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THE NETWORK RAIL (STALYBRIDGE TO DIGGLE (SADDLEWORTH) ENHANCEMENTS) ORDER

DOCUMENT: NR14 ENVIRONMENT REPORT VOLUME 3 APPENDIX 12A – WATER FRAMEWORK DIRECTIVE ASSESSMENT

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EXECUTIVE SUMMARY

A Water Framework Directive (WFD) compliance assessment has been undertaken in line with the proposed outlined in Volume 1, Chapter 1 of this Report [NR14] for the ‘Stalybridge to Diggle (Saddleworth) Enhancements’ Order (referred to as “the Order Scheme”) forming part of the TransPennine Route Upgrade project. As per the Planning Inspectorate (PINS) guidance¹, this WFD compliance assessment has been completed in three phases:

- Stage 1 (WFD Screening).
- Stage 2 (WFD Scoping); and
- Stage 3 (WFD Impact Assessment).

Stage 1 (WFD Screening) identified WFD water bodies within a Zone of Influence (Zoi) to be considered at subsequent stages of this WFD compliance assessment. Stage 2 (WFD Scoping) identified activities associated with the Order Scheme which may affect the water environment and established a baseline for each of the WFD water bodies identified in Stage 1 (WFD Screening). Stage 3 (WFD Impact Assessment) included identification of individual Order Scheme works components and the affected receptors, and field surveys (undertaken September 2024) to further assess the character of the affected receptors. A matrix-based approach to the WFD impact assessment was then used to assess the effect of each individual works component, on each of the individual WFD Quality Elements, for a water body.

The Screening identified that the Order Scheme has the potential to impact the following five WFD surface water bodies and one groundwater body (Figures 12A.3.1 & 3.2 in Volume 2 of the Environmental Report [NR14]):

- Three WFD river water bodies:
 - Tame (Source to Chew Brook) GB112069064741
 - Tame (Chew Brook to Swineshaw Brook) GB112069061111
 - Tame (Swineshaw Brook to Mersey) GB112069061112
- Two WFD canal water bodies:
 - Huddersfield Narrow Canal west section GB71210268
 - Huddersfield Narrow Canal summit section GB70410520
- One WFD groundwater body:

¹ Planning Inspectorate (PINS) guidance: [Procedural Guide: Planning appeals – England - GOV.UK](https://www.gov.uk/government/publications/procedural-guide-to-planning-appeals)

- Manchester and East Cheshire Carboniferous Aquifers
GB41202G102900

The work components of the Order Scheme affecting the water environment include:

Surface water (construction and operation)

- Relocation of Mossley Station and introduction of new drainage to an unnamed culverted watercourse (Ordnance Survey National Grid Reference (OS NGR): SD 97530 02537).
- Potential interaction with unnamed ordinary watercourse associated with Wrights Overbridge works (MVL3/23) (OS NGR: SD 98109 04139).
- Uppermill Viaduct works (MVL3/31) (OS NGR: SD 99569 06285).
- Reconstruction of existing overbridge superstructure on Ward Lane (MVL3/36) (OS NGR: SE 00280 07551).
- Diggle Road Overbridge and Utilities Bridge Works (MVL3/39) (OS NGR: SE 00711 08065).
- Standedge Canal Tunnel (MVL3/39A) (OS NGR: SE 00680 08021).
- Standedge Canal Tunnel Bywash Underbridge Replacement (MVL3/39B) (OS NGR: SD 98109 04139).
- Construction of various temporary compounds which are in close proximity to water bodies namely Plevins site compound (OS NGR: SD 97757 01536), Scout Spoil point compound (OS NGR: SD 97331 01196), Manchester Road Scout West (OS NGR: SD 97448 01241), Ward Lane site compound (OS NGR: SE 00300 07517), Grandpa Greens site compound 2 (OS NGR: SE 00370 07697), Sam Road car park compound (OS NGR: SE 00621 07970) and Diggle Welfare, rail hub and office compound (OS NGR: SE 00598 07868).

Stage 2 (WFD Scoping) identified several watercourses and pond/ lake features that the Order Scheme has the potential to impact:

- Diggle Brook – Tame (Source to Chew Brook).
- River Tame – Tame (Source to Chew Brook, Chew Brook to Swineshaw Brook and Swineshaw Brook to Mersey).
- Huddersfield Narrow Canal - Huddersfield Narrow Canal (Summit Section and Western Section).
- Unnamed watercourse near Standedge Canal Tunnel - Tame (Source to Chew Brook).
- Unnamed watercourse (OW 7) - Tame (Source to Chew Brook).
- Unnamed watercourse (OW 13) – Tame (Chew Brook to Swineshaw Brook).

- Unnamed watercourse (OW 14) - (Chew Brook to Swineshaw Brook).
- Diggle Duck Pond - Tame (Source to Chew Brook).
- Pond (Low Grove Lane) - Tame (Chew Brook to Swineshaw Brook).
- Pond (East of Well-Hole Road) - Tame (Chew Brook to Swineshaw Brook).
- Pond (West of Well-Hole Road) - Tame (Chew Brook to Swineshaw Brook).

Groundwater (construction and operation)

- Installation of rock anchors during the Stalybridge Tunnel works (MVL3/3) (OS NGR: SJ 96657 98929) and Scout Tunney (OS NGR: SD 97328 01330).
- Wrights Overbridge Works (MVL3/23) (OS NGR: SD 98109 04139).
- Manchester Road Footbridge Reconstruction (MVL3/10A) (OS NGR: SD 97238 00715).
- Diggle Road Overbridge Reconstruction (MVL3/39) (OS NGR: SE 00711 08065).
- Relocation of Mossley Station.
- Mossley Cottages Works (OS NGR: SD 97374 01921).
- Reconstruction of Oldham Road Overbridge (MVL3/28) (OS NGR: SD 99191 04720).
- New Oldham Road Footbridge Works (MVL3/28A) (OS NGR: SD 99191 04720).
- Standedge Canal Tunnel Bywash Underbridge Replacement (MVL3/39B) (SD 98109 04139).
- Diversion of utilities bridge into Stamford Road Bridge (OS NGR: SD 97352 02000).
- Stamford Road Bridge Works (MVL3/13) (OS NGR: SD 97355 01846).
- Various temporary compounds which have long term storage of materials or where below ground works will be taking place. Some compounds may be in place for several years and have therefore been considered as permanent works components of the Order Scheme for the purposes of this assessment.

Stage 2 (WFD Scoping) identified one groundwater body that the Order Scheme has the potential to impact:

- Manchester and East Cheshire Carboniferous Aquifers GB41202G102900.

Stage 3 (WFD Impact Assessment) concluded that the implementation of embedded mitigation, best practice guidance and site-specific mitigation measures were sufficient to maintain compliance under the WFD, without the need for further mitigation or water body derogation.

Representatives from AtkinsRéalis on behalf of Network Rail and the Environment Agency (EA) attended a conference call on the 23rd June 2025. During this call an overview of the Order Scheme was provided including initial findings of the various water environment assessments completed in relation to the Order Scheme (surface water, WFD and flood risk). Further consultation with the Environment Agency/Lead Local Flood Authority (LLFA) will be undertaken as the Scheme progresses through detailed design. This is considered to be good practice, even though it is likely that the Order Scheme design will materially remain unchanged.

1. INTRODUCTION

1.1 Overview

- 1.1.1 This chapter presents the Water Framework Directive (WFD) assessment for the proposed ‘Stalybridge to Diggle (Saddleworth) Enhancements’ Order, (hereafter referred to as “the Order Scheme”). This document provides an assessment of likely significant effects of the Order Scheme in accordance with requirements of the WFD and considers opportunities for betterment to help meet WFD objectives (to protect the water environment) where appropriate.
- 1.1.2 A detailed description of the Order Scheme is provided in Table 1-1, Volume 1 of the Environmental Report [NR14] and a summary of the proposed works is provided in section 4.1 on this document.
- 1.1.3 All Figures and Appendices associated with this document are provided in Volumes 2 and 3, Environment Report [NR14] respectively. Any associated relevant consultation responses linked to the WFD are provided in the Consultation Report [NR07].

1.2 The Water Framework Directive – Legislative background

- 1.2.1 The Water Framework Directive (WFD) originates from the European Union (EU) but has been retained in UK law via The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017² (the Regulations), as amended. For the purposes of this assessment, the legislation will be referred to as the WFD throughout this document, with the assessment of the Order Scheme in relation to the Water Environment Regulations referred to as a WFD Assessment³.
- 1.2.2 The framework for delivering the WFD is through a series of River Basin Management Plans (RBMPs), which requires surface waterbodies to achieve both Good Chemical Status (GCS) and Good Ecological Status (GES), and for groundwater bodies to achieve both Good Chemical Status (GCS) and Good Quantitative Status (GQS). The RBMPs outline the actions required to enable natural water bodies to achieve this. Artificial and Heavily Modified Water Bodies (A/HMWB) are surface water bodies that may be prevented from reaching GES due to the modifications necessary to maintain their function for essential human uses, such as flood defence, navigation or drinking water supply. They are, however, required to achieve

² Water Environment (Water Framework Directive) (England and Wales) Regulations 2017:
<https://www.legislation.gov.uk/uksi/2017/407>

³ Some industry practitioners may start referring to it as a Water Environment Regulations Assessment

Good Ecological Potential (GEP), through the implementation of a series of mitigation measures outlined in the RBMP.

- 1.2.3 New activities and projects that affect the water environment may adversely impact biological, hydromorphological, physico-chemical and/or chemical Quality Elements (WFD Quality Elements), leading to a deterioration in water body status. They may also render proposed improvement measures ineffective, leading to the water body failing to meet its objectives for GES/GEP. Under the WFD, activities and projects must not cause deterioration in water body status or prevent a water body from meeting GES/GEP by invalidating improvement measures.
- 1.2.4 Under the WFD, any activity or project with the potential to have an impact directly or indirectly on water body ecology will require a 'WFD Assessment'. A WFD Assessment will consider whether the activity or project has the potential to cause deterioration in the ecological status or ecological potential of that surface water body or adjacent surface water bodies. It will also consider the biological, physico-chemical and hydromorphological qualities of a surface water body. The assessment will consider potential impacts to groundwater quality and quantity as a result of the Order Scheme. The WFD also applies to all coastal and estuarine waters, to a distance of 1 nautical mile (nm).
- 1.2.5 In addition to protecting and improving water bodies, the WFD also requires that a register of 'Protected Areas' is developed. These are "all areas lying within each River Basin District which have been designated as requiring special protection under specific [European] Community legislation for the protection of their surface water, and groundwater, or for the conservation of habitats and species directly depending on water". In the UK, these Protected Areas are:
- Drinking Water Protected Areas.
 - Shellfish Waters.
 - Bathing Waters.
 - Nutrient Sensitive Areas.

- 1.2.6 The potential impacts of new activities and projects on these protected areas must also be considered in order to ensure compliance with the overall requirements of the Regulations.

1.3 Background to the WFD

- 1.3.1 A summary of key WFD concepts are presented below and includes a definition of what a water body is in relation to this assessment.

WFD Objectives

- 1.3.2 The WFD is a European Directive transposed into UK law which sets out a strategic planning process for the purposes of managing, protecting and improving the water environment. The main objectives² of the WFD are to:
- Prevent deterioration in the status of aquatic ecosystems, protect them and improve the ecological condition of waters.
 - Aim to achieve at least 'Good Status' for all waters by 2015 (2021 or 2027) where fully justified within an extended deadline under Article 4.4.
 - Promote sustainable use of water.
 - Conserve habitats and species that depend directly on water.
 - Progressively reduce or phase out the release of individual pollutants or groups of pollutants that present a significant threat to the aquatic environment.
 - Progressively reduce the pollution of groundwater and prevent or limit the entry of pollutants; and
 - Help reduce the effects of floods and droughts.

WFD Classification

- 1.3.3 The WFD classification for a defined surface water body is produced by the assessment of a wide variety of different 'elements'² which includes:
- 'Biological elements' such as fish, invertebrates, phytobenthos (which includes plants, macro-algae, phytoplankton).
 - 'Supporting elements' that include chemical measurements such as ammonia, dissolved oxygen, pH, phosphate, copper, zinc and temperature; and
 - 'Supporting conditions' (sometimes referred to as hydromorphology) that assess the physical attributes of the water body such as 'quantity and dynamics of flow' and 'morphology'.

- 1.3.4 The WFD classification for a defined groundwater body is produced by the assessment of elements which include;
- Groundwater quantitative status considering saline or other intrusions of poor-quality water due to groundwater abstraction, the impact on the ecological status of surface water bodies, the impact on the condition of groundwater dependent terrestrial ecosystems, and the impact on the groundwater body water balance.
 - Groundwater chemical status including pollution concentration and their trends, quality impact on groundwater abstractions, impact on the chemical & ecological status of surface water bodies, nutrient concentration impact on GWDTEs, Drinking Water Protected Areas and a General quality assessment.
- 1.3.5 The assessment given for each element is also accompanied by a measure of certainty in the result. The status classification is published in the RBMP and provides a baseline condition against which compliance and future improvements can be measured.

WFD Compliance

- 1.3.6 There are three key objectives against which the impacts of proposed works on a water body need to be assessed to determine compliance with the overarching objectives of the WFD:
- Objective 1: The Scheme will not cause a deterioration in any element of water body classification.
 - Objective 2: The Scheme will not prevent the WFD status objectives from being reached within the water body or other downstream water bodies.
 - Objective 3: The Scheme will contribute to the delivery of the relevant WFD objectives. In this case, it will be what contribution the Scheme can make towards the water body reaching its objective GEP through planned RBMP mitigation measures.
- 1.3.7 Objective 1 and Objective 2 must be met to avoid infringement of the WFD. The delivery of the third objective is central to the implementation of the WFD, where it can be supported through its operational activities. If it is considered that the Scheme is likely to cause deterioration in water body status or prevent a water body from meeting its ecological objectives, then an assessment would need to be made against the conditions listed in Article 4.7 of the WFD. Article 4.7 can be invoked if:
- ‘New modifications’ are of overriding public interest and/ or,
 - The environmental and social benefits of achieving the WFD objectives are outweighed by the benefits of the new modifications to human health, safety and sustainable development,

- There are no significantly better environmental options that are technically feasible or not disproportionately costly, and
- All practicable steps for mitigation have been taken.

1.4 Consultation

- 1.4.1 Representatives from AtkinsRéalis on behalf of Network Rail and the Environment Agency (EA) attended a conference call on the 23rd June 2025. During this call an overview of the Scheme was provided. Further consultation with the EA and the Lead Local Flood Authority (LLFA) will be undertaken as the Scheme progresses through detailed design. This is considered to be good practice, even though our understanding is that the Scheme design will materially remain unchanged.
- 1.4.2 Additionally, the scheme has undertaken several rounds of consultation with the public and relevant stakeholders, as detailed within the consultation report [NR07].

1.5 Figures

- 1.5.1 In Volume 2 of the Environmental Report [NR14], the following figures provide relevant background information and can be referred to in the context of this document:
- Figure 12A.3.1 WFD surface water bodies within the Zol of the Order Scheme.
 - Figure 12A.3.2 Pond/ lake features within the Zol of the Order Scheme
 - Figure 12A.3.3 Groundwater bodies within the Zol of the Order Scheme.
 - Figure 12A.4.1 Watercourses and lake/ pond features scoped in for further assessment.
 - Figure 12A.5.1 Superficial geology and bedrock geology of Zol of the Order Scheme
 - Figure 12 A.5.2 Groundwater Dependant Terrestrial Ecosystems within the Zol of the Order Scheme.

2. METHODOLOGY

2.1 Approach to the WFD Assessment

- 2.1.1 The methodology used for this WFD assessment closely follows the Planning Inspectorate Advice Note 18 on the WFD, supplemented with the EA Position Statement 488_10 where appropriate^{4,5}. Although the Planning Inspectorate guidance has been produced specifically for the assessment of Nationally Significant Infrastructure Projects (NSIPs) it is still appropriate guidance to follow for assessing WFD compliance for a range of Proposed Developments, such as the TransPennine Route Upgrade project. The methodology for the WFD assessment is split into three stages:
- Stage 1 – WFD Screening.
 - Stage 2 – WFD Scoping; and,
 - Stage 3 – WFD Impact Assessment.
- 2.1.2 The requirements of each of the three stages of WFD assessment are detailed below. Depending on the outcome of each stage, it is not always appropriate to complete all three stages of assessment (for example, if the Screening stage determines that no further steps are required).

2.2 Stage 1 – WFD Screening

- 2.2.1 An initial Screening assessment is undertaken to determine the study area of the Order Scheme and the potentially affected WFD water bodies. Assessment is made to determine if there are any components associated with the Order Scheme that no longer require further consideration; for example, components which have been ongoing since before the current RBMP cycle and have thus formed part of the baseline. Where there is a high confidence of no impact to water bodies, they are then screened out from any subsequent detailed investigation.

2.3 Stage 2 – WFD Scoping

- 2.3.1 For the WFD Scoping stage, a desk study is undertaken to understand the baseline characteristics of each WFD water body using the EA's Catchment Data Explorer and the RBMP^{6,7}. This includes current classification status for all elements, pressures affecting the water body, its sensitivity to change and identification of watercourses within each water body. A desk study is completed to characterise the water bodies

⁴ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/522426/LIT_10445.pdf

⁵ <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-18/>

⁶ <https://environment.data.gov.uk/catchment-planning/>

⁷ <https://www.gov.uk/guidance/north-west-river-basin-district-river-basin-management-plan-updated-2022>

within the surface water bodies potentially affected by the Order Scheme (as identified in Stage 1 Screening).

- 2.3.2 An assessment is also undertaken to identify the mechanisms of impact from the Order Scheme to the surface water and groundwater receptors within the study area based on the relevant water bodies identified during the Stage 1 Screening. The mechanisms of impact to the water receptors are identified through a review of the available design information for the Order Scheme.

2.4 Stage 3 – WFD Impact Assessment

- 2.4.1 A “Red, Amber, Yellow, Green, Blue” (RAYGB) coding system is used to assign the relative WFD risk of each component of the Order Scheme against each Quality Element of each water body screened in during Stage 1. Definitions for the colour coding are assigned to indicate the level of risk of objective non-compliance within each water body and include a) mitigation already “embedded” into the preliminary design and b) additional mitigation to be integrated into later phases of the design. The definitions used are provided in Table 2-1.

Table 2-1 Definitions of the colour coding system used to determine WFD compliance risks within Stage 3 – WFD impact assessment (post implementation of mitigation).

Type of impact	Impact on WFD water body	Outcome
Moderate Beneficial	Impacts in combination with others have the potential to lead to the improvement in the WFD status of the water body.	Increase in status class for that water body.
Minor / localised beneficial	Impacts in combination with others have the potential to lead to a minor localised or temporary improvement that does not affect the overall WFD status of the water body.	Localised improvement, no change in status of WFD water body.
Green (no impact)	No measurable change to any Quality Elements.	No change
Yellow – Localised/ temporary adverse impact	Impacts in combination with others have the potential to lead to a minor localised or temporary impact on the WFD elements. Consideration will be given to habitat creation measures.	No change in status of WFD water body when balanced against mitigation embedded in the Proposed Development.
Amber – adverse widespread or prolonged impact	Impacts in combination with others have the potential to have an adverse impact on the WFD water body. The current WFD risk category will be considered when assessing these combined impacts. Consideration will be given to habitat creation measures.	Adverse impact but risk of status change needs to be considered with any additional mitigation and considering the level of confidence.

Type of impact	Impact on WFD water body	Outcome
Red – adverse impact on an individual Quality Element and/or overall status of water body	Impacts in combination with others have the potential to have an adverse impact on the WFD water body and change its status. The current WFD risk category will be considered when assessing these combined impacts. Consideration will be given to habitat creation measures.	Decrease in status of WFD water body when balanced against additional mitigation. Outcome is considered to be certain.

2.5 Data Sources

2.5.1 A number of surveys and assessments have been carried out to inform the Order Scheme. Where relevant, the details of these have been used to inform this WFD assessment. Online sources of information have also been used. The key data sources that have informed this assessment are:

- EA's Catchment Data Explorer⁸
- Magic Map Application⁹
- British Geological Survey mapping (1:50,000 and 1:625,000).¹⁰

2.5.2 Additionally, walkover surveys were undertaken in September 2024 to provide further updated characterisation of the watercourses present within the Zol of the Order Scheme. Surveys were however constrained by access permission in several locations and as such not all watercourses were visited.

2.6 Report Structure

2.6.1 The structure of this report is summarised in Table 2-2.

Table 2-2 Structure and Content of this Report

Section	Title	Content and Steps
2	Methodology	Describes the legislative context to the assessment and the overall approach including guidance and data sources
3	Stage 1 (WFD Screening)	Identification of the Works components that may impact on the Quality Elements of WFD water bodies and identification

⁸ [England | Catchment Data Explorer](#)

⁹ [Magic Map Application](#)

¹⁰ <https://geologyviewer.bgs.ac.uk/> [accessed 16/07/2025]

Section	Title	Content and Steps
		of water bodies that are relevant to the Order Scheme.
4	Stage 2 (WFD Scoping)	Presentation of the baseline conditions for the relevant Quality Elements of each water body screened in for assessment, and consideration of the potential risk of deterioration from Works components. Components which have the potential to cause deterioration are screened if for further assessment.
5	Stage 3 (WFD Impact Assessment)	A RAYGB coding system is used to assign the relative WFD risk of each Works component against each Quality Element of each water body screened in during Stage 1. This section of the assessment considers embedded and additional mitigation.
6	Conclusion	A summary of the conclusions drawn by the WFD Assessment.

2.7 Assumptions

2.7.1 The following assumptions have been used when undertaking this assessment:

- This assessment is based on the latest version of the Order Scheme boundary (defined the individual boundaries of both the works component areas subject to deemed planning permission and all those associated temporary works) in addition to the latest constructability reports.
- During construction best practice environmental management measures (embedded mitigation) will be implemented on site.
- It is assumed that all below ground works have been designed, and will be undertaken, in accordance with relevant guidance and industry best practice including incorporating site specific geological and hydrogeological information such as groundwater levels.
- Temporary construction compounds: The operational duration of construction compounds is unknown, and all compounds are considered to have potential for permanent impacts to the water

bodies. It is assumed that all compounds may be used for storage of materials.

- There will be like for like replacement or improvements to drainage design.
- Outfalls and culverts: Works will be undertaken using best practice and appropriate mitigation measures. Changes to culvert designs will either be like for like or improved (taking into account any downstream flood risk receptors).
- Discharges and abstractions: All discharges and abstractions will be undertaken in accordance with regulatory requirements and as such will not cause deterioration to the impacted receptors.

3. STAGE 1 (WFD SCREENING)

3.1 WFD Screening

- 3.1.1 A Screening exercise was completed to identify water bodies that are relevant to the Order Scheme. A study boundary also known as the Zol was set for the Screening assessment. For surface water this was any water body which intersects with the Order Scheme, or any water bodies immediately upstream or downstream of these water bodies. For groundwater, this was any groundwater body that directly intersects the Order Scheme, plus a 1 km buffer area from the Order Scheme (referred to as the Zol).
- 3.1.2 The Order Scheme is within the North West River Basin District (RBD) and the management strategies for the district are stated within the North West RBMP (River Basin Management Plan). The proposed works fall within the Mersey Upper Management Catchment, Goyt Etherow Tame Operational Catchment.

Surface Water Bodies

- 3.1.3 In the North West RBD, the following surface water bodies are classified within the Zol (Refer to Figure 12A.3.1 in Volume 2 of the Environmental Report [NR14]).
- Tame (Source to Chew Brook) GB112069064741
 - Chew Brook GB112069061300
 - Tame (Chew Brook to Swineshaw Brook) GB112069061111
 - Tame (Swineshaw Brook to Mersey) GB112069061112
 - Huddersfield Narrow Canal summit section GB70410520
 - Huddersfield Narrow Canal west section GB71210268

The Tame (Source to Chew Brook)

- 3.1.4 The Tame (Source to Chew Brook) is a designated river water body approximately 25.4 km in length. It flows from its headwaters located in the West Pennine Moors to discharge to the Chew Brook and Tame (Chew Brook to Swineshaw Brook) in Greenfield Village, Greater Manchester. The River Tame (Source to Chew Brook) is currently classified as 'Moderate' overall.

Chew Brook

- 3.1.5 Chew Brook is a designated river water body approximately 4.4 km in length. It flows from its source within Yeoman Hey Reservoir to join the

Tame in Greenfield Village. Chew Brook is currently classified as 'Moderate' overall.

Tame (Chew Brook to Swineshaw Brook)

- 3.1.6 The Tame (Chew Brook to Swineshaw Brook) is a designated river water body approximately 17.4 km in length. It flows from the confluence in Greenfield in a southerly direction to become the Tame (Swineshaw Brook to Mersey) in Stalybridge. Tame (Chew Brook to Swineshaw Brook) is currently classified as 'Moderate' overall.

Tame (Swineshaw Brook to Mersey)

- 3.1.7 Tame (Swineshaw Brook to Mersey) is a designated river water body approximately 26.3 km in length. It generally flows in a southerly direction from Stalybridge, before discharging to the River Mersey, north of Stockport. Tame (Swineshaw Brook to Mersey) is currently classified as 'Moderate' overall.

Huddersfield Narrow Canal summit section

- 3.1.8 Huddersfield Narrow Canal summit section is a designated canal water body approximately 6.3 km in length. It is situated between Marsden, West Yorkshire and Diggle, Greater Manchester. The majority (5.2 km) of the Huddersfield Narrow Canal summit section is tunnelled, named Standedge Canal Tunnel (canal tunnel). The canal tunnel is the longest and deepest canal tunnel in the UK; the water body is only an open channel in the village of Diggle. It is currently classified as 'Good' overall.

Huddersfield Narrow Canal west section

- 3.1.9 Huddersfield Narrow Canal west section is a designated canal water body approximately 14.7 km in length. It stretches from Diggle Village to Dukinfield where it becomes the Ashton Canal and Peak Forest Canal. Huddersfield Narrow Canal west section is currently classified as 'Moderate' overall.
- 3.1.10 The Order Scheme is in close proximity and could be hydrologically connected to all the above-mentioned water bodies. Therefore, there is potential for direct impacts to the Quality Elements of these watercourses. As a result, they have been screened in for further assessment.
- 3.1.11 There are no WFD lake water bodies within the Zol. WFD lake water bodies have, therefore, been screened out of any further assessment.
- 3.1.12 Twenty-eight other non-reportable lake/ pond water features are located within the Zol and outlined in Table 3-1 and Figure 12A.3.2 in Volume 2 of the Environmental Report [NR14]. Four of these ponds were screened in for further assessment.

Table 3-1 non-reportable lake and pond features

Water body name/ID	Water body type	Easting	Northing	Screening (in/out)	Justification for Screening in/out
East of Standedge Road	Pond	400649	409156	Out	Screened out as upstream of any construction works.
West of Dean Head Lane	Pond	400930	409368	Out	Screened out as upstream of any construction works.
Standedge Canal Tunnel	Pond	401636	409150	Out	Screened out as upstream of any construction works.
East of Diggle Mill	Pond	401812	408024	Out	Screened out as upstream of any construction works.
1 of 3 South of Diggle Brook	Pond	400997	407836	Out	Screened out as upstream of any construction works.
2 of 3 South of Diggle Brook	Pond	400931	407814	Out	Screened out as upstream of any construction works.

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Water body name/ID	Water body type	Easting	Northing	Screening (in/out)	Justification for Screening in/out
3 of 3 South of Diggle Brook	Pond	400901	407843	Out	Screened out as upstream of any construction works.
Diggle Duck Pond	Pond	400196	407613	In	Screened in as the pond is downstream of a proposed working area with hydrological connectivity to an unnamed watercourse.
South of Barmeadow	Pond	398871	406704	Out	Screened out as upstream of any construction works.
Willowbank Pond	Pond	399878	405798	Out	Screened out as upstream of any construction works.
South of Fur Lane	Pond	400184	404697	Out	Screened out as upstream of any construction works.
Chew Brook Drive	Pond	399816	404205	Out	Screened out as upstream of any construction works.
West of Well-Hole Road	Pond	398475	404107	In	Screened in: potential hydrological

Water body name/ID	Water body type	Easting	Northing	Screening (in/out)	Justification for Screening in/out
					connectivity to the River Tame and downstream of construction areas.
East of Well-Hole Road	Pond	398604	404191	In	Screened in: potential hydrological connectivity to the River Tame and downstream of construction areas.
West of High Grove Lane	Pond	398202	404264	Out	Screened out as upstream of any construction works.
Low Grove Lane	Pond	398070	404021	In	Screened in as the pond is downstream of a proposed working area with potential hydrological connectivity to an unnamed watercourse.
South Micklehurst Road	Pond	397894	401924	Out	Screened out as upstream of any construction works.

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Water body name/ID	Water body type	Easting	Northing	Screening (in/out)	Justification for Screening in/out
1 of 2 Crow i'th Wood	Pond	397741	400468	Out	Screened out as upstream of any construction works.
2 of 2 Crow i'th Wood	Pond	397716	400330	Out	Screened out as upstream of any construction works.
1 of 2 Stalybridge Country Park	Pond	398079	399339	Out	Screened out as upstream of any construction works.
2 of 2 Stalybridge Country Park	Pond	397999	399258	Out	Screened out as upstream of any construction works.
Printworks Road	Lake	397311	399831	Out	Screened out as no obvious hydrological connection with the River Tame and does not intersect any of the known construction works.
Sprout Brook Road	Pond	396822	400222	Out	Screened out as upstream of any construction works.

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Water body name/ID	Water body type	Easting	Northing	Screening (in/out)	Justification for Screening in/out
1 of 2 Primrose Wood	Pond	396771	399802	Out	Screened out as upstream of any construction works.
2 of 2 Primrose Wood	Pond	396826	399762	Out	Screened out as upstream of any construction works.
Stamford Park	Lake	395651	399374	Out	Screened out as upstream of any construction works.
Stamford Park 2	Lake	395701	399584	Out	Screened out as upstream of any construction works.
Mottram Road	Pond	396877	398124	Out	Screened out as upstream of any construction works.

3.1.13 A summary of the screened in surface water bodies and their WFD classification is provided in Table 3-2

Table 3-2 Summary Screening of WFD surface water bodies

Water body name / ID	Water body type	Ecological status (Cycle 3, 2022) ¹¹	Heavily modified status	Screening (in/out)	Justification for Screening in/out
Tame (Source to Chew Brook) GB112069064741	River	Moderate*	Heavily modified	In	Screened in as Order Scheme works are within this water body catchment
Chew Brook GB112069061300	River	Moderate	Heavily modified	Out	Screened out as Order Scheme works are downstream of this water body catchment
Tame (Chew Brook to Swineshaw Brook) GB112069061111	River	Moderate	Heavily modified	In	Screened in as Order Scheme works are within this water body catchment
Tame (Swineshaw Brook to Mersey) GB112069061112	River	Moderate	Heavily modified	In	Screened in as Order Scheme works are within this water body catchment
Huddersfield Narrow Canal west section (GB71210268)	Canal	Moderate*	Artificial	In	Screened in as Order Scheme works are within

¹¹ Note Overall status provided for WFD groundwater body.

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Water body name / ID	Water body type	Ecological status (Cycle 3, 2022) ¹¹	Heavily modified status	Screening (in/out)	Justification for Screening in/out
					this water body catchment
Huddersfield Narrow Canal summit section (GB70410520)	Canal	Good	Artificial	In	Screened in as Order Scheme works are within this water body catchment
*Cycle 3, 2019					

Groundwater Bodies

3.1.14 The Zol is underlain by the following groundwater bodies (See Figure 12A.3.3 Volume 2 of the Environmental Report [NR14]):

- Manchester and East Cheshire Carboniferous Aquifers GB41202G102900
- Northern Manchester Carboniferous Aquifers GB41202G101800

Manchester and East Cheshire Carboniferous Aquifers

3.1.15 The Manchester and East Cheshire Carboniferous Aquifers groundwater body covers an area of 758,000 ha and is currently classified as Poor overall status. As the Order Scheme boundary is within the boundary of this groundwater body, and includes below ground works, the Manchester and East Cheshire Carboniferous Aquifers have been screened **in** for further assessment.

Northern Manchester Carboniferous Aquifers

3.1.16 The Northern Manchester Carboniferous Aquifers groundwater body covers an area of 62,900 ha and is currently classified as Poor overall status. A small section of the groundwater body falls within the defined Zol for groundwater but as the works components are not within this groundwater body (See Figure 12A.3.3 Volume 2 of the Environmental Report [NR14]) the Northern Manchester Carboniferous Aquifers water body has been screened **out** of further assessment.

3.1.17 A summary of the screened groundwater bodies and their WFD classification is provided in Table 3-3 below. The location of the Order Scheme in relation to WFD groundwater bodies is shown in Figure 12A.3.3 Volume 2 of the Environmental Report [NR14]

Table 3-3 Summary Screening of WFD groundwater bodies

Water body name / ID	Water body type	Overall water body status (Cycle 3, 2022) ¹²	Screening (in/out)	Justification for Screening in/out
Manchester and East Cheshire Carboniferous Aquifers GB41202G102900	Groundwater	Poor*	In	Scheme Order works are within the boundary of this groundwater body.
Northern Manchester Carboniferous Aquifers GB41202G101800	Groundwater	Poor*	Out	Not hydraulically connected to the works.
*Cycle 3, 2019				

¹² Note Overall status provided for WFD groundwater body.

3.2 Screening summary

- 3.2.1 There are no WFD surface water transfer water bodies within the Zol. WFD surface water transfer water bodies have, therefore, been screened out of any further assessment.
- 3.2.2 There are no WFD coastal water bodies within the Zol. WFD coastal water bodies have, therefore, been screened out of any further assessment.
- 3.2.3 There are no WFD transitional water bodies within the Zol. WFD transitional water bodies have, therefore, been screened out of any further assessment.
- 3.2.4 The Screening summary (Stage 1) exercise has identified three WFD river water bodies, two WFD canal water bodies and one WFD groundwater body which have been screened in for further assessment:
- Three WFD river water bodies:
 - Tame (Source to Chew Brook) GB112069064741
 - Tame (Chew Brook to Swineshaw Brook) GB112069061111
 - Tame (Swineshaw Brook to Mersey) GB112069061112
 - Two WFD canal water bodies:
 - Huddersfield Narrow Canal west section GB71210268
 - Huddersfield Narrow Canal summit section GB70410520
 - One WFD groundwater body:
 - Manchester and East Cheshire Carboniferous Aquifers GB41202G102900
- 3.2.5 These six water bodies will be taken forward to Stage 2 (Scoping) in section 4 of this report.

4. STAGE 2 (WFD SCOPING)

4.1 Scoping of work components

- 4.1.1 The relevant works components proposed for the Order Scheme are provided in Table 1-1 of Chapter 1, Volume 1 of the Environmental Report [NR14].

Surface water (construction and operation)

- 4.1.2 Specific Order Scheme components which may cause impacts to the surface water receptors identified in Stage 1 (WFD Screening) include the following:
- Relocation of Mossley Station and introduction of new drainage to the River Tame, via an unnamed culverted watercourse (Ordnance Survey National Grid Reference (OS NGR): SD 97530 02537).
 - Potential interaction with unnamed ordinary watercourse associated with Wrights Overbridge works (MVL3/23) (OS NGR: SD 98109 04139).
 - Uppermill Viaduct works (MVL3/31) (OS NGR: SD 99569 06285).
 - Reconstruction of existing overbridge superstructure on Ward Lane (MVL3/36) (OS NGR: SE 00280 07551).
 - Diggle Road Overbridge and Utilities Bridge Works (MVL3/39) (OS NGR: SE 00711 08065).
 - Standedge Canal Tunnel (MVL3/39A) (OS NGR: SE 00680 08021).
 - Standedge Canal Tunnel Bywash Underbridge Replacement (MVL3/39B) (SD 98109 04139).
 - Construction of various temporary compounds which are in close proximity to water bodies namely Plevins site compound (OS NGR: SD 97757 01536), Scout Spoil point compound¹³ (OS NGR: SD 97331 01196), Manchester Road Scout West¹⁴ (OS NGR: SD 97448 01241), Ward Lane site compound (OS NGR: SE 00300 07517), Grandpa Greens site compound 2¹⁵ (OS NGR: SE 00370 07697), Sam Road car park compound¹⁶ (OS NGR: SE 00621 07970) and Diggle Welfare, rail hub and office compound (OS NGR: SE 00598 07868).

¹³ Consented as part of Scout Compounds Works as described in Chapter 1, Table 1.1 of the Environmental Report [NR14]

¹⁴ Consented as part of Scout Compounds Works as described in Chapter 1, Table 1.1 of the Environmental Report [NR14]

¹⁵ Consented as part of Ward Lane Site Compound Works as described in Chapter 1, Table 1.1 of the Environmental Report [NR14]

¹⁶ Consented as part of Diggle Site Compound Works as described in Chapter 1, Table 1.1 of the Environmental Report [NR14]

Groundwater (construction and operation)

- 4.1.3 Potential impacts to groundwater arising from the Order Scheme are generally associated with works components which involve deep foundations (piling) and retaining walls (associated with new structures and/or the refurbishment/partial reconstruction of existing structures), earthworks, and storage of materials in temporary construction compounds. Specific Order Scheme components which may cause impacts to groundwater receptors identified in Stage 1 (WFD Screening) include the following:
- Stalybridge Tunnel (MVL3/3) (OS NGR: SJ 96657 98929) and Scout Tunnel (OS NGR: SD 97328 01330) Ground Stabilisation Works
 - Wrights Overbridge Works (MVL3/23) (OS NGR: SD 98109 04139).
 - Manchester Road Footbridge Reconstruction (MVL3/10A) (OS NGR: SD 97238 00715).
 - Diggle Road Overbridge Reconstruction (MVL3/39) (OS NGR: SE 00711 08065).
 - Relocation of Mossley Station.
 - Mossley Cottages Works (OS NGR: SD 97374 01921).
 - Reconstruction of Oldham Road Overbridge (MVL3/28) (OS NGR: SD 99191 04720).
 - New Oldham Road Footbridge Works (MVL3/28A) (OS NGR: SD 99191 04720).
 - Standedge Canal Tunnel Bywash Underbridge Replacement (MVL3/39B) (SD 98109 04139).
 - Diversion of utilities bridge into Stamford Road Bridge (OS NGR: SD 97352 02000).
 - Stamford Road Bridge Works (MVL3/13) (OS NGR: SD 97355 01846).
 - Construction of various temporary compounds which have below groundworks or will be used for storage of materials. Compounds may be in place for several years and have been assessed as permanent works components of the Order Scheme.
- 4.1.4 The risks associated with these components are considered further in Stage 3 (WFD Impact Assessment) in direct relation to the WFD water body or bodies which they may affect.
- 4.2 Surface water baseline**
- 4.2.1 The following four WFD river water bodies (as identified in Table 4-1) are included in this Scoping:

- Tame (Source to Chew Brook) GB112069064741.

- Chew Brook GB112069061300.
- Tame (Chew Brook to Swineshaw Brook) GB11206906111.
- Tame (Swineshaw Brook to Mersey) GB112069061112.

4.2.2 The following two WFD canal water bodies (as identified in Table 4-2) are included in this Scoping:

- Huddersfield Narrow Canal west section GB71210268.
- Huddersfield Narrow Canal summit section GB70410520.

4.2.3 All WFD river water bodies are designated as Heavily Modified Water Bodies (HMWBs), indicating that they have been substantially altered from their original character.

4.2.4 Both WFD canal water bodies are designated as Artificial Water Bodies (AWBs), which have been created where no natural water body existed previously.

4.2.5 None of the protected areas detailed in section 1.2.5 were identified with the Zol of the Order Scheme. Potential impacts on protected areas resulting from the works components are therefore considered negligible.

4.2.6 The current (2019/2022, Cycle 3) status for the WFD river water bodies are provided in Table 4-1 along with objectives, designations, reasons for not achieving good (RNAG) status and linked protected areas.

Table 4-1 Summary of WFD information for the four scoped in river water bodies

Water Body Name	Tame (Source to Chew Brook)	Chew Brook	Tame (Chew Brook to Swineshaw Brook)	Tame (Swineshaw Brook to Mersey)
Water Body ID	GB112069064741	GB112069061300	GB112069061111	GB112069061112
Hydromorphological Designation	Heavily modified	Heavily modified	Heavily modified	Heavily modified
Cycle 3 2019 or 2022	2019	2022	2019	2022
Classification	Moderate	Moderate	Moderate	Moderate
Objectives	Good by 2027	Good by 2027	Moderate by 2015	Moderate by 2015
Ecological	Moderate	Moderate	Moderate	Moderate
Supporting elements (surface water)	Moderate	Moderate	Moderate	Moderate
Mitigation Measures Assessment	Moderate or less	Moderate or less	Moderate or less	Moderate or less
Biological Quality Elements	Moderate	Poor	Moderate	Poor
Macrophytes and Phytobenthos	Good	Not assessed	Not assessed	Moderate
Fish	Moderate	Poor	Not assessed	Poor
Invertebrates	Good	Poor	Moderate	Poor
Hydromorphological supporting elements	Not assessed	Not assessed	Not assessed	Not assessed

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Water Body Name	Tame (Source to Chew Brook)	Chew Brook	Tame (Chew Brook to Swineshaw Brook)	Tame (Swineshaw Brook to Mersey)
Physico-chemical Quality Elements	Moderate	High	Moderate	High
Acid Neutralising Capacity	Not assessed	Not assessed	High	High
Ammonia (Phys-Chem)	High	High	Moderate	Good
Biochemical Oxygen Demand (BOD)	Not assessed	Not assessed	High	High
Dissolved Oxygen	High	High	High	High
pH	High	High	High	High
Phosphate	Moderate	High	Poor	Poor
Temperature	High	High	High	High
Specific pollutants	Not assessed	Not assessed	High	High
Chemical	Fail	Does not require assessment	Fail	Does not require assessment
Priority substances	Fail	Does not require assessment	Fail	Does not require assessment
Other pollutants	Does not require assessment	Does not require assessment	Does not require assessment	Does not require assessment
Priority hazardous substances	Fail	Does not require assessment	Fail	Does not require assessment

Water Body Name	Tame (Source to Chew Brook)	Chew Brook	Tame (Chew Brook to Swineshaw Brook)	Tame (Swineshaw Brook to Mersey)
RNAG (2019)	Phosphate Water industry Urban & transport Mercury and Its Compounds Polybrominated diphenyl ethers (PBDE)	PBDE Fish Urban and transport Water industry	Perfluorooctane sulphonate (PFOS) PBDE Phosphate Mercury and Its Compounds Water industry Ammonia (Phys-Chem)	Invertebrates PBDE Urban and transport PFOS Phosphate Fish Ammonia (Phys-Chem) Macrophytes and Phytobenthos Combined Mercury and Its Compounds
Linked Protected Areas	South Pennine Moors (UK0030280) South Pennine Moors Phase 2 (UK9007022) Peak District Moors (South Pennine Moors Phase 1) (UK9007021)	South Pennine Moors (UK0030280) Peak District Moors (South Pennine Moors Phase 1) (UK9007021)	South Pennine Moors (UK0030280) Peak District Moors (South Pennine Moors Phase 1) (UK9007021) River Tame (UKENRI144)	River Tame (UKENRI144)

4.2.7 The WFD canal water bodies are within the North West RBD. Huddersfield Narrow Canal west section Water Body is in the Goyt, Etherow and Tame Canals Operational Catchment and Huddersfield Narrow Canal summit section is within the Calder Canals Operational Catchment.

4.2.8 The current (2019/2022, Cycle 3) status for the WFD canal water bodies¹⁷ are provided in Table 4-2 along with objectives, designations, reasons for not achieving good (RNAG) status and linked protected areas.

Table 4-2 Summary of WFD information for the two scoped in canal water bodies

Water Body Name	Huddersfield Narrow Canal west section	Huddersfield Narrow Canal summit section
Water Body ID	GB71210268	GB70410520
Hydromorphological Designation	Artificial	Artificial
Cycle 3 2019 or 2022	2019	2019
Classification	Moderate	Good
Objectives	Good by 2027	Good by 2015
Ecological	Moderate	Good
Supporting elements (surface water)	Moderate	Good
Mitigation Measures Assessment	Moderate or less	Good
Chemical	Fail	Fail
Priority hazardous substances	Fail	Fail
Benzo(a)pyrene	Good	Good
Dioxins and dioxin-like compounds	Good	Good
Heptachlor and cis-Heptachlor epoxide	Good	Good
Hexabromocyclododecane (HBCDD)	Good	Good
Hexachlorobenzene	Good	Good
Hexachlorobutadiene	Good	Good

¹⁷ A summary of the screened in surface water bodies and their WFD classification is provided in Table 3.2

Water Body Name	Huddersfield Narrow Canal west section	Huddersfield Narrow Canal summit section
Mercury and Its Compounds	Fail	Fail
Perfluorooctane sulphonate (PFOS)	Good	Good
Polybrominated diphenyl ethers (PBDE)	Good	Fail
Priority substances	Fail	Good
Fluoranthene	Good	Good
Other Pollutants	Does not require assessment	Does not require assessment
RNAG (2019)	Mercury and Its Compounds Polybrominated diphenyl ethers (PBDE)	Mercury and Its Compounds Polybrominated diphenyl ethers (PBDE)
Linked Protected Areas	N/A	N/A

4.2.9 Watercourses within each of the six WFD surface water bodies have been identified and are outlined in Table 4-3. The table highlights which watercourses are potentially impacted by the Order Scheme, this has been determined by:

- Whether the watercourse is crossed by the Order Scheme/ temporary working areas,
- If there are any outfalls to the watercourse,
- If the Order Scheme is in close proximity to a watercourse or,
- If the watercourse is downstream of any works.

Table 4-3 Watercourses which are potentially impacted by the Order Scheme.

Surface water receptor name	Water body type	Impacted by the Order Scheme?
Tame (Source to Chew Brook) GB112069064741		
Diggle Brook	Main River	Yes – WFD reportable watercourse and crossed by the Order Scheme.
River Tame	Main River	Yes – WFD reportable watercourse and crossed by the Order Scheme.
Unnamed watercourse - Uppermill Village	Main River	No – hydraulically connected but upstream of the Order Scheme.
Unnamed watercourse near Standedge Canal Tunnel	Ordinary Watercourse	Yes – crossed by the Scheme
Wall Hill Brook	Ordinary Watercourse	No – hydraulically connected but upstream of the Order Scheme.
White Brook	Ordinary Watercourse	
Pickhill Brook	Ordinary Watercourse	
Capper Clough	Ordinary Watercourse	
Golburn Clough	Ordinary Watercourse	
OW 1	Ordinary Watercourse	
OW 2	Ordinary Watercourse	
OW 3	Ordinary Watercourse	

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Surface water receptor name	Water body type	Impacted by the Order Scheme?
OW 4	Ordinary Watercourse	
OW 5	Ordinary Watercourse	
OW 6	Ordinary Watercourse	
OW 7	Ordinary Watercourse	Yes – works undertaken immediately adjacent to watercourse.
Tame (Chew Brook to Swineshaw Brook) GB112069061111		
Staly Brook	Main River	No – hydraulically connected but upstream of the Order Scheme.
Unnamed river - Grasscroft Village	Main River	
Unnamed river - Stalybridge	Main River	
Swineshaw Brook	Ordinary Watercourse	
Micklehurst Brook	Ordinary Watercourse	
Acres Brook	Ordinary Watercourse	
OW 9	Ordinary Watercourse	
OW 11	Ordinary Watercourse	
OW 12	Ordinary Watercourse	
River Tame	Main River	Yes

Surface water receptor name	Water body type	Impacted by the Order Scheme?
OW 13	Ordinary Watercourse	Yes – crossed by the Order Scheme.
OW14	Ordinary Watercourse	Yes – surface water drainage will outfall to the watercourse
Chew Brook GB112069061300		
Chew Brook	Main River	No – hydraulically connected but upstream of the Order Scheme.
Warlow Brook	Ordinary Watercourse	
OW 8	Ordinary Watercourse	
OW 10	Ordinary Watercourse	
Tame (Swineshaw Brook to Mersey) GB112069061112		
River Tame	Main River	Yes – works immediately adjacent to watercourse
Huddersfield Narrow Canal	Ordinary Watercourse	Yes - crossed by the Order Scheme
Huddersfield Narrow Canal west section GB71210268		
Huddersfield Narrow Canal summit section GB70410520		
Huddersfield Narrow Canal	Ordinary Watercourse	Yes - crossed by the Order Scheme

4.2.10 The following watercourses, shown in Figure 12A.4.1 (Volume 2 of the Environmental Report [NR14]) will be assessed in Stage 3 (WFD Impact Assessment):

- Diggle Brook
- River Tame
- Huddersfield Narrow Canal
- Unnamed watercourse near Standedge Canal Tunnel
- Unnamed watercourse (OW 7)
- Unnamed watercourse (OW 13)
- Unnamed watercourse (OW 14).

4.2.11 Additionally potential impacts to the following non-reportable lake/ pond features identified in Figure 12A.4.1 (Volume 2 of the Environmental Report [NR14]) will be assessed in Stage 3 (WFD Impact Assessment). These lake/pond features are also listed below:

- Diggle Duck Pond
- Pond (Low Grove Lane)
- Pond (East of Well-Hole Road)
- Pond (West of Well-Hole Road).

4.3 Groundwater baseline

4.3.1 One WFD groundwater body is scoped into this assessment: Manchester and East Cheshire Carboniferous Aquifers (GB41202G102900). The baseline characteristics for this groundwater body are set out below.

Water body overview

4.3.2 The Manchester and East Cheshire Carboniferous Aquifers WFD groundwater body covers 758,000 ha of north-west England, stretching from Castleshaw Moor in the north of the catchment to Madely Park in the south. This groundwater body incorporates several bedrock formations with the Millstone Grit Group covering most of the groundwater body. The Pennine and South Wales Coal Measures and the Warwickshire Group are present in the west and south of the groundwater body.

WFD status

4.3.3 A summary of the current (Cycle 3, 2019) WFD classification for the groundwater body is summarised in Table 4-4¹⁸. The Manchester and

¹⁸ <https://environment.data.gov.uk/catchment-planning/WaterBody/GB41202G102900>
[accessed 09/01/2025]

East Cheshire Carboniferous Aquifers WFD water body is currently attaining Poor Overall status. The Quantitative status is currently Good, although the Chemical status is Poor as a result of the Chemical Drinking Water Protected Area element. All other elements are Good for this groundwater body.

Table 4-4 WFD status (2019) summary for Manchester and East Cheshire Carboniferous Aquifers

Water body name	Manchester and East Cheshire Carboniferous Aquifers
Water Body ID	GB41202G102900
Overall Classification	Poor
Objective	Good by 2027 – Low confidence (Disproportionately expensive: Disproportionate burdens)
Quantitative	Good
Quantitative status element	Good
Quantitative Saline Intrusion	Good
Quantitative Water Balance	Good
Quantitative Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Good
Quantitative Dependent Surface Water Body Status	Good
Chemical (GW)	Poor
Chemical Status element	Poor (Fail on Chemical Drinking Water Protected Area)
Chemical Dependent Surface Water Body Status	Good
Chemical Drinking Water Protected Area	Poor
General Chemical Test	Good
Chemical Groundwater Dependent Terrestrial Ecosystems (GWDTEs) Test	Good
Chemical Saline Intrusion	Good
RNAG	<ul style="list-style-type: none"> Point source, private sewage treatment (domestic general public),

Water body name	Manchester and East Cheshire Carboniferous Aquifers
	<ul style="list-style-type: none"> • Diffuse source, poor nutrient management (agriculture and rural land management) – Chemical Drinking Water protected area. • Diffuse source, poor nutrient management (agriculture and rural land management) – Trend Assessment • Diffuse source, poor livestock management (agriculture and rural land management) – Chemical Drinking Water protected area. • Diffuse source, septic tanks (domestic general public) – Trend Assessment • Diffuse source, poor livestock management (agriculture and rural land management) – Trend Assessment
Linked Protected Areas*	<ul style="list-style-type: none"> • River Weaver (Dane to Frodsham) Nitrate Vulnerable Zone (NVZ) Nitrates Directive • R Tern - conf R Roden to conf R Severn NVZ Nitrates Directive • East Shropshire Nitrates Directive • South Pennine Moors Phase 2 Special Protected Area (SPA) • South Pennine Moors Special Area of Conservation (SAC) • River Trent (source to confluence with Derwent) Nitrates Directive • Peak District Moors (South Pennine Moors Phase 1) SPA • North Staffordshire Nitrates Directive • Betley Mere Eutrophic Lake NVZ Nitrates Directive • Manchester and East Cheshire Carboniferous Aquifers Drinking Water Protected Area

* - Linked protected areas listed may not necessarily lie within the Order Scheme boundary.

5. STAGE 3 (WFD IMPACT ASSESSMENT)

5.1 Surface water character

- 5.1.1 Summary descriptions (hydromorphology, aquatic ecology and water quality) of each watercourse within the four WFD river water bodies and two WFD canal water bodies are provided in Table 5-1 and Table 5-2 respectively.
- 5.1.2 Descriptions of the characteristics of each of the watercourses are based on the findings of walkover surveys undertaken in the summer of 2024. Where available these observations are supplemented with historic EA monitoring data (ecology and water quality).

Table 5-1 Summary description for watercourses

WFD water body	Watercourse name	River Status	Watercourse description (hydromorphology, aquatic ecology, water quality)
<p>Tame (Source to Chew Brook) GB112069064741</p> <p>Tame (Chew Brook to Swineshaw Brook) GB112069061111</p> <p>Tame (Swineshaw Brook to Mersey) GB112069061112</p>	River Tame	Main River	<p>The largest watercourse which flows within the Order Scheme boundary is the River Tame. The River Tame originates on Denshaw Moor in Greater Manchester (outside of the Order Scheme boundary), close to the border with West Yorkshire. The source is located in the moors above Denshaw, and the river flows generally south through the study area, through towns such as Uppermill, Mossley and Stalybridge, before joining the River Goyt in Stockport to form the River Mersey, approximately 9.2 km south-west of the study area.</p> <p>During the survey small sections of the River Tame (Source to Chew Brook) water body were observed however access to the channel was constrained due to dense vegetation and housing. Observations were therefore made from vantage points, such as road bridges where possible.</p> <p>The River Tame was observed to be shallow and fast flowing with a cobble/ gravel substrate and a wetted width of approximately 10 m (Plate 1). Both banks were generally well vegetated with a mixture of herbaceous plants, grasses and trees. The invasive non-native species Himalayan Balsam (<i>Impatiens glandulifera</i>) was also recorded.</p>

WFD water body	Watercourse name	River Status	Watercourse description (hydromorphology, aquatic ecology, water quality)
			 <p>Plate 1: Selected photographs of the River Tame within the Zol</p> <p>EA Monitoring data (<5 Years old)</p> <p>Historic fisheries data from the River Tame reveals that several species of conservation interest have been recorded in the catchment within the past 5 years. This includes brown trout (<i>Salmo trutta</i>), bullhead (<i>Cottus gobio</i>) and European eel (<i>Anguilla anguilla</i>). In the lower catchment (Tame (Swineshaw Brook to Mersey)) fish species diversity is notably greater when compared to the middle (Tame (Chew Brook to Swineshaw Brook)) and upper</p>

WFD water body	Watercourse name	River Status	Watercourse description (hydromorphology, aquatic ecology, water quality)
			<p>catchment (Tame (Source to Chew Brook)). Differences in fish community composition may at least partly be attributed to known barriers to fish passage within the catchment, most notably Harrison's Weir in Reddish Vale Park (OS NGR: SJ 90628 91865).</p> <p>Historic aquatic macroinvertebrate metric data suggests that the macroinvertebrate communities are broadly similar across each of the three River Tame water bodies. Biological indices calculated from the data reveal that the communities are of moderate conversation value and are indicative of a fast flowing, moderate/ minimally sedimented environment. One notable macroinvertebrate species was returned in the data, namely the caddisfly <i>Potamophylax rotundipennis</i>.</p> <p>Phytonbenthos data (diatoms) for the Tame is available from two of the three Tame water bodies; Tame (Source to Chew Brook) water body and the Tame (Swineshaw Brook to Mersey) water body. Biological indices calculated from the data indicate the communities found are indicative of low to moderate levels of nutrient. No notable species of diatoms were returned in the data.</p> <p>No macrophyte survey data was available for the River Tame.</p> <p>EA water quality monitoring is available for the River Tame at several locations spanning the three WFD water bodies considered as part of this assessment. Water quality data indicates that High WFD status for BOD, temperature and dissolved oxygen at each of the three water bodies (BOD not assessed at Tame (Source to Chew Brook)). For ammonia, results were variable between water bodies with High WFD status reported at Tame (Source to Chew Brook) and Moderate and Good WFD status at Tame (Chew Brook to Swineshaw Brook) and Tame (Swineshaw Brook to Mersey) respectively.</p>

WFD water body	Watercourse name	River Status	Watercourse description (hydromorphology, aquatic ecology, water quality)
Tame (Source to Chew Brook) GB112069064741	Diggle Brook	Main River	<p>Diggle Brook is a designated Main River located in the north of the study area. It flows in a south-westerly direction from Diggle Reservoir before crossing the Huddersfield trainline and Huddersfield Narrow Canal in Diggle village centre. At this point, the watercourse flows in a southerly direction, through the centre of the study area to join the River Tame at Brownhill Nature Garden.</p> <p>Only small sections of the watercourse were surveyed due to access restrictions. At the time of the walkover survey Diggle Brook was found to be shallow and fast flowing with a predominantly gravel and cobble substrate. The wetted width of the watercourse near to its confluence with the River Tame was estimated to be 5 m and both banks were well vegetated with a mixture of herbaceous plants, grasses and trees (Plate 2). The invasive non-native species Himalayan Balsam was also recorded.</p>

WFD water body	Watercourse name	River Status	Watercourse description (hydromorphology, aquatic ecology, water quality)
			 <p>Plate 2: Diggle Brook within the Zol</p> <p>EA Monitoring data (<5 Years old)</p> <p>Fish survey data for Diggle Brook is available for 2023. The results of this survey returned two fish species: brown trout and stone loach (<i>Barbatula barbatula</i>). Both species favour shallow, fast flowing stoney watercourses such as the habitat observed during the walkover survey.</p> <p>No water quality, macroinvertebrate, diatom or macrophyte data was available for Diggle Brook however the habitat present is likely to be suitable for invertebrate, plant and diatom communities which favour fast flowing stoney environments.</p>

WFD water body	Watercourse name	River Status	Watercourse description (hydromorphology, aquatic ecology, water quality)
Tame (Source to Chew Brook) GB112069064741	Unnamed watercourse near Standedge Canal Tunnel	Ordinary Watercourse	<p>Large section of the unnamed watercourse was culverted within the study area. Where the channel is exposed, the watercourse was shallow fast flowing with a boulder, cobble and gravel substrate. The wetted width was estimated to be 2m.</p> <p>EA Monitoring data (<5 Years old)</p> <p>No EA water quality, fisheries or ecology data was returned for the unnamed watercourse near Standedge Canal Tunnel however the habitat present is likely to be suitable for fish, invertebrate, plant and diatom communities which favour fast flowing stoney environments.</p>
Tame (Source to Chew Brook) GB112069064741	Unnamed watercourse (OW 7)	Ordinary Watercourse	<p>The unnamed watercourse flows in a westerly direction draining an area of grazed pasture to the east of the Order Scheme boundary. The watercourse is culverted beneath the existing rail line and then passes above the Huddersfield Narrow canal, in an open piped structure, before entering a pond adjacent to Diggle Brook.</p> <p>The watercourse was shallow throughout much of the survey extent with a boulder cobble substrate (Plate 3). The watercourse averaged < 0.5 m in width and the invasive non-native species Himalayan Balsam was also recorded.</p>

WFD water body	Watercourse name	River Status	Watercourse description (hydromorphology, aquatic ecology, water quality)
			 <p>Plate 3: Selected photographs of OW 7 within the Zol</p> <p>EA Monitoring data (<5 Years old)</p> <p>No EA water quality, fisheries or ecology data was returned for OW 7. The watercourse is not considered to provide suitable habitat for fish due to the limited flow and shallow water depth, and the significant modification of the channel (i.e. culverts). The watercourse is likely to support macroinvertebrates, aquatic plants and diatoms however these communities are</p>

WFD water body	Watercourse name	River Status	Watercourse description (hydromorphology, aquatic ecology, water quality)
			likely to be limited to due to the aforementioned habitat conditions/ anthropogenic modifications.
Tame (Chew Brook to Swineshaw Brook) GB112069061111	Unnamed watercourse (OW 13)	Ordinary Watercourse	<p>The unnamed watercourse/spring OW 13 was not visited during the walkover surveys however aerial imagery/ Ordnance survey mapping suggests that the watercourse flows in a south-easterly direction draining an area of pasture/scrub. The watercourse then crosses a rail line presumably via a culvert. The hydrology downstream of this point is uncertain however it is likely that some of the flow feeds the pond adjacent to Low Grove Lane.</p> <p>EA Monitoring data (<5 Years old)</p> <p>No EA water quality, fisheries or ecology data was returned for the unnamed watercourse OW 13.</p>
Tame (Chew Brook to Swineshaw Brook) GB112069061111	Unnamed watercourse (OW 14)	Ordinary Watercourse	<p>The unnamed watercourse OW 14 was not visited during the walkover surveys and is not currently marked on Ordnance Survey mapping. It is our understanding that the watercourse is culverted beneath ground through a 1500 mm diameter culvert beneath the proposed location for Mossley Station before out falling to the River Tame.</p> <p>EA Monitoring data (<5 Years old)</p> <p>No EA water quality, fisheries or ecology data was returned for the unnamed watercourse OW 13.</p>
Tame (Chew Brook to Swineshaw Brook) GB112069061111	Pond (Low Grove Lane)	Pond	The unnamed pond was not visited during the walkover surveys however aerial imagery suggests that the pond is likely fed by OW 13 a small watercourse/ spring. The pond is roughly 0.2 ha in size; is tree lined and is bordered by a rail line and an area of residential housing.

WFD water body	Watercourse name	River Status	Watercourse description (hydromorphology, aquatic ecology, water quality)
			<p>EA Monitoring data (<5 Years old)</p> <p>No EA water quality, fisheries or ecology data was returned for the unnamed pond adjacent to Low Grove Lane however the habitat present is likely to be suitable for fish, invertebrate, plant and diatom communities which favour lentic environments.</p>
Tame (Chew Brook to Swineshaw Brook) GB112069061111	Pond (West of Well-Hole Road).	Pond	<p>The unnamed pond was not visited during the walkover surveys however aerial imagery suggests that the pond is hydrologically connected to the River Tame by a side channel to the main river. There also appears to be connectivity to the pond east of Well-Hole Road. The pond is roughly 1 ha in size, is lined with trees and borders an area of residential housing.</p> <p>EA Monitoring data (<5 Years old)</p> <p>No EA water quality, fisheries or ecology data was returned for the unnamed pond however the habitat present is likely to be suitable for fish, invertebrate, plant and diatom communities which favour lentic environments.</p>
Tame (Chew Brook to Swineshaw Brook) GB112069061111	Pond (East of Well-Hole Road).	Pond	<p>The unnamed pond was not visited during the walkover surveys however aerial imagery suggests that the pond is hydrologically connected to the River Tame by a side channel to the main River. There also appears to be connectivity to the pond west of Well-Hole Road. The pond is roughly 0.1 ha in size; is tree lined and is bordered by two roads and an area of pasture.</p> <p>EA Monitoring data (<5 Years old)</p> <p>No EA water quality, fisheries or ecology data was returned for the unnamed pond however the habitat present is likely to be suitable for fish, invertebrate, plant and diatom communities which favour lentic environments.</p>

WFD water body	Watercourse name	River Status	Watercourse description (hydromorphology, aquatic ecology, water quality)
Tame (Source to Chew Brook) GB112069064741	Diggle Duck Pond	Pond	<p>Diggle Duck Pond is roughly 0.125 ha in size and is fringed by trees, herbaceous plants and emergent aquatic vegetation (Plate 4). The pond is bordered by a road and an area of residential housing. The pond is fed by OW7 and is suspected to outfall to Diggle Brook, although this was not conformed during the walkover surveys.</p>  <p>Plate 4: Diggle Duck pond photographed from western shoreline.</p> <p>EA Monitoring data (<5 Years old)</p> <p>No EA water quality, fisheries or ecology data was returned for the unnamed pond however the habitat present is likely to be suitable for fish, invertebrate, plant and diatom communities which favour lentic environments.</p>

Table 5-2 Summary of baseline surface water character for WFD canal water bodies

WFD water body	Watercourse name	River Status	Watercourse description (hydromorphology, aquatic ecology, water quality)
<p>Huddersfield Narrow Canal west section (GB71210268)</p> <p>Huddersfield Narrow Canal summit section (GB70410520)</p>	Huddersfield Narrow Canal	Ordinary Watercourse - Canal	<p>The Huddersfield Narrow Canal is an ordinary watercourse that stretches across the entire length of the study area. The northern section of the canal is tunnelled, this tunnel is identified as Standedge Canal Tunnels and it stretches from Marsden, located approximately 3.5 km north-east of the study area to Diggle Village in the north of the study area. From this point, Huddersfield Narrow Canal spans south through the centre of the study area before exiting the study area at Stalybridge.</p> <p>During the walkover several sections of the Huddersfield Narrow Canal were surveyed in the Western Section. The Summit Section was also observed where the canal enters Standedge Canal Tunnel.</p> <p>In terms of hydrological characteristic, the canal was broadly similar throughout the survey extent with an estimated wetted width of 10 m and water depths in excess of 1 m (Plate 5). Due to the artificial nature of the canal, there is limited geomorphological diversity.</p>



WFD water body	Watercourse name	River Status	Watercourse description (hydromorphology, aquatic ecology, water quality)
			 <p>Plate 5: Selected photographs of the Huddersfield Narrow Canal within the Zol</p> <p>EA Monitoring data (<5 Years old)</p> <p>No EA water quality, fisheries or ecology data was returned for the Huddersfield Narrow Canal within the past 5 years. The habitat present is likely to provide habitat for mixed coarse fish species and plants and invertebrates which favour slow flowing/lentic environments.</p>

WFD water body	Watercourse name	River Status	Watercourse description (hydromorphology, aquatic ecology, water quality)
			The Huddersfield Narrow Canal between Grasscroft and Dukinfield is designated as a Site of Special Scientific Interest (SSSI) as it supports rare aquatic flora such as floating water-plantain (<i>Luronium natans</i>), autumnal water-starwort (<i>Callitriche hermaphroditica</i>) and grass-wrack pondweed (<i>Potamogeton compressus</i>), as well as rare invertebrates including white-clawed crayfish (<i>Austropotamobius pallipes</i>).

5.2 Groundwater character

5.2.1 The following section summarises the character of the groundwater and geology underlying the Zol. Further information can be found in Chapter 11 (Geo Environment) Volume 1 of the Environment Report¹⁹.

Bedrock and superficial geology

5.2.2 The geology and hydrogeology within the Zol is summarised in Table 5-3 and shown in Figures 12A.5.1 and 12A.5.2 (Volume 2, Environmental Report [NR14]). The Zol is situated in the north-west of the groundwater body.

5.2.3 Mapped superficial deposits within the Zol at 1:50,000²⁰ scale comprise till, glaciofluvial sheet deposits, alluvium and head. These are classified²¹ as Secondary A aquifers (alluvium and glaciofluvial) and Secondary Undifferentiated (till) or Unproductive (head).

5.2.4 The mapped bedrock geology of the Zol at 1:50,000²⁰ scale is comprised of the Millstone Grit (Shale Grit and Lower Kinderscout Grit) to the north-east of Mossley. The coal measures are located to the west of the Zol and south of Mossley and include the Woodhead Hill Rock, Pennine Lower Coal Measures Formation, Rough Rock, Rossendale Formation, Huddersfield White Rock, Fletcher Bank Grit and Marsden Formation. The geology of the area is complex, and faulting is mapped throughout the Zol, meaning groundwater flow will also be complex and highly localised.

Table 5-3 Geology and hydrogeology in the Zol

Period	Parent unit	Formation	Lithological description ²²	EA aquifer designation ²³
Quaternary	N/A	Alluvium	Clay, silt, sand and gravel	Secondary A
	N/A	Head	Clay, silt, sand and gravel	Unproductive
	N/A	Glaciofluvial deposits - Devensian	Sand and gravel, locally with lenses of silt, clay or	Secondary A

¹⁹ NR14 Environment Report Volume 1, Chapter 11 – Geo Environment.

²⁰ <https://www.bgs.ac.uk/datasets/bgs-geology-50k-digmapgb/> [accessed 20/06/2025]

²¹ <https://www.bgs.ac.uk/datasets/aquifer-designation-data/> [accessed 23/07/2025]

²² <https://webapps.bgs.ac.uk/lexicon/> [accessed 20/06/2025]

Period	Parent unit	Formation	Lithological description ²²	EA aquifer designation ²³
			organic material; characteristic 'sandur' (sheet) and valley train form; of glaciofluvial origin.	
	N/A	Till	Diamicton	Unproductive
Carboniferous	Millstone Grit Group	Lower Kinderscout Grit	Sandstone	Secondary A
		Shale Grit	Fine- to very coarse-grained and pebbly, feldspathic sandstone interbedded with grey siltstone and mudstone, with subordinate marine black shales, thin coals and seatearths.	Secondary A
		Marsden Formation	Fine- to very coarse-grained and pebbly feldspathic sandstone, interbedded with grey siltstone and mudstone, and subordinate marine black shales, thin coals and seatearths.	Secondary A

Period	Parent unit	Formation	Lithological description ²²	EA aquifer designation ²³
		Fletcher Bank Grit	Sandstone and pebbly sandstone, coarse-grained with angular grains, with quartz and quartzite pebbles, massive and current-bedded, and subordinate beds of mudstone and coal.	Secondary A
		Huddersfield White Rock	The Huddersfield White Rock is a medium- to coarse-grained, massive to flaggy, cross-bedded, micaceous sandstone.	Secondary A
		Rossendale Formation	A fine- to very coarse-grained and pebbly, feldspathic sandstone, interbedded with grey siltstone and mudstone, and subordinate marine black shales, thin coals and seatearths. Typically, the formation comprises a	Secondary A

Period	Parent unit	Formation	Lithological description ²²	EA aquifer designation ²³
			lower mudstone-dominated succession including two prominent marine shales, the <i>Cancelloceras cancellatum</i> and <i>Cancelloceras cumbriense</i> marine bands, and an upper sandstone-dominated succession, including the Rough Rock and Rough Rock Flags.	
	Rossendale Formation	Rough Rock	The base of the Rough Rock is sharp and erosional, in part underlain by mudstones with the <i>Gastrioceras cumbriense</i> Marine Band; locally present are fine-grained sandstones (Rough Rock Flags, Upper Haslingden Flags).	Secondary A
	Pennine Lower Coal Measures	Woodhead Hill Rock	Sandstone	Secondary A

Period	Parent unit	Formation	Lithological description ²²	EA aquifer designation ²³
		Old Lawrence Rock	Sandstone	Secondary A
	Pennine Coal Measures Group	Pennine Lower Coal Measures	Interbedded grey mudstone, siltstone and pale grey sandstone, commonly with mudstones containing marine fossils in the lower part, and more numerous and thicker coal seams in the upper part.	Secondary A

Aquifer designations

5.2.5 The superficial deposits are classified as Secondary A aquifers (alluvium and glaciofluvial) and Secondary Undifferentiated (till) or Unproductive (head). The bedrock throughout Zol is classified as Secondary A aquifer. Secondary A aquifers are described as “permeable layers that can support local water supplies and may form an important source of base flow to rivers”.²³

Groundwater levels

5.2.6 There is limited site-specific groundwater level information available for the groundwater body within the Zol at this stage of design.

5.2.7 Due to the limited availability of groundwater level data, it is not possible to determine the groundwater flow direction or the depth to groundwater in the vicinity of the Order Scheme. In the absence of information, a conservative approach must be adopted. It is therefore assumed that groundwater is at surface. Intrusive site-specific ground investigation (GI)

²³ <https://www.gov.uk/government/publications/protect-groundwater-and-prevent-groundwater-pollution/protect-groundwater-and-prevent-groundwater-pollution#:~:text=secondary%20A%20aquifers%20comprise%20permeable,of%20base%20flow%20to%20rivers> [Accessed on 11/12/2024]

is scheduled for the detailed design phase of the Order Scheme and will allow the groundwater flow direction and the depth to groundwater to be determined.

- 5.2.8 No groundwater was encountered during drilling 1 m deep boreholes at Mosely Station in February 2018²⁴.

Source Protection Zones

- 5.2.9 There are no groundwater Source Protection Zones²⁵ (SPZs) within the Zol.

Groundwater abstractions

- 5.2.10 Licensed groundwater abstractions within 250 m of each works component of the Order Scheme are provided in Volume 3, Appendix 11A of this Report [NR14] which have been extracted from Groundsure reports produced by works component. Three works components have licenced groundwater abstractions within 250 m which are summarised in Table 5-4.

Table 5-4 Groundwater abstraction licences

Location	Detail of groundwater abstraction within 250 m of each individual works component
Printworks Main Compound ²⁶	This active licence, located 202 m south of the proposed Printworks Main Compound location, is operated by John Hargreaves (Collyhurst & Stalybridge) Ltd.
Plevins Compound ²⁷	There is one historical groundwater abstraction within 250 m of the site. A “spring fed catchpit at Kershaw Hey Farm, Mossley” located 199 m south, started 08/02/1966. No expiry date has been provided by Groundsure.

²⁴ TransPennine Route Upgrade Zone 2 SPO Add1.4-ABS Factual report on Ground Investigation October 2018. Report reference: 151667-TSA-05-MVL3-DM3-X-MF-700013

²⁵ Source Protection Zones are defined by the Environment Agency for groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities which may cause pollution in the area. The closer the activity, the greater the risk.

²⁶ Groundsure, “Enviro+Geo Insight (GS-J63-YFR-PCH-GFU),” 2024.

²⁷ Groundsure, “Enviro+Geo Insight (GS-7GY-VBF-9JS-IUR),” 2025.

Location	Detail of groundwater abstraction within 250 m of each individual works component
Wickers Underbridge (MVL3/29) ²⁸	Two groundwater abstraction licences within 250 m of the site. These are located 228 m north-west (one active, one historical) of the site, extracting for spray irrigation operated by Saddleworth Golf Club.

Groundwater dependant terrestrial ecosystems

- 5.2.11 There are three groundwater dependent terrestrial ecosystems (GWDTEs) which intersect the Zol of the Order Scheme – refer to Table 5-5 below and Figure12A.5.2 (Volume 2 of the Environmental report)). The Dark Peak SSSI and the South Pennine Moors SSSI GWDTEs both intersect <0.1 km² of the northern margin of the Zol and do not intersect the Order Scheme boundary. Therefore, they are not considered in the impact assessment.
- 5.2.12 Huddersfield Narrow Canal SSSI is located within the Zol and is located along the course of the Huddersfield Narrow Canal west section (GB71210268) WFD water body which is classed as an artificial water body. Details of the WFD water body are provided in Table 5-2. The Huddersfield Narrow Canal is designated as a SSSI between the Portland Basin and Gas Work Lock, which is a relatively urban area. The main groundwater dependant habitats present within the SSSI are standing and running water, swamp, tall fen and fragmentary marginal vegetation.
- 5.2.13 The Huddersfield Narrow Canal SSSI intersects the Order Scheme boundary at one location where the canal flows beneath the existing Egmont Street bridge which is part of Plevins Compound.

Table 5-5 GWDTEs within Zol

GWDTE name	Total area (km ²) of GWDTE	Area within Zol (km ²)	Intersect Order Scheme boundary
Huddersfield Narrow Canal SSSI	0.12	0.09	Plevins Site Compound
The Dark Peak SSSI	318	0.07	Does not intersect order Scheme boundary
South Pennine Moors SSSI	209	<0.01	Does not intersect Order Scheme boundary

²⁸ Groundsure, "Enviro+Geo Insight (GS-KNT-M3C-RMA-6W2)," 2024.

5.3 Scoping of Works components

5.3.1 A Scoping exercise has been undertaken to identify the potential risks of each works component that was screened in for further assessment. The Scoping process has followed PINS guidance and has considered the risks of the various work components during construction and operation. WFD water bodies that could potentially be impacted by each works component are therefore scoped into the next stage of the assessment. All receptors that are not at risk from a particular works component are scoped out of the assessment at this stage.

5.3.2 The Scoping assessment has undertaken a review of the baseline information within the Zol and has considered the works components which have the potential to impact on the screened in water bodies.

Surface Water

5.3.3 Works associated with the Order Scheme which are likely to affect surface watercourses and are considered as part of the WFD surface water assessment are summarised in Table 5-6.

5.3.4 The potential impacts of these works on surface water are considered in section 5.5.

Groundwater

5.3.5 Works components with the potential to affect the WFD groundwater body underlying the Zol (Manchester and East Cheshire Carboniferous Aquifers) are detailed in Table 5-7 and can be summarised as:

- Deep foundations (piling) and retaining walls associated with new structures and/or the refurbishment/partial reconstruction of existing structures.
- Earthworks; and
- Storage of materials in temporary construction compounds.

5.3.6 The potential impact of the proposed works depends on the depth below ground of the works and whether the works would intersect with groundwater. There is currently no groundwater level and flow information available for the Zol. Therefore, a conservative approach is taken, and it is assumed that groundwater levels are at surface.

5.3.7 The required duration for the various site compounds is not currently known. Therefore, a conservative approach to the assessment has been

undertaken and all compounds are considered as permanent works components of the Order Scheme.

5.3.8 The potential impacts on groundwater are considered in section 5.6.

Table 5-6 Summary of Order Scheme works directly affecting surface water.

Works component	Works component details	Scoping Decision				
		Tame (Source to Chew Brook)	Tame (Chew Brook to Swineshaw Brook)	Tame (Swineshaw Brook to Mersey)	Huddersfield Narrow Canal west section	Huddersfield Narrow Canal summit section
Mossley Station Relocation Works	Mossley station is being relocated approximately 300 m to the north of its current location on Manchester Road (A635). A positive drainage system shall be installed for the station access loop and accessible parking, link road, station building and platforms. The proposed drainage system will outfall to a 1500 mm diameter culverted watercourse that outfalls to the River Tame roughly 50 m from the proposed tie in point. The resulting surface water drainage will be attenuated using an attenuation tank.	No	Yes	Yes	No	No
Wrights Overbridge works (MVL3/23)	Parapet raising to 1.5 m at the Grade II Listed Wrights overbridge (MVL3/23) between Low Grove Lane and Mossley Road. Bridge arms will also be installed to the bridge underside deck	No	Yes	Yes	No	No
Uppermill Viaduct (MVL3/31)	To enable the electrification of the up and down lines, OLE portals are required to be installed over the viaduct.	Yes	Yes	Yes	Yes	No
Reconstruction of existing overbridge superstructure on Ward Lane (MVL3/36)	The existing overbridge superstructure is to be reconstructed as it does not have sufficient headroom to accommodate installation of OLE and is in poor condition. The overall form of the deck will be as per the	Yes	Yes	Yes	Yes	Yes

Works component	Works component details	Scoping Decision				
		Tame (Source to Chew Brook)	Tame (Chew Brook to Swineshaw Brook)	Tame (Swineshaw Brook to Mersey)	Huddersfield Narrow Canal west section	Huddersfield Narrow Canal summit section
	standardised filler beam overbridge					
Diggle Road Overbridge and Utilities Bridge Works (MVL3/39)	Reconstruction of span 1 on the Diggle Road overbridge (MVL3/39) on Station Road in Diggle, approximately 90 m south of Standedge Canal Tunnel.	Yes	Yes	Yes	Yes	Yes
Standedge Canal Tunnel (MVL3/39A)	Concrete saddling to the masonry arch to strengthen the canal tunnel structure (MVL3/39A) for construction traffic.	No	No	No	Yes	Yes
Standedge Tunnel Bywash Underbridge Replacement (MVL3/39B)	Replacement of the existing Bywash underbridge (MVL3/39B) located adjacent to the Standedge Canal Tunnel western portal, with a box culvert system. This work will require the temporary dewatering and over pumping of an unnamed watercourse.	Yes	Yes	Yes	Yes	Yes
Plevins site compound	Main site compound involving substantial demolition of existing commercial buildings.	No	No	No	Yes	Yes
Scout Spoil Point Compound	Site compound for storage	No	Yes	Yes	No	No
Manchester Road, Scout West	Site compound works for storage	No	Yes	Yes	No	No
Ward Lane site compound	Site compound with associated access and earthworks.	No	No	No	Yes	Yes
Grandpa Green's Site Compound 2	Site compound with associated access and earthworks.	No	No	No	Yes	Yes

Works component	Works component details	Scoping Decision				
		Tame (Source to Chew Brook)	Tame (Chew Brook to Swineshaw Brook)	Tame (Swineshaw Brook to Mersey)	Huddersfield Narrow Canal west section	Huddersfield Narrow Canal summit section
Sam Road Car Park Compound	Site compound with associated access and earthworks.	No	No	No	Yes	Yes
Diggle Welfare, Rail hub and Office Compound	Site compound and associated earthworks.	Yes	Yes	Yes	No	No

Table 5-7 Summary of Order Scheme works directly affecting Manchester and East Cheshire Carboniferous Aquifers

Relevant Works Component	Scoping decision	Reason
Stalybridge Tunnel Works (MVL3/3)	Yes	Works component involves below ground works
Heyrod Hall Overbridge Works (MVL3/7)	No	Upgrading of existing structure with no notable below ground works or structures.
Works to Springbank Lane Footbridge (MVL3/8)	No	Upgrading of existing structure with no notable below ground works or structures.
Springbank Lane Overbridge Works (MVL3/9)	No	Upgrading of existing structure with no notable below ground works or structures.
Manchester Road Underbridge Works (MVL3/10)	No	Upgrading of existing structure with no notable below ground works or structures.
Manchester Road Footbridge Reconstruction (MVL3/10A)	Yes	Works component involves below ground works
Diversion of utilities bridge (MVL3/12)	Yes	Works component involves below ground works
Stamford Road Bridge Works (MVL3/13)	Yes	Works component involves below ground works
Scout Tunnel Works	Yes	Works component involves below ground works
Mossley Cottages Works	Yes	Works component involves below ground works
Mossley Station Relocation Works	Yes	Works component involves below ground works
Roughtown Road Overbridge Works (MVL3/17)	No	Works component does not include below ground works
Roughtown Road Footbridge Reconstruction (MVL3/18)	No	Upgrading of existing structure with no notable below ground works or structures.
Stockport Road Level Crossing Diversion	No	Works component does not include below ground works
Wright's Mill Overbridge Reconstruction (MVL3/20)	No	Reconstruction of existing structure with no notable below ground works or structures.
Wrights Overbridge Works (MVL3/23)	Yes	Works component involves below ground works
Royal George Underbridge Works (MVL3/25)	No	Refurbishment of existing structure with no notable below ground works or structures.
Oaklands Road Site Compound	Yes	Works component involves below ground works
Oldham Road Overbridge Reconstruction (MVL3/28)	Yes	Works component involves below ground works
New Oldham Road Footbridge Works (MVL3/28A)	Yes	Works component involves below ground works
Uppermill Viaduct Works (MVL3/31)	No	Works component does not include below ground works
Ravenstone Drive Footbridge Works (MVL3/35)	No	Works component does not include below ground works
Reconstruction of existing overbridge superstructure on Ward Lane (MVL3/36)	No	Reconstruction of existing structure with no notable below ground works or structures.
Diggle Road Overbridge Reconstruction (MVL3/39)	Yes	Works component involves below ground works
Standedge Canal Tunnel (MVL3/39A)	No	Refurbishment of existing structure with no notable below ground works or structures.
Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Yes	Works component involves below ground works
Printworks Road Main Compound ²⁹	Yes	Works component involves below ground works
Printworks Road Office Compound ²⁹	Yes	Works component involves below ground works
Wakefield Road Plant Access and Compound	Yes	Works component involves below ground works
Plevins site compound	Yes	Works component involves storage of spoil
Heyrod Hall Storage Compound	Yes	Works component involves below ground works

²⁹ Consented as part of Printworks Road Site Compounds as described in Volume 1, Chapter 1, Table 1.1 of the Environmental Report [NR14]

Relevant Works Component	Scoping decision	Reason
Scout West Ramp Compound ³⁰	Yes	Works component involves below ground works
Scout West Laydown Compound ³⁰	Yes	Works component involves below ground works
Scout Spoil Point Compound ³⁰	Yes	Works component involves storage of spoil
Manchester Road, Scout West Compound ³⁰	Yes	Works component involves below ground works
Scout East Ramp	Yes	Works component involves below ground works
Scout East Laydown Area ³⁰	Yes	Works component involves below ground works
Scout East Car Park Compound ³⁰	Yes	Works component involves below ground works
Scout East Access Compound ³⁰	Yes	Works component involves below ground works
Relocated Mossley Station West Site Compound ³¹	Yes	Works component involves below ground works
Manchester Road, Mossley Site Compound ³¹	Yes	Works component involves below ground works
Heron Lane Site Compound	Yes	Works component involves below ground works
Armit Road Site Compound	Yes	Works component involves below ground works
Lineside fencing access from Oldham Road	Yes	Works component involves below ground works
Drainage and lineside fencing canal side in Uppermill	Yes	Works component involves below ground works
Brownhill Lane Compound	Yes	Works component involves below ground works
Saddleworth Old Railway Tunnel site compound	Yes	Works component involves below ground works
Ward Lane site compound	Yes	Works component involves below ground works
Grandpa Green's Site Compound ³²	Yes	Works component involves below ground works
Grandpa Green's 2 Site Compound ³²	Yes	Works component involves below ground works
Sam Road Car Park Compound ³³	Yes	Works component involves below ground works
Diggle Welfare, Rail hub and Office Compound ³³	Yes	Works component involves below ground works
Diggle Access and Diversion Route	Yes	Works component involves below ground works

³⁰ Consented as part of Scout Site Compounds as described in Volume 1, Chapter 1, Table 1.1 1 of the Environmental Report [NR14]

³¹ Consented as part of Mossley Station Relocation - Construction of New Station Works and Site Compounds as described in Volume 1, Chapter 1, Table 1.1 of the Environmental Report [NR14]

³² Consented as part of Ward Lane Site Compounds as described in Volume 1, Chapter 1, Table 1.1 of the Environmental Report [NR14]

³³ Consented as part of Diggle Compound Works as described in Volume 1, Chapter 1, Table 1.1 of the Environmental Report [NR14]

5.4 Mitigation

- 5.4.1 Mitigation measures for the water environment are presented below and are also discussed in section 0 of this report.

Mitigation (design)

- 5.4.2 Best practice guidance (as outlined below) will be incorporated into the detailed design of any works components with the potential to impact upon a watercourse, its riparian zone or a groundwater body. Such mitigation aims to minimise the impact of the works associated with the Order Scheme on WFD Quality Elements, with a view to securing WFD compliance for the Order Scheme. Mitigation incorporated into the design of a development is generally referred to as embedded mitigation.

Drainage of run-off to surface water and groundwater

- 5.4.3 Sustainable Drainage Systems (SuDS) are the preferred approach to managing any potentially run-off and will be implemented where technically feasible. All drainage systems should be designed in accordance with industry standards, with particular emphasis on appropriate pollution prevention and control measures (CIRIA, 2015)³⁴.
- 5.4.4 As part of this assessment, it has been assumed that there will be like for like replacement or improvements to drainage design. Potential effects to water bodies as a result of changes to drainage are considered negligible.
- 5.4.5 The potential consequences of any pollution incidents will be dealt with via an environmental management and contingency planning process in order to prevent or mitigate for any potentially contaminated run-off being routed to surface water or groundwater.

Deep foundations and below ground structures

- 5.4.6 Below ground structures (including deep foundations and retaining walls), which extend below the groundwater table, may form a barrier to groundwater flow, depending on the groundwater flow direction. This can potentially reduce groundwater contributions to groundwater-dependant water features (e.g. water courses and any groundwater abstractions in the water body).
- 5.4.7 Where deep foundations extending beneath the groundwater table are required as part of the Order Scheme (e.g. piling, retaining walls), these will be designed in accordance with industry standards. Detailed designs will take into account the site-specific groundwater level monitoring data obtained from intrusive ground investigation for the Order Scheme. A

³⁴ Construction Industry Research and Information Association (CIRIA), 2015. The SuDS Manual (C753).
<https://www.ciria.org/ItemDetail?iProductCode=C753&Category=BOOK&WebsiteKey=3f18c87a-d62b-4eca-8ef4-9b09309c1c91>

piling risk assessment will be carried out where required to ensure the selected piling method does not introduce contamination pathways into the aquifer.

Mitigation (construction)

- 5.4.8 Best practice guidance (as detailed below) will be incorporated into the construction of any works components with the potential to impact upon a watercourse, its riparian zone or a groundwater body. Such mitigation aims to minimise as far as reasonably practicable the temporary impact of the works associated with the Order Scheme on the water environment.

In-channel works

- 5.4.9 The design process has sought to minimise the requirement for in-channel working during the construction process. Where in-channel working cannot be eliminated entirely, such as at the unnamed watercourse near Standedge Canal Tunnel, the following measures will be implemented.
- 5.4.10 In-channel working should be timed during the summer months to avoid potential disturbance to fish spawning and should also ideally be undertaken during low flow periods (i.e. when flows are at or below the mean average to reduce the potential for sediment release and risk of scour). Appropriate measures will be in place to ensure any contaminants/ materials from construction activities do not enter the watercourse. Use isolation techniques such as dams/ over-pumping to create dry working areas e.g. during works on the unnamed watercourse near Standedge Canal Tunnel. Installation of silt curtains to minimize the propagation of fine sediment pollution in watercourses. during works on the Huddersfield Narrow Canal at Standedge Canal Tunnel, should also be undertaken. These measures will be detailed in a Pollution Prevention and Incident Control Plan (PPICP) which will be secured via the Code of Construction Practice (CoCP) Part B and submitted for approval to the relevant local authority. Additionally works with 16 m of a watercourse will be regulated and consented the relevant regulatory body such as the EA, Canal and Rivers Trust (CRT) and LLFA.
- 5.4.11 Where watercourses require temporary dewatering and/ or over-pumping to permit construction activities, fish will be removed by means of electrofishing and relocated prior to dewatering. Water flow/passage will be sufficiently maintained as to not result in the drying of habitats downstream areas.
- 5.4.12 The length of channel disturbed, and size of working corridor will be limited to a minimum. In addition, the length of tracking along the side of channels will be minimised as far as reasonably practicable to avoid the

creation of new flow paths and a buffer zone around the watercourse will be maintained where possible.

- 5.4.13 Noise, vibration and light spill will be minimised as far as reasonably practicable by working back from the watercourses where possible. Construction lighting will be angled away from the watercourse to reduce the potential for disturbance. Measures to minimise noise vibration and light spill will be captured via PPICP and the Code of Construction Practice Part B which will be submitted for approval to the relevant local authority.
- 5.4.14 Any vegetation clearance required for construction will be minimised as far as reasonably practicable and re-instated where practicable.
- 5.4.15 Where the erection of temporary structures is required for construction, e.g. dams, appropriate isolation techniques will be used. These measures will be in place for the minimum possible period of time in order to minimise disruption to flow, sediments and biota as far as reasonably practicable.

Disturbance of invasive non-native species

- 5.4.16 Construction activities in, over and adjacent to water bodies offer a significant increase in the risk of the spread of Invasive Non-Native Species (INNS) associated with aquatic and riparian habitats.
- 5.4.17 Any identified risks will need to be managed effectively during the construction period through the implementation of biosecurity control, such as the “check-clean-dry” procedures for plant, equipment and the workforce. The GB Non-Native Species Secretariat website³⁵ provides a key source of information for the identification of risks, appropriate control and management systems and disposal. Disturbance to INNS are discussed in further detail in Volume 1, Chapter 6: Ecology.
- 5.4.18 The EA will also be consulted to ascertain the status and distribution of invasive species in surface water bodies. Consideration will be given to the potential to create pathways for invasive species movement within/ between water bodies.

Groundwater dewatering

- 5.4.19 Should dewatering be required as part of construction, industry standard best practice mitigation should be followed, including integration of dewatering into the Construction Environment Management Plan (CEMP) which will be secured via the Code of Construction Practice Part B.

³⁵ Non-Native Species Secretariat, 2020. Available from: <http://www.nonnativespecies.org>

Run-off from construction sites to surface water and groundwater.

- 5.4.20 Construction can generate significant risk of pollution to surface water bodies and groundwater bodies. Any risks will need to be fully mitigated by suitable control of construction practices and will be incorporated into the Pollution Prevention and Incident Control Plan (PPICP) which will be secured via the Code of Construction Practice Part B and submitted for approval to the relevant local authority.
- 5.4.21 Construction works will adhere to environmental best practice such as guidance provided in Pollution Prevention Guidance (PPG) which will be secured via the Code of Construction Practice Part B which will be submitted to the relevant local authority for approval.

Vegetation management

- 5.4.22 There is often the requirement to manage vegetation (both riparian and aquatic) during construction activities in, over and adjacent to water bodies. Vegetation clearance will only be undertaken following an ecological constraints assessment of the potential for vegetated habitats to support protected species (e.g. nesting birds, reptiles) and to determine the intrinsic ecological value of the habitat, plus the risk posed by INNS. Further information about vegetation management is presented in Chapter 6 (Ecology) in the relevant Route Section Assessment in Volume 1 of the Environmental Statement [NR14]. These measures will be detailed in a LEMP which will be submitted to the relevant local authority for approval.

Mitigation (operation)

- 5.4.23 No specific mitigation has been identified during operation. Specific drainage interventions are assumed to be like for like replacement or improvements of culverts and outfalls of existing drainage.
- 5.4.24 For groundwater, the mitigation implemented at construction stage in relation to deep foundations and below ground works is also applicable to the operation phase.
- 5.4.25 Implementation of best practice guidance in combination with site-specific mitigation measures detailed above are considered to be sufficient to maintain compliance under the WFD.

5.5 Surface water impact assessment

- 5.5.1 This section sets out WFD Impact Assessments for those WFD surface water bodies which are identified as having the potential to be affected

directly or indirectly by works associated with the Order Scheme. This includes the following:

- Three WFD river water bodies: River Tame (Source to Chew Brook), River Tame (Chew Brook to Swineshaw Brook) and River Tame (Swineshaw Brook to Mersey)
- Two WFD canal water bodies: Huddersfield Canal Summit Section and Huddersfield Canal Western Section.

- 5.5.2 Detailed WFD impact assessments for the five WFD surface water bodies are provided in Annex A of this document. A summary of each of the assessments are provided in turn, as follows.

River Tame (Source to Chew Brook)

Test A – Potential to cause deterioration of current WFD Ecological Potential

- 5.5.3 The proposed works on Uppermill Viaduct, Ward Lane Overbridge (MVL3/36) and the Diggle Road Overbridge and Utilities Bridge Works (MVL3/39) were all assessed to have minor localised effects to Biological Quality Elements, as a result of temporary noise and vibration, and negligible effects to water quality, assuming industry best practice is implemented with regards to pollution prevention control. These measures will be detailed in a Pollution Prevention and Incident Control Plan (PPICP) which will be secured via the Code of Construction Practice Part B and submitted for approval to the relevant local authority.
- 5.5.4 The proposed Diggle Welfare, rail hub and office compound was assessed to have minor localised effects to Biological Quality Elements as a result of noise and disturbance created during compound construction/operation and negligible effects to water quality and Hydromorphological Quality Elements assuming industry best practice is implemented with regards to pollution prevention control and surface water drainage is attenuated.
- 5.5.5 The proposed Bywash (MVL3/39B) were assessed to have minor localised effects to Biological, Physico-Chemical and Hydromorphological Quality Elements as a result of the temporary dewatering of the unnamed watercourse near Standedge Canal Tunnel required to facilitate the works.
- 5.5.6 The mitigation measures proposed included minimising the duration of works where possible, adherence to measures in CoCP Part B PPICP relating to surface water run-off, timing of instream works to avoid fish

spawning and undertaking fish rescues/translocations prior to any dewatering.

- 5.5.7 With the proposed mitigation measures in place, the Order is anticipated to have no effect on the current WFD water body status for the Tame (Source to Chew Brook) WFD surface water body.

Test B – Potential to prevent attainment of Good Ecological Potential

- 5.5.8 Whilst there are no measures specifically assigned to this water body, several wider area measure actions assigned to the water body such as structural modifications (e.g. improvements for fish passage) and operations and maintenance (treatment for INNS).. There is anticipated to be no effect from the Order Scheme upon the implementation of these measures assigned to the water body.
- 5.5.9 The Order Scheme is not anticipated to have any effect upon the future attainment of GEP within the water body (which is currently Moderate Overall and Moderate Ecological Potential).

River Tame (Chew Brook to Swineshaw Brook)

Test A – Potential to cause deterioration of current WFD Ecological Potential

- 5.5.10 The proposed works at Wrights Overbridge (MVL3/23), Scout Spoil Compound and Manchester Road Scout West Compound were all assessed to have minor localised effects to Biological Quality Elements, as a result of temporary noise and vibration.
- 5.5.11 The proposed works at Mossley Station (namely the construction of a new surface water outfall) were assessed to have minor localised effects to Biological Quality Elements as a result of temporary noise and vibration. Assuming industry best practice is implemented, with regards to pollution prevention control, and surface water drainage is insufficiently attenuated impacts to water quality and hydromorphology are considered negligible.
- 5.5.12 Assuming industry best practice is implemented with regards to pollution prevention control, the potential effects to WFD Quality Elements from works in upstream WFD water bodies e.g. Diggle Welfare, rail hub and

office compound , MLV3/39, MLV3/39A, MLV3/39B and Stalybridge are considered negligible.

- 5.5.13 The mitigation measures proposed include adherence to the site-wide mitigation strategies for surface water runoff detailed in CoCP Part B PPICP.
- 5.5.14 With the proposed mitigation measures in place, the Order Scheme is anticipated to have no effect on the current WFD water body status for the Tame (Chew Brook to Swineshaw Brook) WFD surface water body.

Test B – Potential to prevent attainment of Good Ecological Potential

- 5.5.15 Whilst there are no measures specifically assigned to this water body, several wider area measure actions assigned to the water body such as structural modifications (e.g. improvements for fish passage) and operations and maintenance (treatment for INNS). There is anticipated to be no effect from the Order Scheme upon the implementation of these measures assigned to the water body.
- 5.5.16 The Order Scheme is not anticipated to have any effect upon the future attainment of GEP within the water body (which is currently Moderate Overall and Moderate Ecological Potential).

River Tame (Swineshaw Brook to Mersey)

Test A – Potential to cause deterioration of current WFD Ecological Potential

- 5.5.17 No works components were identified that would potentially effect the River Tame (Swineshaw Brook to Mersey) WFD water body directly. Assuming industry best practice is implemented with regards to pollution prevention control, the potential effects to WFD Quality Elements from works in upstream WFD water bodies are considered negligible. The Order Scheme is therefore anticipated to have no effect on the current WFD water body status for the Tame (Swineshaw Brook to Mersey) WFD surface water body.

Test B – Potential to prevent attainment of Good Ecological Potential

- 5.5.18 Whilst there are no measures specifically assigned to this water body, several wider area measure actions are assigned to the water body such as structures and modifications. There is anticipated to be no effect from

the Order Scheme upon the implementation of these measures assigned to the water body.

- 5.5.19 The Order Scheme is not anticipated to have any effect upon the future attainment of GEP within the water body (which is currently Moderate Overall and Moderate Ecological Potential).

Huddersfield Narrow Canal (Western Section)

Test A – Potential to cause deterioration of current WFD Ecological Potential

- 5.5.20 The proposed works at MVL3/39A and MVL3/39B were all assessed to have minor localised effects to water quality both during construction (via sediment mobilisation). These impacts are however anticipated to be minor and localised in nature.
- 5.5.21 The mitigation measures proposed includes utilising silt curtains during in channel works to contain the dispersion of suspended solids (and associated impacts to water quality) and adherence to measures outlined in CoCP Part B PPICP relating to surface water run-off.
- 5.5.22 With the proposed mitigation measures in place, the Order Scheme is anticipated to have no effect on the current WFD water body status for the Huddersfield Narrow Canal (Western Section) WFD surface water body.

Test B – Potential to prevent attainment of Good Ecological Potential

- 5.5.23 Whilst there are no measures specifically assigned to this water body, several wider area measure actions are assigned to the water body such as structural modifications (e.g. improvements for fish passage) and operations and maintenance (treatment for INNS). There is anticipated to be no effect from the Order Scheme upon the implementation of these measures assigned to the water body.
- 5.5.24 The Order Scheme is not anticipated to have any effect upon the future attainment of GEP within the water body (which is currently Moderate Overall and Moderate Ecological Potential).

Huddersfield Narrow Canal (Summit Section)

Test A – Potential to cause deterioration of current WFD Ecological Potential

- 5.5.25 The proposed works at MVL3/39A and MVL3/39B were assessed to have minor localised effects to water quality both during construction (via sediment mobilisation) and during operation (as a result in localised

changes to drainage). These impacts are however anticipated to be minor and localised in nature.

- 5.5.26 The mitigation measures proposed includes utilising silt curtains during in channel works to contain the dispersion of suspended solids (and associated impacts to water quality) and to measures outlined in CoCP Part B PPICP relating to surface water run-off.
- 5.5.27 With the proposed mitigation measures in place, the Order Scheme is anticipated to have no effect on the current WFD water body status for the Huddersfield Narrow Canal (Summit Section) WFD surface water body.

Test B – Potential to prevent attainment of Good Ecological Potential

- 5.5.28 There are currently no measures assigned to this water body at the water body level but wider area measure actions are detailed for the Huddersfield Narrow Canal (Western Section) such as structural modifications (e.g. improvements for fish passage) and operations and maintenance (treatment for INNS). There is anticipated to be no effect from the Order Scheme upon the implementation of these measures.
- 5.5.29 The Order Scheme is not anticipated to have any effect upon the future maintenance of GEP within the water body (which is currently Good Overall and Good Ecological Potential).

5.6 Groundwater impact assessment

- 5.6.1 This section sets out a WFD Impact Assessment for the Manchester and East Cheshire Carboniferous Aquifers WFD groundwater body which is identified as having the potential to be affected directly or indirectly by proposed works associated with the Order Scheme.
- 5.6.2 A detailed WFD impact assessment for the WFD groundwater body is provided in Annex A of this document. A summary of the assessment is provided below.

Manchester and East Cheshire Carboniferous Aquifers

Potential effects – permanent works

- 5.6.3 The potential effects on the groundwater body of permanent components of the Order Scheme are summarised in Table 5-8. The impact assessment assumes that embedded mitigation is included in design, construction and operation.

Table 5-8 Summary of potential effects on the groundwater body of permanent works components

Order Scheme element	Potential effect
Deep foundations and retaining walls.	Assuming foundations and retaining walls extend below the water table into the bedrock aquifer, below ground structures can form a barrier to groundwater flow, depending on the groundwater flow direction. This can potentially reduce groundwater contributions to adjacent watercourses and any groundwater abstractions in the water body. Deep excavations may require temporary dewatering. This may locally reduce the groundwater table, and any contaminated discharge may adversely impact the surface and groundwater bodies.
Sheet piling	Assuming piling will extend below the water table and into the bedrock aquifer, deep piling through contaminated ground may create rapid vertical flow pathways into the groundwater body. The effect of sheet piling is dependent on site-specific conditions, structure design and construction depth. However, it may also cause a barrier to groundwater flow, potentially resulting in reduction in base flow to surface watercourses or GWDTEs.
Storage of materials	Storage of materials on construction compounds may cause contaminants to enter the groundwater body dependent on site-specific conditions. Increased areas of hardstanding may increase surface water runoff and enter the groundwater body.

Potential effects – temporary works

- 5.6.4 Temporary effects that are addressed as part of the WFD impact assessment include the following:
- Polluted surface water runoff which may adversely impact water body quality through infiltration of the water body via contamination pathways.
 - Below ground works which may increase the contamination pathways proximal to works.
 - Temporary dewatering works which may decrease the local groundwater level, potentially reducing base flow to rivers, and increase the potential of groundwater contamination as a result of contaminated discharge to surface water.

- 5.6.5 The impact assessment assumes that embedded mitigation is included for all temporary effects.

Test A – Potential to cause deterioration of current WFD Ecological Potential

- 5.6.6 The construction of structures into the subsurface is assessed to have no affect at the WFD water body scale on the assumption that mitigation measures (section 5.4) for the Order Scheme will limit the overall effect of the works to no effect.

Test B – Potential to prevent attainment of Good Ecological Potential

- 5.6.7 None of the works components affecting the groundwater body are considered to prevent future attainment of GEP.

Overview

- 5.6.8 With the proposed mitigation measures (section 5.4) in place, works components potentially affecting Manchester and East Cheshire Carboniferous Aquifers groundwater body are considered compliant against with the requirements of the WFD. On this basis, the works components potentially affecting this water body are not considered to cause deterioration (thus passing Test A) and should not prevent future attainment of GEP (Test B).

5.7 Cumulative effects

Cumulative effects within the Order Scheme

- 5.7.1 Cumulative effects within the Order Scheme (i.e. intra-project) are considered as part of this WFD impact assessment for both surface water and groundwater.
- 5.7.2 In addition to the relevant works components of the Order Scheme it is acknowledged that additional works to be consented via Permitted Development Rights (PDRs) are being undertaken as part of the wider Scheme. Construction of these works will likely be undertaken concurrently with the relevant works components of the Order Scheme and therefore may give rise to cumulative effects both during the construction and operation phases of the Project.
- 5.7.3 The potential effects of the design, construction and operation of the works being undertaken by PDRs will be managed in accordance with the relevant clauses included within Network Rail's Environment and Social Minimum Requirements for Projects – Design and Construction (NR/L2/ENV/015, Volume 3, Appendix 1A of this Report [NR14]). Further mitigation in relation to works being undertaken by PDR's will be secured via adherence to the control measures outlined with the COCP (Part A) and compliance with relevant Environmental Management Plans.

Surface water

- 5.7.4 This assessment has concluded that, in relation to the three River Tame water bodies, the proposed Order Scheme is likely to result in minor localised impacts to WFD Quality Elements. Providing the mitigation measures are adopted, as detailed in section 5.4, these impacts will primarily be restricted to the construction phase of the Order Scheme and thus be temporary in nature.
- 5.7.5 With regards to the two Huddersfield Canal water bodies, this assessment has concluded that, the proposed Order Scheme is likely to result in minor localised impacts to WFD Quality Elements. These potential impacts to WFD Quality Elements can however be reduced by implementing the mitigation measures recommended in section 5.4.
- 5.7.6 When considering the potential impacts of the Order Scheme collectively, which at worst have been assessed to be localised and minor in nature, the cumulative effect on each water body are considered to be minor and the proposed mitigation measures for each of the individual measures is considered to be sufficient to ensure compliance with the WFD.

Groundwater

- 5.7.7 This assessment has concluded that, in relation to the Manchester and East Cheshire Carboniferous Aquifers WFD groundwater body, the

proposed Order Scheme is likely to result in minor localised impacts to WFD Quality Elements.

- 5.7.8 The works associated with the Scheme which have the potential to affect groundwater are considered to be sufficiently localised that there is no cumulative effect on the Manchester and East Cheshire Carboniferous Aquifers WFD groundwater body.

5.8 Risk of derogation

- 5.8.1 This WFD compliance assessment has identified that at the current stage of design, the Works components affecting the five WFD surface water bodies and one groundwater body are not considered to cause deterioration (Test A) and should not prevent future attainment of GEP (Test B).
- 5.8.2 The works associated with the Scheme are localised in their extent and impact, resulting in a Negligible impact at the water body scale. Therefore, assuming the best practice guidelines outlined above for design and construction, and identified specific mitigation measures are adhered to, this WFD compliance assessment concludes that the Order Scheme is likely to be WFD-compliant.

6. CONCLUSIONS AND RECOMMENDATIONS

- 6.1.1 This assessment has concluded that the implementation of the mitigation measures detailed in section 5.4 are considered to be sufficient to maintain compliance under the WFD without the need for further mitigation/derogation.
- 6.1.2 Should there be any subsequent minor design alterations to the Order Scheme, or further design details available, this WFD compliance assessment will need to be updated.
- 6.1.3 The best practice guidelines and mitigation measures identified will need integrating into the design and construction process. This will occur through liaison with the Order Scheme design team and design workshops.
- 6.1.4 Further consultation with the EA will be undertaken as the Order Scheme progresses through detailed design. This is considered to be good practice, given that the Order Scheme design will materially remain unchanged.

ANNEX A - WFD IMPACT ASSESSMENT MATRICES

The full WFD impact assessment matrices are presented in this annex for the following five WFD surface water bodies and one groundwater body:

- Tame (Source to Chew Brook)
- Tame (Chew Brook to Swineshaw Brook)
- Tame (Swineshaw Brook to Mersey)
- Huddersfield Narrow Canal Summit Section
- Huddersfield Narrow Canal Western Section
- Manchester and East Cheshire Carboniferous Aquifers

The WFD impact assessment for each water body has been undertaken based on the Order Scheme design, and also assumes the following:

- 1) The mitigation already "embedded" in this preliminary design is implemented.
- 2) Additional specific mitigation measures are implemented if agreed with the EA; and,
- 3) Generic guidance on the principles of WFD compliant design and best practice is adhered to in subsequent detailed design of Works components affecting the water environment.

The WFD impact assessment matrices use a colour-coded key (see below).

Key	
	major beneficial effect
	minor / localised beneficial effect
	no effect
	minor / localised adverse effect
	adverse widespread or prolonged effect
	adverse effect on overall WFD status of water body

Where a WFD element is not classified by the EA for the WFD water body, it is not considered in the WFD impact assessment.

Tame (Source to Chew Brook)

Water body summary

WFD water body type	River Surface Water Body
WFD hydromorphological designation	Heavily Modified Water Body
WFD water body ID	GB112069064741
WFD Water body name	River Tame (Source to Chew Brook)

Works components with potential impacts to water body.

Structure code/name	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Diggle Welfare, rail hub and office compound	Diggle Road Overbridge and Utilities Bridge Works MVL3/39
Works component	Viaduct electrification works	Overbridge reconstruction.	Replacement of the existing Bywash underbridge	Site compound	Diggle Road Overbridge and Utilities Bridge Works
Water feature type	River Tame and Huddersfield Narrow Canal	Unnamed watercourse OW 7	Huddersfield Narrow Canal	Unnamed watercourse near Standedge Canal Tunnel and Diggle Brook.	Unnamed watercourse near Standedge Canal Tunnel and Huddersfield Narrow Canal.
Location	SD 99569 06285	SE 00280 07551	SD 98109 04139	SE 00598 07868	SE 00711 08065
Works description	To enable the electrification of the up and down lines, OLE portals are required to be installed over the viaduct. 1500mm into the viaduct.	The existing overbridge superstructure is to be reconstructed as it does not have sufficient headroom to accommodate installation of OLE and is in poor condition.	Replacement of the existing Bywash underbridge (MVL3/39B) located adjacent to the Standedge Canal Tunnel western portal, with a box culvert system. This work will require the temporary dewatering and over pumping of an unnamed watercourse.	Site compound and associated earthworks. (Full planning application to be progressed ahead of the TWAO subject to instruction from NR).	Reconstruction of span 1 on the Diggle Road overbridge (MVL3/39) on Station Road in Diggle, approximately 90 m south of Standedge Canal Tunnel.

Test A Potential to cause deterioration of current WFD Ecological Potential

WFD elements			WFD status		Effect of Works components on WFD elements					Overall effect				
			Current status (2019)	Status objective	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Diggle Welfare, rail hub and office compound	Diggle Road Overbridge and Utilities Bridge Works MVL3/39	Overall effect of Order Scheme on WFD element*	Additional proposed mitigation measures	Residual effect of Order Scheme on WFD element**	Effect of Scheme on ecological/ chemical status	Overall effect of Order Scheme on water body status
Ecological status	Biological Quality Elements	Macrophytes and phytobenthos	Good	Good (2015)	Assuming adequate pollution controls are implemented during construction impacts to Biological Quality Elements arising from changes to water quality are considered negligible. During construction works some minor disturbance to Biological Quality Elements (fish and macroinvertebrates) may occur as a result of noise and vibration created by the works. Works will however be temporary in nature and localised to the Uppermill Viaduct. Overall impacts to Biological Quality Elements are therefore considered to be minor and localised.	The unnamed watercourse (OW 7) which flows immediately adjacent to the proposed works area at ML3/36 makes a local contribution to habitat value and ecological resilience at the water body scale. During construction works disturbance to Biological Quality Elements (fish and macroinvertebrates) is likely to occur as a result of noise and vibration created by the works. Works will however be temporary in nature and restricted to the overbridge on Ward Lane (MVL3/36) and access routes. Assuming adequate pollution controls are implemented during construction impacts to Biological Quality Elements arising from changes to water quality are considered negligible in OW 7 and also Diggle Duck pond which is downstream of the proposed works area and fed by OW 7. Overall impacts to Biological Quality Elements arising from the works at MVL3/36 are therefore considered to be minor and localised.	The unnamed watercourse near Standedge Canal Tunnel impacted by the proposed works makes a local contribution to habitat value and ecological resilience at the water body scale. The dewatering process required as part of the works will cause a temporary loss in habitat availability and temporary loss of longitudinal connectivity for Biological Quality Elements'. During construction works disturbance to Biological Quality Elements will occur as a result of the physical works and the resulting noise and vibration. Works will however be temporary in nature and localised to the unnamed watercourse. Assuming adequate pollution controls are implemented during construction impacts to Biological Quality Elements as a result of changes to water quality are considered negligible. Overall impacts to Biological Quality Elements are therefore considered to be minor and localised however further mitigation e.g. fish rescues are likely to be required to ensure legislative compliance.	The unnamed watercourse near Standedge Canal Tunnel and Diggle Brook, which flow immediately adjacent to the proposed compound access route make a local contribution to habitat value and ecological resilience at the water body scale. During site set up and operation disturbance to Biological Quality Elements in both watercourses is likely to occur as a result of noise and vibration created by the works. Works will however be temporary in nature and existing access routes will be utilised therefore no in channel works will be required. Assuming adequate pollution controls are implemented during construction/operation and that there will be like for like or improvements to drainage impacts to Biological Quality Elements are considered negligible. Overall impacts to Biological Quality Elements arising from the works at Diggle Welfare are therefore considered to be minor and localised.	The unnamed watercourse near Standedge Canal Tunnel which bisects the proposed works area at ML3/39 makes a local contribution to habitat value and ecological resilience at the water body scale. During construction works disturbance to Biological Quality Elements is likely to occur as a result of noise and vibration created by the works. Works will however be temporary in nature and restricted to the overbridge on Station Road and access routes. Assuming adequate pollution controls are implemented during construction impacts to Biological Quality Elements arising from changes to water quality are considered negligible. Overall impacts to Biological Quality Elements arising from the works at MVL3/39 are therefore considered to be minor and localised.	Assuming industry best practice measures are implemented during the works (e.g. pollution prevention control) impacts to the ecological Quality Elements of the Tame (Source to Chew Brook water body) are considered to be minor, localised and for the most part temporary in nature. Works on the unnamed watercourse near Standedge Canal Tunnel should be undertaken during the summer months to avoid periods where fish are likely to spawn. Prior to over pumping fish should be captured and excluded from the proposed works area by a trained ecologist. All pumping apparatus should be appropriately screened to reduce fish of fish entrainment/impingement. Furthermore, the duration of instream works on the unnamed watercourse near Standedge Canal Tunnel should be curtailed where possible to minimise the impacts associated with the temporary loss of longitudinal connectivity on Biological Quality Elements.	Where possible the duration of works should be minimised to reduce disturbance via noise and vibration. The proposed mitigation should minimise the potential effect on the Biological Quality Elements and is considered sufficient to ensure no expected deterioration as a result of the Order Scheme	There is no anticipated effect of the Order Scheme on the Ecological Status of the water body.	Overall, there is no anticipated effect on the WFD classification of the River Tame (Source to Chew Brook) WFD water body.	
		Macro-invertebrates	Good	Good (2015)										
		Fish	Moderate	Good (2027)										
		Physico-Chemical Quality Elements	Elements including Ammonia, Dissolved Oxygen (DO), pH, Phosphate and Temperature.	Moderate	Good (2015)	Assuming adequate pollution controls are implemented during construction impacts to Physico-Chemical Quality Elements are considered negligible.	Assuming adequate pollution controls are implemented during construction impacts to Physico-Chemical Quality Elements are considered negligible.	Localised changes to Physico-Chemical Quality Elements, such as dissolved oxygen, are likely to occur as a result of in channel works e.g. as a result of sediment mobilisation. Assuming adequate pollution controls are implemented during construction the impacts are likely to be minor, localised and temporary.	Assuming adequate pollution controls are implemented during construction/operation and that there will be like for like or improvements to drainage impacts to Physico-Chemical Quality Elements are considered negligible.	Assuming adequate pollution controls are implemented during construction impacts to Physico-Chemical Quality Elements are considered negligible.	Assuming industry best practice measures are implemented during the works (e.g. pollution prevention control) impacts to the Physico-Chemical Quality Elements of the Tame (Source to Chew Brook water body) are considered to be minor, localised and temporary in nature.	Assuming adequate pollution controls are implemented during construction the impacts are likely to be minor, localised and temporary.	The proposed mitigation should minimise the potential effect on the Physico-Chemical Quality Elements and is considered sufficient to ensure no expected deterioration as a result of the Order Scheme	

WFD elements			WFD status		Effect of Works components on WFD elements					Overall effect				
			Current status (2019)	Status objective	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Diggle Welfare, rail hub and office compound	Diggle Road Overbridge and Utilities Bridge Works MVL3/39	Overall effect of Order Scheme on WFD element*	Additional proposed mitigation measures	Residual effect of Order Scheme on WFD element**	Effect of Scheme on ecological/ chemical status	Overall effect of Order Scheme on water body status
	Hydromorphological Quality Elements	Elements including Hydrological Regime (i.e. quantity and dynamics of water flow, connection to groundwater) and Morphology (i.e. river continuity, river depth and width variation, structure and substrate of river bed, structure of the riparian zone).	Not assessed.	Not assessed	No in channel or drainage works required so impacts to Hydromorphological Quality Elements are considered negligible.	No in channel or drainage works required so impacts to Hydromorphological Quality Elements are considered negligible.	The unnamed watercourse near Standedge Canal Tunnel impacted by the proposed works makes a local contribution to habitat value and ecological resilience at the water body scale. Localised changes in river width, water depth, substrate composition and riparian zones are likely to occur within the section of unnamed watercourse which will be dewatered as part of the works. In the context of the water body scale these impacts are considered to be localised and minor however timescales are currently unknown.	Assuming there will be like for like or improvements to drainage impacts to Hydromorphological Quality Elements are considered negligible	No in channel or drainage works required so impacts to Hydromorphological Quality Elements are considered negligible.	Impacts to the Hydromorphological Quality Elements of the Tame (Source to Chew Brook water body) are considered to be minor and localised.	Following completion of the works on the unnamed watercourse near Standedge Canal Tunnel the instream habitat should be restored so that the hydromorphological characteristics (width, depth, flow, substrate composition and riparian structure) are representative of baseline conditions. Providing there will be like for like replacement or improvements to drainage design this will mitigate any potential water quality risks.	The proposed mitigation should minimise the potential effects on the Hydromorphological Quality Elements and is considered sufficient to ensure no expected deterioration as a result of the Order Scheme.		
	Specific pollutants	Listed in Annex VIII of the Water Framework Directive (2000/60/EC).	Not assessed	Not assessed	Assuming adequate pollution controls are implemented during construction impacts to water quality are considered negligible.	Assuming adequate pollution controls are implemented during construction impacts to water quality considered negligible.	Assuming adequate pollution controls are implemented during construction impacts to water quality are considered negligible.	Assuming adequate pollution controls are implemented during construction/operation and that there will be like for like or improvements to drainage impacts to water quality are considered negligible.	Assuming adequate pollution controls are implemented during construction impacts to water quality are considered negligible.	Assuming adequate pollution controls are implemented during construction impacts to water quality are considered negligible.	N/A impacts are considered negligible, so no further mitigation required.	Industry best practice mitigation is sufficient to minimise the potential effects on water quality to ensure no expected deterioration as a result of the Order Scheme.		
Chemical Status	Priority Substances	Listed in Annex II of the Environmental Quality Standards Directive (2008/105/EC)	Fail	Good (2027)	Assuming adequate pollution controls are implemented during construction impacts to water quality are considered negligible.	Assuming adequate pollution controls are implemented during construction impacts to water quality considered negligible.	Assuming adequate pollution controls are implemented during construction impacts to water quality are considered negligible.	Assuming adequate pollution controls are implemented during construction/operation and that there will be like for like or improvements to drainage impacts to water quality are considered negligible.	Assuming adequate pollution controls are implemented during construction impacts to water quality are considered negligible.	Assuming adequate pollution controls are implemented during construction impacts to water quality are considered negligible.	N/A impacts are considered negligible, so no further mitigation required.	Industry best practice mitigation is sufficient to minimise the potential effects on water quality to ensure no expected deterioration as a result of the Order Scheme.	There is no anticipated effect of the Order Scheme on the Chemical Status of the water body.	
	Other Pollutants	Listed in Annex II of the Environmental Quality Standards Directive (2008/105/EC)	Does not require assessment	Does not require assessment										
	Priority Hazardous Substances	Listed in Annex II of the Environmental Quality Standards Directive (2008/105/EC)	Fail	Good (2063)										

Test B Potential to prevent future attainment of Good Ecological Potential

RBMP measures					Effect of Works components on WFD elements						Overall effect of Order Scheme on proposed measure	
RBMP measures to achieve objective	Where measure happen	RBMP will	When measure happen	RBMP will	Uppermill MVL3/31	Viaduct	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36.	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Diggle Welfare, rail hub and office compound	Diggle Road Overbridge and Utilities Bridge Works MVL3/39		
Wider area measures actions												
Education: Educate landowners	Catchment wide		Not specified		The proposed works will have no impact to the education measures.						No effect is anticipated at the water body scale.	
Operations and maintenance: Vegetation control, invasive species techniques, minimise habitat impact (maintenance), sediment management strategy, prevent sediment transfer (maintenance) and retain habitats.	Catchment wide		Not specified		The proposed works are not anticipated to impact the operations and maintenance measures.		The proposed works will result in the temporary loss of instream habitat in an unnamed watercourse where damming, over pumping and dewatering is undertaken. This habitat will however be reinstated following completion of the works.		The proposed works are not anticipated to impact the operations and maintenance measures.		Temporary localised impacts are likely to occur however no effect is anticipated at the water body scale.	
Structural modification: fish passes and enhance ecology.	Catchment wide		Not specified		The proposed works will have no impact on structural modification measures.						No effect is anticipated at the water body scale.	

RBMP measures					Effect of Works components on WFD elements						Overall effect of Order Scheme on proposed measure
RBMP measures to achieve objective	Where measure happen	RBMP will	When measure happen	RBMP will	Uppermill MVL3/31	Viaduct	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36.	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Diggle Welfare, rail hub and office compound	Diggle Road Overbridge and Utilities Bridge Works MVL3/39	
Water management: Access to feeder stream, downstream flow regime, flows to move sediment, good downstream DO/temperature levels and align and attenuate flow.	Catchment wide		Not specified		The proposed works will have no impact on water management measures.			Damming and dewatering of an unnamed tributary is required as part of the works. This process will result in temporary loss of longitudinal connectivity in the watercourse and localised changes to water quality (e.g. dissolved oxygen) as a result of sediment mobilisation. Flow downstream of the works area will be maintained using over pumping. These impacts will be temporary for the duration of the works and minor in the context of the water body scale.	Assuming adequate pollution controls are implemented during construction/operation and that there will be like for like or improvements to drainage impacts to water quality are considered negligible.	The proposed works will have no impact on water management measures.	Minor localised impacts likely to occur however no effect is anticipated at the water body scale.
Working with physical form and function: Re-engineer River, flood bunds, set back embankments, floodplain connectivity, in channel morphological diversity, alter culvert channel bed, remove or soften hard banks, preserve or restore habitats and remove obsolete structures.	Catchment wide		Not specified		The proposed works are not anticipated to impact physical form and function measures.			Damming and dewatering of an unnamed tributary is required as part of the works. This process will result in temporary loss of longitudinal connectivity in the watercourse and localised changes to water quality (e.g. dissolved oxygen) as a result of sediment mobilisation. Flow downstream of the works area will be maintained using over pumping. These impacts will be temporary for the duration of the works and minor in the context of the water body scale.	The proposed works are not anticipated to impact physical form and function measures.		Minor, temporary, localised impacts likely to occur however no effect is anticipated at the water body scale.

Tame (Chew Brook to Swineshaw Brook)

Water body summary

WFD water body type	River Surface Water Body
WFD hydromorphological designation	Heavily Modified Water Body
WFD water body ID	GB112069061111
WFD Water body name	Tame (Chew Brook to Swineshaw Brook)

Works components with potential impacts to water body.

Structure code/name	Mossley Station	Wrights Overbridge works MVL3/23	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36.	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Diggle Road Overbridge and Utilities Bridge Works MVL3/39	Scout Spoil Point Compound	Manchester Road Scout West Compound	Diggle Welfare, rail hub and office compound
Works component	Construction of a new rail station with drainage system.	Overbridge reconstruction.	Viaduct electrification works	Overbridge reconstruction.	Replacement of the existing Bywash underbridge	Diggle Road Overbridge and Utilities Bridge Works	Site compound	Site compound	Site compound
Water feature type	River Tame	Unnamed watercourse OW 13.	River Tame and Huddersfield Narrow Canal	Unnamed watercourse 17.	Huddersfield Narrow Canal	Diggle Brook and Huddersfield Narrow Canal	River Tame	River Tame	Unnamed watercourse adjacent to Standedge Canal Tunnel
Location	SD 97530 02537	SD 98109 04139	SD 99569 06285	SE 00280 07551	SD 98109 04139	SE 00711 08065	SD 97331 01196	SD 97448 01241	SE 00598 07868
Works description	As part of the new station construction the proposed drainage system will outfall to a culverted watercourse.	Parapet raising to 1.5 m at the Grade II Listed Wrights overbridge (MVL3/23) between Low Grove Lane and Mossley Road. Bridge arms will also be installed to the bridge underside deck	To enable the electrification of the up and down lines, OLE portals are required to be installed over the viaduct. 1500mm into the viaduct.	The existing overbridge superstructure is to be reconstructed as it does not have sufficient headroom to accommodate installation of OLE and is in poor condition.	Replacement of the existing Bywash underbridge (MVL3/39B) located adjacent to the Standedge Canal Tunnel western portal, with a box culvert system. This work will require the temporary dewatering and over pumping of an unnamed watercourse.	Reconstruction of span 1 on the Diggle Road overbridge (MVL3/39) on Station Road in Diggle, approximately 90 m south of Standedge Canal Tunnel.	Site compound for storage	Site compound for storage	Site compound and associated earthworks. (Full planning application to be progressed ahead of the TWAO subject to instruction from NR).

Test A Potential to cause deterioration of current WFD Ecological Potential

WFD elements			WFD status		Effect of Works components on WFD elements								Overall effect					
			Current status (2019)	Status objective	Mossley Station	Wrights Overbridge works MVL3/23	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Diggle Road Overbridge and Utilities Bridge Works MVL3/39	Scout Spoil Point Compound	Manchester Road Scout West Compound	Diggle Welfare, rail hub and office compound	Overall effect of Order Scheme on WFD element*	Additional proposed mitigation measures	Residual effect of Order Scheme on WFD element**	Effect of Order Scheme on ecological/ chemical status	Overall effect of Order Scheme on water body status
Ecological status	Biological Quality Elements	Macrophytes and phytobenthos	Not assessed	Not assessed	Changes to water quality and discharge could occur where surface water drainage from Mossley Station outfalls to an unnamed culverted	The unnamed watercourse (OW 13) which bisects proposed works area at ML3/23 is likely to make a local contribution to	The proposed works fall within the Tame (Source to Chew) water body which is immediately upstream of the Tame (Chew Brook to Swineshaw Brook) water body.				The River Tame flows immediately adjacent to the proposed compound locations.		The unnamed watercourse near Standedge Canal Tunnel impacted by the proposed works falls within the Tame (Source to Chew) water body which is immediately upstream of the Tame (Chew Brook to Swineshaw Brook) water body.	Assuming industry best practice measures are implemented during the works (e.g. pollution prevention control) impacts to the Biological Quality	The changes to surface water drainage associated with the Mossley station may contribute to a decline in water quality within the River Tame if the	The proposed mitigation should minimise the potential effect on the Biological Quality Elements and is	There is no anticipated effect of the Order Scheme on the Ecological	Overall, there is no anticipated effect on the WFD classification of the
		Macro-invertebrates	Moderate	Good (2027)			No direct impacts to Biological Quality Elements are therefore anticipated and assuming adequate pollution controls are implemented during construction impacts to				Disturbance to Biological Quality Elements in The River Tame are likely to occur as a result of noise and vibration created during site set up and operation. Works will							

WFD elements			WFD status		Effect of Works components on WFD elements							Overall effect						
			Current status (2019)	Status objective	Mossley Station	Wrights Overbridge works MVL3/23	Uppermill Viaduct MVL3/31	Reconstru ction of existing overbridg e superstru cture on Ward Lane MVL3/36	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Diggle Road Overbridge and Utilities Bridge Works MVL3/39	Scout Spoil Point Compound	Manchester Road Scout West Compound	Diggle Welfare, rail hub and office compound	Overall effect of Order Scheme on WFD element*	Additional proposed mitigation measures	Residual effect of Order Scheme on WFD element**	Effect of Order Scheme on ecological/ chemical status	Overall effect of Order Scheme on water body status
		Fish	Not assessed	Not assessed	watercourse and subsequently to the River Tame (roughly 50 m below the proposed tie in location). The proposed outfall location is downstream of the ponds east and west of Well-Hole Road therefore no impacts are anticipated to these two water bodies during construction or operation. The drainage from the station will be attenuated therefore Impacts to water quality associated with the operation of the station are therefore anticipated to be negligible. Construction of a new outfall to the unnamed culverted watercourse is likely to cause minor localised disturbance to Biological Quality Elements as a result of the physical works and the resulting noise and vibration. It is important to note however that due to the heavily modified nature of the unnamed watercourse its ecological significance at the water body scale is considered to be limited. Assuming adequate pollution controls are implemented during construction impacts to Biological Quality Elements arising from changes to water quality (associated with construction) are considered negligible. Overall impacts to Biological Quality Elements arising from the works at Mossley Station are considered to be minor and localised.	habitat value and ecological resilience at the water body scale. The proposed compound location is downstream of the ponds east and west of Well-Hole Road therefore no impacts are anticipated to these two water bodies during construction or operation. During construction works disturbance to Biological Quality Elements is likely to occur as a result of noise and vibration created by the works. Works will however be temporary in nature and restricted to the overbridge at MVL3/23, adjacent railway embankments (where regrading and fencing will be undertaken) and access routes. Assuming adequate pollution controls are implemented during construction impacts to Biological Quality Elements arising from changes to water quality are considered negligible in OW 13 and also the pond at Low Grove Lane, which is downstream of the proposed works area potentially fed by OW 13, Overall impacts to Biological Quality Elements arising from the works at MVL3/23 are therefore considered to be minor and localised.	Biological Quality Elements within the Tame (Chew Brook to Swineshaw Brook) water body are considered negligible.			however be temporary in nature and disturbance will be localised to the river channel immediately adjacent to the compound location. The proposed compound locations are downstream of the ponds east and west of Well-Hole Road therefore no impacts are anticipated to these two water bodies during construction or operation. No earthworks or intrusive works envisioned as part of compound set up/operation therefore assuming adequate pollution controls are implemented during site set up/operation impacts to Biological Quality Elements within the Tame (Chew Brook to Swineshaw Brook) water body are considered negligible. Overall impacts to Biological Quality Elements arising from the works therefore considered to be minor and localised.		No direct impacts to Biological Quality Elements are therefore anticipated and assuming adequate pollution controls are implemented during construction impacts to Biological Quality Elements within the Tame (Chew Brook to Swineshaw Brook) water body are considered negligible.		Elements of the Tame (Chew Brook to Swineshaw Brook) water body are considered to be minor, localised and for the most part temporary in nature.	water is not attenuated prior to discharge. Providing there will be like for like replacement or improvements to drainage design this will mitigate any potential water quality risks. Where possible the duration of works should be minimised to reduce disturbance via noise and vibration.	considered sufficient to ensure no expected deterioration as a result of the Scheme	Status of the water body.	River Tame (Chew Brook to Swineshaw Brook) WFD water body.

WFD elements			WFD status		Effect of Works components on WFD elements							Overall effect				
			Current status (2019)	Status objective	Mossley Station	Wrights Overbridge works MVL3/23	Uppermill Viaduct MVL3/31	Reconstru ction of existing overbridg e superstru cture on Ward Lane MVL3/36	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Diggle Road Overbridge and Utilities Bridge Works MVL3/39	Scout Spoil Point Compound	Manchester Road Scout West Compound	Diggle Welfare, rail hub and office compound	Overall effect of Order Scheme on WFD element*	Additional proposed mitigation measures	Residual effect of Order Scheme on WFD element**
	Physico-Chemical Quality Elements	Elements including Ammonia, Dissolved Oxygen (DO), pH, Phosphate and Temperature.	Moderate	Good (2063)	Changes to Physico-Chemical Quality Elements are likely to occur where surface water drainage from Mossley Station outfalls to an unnamed culverted watercourse and subsequently to the River Tame (roughly 50 m below the proposed tie in location). The drainage from the station will however be attenuated therefore Impacts to water quality are anticipated to be negligible.	Assuming adequate pollution controls are implemented during construction impacts to Physico-Chemical Quality Elements within the Tame (Chew Brook to Swineshaw Brook) water body are considered negligible.			No earthworks or intrusive works envisioned as part of compound set up/operation therefore assuming adequate pollution controls are implemented during site set up/operation impacts to Physico-Chemical Quality Elements within the Tame (Chew Brook to Swineshaw Brook) water body are considered negligible.	A small section of the proposed land take for the compound falls within Flood Zone 2 and 3. Assuming adequate pollution controls are implemented during construction/operation to reflect the risk of flooding (e.g. appropriate storage of chemicals and materials) impacts to water quality as a result of flooding are considered negligible. No earthworks or intrusive works envisioned as part of compound set up/operation therefore assuming adequate pollution controls are implemented during site set up/operation impacts to Physico-Chemical Quality Elements within the Tame (Chew Brook to Swineshaw Brook) water body are considered negligible.	Assuming adequate pollution controls are implemented during construction/operation impacts to Physico-Chemical Quality Elements within the Tame (Chew Brook to Swineshaw Brook) water body are considered negligible.	Assuming industry best practice measures are implemented during the construction works (e.g. pollution prevention control) impacts to the Physico-Chemical Quality Elements of the Tame (Chew Brook to Swineshaw Brook) water body are anticipated to be negligible.	Providing there will be like for like replacement or improvements to drainage design this will mitigate any potential water quality risks.	The proposed mitigation should minimise the potential effect on the Physico-Chemical Quality Elements and is considered sufficient to ensure no expected deterioration as a result of the Order Scheme..		
		Elements including Hydrological Regime (i.e. quantity and dynamics of water flow, connection to groundwater) and Morphology (i.e. river continuity, river depth and width variation, structure and substrate of river bed, structure of the riparian zone).	Not assessed	Not assessed	Changes to surface water drainage resulting from the proposed works could create scour and potentially changes in sediment composition and water depth. Surface water discharge from Mossley Station will be attenuated therefore these impacts are likely to be negligible.	No in channel works required so impacts to Hydromorphological Quality Elements are considered negligible.			Hydromorphol ogical impacts resulting from the works will be localised to the unnamed watercourse near Standedge Canal Tunnel with negligible impacts to the Tame (Chew Brook to Swineshaw Brook) water body.	No in channel works required so impacts to Hydromorpho logical Quality Elements are considered negligible.	No in channel/drainage works required so impacts to Hydromorphological Quality Elements are considered negligible.	No in channel/drainage works required so impacts to Hydromorphological Quality Elements are considered negligible.	No in channel works required so impacts to Hydromorphological Quality Elements are considered negligible.	Assuming surface water drainage from the surface water outfall at Mossley Station are sufficiently attenuated potential impacts to Hydromorphological Quality Elements of the Tame (Chew Brook to Swineshaw Brook) water body are anticipated to be negligible.		

WFD elements			WFD status		Effect of Works components on WFD elements								Overall effect					
			Current status (2019)	Status objective	Mossley Station	Wrights Overbridge works MVL3/23	Uppermill Viaduct MVL3/31	Reconstru ction of existing overbridg e superstru cture on Ward Lane MVL3/36	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Diggle Road Overbridge and Utilities Bridge Works MVL3/39	Scout Spoil Point Compound	Manchester Road Scout West Compound	Diggle Welfare, rail hub and office compound	Overall effect of Order Scheme on WFD element*	Additional proposed mitigation measures	Residual effect of Order Scheme on WFD element**	Effect of Order Scheme on ecological/ chemical status	Overall effect of Order Scheme on water body status
Chemical Status	Specific pollutants	Listed in Annex VIII of the Water Framework Directive (2000/60/EC).	High	High (2015)	Changes to water quality are likely to occur where surface water drainage from Mossley Station outfalls to an unnamed culverted watercourse and subsequently to the River Tame (roughly 50 m below the proposed tie in location). The drainage from the station will however be attenuated therefore. impacts to water quality are anticipated to be negligible.	Assuming adequate pollution controls are implemented during construction impacts to water quality are considered negligible.			No earthworks or intrusive works proposed as part of compound set up/operation therefore assuming adequate pollution controls are implemented during site set up/operation impacts to water quality within the Tame (Chew Brook to Swineshaw Brook) water body are considered negligible.	A small section of the proposed land take for the compound falls within Flood Zone 2 and 3. Assuming adequate pollution controls are implemented during construction/operati on to reflect the risk of flooding (e.g. appropriate storage of chemicals and materials) impacts to water quality are considered negligible. No earthworks or intrusive works envisioned as part of compound set up/operation therefore assuming adequate pollution controls are implemented during site set up/operation impacts to water quality within the Tame (Chew Brook to Swineshaw Brook) water body are considered negligible.	Assuming adequate pollution controls are implemented during construction/operation impacts to water quality within the Tame (Chew Brook to Swineshaw Brook) water body are considered negligible.	Assuming industry best practice measures are implemented during the construction works (e.g. pollution prevention control) impacts to water quality of the Tame (Chew Brook to Swineshaw Brook) water body are anticipated to be negligible.	Providing there will be like for like replacement or improvements to drainage design this will mitigate any potential water quality risks.	The proposed mitigation should minimise the potential effect on water quality and is considered sufficient to ensure no expected deterioration as a result of the Order.				
		Priority Substances	Listed in Annex II of the Environmental Quality Standards Directive (2008/105/EC)	Fail	Good (2063)	Changes to water quality are likely to occur where surface water drainage from Mossley Station outfalls to an unnamed culverted watercourse and subsequently to the River Tame (roughly 50 m below the proposed tie in location). The drainage from the station will however be attenuated therefore impacts to water quality are anticipated to be negligible.	Assuming adequate pollution controls are implemented during construction impacts to water quality are considered negligible.			No earthworks or intrusive works envisioned as part of compound set up/operation therefore assuming adequate pollution controls are implemented during site set up/operation impacts to water quality within the Tame (Chew Brook to Swineshaw Brook) water body are considered negligible.	A small section of the proposed land take for the compound falls within Flood Zone 2 and 3. Assuming adequate pollution controls are implemented during construction/operati on to reflect the risk of flooding (e.g. appropriate storage of chemicals and materials) impacts to water quality are considered negligible.	Assuming adequate pollution controls are implemented during construction impacts to water quality are considered negligible.	Assuming industry best practice measures are implemented during the construction works (e.g. pollution prevention control) impacts to water quality of the Tame (Chew Brook to Swineshaw Brook) water body are anticipated to be negligible.	Providing there will be like for like replacement or improvements to drainage design this will mitigate any potential water quality risks.				The proposed mitigation should minimise the potential effect on water quality is considered sufficient to ensure no expected deterioration as a result of the Order Scheme.
	Other Pollutants	Listed in Annex II of the Environmental Quality Standards Directive (2008/105/EC)	Does not require assessment	Does not require assessment														
	Priority Hazardous Substances	Listed in Annex II of the Environmental Quality Standards Directive (2008/105/EC)	Fail	Good (2063)					No earthworks or intrusive works envisioned as part of compound set up/operation therefore assuming adequate pollution controls are implemented during site set up/operation impacts to water quality within the Tame (Chew Brook to Swineshaw Brook) water body are considered negligible.									

Test B Potential to prevent future attainment of Good Ecological Potential

RBMP measures			Effect of Works components on WFD elements												Overall effect of Order Scheme on proposed measure
RBMP measures to achieve objective	Where RBMP measure will happen	When RBMP measure will happen	Mossley Station	Wrights Overbridge works MVL3/23	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel Underbridge Replacement MVL3/39B)	Diggle Road Overbridge and Utilities Bridge Works MVL3/39	Manchester Road Scout Compound	Diggle Welfare, rail hub and office compound	Manchester Road Scout West				
Wider area measures actions															
Education: Educate landowners.	Catchment wide	Not specified	The proposed works will have no impact to the education measures.										No effect is anticipated at the water body scale.		
Operations and maintenance: Sediment management regime, manage artificial drawdown, manage seasonal water levels, vegetation control, invasive species techniques, retain habitats, minimise habitat impacts (maintenance), prevent sediment transfer (maintenance), water level management.	Catchment wide	Not specified	The proposed works are not anticipated to impact the operations and maintenance measures.										No effect is anticipated at the water body scale.		
Structural modification: Fish passes, fish pass flow releases, reduce fish entrainment, enhance ecology and changes to locks etc.	Catchment wide	Not specified	The proposed works are not anticipated to impact the structural modification measures.										No effect is anticipated at the water body scale.		
Water management: Access to feeder streams, downstream flow regime, flows to move sediment, good downstream DO/temperature and align and attenuate flow.	Catchment wide	Not specified	The proposed works are not anticipated to impact the water management measures.										No effect is anticipated at the water body scale.		
Working with physical form and function: Re-engineers river, flood bunds, set back embankments, floodplain connectivity, remove obsolete structures, remove of soften hard banks, preserve or restore habitats, in channel morphological diversity, re-opening culverts and alter culvert channel bed.	Catchment wide	Not specified	The proposed works are not anticipated to impact the physical form and function measures.									A small section of the proposed compound is located within flood zones 2 & 3. In the context of the water body scale this only represents a small proportion of the River Tame's total floodplain area.	Minor localised impacts likely to occur however no effect is anticipated at the water body scale		

Tame (Swineshaw Brook to Mersey)

Water body summary

WFD water body type	River Surface Water Body
WFD hydromorphological designation	Heavily Modified Water Body
WFD water body ID	GB112069061112
WFD Water body name	Tame (Swineshaw Brook to Mersey)

Works components with potential impacts to water body.

Structure code/name	Mossley Station	Wrights Overbridge works MVL3/23	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Scout Spoil Point Compound	Manchester Road Scout West Compound	Diggle Welfare, rail hub and office compound
Works component	Construction of a new rail station with drainage system.	Overbridge reconstruction.	Viaduct electrification works	Overbridge reconstruction.	Replacement of the existing Bywash underbridge	Site compound	Site compound	Site compound
Water feature type	River Tame	Unnamed watercourse OW 13.	River Tame and Huddersfield Narrow Canal	Unnamed watercourse 17.	Huddersfield Narrow Canal	River Tame	River Tame	Unnamed watercourse adjacent to Standedge Canal Tunnel
Location	SD 97530 02537	SD 98109 04139	SD 99569 06285	SE 00280 07551	SD 98109 04139	SE 00711 08065	SD 97331 01196	SD 97448 01241
Works description	As part of the new station construction the proposed drainage system will outfall to a culverted watercourse.	Parapet raising to 1.5 m at the Grade II Listed Wrights overbridge (MVL3/23) between Low Grove Lane and Mossley Road. Bridge arms will also be installed to the bridge underside deck	To enable the electrification of the up and down lines, OLE portals are required to be installed over the viaduct. 1500mm into the viaduct.	The existing overbridge superstructure is to be reconstructed as it does not have sufficient headroom to accommodate installation of OLE and is in poor condition.	Replacement of the existing Bywash underbridge (MVL3/39B) located adjacent to the Standedge Canal Tunnel western portal, with a box culvert system. This work will require the temporary dewatering and over pumping of an unnamed watercourse.	Site compound for storage	Site compound for storage	Site compound and associated earthworks. (Full planning application to be progressed ahead of the TWAO subject to instruction from NR).

Test A Potential to cause deterioration of current WFD Ecological Potential

WFD elements			WFD status		Effect of Works components on WFD elements								Overall effect				
			Current status (2019)	Status objective	Mossley Station	Wrights Overbridge works MVL3/23	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	MLV3/39	Scout Spoil Point Compound	Manchester Road Scout West Compound	Diggle Welfare, rail hub and office compound	Overall effect of Order Scheme on WFD element*	Additional proposed mitigation measures	Residual effect of Order Scheme on WFD element**	Effect of Order Scheme on ecological/ chemical status
Ecological status	Biological Quality Elements	Macrophytes and phytobenthos	Moderate	Moderate 2015	The proposed works falls within the Tame (Chew Brook to Swineshaw Brook) water body which is upstream of the Tame (Swineshaw Brook to Mersey) water body. No direct impacts to Biological Quality Elements are therefore anticipated and assuming adequate pollution controls are implemented during construction impacts to Biological Quality Elements within the Tame (Swineshaw Brook to Mersey) water body are considered negligible.								Assuming adequate pollution controls are implemented during construction/operation impacts to Biological Quality Elements within the Tame (Swineshaw Brook to Mersey) water body are considered negligible.	N/A impacts are considered negligible, so no further mitigation required.	The proposed mitigation should minimise the potential effect on Biological Quality Elements and is considered sufficient to ensure no expected deterioration as a result of the Order Scheme.	There is no anticipated effect of the Order Scheme on the Ecological Status of the water body.	Overall, there is no anticipated effect on the WFD classification of the River Tame (Swineshaw Brook to Mersey) WFD water body.
		Macro-invertebrates	Poor	Moderate (2015)													
		Fish	Poor	Good (2027)													
		Physico-Chemical Quality Elements	Elements including Ammonia, Dissolved Oxygen (DO), pH, Phosphate and Temperature.	Moderate	Moderate (2015)	Assuming adequate pollution controls are implemented during construction/operation impacts to water quality within the Tame (Swineshaw Brook to Mersey) water body are considered negligible.								Assuming adequate pollution controls are implemented during construction/operation impacts to water quality within the Tame (Swineshaw Brook to Mersey) water body are considered negligible.	N/A impacts are considered negligible, so no further mitigation required.	The proposed mitigation should minimise the potential effect on the Physico-Chemical Quality Elements and is considered sufficient to ensure no expected deterioration as a result of the Order Scheme.	

WFD elements			WFD status		Effect of Works components on WFD elements								Overall effect					
			Current status (2019)	Status objective	Mossley Station	Wrights Overbridge works MVL3/23	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	MLV3/39	Scout Spoil Point Compound	Manchester Road Scout West Compound	Diggle Welfare, rail hub and office compound	Overall effect of Order Scheme on WFD element*	Additional proposed mitigation measures	Residual effect of Order Scheme on WFD element**	Effect of Order Scheme on ecological/ chemical status	Overall effect of Order Scheme on water body status
	Hydromorphological Quality Elements	Elements including Hydrological Regime (i.e. quantity and dynamics of water flow, connection to groundwater) and Morphology (i.e. river continuity, river depth and width variation, structure and substrate of river bed, structure of the riparian zone).	Not assessed	Not assessed	Assuming surface water drainage from Mossley Station is attenuated to provide like for like drainage Hydromorphological Quality Elements are considered negligible.	No in channel or drainage works required within the water body so impacts to Hydromorphological Quality Elements are considered negligible.								No in channel or drainage works required within the water body so impacts to Hydromorphological Quality Elements are considered negligible.	N/A impacts are considered negligible, so no further mitigation required.	No in channel or drainage works required within the water body so impacts to Hydromorphological Quality Elements are considered negligible.		
	Specific pollutants	Listed in Annex VIII of the Water Framework Directive (2000/60/EC).	High	High (2015)	Assuming adequate pollution controls are implemented during construction impacts to water quality within the Tame (Swineshaw Brook to Mersey) water body are considered negligible.								Assuming adequate pollution controls are implemented during construction/operation impacts to water quality within the Tame (Swineshaw Brook to Mersey) water body are considered negligible.	N/A impacts are considered negligible, so no further mitigation required.	The proposed mitigation should minimise the potential effects on water quality and is considered sufficient to ensure no expected deterioration as a result of the Order Scheme.			
Chemical Status	Priority Substances	Listed in Annex II of the Environmental Quality Standards Directive (2008/105/EC)	Fail	Good (2027)	Assuming adequate pollution controls are implemented during construction and surface water drainage is sufficiently attenuated impacts to water quality within the Tame (Swineshaw Brook to Mersey) water body are considered negligible.								Assuming adequate pollution controls are implemented during construction/operation impacts to water quality within the Tame (Swineshaw Brook to Mersey) water body are considered negligible.	N/A impacts are considered negligible, so no further mitigation required.	The proposed mitigation should minimise the potential effects on water quality and is considered sufficient to ensure no expected deterioration as a result of the Order Scheme.	There is no anticipated effect of the Order Scheme on the Chemical Status of the water body.		
	Other Pollutants	Listed in Annex II of the Environmental Quality Standards Directive (2008/105/EC)	Good	Good (2015)														
	Priority Hazardous Substances	Listed in Annex II of the Environmental Quality Standards Directive (2008/105/EC)	Fail	Good (2063)														

Test B Potential to prevent future attainment of Good Ecological Potential

RBMP measures			Effect of Works components on WFD elements									Overall effect of Order Scheme on proposed measure
RBMP measures to achieve objective	Where RBMP measure will happen	When RBMP measure will happen	Mossley Station	Wrights Overbridge works MVL3/23	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Diggle Road Overbridge and Utilities Bridge Works MVL3/39	Scout Spoil Point Compound	Diggle Welfare, rail hub and office compound	Manchester Road Scout West Compound	
Wider area measures actions												
Education: Educate landowners.	Catchment wide	Not specified	The proposed works will have no impact to the education measures.									No effect is anticipated at the water body scale.
Operations and maintenance: Sediment management regime, manage artificial drawdown, manage seasonal water levels, vegetation control, invasive species techniques, retain habitats, minimise habitat impacts (maintenance), prevent sediment transfer (maintenance) and water level management.	Catchment wide	Not specified	The proposed works are not anticipated to impact the operations and maintenance measures.									No effect is anticipated at the water body scale.
Structural modification: Fish passes, fish pass flow releases, reduce fish entrainment, enhance ecology and changes to locks etc.	Catchment wide	Not specified	The proposed works will have no impact on structural modification measures.									No effect is anticipated at the water body scale.
Water management: Access to feeder streams, downstream flow regime, flows to	Catchment wide	Not specified	The proposed works will have no impact on water management measures.									No effect is anticipated at the water body scale.

RBMP measures			Effect of Works components on WFD elements									Overall effect of Order Scheme on proposed measure
RBMP measures to achieve objective	Where RBMP measure will happen	When RBMP measure will happen	Mossley Station	Wrights Overbridge works MVL3/23	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Diggle Road Overbridge and Utilities Bridge Works MVL3/39	Scout Spoil Point Compound	Diggle Welfare, rail hub and office compound	Manchester Road Scout West Compound	
move sediment, good downstream DO/temperature and align and attenuate flow.												
Working with physical form and function: Re-engineers river, flood bunds, set back embankments, floodplain connectivity, remove obsolete structures, remove of soften hard banks, preserve or restore habitats, in channel morph diversity, re-opening culverts and alter culvert channel bed.	Catchment wide	Not specified	The proposed works will occur have no impact on the working with physical form and function measures.									No effect is anticipated at the water body scale.

Huddersfield Narrow Canal (Western Section)

Water body summary

WFD water body type	Canal Surface Water Body
WFD hydromorphological designation	Artificial Water Body
WFD water body ID	GB71210268
WFD Water body name	Huddersfield Narrow Canal (Western Section)

Works components with potential impacts to water body.

Structure code/name	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel MVL3/39A	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Plevins site compound	Ward Lane site compound	Grandpa Greens Site 2 Compound	Sam Road Car Park Compound
Works component	Viaduct electrification works	Overbridge reconstruction.	Overbridge reconstruction.	Replacement of the existing Bywash underbridge	Site compound	Site compound	Site compound	Site compound
Water feature type	River Tame and Huddersfield Narrow Canal	Unnamed watercourse OW 7 and Huddersfield Narrow Canal	Huddersfield Narrow Canal	Huddersfield Narrow Canal	Huddersfield Narrow Canal	Huddersfield Narrow Canal	Huddersfield Narrow Canal	Huddersfield Narrow Canal
Location	SD 99569 06285	SE 00280 07551	SE 00680 08021	SD 98109 04139	SD 97757 01536	SE 00300 07517	SE 00370 07697	SE 00621 07970
Works description	To enable the electrification of the up and down lines, OLE portals are required to be installed over the viaduct. 1500mm into the viaduct.	The existing overbridge superstructure is to be reconstructed as it does not have sufficient headroom to accommodate installation of OLE and is in poor condition.	Reconstruction of Diggle Road overbridge (MVL3/39) on Station Road in Diggle, approximately 90 m south of Standedge Canal Tunnel.	Replacement of the existing Bywash underbridge (MVL3/39B) located adjacent to the Standedge Canal Tunnel western portal, with a box culvert system. This work will require the temporary dewatering and over pumping of an unnamed watercourse.	Main site compound involving substantial demolition of existing commercial buildings.	Site compound with associated access and earthworks.	Site compound with associated access and earthworks.	Site compound with associated access and earthworks.

Test A Potential to cause deterioration of current WFD Ecological Potential

WFD elements			WFD status		Effect of Works components on WFD elements								Overall effect				
			Current status (2019)	Status objective	Uppermill Viaduct MVL3/31	Reconstructio n of existing overbridge superstructur e on Ward Lane MVL3/36	Standedge Canal Tunnel MVL3/39A	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Plevins site compound	Ward Lane site compound	Grandpa Greens Site 2 Compound	Sam Road Car Park Compound	Overall effect of Order Scheme on WFD element*	Additional proposed mitigation measures	Residual effect of Order Scheme on WFD element**	Effect of Order Scheme on ecological/chemical status	Overall effect of Order Scheme on water body status
Ecological Status	Physico-Chemical Quality Elements	Elements including Ammonia, Dissolved Oxygen, pH, Phosphate and Temperature.	Not assessed	Not assessed	Assuming adequate pollution controls are implemented during construction/operation impacts to water quality within the Huddersfield Narrow Canal Western Section water body are considered negligible.		Localised changes to Physico-Chemical Quality Elements, such as dissolved oxygen, are likely to occur as a result of in channel works e.g. as a result of sediment mobilisation. These impacts are anticipated to be minor.		No drainage works detailed therefore assuming adequate pollution controls are implemented during construction/operation impacts to water quality within the Huddersfield Narrow Canal Western Section water body are considered negligible.				Localised changes to Physico-Chemical Quality Elements, such as dissolved oxygen, are likely to occur as a result of in channel work.	The use of silt curtains during in channel works will contain the dispersion of suspended solids and associated effects to water quality. The changes to surface water drainage associated with compound construction may contribute to a decline in water quality within the Huddersfield Narrow Canal if the water is not attenuated prior to discharge. Providing there will be like for like replacement or improvements to drainage design this will mitigate any potential water quality risks.	The proposed mitigation should minimise the potential effect on the Physico-Chemical Quality Elements and is considered sufficient to ensure no expected deterioration as a result of the Order Scheme.	There is no anticipated effect of the Order Scheme on the Ecological Status of the water body.	Overall, there is no anticipated effect on the WFD classification of the Huddersfield Narrow Canal (Western Section) WFD water body.
Chemical Status	Priority Substances	Listed in Annex II of the Environmental Quality Standards Directive (2008/105/EC).	Fail	Good (2015)	Assuming adequate pollution controls are implemented during construction/operation impacts to water quality within the Huddersfield Narrow Canal Western Section water body are considered negligible.		Sediment disturbance within the canal during the works may result in the mobilisation of potentially harmful substances/ compounds bound to sediments (derived from the canals industrial past). The risk of these effects propagating to wider areas is however considered low due to the canals slow flowing nature. Impacts associated with sediment mobilisation are therefore considered to be localised and minor.		No drainage works detailed therefore assuming adequate pollution controls are implemented during construction/operation impacts to water quality within the Huddersfield Narrow Canal Western Section water body are considered negligible.				Localised changes to water quality are likely to occur as a result of in channel works.	The use of silt curtains during in channel works will contain the dispersion of suspended solids and associated impacts to water quality. The changes to surface water drainage associated with compound construction may contribute to a decline in water quality within the Huddersfield Narrow Canal if the water is not attenuated prior to discharge. Providing there will be like for like replacement or improvements to drainage design this will mitigate any potential water quality risks.	The proposed mitigation should minimise the potential effect on water quality and is considered sufficient to ensure no expected deterioration as a result of the Order Scheme.	There is no anticipated effect of the Order Scheme on the Chemical Status of the water body.	
			Does not require assessment	Does not require assessment													
	Priority Hazardous Substances		Good	Good (2015)													

Test B Potential to prevent future attainment of Good Ecological Potential

RBMP measures			Effect of Works components on WFD elements								Overall effect of Order Scheme on proposed measure
RBMP measures to achieve objective	Where RBMP measure will happen	When RBMP measure will happen	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel MVL3/39A	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Plevins site compound	Ward Lane site compound	Grandpa Greens Site 2 Compound	Sam Road Car Park Compound	
Wider area measures actions											
Structural modifications: Fish passes. Enhance ecology and changes to locks etc.	Catchment wide	Not specified	The proposed works will have no impact on existing structures.								No effect is anticipated at the water body scale.
Operations and maintenance: Avoid the need to dredge, dredging disposal strategy, reduce impact of dredging, reduce sediment resuspension, retime dredging or disposal, sediment management, dredge disposal site selection, management disturbance, phased de-watering, vegetation control and invasive species techniques.	Catchment wide	Not specified	Proposed works will have no impact on operations and maintenance of the Huddersfield Narrow Canal.	The proposed works are likely to result in the localised mobilisation of sediments.			Proposed works will have no impact on operations and maintenance of the Huddersfield Narrow Canal.			Localised sediment mobilisation anticipated from the work however no effect is anticipated at the water body scale.	
Working with physical form and function: Remove or soften hard banks, preserve or restore habitats, in channel morph diversity and bank rehabilitation.	Catchment wide	Not specified	Proposed works will have no impact on the physical form or function of the Huddersfield Narrow Canal.	Proposed works will have a minor localised impact on the physical form of the Huddersfield Narrow Canal.			Proposed works will have no impact on the physical form or function of the Huddersfield Narrow Canal.			Minor localised impacts to physical form and function anticipated but no effect is anticipated at the water body scale.	
Navigation: Modify vessel design, vessel management and boats in central track.	Catchment wide	Not specified	Proposed works will have no impact on vessel design or management.								No effect is anticipated at the water body scale.
Education: Invasive species awareness and boat wash awareness.	Catchment wide	Not specified	Proposed works will have no impact on education measures.								No effect is anticipated at the water body scale.

Huddersfield Narrow Canal (Summit Section)

Water body summary

WFD water body type	Canal Surface Water Body
WFD hydromorphological designation	Artificial Water Body
WFD water body ID	GB70410520
WFD Water body name	Huddersfield Narrow Canal (Summit Section)

Works components with potential impacts to water body,

Structure code/name	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel MVL3/39A	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Plevins site compound	Ward Lane site compound	Grandpa Greens Site 2 Compound	Sam Road Car Park Compound
Works component	Viaduct electrification works	Overbridge reconstruction.	Overbridge reconstruction.	Replacement of the existing Bywash underbridge	Site compound	Site compound	Site compound	Site compound
Water feature type	River Tame and Huddersfield Narrow Canal	Unnamed watercourse OW 7 and Huddersfield Narrow Canal	Huddersfield Narrow Canal	Huddersfield Narrow Canal	Huddersfield Narrow Canal	Huddersfield Narrow Canal	Huddersfield Narrow Canal	Huddersfield Narrow Canal
Location	SD 99569 06285	SE 00280 07551	SE 00680 08021	SD 98109 04139	SD 97757 01536	SE 00300 07517	SE 00370 07697	SE 00621 07970
Works description	To enable the electrification of the up and down lines, OLE portals are required to be installed over the viaduct. 1500mm into the viaduct.	The existing overbridge superstructure is to be reconstructed as it does not have sufficient headroom to accommodate installation of OLE and is in poor condition.	Reconstruction of Diggle Road overbridge (MVL3/39) on Station Road in Diggle, approximately 90 m south of Standedge Canal Tunnel.	Replacement of the existing Bywash underbridge (MVL3/39B) located adjacent to the Standedge Canal Tunnel western portal, with a box culvert system. This work will require the temporary dewatering and over pumping of an unnamed watercourse.	Main site compound involving substantial demolition of existing commercial buildings.	Site compound with associated access and earthworks.	Site compound with associated access and earthworks.	Site compound with associated access and earthworks.

Test A Potential to cause deterioration of current WFD Ecological Potential

WFD elements			WFD status		Effect of Works components on WFD elements						Overall effect				
			Current status (2019)	Status objective	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel MVL3/39A	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Plevins site compound	Ward Lane site compound	Grandpa Greens Site 2 Compound	Sam Road Car Park Compound	Overall effect of Order Scheme on WFD element*	Additional proposed mitigation measures	Residual effect of Order Scheme on WFD element**
Ecological Status	Physico-Chemical Quality Elements	Elements including Ammonia, Dissolved Oxygen, Phosphate and Temperature. pH, and	Not assessed	Not assessed	Assuming adequate pollution controls are implemented during construction/operation impacts to water quality within the Huddersfield Narrow Canal Summit Section water body are considered negligible.	Localised changes to Physico-Chemical Quality Elements, such as dissolved oxygen, are likely to occur as a result of in channel works e.g. as a result of sediment mobilisation. These impacts are anticipated to be minor.	Changes to Physico-Chemical Quality Elements may occur as a result of changes in surface water drainage. These impacts are however anticipated to localised and minor.	No drainage works detailed therefore assuming adequate pollution controls are implemented during construction/operation impacts to water quality within the Huddersfield Narrow Canal Western Section water body are considered negligible.	Assuming adequate pollution controls are implemented during construction/operation and that there will be like for like or improvements to drainage impacts to Physico-Chemical Quality Elements are considered negligible.	Localised changes to Physico-Chemical Quality Elements, such as dissolved oxygen, are likely to occur as a result of in channel work.	The use of silt curtains during in channel works will contain the dispersion of suspended solids and associated impacts to water quality. Providing there will be like for like replacement or improvements to drainage design this will mitigate any potential water quality risks.	The proposed mitigation should minimise the potential effect on the Physico-Chemical Quality Elements and is considered sufficient to ensure no expected deterioration as a result of the Order Scheme.	There is no anticipated effect of the Order Scheme on the Ecological Status of the water body.	Overall, there is no anticipated effect on the WFD classification of the Huddersfield Narrow Canal (Summit Section) WFD water body.	
		Chemical Status	Priority Substances Other Pollutants Priority Hazardous Substances	Listed in Annex II of the Environmental Quality Standards Directive (2008/105/EC).	Fail	Good (2015)	Assuming adequate pollution controls are implemented during construction/operation impacts to water quality within the Huddersfield Narrow Canal Summit Section water body are considered negligible.	Sediment disturbance within the canal during the works may result in the mobilisation of potentially harmful substances/ compounds bound to sediments (derived from the canals industrial past). The risk of these effects propagating to wider areas is however considered low due to the canals slow flowing nature. Impacts associated with sediment mobilisation are therefore considered to be localised and minor.	Changes to water quality may occur as a result of changes in surface water drainage. These impacts are however anticipated to localised and minor.	No drainage works detailed therefore assuming adequate pollution controls are implemented during construction/operation impacts to water quality within the Huddersfield Narrow Canal Western Section water body are considered negligible.	Assuming adequate pollution controls are implemented during construction/operation and that there will be like for like or improvements to drainage impacts to water quality are considered negligible.	Localised changes to water quality are likely to occur as a result of in channel work.	The use of silt curtains during in channel works will contain the dispersion of suspended solids and associated impacts to water quality. Providing there will be like for like replacement or improvements to drainage design this will mitigate any potential water quality risks.		The proposed mitigation should minimise the potential effect on water quality and is considered sufficient to ensure no expected deterioration as a result of the Order Scheme.
Does not require assessment	Does not require assessment														
						Good	Good (2015)								

Test B Potential to prevent future attainment of Good Ecological Potential

RBMP measures			Effect of Works components on WFD elements								Overall effect of Order Scheme on proposed measure
RBMP measures to achieve objective	Where RBMP measure will happen	When RBMP measure will happen	Uppermill Viaduct MVL3/31	Reconstruction of existing overbridge superstructure on Ward Lane MVL3/36	Standedge Canal Tunnel MVL3/39A	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	Plevins site compound	Ward Lane site compound	Grandpa Greens Site 2 Compound	Sam Road Car Park Compound	
Wider area measures actions											
Structural modifications: Fish passes. Enhance ecology and changes to locks etc.	Catchment wide	Not specified	The proposed works will have no impact on existing structures.								No effect is anticipated at the water body scale.
Operations and maintenance: Avoid the need to dredge, dredging disposal strategy, reduce impact of dredging, reduce sediment resuspension, retime dredging or disposal, sediment management, dredge disposal site selection, management disturbance, phased de-watering, vegetation control and invasive species techniques.	Catchment wide	Not specified	Proposed works will have no impact on operations and maintenance of the Huddersfield Narrow Canal.	The proposed works are likely to result in the localised mobilisation of sediments.			Proposed works will have no impact on operations and maintenance of the Huddersfield Narrow Canal.			Localised sediment mobilisation anticipated from the work however no effect is anticipated at the water body scale.	
Working with physical form and function: Remove or soften hard banks, preserve or restore habitats, in channel morph diversity and bank rehabilitation.	Catchment wide	Not specified	Proposed works will have no impact on the physical form or function of the Huddersfield Narrow Canal.	Proposed works will have a minor localised impact on the physical form of the Huddersfield Narrow Canal			Proposed works will have no impact on the physical form or function of the Huddersfield Narrow Canal.			Minor localised impacts to physical form and function anticipated but no effect is anticipated at the water body scale.	
Navigation: Modify vessel design, vessel management and boats in central track.	Catchment wide	Not specified	Proposed works will have no impact on vessel design or management.								No effect is anticipated at the water body scale.
Education: Invasive species awareness and boat wash awareness.	Catchment wide	Not specified	Proposed works will have no impact on education measures.								No effect is anticipated at the water body scale.

Manchester and East Cheshire Carboniferous Aquifers

Water body summary

WFD water body type	Groundwater body
WFD water body ID	GB41202G102900
WFD water body name	Manchester and East Cheshire Carboniferous Aquifers

Works components

Works component	Stalybridge Tunnel Works MVL3/3	Scout Tunnel Works	Wrights Overbridge works MVL3/23	Manchester Road Footbridge Reconstruction MVL3/10A	Diggle Road Overbridge and Utilities Bridge Works MVL3/39	Mossley Station Relocation Works	Mossley Cottages Works	Printworks Road Main Compound	Printworks Road Office Compound
Location (Structure ID and/or NGR)	SJ 96239 98737 to SJ 96764 99021	SD 97288 01238 to SD 97364 01408	MVL3/23 SD 98109 04139	ML3/10A SD 97238 00715	MVL3/39 SE 00711 08065	SD 97530 02537	SD 97374 01921	SJ 96899 99330	SJ 96905 99344
Description	Installation of rock anchors which will project beyond the tunnel extrados into third party land. Rock anchors range from 5.5 m to 9 m.	Works to Scout Tunnel south of Mossley Station, including the installation of rock anchors (7 m length) which will extend into third party land (the 'Scout Tunnel Works').	Parapet raising to 1.5 metres at the Grade II Listed Wrights overbridge (MVL3/23) between Low Grove Lane and Mossley Road. Bridge arms will also be installed to the bridge underside deck. Embankment works and rock anchors will be installed. Depth below ground of the proposed works are unknown.	The reconstruction of the Manchester Road Footbridge (MVL3/10A) is required to facilitate OLE installations underneath the bridge. Below ground works include excavation and demolishing of existing foundations, and installation of RC piling. Depth below ground of the proposed works are unknown.	Reconstruction of span 1 on the Diggle Road overbridge (MVL3/39) on Station Road in Diggle, approximately 90 metres south of Standedge Canal Tunnel. A new RC king pier will be built supported upon a piled foundation with piles socketed into the competent rock strata (circa 5m bgl).	The works include a new access layout, station building, parking area, footbridge, and lift shafts. Below ground works include: <ul style="list-style-type: none">Retaining walls which will be designed when GI is completed. May be contiguous or king post. Depths of retaining walls are unknown.The proposed car park level is ~ 2 m bgl and there will be an additional excavation of approximately 1.5 m for the attenuation tank. Sheet piling may be used to provide temporary support.The lift pit will require an excavation of between 1.5- 2.5 m deep.The new station building and waiting shelters will have shallow foundations, piling may be required depending on GI. Depth below ground of the proposed works are unknown.	Installation of new retaining wall to support track slew and anti-trespass measures at Mossley Cottages to the west of Manchester Road and south of the existing Mossley Railway Station. Depth below ground of the proposed works are unknown.	Construction of the office compound at Printworks Road north of Stalybridge Tunnel, with upgrades to the existing road access. Install retaining wall (Sheet pile "king post" or stepped gravity wall / gabion baskets - depending on ground condition). Depth below ground of the proposed works are unknown.	Construction of the office compound at Printworks Road north of Stalybridge Tunnel, with upgrades to the existing road access. A retaining wall will be installed (either sheet pile "king post" or stepped gravity wall). Depth below ground of the proposed works are unknown.
Summary of local geology (geology at 1 in 50 scale)	Pennine Lower Coal Measures Formation (mudstone, siltstone and sandstone), Woodhead Hill Rock (sandstone) and Rough Rock (sandstone) bedrock. Till is mapped at overlying the western end of Stalybridge Tunnel. No superficial deposits documented on eastern end of tunnel.	Marsden Formation (mudstone and siltstone), Fletcher Bank Grit (sandstone). No documented overlying superficial deposits.	Lower Kingscourt Grit (sandstone), Hebden Formation (mudstone and siltstone). No documented overlying superficial deposits.	Marsden Formation (mudstone and siltstone) bedrock. Overlain by head (clay, silt, sand and gravel) on western side of footbridge. No documented overlying superficial deposits on eastern side of footbridge.	Underlain by Shale Grit (sandstone) bedrock. No documented overlying superficial deposits.	Underlain by Fletchers Bank Grit (sandstone), Marsden Formation (mudstone and siltstone), Upper Kinderscout Grit (sandstone) bedrock. No documented overlying superficial deposits.	Fletcher Bank Grit (sandstone). No documented overlying superficial deposits.	Rough Rock (sandstone), Rossendale Formation (mudstone and siltstone), Huddersfield White Rock (sandstone), Marsden Formation (mudstone and siltstone). Overlain in the south and east by alluvium (clay, silt, sand and gravel) and head deposits (clay, silt, sand and gravel).	Rossendale Formation (mudstone and siltstone), Huddersfield White Rock (sandstone). Overlain by head deposits (clay, silt, sand and gravel).
Summary of bedrock hydrogeology	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. Indicative rest water level is deeper than 1 mbgl from GI.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.

Test A Potential to cause deterioration of current WFD Ecological Potential

WFD elements		WFD status		Effect of Works components on WFD elements							
		Current status	Status objective	Stalybridge Tunnel Works MVL3/3	Scout Tunnel Works	Wrights Overbridge works MVL3/23	Manchester Road Footbridge Reconstruction MVL3/10A	Diggle Road Overbridge Reconstruction	Mossley Station Relocation Works	Mossley Cottages Works	Printworks Road Main Compound
Quantitative impacts	Quantitative impacts cover: Saline or other intrusions of poor-quality water due to groundwater abstraction, the impact on the ecological status of surface water bodies, the impact on the condition of groundwater dependent terrestrial ecosystems, and the impact on the groundwater body water balance.	Good	Good (2027)	Rock anchors spaced out and will not act as a barrier to flow. No measurable change to the groundwater environment is anticipated. Compliance is expected with standard mitigation and best practice measures.	Groundwater body is partially at outcrop at this location with no low permeability geology protecting the groundwater body. RC clear space piling is unlikely to act as a barrier to flow.	Groundwater body is at outcrop at this location with no low permeability geology protecting the groundwater body. RC piling will not act as barrier to flow.	Groundwater body is at outcrop here, the depth of piling and structures are not known. Assuming piling will extend below the water table into the groundwater body, sheet piling may form a barrier to shallow groundwater flow, potentially reducing groundwater contributions to adjacent water courses.	Structure is unlikely to act as a barrier to flow. Compliance is expected with standard mitigation and best practice measures. No anticipated effect from Order Scheme element.	Structure is unlikely to act as a barrier to flow. Compliance is expected with standard mitigation and best practice measures. No anticipated effect from Order Scheme element.	Structure is unlikely to act as a barrier to flow. Compliance is expected with standard mitigation and best practice measures. No anticipated effect from Order Scheme element.	
					Site investigations should be conducted, and a piling risk assessment should also be undertaken where required to ensure the most appropriate piling for the ground conditions is selected to reduce impact to groundwater flow. Best practice should be followed when installing deep foundations and piling to minimise impacts to the groundwater body.	Site investigations should be conducted, and a piling risk assessment should also be undertaken to ensure the most appropriate piling for the ground conditions will be selected to reduce impact to groundwater flow. Best practice will be followed when installing deep foundations and piling to minimise impacts to the groundwater body.	Assuming the excavation will extend below the water table into the shallow groundwater body, excavations may require dewatering, potentially reducing groundwater contributions to adjacent water courses.				
Chemical impacts	Chemical impacts cover pollution concentrations, quality impact on groundwater abstractions, impact on the chemical & ecological status of surface water bodies, nutrient concentration impact on GWDTEs, Drinking Water Protected Areas and a General quality assessment.	Poor	Good (2027)	Assuming rock anchors will extend below the water table, rock anchors may create vertical flow pathways into the groundwater body for potentially contaminated runoff. Assuming structure and design is to industry standards, risk to the groundwater body should be mitigated.	Groundwater body is partially at outcrop at this location with no low permeability geology protecting the groundwater body. There is the potential for piling to create a rapid vertical flow pathway, allowing pollution to enter the groundwater body. However, assuming best practice is followed, including preparation of piling risk assessments for deep foundations where required, and the design takes account of site-specific groundwater level data, no measurable change to the groundwater environment is anticipated. Compliance is expected with standard mitigation and best practice measures.	Groundwater body is at outcrop at this location with no low permeability geology protecting the groundwater body. There is the potential for piling to create a rapid vertical flow pathway, allowing pollution to enter the groundwater body. However, assuming best practice is followed, including preparation of piling risk assessments for deep foundations, and the design takes account of site-specific groundwater level data, no measurable change to the groundwater environment is anticipated. Compliance is expected with standard mitigation and best practice measures.	Groundwater body is at outcrop at this location with no low permeability geology protecting the groundwater body. Assuming excavation will extend below the water table, deep excavations may require dewatering. The disposal of pumped water may flow through contamination pathways into the aquifer. Assuming excavation and disposal of pumped water is to industry standards, this risk to the groundwater body should be mitigated.	Groundwater body is at outcrop at this location with no low permeability geology protecting the groundwater body.	Groundwater body is partially at outcrop at this location with no low permeability geology protecting the groundwater body.	Groundwater body is not at outcrop at this location with low permeability geology protecting the groundwater body.	
								Assuming structure will extend below the water table, piling may create rapid vertical flow pathways into the shallow groundwater body for potentially contaminated runoff. Assuming piling design and construction is to industry standards, this risk to the groundwater body should be mitigated.	Assuming structure will extend below the water table, piling may create rapid vertical flow pathways into the shallow groundwater body for potentially contaminated runoff. Assuming piling design and construction is to industry standards, this risk to the groundwater body should be mitigated.	Assuming structure will extend below the water table, piling may create rapid vertical flow pathways into the shallow groundwater body for potentially contaminated runoff. Assuming piling design and construction is to industry standards, this risk to the groundwater body should be mitigated.	

Test B Potential to prevent future attainment of Good Ecological Potential

RNAG element	Description	Order Scheme impact on RNAG
Drinking Water Protected Area	Point source of Private sewage treatment from domestic general public	No impact on water body's ability to achieve 'Good' status for this Quality Element. Additional mitigation not required.
	Diffuse source of Poor nutrient management from agricultural and rural land management	
	Diffuse source of Poor livestock management from agricultural and rural land management	
Trend Assessment	Diffuse source of Poor nutrient management from agriculture and rural land management	
	Diffuse source of Septic tanks from domestic general public	
	Diffuse source of Poor livestock management from agriculture and rural land management.	

Manchester and East Cheshire Carboniferous Aquifers

Water body summary

WFD water body type	Groundwater body
WFD water body ID	GB41202G102900
WFD water body name	Manchester and East Cheshire Carboniferous Aquifers

Works components

Works component	Printworks Road Main Compound	Printworks Road Office Compound	Scout West Ramp Compound	Wakefield Road Plant Access and Compound	Scout East Ramp Compound	Oaklands Road Site Compound	Wakefield Road Plant Access and Compound	Plevins site compound	Scout Spoil Point Compound
Location (Structure ID and/or NGR)	SJ 96899 99330	SJ 96905 99344	SD 97266 01117	SD 97326 00370	SD 97401 01568	SD 98690 04451	SD 97316 00355	SD 97757 01536	SE 00711 08065
Description	Construction of the office compound at Printworks Road north of Stalybridge Tunnel, with upgrades to the existing road access. Install retaining wall (Sheet pile "king post" or stepped gravity wall / gabion baskets - depending on ground condition). Depth below ground of the proposed works are unknown.	Construction of the office compound at Printworks Road north of Stalybridge Tunnel, with upgrades to the existing road access. A retaining wall will be installed (either sheet pile "king post" or stepped gravity wall). Depth below ground of the proposed works are unknown. Topsoil will be removed and replaced with hardcore.	Site compound with associated access and earthworks. Below ground works include installation of retaining wall (sheet pile "king post" or stepped gravity wall / gabion baskets - depending on ground condition). Depth below ground of the proposed works are unknown.	Upgrade works to the existing vehicular access at Wakefield Road, and the creation of a compound area north of the Springbank Lane Overbridge (MVL3/09) and west of Mossley Wastewater Treatment Works. Below ground works include excavation / earthworks installation / levelling off and installation of retaining wall (sheet pile "king post" or stepped gravity wall / gabion baskets - depending on ground condition). Depth below ground of the proposed works are unknown.	Laydown area and associated earthworks. Installation of retaining wall (Sheet pile "king post" or stepped gravity wall / gabion baskets - depending on ground condition). Depth below ground of the proposed works are unknown.	A site compound is required at Oaklands Road to the north of the George Street Underbridge Works. Below ground works include earthworks, excavation and installation of retaining wall (sheet pile "king post" or stepped gravity wall/gabion brackets depending on ground condition). Depth below ground of the proposed works are unknown.	Upgrade works to the existing vehicular access at Wakefield Road, and the creation of a compound area north of the Springbank Lane Overbridge (MVL3/09) and west of Mossley Wastewater Treatment Works. Below ground works include excavation / earthworks installation / levelling off and installation of retaining wall (sheet pile "king post" or stepped gravity wall / gabion baskets - depending on ground condition). Depth below ground of the proposed works are unknown.	Main site compound involving substantial demolition of existing commercial buildings. Potential storage/stockpile of spoil.	Site compound for storage.
Summary of local geology (geology at 1 in 50 scale)	Rough Rock (sandstone), Rossendale Formation (mudstone and siltstone), Huddersfield White Rock (sandstone), Marsden Formation (mudstone and siltstone). Overlain in the south and east by alluvium (clay, silt, sand and gravel) and head deposits (clay, silt, sand and gravel).	Rossendale Formation (mudstone and siltstone), Huddersfield White Rock (sandstone). Overlain by head deposits (clay, silt, sand and gravel).	Fletcher Bank Grit (sandstone) bedrock. Overlain by alluvium (clay, silt, sand and gravel).	Marsden Formation (mudstone and siltstone), Fletcher Bank Grit (sandstone). No documented overlying superficial deposits.	Fletcher Bank Grit (sandstone) bedrock. No documented overlying superficial deposits.	Hebden Formation (mudstone and siltstone) bedrock. No documented overlying superficial deposits.	Marsden Formation (mudstone and siltstone), Fletcher Bank Grit (sandstone). No documented overlying superficial deposits.	Fletcher Bank Grit (sandstone), Marsden Formation (mudstone and siltstone) bedrock. Main compound area overlain by till.	Fletcher Bank Grit (sandstone) bedrock. Overlain by alluvium (clay, silt, sand and gravel).
Summary of bedrock hydrogeology	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.

Test A Potential to cause deterioration of current WFD Ecological Potential

WFD elements		WFD status		Effect of Works components on WFD elements									
		Current statuses	Status objective	Printworks Road Main Compound	Printworks Road Office Compound	Scout West Ramp Compound	Wakefield Road Plant Access and Compound	Scout East Ramp Compound	Oaklands Road Site Compound	Wakefield Road Plant Access and Compound	Plevins site compound	Scout Spoil Point Compound	
Quantitative impacts	Quantitative impacts cover: Saline or other intrusions of poor-quality water due to groundwater abstraction, the impact on the ecological status of surface water bodies, the impact on the condition of groundwater dependent terrestrial ecosystems, and the impact on the groundwater body water balance.	Good	Good (2027)	Structure is unlikely to act as a barrier to flow. Compliance is expected with standard mitigation and best practice measures. No likely anticipated effect from Order Scheme element.	Structure is unlikely to act as a barrier to flow. Compliance is expected with standard mitigation and best practice measures. No likely anticipated effect from Order Scheme element.	Structure is unlikely to act as a barrier to flow. Compliance is expected with standard mitigation and best practice measures. No likely anticipated effect from Order Scheme element.						No below ground works anticipated. No likely anticipated impact from Order Scheme element.	
	Chemical impacts cover pollution concentrations, quality impact on groundwater abstractions, impact on the chemical & ecological status of surface water bodies, nutrient concentration impact on GWDTEs, Drinking Water Protected Areas and a General quality assessment.	Poor	Good (2027)	Groundwater body is partially at outcrop at this location with no low permeability geology protecting the groundwater body. Assuming structure will extend below the water table, piling may create rapid vertical flow pathways into the shallow groundwater body for potentially contaminated runoff. Increased areas of hardstanding may increase surface water runoff and enter the groundwater body. Assuming piling design and construction is to industry standards, and adequate pollution controls are implemented during construction/operation the risk to the groundwater body should be mitigated.	Groundwater body is not at outcrop at this location with low permeability geology protecting the groundwater body. Assuming structure will extend below the water table, piling may create rapid vertical flow pathways into the shallow groundwater body for potentially contaminated runoff. Increased areas of hardstanding may increase surface water runoff and enter the groundwater body. Assuming piling design and construction is to industry standards, and adequate pollution controls are implemented during construction/operation the risk to the groundwater body should be mitigated.	Groundwater body is at outcrop at this location with no low permeability geology protecting the groundwater body. Assuming structure will extend below the water table, piling may create rapid vertical flow pathways into the shallow groundwater body for potentially contaminated runoff. Increased areas of hardstanding may increase surface water runoff and enter the groundwater body. Assuming piling design and construction is to industry standards, and adequate pollution controls are implemented during construction/operation the risk to the groundwater body should be mitigated.	Increased areas of hardstanding may increase surface water runoff and enter the groundwater body. Assuming industry standard pollution controls are implemented during construction/operation no measurable change to the groundwater body is anticipated.	Increased areas of hardstanding may increase surface water runoff and enter the groundwater body. Assuming industry standard pollution controls are implemented during construction/operation no measurable change to the groundwater body is anticipated.					

Test B Potential to prevent future attainment of Good Ecological Potential

RNAG element	Description	Order Scheme impact on RNAG
Drinking Water Protected Area	Point source of Private sewage treatment from domestic general public	No impact on water body's ability to achieve 'Good' status for this Quality Element. Additional mitigation not required.
	Diffuse source of Poor nutrient management from agricultural and rural land management	
	Diffuse source of Poor livestock management from agricultural and rural land management	
Trend Assessment	Diffuse source of Poor nutrient management from agriculture and rural land management	
	Diffuse source of Septic tanks from domestic general public	
	Diffuse source of Poor livestock management from agriculture and rural land management.	

Manchester and East Cheshire Carboniferous Aquifers

Water body summary

WFD water body type	Groundwater body
WFD water body ID	GB41202G102900
WFD water body name	Manchester and East Cheshire Carboniferous Aquifers

Works components

Works component	Oldham Road Overbridge Reconstruction	New Oldham Road Footbridge Works	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	MVL3/13 (diversion of utilities bridge)	Stamford Road Bridge Works MVL3/13	Armit Road Site Compound	Heyrod Hall Storage Compound
Location (Structure ID and/or NGR)	MVL/28 SD 99191 04720	MVL/28 SD 99191 04720	MLV/39B SE 00759 08128	SD 97352 02000	SD 97355 01846	SD 98108 03966	SJ 97246 99811
Description	Reconstruction of the Grade II Listed Oldham Road overbridge (MVL3/28) adjacent to Greenfield Station with a reinforced concrete portal structure and approach containment and widening to the low mileage side to improve the highways alignment and provide additional footway width. Depth below ground of the proposed works are unknown.	Construction of a new Oldham Road footbridge adjacent to the existing Oldham Road overbridge (MVL3/28A) and Greenfield Station. Below ground works include removal of shallow foundations and excavation. Depth below ground of the proposed works are unknown.	Replacement of the existing Bywash underbridge (MVL3/39B) located adjacent to the Standedge Canal Tunnel western portal, with a box culvert system. Below ground works include excavation of superficial deposits and 100mm of weathered bedrock.	Diversion of utilities bridge into Stamford Road Bridge, which requires excavation on the highway to install the diverted utility pipe. Depth below ground of excavation unknown.	Utilities diversion from bridge MVL3/12A adjacent to MVL3/13 Stamford Road Bridge, into Stamford Road Bridge, involving excavation of the highway which passes over the bridge. Depth below ground of excavation unknown.	Site compound located away from NR land and associated earthworks. Below ground works include excavation and earthworks installation. Soakaway or attenuation tanks may be used. Depth below ground of the proposed works are unknown.	Temporary site compound to support works to MVL 3/07, with associated earthworks and private access track upgrades. Depth below ground of the proposed works are unknown.
Summary of local geology (geology at 1 in 50 scale)	Lower Kindercourt Grit (sandstone), Hebden Formation (mudstone and siltstone) bedrock. No documented overlying superficial deposits.	Lower Kindercourt Grit (sandstone), Hebden Formation (mudstone and siltstone) bedrock. No documented overlying superficial deposits.	Shale Grit (sandstone) bedrock. No documented overlying superficial deposits.	Fletcher Bank Grit (sandstone) bedrock. No documented overlying superficial deposits.	Fletcher Bank Grit (sandstone) bedrock. No documented overlying superficial deposits.	Lower Kinderscout Grit (sandstone) bedrock. Overlain by alluvium (clay, silt, sand and gravel).	Fletcher Bank Grit (sandstone) bedrock. Overlain by head (clay, silt, sand and gravel).
Summary of bedrock hydrogeology	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.

Test A Potential to cause deterioration of current WFD Ecological Potential

WFD elements		WFD status		Effect of Works components on WFD elements						
		Current status	Status objective	Oldham Road Overbridge Reconstruction	New Oldham Road Footbridge Works	Standedge Canal Tunnel Bywash Underbridge Replacement MVL3/39B	MVL3/13 (diversion of utilities bridge)	Stamford Road Bridge Works MVL3/13	Armit Road Site Compound	Heyrod Hall Storage Compound
Quantitative impacts	Quantitative impacts cover: Saline or other intrusions of poor-quality water due to groundwater abstraction, the impact on the ecological status of surface water bodies, the impact on the condition of groundwater dependent terrestrial ecosystems, and the impact on the groundwater body water balance.	Good	Good (2027)	Groundwater body is at outcrop at this location with no low permeability geology protecting the groundwater body. All earthworks have been designed and will be undertaken in accordance with relevant guidance and industry best practice. No likely anticipated effect from Order Scheme element as shallow works unlikely to affect groundwater flow pathways.					Groundwater body is not at outcrop at this location with low permeability superficial geology protecting the groundwater body. All earthworks have been designed and will be undertaken in accordance with relevant guidance and industry best practice. No likely anticipated effect from Order Scheme element as shallow works unlikely to affect groundwater flow pathways.	
Chemical impacts	Chemical impacts cover pollution concentrations, quality impact on groundwater abstractions, impact on the chemical & ecological status of surface water bodies, nutrient concentration impact on GWDTEs, Drinking Water Protected Areas and a General quality assessment.	Poor	Good (2027)	Groundwater body is at outcrop at this location with no low permeability geology protecting the groundwater body. Assuming industry standard pollution controls are implemented during construction/operation no measurable change to the groundwater body is anticipated.					Groundwater body is not at outcrop at this location with low permeability superficial geology protecting the groundwater body. Increased areas of hardstanding may increase surface water runoff and enter the groundwater body. Assuming industry standard pollution controls are implemented during construction/operation no measurable change to the groundwater body is anticipated.	

Test B Potential to prevent future attainment of Good Ecological Potential

RNAG element	Description	Order Scheme impact on RNAG
Drinking Water Protected Area	Point source of Private sewage treatment from domestic general public	No impact on water body's ability to achieve 'Good' status for this Quality Element. Additional mitigation not required.
	Diffuse source of Poor nutrient management from agricultural and rural land management	
	Diffuse source of Poor livestock management from agricultural and rural land management	
Trend Assessment	Diffuse source of Poor nutrient management from agriculture and rural land management	
	Diffuse source of Septic tanks from domestic general public	
	Diffuse source of Poor livestock management from agriculture and rural land management.	

Manchester and East Cheshire Carboniferous Aquifers

Water body summary

WFD water body type	Groundwater body
WFD water body ID	GB41202G102900
WFD water body name	Manchester and East Cheshire Carboniferous Aquifers

Works components

Works component	Scout East Laydown Compound	Scout East Car Park Compound	Scout East Access Compound	Relocated Mossley Station West Site Compound	Manchester Road, Mossley Site Compound	Heron Lane Site Compound	Saddleworth Old Railway Tunnel site compound	Ward Lane site compound	Lineside fencing access from Oldham Road
Location (Structure ID and/or NGR)	SD 97397 01437	SD 97405 01478	SD 97401 01568	SD 97356 02528	SD 97385 02384	SD 97877 03547	SE 00095 06850	SE 00299 07530	SD 99425 05171
Description	Site compound and drainage works. Below ground works include excavation/earthworks. Depth below ground of the proposed works are unknown.	Earthworks from Andrew Street to create a suitable access route and for ground stability of the railway embankment. Depth below ground of the proposed works are unknown.	Diversion of utilities bridge into Stamford Road Bridge, which requires excavation on the highway to install the diverted utility pipe. Minor earthworks required. Depth below ground of the proposed works are unknown.	Site compound with new access on the western side of the Mossley Station relocation site. Earthworks include possible retaining structures, drainage, excavation and fill. Depth below ground of the proposed works are unknown.	Site compound with access widening onto Manchester Road. Below ground works include excavation and earthworks installation. Depth below ground of the proposed works are unknown.	Site compound with works to Heron Lane to create passing places and a parking area. Below ground works include excavation and earthworks installation. Soakaway or attenuation tanks may be used. Depth below ground of the proposed works are unknown.	Site compound for access with temporary RRAP with associated earthworks and tree removal. Depth below ground of the proposed works are unknown.	Site compound with associated access and earthworks. Depth below ground of the proposed works are unknown.	Creation of a new access from Oldham Road and earthworks as well as tree removal to create a suitable access route. Depth below ground of the proposed works are unknown.
Summary of local geology (geology at 1 in 50 scale)	Fletcher Bank Grit (sandstone) bedrock. No documented overlying superficial deposits.	Marsden Formation (mudstone and siltstone), Fletcher Bank Grit (sandstone) bedrock. No documented overlying superficial deposits.	Fletcher Bank Grit (sandstone) bedrock. No documented overlying superficial deposits.	Fletcher Bank Grit (sandstone), Marsden Formation (mudstone and siltstone) bedrock. No documented overlying superficial deposits.	Fletcher Bank Grit (sandstone), Marsden Formation (mudstone and siltstone). Upper Kinderscout Grit (sandstone) bedrock. No documented overlying superficial deposits.	Lower Kinderscout Grit (sandstone) bedrock. No documented overlying superficial deposits.	Hebden Formation (mudstone and siltstone). No documented overlying superficial deposits.	Shale Grit (sandstone). No documented overlying superficial deposits.	Lower Kinderscourt Grit (sandstone) bedrock. No documented overlying superficial deposits.
Summary of bedrock hydrogeology	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.

Test A Potential to cause deterioration of current WFD Ecological Potential

WFD elements		WFD status		Effect of Works components on WFD elements							
		Current status	Status objective	Scout East Laydown Compound	Scout East Car Park Compound	Scout East Access Compound	Relocated Mossley Station West Site Compound	Manchester Road, Mossley Site Compound	Heron Lane Site Compound	Saddleworth Old Railway Tunnel site compound	Ward Lane site compound
Quantitative impacts	Quantitative impacts cover: Saline or other intrusions of poor-quality water due to groundwater abstraction, the impact on the ecological status of surface water bodies, the impact on the condition of groundwater dependent terrestrial ecosystems, and the impact on the groundwater body water balance.	Good	Good (2027)	Groundwater body is at outcrop at this location with no low permeability geology protecting the groundwater body. All earthworks have been designed and will be undertaken in accordance with relevant guidance and industry best practice. No likely anticipated effect from Order Scheme element as shallow works unlikely to affect groundwater flow pathways.							
Chemical impacts	Chemical impacts cover pollution concentrations, quality impact on groundwater abstractions, impact on the chemical & ecological status of surface water bodies, nutrient concentration impact on GWDTEs, Drinking Water Protected Areas and a General quality assessment.	Poor	Good (2027)	Groundwater body is at outcrop at this location with no low permeability geology protecting the groundwater body. Increased areas of hardstanding may increase surface water runoff and enter the groundwater body. Assuming industry standard pollution controls are implemented during construction/operation no measurable change to the groundwater body is anticipated.							

Test B Potential to prevent future attainment of Good Ecological Potential

RNAG element	Description	Order Scheme impact on RNAG
Drinking Water Protected Area	Point source of Private sewage treatment from domestic general public	No impact on water body's ability to achieve 'Good' status for this Quality Element. Additional mitigation not required.
	Diffuse source of Poor nutrient management from agricultural and rural land management	
	Diffuse source of Poor livestock management from agricultural and rural land management	
Trend Assessment	Diffuse source of Poor nutrient management from agriculture and rural land management	
	Diffuse source of Septic tanks from domestic general public	
	Diffuse source of Poor livestock management from agriculture and rural land management.	

Manchester and East Cheshire Carboniferous Aquifers

Water body summary

WFD water body type	Groundwater body
WFD water body ID	GB41202G102900
WFD water body name	Manchester and East Cheshire Carboniferous Aquifers

Works components

Works component	Drainage and lineside fencing canal side in Uppermill	Brownhill Lane Compound	Sam Road Car Park Compound	Diggle Welfare, Rail hub and Office Compound	Scout West Laydown Compound	Grandpa Green's Site Compound 2	Grandpa Green's Site Compound	Diggle Access and Diversion Route
Location (Structure ID and/or NGR)	SD 99497 05483	SD 99871 06534	SE 00686 08026	SE 00598 07868	SD 97264 01203	SE 00386 07687	SE 00372 07637	SE 00779 08133
Description	Works to enable lineside fencing installation and a culvert into the Huddersfield Narrow Canal. Includes excavation to install new culvert from rail side to canal. Depth below ground of the proposed works are unknown.	Site compound with associated access and earthworks. Below ground works include excavation and earthworks installation. Soakaway or attenuation tanks may be used. Depth below ground of the proposed works are unknown.	Site compound with associated access and earthworks. Below ground works include excavation and earthworks installation. Soakaway or attenuation tanks may be used. Depth below ground of the proposed works are unknown.	Site compound and associated earthworks. (Full planning application to be progressed ahead of the TWAO subject to instruction from NR). Below ground works include excavation and earthworks installation. Depth below ground of the proposed works are unknown.	Laydown area and associated earthworks. Below ground works include excavation/earthworks. Depth below ground of the proposed works are unknown.	Site compound with associated access and earthworks. Below ground works include excavation and earthworks installation. Soakaway or attenuation tanks may be used. Depth below ground of the proposed works are unknown.	Site compound with associated access and earthworks. Below ground works include excavation and earthworks installation. Soakaway or attenuation tanks may be used. Depth below ground of the proposed works are unknown.	New access road to provide a temporary diversion and associated earthworks, to the north east of Standedge Canal Tunnel's western portal. Depth below ground of the proposed works are unknown.
Summary of local geology (geology at 1 in 50 scale)	Lower Kinderscout Grit (sandstone) bedrock. Partially overlain by alluvium (clay, silt, sand and gravel).	Lower Kinderscout Grit (sandstone), Hebden Formation (mudstone and siltstone) bedrock. Partially overlain by till.	Shale Grit (sandstone). Alluvium (clay, silt, sand and gravel) mapped at the south of compound.	Shale Grit (sandstone). Alluvium (clay, silt, sand and gravel) through centre of compound.	Marsden Formation (mudstone and siltstone) bedrock. No documented overlying superficial deposits.	Shale Grit (sandstone). No documented overlying superficial deposits.	Shale Grit (sandstone). No documented overlying superficial deposits.	Shale Grit (sandstone), Hebden Formation (mudstone and siltstone). No documented overlying superficial deposits.
Summary of bedrock hydrogeology	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.	Water bearing strata. Secondary A aquifer. No local groundwater level data available, assume groundwater is at surface.

Test A Potential to cause deterioration of current WFD Ecological Potential

WFD elements		WFD status		Effect of Works components on WFD elements							
		Current status	Status objective	Drainage and lineside fencing canal side in Uppermill	Brownhill Lane Compound	Sam Road Car Park Compound	Diggle Welfare, Rail hub and Office Compound	Scout West Laydown Compound	Grandpa Green's Site Compound 2	Grandpa Green's Site Compound	Diggle Access and Diversion Route
Quantitative impacts	Quantitative impacts cover: Saline or other intrusions of poor-quality water due to groundwater abstraction, the impact on the ecological status of surface water bodies, the impact on the condition of groundwater dependent terrestrial ecosystems, and the impact on the groundwater body water balance.	Good	Good (2027)	Groundwater body is partially at outcrop at this location with no low permeability geology protecting parts of the groundwater body. All earthworks have been designed and will be undertaken in accordance with relevant guidance and industry best practice. No likely anticipated effect from scheme element as shallow works unlikely to affect groundwater flow pathways.				Groundwater body is at outcrop at this location with no low permeability geology protecting the groundwater body. All earthworks have been designed and will be undertaken in accordance with relevant guidance and industry best practice. No likely anticipated effect from scheme element as shallow works unlikely to affect groundwater flow pathways.			
		Poor	Good (2027)	Groundwater body is partially at outcrop at this location with no low permeability superficial geology protecting the groundwater body. Increased areas of hardstanding may increase surface water runoff and enter the groundwater body. Assuming industry standard pollution controls are implemented during construction/operation no measurable change to the groundwater body is anticipated.				Groundwater body is at outcrop at this location with no low permeability superficial geology protecting the groundwater body. Increased areas of hardstanding may increase surface water runoff and enter the groundwater body. Assuming industry standard pollution controls are implemented during construction/operation no measurable change to the groundwater body is anticipated.			
Chemical impacts	Chemical impacts cover pollution concentrations, quality impact on groundwater abstractions, impact on the chemical & ecological status of surface water bodies, nutrient concentration impact on GWDTEs, Drinking Water Protected Areas and a General quality assessment.										

Test B Potential to prevent future attainment of Good Ecological Potential

RNAG element	Description	Order Scheme impact on RNAG
Drinking Water Protected Area	Point source of Private sewage treatment from domestic general public	No impact on water body's ability to achieve 'Good' status for this Quality Element. Additional mitigation not required.
	Diffuse source of Poor nutrient management from agricultural and rural land management	
	Diffuse source of Poor livestock management from agricultural and rural land management	
Trend Assessment	Diffuse source of Poor nutrient management from agriculture and rural land management	
	Diffuse source of Septic tanks from domestic general public	
	Diffuse source of Poor livestock management from agriculture and rural land management.	

