment, method statement, emergency response	Low	2	Severe	4	8	MEDIUM
Utility strike - gas	Yes	Gas	A	Workforce, Humans, fauna	Safe digging practices, buried service location, permit to dig, risk assessment, method statement, emergency response	Low	2	Severe	4	8	MEDIUM
Utility strike - water	Yes	Water (large volume)	L, W	Land, Controlled Waters, Humans, Flora & Fauna	Safe digging practices, buried service location, permit to dig, risk assessment, method statement, emergency response	Low	2	Severe	4	8	MEDIUM
Utility strike - fuel	Yes	Fuel (large volume)	L, W	Land, Controlled Waters, Humans, Flora & Fauna	Safe digging practices, buried service location, permit to dig, risk assessment, method statement, emergency response	Low	2	Severe	4	8	MEDIUM
Vegetation control - disturb/destruc'n of trees with TPOs	Yes	Disturbance or destruction	Vegetation	Flora	Environmental Impact Assessment, Client (ecologist) information, environmental planning meeting, fencing, ecologist	Low	2	Moderate	3	6	MEDIUM
Vegetation control - disturb/destruct'n of private asset	Yes	Disturbance or destruction	Vegetation	Flora	Environmental Impact Assessment, Client (ecologist) information, environmental planning meeting, fencing, ecologist	Low	2	Mild	2	4	LOW
Vegetation control - disturb/destruc'n of natural habitat	Yes	Disturbance or destruction	Vegetation	Flora & Fauna	Environmental Impact Assessment, Client (ecologist) information, environmental planning meeting, fencing, ecologist	Low	2	Severe	4	8	MEDIUM
Vegetation control - disturb/destruc'n of fauna or flora	Yes	Disturbance or destruction	Fauna or flora	Flora & Fauna	Environmental Impact Assessment, Client (ecologist) information, environmental planning meeting, fencing, ecologist	Low	2	Severe	4	8	MEDIUM

Vegetation control - removal of invasive plants	Yes	Contamination of 'clean areas'	Vegetation	Fauna	Site Waste Management Plan, authorised Waste Carriers, Duty of Care checks, verification by ecologist / Env Mgr	Low	2	Moderate	3	6	MEDIUM
Vegetation control - weed spraying	Yes	Weed killer	L, W	Flora & Fauna	Selective weed killers where possible, minimal use, locked stores, applicator fit for purpose	Negligible	1	Negligible	1	1	LOW
Vehicle maintenance	Yes	Fuel, oil or lubricant	L, W	Land, Controlled Waters	Completed by competent mechanics at garage/depot, containment systems, waste disposal, vehicle checks	Negligible	1	Moderate	3	3	LOW
Vehicle storage / parking	Yes	Fuel, oil or lubricant	L, W	Land, Controlled Waters	Regular maintenance and vehicle checks, well maintained vehicles, dedicated parking area	Negligible	1	Moderate	3	3	LOW
Vehicles idling/running	Yes	Fuel, oil or lubricant	L, W	Land, Controlled Waters	Regular maintenance and vehicle checks, well maintained vehicles, dedicated parking area	Negligible	1	Moderate	3	3	LOW
Vehicles idling/running	Yes	Emissions	A	Climate	Centralised transport department sourcing fleet, green fleet policy, switched off when not in use	Low	2	Moderate	3	6	MEDIUM
Vehicles idling/running	Yes	Noise	A	Humans, Flora & Fauna	Vehicles switched off when not in use	Low	2	Moderate	3	6	MEDIUM
Vehicle movements	Yes	Noise and dust	L, A, W	Humans, Flora & Fauna	Responsible driving	Medium	3	Moderate	3	9	MEDIUM
Vehicle movements	Yes	Emissions	A	Climate	Centralised transport department sourcing fleet, green fleet policy, switched off when not in use	Low	2	Moderate	3	6	MEDIUM
Vehicle washing	Yes	Wash down water containing oils, salts etc	L, W	Land, Controlled Waters	Washing down at dedicated facilities (car wash) or wash down bay at depot	Negligible	1	Negligible	1	1	LOW
Vehicle refuelling	Yes	Fuel	L, W	Land, Controlled Waters, Humans, Flora & Fauna	Refuelling at petrol station - infrastructure to deal with spills	Negligible	1	Negligible	1	1	LOW
Vehicle disposal	Yes	Constituent parts, components, chemicals	L, A, W	Land, Controlled Waters, Humans, Flora & Fauna	Lease company sells used fleet vehicles preventing/reducing end of life disposal following company use	Negligible	1	Moderate	3	3	LOW

Vehicle selection	Yes	Emissions	A	Climate	Centralised transport department sourcing fleet, replacement at end of lease, green fleet policy	Negligible	1	Moderate	3	3	LOW
Waste - storage of inert waste	Yes	Inert waste	L, A, W	Land, Controlled Waters, Humans, Flora & Fauna	Stockpiles away from receptors, damping down where possible, height of stockpile minimised	Low	2	Mild	2	4	LOW
Waste - storage of non-hazardous waste	Yes	Non-hazardous waste	L, A, W	Land, Controlled Waters, Humans, Flora & Fauna	Container fit for purpose in accordance with Duty of Care for waste, storage time kept to a minimum	Low	2	Mild	2	4	LOW
Waste - storage of hazardous waste	No	Hazardous waste	L, A, W	Land, Controlled Waters, Humans, Flora & Fauna	Container fit for purpose in accordance with Duty of Care for waste, storage time kept to a minimum	Low	2	Moderate	3	6	MEDIUM
Waste - transport of inert waste	Yes	Inert waste	L, A, W	Land, Controlled Waters, Humans, Flora & Fauna	Site Waste Management Plan, authorised Waste Carriers, Duty of Care checks	Negligible	1	Mild	2	2	LOW
Waste - transport of non-hazardous waste	Yes	Non-hazardous waste	L, A, W	Land, Controlled Waters, Humans, Flora & Fauna	Site Waste Management Plan, authorised Waste Carriers, Duty of Care checks	Negligible	1	Mild	2	2	LOW
Waste - transport of hazardous waste	Yes	Hazardous waste	L, A, W	Land, Controlled Waters, Humans, Flora & Fauna	Site Waste Management Plan, authorised Waste Carriers, Duty of Care checks	Negligible	1	Moderate	3	3	LOW
Waste - disposal of inert waste	Yes	Inert waste	L, A, W	Land, Controlled Waters, Humans, Flora & Fauna	Site Waste Management Plan, disposal/recycling point authorised to accept, Duty of Care checks	Low	2	Mild	2	4	LOW
Waste - disposal of non-hazardous waste	Yes	Non-hazardous waste	L, A, W	Land, Controlled Waters, Humans, Flora & Fauna	Site Waste Management Plan, disposal/recycling point authorised to accept, Duty of Care checks	Low	2	Mild	2	4	LOW
Waste - disposal of hazardous waste	Yes	Hazardous waste	L, A, W	Land, Controlled Waters, Humans, Flora & Fauna	Site Waste Management Plan, disposal point authorised to accept, Duty of Care checks	Low	2	Moderate	3	6	MEDIUM
Welfare facilities - toilets	Yes	Septic waste	L, W	Land, Controlled Waters	Connection to septic tank or approved connection to foul sewer	Low	2	Mild	2	4	LOW

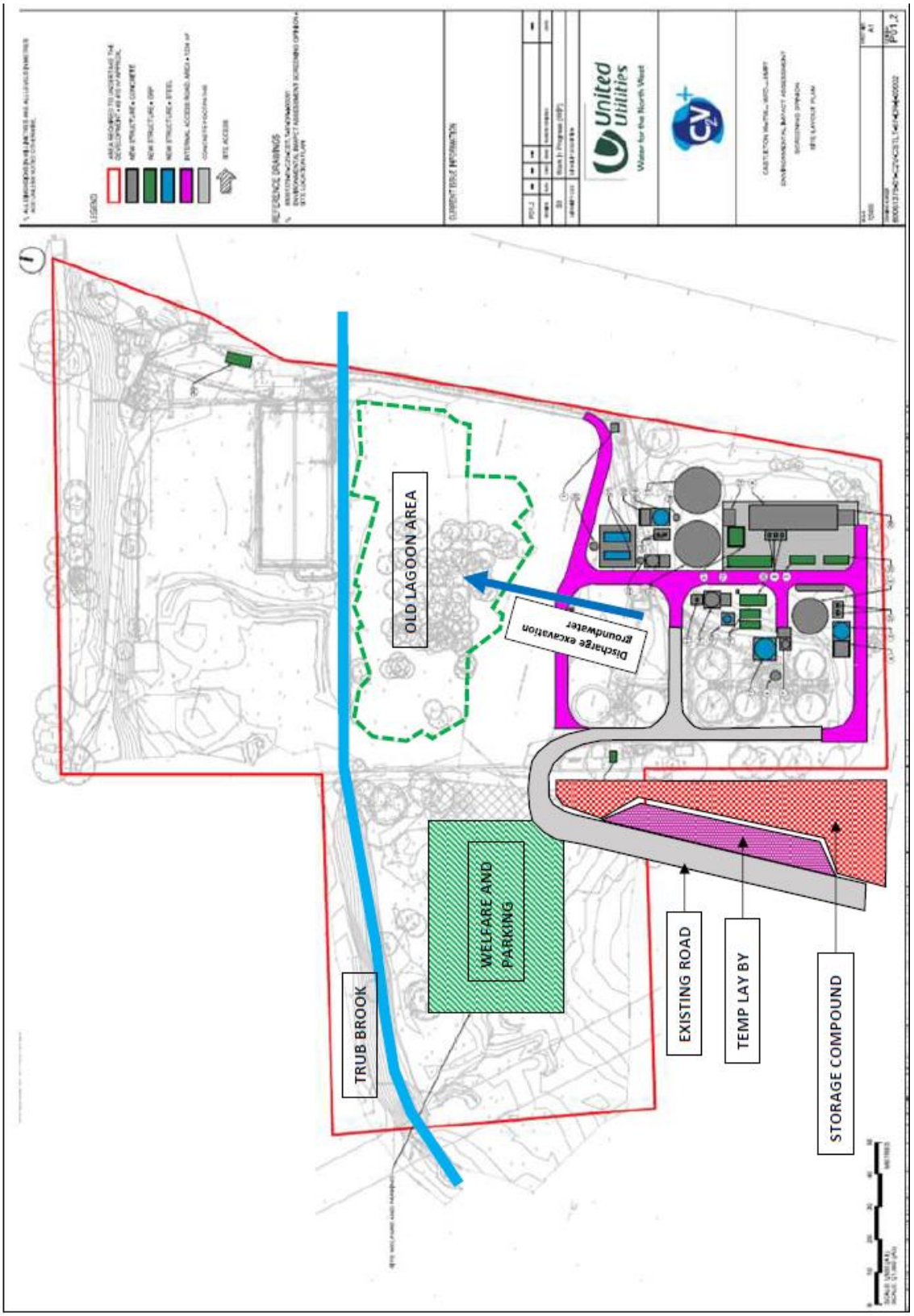
Welfare facilities - canteen food disposal	Yes	Food waste	L, W	Land, Controlled Waters	Site Waste Management Plan, authorised Waste Carriers, Duty of Care checks	Low	2	Mild	2	4	LOW
Welfare facilities - canteen wash water	Yes	Canteen washing water	L, W	Land, Controlled Waters	Connection to septic tank or approved connection to foul sewer	Low	2	Mild	2	4	LOW
Winter maintenance - delivery of salt	Yes	Salt	L, W	Land, Controlled Waters	Supervised delivery and unloading	Low	2	Moderate	3	6	MEDIUM
Winter maintenance - delivery of salt	Yes	Noise	A	Humans, Flora & Fauna	Deliveries during normal working wours	Low	2	Negligible	1	2	LOW
Winter maintenance - storage of salt	Yes	Salt	L, W	Land, Controlled Waters	Dedicated salt barns	Low	2	Mild	2	4	LOW
Winter maintenance - loading of gritters/hoppers	No	Salt	L, W	Land, Controlled Waters	Dedicated plant for loading of salt	Low	2	Mild	2	4	LOW
Winter maintenance - loading of gritters/hoppers	No	Noise	A	Humans, Flora & Fauna	Depot rules, consideration of neighbours	Low	2	Mild	2	4	LOW
Winter maintenance - washing of vehicles	No	Salt	L, W	Land, Controlled Waters	Wash down bays with holding tanks	Low	2	Mild	2	4	LOW
HDD- escape of drilling fluids	Yes		L, W	Land, water course	Impact assessment to be reviewed on site. Drilling pressures monitored at all times during drilling operation. Spill procedure in place. Toolbox talk re pollution to be carried out.	Medium	3	Moderate	3	9	MEDIUM


CASTLETON WwTW - AERIAL VIEW
Google Maps
REFER TO THIRD PARTY ENVIRONMENT AND CUSTOMER ACTION PLAN
8006137901-C2V-CSTLT-99-RP--00001
RECEPTORS / CUSTOMERS
KEY CONSTRAINTS
BUILDING OR TREES WITH BAT ROOST POTENTIAL
BADGER SETS
OTTER AND WATER VOLE HABITAT
TRUB BROOK
TREE ROOT PROTECTION AREA
DISUSED BADGER SETS WITHIN SITE
EXISTING ACCESS
MANCHESTER GOLF CLUB
INVASIVE SPECIES
GREEN BELT
NESTING AND BREEDING BIRD HABITAT
GREAT CRESTED NEWT
POTENTIAL ALTERNATIVE CONSTRUCTION ACCESS TO SEGREGATE TRAFFIC
LOCAL NATURE RESERVE
CLUB HOUSE
Rochdale Canal SAC
ROC0094
CASTLETON WwTW - WFD - AMP7
Environment and Customer Constraints Plan
United Utilities
Water for the North West
P01.1

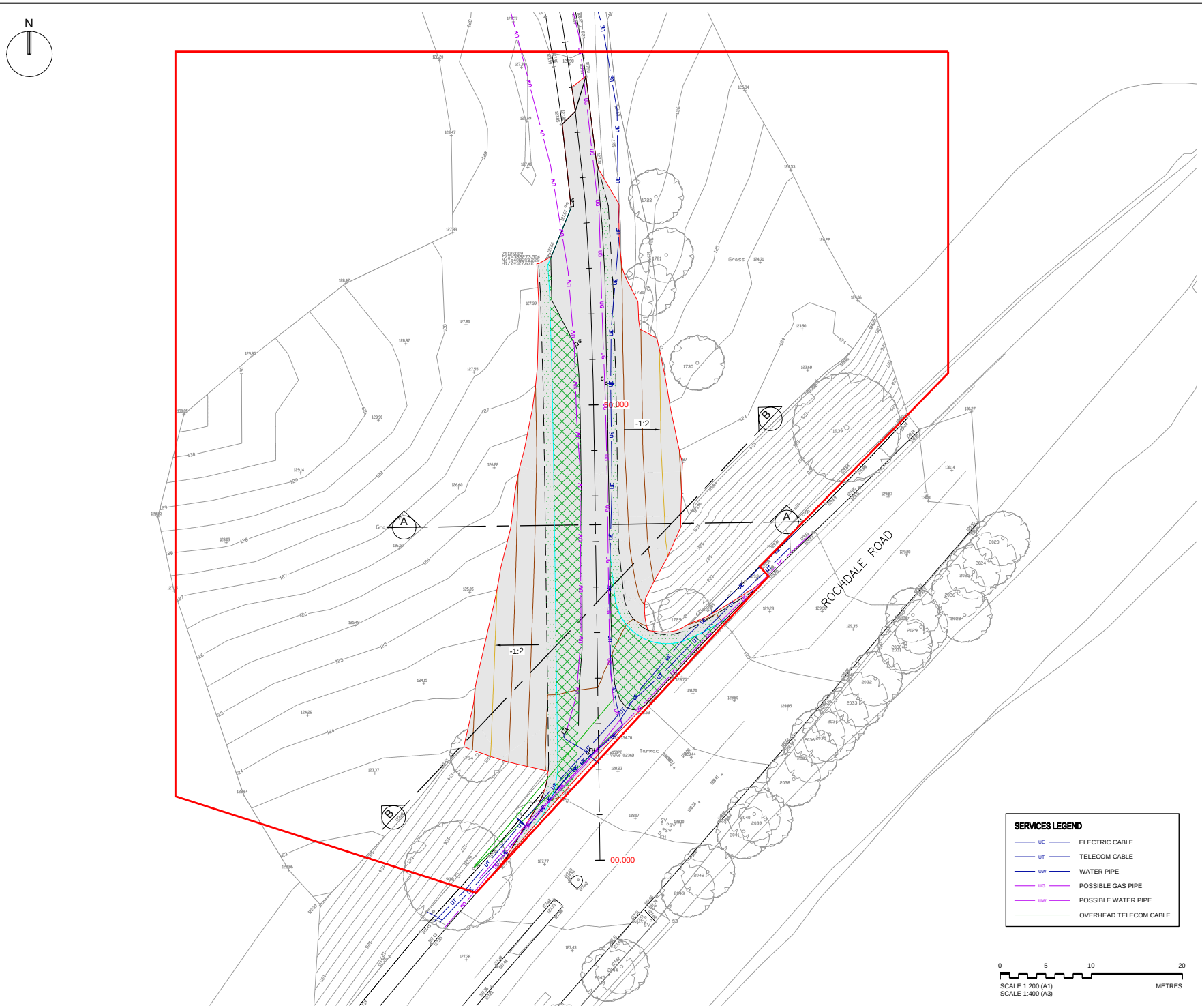

New proposed access road to be constructed (in part) on an old lagoon where access is difficult. Depth of lagoon material is unknown and will need investigation.
Himalayan Balsam evident in large areas of the north end of the WwTW and the proposed office compound area outside of the WwTW.
Access constraints
The only viable access route to the WwTW is through MGC. Shared access constraints as follows:
1. Widening of access road at Rochdale road entrance
2. Installation of large passing bays or road widening,
3. Installation of physical barriers.
4. Provision of additional parking for MGC.
5. Section of access road to be made 2-way traffic.
6. Items 1 – 5 will require TM on Rochdale road, extensive tree removal, ground re-profiling & service diversion.
Access to be maintained for UU operational & maintenance staff to the north end of the WwTW. Also, for radio transmitter mast maintenance.
Railway boundary
Crane movements to be restricted so that rail boundary is outside of crane fall zone.
Access to the existing sludge tanks must be maintained during the construction works.
General Note: Existing plant remains operational throughout construction phase, UU operational staff will require access to the plant for maintenance.
Legend
Chemical Lines
New Pipework
New Assets
Reused Items
Decommissioned Items
Refurbished Items
New Infrastructure and Misc Items

APPENDIX F – SITE DRAINAGE PLAN

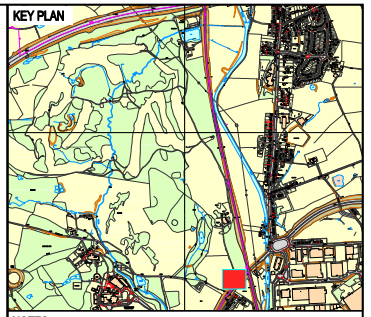
WIP 13/10/2020



APPENDIX C: JUNCTION WIDENING ELEMENT OF PLANNING APPLICATION



KEY PLAN



NOTES

1. ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS IN METRES AOD UNLESS NOTED OTHERWISE.

LEGEND

- PROPOSED DEVELOPMENT REQUIRING PLANNING PERMISSION - 6230 m²
- PROPOSED FLEXIBLE ROAD WIDENING
- PROPOSED SOFT VERGE
- EXISTING ROAD EDGE
- PROPOSED FLEXIBLE ROAD EDGE
- PROPOSED SOFT VERGE

REFERENCES

80061379-01-C2V-CSTLT-97-DR-I-00004 - SITE SECTIONS
80061379-01-C2V-CSTLT-97-DR-I-00005 - SITE LOCATION PLAN

CURRENT ISSUE INFORMATION

VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
P01	HC	PC	MH	For Information	21/10/20
S2				Issued for Information	

SUITABILITY CODE	SUITABILITY DESCRIPTION

SERVICES LEGEND

- UE — ELECTRIC CABLE
- UT — TELECOM CABLE
- UW — WATER PIPE
- UG — POSSIBLE GAS PIPE
- UW — POSSIBLE WATER PIPE
- OVERHEAD TELECOM CABLE

0 5 10 20
METRES
SCALE 1:200 (A1)
SCALE 1:400 (A3)

United Utilities
Water for the North West

C2V+

CASTLETON WwTW – WFD – AMP7

PLANNING APPLICATION

SITE LAYOUT PLAN

SCALE	SHEET SIZE
1:200	A1

DRAWING NUMBER	REVISION
80061379-01-C2V-CSTLT-97-DR-I-00003	P01

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APPENDIX D: KIOSK ELEMENTS PLANNING APPLICATION

SCHEDULE OF STRUCTURES

STRUCTURE ID	EQUIPMENT/ PLANT	DIMENSIONS (L x W x H)	MATERIAL	COLOUR	PLANNING REQUIRED
1	MCC KIOSK 01	7.76m x 3.64m x 4.50m (STEEL FRAME INCLUDED)	GRP	GREEN	PLANNING
2	PRIMARY MIXING & FLOCCULATION CHAMBER	6.00m dia x 5.00m	STEEL	-	PERMITTED
3	FERRIC STORAGE KIOSK	2.58m x 7.82m x 2.92m	GRP	GREEN	PLANNING
4	PST (PRIMARY SEDIMENTATION TANK) 3-WAY DISTRIBUTION CHAMBER	4.60m x 4.60m x 3.00m	CONCRETE	-	PERMITTED
5	PST (PRIMARY SEDIMENTATION TANK)	11.00m dia x 5.00m	CONCRETE	-	PERMITTED
6	BIOFILTERS FEED PUMPING STATION	3.80m dia x 3.00m	CONCRETE	-	PERMITTED
7	IFAS (INTEGRATED FIXED-FILM ACTIVATED SLUDGE) FEED PUMPING STATION	3.30m dia x 2.50m	CONCRETE	-	PERMITTED
8	IFAS REACTORS (INTEGRATED FIXED-FILM ACTIVATED SLUDGE)	33.81m x 7.80m x 6.00m	CONCRETE	-	PERMITTED
9	BLOWERS (3No.)	1.00m x 1.00m x 1.50m	GRP	-	PERMITTED
10	PROCESS MCC 02 KIOSK	13.76m x 3.64m x 4.50m (STEEL FRAME INCLUDED)	GRP	GREEN	PLANNING
11	FST DE'SLUDGE WELL	3.00m dia x 3.00m	CONCRETE	-	PERMITTED
12	FST (FINAL SETTLEMENT TANKS) 2 - WAY DISTRIBUTION CHAMBER	4.80m x 3.30m x 2.50m	CONCRETE	-	PERMITTED
13	FST (FINAL SETTLEMENT TANKS) 1 & 2	13.00m dia x 6.00m	CONCRETE	-	PERMITTED
14	SAS/RAS (SURPLUS ACTIVATED SLUDGE/RETURN ACTIVATED SLUDGE) PUMPING STATION	3.30m dia x 2.00m	CONCRETE	-	PERMITTED
15	PRESSURE BREAK CHAMBER	2.60m dia x 2.00m	CONCRETE	-	PERMITTED
16	POTABLE WATER VALVE CHAMBER	2.30m dia x 2.00m	CONCRETE	-	PERMITTED
17	FST (FINAL SETTLEMENT TANKS) COMBINED CHAMBER	3.00m dia x 2.00m	CONCRETE	-	PERMITTED
18	SECONDARY MIXING & FLOCCULATION CHAMBER	6.00m dia x 5.00m	STEEL	-	PERMITTED
19	TERTIARY FILTER 2-WAY DISTRIBUTION CHAMBER	4.80m x 3.30m x 3.00m	CONCRETE	-	PERMITTED

SCHEDULE OF STRUCTURES

STRUCTURE ID	EQUIPMENT/ PLANT	DIMENSIONS (L x W x H)	MATERIAL	COLOUR	PLANNING REQUIRED
20	2 NO. TERTIARY CLOTH FILTERS	2.80m x 8.30m x 3.10m	STAINLESS STEEL	-	PERMITTED
21	LIQUOR RETURN PUMPING STATION	3.60m dia x 2.75m	CONCRETE	-	PERMITTED
22	TERTIARY FILTER COMBINED CHAMBER	3.25m dia x 2.40m	CONCRETE	-	PERMITTED
23	ANALYSER KIOSK	2.90m x 2.00m x 2.50m	GRP	GREEN	PERMITTED
24	CAUSTIC DOSING KIOSK (RESERVED SPACE)	2.58m x 7.82 x 2.92m	GRP	GREEN	PLANNING
25	SCADA AND LAB KIOSK	6.00m x 5.00m x 4.00m	GRP	GREEN	PLANNING
26	PRIMARY MIXING BLOWERS (2No.)	1.00m x 0.80m x 1.00m	GRP	-	PERMITTED
27	SECONDARY MIXING BLOWERS (2No.)	1.00m x 0.80m x 1.00m	GRP	-	PERMITTED

SITE WELFARE AND PARKING

NOTE: FINAL DIMENSIONS AND LOCATIONS OFASSETS TO BE CONFIRMED

0 10 20 30 40 50

SCALE 1:500 (A1)
SCALE 1:1,000 (A3)
METRES

NOTES

1. ALL DIMENSIONS IN MILLIMETRES AND ALL LEVELS IN METRES AOD UNLESS NOTED OTHERWISE.

LEGEND

- AREA REQUIRED TO UNDERTAKE THE DEVELOPMENT - 54 861 m² APPROX.
- NEW STRUCTURE - CONCRETE
- NEW STRUCTURE - GRP
- NEW STRUCTURE - STEEL
- INTERNAL ACCESS ROAD, AREA - 1285 m²
- CONCRETE FOOTPATHS
- SITE ACCESS

REFERENCE DRAWINGS

1. 80061379-01-C2V-CSTLT-97-DR-I-00001 ENVIRONMENTAL IMPACT ASSESSMENT SCREENING OPINION - SITE LOCATION PLAN

CURRENT ISSUE INFORMATION

VERSION	AUTH	CHKD	REVD	REASON FOR ISSUE	DATE
P03	TK	PC	MH	For Information	09/10/20
S2				Issued for Information	
SUITABILITY CODE				SUITABILITY DESCRIPTION	

United Utilities
Water for the North West

C2V+

CASTLETON WwTW – WFD – AMP7

ENVIRONMENTAL IMPACT ASSESSMENT

SCREENING OPINION

SITE LAYOUT PLAN

SCALE 1:500

SHEET SIZE A1

DRAWING NUMBER 80061379-01-C2V-CSTLT-97-DR-I-00002

REVISION P03

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APPENDIX E: ROCHDALE CANAL SAC CITATION SHEET

NATURA 2000 – STANDARD DATA FORM

Special Areas of Conservation under the EC Habitats Directive (includes candidate SACs, Sites of Community Importance and designated SACs).

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Areas of Conservation (SACs) in the United Kingdom is available from the SAC home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SACs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE **UK0030266**

SITENAME **Rochdale Canal**

TABLE OF CONTENTS

- 1. SITE IDENTIFICATION
- 2. SITE LOCATION
- 3. ECOLOGICAL INFORMATION
- 4. SITE DESCRIPTION
- 5. SITE PROTECTION STATUS AND RELATION WITH CORINE BIOTOPES
- 6. SITE MANAGEMENT

1. SITE IDENTIFICATION

Back to top

1.1 Type	1.2 Site code
B	UK0030266

1.3 Site name

Rochdale Canal

1.4 First Compilation date	1.5 Update date
2001-05	2015-12

1.6 Respondent:

Name/Organisation: Joint Nature Conservation Committee

Address: Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY

Email:

Date site proposed as SCI:	2001-05
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
-2.161111111	53.53055556

2.2 Area [ha]:

24.86

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKD3	Greater Manchester

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

Back to top

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
P	1831	Luronium natans			p				P	DD	C	A	A	A

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

Back to top

4.1 General site character

Habitat class	% Cover
N06	90.0
N23	10.0
Total Habitat Cover	100

Other Site Characteristics

2 Terrestrial: Geomorphology and landscape: lowland

4.2 Quality and importance

Luronium natans for which this is considered to be one of the best areas in the United Kingdom.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	H04		B
H	J02		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/category/3212324
http://publications.naturalengland.org.uk/category/6490068894089216

http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

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5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Natural England

Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

☐	Yes
☐	No, but in preparation
☒	No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha□ rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

APPENDIX F: GROUND WATER INFORMATION (PRELIMINARY)

EPA On-line Tools for Site Assessment Calculation

Hydraulic Gradient -- Magnitude and Direction

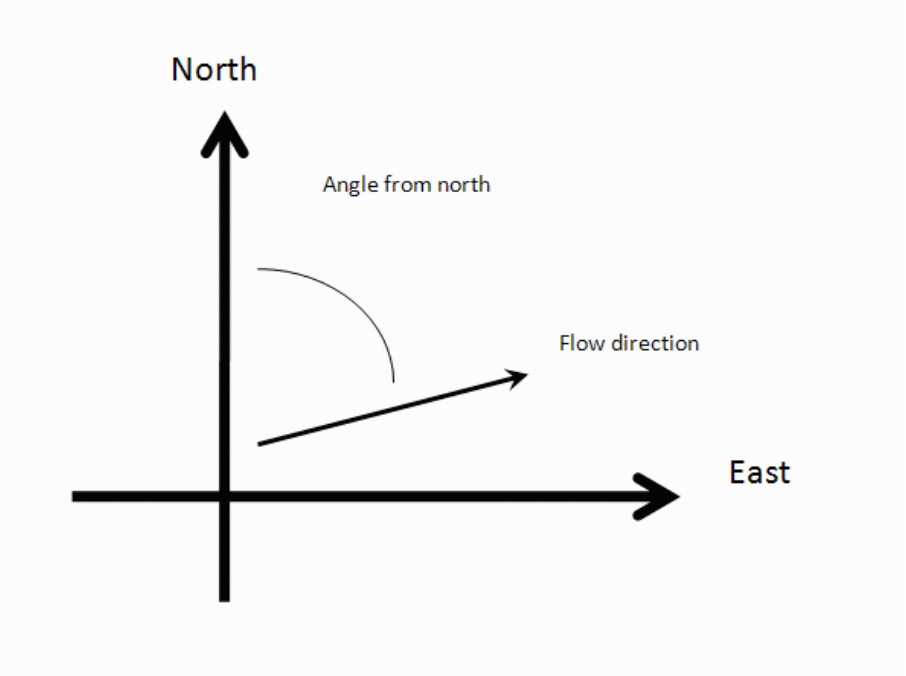
Gradient Calculation from fitting a plane to as many as thirty points

$a\,x_1 + b\,y_1 + c = h_1$
$a\,x_2 + b\,y_2 + c = h_2$
$a\,x_3 + b\,y_3 + c = h_3$
. . .
$a\,x_{30} + b\,y_{30} + c = h_{30}$

where (x_i, y_i) are the coordinates of the well and
h_i is the head

i = 1,2,3, ... , 30
The coefficients a, b, and c are calculated by a least-squares fitting of the the data to a plane

The gradient is calculated from the square root of $(a^2 + b^2)$ and the angle from the arctangent of a/b or b/a depending on the quadrant



Inputs

Example Data Set 1 | Example Data Set 2 | Calculate | Clear
Save Data | Recall Data | Go Back

Site Name: Castleton WwTW
Date: 11.11.20 Current Date
Calculation basis: Head
Coordinates: m

I.D.	x-coordinate	y-coordinate	head (m)
1) 502CAS	388050.1	409502.4	126.08
2) 503ACAS	388083.2	409458.4	126.65
3) 506CAS	388073.5	409434.5	126.77
4)			
5)			
6)			
7)			
8)			
9)			
10)			
11)			
12)			
13)			
14)			
15)			
16)			

17)				
18)				
19)				
20)				
21)				
22)				
23)				
24)				
25)				
26)				
27)				
28)				
29)				
30)				

Results

Number of Points Used in Calculation	3
Max. Difference Between Head Values	0.6900
Gradient Magnitude (i)	0.01038
Flow direction as degrees from North (positive y axis)	318.7
Coefficient of Determination (R^2)	1.00

WCMS

Last updated on 23/02/2016