HyNet North West Hydrogen Pipeline

Delivering clean growth

Appendix 7A
Detailed Water Environment Baseline Information

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1. Introduction

1.1.1 As part of the works in support of the HyNet North West Hydrogen Pipeline Preliminary Environmental Information Report (PEIR), this technical appendix presents detailed results of the desktop studies to establish the existing water environment baseline conditions within the **Chapter 7: Water Environment**. The detailed information on water dependent Water Framework Directive (WFD) classifications, conservation sites and water resources within this report informs the summary of baseline information and the assessment of potential effects in **Chapter 7 (Section 7.6)**. Where water bodies have subsequently been determined to not be likely to be affected by the Project they have been screened out of further assessment and the basis for screening is provided. Background information on the approach to the assessment, including the spatial Preliminary Order Limits, Study Area and Zone of Influence (ZoI) definition (**Figure 7.1**) and data gathering methodologies are also presented in **Chapter 7 (Section 7.4),** of the PEIR for reference.

1.1.2 All surface and groundwater WFD waterbody catchments intersected by the Preliminary Order Limits are included within this Appendix with limited screening. The surface WFD waterbody catchments define the Study Area, whilst the groundwater WFD waterbody catchments extend beyond this and are spatially more extensive.

1.1.3 Discharge data was collected for within the Preliminary Order Limits only and not screened further. For conservation sites and surface water abstractions data has been collected within the ZoI and then screened based on possible hydraulic pathway connection to the Preliminary Order Limit area, and/or whether conservation sites are truly water-dependent.

1.1.4 Groundwater and public water supply abstractions data were collected for the Study Area and screened based on likely hydrologic pathway connection to the Preliminary Order Limits. A conservative approach to screening was adopted with only abstractions over 1.5 km from the Preliminary Order Limits, and/ or with a significant hydraulic divide between the two, being screened out.

2. Water Framework Directive classifications

2.1.1 The current (2019 Cycle 2) status of all Water Framework Directive (WFD) water bodies intersecting the water environment Preliminary Order Limits are presented in the following tables. WFD river water bodies are included in **Table 2.1**, WFD Groundwater bodies in **Table 2.2**, WFD Canal water bodies in **Table 2.3,** WFD Transitional water bodies in **Table 2.4**, and WFD Lake water bodies in **Table 2.5.** All WFD water bodies presented in the above tables have been screened in for further assessment within **Chapter 7: Water environment and Appendix C: Preliminary Water Framework Directive Compliance Assessment.** The locations of the WFD water bodies are shown in **Figures 7.2 and 7.5**. All WFD data has been downloaded from the Environment Agency Catchment Data Explorer Website.

2.1.2 The WFD waterbodies are presented on the basis that they intersect, or are closely adjacent to, the Preliminary Order Limits, meaning that they have a potential hydrological or hydrogeological connection to the Project. Three WFD Lake water bodies within the Study Area have been screened out on the basis that while they are all within the Study Area, they are all located in excess of 1.5 km upstream of the Project and therefore are unlikely to be affected.

2.1.3 In addition to the WFD water bodies screened in for assessment, there are three 'non-reportable' water bodies within the Study Area. Whilst these are not routinely monitored by the Environment Agency and have no associated WFD status associated with them, they make up a portion of the water environment Study Area. Their location is shown in **Figure 7.2** and the approach to their assessment is covered within **Chapter 7.**

Table 2.1 WFD River water bodies across the water environment Study Area (2019 Cycle 2 data)

River Water body (Water Body ID)	Hydromorphological designation	Ecological Status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
Sinderland Brook (GB 112069060980)	Not designated artificial or heavily modified.	Poor Status.	Poor. Fish – Moderate. Invertebrates – Poor. Macrophytes and Phytobenthos Combined – Moderate.	Moderate. Acid Neutralising Capacity – High. Ammonia (Phys-Chem) – Good. Dissolved Oxygen – Moderate. Phosphate – Poor. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Good. Morphology – Good.		High. Chromium (VI) – High. Copper – High Triclosan – High.	Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, PFOS and PBDE). Priority substances – Good.	Urbanisation – urban development, Sewage discharge (continuous), Misconnections, Flood protection structures, Barriers – ecological discontinuity, Unknown (pending investigation).	Moderate by 2015. Disproportionately expensive: Disproportionate burdens; Technically infeasible: No known technical solution is available.
Whittle Brook (Mersey Estuary) (GB112069060990)	Heavily modified.	Moderate Potential.	Moderate. Invertebrates – Moderate.	Moderate. Ammonia (Phys-Chem) – Good. Dissolved Oxygen – High. Phosphate – Moderate. Temperature – High. pH – High.	Supports Good.	Mitigation Measures Assessment – Moderate or less.	High. Triclosan- High.	Fail. Priority hazardous substances – Fail (due to benzo(g-h-i)perylene, Mercury and its Compounds and PBDE). Priority substances – Good.	Poor nutrient management, Urbanisation-urban development, Poor soil management, Misconnections, Flood protection-structures, Unknown (pending investigation), and Other.	Good by 2027 Disproportionately expensive: Disproportionate burdens;
Sutton Brook (GB112069061170)	Heavily Modified.	Moderate Potential.	Moderate. Invertebrates – Moderate. Macrophytes and	Moderate. Ammonia (Phys-Chem) – Moderate. Dissolved Oxygen – High.	Supports Good.	Mitigation Measures Assessment – Moderate or less.	High. Triclosan – High.	Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds and	Contaminated land, Sewage discharge (continuous) Urbanisation,	Good by 2027 Disproportionately expensive:

River Water body (Water Body ID)	Hydromorphological designation	Ecological Status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
			Phytobenthos Combined – Moderate.	Phosphate – Moderate. Temperature – High. pH – High.				PBDE). Priority substances – Good.	urban development, Other.	Disproportionate burdens;
Weaver (Dane to Frodsham) (GB 112068060500)	Heavily modified.	Moderate Potential.	Bad. Invertebrates – Bad. Macrophytes and Phytobenthos Combined – Good.	Moderate. Acid Neutralising Capacity – High. Ammonia (Phys-Chem) – Moderate. Dissolved Oxygen – High. Phosphate – Poor. Temperature – High. pH – High.	Supports Good.	Mitigation Measures Assessment – Moderate or less.	High. 2,4-dichlorophenol - High. 2,4-dichlorophenoxy acetic acid - High. Arsenic – High. Chlorothalonil – High. Chromium (VI) – High. Copper – High. Iron – High. Linuron – High. Manganese – High. Triclosan – High. Zinc - High.	Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds and PBDE). Priority substances – Fail (due to Cypermethrin).	Poor soil management, Poor nutrient management, Poor livestock management, Urbanisation – urban development, Farm/site infrastructure, Sewage discharge (continuous), Trad/Industry discharge, Inland boating and structures, Unknown (pending investigation, and Other.	Good by 2027 Disproportionately expensive: Disproportionate burdens;
Mersey/ Manchester Ship Canal (Irwell/Manchester Ship Canal to Bollin) (GB112069061011)	Heavily Modified.	Moderate Potential.	Bad. Invertebrates – Bad. Macrophytes and Phytobenthos Combined – Good.	Moderate. Acid Neutralising Capacity – High. Ammonia (Phys-Chem) – Moderate. BOD – Good. Dissolved Oxygen – Bad. Phosphate – Poor.	Supports Good.	Mitigation Measures Assessment – Moderate or less.	High. Chromium (VI) – High. Copper – High. Mecoprop – High. Triclosan – High. Zinc- High.	Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, PFOS, PBDE and Tributylin Compounds). Priority substances	Contaminated water body bed sediments, Sewage discharge (intermittent), inland boating and structures, and unknown (pending investigation)	Moderate by 2015 Disproportionately expensive: Unfavourable balance of costs and benefits; Technically infeasible: Cause of adverse impact unknown;

River Water body (Water Body ID)	Hydromorphological designation	Ecological Status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
				Temperature – High. pH – High.				– Fail (due to Cypermethrin).		Technically infeasible: No known technical solution is available
Weaver (Marbury Brook to Dane) (GB112068060460)	Not designated artificial or heavily modified.	Poor Status.	Poor. Fish – Poor. Invertebrates – Poor. Macrophytes and Phytobenthos Combined – Poor.	Moderate. Acid Neutralising Capacity – High. Ammonia (Phys-Chem) – Moderate. Dissolved Oxygen – Good. Phosphate – Poor. Temperature – High. pH – High.	Supports Good.			Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, PFOS and PBDE). Priority substances – Good.	Poor soil management, Poor nutrient management, Poor pesticide management, Poor livestock management, Urbanisation – urban development, Sewage discharge (continuous), Farm/site infrastructure, Barriers – ecological discontinuity, Recreation, Unknown (pending investigation).	Good by 2027 Disproportionately expensive: Disproportionate burdens.
Bollin (Ashley Mill to Manchester Ship Canal) (GB112069061382)	Heavily modified.	Moderate Potential.	Poor. Fish – Poor. Invertebrates – Good.	Moderate. Ammonia (Phys-Chem) – Good. Dissolved Oxygen – Good. Phosphate – Poor. Temperature –	Supports Good.	Mitigation Measures Assessment – Moderate or less.		Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds and PBDE). Priority substances – Good.	Urbanisation – urban development, Poor livestock management, Sewage discharge (continuous), Other, Unknown	Moderate by 2015. Disproportionately expensive: Disproportionate burdens; Technically infeasible: Cause of adverse impact unknown;

River Water body (Water Body ID)	Hydromorphological designation	Ecological Status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
				High. pH – High.					(pending investigation).	Technically infeasible: No known technical solution is available.
Dane (Wheelock to Weaver) (GBGB112068060470)	Not designated artificial or Heavily modified.	Moderate Status.	Moderate. Fish – Moderate. Invertebrates – Good. Macrophytes and Phytobenthos Combined – Moderate.	Moderate. Acid Neutralising Capacity – High. Ammonia (Phys-Chem) – High. Dissolved Oxygen – High. Phosphate – Poor. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good. Morphology – Supports Good.		High. Chlorothanonil – High. Copper – High. Diazinon – High. Dimethoate – High. Iron – High. Manganese – High. Pendimethalin – High. Zinc – High.	Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds and PBDE). Priority substances – Fail (due to Cypermethrin).	Urbanisation – Urban development, Riparian/in-river activities (inc bankside erosion), Poor livestock management, Poor soil management, Poor nutrient management, Farm/site infrastructure, sewage discharge continuous), Unknown (pending investigation).	Moderate by 2027 Disproportionately expensive: Disproportionate burdens; Technically infeasible: No known technical solution is available.
Gale Brook (GB112068060430)	Not designated artificial or heavily modified	Moderate Status.	Moderate. Invertebrates – Good. Macrophytes and Phytobenthos combined – Moderate.	Moderate. Ammonia (Phys-Chem) – Good. Dissolved Oxygen – High. Phosphate – Moderate. Temperature – High. pH – High.	Supports Good. Hydrological Regime – High. Morphology – Supports Good.		High. Permethrin – High.	Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds and PBDE). Priority substances – Good.	Poor livestock management, Poor soil management, Poor nutrient management, Farm/site infrastructure.	Good by 2027, Disproportionately expensive: Disproportionate burdens.

River Water body (Water Body ID)	Hydromorphological designation	Ecological Status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
Puddinglake Brook (GB112068060220)	Not designated artificial or heavily modified	Poor Status.	Poor. Invertebrates – Poor. Macrophytes and Phytobenthos combined – Moderate.	Moderate. Ammonia (Phys-Chem) – Poor. Dissolved Oxygen – Poor. Phosphate – Poor. Temperature – High. pH – High.	Supports Good. Hydrological Regime – High. Morphology – Supports Good.			Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds and PBDE). Priority substances – Good.	Riparian/in-river activities (inc bankside erosion), Poor nutrient management, Poor livestock management, Farm/site infrastructure, Private sewage treatment, Unknown (pending investigation).	Good by 2027, Disproportionately expensive: Disproportionate burdens.
Bogart Brook (GB112068060540)	Not designated artificial or heavily modified.	Moderate Status.	Moderate. Fish – High. Invertebrates – Good. Macrophytes and Phytobenthos combined – Moderate.	Moderate. Ammonia (Phys-Chem) – High. BOD – High. Dissolved Oxygen – High Phosphate – Moderate. Temperature – High. pH – High.	Supports Good. Hydrological Regime – High. Morphology – Supports Good.			Fail Priority hazardous substances – Fail (due to Mercury and its Compounds, PFOS and PBDE). Priority substances – Good.	Poor soil management, Poor nutrient management, Poor livestock management, Sewage discharge (continuous), Farm/site infrastructure.	Good by 2027 Technically infeasible: Cause of adverse impact unknown.
Cuddington Brook (Source to Crowton Brook) (GB112068060480)	Not designated artificial or heavily modified.	Moderate Status.	Moderate. Invertebrates – Moderate. Macrophytes and Phytobenthos combined – Moderate.	Moderate. Ammonia (Phys-Chem) – Moderate. Dissolved Oxygen – High. Phosphate – Poor. Temperature –	Supports Good. Hydrological Regime – High. Morphology – Supports Good.			Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, PFOS and PBDE). Priority substances – Good.	Poor soil management, Sewage discharge (continuous), Unknown (pending investigation).	Good by 2021.

River Water body (Water Body ID)	Hydromorphological designation	Ecological Status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
				High. pH – High.						
Dog Clog Brook (including Mill Brook) (GB112069060690) -**Screened out**, on the basis of only the very upslope part of the WFD catchment being within the Preliminary Order Limits, and this area of catchment being entirely covered by a short section of motorway, which will not be affected by the Project and will have an existing drainage system which will also not be affected. As such it is not considered that there is likely to be any affect on this water body and it is **screened out** of further assessment.	Heavily Modified.	Moderate Potential.	Moderate. Invertebrates – Moderate. Macrophytes and Phytobenthos combined – High.	Moderate. Ammonia (Phys-Chem) – Moderate. Dissolved Oxygen – Good. Phosphate – Good. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good.	Mitigation Measures Assessment – Moderate or less.	High. Triclosan – High.	Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, PFOS and PBDE). Priority substances – Fail (due to Cypermethrin).	Poor soil management, Poor nutrient management, Abandoned Mine, Private sewage treatment, Incidents, Unknown (pending investigation, And Other.	Good by 2027 Disproportionately expensive: Disproportionate burdens.
Wade Brook (GB112068060370)	Not designated artificial or heavily modified.	Poor Status.	Poor. Invertebrates - Moderate Macrophytes and Phytobenthos	Moderate. Ammonia (Phys-Chem) – Bad. Dissolved Oxygen – High. Phosphate – Moderate.	Supports Good. Hydrological Regime – Supports Good. Morphology – Supports Good.		Moderate. 2, 4-dichlorophenol – High. Arsenic – High. Copper – High. Cyanide – Moderate	Fail. Priority hazardous substances – Fail (due to Cadmium and its Compounds, Mercury and its Compounds, and	Poor soil management, Contaminated land, Poor livestock management, Poor nutrient management, Farm/site	Good by 2027 Disproportionately expensive: Disproportionate burdens; Technically infeasible: Cause

River Water body (Water Body ID)	Hydromorphological designation	Ecological Status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
			combined – Poor.	Temperature – Good. pH – High.			Iron – High. Manganese – High. Phenol – Moderate. Zinc – High.	PFOS). Priority substances – Fail (due to Trichloroethylene).	infrastructure, Landfill leaching, Trade/industry discharge, North American signal crayfish, Unknown (pending investigation).	of adverse impact unknown.
Peckmill Brook, Hoolpool Gutter at Ince Marshes. Water Body (GB112068060330)	Not designated artificial or heavily modified.	Moderate Status.	Moderate. Fish – Moderate. Macrophytes and Phytobenthos combined – Moderate.	Moderate. Acid neutralising capacity – High. Ammonia (Phys-Chem) – Poor. Dissolved Oxygen – High. Phosphate – Poor. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good.		High. Zinc – High.	Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, and PBDE). Priority substances – Good.	Urbanisation – urban development, Poor soil management Poor livestock management, Contaminated land, Sewage discharge (continuous), Farm/site infrastructure, Unknown (pending investigation).	Poor by 2015 Disproportionately expensive: Disproportionate burdens; Technically infeasible: No known technical solution is available.
Forge (Kidd) Brook (GB112068060400) **-Screened out.** While this WFD catchment comes within 100m of the Preliminary Order Limits at its closest point, it is not in direct hydrological	Not designated artificial or heavily modified.	Poor Status.	Poor. Invertebrates – Moderate. Macrophytes and Phytobenthos combined – Poor.	Moderate. Ammonia (Phys-Chem) – High. Dissolved Oxygen – High. Phosphate – Poor. Temperature – High. pH – High.	Supports Good. Hydrological Regime – High. Morphology - Supports Good.		High. Copper – High. Zinc – High.	Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, and PBDE). Priority substances – Good.	Poor Soil management, Poor nutrient management, Contaminated land, Farm/site infrastructure.	Good by 2027 Disproportionately expensive: Disproportionate burdens.

River Water body (Water Body ID)	Hydromorphological designation	Ecological Status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
connection with the boundary. There are no waterbodies linking to the catchment and no overland flowpaths. It is therefore **screened out** of further assessment.										
Arley Brook (Source to Gale Brook) (GB112068060420)	Not designated artificial or heavily modified.	Moderate Status.	Moderate Invertebrates - High Macrophytes and Phytobenthos combined – Moderate	Moderate Ammonia (Phys-Chem) – Moderate Dissolved Oxygen – Moderate Phosphate – Good Temperature – High pH – High	Supports Good Hydrological Regime – High Morphology - Supports Good			Fail Priority hazardous substances – Fail (due to Mercury and its Compounds, and PBDE) Priority substances – Good	Poor Soil management, Poor nutrient management, Poor livestock management, Private sewage treatment,	Good by 2027 Disproportionately expensive: Disproportionate burdens. Technically infeasible: Cause of adverse impact unknown
Keckwick Brook (GB112068060520)	Heavily modified.	Moderate Potential.	Bad. Fish – Poor. Invertebrates – Bad.	Moderate. Ammonia (Phys-Chem) – High. Dissolved Oxygen – High. Phosphate – Poor. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good.	Mitigation measures assessment – Moderate or less.	High. Copper – High. Iron – High. Manganese – High. Zinc – High.	Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, and PBDE). Priority substances – Good.	Poor livestock management, Urbanisation – urban development, Trade/industry discharge Barriers – ecological discontinuity Ecological recovery time – surface waters, Unknown (pending investigation, Other.	Good by 2027 Disproportionately expensive: Disproportionate burdens.

River Water body (Water Body ID)	Hydromorphological designation	Ecological Status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
Cogshall Brook (GB112068060510)	Not designated artificial or heavily modified.	Moderate Status.	Good. Invertebrates – High. Macrophytes and Phytobenthos combined – Good.	Moderate. Ammonia (Phys-Chem) – Good. Dissolved Oxygen – High. Phosphate – Moderate. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good. Morphology – Supports Good.		High. Copper – High. Zinc – High.	Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, and PBDE). Priority substances – Good.	Poor livestock management, Poor soil management, Poor nutrient management, Farm/site infrastructure.	Good by 2027 Technically infeasible: Cause of adverse impact unknown.
Mersey (Bollin confluence to Howley Weir) including Padgate Brook (GB112069061012)	Heavily modified.	Moderate Potential.	Bad. Invertebrates – Bad. Macrophytes and Phytobenthos combined – Good.	Moderate. Acid Neutralising Capacity – High. Ammonia (Phys-Chem) – Moderate. Dissolved Oxygen – Moderate. Phosphate – Poor. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good.	Moderate. Mitigation measures assessment – moderate or less.	High. 2, 4-dichlorophenoloxyacetic acid – High. Arsenic – High. Chlorothanonil – High. Chromium (VI) – High. Copper – High. Diazinon – High. Dimethoate – High. Iron – High. Manganese – High. Pendimethalin – High. Permethrin – High. Toluene – High. Zinc – High.	Fail. Priority hazardous substances – Fail (due to Benzo(g-h-i)perylene, Mercury and its Compounds, PFOS, PBDE and Tributylin Compounds). Priority substances – Fail (due to Cypermethrin). Other pollutants – Good.	Contaminated water body bed sediments, Sewage discharge (continuous), Inland boating and structures, Flood protection – structures, Urbanisation – urban development, Unknown (pending investigation).	Moderate by 2015 Disproportionately expensive: Disproportionate burdens; Disproportionately expensive: Unfavourable balance of costs and benefits; Technically infeasible: No known technical solution is available.
Sankey Brook (Hardshaw Brook	Heavily modified.	Moderate Potential.		Ammonia (Phys-Chem) – Poor.	Supports Good.	Moderate. Mitigation	High. Arsenic – High.	Fail. Priority hazardous	Other, Unknown	Good by 2027 Disproportionately

River Water body (Water Body ID)	Hydromorphological designation	Ecological Status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
to Rainford Brook) (GB112069061180)				BOD – High. Dissolved Oxygen – Bad. Phosphate – Good. Temperature – High. pH – High.	Hydrological Regime – Supports Good.	measures assessment – moderate or less.	Triclosan – High.	substances – Fail (due to Mercury and its Compounds, and PBDE). Priority substances – Fail (due to Cypermethrin).	(pending investigation).	expensive: Disproportionate burdens.
Hardshaw (Windle) Brook (GB112069061210)	Heavily modified.	Moderate Potential.	Moderate. Invertebrates – Moderate. Macrophytes and Phytobenthos combined – Moderate.	Moderate. Ammonia (Phys-Chem) – High. Dissolved Oxygen – High. Phosphate – Moderate. Temperature – High. pH – High.	Supports Good. Hydrological Regime – Supports Good.	Moderate. Mitigation measures assessment – moderate or less.	High. Triclosan – High.	Fail. Priority hazardous substances – Fail (due to Benzo(g-h-i)perylene, Mercury and its Compounds, and PBDE). Priority substances – Good.	Urbanisation – urban development, Poor nutrient management, Contaminated land, Misconnections, Surface water abstraction, Other, Unknown (pending investigation).	Good by 2027 Disproportionately expensive: Disproportionate burdens.

Table 2.2 WFD Groundwater bodies across the water environment Study Area (2019 cycle 2)

WFD Groundwater Catchment (Water Body ID)	Overall Water Body classification	Quantitative Status Element	Chemical (GW) status	Supporting elements, Trend Assessment	Issues preventing the attainment of Good Status	Objectives
Wirral and West Cheshire Permo-Triassic Sandstone Aquifers (GB41101G202600)	Poor.	Good.	Poor (due to Chemical Drinking Water Protected Area being Poor, all other elements at Good).	Upward trend.	Poor Nutrient management, Poor Livestock management Forestry Private Sewage treatment, Other (water industry	Good by 2027 Disproportionately expensive: Disproportionate burdens.

WFD Groundwater Catchment (Water Body ID)	Overall Water Body classification	Quantitative Status Element	Chemical (GW) status	Supporting elements, Trend Assessment	Issues preventing the attainment of Good Status	Objectives
					and domestic general public).	
Weaver and Dane Quaternary Sand and Gravel Aquifers (GB41202G991700)	Poor.	Good.	Poor (due to Chemical Drinking Water Protected Area, Chemical GWDTEs test and General Chemical Test being Poor, all other elements at Good).	Upward trend.	Poor nutrient management, Suspect Data, and unknown (pending investigation).	Good by 2027 Technically infeasible: Cause of adverse impact unknown.
Manchester and East Cheshire Permo-Triassic Sandstone Aquifers (GB41201G101100)	Poor.	Poor (due to Quantitative Saline Intrusion being Poor, all other elements at Good).	Poor (due to Chemical Saline Intrusion Being Poor, all other elements at Good).	Upward trend.	Saline and other intrusion, unknown (pending investigation).	Good by 2021.
Lower Mersey Basin and North Merseyside Permo-Triassic Sandstone Aquifers (GB41201G101700)	Poor.	Poor (due to Quantitative Saline intrusion being poor, all other elements at Good).	Poor (all elements at Poor apart from Chemical GWDTEs test being Good).	Upward trend.	Poor nutrient management, Poor pesticide management, Saline or other intrusion, Private sewage treatment, Unknown (pending investigation).	Good by 2027 Technically infeasible: Cause of adverse impact unknown.
Sankey and Glaze Carboniferous Aquifers (GB41202G100100)	Poor.	Good.	Poor (due to Chemical Dependent Surface Water Body Status and General Chemical Test being at Poor, all other elements at Good).	No trend.	Abandoned mines.	Poor by 2015 Disproportionately expensive: Disproportionate burdens.

Table 2.3 WFD Canal water bodies across the water environment Study Area (2019 Cycle 2 data)

Canal Water body (Water Body ID)	Ecological Status / potential	Physico-chemical quality elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
Weaver Navigation (canal section Frodsham to Weston Point Docks) (GB71210545)	Moderate.		Moderate. Mitigation Measures Assessment – Moderate or less.		Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, and PBDE). Priority substances – Fail (due to Trichloromethane). Other pollutants – Good.	Atmospheric deposition, Natural conditions other, Other, Unknown (pending investigation).	Good by 2027 Disproportionately expensive: Disproportionate burdens.
Bridgewater Canal (GB71210001)	Moderate.		Moderate. Mitigation Measures Assessment – Moderate or less.		Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, and PBDE). Priority substances – Good.	Other.	Good by 2027 Technically infeasible: Cause of adverse impact unknown.
Manchester Ship Canal (GB71210004)	Moderate.		Moderate. Mitigation Measures Assessment – Moderate or less.	High. Arsenic – High. Copper – High. Permethrin – High. Zinc – High.	Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, PBDE and Tributyltin Compounds). Priority substances – Good. Other pollutants – Good.	Other. Landfill leaching, Sewage discharge (intermittent), Sewage discharge (continuous), Other.	Good by 2027 Technically infeasible: Cause of adverse impact unknown.

Canal Water body (Water Body ID)	Ecological Status / potential	Physico-chemical quality elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
Sankey Canal (GB71210055)	Moderate.	Moderate. pH – Moderate.			Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, and PBDE). Priority substances – Good.	Other.	Good by 2027. Disproportionately expensive: Disproportionate burdens.
Trent and Mersey Canal, summit to Preston Brook Tunnel (GB71210247)	Moderate.	High. pH – High.	Moderate. Mitigation Measures Assessment – Moderate or less.	High. Arsenic – High. Chromium (VI) – High. Copper – High. Iron – High. Manganese – Moderate. Zinc – High.	Fail. Priority hazardous substances – Fail (due to Mercury and its Compounds, and PBDE). Priority substances – Good.	Contaminated water body bed sediments, Other, Unknown (pending investigation).	Good by 2027 Technically infeasible: Cause of adverse impact unknown.

Table 2.4 WFD Transitional water bodies across the water environment Study Area (2019 Cycle 2 data)

Transitional Water body (Water Body ID)	Hydromorphological designation	Ecological Status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
Mersey (GB531206908100)	Heavily modified.	Moderate.	Poor. Invertebrates – Moderate. Macroalgae – Moderate. Phytoplankton – Moderate.	Moderate. Dissolved Inorganic Nitrogen – Moderate. Dissolved Oxygen –	Supports Good. Hydrological Regime – Supports Good.	Moderate. Mitigation Measures Assessment – Moderate or less.	High. 2, 4-dichlorophenol – High. 2, 4-dichlorophenoloxyacetic acid – High. Arsenic – High Chlorothanonil – High.	Fail. Priority hazardous substances – Fail (due to Benzo(g-h-i)perylene, Heptachlor and cis-	Contaminated land, Contaminated water body bed sediments, Other, Unknown	Good by 2027 Technically infeasible: No known technical

Transitional Water body (Water Body ID)	Hydromorphological designation	Ecological Status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Specific pollutants	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives
				Good.			Chromium (VI) – High. Copper – High. Diazinon – High. Dimethoate – High. Iron – High. Linuron – High. Mecoprop – High. Pendimethalin – High. Permethrin – High. Phenol – High. Toluene – High. Triclosan – High. Zinc – Moderate.	Heptachlor epoxide, Mercury and its Compounds, and PBDE). Priority substances – Fail (due to Dichlorvos (Priority)). Other pollutants – Good.	(pending investigation).	solution is available.

Table 2.5 WFD Lake water bodies across the water environment Study Area (2019 Cycle 2 data)

Lake Water body (Water Body ID)	Hydromorphological designation	Ecological Status / potential	Biological quality elements	Physico-chemical quality elements	Hydromorphological supporting elements	Supporting elements (surface water)	Chemical status	Reasons for not Achieving Good / Reasons for deterioration	Objectives	Potential connection to the Preliminary Order Limits
Tabley Mere (GB31232960)	Heavily modified.	Moderate.	Moderate. Macrophytes and Phytobenthos Combined – Moderate. Phytoplankton – Moderate.	Moderate. Salinity – High. Total Nitrogen – Poor. Total Phosphorus – Bad.	Supports Good. Hydrological regime – High.	Moderate. Expert judgement – Moderate. Mitigation measures assessment – Moderate or Less.	Fail. Priority hazardous substances – Fail (due to Mercury and its compounds and PBDE). Priority substances – Good.	Poor livestock management, Private sewage treatment, Sewage discharge (continuous), Other.	Moderate by 2015. Technically infeasible: Cause of adverse impact unknown; Technically infeasible: No known technical solution is available.	As this lake is located around 7km upstream of the Preliminary Order Limits it is not considered likely to be affected. **Screened out.**

Petty Pool (GB31233344)	Heavily modified.	Moderate.	Moderate. Phytoplankton – Moderate.	Moderate. Salinity – High. Total Nitrogen – Poor. Total Phosphorus – Moderate.	Supports Good. Hydrological regime – High.	Moderate. Expert judgement – Moderate Mitigation measures assessment – Moderate or Less.	Fail. Priority hazardous substances – Fail (due to Mercury and its compounds and PBDE). Priority substances – Good.	Poor livestock management, Poor nutrient management, Poor soil management, Farm/site infrastructure, and Other.	Moderate by 2015 Technically infeasible: Cause of adverse impact unknown; Technically infeasible: No known technical solution is available.	As the lake is located approximately 1.2km upstream of the Preliminary Order Limits it is not considered likely to be affected. **Screened out.**
Appleton Reservoir (GB31232665)	Heavily Modified.	Moderate.	Moderate. Phytoplankton – Moderate.	Moderate. Salinity – High. Total Nitrogen – Poor. Total Phosphorus – Moderate.		Moderate. Expert judgement – Moderate Mitigation measures assessment – Moderate or Less.	Fail. Priority hazardous substances – Fail (due to Mercury and its compounds and PBDE). Priority substances – Good and its Compounds and PBDE). Priority substances – Good.	Forestry, Private sewage treatment, Unknown (pending investigation), and Other.	Moderate by 2015 Technically infeasible: Cause of adverse impact unknown; Technically infeasible: No known technical solution is available.	As the lake is located approximately 2.4km upstream of the Preliminary Order Limits it is not considered likely to be affected. **Screened out.**

3. Conservation Sites

3.1.1 This section provides details of designated conservation sites where hydrological or hydrogeological conditions support water dependent features. A complete list of other designated sites (including non-water dependent sites) is provided in **Chapter 5: Biodiversity**. Within the ZoI, the designations of conservation sites considered within this assessment are Sites of Special Scientific Interest (SSSI), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Local Wildlife Sites (LWS), Local Geological Sites (LGS). No Special Areas of Conservation (SAC) or National Nature Reserves (NNR) were identified within the ZoI. **Table 2.1** provides details on the sites and their water dependency and are presented in **Chapter 7: Water environment** and within **Figure 7.2.**

3.1.2 A number of conservation sites within the ZoI have been screened out of further assessment on the basis that they have no hydrological or hydrogeological component to their designation. These are as follows: Hatton's Hey Wood, Whittle's Corner and Bank Rough (SSSI), Frodsham Railway and Road Cuttings (SSSI, LGS), Red Brow Cutting (SSSI), Beechmill Wood and Pasture (SSSI), Daresbury Firs (SSSI), Reeve Court Woodland and Grassland (LWS) and Green Wood[1] (LWS).

3.1.3 Within **Table 2.1** further screening is included to determine whether or not the Conservation sites are likely to be affected by the Project, and are therefore screened in for further assessment, or whether, due to factors such as distance, being sufficiently upslope/upstream or having no direct hydraulic connection, they have been deemed unlikely to be affected and are therefore screened out.

[1] No name provided in LWS information supplied by Halton Borough Council. The name of this LWS has therefore been assumed, pending clarification from the council.

Table 3.1 Conservation sites within the water environment ZoI with potential water dependency or geological features of interest

ID	Conservation Site (Designation)	Description and Hydrological or Hydrogeological Dependency	Potential connection to the Preliminary Order Limits
C1	Flood Brook Clough (SSSI)	Flood Brook Clough is an Ancient Semi-Natural Woodland and Site of Special Scientific Interest located in the Beechwood area of Runcorn. It is a mixed broadleaved woodland in a long deep steep-sided valley with Flood Brook running through the bottom. It has been relatively undisturbed due to the steep slopes and is one of the best examples in Cheshire of clough woodland on keuper marl. It has rich assemblages of wet woodland plants including two nationally rare species (thin spiked wood sedge and wood barley).	The site is located approximately 520m upstream of the Preliminary Order Limits. It is therefore unlikely to be affected. **Screened out.**
C2	Woolston Eyes (SSSI)	Woolston Eyes consists of four large lagoons used for depositing dredgings from the Manchester Ship Canal. Recently used lagoons contain large expanses of open water and mud, whilst older lagoons are dry and at various stages of colonisation by vegetation. The site is still operational with the lagoons being used for deposition of dredgings in a rotation of approximately 15 years, maintaining the range of wetland habitats across the site. Woolston Eyes supports a breeding bird assemblage of lowland open waters and their margins, including nationally important numbers of black-necked grebe, gadwall and pochard.	Located approximately 150m from the Preliminary Order Limits and in direct hydrological connection with the Manchester Ship Canal. **Screen in.**
C3	Mersey Estuary (SSSI,	The Mersey Estuary is an internationally important site for wildfowl and consists of large areas of intertidal sand and mudflats. The site also includes an area of reclaimed marshland, salt-marshes,	The Mersey Estuary is downstream of the whole Project and directly intersects the

ID	Conservation Site (Designation)	Description and Hydrological or Hydrogeological Dependency	Potential connection to the Preliminary Order Limits
	RAMSAR, SPA, LWS)	brackish marshes and boulder clay cliffs with freshwater seepages. The Manchester Ship Canal forms part of the southern boundary of the site and separates a series of pools from the main estuary. These pools together with Hale Marsh are important roosting sites for wildfowl and waders at high tide. Throughout the winter the estuary supports large numbers of wildfowl and waders. The birds feed on the rich invertebrate fauna of the intertidal sediments as well as plants and seeds from the salt-marsh and adjacent agricultural land. The estuary is also a valuable staging post for migrating birds in spring and autumn.	Preliminary Order Limits. **Screen in.**
C4	Oxmoor Wood (LNR)	A small area of woodland, also including grassland, reedbeds and tall herbs, but also includes areas open water. It is identified as an important nesting site for herons.	Located approximately 1.5km downstream of the Preliminary Order Limits and while it is in direct hydrological connection, given the distance it is considered unlikely to be affected. **Screened out.**
C5	Runcorn Hill (LNR)	Runcorn Hill is a unique combination of Formal Park and Local Nature Reserve at the heart of industrial Runcorn. Runcorn Hill LNR includes the largest area of lowland heath in North Cheshire. The woodlands, ponds and scrub along with its geological structure complete a unique mosaic of habitat.	This site is located approximately 350m to the west and around 4.5m upslope of the nearest part of the Preliminary Order Limits. It is therefore unlikely to be affected. **Screened out.**

ID	Conservation Site (Designation)	Description and Hydrological or Hydrogeological Dependency	Potential connection to the Preliminary Order Limits
C6	Thatto Heath Meadows (LNR, LWS)	A remnant meadow system within the urban area. The meadows consist of unimproved grassland with a network of hedgerows. A stream valley runs through the site. The principal habitats are stream, neutral grassland, and hedgerows.	The site bounds the Preliminary Order Limits, and is in direct hydrological connection with an ordinary watercourse which intersects them. It therefore has the potential to be affected. **Screen in.**
C7	Dorchester Park (LNR)	A wooded park area containing ordinary watercourses, adjacent to Sandymoor Pool.	The site is located approximately 850m downstream of the Preliminary Order Limits, however it is not in direct hydrological connection and therefore is unlikely to be affected. **Screened out.**
C8	Murdishaw Wood And Valley (LNR)	The steep sided valley has been wooded for hundreds of years. Part of this ancient semi natural woodland still remains, there are trees which over 100 years old, including oak, birch and beech, with some ash, alder, cherry, hawthorn, pine and sycamore. There are also areas of younger woodland, open glades, five ponds, wildflower-strewn meadows and a meandering stream that flows along the valley bottom. The wood provides an important habitat for local bats, foxes and squirrels as well as a wide range of bird species. The ground flora,	While this site is just over 1km to the north of the Western Corridor, there is a topographic divide which means that there is no hydrological connection. It is also 2km to the west of the Northern Corridor, though it is on the opposite side of a steep sided valley. On this basis it is

ID	Conservation Site (Designation)	Description and Hydrological or Hydrogeological Dependency	Potential connection to the Preliminary Order Limits
		in particular, attracts a number of butterflies and other insects, and dragonflies flit by close to the ponds and streams.	considered unlikely to be affected. **Screened out.**
C9	Marshall's Arm, Hartford (LNR)	Marshall's Arm LNR was designated a Local Nature Reserve in 1998, for wildlife and people. The arm refers to the arm of the river that is in the reserve, they are the old meanders of the river before it was straightened for the movement of salt in the 1700s.	The site is located 700m downstream of the Preliminary Order Limits and in direct hydrological connection with the River Weaver, it is therefore considered that there is potential for it to be affected. **Screen in.**
C10	Colliers Moss Common (LNR)	This local nature reserve was designated in 2005 and is the site of disused colliery spoil heap. Remnants of the mossland on which the spoil heap sits remain around the perimeter of the site. A diverse range of habitats has developed on the site including acid and neutral grassland and heath whilst lagoons provide wetland habitats and breeding sites for a number of dragonfly and damselfly species.	The site is located 2.6km to the east of the Preliminary Order Limits on a tributary of Sutton Mill Brook. Its location on a tributary means that it is not in direct hydraulic connection with the Project. It is therefore unlikely to be affected. **Screened out.**
C11	Wigg Island (LNR)	A nature reserve comprised of former saltmarsh situated between the River Mersey and the Manchester Ship Canal. The nature reserve contains a lake and ordinary watercourse.	While the Site is on the banks of the River Mersey and Manchester Ship canal it is 3.4km downstream of the Preliminary Order Limits. It is

ID	Conservation Site (Designation)	Description and Hydrological or Hydrogeological Dependency	Potential connection to the Preliminary Order Limits
			therefore unlikely to be affected by upstream impacts. **Screened out.**
C12	The Bongs and the Gorse (LWS)	An area of mature woodland containing both the Mag Brook and Bradley Brook in addition to a number of ponds.	The Site is located 1.1km to the west of the Preliminary Order Limits and is situated downslope. However there is no direct hydrological connection with none of the ordinary watercourses extending up to the Preliminary Order Limits and the M56 forming a barrier to overland flow. It therefore is unlikely to be affected by the Project. **Screened out.**
C13	Old mineral line Lea Green (LWS)	A mix of grasslands established on colliery spoil. Scrub has developed since the site was first designated. Recent management work has occurred that has enabled vegetation colonisation to begin again. Contains the upstream reach of Pendlebury Brook, which supports a population of Water Voles.	The site is located 750m downstream of the Preliminary Order Limits. The Pendlebury Brook intersects the Preliminary Order Limits upstream and the site is in direct hydrological connection with the Project. It therefore has the potential to be

ID	Conservation Site (Designation)	Description and Hydrological or Hydrogeological Dependency	Potential connection to the Preliminary Order Limits
			affected by the Project. **Screen in.**
C14	Pendlebury Brook (SJ493920-SJ515914) (LWS)	A stretch of Pendlebury Brook which supports a population of Water Voles.	The site is within the Preliminary Order Limits. **Screen in.**
C15	Whittle Brook (SJ521902-SJ535896) (LWS)	A stretch of Whittle Brook which provides habitat for Water voles.	The site is located 610m to the east of the Preliminary Order Limits which are within the upslope catchment of the Brook. It therefore has the potential to be affected by the Project. **Screen in.**
C16	Ansdells Wood (LWS)	A semi-natural oak woodland containing a number of nationally and regionally important habitats including neutral grassland, a pond and marsh. The site contains English bluebell and a number of regionally and locally important species.	Part of the site is within the Preliminary Order Limits. **Screen in.**
C17	Ravenhead Ponds (LWS)	This site is part of the Ravenhead Greenway and consists of two ponds with swamp and marginal vegetation. The site contains a	The site is located 400m to the south-east of the Preliminary Order Limits and it is

ID	Conservation Site (Designation)	Description and Hydrological or Hydrogeological Dependency	Potential connection to the Preliminary Order Limits
		number of regionally and locally important species including several species associated with coastal habitats.	hydrologically linked to via an ordinary watercourse which flows from within the Preliminary Order Limits, into the ponds. **Screen in.**
C18	Dog Kennel Plantation (LWS)	A mature plantation of beech, oak and sycamore providing an important bird breeding site. Contains standing water.	The site is located 2.4km to the east of the Preliminary Order Limits and there appears to be no direct hydraulic connection. It is therefore considered to be unlikely to be affected. **Screened out.**
C19	Booth's Wood (LWS)	Deciduous plantation woodland dominated by Sycamore, Horse chestnut and Oak. A stream and ditch network runs through the woodland. The large pond in the south of the woodland is surrounded by rush pasture providing wetland habitat for a number of locally rare wetland species.	The site is located 3km to the east of the Preliminary Order Limits and there appears to be no direct hydraulic connection. It is therefore considered to be unlikely to be affected. **Screened out.**
C20	Mersey Valley Golf Course (LWS)	A golf course containing a number of ponds and hedgerows. The ponds provide habitat for the regionally important species Rigid	The site is located 730m to the north of the Preliminary Order Limits and there appears to be no direct hydraulic connection. It

ID	Conservation Site (Designation)	Description and Hydrological or Hydrogeological Dependency	Potential connection to the Preliminary Order Limits
		Hornwort, whilst the hedgerows contain a number of locally rare species.	is therefore considered to be unlikely to be affected. **Screened out.**
C21	Sherdley Park (LWS)	The Victorian designed Sherdley Park includes several areas of relict woodlands, wetlands and ponds. The European protected species great crested newt is present and the site offers an excellent variety of habitats for plants, invertebrates, amphibians and mammals.	The site is located 118m from the Preliminary Order Limits at its closest point, and is also downslope. However, there is no direct hydrological connection and the A570 is likely to intercept any surface runoff. It therefore has the potential to be affected by the Project. **Screened out.**
C22	Sutton Manor (LWS)	An extensive mosaic of grassland, scrub, woodland and wetland habitats created on a former colliery. The site is owned and managed by the Forestry Commission and has a large expanse of developing plantation woodland intersected by grasslands. The geology of the site means it retains water and a large amount of wetland and marsh present. Water voles have been recorded on site and the site is well populated with bird species.	The site abuts the Preliminary Order Limits. **Screen in.**

ID	Conservation Site (Designation)	Description and Hydrological or Hydrogeological Dependency	Potential connection to the Preliminary Order Limits
C23	Sinderland Green[2] (LWS)	Areas of riparian woodland and cultivated agricultural land. Contains Red Brook transitioning to Sinderland Brook.	This site is within the Preliminary Order Limits. **Screen in.**
C24	Partington Nature Reserve**Error! Bookmark not defined.** (LWS)	Two modified watercourses present. Woodland area with a disused railway line running through the centre.	This site is within the Preliminary Order Limits. **Screen in.**
C25	Dunham Massey (LWS) **Error! Bookmark not defined.**	Area of primarily cultivated agricultural land containing an ordinary watercourse, the River Bollin and the Old Bollin. Sparse trees present.	This site is within the Preliminary Order Limits. **Screen in.**
C26	Lymm Dam Complex (LWS)	Riparian woodland corridor with Kaylane Brook passing through and feeding into Lymm Dam (the name of the dam and the lake).	The site is located 1.3km to the west of the Preliminary Order Limits, but upslope and not in direct hydraulic connection. It is unlikely to be affected. **Screened out.**

[2] LWS names not provided by Trafford Council. These names have been derived from the surrounding areas and will need to be clarified with Trafford Council.

ID	Conservation Site (Designation)	Description and Hydrological or Hydrogeological Dependency	Potential connection to the Preliminary Order Limits
C27	Moore Nature Reserve (LWS)	Extensive nature reserve containing woodland, multiple lakes and ponds. The area is noted for bitterns and herons.	This site is within the Preliminary Order Limits. **Screen in.**
C28	Moss Side Farm (LWS)	Site containing areas of woodland, grassland and agricultural fields with multiple ordinary watercourses.	This site is within the Preliminary Order Limits. **Screen in.**
C29	Morton Marsh and Upper Moss Side Fields (LWS)	Sparse woodland and rough grassland containing multiple ponds and an ordinary watercourse.	This site is within the Preliminary Order Limits. **Screen in.**
C30	Gatewarth Landfill Site (LWS)	Rough grassland and scrub with sparse trees over former landfill containing several ponds.	The site is situated on the banks of the River Mersey and the St Helens Canal, opposite the Preliminary Order Limits, and also downstream of the boundary along Penketh Brook. It therefore has the potential to be affected. **Screen in.**
C31	Helsdale Wood & Newhey's Plantation (LWS)	Mature broadleaved deciduous woodland with dense areas of rhododendron. Helsdale Brook passes through it and the site contains two ponds.	The site is located over 1km to the west of the Preliminary Order Limits and does not appear to be in direct hydrological connection.

ID	Conservation Site (Designation)	Description and Hydrological or Hydrogeological Dependency	Potential connection to the Preliminary Order Limits
			It is therefore unlikely to be affected. **Screened out.**
C32	Rows Wood (LWS)	An area of woodland with an ordinary watercourse passing through it.	This site is within the Preliminary Order Limits. **Screen in.**
C33	St Helens Canal (East) (LWS)	A canal with some areas of adjacent woodland.	This section of the canal is upstream of the Preliminary Order Limits and is therefore unlikely to be affected. **Screened out**.
C34	St Helens Canal (West) (LWS)	A canal with some areas of adjacent woodland.	This section of the canal is within the Preliminary Order Limits. **Screen in.**
C35	Pitts Heath Wood**Error! Bookmark not defined.** (LWS)	Pitts Heath Wood is part of the 'Moore Meadows' nature reserve and is a wet woodland. The site contains a range of habitats from carr woodland, open water ponds, seasonal pools and is criss-crossed by a network of open drains.	This site is within the Preliminary Order Limits. **Screen in.**
C36	Flood Brook Clough**Error! Bookmark not defined.** (LWS)	Containing the downstream reach of the Flood Brook, downstream of the SSSI, but upstream of Clifton Lagoons, this area has been planted as a wildflower meadow.	This site is within the Preliminary Order Limits. **Screen in.**

ID	Conservation Site (Designation)	Description and Hydrological or Hydrogeological Dependency	Potential connection to the Preliminary Order Limits
C37	Mort's Wood**Error! Bookmark not defined.** (LWS)	An area of woodland containing a pond and ordinary watercourse.	This site is encircled and adjacent to the Preliminary Order Limits, with the watercourse flowing from an area within the boundary. **Screen in.**
C38	Halton Moss (LWS)	An area of mixed woodland containing surrounded by watercourses on all sides.	This site is within the Preliminary Order Limits. **Screen in.**

4. Water resources

4.1 Licensed abstractions

4.1.1 The EA has provided information for licensed abstractions. Within the Study Area 163 licensed abstractions have been screened as having a potential hydrological pathway to the Preliminary Order Limits and are shown within **Table 4.1, Table 4.2, Table 4.3**. This includes 104 groundwater abstractions and 10 public water supply groundwater abstractions, as well as 49 surface water abstractions. There are no known private water supplies (PWS) within the study area.

4.1.2 The locations of the licenced abstractions are shown in **Figure 7.6**. The majority of surface water abstractions are located in the southern part of the ZoI around the wider Northwich area, with other clusters in the East Corridor centred around Heatley, the Northern Corridor centred around Warrington, and the Western Corridor centred around the Stanlow area of the Manchester Ship Canal. Groundwater abstractions are less clustered, with clusters around the Walton area of the Manchester Ship Canal located on the North Corridor Spur, Cuerdley on the North Corridor, and Great Budworth located between the South Corridor Spur and East Corridor.

4.1.3 There are multiple groundwater Source Protection Zones (SPZs) within the Preliminary Order Limits. This includes a continuous area of Total Catchment SPZ3 across the northern part of the Study Area, where they intersect the Preliminary Order Limits in places, and five Inner Protection Zones SPZ1 within the Study Area. The nearest SPZ1s to the Preliminary Order Limits are located at Daresbury and Higher Walton, approximately 250m and 480m from the Preliminary Order Limits respectively. Appropriate environmental measures have been embedded within **Section 7.7 of Chapter 7: Water Environment** to ensure the protection of these public water supplies (along with other licensed abstractions) during proposed works.

Table 4.1 Licensed groundwater abstractions within the water environment Study Area

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
A1	2569017028, Borehole at Peterhouse Farm, Gorsey Lane, Warburton	Duncan Priestner And Mark Priestner	372800, 389250	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	10000	Borehole located ~60m from the Preliminary Order Limits in the same geology (Triassic sandstone). **Screen in.**
A2	2569017026, Borehole At Broad Oak Farm, Warburton Lymm	H Booth & Son	372300, 390600	AGRICULTURE, General Farming & Domestic	15000	Borehole located ~680 m west from the Preliminary Order Limits in the same geology (Triassic sandstone) and located on river terrace/ blown sand superficial deposits. **Screen in.**
A3	2569017026, Borehole At Broad Oak Farm,Warburton Lymm	H Booth & Son	372300, 390600	AGRICULTURE, Vegetable Washing	15000	Borehole located ~680 m west from the Preliminary Order Limits in the same geology (Triassic sandstone) and

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						located on river terrace/ blown sand superficial deposits. **Screen in.**
A4	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 12	Solvay Interox Ltd	359570, 386060	INDUSTRY, Effluent/Slurry Dilution	7807300	Borehole located ~90m from the Preliminary Order Limits in the same geology (Triassic sandstone). **Screen in.**
A5	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 12	Solvay Interox Ltd	359570, 386060	INDUSTRY, Evaporative Cooling	7807300	Borehole located ~90m from the Preliminary Order Limits in the same geology (Triassic sandstone). **Screen in.**
A6	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 12	Solvay Interox Ltd	359570, 386060	INDUSTRY, Non-Evaporative Cooling	7807300	Borehole located ~90m from the Preliminary Order Limits in the same geology (Triassic

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						sandstone). **Screen in.**
A7	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 12	Solvay Interox Ltd	359570, 386060	INDUSTRY, Pollution Remediation	7807300	Borehole located ~90m from the Preliminary Order Limits in the same geology (Triassic sandstone). **Screen in.**
A8	NW/069/0024/005, AO Plant Wells	Solvay Interox Ltd	359633, 386125	INDUSTRY, Pollution Remediation	51100	Well located ~135m from the Preliminary Order Limits in the same geology (Triassic sandstone). **Screen in.**
A9	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 1	Solvay Interox Ltd	359953, 386039	INDUSTRY, Pollution Remediation	7807300	Borehole located ~240m upgradient from the Preliminary Order Limits in the same geology (Triassic sandstone). **Screen in.**

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
A10	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire - Well 11	Solvay Interox Ltd	360124, 386090	INDUSTRY, Evaporative Cooling	7807300	Borehole located ~420m upgradient from the Preliminary Order Limits in the same geology (Triassic sandstone). **Screen in.**
A11	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire - Well 11	Solvay Interox Ltd	360124, 386090	INDUSTRY, Effluent/Slurry Dilution	7807300	Borehole located ~420m upgradient from the Preliminary Order Limits in the same geology (Triassic sandstone). **Screen in.**
A12	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire - Well 11	Solvay Interox Ltd	360124, 386090	INDUSTRY, Non-Evaporative Cooling	7807300	Borehole located ~420m upgradient from the Preliminary Order Limits in the same geology (Triassic sandstone). **Screen in.**
A13	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire - Well 11	Solvay Interox Ltd	360124, 386090	INDUSTRY, Pollution Remediation	7807300	Borehole located ~420m upgradient from the Preliminary

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						Order Limits in the same geology (Triassic sandstone). **Screen in.**
A14	NW/069/0025/001/R01, Warrington Wolves Borehole	The Warrington Football Club Limited	360574, 388822	INDUSTRY, Spray Irrigation - Direct	2400	Borehole located ~1km from the Preliminary Order Limits on flat ground in the same geology (Triassic sandstone). **Screen in.**
A15	2569021019, EXCAV. INTO U/G STRATA AT CADDICK'S CLEMATIS NURSERY, LYMM	H Caddick	366000, 387600	AGRICULTURE, Spray Irrigation - Direct	905	Excavation located ~2.2km from the Preliminary Order Limits in the same geology (Triassic sandstone) located on superficial alluvium within an SPZ 3. **Screen in.**
A16	2569021019, Excav. into U/G Strata at Caddick's Clematis Nursery, Lymm	H Caddick	366000, 387600	OTHER POTABLE USES, Drinking, Cooking, Sanitary, Washing, (Small	905	Excavation located ~2.2km from the Preliminary Order Limits in the same

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
				Garden) - Household		geology (Triassic sandstone) located on superficial alluvium within an SPZ 3. **Screen in.**
A17	2569021018, Borehole at Lymm G.C., Whitbarrow Rd , Lymm	Lymm Golf Club	367850, 387890	INDUSTRY, Spray Irrigation - Direct	9092	Borehole located approximately 3.5 km northeast of the Preliminary Order Limits and although located on the Triassic sandstone and down hydraulic gradient there are hydraulic divides (rivers/ streams) separating the two. **Screened out.**
A18	2568002143, Well At New Hall Farm, Feeding A Hydraulic Ram At Davenham	The Misses Russell AlleN	366700, 370800	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	299	Borehole located over 1.5 km from the nearest Preliminary Order Limits and although located on the Triassic sandstone the area is covered in

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						till superficial deposits and hydraulic connection unlikely. **Screened out.**
A19	2568003040, Collecting Tank At Bridge Farm, Anderton,Northwich, Cheshire	G DONE	364800, 375600	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	841	A collection tank at Bridge farm, at Anderton, on till superficial deposits less than 50 m to the southwest of the Preliminary Order Limits. **Screen in.**
A20	2568003055, Well At Manor Farm, Anderton, Northwich, Cheshire	J & J Whalley	363500, 375900	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	236	A well at Manor farm on till superficial deposits less than 200 m to the southeast of the Preliminary Order Limits. **Screen in.**
A21	2568003069, Springs3 At Hield House Farm, Aston By Budworth, *15	J M Williamson	366700, 377400	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	5819	Spring on till superficial deposits issuing from higher ground to the north into a localised depression. The

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						Preliminary Order Limits is over 2.5 km to the southwest and therefore no hydraulic connectivity is possible. **Screened out.**
A22	2568003069, Springs3 At Hield House Farm, Aston By Budworth, North	J M Williamson	367400, 377700	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	5819	Spring on till superficial deposits issuing from higher ground to the north into a localised depression. The Preliminary Order Limits is over 2.5 km to the southwest and therefore no hydraulic connectivity is possible. **Screened out.**
A23	2568003069, Springs3 At Hield House Farm, Aston By Budworth, $55	J M Williamson	367100, 377700	AGRICULTURE, General Use Relating To Secondary	5819	Spring on till superficial deposits issuing from higher ground to the north into a localised

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
				Category (Medium Loss)		depression. The Preliminary Order Limits is over 2.5 km to the southwest and therefore no hydraulic connectivity is possible. **Screened out.**
A24	2568004025, Borehole At Blackstone Farm, Lower Whitley, Daresbury	P A Waterman	359800, 380800	AGRICULTURE, Fish Farm/Cress Pond Throughflow	4148	Borehole on till superficial deposits and Mercia Mudstone. The Preliminary Order Limits is approximately 930 m to the west and therefore hydraulic connectivity is possible unlikely. **Screened out.**
A25	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 2	Solvay Interox Ltd	359418, 385869	INDUSTRY, Pollution Remediation	7807300	Borehole within the Triassic Sandstone and on alluvial superficial deposits located within or close to the (less than 1 km) to the Preliminary

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						Order Limits and/ or within an SPZ. **Screen in.**
A26	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 2	Solvay Interox Ltd	359418, 385869	INDUSTRY, Effluent/Slurry Dilution	7807300	Borehole within the Triassic Sandstone and on alluvial superficial deposits located within or close to the (less than 1 km) to the Preliminary Order Limits and/ or within an SPZ. **Screen in**.
A27	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 2	Solvay Interox Ltd	359418, 385869	INDUSTRY, Evaporative Cooling	7807300	Borehole within the Triassic Sandstone and on alluvial superficial deposits located within or close to the (less than 1 km) to the Preliminary Order Limits and/ or within an SPZ. **Screen in**.

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
A28	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 2	Solvay Interox Ltd	359418, 385869	INDUSTRY, Non-Evaporative Cooling	7807300	Borehole within the Triassic Sandstone and on alluvial superficial deposits located within or close to the (less than 1 km) to the Preliminary Order Limits and/ or within an SPZ. **Screen in.**
A29	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 1	Solvay Interox Ltd	359953, 386039	INDUSTRY, Evaporative Cooling	7807300	Borehole within the Triassic Sandstone and on alluvial superficial deposits located within or close to the (less than 1 km) to the Preliminary Order Limits and/ or within an SPZ. **Screen in.**
A30	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 1	Solvay Interox Ltd	359953, 386039	INDUSTRY, Effluent/Slurry Dilution	7807300	Borehole within the Triassic Sandstone and on alluvial superficial deposits located within or close

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						to the (less than 1 km) to the Preliminary Order Limits and/ or within an SPZ. **Screen in.**
A31	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 1	Solvay Interox Ltd	359953, 386039	INDUSTRY, Non-Evaporative Cooling	7807300	Borehole within the Triassic Sandstone and on alluvial superficial deposits located within or close to the (less than 1 km) to the Preliminary Order Limits and/ or within an SPZ. **Screen in**.
A32	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 5	Solvay Interox Ltd	358842, 385841	INDUSTRY, Effluent/Slurry Dilution	7807300	Borehole within the Triassic Sandstone and on alluvial superficial deposits located within or close to the (less than 1 km) to the Preliminary Order Limits and/ or within an SPZ. **Screen in**.

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
A33	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 5	Solvay Interox Ltd	358842, 385841	INDUSTRY, Evaporative Cooling	7807300	Borehole within the Triassic Sandstone and on alluvial superficial deposits located within or close to the (less than 1 km) to the Preliminary Order Limits and/ or within an SPZ. **Screen in.**
A34	2569024024, 5 Boreholes At Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354700, 386500	POWER GENERATION, Boiler Feed	721848	Borehole within the Triassic Sandstone and on till superficial deposits located within or close to the (less than 1 km) to the Preliminary Order Limits. **Screen in.**
A35	2569024024, 5 Boreholes At Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354700, 386500	POWER GENERATION, General Use Relating To Secondary Category (Medium Loss)	721848	Borehole within the Triassic Sandstone and on till superficial deposits located within or close to the (less than1 km) to the

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						Preliminary Order Limits. **Screen in**.
A36	2569024024, 5 Boreholes At Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354600, 386600	POWER GENERATION, General Use Relating To Secondary Category (Medium Loss)	721848	Borehole within the Triassic Sandstone and on till superficial deposits located within or close to the (less than1 km) to the Preliminary Order Limits. **Screen in**.
A37	2569024024, 5 Boreholes At Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354600, 386600	POWER GENERATION, Boiler Feed	721848	Borehole within the Triassic Sandstone and on till superficial deposits located within or close to the (less than1 km) to the Preliminary Order Limits. **Screen in**.
A38	2569024024, 5 Boreholes At Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354800, 386700	POWER GENERATION, General Use Relating To Secondary	721848	Borehole within the Triassic Sandstone and on till superficial deposits located within or close to the (less than1 km) to the

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
				Category (Medium Loss)		Preliminary Order Limits. **Screen in**.
A39	2569024024, 5 Boreholes At Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354500, 386700	POWER GENERATION, General Use Relating To Secondary Category (Medium Loss)	721848	Borehole within the Triassic Sandstone and on till superficial deposits located within or close to the (less than1 km) to the Preliminary Order Limits. **Screen in**.
A40	2569024024, 5 Boreholes At Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354200, 386700	POWER GENERATION, Boiler Feed	721848	Borehole within the Triassic Sandstone and on till superficial deposits located within or close to the (less than1 km) to the Preliminary Order Limits. **Screen in**.
A41	2569024024, 5 Boreholes At Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354800, 386700	POWER GENERATION, Boiler Feed	721848	Borehole within the Triassic Sandstone and on till superficial deposits located within or close to the (less than1 km) to the

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						Preliminary Order Limits. **Screen in.**
A42	2569024024, 5 Boreholes At Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354200, 386700	POWER GENERATION, General Use Relating To Secondary Category (Medium Loss)	721848	Borehole within the Triassic Sandstone and on till superficial deposits located within or close to the (less than1 km) to the Preliminary Order Limits. **Screen in**.
A43	2569024024, 5 Boreholes At Fiddlers Ferry Power Station, Widnes	Keadby Generation Ltd	354500, 386700	POWER GENERATION, Boiler Feed	721848	Borehole within the Triassic Sandstone and on till superficial deposits located within or close to the (less than1 km) to the Preliminary Order Limits. **Screen in**.
A44	2569024027, B/hole at Gatewarth Ind. Estate, Sankey Bridges, Warrington	Hanson Quarry Products Europe Ltd	358870, 387240	INDUSTRY, Process Water	24500	Borehole within alluvial superficial deposits located approximately 380 m to the southeast of the Preliminary Order Limits(access

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						road), but separated by the Mersey as a hydraulic divide. **Screened out**.
A45	2569027004, Borehole Near Lh's Premises At Moorfield Road, Widnes	Byk Additives Ltd	352900, 387700	INDUSTRY, Process Water	560000	Borehole within the Triassic Sandstone and on till superficial deposits located over 1 km to the south of the Preliminary Order Limits. **Screened out.**
A46	2569025019, B/holes (3) AT Burtonwood, Warrington	Molson Coors Brewing Company (UK) Limited	355600, 393500	INDUSTRY, Process Water	250939	Borehole with SPZ but over 4.6 km east of the nearest Preliminary Order Limitswith associated river hydraulic divides between the two. **Screened out.**
A47	NW/069/0025/008, Burtonwood, Warrington, Cheshire	Thomas Hardy Burtonwood Ltd	355643, 393667	INDUSTRY, Process Water	120000	Borehole with SPZ but over 4.6 km east of the nearest Preliminary Order Limits with associated river

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						hydraulic divides between the two. **Screened out**.
A48	2568003039, Well At Aston Grange,Preston Brook	S & A Shaw	356600, 377700	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	500	Borehole within sand and gravel superficial deposits present, approximately 300 m to the south and slightly down hydraulic gradient of the Preliminary Order Limits(access road). **Screen in.**
A49	2568003088, Borehole At Premises At Rocksavage Works, Runcorn	INEOS Chlorvinyls Ltd	351600, 379900	INDUSTRY, General Cooling (Existing Licences Only) (Low Loss)	1991148	Borehole within the Triassic Sandstone where there are no superficial deposits present, approximately 520 m to the south and down hydraulic gradient of the Preliminary Order Limits. **Screen in.**

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
A50	NW/068/0004/001, Borehole 2	Daresbury SIC LLP	357748, 383276	POWER GENERATION, Heat Pump	305000	Borehole within the Triassic Sandstone and on till superficial deposits approximately 210 m to the south of the Preliminary Order Limits. **Screen in.**
A51	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 6	Solvay Interox Ltd	357772, 385506	INDUSTRY, Effluent/Slurry Dilution	7807300	Borehole within the Triassic Sandstone and on blown sand superficial deposits approximately 280 m to the north of the Preliminary Order Limits within flat ground. **Screen in.**
A52	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 6	Solvay Interox Ltd	357772, 385506	INDUSTRY, Non-Evaporative Cooling	7807300	Borehole within the Triassic Sandstone and on blown sand superficial deposits approximately 280 m to the north of the Preliminary Order

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						Limits within flat ground. **Screen in**.
A53	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 6	Solvay Interox Ltd	357772, 385506	INDUSTRY, Evaporative Cooling	7807300	Borehole within the Triassic Sandstone and on blown sand superficial deposits approximately 280 m to the north of the Preliminary Order Limits within flat ground. **Screen in**.
A54	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 6	Solvay Interox Ltd	357772, 385506	INDUSTRY, Pollution Remediation	7807300	Borehole within the Triassic Sandstone and on blown sand superficial deposits approximately 280 m to the north of the Preliminary Order Limits within flat ground. **Screen in**.
A55	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 5	Solvay Interox Ltd	358842, 385841	INDUSTRY, Non-Evaporative Cooling	7807300	Borehole within the Triassic Sandstone and on blown sand superficial deposits

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						just outside the northern edge of the Preliminary Order Limits within flat ground. **Screen in**.
A56	2569024013, Boreholes X 6 At Warrington And Penketh Cheshire- Well 5	Solvay Interox Ltd	358842, 385841	INDUSTRY, Pollution Remediation	7807300	Borehole within the Triassic Sandstone and on blown sand superficial deposits just outside the northern edge of the Preliminary Order Limits within flat ground. **Screen in**.
A57	NW/068/0006/012, B/hole No 7 At Thornton-Le-Moors & Stanlow, Ellesmere Port	University of Chester	344954, 375514	INDUSTRY, General Cooling (Existing Licences Only) (High Loss)	955636	Borehole within the Triassic Sandstone and approximately 280 m to the north of the Preliminary Order Limits within flat ground. **Screen in**.
A58	NW/068/0006/012, B/hole No 7 At Thornton-Le-Moors & Stanlow, Ellesmere Port	University of Chester	344954, 375514	INDUSTRY, General Cooling	955636	Borehole within the Triassic Sandstone and approximately 280

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
				(Existing Licences Only) (Low Loss)		m to the north of the Preliminary Order Limits within flat ground. **Screen in**.
A59	NW/068/0006/012, B/hole No 7 At Thornton-Le-Moors & Stanlow, Ellesmere Port	University of Chester	344954, 375514	INDUSTRY, Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services	955636	Borehole within the Triassic Sandstone and approximately 280 m to the north of the Preliminary Order Limits within flat ground. **Screen in**.
A60	NW/068/0006/012, B/hole No 7 At Thornton-Le-Moors & Stanlow, Ellesmere Port	University of Chester	344954, 375514	INDUSTRY, Process Water	955636	Borehole within the Triassic Sandstone and approximately 280 m to the north of the Preliminary Order Limits within flat ground. **Screen in**.
A61	NW/068/0006/012, B/hole No 7 At Thornton-Le-Moors & Stanlow, Ellesmere Port	University of Chester	344954, 375514	INDUSTRY, Boiler Feed	955636	Borehole within the Triassic Sandstone and approximately 280 m to the north of the Preliminary Order

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						Limits within flat ground. **Screen in**.
A62	NW/068/0006/012 B/hole No 7 At Thornton-Le-Moors & Stanlow, Ellesmere Port	University of Chester	344954375514	INDUSTRY, General Use Relating To Secondary Category (Medium Loss)	955636	Borehole within the Triassic Sandstone and approximately 280 m to the north of the Preliminary Order Limits within flat ground. **Screen in.**
A63	2568004012 Borehole At Weston Point, Runcorn	Inovyn Chlorvinyls Limited	350100380700	INDUSTRY, General Cooling (Existing Licences Only) (Low Loss)	1000120	Borehole within the Triassic Sandstone and approximately 1 km to the west of and down gradient of the Preliminary Order Limits. **Screen in.**
A64	2568002030, Well At Pear Tree Farm, Byley, Middlewich	W Bickerton	373800, 368600	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	286	Well located over 4 km from the Preliminary Order Limits. **Screened out**.

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
A65	2568002189, Lagoon At Rudheath Woods,Cranage, Knutsford	W & A Halman	373500, 370700	AGRICULTURE, Spray Irrigation - Direct	6819	Well located over 4 km from the Preliminary Order Limits. **Screened out**.
A66	2568003052, Well At Dairy Farm, High Legh, Knutsford	R H Cornwall Legh	369800, 383400	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	490	Well approximately 500 m to the southeast of the Preliminary Order Limits within flat ground. **Screen in**.
A67	2569017039/R02, Borehole	Manchester United Football Club Plc	374942, 391195	INDUSTRY, Spray Irrigation - Direct	95200	Borehole located over 1.6 km to the east of the Preliminary Order Limits. **Screened out**.
A68	2569021004, Claypit On Premises At Moss Side Lane Rixton	Thomas Mosedale & Sons Ltd	368700, 390800	INDUSTRY, Dust Suppression	2273	Borehole located over 4 km from the Preliminary Order Limits with hydraulic divides between. **Screened out**.
A69	2568001005, Well At Dalefords Farm, Sandiway	J R Leech & Co	360500, 369600	AGRICULTURE, General Use Relating To	4978	Well located over 1.5 km from the

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
				Secondary Category (Medium Loss)		Preliminary Order Limits. **Screened out.**
A70	2568001225, Lagoon in Underground Strata at Whitegate, nr. Northwich	J R Leech & Co	360300, 369800	AGRICULTURE, Spray Irrigation - Direct	18502	Lagoon located over 1.5 km from the Preliminary Order Limits. **Screened out.**
A71	2568001261, Borehole at Red Hall Farm, Leighton, nr. Crewe, Cheshire	MR T J Charlesworth	367959, 358372	AGRICULTURE, General Farming & Domestic	25200	Borehole located over 10 km from the Preliminary Order Limits. **Screened out.**
A72	2568002026, Well At Bank Farm, Stanthorne, Middlewich	F T Hague	368200, 367300	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	3319	Boreholes located over 1.8 km from the Preliminary Order Limits. **Screened out.**
A73	2568001139, Spring Fed Catchpit At Brook House Farm, Winsford, Cheshire	P & R Robinson	363600, 367800	AGRICULTURE, General Farming & Domestic	5810	Boreholes located over 4.5 km from the Preliminary Order Limits and separated by the River Weaver

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						hydraulic divide. **Screened out.**
A74	2568003028, Catchpit At Farm,Peel Hall,Kingsley,Frodsham	Sydney Sproston	353600, 375600	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	2491	Boreholes located over 4.5 km from the Preliminary Order Limits and separated by the River Weaver hydraulic divide. **Screened out.**
A75	2568003068, Spring Fed Catchpits 3 At Peel Hall, Kingsley, Frodsham	T and R Gleave And Sons	353900, 375800	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	5078	Boreholes located over 4.5 km from the Preliminary Order Limits and separated by the River Weaver hydraulic divide. **Screened out.**
A76	2568003068, Spring Fed Catchpits 3 At Peel Hall, Kingsley, Fro*14	T and R Gleave And Sons	353900, 376000	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	5078	Boreholes located over 4.5 km from the Preliminary Order Limits and separated by the River Weaver hydraulic divide. **Screened out.**

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
A77	2569024009, 2 Boreholes At Moss Bank, Widnes	Widnes Regeneration Ltd	353100, 385500	INDUSTRY, General Cooling (Existing Licences Only) (Low Loss)	210000	Boreholes located over 1.5 km from the Preliminary Order Limits. **Screened out.**
A78	2569024028/R01, Premises At Tanhouse Lane Widnes	Plasmor (Halton) Limited	352870, 385810	INDUSTRY, Dust Suppression	30000	Borehole located over 1.5 km from the Preliminary Order Limits. **Screened out.**
A79	2568001251, A Borehole At Pigwood, Fishpool Road, Northwich	N A Haworth	357100, 367500	AGRICULTURE, General Farming & Domestic	250	Borehole located over 5.5 km from the Preliminary Order Limits. **Screened out.**
A80	2568001001, Quarry At Relicks Moss, Delamere	Tarmac Limited	356628, 369773	INDUSTRY, Dust Suppression	1463489	Borehole located over 5 km from the Preliminary Order Limits. **Screened out**.
A81	2568001001, Quarry At Relicks Moss, Delamere	Tarmac Limited	356628, 369773	INDUSTRY, Mineral Washing	1463489	Borehole located over 5 km from the Preliminary Order Limits. **Screened out.**
A82	NW/068/0003/006, Crown Farm Quarry Stoneyford Lane Oakmere Cheshire	Tarmac Limited	357199, 370203	INDUSTRY, Mineral Washing	1000000	Borehole located over 4 km from the

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
						Preliminary Order Limits. **Screened out.**
A83	NW/068/0003/006, Crown Farm Quarry Stoneyford Lane Oakmere Cheshire	Tarmac Limited	357199, 370203	INDUSTRY, Dust Suppression	1000000	Borehole located over 4 km from the Preliminary Order Limits. **Screened out.**
A84	NW/068/0003/006, Crown Farm Quarry Stoneyford Lane Oakmere Cheshire	Tarmac Limited	357199, 370203	INDUSTRY, General Use Relating To Secondary Category (High Loss)	1000000	Borehole located over 4 km from the Preliminary Order Limits. **Screened out.**
A85	2568005004, Well On Land Adjacent To Well Lane, Mouldsworth	P Willis	350500, 371200	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	9710	Borehole located over 4.5 km from the Preliminary Order Limits. **Screened out**.
A86	2568005010, Spring At Manley Old Hall, Manley	G J Ford & Sons	350100, 372800	AGRICULTURE, General Use Relating To Secondary	4978	Borehole located over 3.5 km from the Preliminary Order Limits. **Screened out.**

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
				Category (Medium Loss)		
A87	2568005002, Borehole At Mersey Bank Farm, Hapsford, Helsby	Messrs B & G Leatherbarrow	347400, 374500	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	4978	Borehole within the Triassic Sandstone and approximately 800 m to the south of the Preliminary Order Limits within flat ground. **Screen in**.
A89	NW/068/0006/011, B/holes (22) At Thornton-Le-Moors & Stanlow, Ellesmere Port	Essar Oil (UK) Ltd	343500, 374800	INDUSTRY, Boiler Feed	8997914	Borehole within the Triassic Sandstone and approximately 1 km to the west of the Preliminary Order Limits within flat ground. **Screen in**.
A90	NW/068/0006/011, B/holes (22) At Thornton-Le-Moors & Stanlow, Ellesmere Port	Essar Oil (UK) Ltd	343500, 374800	INDUSTRY, Drinking, Cooking, Sanitary, Washing, (Small Garden) - Commercial/Industrial/Public Services	8997914	Borehole within the Triassic Sandstone and approximately 1 km to the west of the Preliminary Order Limits within flat ground. **Screen in**.

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
A91	NW/068/0006/011, B/holes (22) At Thornton-Le-Moors & Stanlow, Ellesmere Port	Essar Oil (UK) Ltd	343500, 374800	INDUSTRY, General Cooling (Existing Licences Only) (High Loss)	8997914	Borehole within the Triassic Sandstone and approximately 1 km to the west of the Preliminary Order Limits within flat ground. **Screen in**.
A92	NW/068/0006/011, B/holes (22) At Thornton-Le-Moors & Stanlow, Ellesmere Port	Essar Oil (UK) Ltd	343500, 374800	INDUSTRY, General Use Relating To Secondary Category (Medium Loss)	8997914	Borehole within the Triassic Sandstone and approximately 1 km to the west of the Preliminary Order Limits within flat ground. **Screen in**.
A93	NW/068/0006/011, B/holes (22) At Thornton-Le-Moors & Stanlow, Ellesmere Port	Essar Oil (UK) Ltd	343500, 374800	INDUSTRY, Process Water	8997914	Borehole within the Triassic Sandstone and approximately 1 km to the west of the Preliminary Order Limits within flat ground. **Screen in**.
A94	NW/068/0006/011, B/holes (22) At Thornton-Le-Moors & Stanlow, Ellesmere Port	Essar Oil (UK) Ltd	343500, 374800	INDUSTRY, General Cooling	8997914	Borehole within the Triassic Sandstone and approximately 1

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
				(Existing Licences Only) (Low Loss)		km to the west of the Preliminary Order Limits within flat ground. **Screen in**.
A95	2568003068, Spring Fed Catchpits 3 At Peel Hall, Kingsley, Fro$54	T and R Gleave And Sons	353900, 375500	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	5078	Boreholes located over 4.5 km from the Preliminary Order Limits and separated by the River Weaver hydraulic divide. **Screened out**.
A96	2569028024R01, Borehole At Alder Lane, Cronton, Widnes	Morphet	347880, 387920	INDUSTRY, General Use Relating To Secondary Category (Medium Loss)	34000	Borehole located over 4 km from the Preliminary Order Limits. **Screened out**.
A97	2569028024R01, Borehole At Alder Lane, Cronton, Widnes	Morphet	347880, 387920	OTHERPOTABLE USES, Water Bottling	34000	Borehole located over 4 km from the Preliminary Order Limits. **Screened out**.

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
A98	2568003045, Well At Fields Farm,Kermincham, Holmes Chapel	R & B Riddell	379900, 369300	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	4978	Borehole located over 10 km to the east of the Preliminary Order Limits. **Screened out**.
A99	2568002021, Wells 2 At Davenport Lane Farm, Marton	Worth Partners	383800, 368300	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	4146	Borehole located over 10 km to the east of the Preliminary Order Limits. **Screened out**.
A100	2568002021, Wells 2 At Davenport Lane Farm, Marton $23	Worth Partners	383900, 368300	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	4146	Borehole located over 10 km to the east of the Preliminary Order Limits. **Screened out**.
A101	2568003026, Well At Lower Gorseley Green Farm, Marton, Macclesfield	P Okill	384100, 368700	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	2489	Borehole located over 10 km to the east of the Preliminary Order Limits. **Screened out**.

ID	Licence No. and Name	Operator	NGR	Use	Annual Licence Limit (m^3/ year)	Potential connection to the Preliminary Order Limits
A102	2568003022, Well At Higher Gorseley Farm,Marton, Macclesfield	Alan Mosford	384500, 369200	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	166	Borehole located over 10 km to the east of the Preliminary Order Limits. **Screened out**.
A103	2568003018, Collecting Chamber At Northwood Farm, Siddington	Mr W A Venables	384700, 369700	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	830	Borehole located over 10 km to the east of the Preliminary Order Limits. **Screened out**.
A104	2568003019, Collecting Chamber At Carditch Farm, Siddington	Mrs M Carbutt	384700, 369700	AGRICULTURE, General Use Relating To Secondary Category (Medium Loss)	2157	Borehole located over 10 km to the east of the Preliminary Order Limits. **Screened out**.

Table 4.2 Licensed public groundwater abstractions within the water environment Study Area

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the PEIR Assessment
A105	2569025040, Well at Winwick P.S., Warrington	United Utilities Water Plc	SJ 60657 93117	PUBLIC WATER SUPPLY, Potable Water Supply - Direct	909200	Preliminary Order Limits are inside of SPZ3, but the borehole is located over 5km to northwest of the nearest Preliminary Order Limits and separated by a hydraulic divide (River Mersey). **Screened out.**
A106	2569021011, Boreholes (2) At Lymm Ps, Near The Dingle At Lymm	United Utilities Water Plc	SJ 68109 87000	PUBLIC WATER SUPPLY, Potable Water Supply - Direct	3318580	Preliminary Order Limits are outside of SPZ3 and located over 2km to northwest of the Preliminary Order Limits. Upgradient areas (recharge area) of the Preliminary Order Limits are located on till superficial deposits and over Mercia Mudstone. **Screened out.**
A107	2568004008, Boreholes (2) At Hough Lane, Walton, Warrington	United Utilities Water Plc	SJ 60170 84620 *	PUBLIC WATER SUPPLY, Potable Water Supply - Direct	1245604	Borehole is approximately 500 m to the east of the Preliminary Order Limits, which intersect SPZ3. **Screen in.**
A108	2569025039, Boreholes X 2 Forest Farm Pumping Station Burtonwood	United Utilities Water Plc	Unknown	PUBLIC WATER SUPPLY, Potable Water Supply - Direct	4150498	Preliminary Order Limits are inside of SPZ3, but the intersection of the two is approximately 6km to the south of the borehole and separated by hydraulic divide (Whittle Brook). **Screened out.**

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the PEIR Assessment
A109	2568004016, Borehole At Daresbury, Near Warrington	United Utilities Water Plc	SJ 57680 82040 *	PUBLIC WATER SUPPLY, Potable Water Supply - Direct	1246000	Preliminary Order Limits are inside of SPZ3, and the intersection of the two is less than 500 m to the northeast of the source. **Screen in.**
A110	2568001159, Borehole At Eddisbury, Northwich, Cheshire	United Utilities Water Plc	Unknown	PUBLIC WATER SUPPLY, Potable Water Supply - Direct	909200	Preliminary Order Limits are outside of SPZ3 and the borehole is located over 5.6 km to the southwest and up hydraulic gradient of the nearest Preliminary Order Limits. **Screened out**
A111	2568005008, Boreholes (2) At Helsby Pumping Station	United Utilities Water Plc	SJ 48341 74256	PUBLIC WATER SUPPLY, Potable Water Supply - Direct	454600	Preliminary Order Limits is outside of SPZ zone and located over approximately 1.5 km to southeast and up hydraulic gradient of the nearest Preliminary Order Limits. **Screened out**
A112	2569025037, B/H (1) & Wells (2), Eccleston Hill, St.Helens	United Utilities Water Plc	SJ 48810 94070 *	PUBLIC WATER SUPPLY, Potable Water Supply - Direct	1161503	Preliminary Order Limits are just inside of SPZ 3, although the intersection of the two is approximately 2km to the southeast of the borehole. **Screen in.**
A113	Bold Heath Borehole +	United Utilities Water Plc	SJ 53730 89110 *	PUBLIC WATER SUPPLY, Non-operational borehole	N/A	Borehole is 450m north of the Preliminary Order Limits and, although not operational, UU requested that the borehole be screened in. **Screen in**.

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the PEIR Assessment
A114	Broomedge Borehole +	United Utilities Water Plc	SJ 70760 86570 *	PUBLIC WATER SUPPLY, Non-operational borehole	N/A	Borehole is 600m northwest of the Preliminary Order Limits and, although not operational, UU requested that the borehole be screened in. **Screen in**.

Note * United Utilities (UU) confirmed locations whilst other locations are estimates based on believed SPZ locations. + After consultation with UU two non-operational boreholes (Bold Heath and Broomedge) were requested to be included within the assessment.

Table 4.3 Licensed surface water abstractions within the ZoI

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
A115	2569020016, Agden Brook At Agden Brook Farm At Altrincham	FH Cookson & Sons	372000, 386100	Agriculture, Spray Irrigation - Direct	7092	Abstraction approximately 15 m from the Agden Brook. located upstream of the Preliminary Order Limits. **Screened out**.
A116	2569020060, Bridgewater Canal At Agden, Lymm	Mr Blackburn	371200, 387000	Agriculture, Spray Irrigation - Direct	6810	Abstraction from the Bridgewater Canal, 513m to the west of the Preliminary Order Limits. **Screen in.**

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
A117	2569020063, River Bollin At Agden, Lymm, Cheshire	Mr Blackburn	371900, 387850	Agriculture, Spray Irrigation - Direct	13000	Abstraction from the River Bollin 26m to the east of Preliminary Order Limits. **Screen in.**
A118	2569020041, River Bollin At Heatley, Altrincham, Cheshire	FH Cookson & Sons	371360, 387980	Agriculture, Spray Irrigation - Direct	16300	Abstraction from the River Bollin 290m to the west of Preliminary Order Limits. **Screen in.**
A119	2569020015, Unnamed Trib Of River Bollin At Moss Brow Farm At Warburton	R & V Clegg	370700, 388600	Agriculture, Spray Irrigation - Direct	10638	Abstraction from the Old Bollin, 1.2km from the Preliminary Order Limits. Due to being over 1km from the Preliminary Order Limits and not in direct hydraulic connection, **Screened out.**
A120	2569017033, Caldwell Brook At Sinderland Green, Dunham Massey, Altrincham	Priestner	372900, 389500	Agriculture, Spray Irrigation - Direct	10624	Abstraction from the Caldwell Brook, located on blown sand superficial deposits and located within the

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
						Preliminary Order Limits. **Screen in.**
A121	2569017030, Sinderland Brook At Warburton, Lymm, And Dunham Massey, Altrincham	S J Booth	372100, 390500	Agriculture, Spray Irrigation - Direct	10575	Abstraction on the Sinderland Brook, located 820m downstream of the Preliminary Order Limits. **Screen in.**
A122	2569017031, Sinderland Brook At Sinderland Green Dunham Massey, Altrincham	Priestner	373100, 390500	Agriculture, Spray Irrigation - Direct	17661	Located immediately upstream of the Preliminary Order Limits. **Screen in.**
A123	2569020067, Bridgewater Canal At Agden	FH Cookson & Sons	370250, 387400	Agriculture, Spray Irrigation - Direct	13650	Abstraction located on the Bridgewater Canal 1.5km to the west of the Preliminary Order Limits. **Screen in.**
A124	2569020065, Heatley Fed By Trib Of The River Bollin At Heatley Lymm	Priestner	370120, 388000	Agriculture, Spray Irrigation - Direct	13640	Abstraction from a pond which is fed by a tributary of the River Bollin. The abstraction is 1.5km to the west of the Preliminary Order Limits and not in direct

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
						hydraulic connection. **Screened out.**
A125	2568001028, Rookery Pool At Vale Royal Abbey, Whitegate	Vale Royal Abbey Golf Club	363300, 370100	Industry, Spray Irrigation - Direct	28004	Abstraction from Rookery Pool, located 70m to the south and downslope of the Preliminary Order Limits. **Screen in.**
A126	2568001206, Pettypool Brook At Whitegate, Winsford, Cheshire	A J E C Thorley	364800, 368800	Agriculture, Spray Irrigation - Direct	34550	Abstraction is within the Preliminary Order Limits. **Screen in.**
A127	2568001173, R. Weaver At LH'S Premises, Winsford, Cheshire	Compass Minerals UK Limited	365300, 368200	Industry, Process Water	28000	Abstraction on the River Weaver located 200m to the south of the Preliminary Order Limits. **Screen in.**
A128	2569020059, River Bollin At Warburton , Lymm	R & V Clegg	370500, 388400	Agriculture, Spray Irrigation - Direct	17048	Located 1.22km to the west and downstream of the Preliminary Order Limits. **Screen in.**

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
A129	2569020010, R Bollin At Warburton, Lymm,Cheshire	FH Cookson & Sons	370450, 388450	Agriculture, Spray Irrigation - Direct	13650	Located 1.29km to the west and downstream of the Preliminary Order Limits. **Screen in.**
A130	2568001018, Petty Pool, Sandiwayfed By And O/F To Unnamed Tribs Of River Weaver	Sandiway Golf Club Ltd	361900, 370200	Industry, Spray Irrigation - Direct	2273	Abstraction on the Petty pool (pond/lake) on a tributary of the weaver, ~3.5km downstream and only 300 m to the southwest of the Preliminary Order Limits. **Screen in.**
A131	NW/068/0003/007, Tributary of River Weaver at Hartford Golf Club	Hartford Golf And Leisure Limited	363501, 373169	Industry, Spray Irrigation - Spray Irrigation Definition Order	5400	Located ~1.25km of the River Weaver and ~6km upstream of the Preliminary Order Limits. **Screened out.**
A132	NW/068/0003/003, Cliff Brook at Acton Bridge, Northwich, Cheshire	Ej And Jr Woodward	359051, 374614	Agriculture, Make-Up Or Top Up Water	2467	Located 1.35km west and ~2.5km downstream of the Preliminary Order Limits. **Screen in.**

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
A133	2568003120, Acton Brook At Weaverham, Northwich	R E Ford	358700, 374700	Agriculture, Spray Irrigation - Direct	16820	Located 1.6km west and ~2.85km downstream of the Preliminary Order Limits. **Screen in.**
A134	2568003082, R Weaver At Premises, Winnington, Northwich	Brunner Mond & Co Ltd	365000, 375000	Industry, General Cooling (Existing Licences Only) (Low Loss)	56825000	Located 25m north and adjacent to Preliminary Order Limits. **Screen in.**
A135	2568003082, R Weaver At Premises, Winnington, Northwich	Brunner Mond & Co Ltd	365000, 375000	Industry, Process Water	56825000	Located 25m north and adjacent to Preliminary Order Limits. **Screen in.**
A136	NW/068/0003/014, River Weaver Navigationat Saltersford Lock	Canal And River Trust	362690, 375139	Power generation, Hydroelectric Power Generation	252455405	Located ~3.75km Downstream and 2.3km west of the Preliminary Order Limits. **Screen in.**
A137	NW/068/0003/009, Anderton Boat Lift	Canal And River Trust	364778, 375355	Power generation, Hydroelectric Power Generation	7568640	Located 200m south and Downstream of the Preliminary Order Limits. **Screen in**

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
A138	2568003133, Pool@The Head Of Unnamed Trib Of The Riv Weaver Little Leigh	J E Horton And Partners	361030, 376540	Agriculture, Spray Irrigation - Direct	4546	Located on a pond on a tributary of the River Weaver, 459m South and ~1.25km upstream of the Preliminary Order Limits. **Screened out.**
A139	2568003097, Whitley Brook At Heath Hall Farm, Little Leigh	Timothy And Robert Horton	361700, 377000	Agriculture, Spray Irrigation - Direct	1227	Abstraction from either the ordinary watercourse or pond which is likely fed by the ordinary watercourse. The ordinary watercourse rises within the Preliminary Order Limits and flows north. The abstraction is also 53m north and downslope / downstream of the Preliminary Order Limits. **Screen in**
A140	NW/068/0003/011, Hydropower Intake - Dutton Sluices	Canal And River Trust	358755, 377050	Power generation, Hydroelectric Power Generation	378432000	Located 156m South and ~1.3km downstream of the

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
						Preliminary Order Limits. **Screen in**
A141	2568003097, Whitley Brook At Heath Hall Farm, Little Leigh	Timothy And Robert Horton	361200, 378100	Agriculture, Spray Irrigation - Direct	1227	Located 300m east and downstream of the Preliminary Order Limits. This watercourse also joins the Weaver downstream which flows through another branch of the Preliminary Order Limits. **Screen in**
A142	2568003128, Pond Fed By Surface Drainage At Aston Heath, Aston	J E Stubbs And D R Stubbs	355700, 379500	Agriculture, Spray Irrigation - Direct	27276	Abstraction from a pond located on till, 650m to the northeast of Arley Heath and therefore no direct hydraulic connection to the Preliminary Order Limits. **Screened out.**
A143	2568004026, Unnamed Watercourse Feeding A Pond At Daresbury Farm	Daresbury Properties Ltd	358620, 382100	Agriculture, Spray Irrigation - Direct	4546	Abstraction from a watercourse feeding a pond, located on till

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
						and located within the Preliminary Order Limits. **Screen in.**
A144	2568004026, Unnamed Watercourse Feeding A Pond At Daresbury Farm.	Daresbury Properties Ltd	358620, 382100	Agriculture, Transfer Between Sources (Pre Water Act 2003)	4546	Abstraction from a watercourse feeding a pond, located on till and located within the Preliminary Order Limits. **Screen in.**
A145	2569024005, R. Mersey At Bank Quay, Warrington	Ineos Silicas Ltd.	359800, 387900	Industry, General Cooling (Existing Licences Only) (Low Loss)	6819000	Abstraction from Mersey and located within the Preliminary Order Limits. **Screen in**.
A146	2569024005, R. Mersey At Bank Quay, Warrington	Ineos Silicas Ltd.	359600, 387900	Industry, General Cooling (Existing Licences Only) (Low Loss)	6819000	Abstraction from Mersey and located within the Preliminary Order Limits. **Screen in**.
A147	2568005017, Unnamed Watercourse Feeding Pond At Godscroft Hall Frodsham	G Warburton	350300, 376700	Agriculture, Spray Irrigation - Direct	9092	Abstraction from a pond located on glaciofluvial deposits, 395m southwest of the Preliminary Order

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
						Limits. This pond is upslope and therefore there is no direct hydrological connection with the Preliminary Order Limits. **Screened out**
A148	2568003109, Weston Canal (Weaver Navigation) At Pumping Station, Frodsham	Canal And River Trust	351900, 379800	Industry, Conveying Materials	65462	Located 160m west and downstream of the Preliminary Order Limits. **Screen in**
A149	2568003095, Weston Canal At Sutton,Runcorn [ICI][Sutton Causeway/West Cl	Canal And River Trust	352000, 379800	Industry, Process Water	70000	Located 65m west and downstream of the Preliminary Order Limits. **Screen in**
A150	2568004997, Weston Canal At Weston Point Runcorn Cheshire	British Waterways Board	351750, 379840	Industry, Process Water	10000000	Located 315m west and downstream of the Preliminary Order Limits. **Screen in**
A151	2568004997, Weston Canal At Weston Point Runcorn Cheshire	British Waterways Board	351750, 379840	Industry, Non-Evaporative Cooling	10000000	Located 315m west and downstream of the Preliminary Order Limits. **Screen in**

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
A152	2568009008, Manchester Ship Canal At Weston Point, Runcorn	Ineos Enterprises Group Limited	349410, 381920	Industry, General Cooling (Existing Licences Only) (Low Loss)	52279000	Located on the Manchester Ship canal ~8.4km directly downstream. **Screen in**
A153	2568009008, Manchester Ship Canal At Weston Point, Runcorn	Ineos Enterprises Group Limited	349430, 381980	Industry, General Cooling (Existing Licences Only) (Low Loss)	52279000	Located on the Manchester Ship canal ~8.4km directly downstream. **Screen in**
A154	2569025077, ST. Helens Canal at St. Helens, Merseyside	Pilkington Properties Ltd	351270, 394950	Industry, Evaporative Cooling	7273600	Abstraction from St Helens Canal ~500m north east of the Preliminary Order Limits downstream. **Screen in.**
A155	2569025077, ST. Helens Canal at St. Helens, Merseyside	Pilkington Properties Ltd	351270, 394950	Industry, General Cooling (Existing Licences Only) (Low Loss)	7273600	Abstraction from St Helens Canal ~500m north east of the Preliminary Order Limits downstream. **Screen in.**

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
A156	2569017032, Red Brook At Warburton,Lymm,Cheshire	FH Cookson & Sons	370030, 390780	Agriculture, Spray Irrigation - Direct	13640	Abstraction from Red Brook ~2.9km west of the Preliminary Order Limits with a direct downstream hydrological connection. **Screen in.**
A157	2568009001, Manchester Ship Canal At Ellesmere Port	Shell UK Oil Products Ltd	342700, 376900	Industry, Non-Evaporative Cooling	60000000	Abstraction from Manchester Ship Canal ~2.5km north west of the Preliminary Order Limits and downhill. **Screen in.**
A158	2568009017, Manchester Ship Canal At Ellesmere Port	Cleanaway Ltd	342700, 376900	Industry, Gas Suppression/Scrubbing	2186670	Abstraction from Manchester Ship Canal ~2.5km north west of the Preliminary Order Limits and downhill. **Screen in.**
A159	2568009017, Manchester Ship Canal At Ellesmere Port	Cleanaway Ltd	342700, 376900	Industry, General Cooling (Existing Licences Only) (Low Loss)	2186670	Abstraction from Manchester Ship Canal ~2.5km north west of the Preliminary

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
						Order Limits and downhill. **Screen in.**
A160	NW/068/0006/016, Inland Water - Thornton Brook At Stanlow Manufacturing	Essar Oil (UK) Ltd	343173, 375839	Industry, Hydraulic Testing	41500	Abstraction from Manchester Ship Canal ~1.6km west of the Preliminary Order Limits and downhill. **Screen in.**
A161	2568009001, Manchester Ship Canal At Ellesmere Port	Shell UK Oil Products Ltd	343500, 376900	Industry, Non-Evaporative Cooling	60000000	Abstraction from Manchester Ship Canal ~1.7km north west of the Preliminary Order Limits and downhill. **Screen in.**
A162	2568009001, Manchester Ship Canal At Ellesmere Port	Shell UK Oil Products Ltd	344600, 377200	Industry, Non-Evaporative Cooling	60000000	Abstraction from Manchester Ship Canal ~1.2km north of the Preliminary Order Limits and downhill. **Screen in.**
A163	NW/069/0007/002, Manchester Ship Canal, Partington, Carrington, Manchester	SAICA Paper UK Limited	46843, 372165	Industry, General Use Relating To Secondary	3000000	Abstraction from Manchester Ship Canal ~1.2km north of the Preliminary Order

ID	Licence no. and name	Operator	NGR	Use	Annual Licence Limit (m^3/year)	Potential connection to the Preliminary Order Limits
				Category (Medium Loss)		Limits and downhill. **Screen in.**

4.2 Consented discharges

4.2.1 The EA has provided information on consented discharges. Within the Preliminary Order Limits four consented discharges have been identified as shown in **Table 2-10** and **Figure 7.6** of the **Chapter 7: Water Environment**. Only those within the Preliminary Order Limits are considered to as having a potential direct influence by the Project. Information on the volume of discharge and/or the receiving environment, i.e. whether the discharges were to surface or ground, was not provided within the EA data.

Table 4.4 Consented discharges within the Zone of Influence

ID	Discharge No.	Site Address	Discharge Outlet NGR	Discharge Category	Potential connection to the PEIR Assessment
D1	016891950	Vale Royal Abbey Stp, Vale Royal Abbey, Whitegate, Cheshire	SJ6393070220	WwTW/Sewage Treatment Works (water company)	Discharge located outside the Preliminary Order Limits. **Screen in.**
D2	016890503	East Clifton Marsh Northern Outfall, Frodsham, Cheshire	SJ5269079040	Making of Chemicals + Chemical Products	Discharge located outside the Preliminary Order Limits. **Screen in.**
D3	016892435	Encirc, Ash Road, Elton, Cheshire	SJ4620776302	Offices Admin + Support	Discharge located outside the Preliminary Order Limits. **Screen in.**
D4	016892436	Encirc, Ash Road, Elton, Cheshire	SJ4620776302	Offices Admin + Support	Discharge located outside the Preliminary Order Limits. **Screen in.**

5. Glossary of terms and abbreviations

Term	Definition
BOD	Biological Oxygen Demand
CSO	Combined Sewer Overflow
LGS	Local Geological Sites
LLP	Limited Liability Partnership
LNR	Local Nature Reserve
LTD	Limited
LWS	Local Wildlife Site
NNR	National Nature Reserve
PBDE	Polybrominated Diphenyl Ethers
PEIR	Preliminary Environmental Information Report
PFOS	Perfluorooctanesulfonic Acid
PLC	Public Limited Company
PS	Pumping Station
PWS	Private Water Supply
SAC	Special Areas of Conservation
SIC	Standard Industrial Classification
SPA	Special Protection Area
SPZ	Source Protection Zone

Term	Definition
SSSI	Site of Special Scientific Interest
WFD	Water Framework Directive
ZoI	Zone of Influence

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