Appendix D – NE3 – Carrs Industrial Estate North Extension, Haslingden – Access Road Preliminary Study (Appendices D to F)

D. Envirocheck Report

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Envirocheck® Report:

Datasheet

Order Details:

Order Number:
241411014_1_1

Customer Reference:
391034AA06

National Grid Reference:
378340, 423810

Slice:
A

Site Area (Ha):
2.26

Search Buffer (m):
1000

Site Details:

Site at
Rossendale Valley
Lancashire

Client Details:

Mr S Myles
Mott Macdonald
Spring Bank House
33 Stamford Street
Altrincham
Manchester
WA14 1ES

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Contents

Introduction

The Environment Act 1995 has made site sensitivity a key issue, as the legislation pays as much attention to the pathways by which contamination could spread, and to the vulnerable targets of contamination, as it does the potential sources of contamination.
For this reason, Landmark's Site Sensitivity maps and Datasheet(s) place great emphasis on statutory data provided by the Environment Agency/Natural Resources Wales and the Scottish Environment Protection Agency; it also incorporates data from Natural England (and the Scottish and Welsh equivalents) and Local Authorities; and highlights hydrogeological features required by environmental and geotechnical consultants. It does not include any information concerning past uses of land. The datasheet is produced by querying the Landmark database to a distance defined by the client from a site boundary provided by the client.
In this datasheet the National Grid References (NGRs) are rounded to the nearest 10m in accordance with Landmark's agreements with a number of Data Suppliers.

Report Version v53.0

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Agency & Hydrological					
BGS Groundwater Flooding Susceptibility	pg 1	Yes	Yes	Yes	n/a
Contaminated Land Register Entries and Notices					
Discharge Consents	pg 2		3	14	2
Prosecutions Relating to Controlled Waters			n/a	n/a	n/a
Enforcement and Prohibition Notices					
Integrated Pollution Controls	pg 7		2		
Integrated Pollution Prevention And Control					
Local Authority Integrated Pollution Prevention And Control					
Local Authority Pollution Prevention and Controls	pg 7		1	1	6
Local Authority Pollution Prevention and Control Enforcements					
Nearest Surface Water Feature			Yes		
Pollution Incidents to Controlled Waters	pg 9		2	6	12
Prosecutions Relating to Authorised Processes	pg 12				1
Registered Radioactive Substances					
River Quality	pg 12		1		
River Quality Biology Sampling Points					
River Quality Chemistry Sampling Points					
Substantiated Pollution Incident Register	pg 12		1	2	2
Water Abstractions	pg 13			2	2 (*35)
Water Industry Act Referrals					
Groundwater Vulnerability Map	pg 23	Yes	n/a	n/a	n/a
Groundwater Vulnerability - Soluble Rock Risk			n/a	n/a	n/a
Groundwater Vulnerability - Local Information			n/a	n/a	n/a
Bedrock Aquifer Designations	pg 23	Yes	n/a	n/a	n/a
Superficial Aquifer Designations	pg 23	Yes	n/a	n/a	n/a
Source Protection Zones					
Extreme Flooding from Rivers or Sea without Defences	pg 23	Yes	Yes	n/a	n/a
Flooding from Rivers or Sea without Defences	pg 23	Yes	Yes	n/a	n/a
Areas Benefiting from Flood Defences				n/a	n/a
Flood Water Storage Areas				n/a	n/a
Flood Defences				n/a	n/a
OS Water Network Lines	pg 24	1	22	34	61

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Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Waste					
BGS Recorded Landfill Sites	pg 38			1	
Historical Landfill Sites	pg 38		2	1	5
Integrated Pollution Control Registered Waste Sites					
Licensed Waste Management Facilities (Landfill Boundaries)	pg 39			1	2
Licensed Waste Management Facilities (Locations)	pg 40			1	3
Local Authority Landfill Coverage	pg 41	2	n/a	n/a	n/a
Local Authority Recorded Landfill Sites					
Potentially Infilled Land (Non-Water)	pg 41		1	2	7
Potentially Infilled Land (Water)	pg 41		6	10	12
Registered Landfill Sites	pg 43		2	2	5
Registered Waste Transfer Sites	pg 47				2
Registered Waste Treatment or Disposal Sites	pg 48			1	
Hazardous Substances					
Control of Major Accident Hazards Sites (COMAH)					
Explosive Sites					
Notification of Installations Handling Hazardous Substances (NIHHS)					
Planning Hazardous Substance Consents					
Planning Hazardous Substance Enforcements					

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Geological					
BGS 1:625,000 Solid Geology	pg 49	Yes	n/a	n/a	n/a
BGS Estimated Soil Chemistry	pg 49	Yes	Yes		Yes
BGS Recorded Mineral Sites	pg 50				16
BGS Urban Soil Chemistry					
BGS Urban Soil Chemistry Averages					
CBSCB Compensation District			n/a	n/a	n/a
Coal Mining Affected Areas	pg 52	Yes	n/a	n/a	n/a
Mining Instability	pg 53	Yes	n/a	n/a	n/a
Man-Made Mining Cavities					
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 53	Yes		n/a	n/a
Potential for Collapsible Ground Stability Hazards	pg 53	Yes	Yes	n/a	n/a
Potential for Compressible Ground Stability Hazards	pg 53	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards				n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 53	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 54	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 54	Yes	Yes	n/a	n/a
Radon Potential - Radon Affected Areas	pg 55	Yes	n/a	n/a	n/a
Radon Potential - Radon Protection Measures	pg 55	Yes	n/a	n/a	n/a
Industrial Land Use					
Contemporary Trade Directory Entries	pg 56		49	39	93
Fuel Station Entries	pg 72			1	1
Points of Interest - Commercial Services	pg 72		7	14	34
Points of Interest - Education and Health					
Points of Interest - Manufacturing and Production	pg 77		21	13	28
Points of Interest - Public Infrastructure	pg 82			9	23
Points of Interest - Recreational and Environmental	pg 85			2	10
Gas Pipelines					
Underground Electrical Cables					

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Summary

Data Type	Page Number	On Site	0 to 250m	251 to 500m	501 to 1000m (*up to 2000m)
Sensitive Land Use					
Ancient Woodland					
Areas of Adopted Green Belt	pg 87				2
Areas of Unadopted Green Belt					
Areas of Outstanding Natural Beauty					
Environmentally Sensitive Areas					
Forest Parks					
Local Nature Reserves					
Marine Nature Reserves					
National Nature Reserves					
National Parks					
Nitrate Sensitive Areas					
Nitrate Vulnerable Zones					
Ramsar Sites					
Sites of Special Scientific Interest	pg 87				1
Special Areas of Conservation					
Special Protection Areas					
World Heritage Sites					

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (E)	0	1	378400 423814
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13SE (S)	0	1	378341 423700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (SW)	0	1	378341 423814
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (SE)	0	1	378350 423800
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (E)	16	1	378400 423800
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (S)	78	1	378350 423600
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13SE (SE)	101	1	378500 423700
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13SE (S)	126	1	378341 423550
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (NE)	142	1	378550 424000
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (E)	177	1	378600 423900
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding to Occur at Surface	A13NE (NE)	178	1	378600 423950
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A13NE (E)	227	1	378650 423814
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (S)	229	1	378300 423450
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A13NE (NE)	237	1	378650 424000
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (W)	254	1	378000 423814
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (E)	277	1	378700 423814
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (S)	278	1	378300 423400
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A12SE (W)	304	1	377950 423700
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (NW)	319	1	378150 424200
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (E)	327	1	378750 423814
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (S)	378	1	378300 423300
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	386	1	378250 423300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (S)	400	1	378200 423300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (S)	417	1	378150 423300
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A18SW (NW)	423	1	378050 424250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NE (S)	426	1	378341 423250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (S)	428	1	378300 423250
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A12NE (W)	429	1	377850 423850
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A7NE (SW)	437	1	377900 423450
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A14NW (E)	477	1	378900 423814
	BGS Groundwater Flooding Susceptibility Flooding Type: Limited Potential for Groundwater Flooding to Occur	A8NW (SW)	482	1	378100 423250
	BGS Groundwater Flooding Susceptibility Flooding Type: Potential for Groundwater Flooding of Property Situated Below Ground Level	A8NW (S)	495	1	378200 423200
1	**Discharge Consents** Operator: P & P Micro Distributors Ltd Property Type: LAND TRANSPORT + VIA PIPELINES/FREIGHT Location: P & P Micro Distributors Swo Carrs Ind Estate, Haslingden, Rossendale, Lancashire Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016991313 Permit Version: 1 Effective Date: 2nd September 1988 Issued Date: Not Supplied Revocation Date: 30th June 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	82	2	378500 423900
1	**Discharge Consents** Operator: P & P Micro Distributors Ltd Property Type: LAND TRANSPORT + VIA PIPELINES/FREIGHT Location: P & P Micro Distributors Swo Carrs Ind Estate, Haslingden, Rossendale, Lancashire Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016991313 Permit Version: 2 Effective Date: 1st July 1991 Issued Date: Not Supplied Revocation Date: 1st September 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A13NE (NE)	82	2	378500 423900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
2	**Discharge Consents** Operator: P & P Micro Distributors Ltd Property Type: REAL ESTATE ACTIVITIES/BUYING/SELLING/RENTING Location: Plot 14 At Carrs Industrial Estate, Haslingden, Rossendale, Lancashire Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016992025 Permit Version: 1 Effective Date: Not Supplied Issued Date: Not Supplied Revocation Date: 1st November 1994 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status: Lapsed (under Environment Act 1995, Schedule 23)** Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	213	2	378200 423500
3	**Discharge Consents** Operator: North West Water Limited Property Type: Not Given Location: Beaconsfield, Bury Road Cso, HASLINGDEN Authority: Environment Agency, North West Region Catchment Area: Upper Mersey Reference: ROS0079 Permit Version: Not Supplied Effective Date: Not Supplied Issued Date: 23rd June 1995 Revocation Date: Not Supplied Discharge Type: Sewage Effluent Discharge-Storm Effluent Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status: Not Supplied** Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	255	2	378080 423520
3	**Discharge Consents** Operator: Laund Developments Ltd Property Type: DOMESTIC PROPERTY (MULTIPLE) (INCL FARM HOUSES) Location: Laund Res Development Swo Plot 14b, Carrs Ind Estate, Haslingden, Lancashire Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016991401 Permit Version: 1 Effective Date: 24th April 1989 Issued Date: Not Supplied Revocation Date: 1st July 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	258	2	378100 423500
4	**Discharge Consents** Operator: Loks Plasma Services Ltd Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Loks Plasma Services Ltd Swo Site 3b, Carrs Ind Estate, Haslingden, Lancashire Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016991336 Permit Version: 1 Effective Date: 1st October 1994 Issued Date: Not Supplied Revocation Date: 14th December 1994 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	415	2	378080 423330

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
4	**Discharge Consents** Operator: Loks Plasma Services Ltd Property Type: WWTW (NOT WATER CO) (NOT STP AT A PRIVATE PREMISES) Location: Loks Plasma Services Ltd Swo Site 3b, Carrs Ind Estate, Haslingden, Lancashire Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 017290123 Permit Version: 1 Effective Date: 1st July 1991 Issued Date: Not Supplied Revocation Date: 1st July 1991 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Trib For Drainage Area 72 **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A8NW (SW)	415	2	378080 423330
5	**Discharge Consents** Operator: United Utilities Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Deardengate/Bury Road Cso Deardengate, Haslingden, Rossendale, Lancashire, Bb4 5qj Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 01ros0039 Permit Version: 3 Effective Date: 22nd March 2016 Issued Date: 22nd March 2016 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A8NE (S)	418	2	378510 423297
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Carr Mill Street Cso 1 Carr Mill Street, Rossendale, ., Lancashire, Bb4 5bu Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 01ros0035 Permit Version: 2 Effective Date: 6th December 2005 Issued Date: 6th December 2005 Revocation Date: 10th December 2019 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status: Modified (Water Resources Act 1991, Schedule 10 as amended by Environment Act 1995)** Positional Accuracy: Located by supplier to within 10m	A18SE (NE)	444	2	378570 424350
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Carr Mill Street Cso 1 Carr Mill Street, Rossendale, ., Lancashire, Bb4 5bu Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016993764 Permit Version: 1 Effective Date: 11th December 2019 Issued Date: 11th December 2019 Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Clvrt'D Section Swinnel Brook **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A18SE (NE)	445	2	378575 424349

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Haslingden Council Depot Sso, Carr Hall Street, Haslingden, Lancashire Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016950297 Permit Version: 1 Effective Date: 18th September 1978 Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status: Pre National Rivers Authority Legislation where issue date < 01/09/1989** Positional Accuracy: Located by supplier to within 100m	A18SE (N)	463	2	378570 424370
6	**Discharge Consents** Operator: United Utilities Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Carr Mill Street Cso 1 Carr Mill Street, Rossendale, ., Lancashire, Bb4 5bu Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 01ROS0035 Permit Version: 1 Effective Date: 1st January 1995 Issued Date: 1st January 1995 Revocation Date: 5th December 2005 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status: Consent revoked or revised: New Consent issued (Section 37(1))** Positional Accuracy: Located by supplier to within 100m	A18SE (NE)	476	2	378580 424380
7	**Discharge Consents** Operator: United Utilities Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Deardengate/Bury Road Cso Deardengate, Haslingden, Rossendale, Lancashire, Bb4 5qj Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 01ros0039 Permit Version: 2 Effective Date: 14th April 2009 Issued Date: 14th April 2009 Revocation Date: 21st March 2016 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status: Varied under EPR 2010** Positional Accuracy: Located by supplier to within 10m	A8NW (SW)	489	2	378080 423250
7	**Discharge Consents** Operator: United Utilities Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Beaconsfield/Bury Rd Cso, Haslingden, Lancashire Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016982972 Permit Version: 1 Effective Date: 23rd June 1995 Issued Date: 23rd June 2005 Revocation Date: 21st June 2005 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	489	2	378080 423250

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**Discharge Consents** Operator: United Utilities Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Manchester Road Sewer, Haslingden, Rossendale, Lancashire Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 01ROS0058 Permit Version: 2 Effective Date: 1st January 1995 Issued Date: Not Supplied Revocation Date: Not Supplied Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Not Supplied **Status:** **Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 10m	A8NW (SW)	489	2	378080 423250
7	**Discharge Consents** Operator: United Utilities Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Deardengate/Bury Road Cso Deardengate, Haslingden, Rossendale, Lancashire, Bb4 5qj Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 01ROS0039 Permit Version: 1 Effective Date: 1st January 1995 Issued Date: Not Supplied Revocation Date: 13th April 2009 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status:** **Post National Rivers Authority Legislation where issue date > 31/08/1989** Positional Accuracy: Located by supplier to within 10m	A8NW (SW)	489	2	378080 423250
7	**Discharge Consents** Operator: United Utilities Water Limited Property Type: STORM TANK/CSO ON SEWERAGE NETWORK (WATER COMPANY) Location: Manchester Road Sewer, Haslingden, Rossendale, Lancashire Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 01ros0058 Permit Version: 1 Effective Date: 1st April 1991 Issued Date: Not Supplied Revocation Date: 31st December 1994 Discharge Type: Public Sewage: Storm Sewage Overflow Discharge Environment: Not Supplied Receiving Water: Not Supplied **Status:** **Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A8NW (SW)	489	2	378080 423250
8	**Discharge Consents** Operator: Hurstwood Development Ltd Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Hurstwood House Swo 175 Crane Road, Haslingden, Rossendale, Lancashire Authority: Environment Agency, North West Region Catchment Area: Not Given Reference: 016991335 Permit Version: 1 Effective Date: 11th November 1988 Issued Date: Not Supplied Revocation Date: 30th September 1994 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status:** **Authorisation revoked** Positional Accuracy: Located by supplier to within 100m	A3NW (S)	900	2	378180 422790

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
8	**Discharge Consents** Operator: Hurstwood Development Ltd Property Type: DOMESTIC PROPERTY (SINGLE) (INCL FARM HOUSE) Location: Hurstwood House Swo 175 Crane Road, Haslingden, Rossendale, Lancashire Authority: Environment Agency, North West Region Catchment Area: Not Supplied Reference: 016991335 Permit Version: 2 Effective Date: 1st October 1994 Issued Date: Not Supplied Revocation Date: 14th December 1994 Discharge Type: Discharge Of Other Matter-Surface Water Discharge Environment: Freshwater Stream/River Receiving Water: Swinnel Brook **Status: Authorisation revoked** Positional Accuracy: Located by supplier to within 10m	A3NW (S)	900	2	378180 422790
9	**Prosecutions Relating to Controlled Waters** Location: Swinnel Brook, Taylor Court, Todd Hall Road, Haslingden Prosecution Text: Releasing waste water into a watercourse Prosecution Act: Epr10 S12 & 38 Hearing Date: 21st October 2010 Verdict: Guilty Fine: 10000 Cost: 3407 Positional Accuracy: Manually positioned to the road within the address or location	A8NW (SW)	261	2	378141 423471
10	**Integrated Pollution Controls** Name: Warton Metals Ltd Location: Carrs Industrial Estate, Commerce Street, Haslingden, ROSSENDALE, Lancashire, BB4 5JT Authority: Environment Agency, North West Region Permit Reference: BD2519 Dated: 24th November 1998 Process Type: IPC minor (non-substantial) variation to previous variation Description: 2.2 A (A) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation revoked** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	80	2	378495 423884
10	**Integrated Pollution Controls** Name: Warton Metals Ltd Location: Carrs Industrial Estate, Commerce Street, Haslingden, ROSSENDALE, Lancashire, BB4 5JT Authority: Environment Agency, North West Region Permit Reference: AS7566 Dated: 15th November 1995 Process Type: IPC new application Description: 2.2 A (A) Non-ferrous Metal processes within the Metal Industry **Status: Authorisation superseded by a substantial or non substantial variation** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	80	2	378495 423884
11	**Local Authority Pollution Prevention and Controls** Name: Wartons Metal Ltd Location: Grove Mill, Commerce Street, HASLINGDEN, Lancashire, BB4 5 Authority: Rossendale Borough Council, Environmental Health Department Permit Reference: As7566 Dated: 15th November 1995 Process Type: Local Authority Air Pollution Control Description: PG4/1 Processes for the surface treatment of metals **Status: Authorisation revoked** Positional Accuracy: Manually positioned to the address or location	A13SE (S)	71	3	378367 423613
12	**Local Authority Pollution Prevention and Controls** Name: Haslingden Service Station Location: Blackburn Road, HASLINGDEN, Lancashire, BB4 5QG Authority: Rossendale Borough Council, Environmental Health Department Permit Reference: 14/00011/PETROL Dated: 19th January 1999 Process Type: Local Authority Pollution Prevention and Control Description: PG1/14 Petrol filling station **Status: Permitted** Positional Accuracy: Automatically positioned to the address	A8NE (S)	423	3	378532 423303

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
13	**Local Authority Pollution Prevention and Controls** Name: Flexipol Packaging Ltd Location: Unit 14 Carrs Industrial Estate, Bentwood Road, Haslingden, Rossendale, Lancashire, Bb4 5hh Authority: Rossendale Borough Council, Environmental Health Department Permit Reference: 14/00023/PRINT Dated: 14th November 2008 Process Type: Local Authority Pollution Prevention and Control Description: PG6/17 Printing of flexible packaging **Status:** **Permitted** Positional Accuracy: Manually positioned to the address or location	A8NW (S)	520	3	378126 423199
14	**Local Authority Pollution Prevention and Controls** Name: Atc Ltd Location: Hud Hey Mill, Hud Hey Road, Haslingden, ROSSENDALE, Lancashire, BB4 5LB Authority: Rossendale Borough Council, Environmental Health Department Permit Reference: Epa 13/93 Dated: 15th March 1996 Process Type: Local Authority Air Pollution Control Description: PG6/23 Coating of metal and plastic **Status:** **Application Not Yet Authorised** Positional Accuracy: Manually positioned to the road within the address or location	A18SE (N)	527	3	378530 424448
15	**Local Authority Pollution Prevention and Controls** Name: Advanced Technical Coating Location: Hud Hey Mill, Hud Hey Road, HASLINGDEN, Lancashire, BB4 5LB Authority: Rossendale Borough Council, Environmental Health Department Permit Reference: Epa/13/96 Dated: 15th March 1996 Process Type: Local Authority Air Pollution Control Description: Part B - General Metal Process (No Specific Reference) **Status:** **Authorisation revoked** Positional Accuracy: Manually positioned within the geographical locality	A18SE (N)	569	3	378611 424468
16	**Local Authority Pollution Prevention and Controls** Name: Deardengate Dry Cleaners Location: 54 Deardengate, Haslingden Authority: Rossendale Borough Council, Environmental Health Department Permit Reference: 34/07 Dated: 31st October 2007 Process Type: Local Authority Pollution Prevention and Control Description: PG6/46 Dry cleaning **Status:** **Permitted** Positional Accuracy: Manually positioned to the address or location	A8NE (S)	590	3	378588 423144
17	**Local Authority Pollution Prevention and Controls** Name: Timberform Ltd Location: Clough End Road, Haslingdon, ROSSENDALE, Lancashire, BB4 5AN Authority: Rossendale Borough Council, Environmental Health Department Permit Reference: 14/96 Dated: 25th June 1996 Process Type: Local Authority Air Pollution Control Description: PG6/2 Manufacture of timber and wood-based products **Status:** **Authorised** Positional Accuracy: Manually positioned to the address or location	A19SW (NE)	693	3	378912 424422
17	**Local Authority Pollution Prevention and Controls** Name: Timberform Ltd Location: Clough End Road, ROSSENDALE, Lancashire, BB4 5AN Authority: Rossendale Borough Council, Environmental Health Department Permit Reference: Epa 14/93 Dated: 25th June 1996 Process Type: Local Authority Air Pollution Control Description: PG6/3 Chemical treatment of timber and wood-based products **Status:** **Authorised** Positional Accuracy: Manually positioned to the address or location	A19SW (NE)	696	3	378912 424427
	Nearest Surface Water Feature	A13NE (NE)	1	-	378414 423934

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
18	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Stream Carrs Industrialest , Hasling Authority: Environment Agency, North West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Oil Coming Down; Near Underbank Incident Date: 25th June 1998 Incident Reference: SO981187 Catchment Area: Irwell Receiving Water: Freshwater Stream/River Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13NW (NW)	157	2	378200 424000
19	**Pollution Incidents to Controlled Waters** Property Type: Chemical industry Location: Cam Industrial Estate , HASLINGDEN Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Foam Note: Foam On Brook Incident Date: 29th September 1998 Incident Reference: SO981766 Catchment Area: Irwell Receiving Water: Freshwater Stream/River Cause of Incident: Poor Operational Practice Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13SE (S)	188	2	378400 423500
20	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Lancashire Authority: Environment Agency, North West Region Pollutant: Unknown Note: Swinnel Brook; No Pollution Found Incident Date: 15th June 1995 Incident Reference: 95621433 Catchment Area: Irwell Receiving Water: Not Given Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A13SW (SW)	258	2	378100 423500
21	**Pollution Incidents to Controlled Waters** Property Type: Industrial: Other Location: Carrs Industrial Estate, Swinell Brook, HASLINGDEN Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Unknown Note: Swinell Brook; Silt And Sediment Incident Date: 9th May 1997 Incident Reference: 97620816 Catchment Area: Irwell Receiving Water: Freshwater Stream/River Cause of Incident: Other Cause Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A12SE (SW)	275	2	378000 423600
22	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Lancashire Authority: Environment Agency, North West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Swinnel Brook; Diesel Oil Incident Date: 18th January 1996 Incident Reference: 96620121 Catchment Area: Irwell Receiving Water: Not Given Cause of Incident: Accidental Spillage/Leakage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	306	2	378200 423400
23	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Unknown Note: Swinnel Brook Incident Date: 20th July 1995 Incident Reference: 95621825 Catchment Area: Irwell Receiving Water: Not Given Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18SE (N)	377	2	378500 424300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
24	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Lancashire Authority: Environment Agency, North West Region Pollutant: Unknown Note: No Pollution Found Incident Date: 25th March 1996 Incident Reference: 96620600 Catchment Area: Irwell Receiving Water: Not Given Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NW (S)	378	2	378300 423300
25	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Oils - Diesel (Including Agricultural) Note: Tributary Swinnel Brook Incident Date: 10th April 1995 Incident Reference: 95620776 Catchment Area: Irwell Receiving Water: Not Given Cause of Incident: Poor Operational Practice Incident Severity: Category 2 - Significant Incident Positional Accuracy: Located by supplier to within 100m	A12SE (SW)	410	2	377900 423500
26	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Lancashire Authority: Environment Agency, North West Region Pollutant: Unknown Note: None Affected; Petrol To Drains Road Traffic Accident Incident Date: 6th November 1996 Incident Reference: 96622301 Catchment Area: Irwell Receiving Water: Not Given Cause of Incident: Road Traffic Accident Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8NE (S)	504	2	378500 423200
27	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Inert Suspended Solids Note: Swinnel Brook Incident Date: 24th August 1995 Incident Reference: 95622190 Catchment Area: Irwell Receiving Water: Not Given Cause of Incident: Poor Operational Practice Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18NE (N)	552	2	378400 424500
28	**Pollution Incidents to Controlled Waters** Property Type: Boats/Ships Location: Lancashire Authority: Environment Agency, North West Region Pollutant: Unknown Note: None Found Incident Date: 15th August 1994 Incident Reference: 94621851 Catchment Area: Irwell Receiving Water: Canal Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A7NE (SW)	567	2	378000 423200
29	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Lancashire Authority: Environment Agency, North West Region Pollutant: Chemicals - Other Organic Note: Woodnook Water; Trade Effluent Incident Date: 19th February 1996 Incident Reference: 96330047 Catchment Area: Calder - Lancs Receiving Water: Not Given Cause of Incident: Blocked Sewer Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A18NW (N)	570	2	378200 424500

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
30	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Stream Grey In Colour, Near Complainants House Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Unknown Note: Langwood Brook; Unknown Incident Date: 26th September 1997 Incident Reference: 97621715 Catchment Area: Irwell Receiving Water: Freshwater Stream/River Cause of Incident: Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A14SW (SE)	590	2	378900 423500
31	**Pollution Incidents to Controlled Waters** Property Type: Spillage; Accident - Static Site Location: Lancashire Authority: Environment Agency, North West Region Pollutant: Chemicals - Paints / Dyes Note: Ogden; Ink Incident Date: 4th July 1996 Incident Reference: 96621504 Catchment Area: Irwell Receiving Water: Not Given Cause of Incident: Accidental Spillage/Leakage Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SW (S)	592	2	378200 423100
32	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Lancashire Authority: Environment Agency, North West Region Pollutant: Unknown Note: No Pollution Found Incident Date: 10th April 1996 Incident Reference: 96620715 Catchment Area: Irwell Receiving Water: Not Given Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A8SE (S)	635	2	378600 423100
33	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Lancashire Authority: Environment Agency, North West Region Pollutant: Unknown Note: None Affected; None Pollution Found Incident Date: 8th October 1996 Incident Reference: 96622190 Catchment Area: Irwell Receiving Water: Not Given Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A17NE (NW)	651	2	378000 424500
34	**Pollution Incidents to Controlled Waters** Property Type: Spillage; Accident - Static Site Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Chemicals - Pesticides Note: Duckworth Clough; Wood Treatment Fluid Incident Date: 8th November 1995 Incident Reference: 95622745 Catchment Area: Irwell Receiving Water: Not Given Cause of Incident: Inadequate Construction Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A19NW (NE)	742	2	378900 424500
35	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Location Description Not Available Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Other Note: Swinnel Brook; Lodge Water Incident Date: 14th June 1995 Incident Reference: 95621423 Catchment Area: Irwell Receiving Water: Not Given Cause of Incident: Miscellaneous/Other Pollution Type Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A3NW (S)	886	2	378200 422800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
36	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Lancashire Authority: Environment Agency, North West Region Pollutant: Unknown Note: None Affected; None Pollution Found Incident Date: 20th April 1996 Incident Reference: 96620849 Catchment Area: Irwell Receiving Water: Not Given Cause of Incident: Other Incident/Unknown Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A3NW (S)	907	2	378100 422800
37	**Pollution Incidents to Controlled Waters** Property Type: Not Given Location: Kirkhill Avenue, HASLINGDEN Authority: Environment Agency, North West Region Pollutant: Miscellaneous - Other Note: Grey Stuff In Stream Incident Date: 1st September 1998 Incident Reference: SO981599 Catchment Area: Irwell Receiving Water: Freshwater Stream/River Cause of Incident: Poor Operational Practice Incident Severity: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 100m	A9NE (SE)	988	2	379200 423200
38	**Prosecutions Relating to Authorised Processes** Location: Land At Hutch Bank Road, Haslingden Prosecution Text: Operating a waste site without a WML Prosecution Act: Epa90 S33(1)(A) Hearing Date: 28th April 2006 Verdict: Guilty Fine: 6000 Costs: 2662 Positional Accuracy: Manually positioned to the road within the address or location	A3NW (S)	999	2	378055 422717
	River Quality Name: Swinnel Bk GQA Grade: River Quality B Reach: Qsl At Hud Hey Road To Ogden Estimated Distance (km): 2.7 Flow Rate: Flow less than 0.31 cumecs Flow Type: River Year: 2000	A13SE (E)	71	2	378467 423767
39	**Substantiated Pollution Incident Register** Authority: Environment Agency - North West Region, North Area Incident Date: 24th April 2001 Incident Reference: 3336 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: General Biodegradable : Other	A13SW (SW)	245	2	378072 423542
40	**Substantiated Pollution Incident Register** Authority: Environment Agency - North West Region, North Area Incident Date: 20th April 2010 Incident Reference: 772191 Water Impact: Category 1 - Major Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Contaminated Water: Other Contaminated Water	A8NW (SW)	303	2	378087 423454
41	**Substantiated Pollution Incident Register** Authority: Environment Agency - North West Region, North Area Incident Date: 12th February 2015 Incident Reference: 1313430 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Pollutant Not Identified: Not Identified	A13SW (SW)	306	2	378040 423488

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
42	**Substantiated Pollution Incident Register** Authority: Environment Agency - North West Region, North Area Incident Date: 17th April 2001 Incident Reference: 2598 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 4 - No Impact Positional Accuracy: Located by supplier to within 10m Pollutant: Organic Chemicals/Products: Surfactants And Detergents	A8NE (SE)	572	2	378630 423187
43	**Substantiated Pollution Incident Register** Authority: Environment Agency - North West Region, North Area Incident Date: 24th February 2009 Incident Reference: 656415 Water Impact: Category 2 - Significant Incident Air Impact: Category 4 - No Impact Land Impact: Category 3 - Minor Incident Positional Accuracy: Located by supplier to within 10m Pollutant: Oils And Fuel: Other Oil Or Fuel	A8NW (S)	581	2	378085 423149
44	**Water Abstractions** Operator: Scapa-- Porritt Ltd Licence Number: 2569001182 Permit Version: Not Supplied Location: Reservoir Fed By Surface Drainage, & Swinnel Brook, HASLINGDEN Authority: Environment Agency, North West Region Abstraction: Manufacturing Abstraction Type: Not Supplied Source: River Daily Rate (m3): 450 Yearly Rate (m3): 114000 Details: Licence Status: Lapsed Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A18SE (N)	280	2	378500 424200
45	**Water Abstractions** Operator: Options Technologies Europe Ltd Licence Number: 2569001286 Permit Version: 1 Location: Swinnel Brook In Haslingden Lancashire Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Effluent/Slurry Dilution Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Lh Premises Underbank Way Haslingden Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 27th September 2006 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A8NW (SW)	398	2	378100 423340
46	**Water Abstractions** Operator: Bernard L.Watson Licence Number: 2569001003 Permit Version: Not Supplied Location: Pond Fed By Two Springs At Clough End, HASLINGDEN Authority: Environment Agency, North West Region Abstraction: Drinking; Cooking; Sanitary; Washing For Industrial Premises Abstraction Type: Not Supplied Source: River Daily Rate (m3): 2 Yearly Rate (m3): 568 Details: Licence Status: Revoked Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A19SW (NE)	603	2	378900 424300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
47	**Water Abstractions** Operator: J & F Gibbons Licence Number: 2569001018 Permit Version: 100 Location: Well At Roundhill And Collecting Chamber,At Higher Authority: Environment Agency, North West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 0 Yearly Rate (m3): 0 Details: Higher Hud Hey And Higher Barn Farms Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 25th January 1974 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A18NW (N)	790	2	378100 424700
	Water Abstractions Operator: Whitbread West Pennines Ltd Licence Number: 2569001023 Permit Version: Not Supplied Location: Well At The Farmers Glory Pub, HASLINGDEN Authority: Environment Agency, North West Region Abstraction: Private Water Supply (Domestic & Holiday Recreation/Hotels Etc) Abstraction Type: Not Supplied Source: Spring Daily Rate (m3): 2 Yearly Rate (m3): 818 Details: Licence Status: Revoked Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A17NE (NW)	1011	2	377800 424800
	Water Abstractions Operator: Park Royal Haulage Ltd Licence Number: 2569001250 Permit Version: Not Supplied Location: Swinnel Brook At, HASLINGDEN Authority: Environment Agency, North West Region Abstraction: Dust Suppression & Washing Down Floors And Machines Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): 16 Yearly Rate (m3): 2250 Details: Additional Purpose: Washing Down Floors And Machines Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A2NE (S)	1032	2	378000 422700
	Water Abstractions Operator: G Briggs Licence Number: 2569001082 Permit Version: 101 Location: Reservoir Fed By Langwood Brk At Grane Mill, Haslingden Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Boiler Feed Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 927 Yearly Rate (m3): 227300 Details: Grane Mill, Haslingden Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 10th July 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A9SE (SE)	1091	2	379100 422900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: G Briggs Licence Number: 2569001082 Permit Version: 101 Location: Reservoir Fed By Langwood Brk At Grane Mill, Haslingden Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Grane Mill, Haslingden Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 10th July 2000 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A9SE (SE)	1091	2	379100 422900
	Water Abstractions Operator: Mr J R Handley Licence Number: 2569001157 Permit Version: 100 Location: Well At Laund Slack Farm, Haslingden Authority: Environment Agency, North West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 6 Yearly Rate (m3): 2323 Details: Laund Slack Farm, Haslingden Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 17th May 1967 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A10NW (E)	1093	2	379400 423400
	Water Abstractions Operator: J & F Gibbons Licence Number: 2569001018 Permit Version: 100 Location: Well At Roundhill And Collecting Chamber,At Higher Barn Farm Authority: Environment Agency, North West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 6 Yearly Rate (m3): 2159 Details: Higher Hud Hey And Higher Barn Farms Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 25th January 1974 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A22SE (NW)	1097	2	377800 424900
	Water Abstractions Operator: T L Ormerod Bros. Ltd. Licence Number: 2569001061 Permit Version: Not Supplied Location: Well Fed By Langwood Brook, Laneside Sizing Works, HASLINGDEN Authority: Environment Agency, North West Region Abstraction: Boiler Feed Abstraction Type: Not Supplied Source: River Daily Rate (m3): 20 Yearly Rate (m3): 82 Details: Licence Status: Lapsed Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A4NW (SE)	1182	2	379000 422700

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: J H Birtwistle & Co Ltd Licence Number: 2569001093 Permit Version: 100 Location: Reservoir At Premises Grane Road Mill Haslingden Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 132 Yearly Rate (m3): 34095 Details: Premises, Grane Road Mill,Haslingden Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 26th January 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A2NE (S)	1223	2	378000 422500
	Water Abstractions Operator: T L Ormerod Bros. Ltd. Licence Number: 2569001060 Permit Version: Not Supplied Location: Spring Fed Reservoir, Laneside Sizing Works, HASLINGDEN Authority: Environment Agency, North West Region Abstraction: Boiler Feed & Manufacturing Abstraction Type: Not Supplied Source: Spring Daily Rate (m3): 23 Yearly Rate (m3): 673 Details: Additional Purpose: Boiler feed; Licence Status: Lapsed Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A4NE (SE)	1241	2	379100 422700
	Water Abstractions Operator: Jack Wolfenden Licence Number: 2671333008 Permit Version: 100 Location: Well In Field Nr Larkhill Farm, Haslingden,Rossendale Authority: Environment Agency, North West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 0 Yearly Rate (m3): 159 Details: Larkhill Farm,Haslingden,Lancs Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 18th February 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A22NE (N)	1365	2	377800 425200
	Water Abstractions Operator: Mr G Trickett Licence Number: 2569001079 Permit Version: 100 Location: Spring Fed Tank At Cribden Flat Farm, Haslingden Authority: Environment Agency, North West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 4 Yearly Rate (m3): 1500 Details: Cribden Flat Farm, Haslingden Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 12th January 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A15SE (E)	1383	2	379800 423800

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Walter Holland & Sons Licence Number: 2671333034 Permit Version: 100 Location: Stream Known As Woodnook Water Fedg. Lodge At Food Factory Authority: Environment Agency, North West Region Abstraction: Food And Drink: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 546 Yearly Rate (m3): 170202 Details: Food Factory,Baxenden,Accrington. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 26th November 2018 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A22NE (N)	1612	2	377905 425500
	Water Abstractions Operator: Walter Holland & Sons Licence Number: 2671333033 Permit Version: 100 Location: Borehole At The Food Factory, Baxenden, Accrington Authority: Environment Agency, North West Region Abstraction: Food And Drink: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 1064 Yearly Rate (m3): 144017 Details: Food Factory,Baxenden,Accrington. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 21st February 1992 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	A22NE (N)	1613	2	377900 425500
	Water Abstractions Operator: Walter Holland & Sons Licence Number: 2671333033 Permit Version: Not Supplied Location: The Food Factory, Baxenden, ACCRINGTON Authority: Environment Agency, North West Region Abstraction: Industrial Cooling & Manufacturing Abstraction Type: Not Supplied Source: Groundwater Daily Rate (m3): 1064 Yearly Rate (m3): 144017 Details: Additional Purpose - Cooling Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A22NE (N)	1613	2	377900 425500
	Water Abstractions Operator: William Hargreaves Ltd Licence Number: 2569001154 Permit Version: Not Supplied Location: Swinnel Brook At, HASLINGDEN Authority: Environment Agency, North West Region Abstraction: Manufacturing Abstraction Type: Not Supplied Source: Surface Daily Rate (m3): 0 Yearly Rate (m3): 727360 Details: Licence Status: Revoked Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(S)	1635	2	377900 422100

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: J S Slater Ltd Licence Number: 2569001051 Permit Version: Not Supplied Location: Two Reservoirs, Syke Mill, Haslingden, ROSSENDALE, Lancashire Authority: Environment Agency, North West Region Abstraction: Cooling & Boiler Feed & Manufacturing Abstraction Type: Not Supplied Source: River Daily Rate (m3): 0 Yearly Rate (m3): 0 Details: Additional Purposes: Manufacturing; Boiler feed; Licence Status: Lapsed Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A4SE (SE)	1663	2	379100 422200
	Water Abstractions Operator: J Willan Licence Number: 2569001135 Permit Version: 100 Location: Well At Causeway Head Farm, Haslingden, Rossendale, Authority: Environment Agency, North West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 7 Yearly Rate (m3): 2409 Details: Causeway Head Farm, Haslingden Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 15th February 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(S)	1677	2	378300 422000
	Water Abstractions Operator: R & J Cockerill Licence Number: 2569001084 Permit Version: 100 Location: Spring Fed Tank At Cribden End Farm,Rawtenstall Authority: Environment Agency, North West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 3 Yearly Rate (m3): 1318 Details: Cribden End Farm, Rawtenstall Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 26th January 1966 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(E)	1682	2	380100 423800
	Water Abstractions Operator: United Utilities Water Ltd Licence Number: 2569001165 Permit Version: 101 Location: Holdenwood Reservoir (Impounding Ogden Brk) Authority: Environment Agency, North West Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Not Supplied Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 27th January 2005 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A2SW (SW)	1732	2	377400 422200

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: United Utilities Water Plc Licence Number: 2569001165 Permit Version: 100 Location: Holdenwood Reservoir (Impounding Ogden Brk) Authority: Environment Agency, North West Region Abstraction: Public Water Supply: Potable Water Supply - Direct Abstraction Type: Water may be abstracted from a single point Source: Surface Daily Rate (m3): 0 Yearly Rate (m3): 0 Details: Ogden/ Calfhey/ Holdenwood Reservoir (Imp/ Ogden Brook) & River Intake From Musbury Brook Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 22nd March 1991 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A2SW (SW)	1732	2	377400 422200
	Water Abstractions Operator: J S Slater Ltd Licence Number: 2569001051 Permit Version: Not Supplied Location: Two Reservoirs, Syke Mill, Haslingden, ROSSENDALE, Lancashire Authority: Environment Agency, North West Region Abstraction: Cooling & Boiler Feed & Manufacturing Abstraction Type: Not Supplied Source: River Daily Rate (m3): 387 Yearly Rate (m3): 90920 Details: Additional Purposes: Manufacturing; Boiler feed; Licence Status: Lapsed Authorised Start: Not Supplied Authorised End: Not Supplied Permit Start Date: Not Supplied Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1753	2	379100 422100
	Water Abstractions Operator: Lanxess Urethanes Uk Ltd Licence Number: 2671333053 Permit Version: 101 Location: Borehole At Paragon Works Baxenden Accrington Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Paragon Works, Baxenden Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 12th June 2017 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(NW)	1812	2	377600 425600
	Water Abstractions Operator: Lanxess Urethanes Uk Ltd Licence Number: 2671333053 Permit Version: 101 Location: Borehole At Paragon Works Baxenden Accrington Authority: Environment Agency, North West Region Abstraction: Chemicals: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Paragon Works, Baxenden Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 12th June 2017 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(NW)	1812	2	377600 425600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Lanxess Urethanes Uk Ltd Licence Number: 2671333053 Permit Version: 101 Location: Borehole At Paragon Works Baxenden Accrington Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Paragon Works, Baxenden Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 12th June 2017 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(NW)	1812	2	377600 425600
	Water Abstractions Operator: Baxenden Chemical Co Ltd Licence Number: 2671333053 Permit Version: 100 Location: Borehole At Paragon Works Baxenden Accrington Authority: Environment Agency, North West Region Abstraction: Chemicals: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 159 Yearly Rate (m3): 34095 Details: Paragon Works, Baxenden Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 13th December 1993 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(NW)	1812	2	377600 425600
	Water Abstractions Operator: Baxenden Chemical Co Ltd Licence Number: 2671333053 Permit Version: 100 Location: Borehole At Paragon Works Baxenden Accrington Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Paragon Works, Baxenden Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 13th December 1993 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(NW)	1812	2	377600 425600
	Water Abstractions Operator: Baxenden Chemical Co Ltd Licence Number: 2671333053 Permit Version: 100 Location: Borehole At Paragon Works Baxenden Accrington Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Paragon Works, Baxenden Authorised Start: 01 October Authorised End: 30 September Permit Start Date: 13th December 1993 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(NW)	1812	2	377600 425600

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: James Gaskell Butchers Ltd Licence Number: 2671333067 Permit Version: 100 Location: Borehole At Spittens Farm, Haslingdenroad, Accrington. Authority: Environment Agency, North West Region Abstraction: General Agriculture; General Use (Medium Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 5 Yearly Rate (m3): 1659 Details: Land & Premises At Spittens Farm. Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 18th June 1987 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A21NE (NW)	1839	2	377100 425300
	Water Abstractions Operator: Jane Ackroyd Licence Number: 2671333070 Permit Version: 100 Location: Borehole At Newhouses, Roundhill Road, Accrington Authority: Environment Agency, North West Region Abstraction: Household Water Supply: Drinking; Cooking; Sanitary; Washing; (Small Garden) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 3 Yearly Rate (m3): 996 Details: 1/2/3/4 Newhouses & Glenmoor Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 8th January 1998 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	A21NW (NW)	1913	2	376900 425200
	Water Abstractions Operator: Interfloor Ltd Licence Number: 2569001184 Permit Version: 101 Location: Borehole At Broadway, Haslingden Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (High Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Premises At Broadway, Haslingden Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 2nd June 2003 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1976	2	379200 421900
	Water Abstractions Operator: Interfloor Ltd Licence Number: 2569001184 Permit Version: 101 Location: Borehole At Broadway, Haslingden Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Premises At Broadway, Haslingden Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 2nd June 2003 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1976	2	379200 421900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Water Abstractions Operator: Interfloor Ltd Licence Number: 2569001184 Permit Version: 101 Location: Borehole At Broadway, Haslingden Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Premises At Broadway, Haslingden Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 2nd June 2003 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1976	2	379200 421900
	Water Abstractions Operator: Duralay Ltd Licence Number: 2569001184 Permit Version: 100 Location: Borehole At Broadway, Haslingden Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (High Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): 550 Yearly Rate (m3): 136000 Details: Premises At Broadway, Haslingden Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 2nd November 1992 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 100m	(SE)	1976	2	379200 421900
	Water Abstractions Operator: Duralay Ltd Licence Number: 2569001184 Permit Version: 100 Location: Borehole At Broadway, Haslingden Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: General Cooling (Existing Licences Only) (Low Loss) Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Premises At Broadway, Haslingden Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 2nd November 1992 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(SE)	1976	2	379200 421900
	Water Abstractions Operator: Duralay Ltd Licence Number: 2569001184 Permit Version: 100 Location: Borehole At Broadway, Haslingden Authority: Environment Agency, North West Region Abstraction: Other Industrial/Commercial/Public Services: Process Water Abstraction Type: Water may be abstracted from a single point Source: Groundwater Daily Rate (m3): Not Supplied Yearly Rate (m3): Not Supplied Details: Premises At Broadway, Haslingden Authorised Start: 01 January Authorised End: 31 December Permit Start Date: 2nd November 1992 Permit End Date: Not Supplied Positional Accuracy: Located by supplier to within 10m	(SE)	1976	2	379200 421900

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Groundwater Vulnerability Map Combined Classification: Secondary Superficial Aquifer - Medium Vulnerability Combined Vulnerability: Medium Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: Low Bedrock Flow: Well Connected Fractures Dilution: >550 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: 3-10m Superficial Recharge: High	A13NE (N)	0	4	378339 423859
	Groundwater Vulnerability Map Combined Classification: Secondary Superficial Aquifer - Medium Vulnerability Combined Vulnerability: Medium Combined Aquifer: Productive Bedrock Aquifer, Productive Superficial Aquifer Pollutant Speed: Low Bedrock Flow: Well Connected Fractures Dilution: >550 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: 3-10m Superficial Recharge: High	A13NE (NE)	0	4	378412 423900
	Groundwater Vulnerability Map Combined Classification: Secondary Bedrock Aquifer - Medium Vulnerability Combined Vulnerability: Medium Combined Aquifer: Productive Bedrock Aquifer, No Superficial Aquifer Pollutant Speed: Low Bedrock Flow: Well Connected Fractures Dilution: >550 mm/year Baseflow Index: >70% Superficial Patchiness: <90% Superficial Thickness: 3-10m Superficial Recharge: High	A13NE (SW)	0	4	378341 423814
	Groundwater Vulnerability - Soluble Rock Risk None				
	Bedrock Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NE (SW)	0	4	378341 423814
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - Undifferentiated	A13NE (N)	0	4	378339 423859
	Superficial Aquifer Designations Aquifer Designation: Secondary Aquifer - A	A13NE (NE)	0	4	378412 423900
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	0	2	378380 423797
	Extreme Flooding from Rivers or Sea without Defences Type: Extent of Extreme Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	116	2	378468 423697
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13NE (NE)	0	2	378403 423887

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (S)	34	2	378364 423660
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SE (SE)	116	2	378469 423698
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (S)	138	2	378239 423565
	Flooding from Rivers or Sea without Defences Type: Extent of Flooding from Rivers or Sea without Defences Flood Plain Type: Fluvial Models Boundary Accuracy: As Supplied	A13SW (S)	224	2	378208 423485
	Areas Benefiting from Flood Defences None				
	Flood Water Storage Areas None				
	Flood Defences None				
48	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 68.6 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NE (NE)	0	5	378449 423877
49	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 125.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NE (NE)	2	5	378415 423935
50	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 58.5 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13NE (NE)	34	5	378449 423875
51	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 251.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13NE (NE)	36	5	378460 423932
52	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 14.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13NE (NE)	37	5	378452 423861
53	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 165.0 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13NE (E)	43	5	378453 423850

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
54	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 81.1 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13SW (S)	98	5	378326 423579
55	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 159.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13SE (SE)	101	5	378459 423649
56	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 165.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NE (N)	110	5	378374 424057
57	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 281.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A13SE (E)	124	5	378529 423789
58	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NE (N)	125	5	378430 424058
59	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 53.6 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13SE (SE)	126	5	378467 423655
60	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 396.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NE (N)	127	5	378438 424058
61	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 25.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A13NE (NE)	145	5	378556 423990
62	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 34.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13SE (SE)	148	5	378498 423685

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
63	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 219.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A13SW (S)	151	5	378269 423539
64	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 13.1 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A13NE (NE)	164	5	378565 424014
65	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 27.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A13NE (NE)	175	5	378570 424027
66	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 36.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NW (N)	185	5	378310 424131
67	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 17.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A13NE (NE)	192	5	378571 424054
68	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 155.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A13NE (NE)	199	5	378565 424070
69	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 26.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13NW (N)	211	5	378281 424150
70	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 47.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18SW (N)	232	5	378260 424165
71	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 55.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (W)	256	5	377998 423691

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
72	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.3 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A18SE (N)	259	5	378486 424182
73	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 14.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A18SE (N)	266	5	378492 424188
74	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 151.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18SW (N)	267	5	378222 424185
75	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 45.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A18SE (NE)	278	5	378502 424197
76	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 25.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (SW)	283	5	377978 423645
77	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 139.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (SW)	283	5	377977 423652
78	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 114.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (SW)	288	5	377980 423605
79	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 23.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (SW)	298	5	377967 423625
80	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 36.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13SW (SW)	301	5	378008 423533

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
81	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 128.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13SW (SW)	302	5	378045 423488
82	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 15.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13SW (SW)	302	5	378045 423488
83	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A13SW (SW)	304	5	378028 423502
84	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (SW)	317	5	377945 423633
85	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 268.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A18SE (NE)	323	5	378522 424238
86	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 11.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (SW)	324	5	377938 423635
87	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.3 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (W)	341	5	377919 423770
88	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (W)	346	5	377915 423777
89	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 19.5 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8NW (SW)	347	5	378120 423387

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
90	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 140.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12SE (W)	347	5	377914 423779
91	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 388.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	347	5	377926 423862
92	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 98.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8NW (SW)	365	5	378116 423369
93	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 64.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18SW (NW)	370	5	378065 424189
94	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 62.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18SW (NW)	379	5	378055 424191
95	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 346.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18SW (NW)	386	5	378088 424236
96	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 230.6 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A7NE (SW)	422	5	377902 423473
97	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 169.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SE (NW)	438	5	377996 424210
98	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 185.4 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A7NE (SW)	441	5	377942 423395

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
99	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 7.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8NW (SW)	462	5	378069 423283
100	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 31.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8NW (SW)	469	5	378066 423277
101	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 90.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	481	5	377792 423843
102	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 116.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	481	5	377792 423843
103	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A8NW (SW)	492	5	378078 423247
104	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 142.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8NW (SW)	493	5	378075 423247
105	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 184.5 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A18SE (NE)	554	5	378667 424428
106	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 105.9 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SE (NW)	567	5	377836 424193
107	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	569	5	377735 423941

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
108	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 198.3 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	570	5	377707 423868
109	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 41.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	576	5	377730 423948
110	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 98.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A7NE (SW)	588	5	377954 423200
111	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 186.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SW (NE)	589	5	378782 424399
112	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 105.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A18SE (NE)	589	5	378635 424480
113	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 52.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (NW)	611	5	377750 424087
114	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 93.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (NW)	611	5	377750 424087
115	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 2	A7NE (SW)	618	5	377984 423151
116	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 1.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8SW (S)	621	5	378085 423107

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
117	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 20.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8SW (S)	622	5	378085 423106
118	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 127.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A7NE (SW)	625	5	377983 423144
119	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 23.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8SW (S)	639	5	378089 423086
120	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.1 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	648	5	377702 424069
121	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 164.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NE (W)	652	5	377698 424069
122	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 95.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8SW (S)	656	5	378098 423064
123	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 32.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A8SW (S)	656	5	378098 423064
124	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 49.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SE (NW)	658	5	377780 424283
125	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 124.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SE (NW)	672	5	377712 424164

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
126	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 32.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SE (NW)	674	5	377876 424431
127	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 59.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SW (NE)	676	5	378955 424349
128	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 8.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A19NW (NE)	676	5	378722 424538
129	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 10.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SW (NE)	683	5	378948 424368
130	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 91.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A19NW (NE)	684	5	378728 424544
131	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 467.9 Watercourse Level: Underground Permanent: True Watercourse Name: Long Dike Catchment Name: Mersey Primacy: 1	A19NW (NE)	684	5	378728 424544
132	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 41.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	694	5	379020 424285
133	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 13.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SW (NE)	698	5	378991 424337
134	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 39.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SE (NW)	700	5	377846 424438

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
135	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 17.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SW (NE)	702	5	379007 424322
136	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 23.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SW (NE)	710	5	379004 424339
137	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 260.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A8SW (S)	729	5	378133 422975
138	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.5 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	730	5	379027 424341
139	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 143.0 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	732	5	379030 424341
140	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 5.0 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A19NW (NE)	764	5	378782 424605
141	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 43.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NW (W)	767	5	377511 423897
142	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 124.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A19NW (NE)	768	5	378785 424609
143	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 86.7 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	778	5	379048 424394

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
144	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SW (NE)	786	5	378999 424466
145	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 6.7 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NW (W)	795	5	377534 424047
146	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 4.8 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SW (NW)	796	5	377594 424204
147	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 3.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SW (NW)	800	5	377590 424205
148	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 142.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NW (W)	801	5	377528 424047
149	**OS Water Network Lines** Watercourse Form: Lake Watercourse Length: 6.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SW (NW)	804	5	377586 424205
150	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 2.4 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NW (W)	810	5	377469 423908
151	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 113.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SW (NW)	810	5	377580 424206
152	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 35.4 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NW (W)	812	5	377467 423908

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
153	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 166.1 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (E)	822	5	379213 424162
154	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 22.2 Watercourse Level: Underground Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (E)	825	5	379216 424160
155	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 18.2 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	834	5	379167 424308
156	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 145.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (E)	842	5	379236 424151
157	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 32.1 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A19NW (NE)	844	5	378732 424717
158	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 88.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	852	5	379181 424319
159	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 32.9 Watercourse Level: On ground surface Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A19NW (NE)	873	5	378732 424748
160	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 67.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	906	5	379194 424407
161	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 129.8 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A17SW (NW)	922	5	377469 424228

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
162	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 93.5 Watercourse Level: Underground Permanent: True Watercourse Name: Swinnel Brook Catchment Name: Mersey Primacy: 1	A3NW (S)	926	5	378163 422766
163	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 13.5 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A23SE (N)	937	5	378663 424836
164	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 104.0 Watercourse Level: Not Supplied Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A19SE (NE)	955	5	379259 424392
165	**OS Water Network Lines** Watercourse Form: Inland river Watercourse Length: 137.3 Watercourse Level: On ground surface Permanent: True Watercourse Name: Not Supplied Catchment Name: Mersey Primacy: 1	A12NW (W)	977	5	377359 424102

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
166	**BGS Recorded Landfill Sites** Site Name: South Shore Tip Location: Charles Lane, HASLINGDEN, Lancs Authority: British Geological Survey, National Geoscience Information Service Ground Water: Information not available Surface Water: Information not available Geology: N/A Positional Accuracy: Positioned by the supplier Boundary Accuracy: Good	A8NW (S)	387	-	378261 423296
167	**Historical Landfill Sites** Licence Holder: Tarmac Construction Limited Location: Off Commerce Street, Carrs, Haslingden, Lancashire Name: Sunny Field Farm Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD15625 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 2300/0694 BGS Ref: Not Supplied Other Ref: R059, K1/14/59, Licence No 127	A13SW (W)	179	2	378080 423751
168	**Historical Landfill Sites** Licence Holder: Tarmac National Construction Limited Location: Martin Croft Road, Hud Hey, Haslingden, Lancashire Name: Martin Croft Farm Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD15624 First Input Date: 31st December 1985 Last Input Date: 31st December 1989 Specified Waste Type: Deposited Waste included Inert Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 2300/0689 BGS Ref: Not Supplied Other Ref: K1/14/54, Licence No 126, R054	A18SE (N)	239	2	378435 424175
169	**Historical Landfill Sites** Licence Holder: Tarmac Construction Limited Location: Charles Lane, Well Bank, Haslingden, Lancashire Name: South Shore Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD15628 First Input Date: 1st January 1951 Last Input Date: 22nd September 1972 Specified Waste Type: Deposited Waste included Industrial and Commercial Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 2300/0666 BGS Ref: 2927 Other Ref: R024, K1/14/024, Licence No 122	A8NW (S)	346	2	378270 423336
170	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Carrs, Haslingden, Lancashire Name: Bentwood Road Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD17258 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: Not Supplied Other Ref: K1/14/071	A8NW (S)	502	2	378110 423224

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
171	**Historical Landfill Sites** Licence Holder: Not Supplied Location: Haslingden, Lancashire Name: Duckworth Clough Tip Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD32067 First Input Date: 25th September 1972 Last Input Date: 31st December 1992 Specified Waste Type: Deposited Waste included Industrial and Commercial Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: Not Supplied BGS Ref: 2928 Other Ref: Not Supplied	A19SW (NE)	725	2	379009 424358
172	**Historical Landfill Sites** Licence Holder: K and D Excavations Location: Off Blackburn Road, Acre, Haslingden, Lancashire Name: Higher Barn Farm Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD15622 First Input Date: 31st December 1985 Last Input Date: 31st December 1994 Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 2300/0674 BGS Ref: Not Supplied Other Ref: R037, K1/14/037	A19NW (NE)	728	2	378729 424592
173	**Historical Landfill Sites** Licence Holder: Mr M Holden Location: Off Blackburn Road, Acre, Haslingden, Lancashire Name: Hall Park Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD15623 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Not Supplied EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 2300/0683 BGS Ref: Not Supplied Other Ref: R048, K1/14/048, Licence No 310	A19NW (NE)	746	2	378709 424620
174	**Historical Landfill Sites** Licence Holder: Caralux Limited Location: Blackburn Road, Acre, Haslingden, Lancashire Name: Caralux Limited Operator Location: Not Supplied Boundary Accuracy: As Supplied Provider Reference: EAHLD15621 First Input Date: Not Supplied Last Input Date: Not Supplied Specified Waste Type: Deposited Waste included Inert and Industrial Waste EA Waste Ref: 0 Regis Ref: Not Supplied WRC Ref: 2300/0692 BGS Ref: Not Supplied Other Ref: R057, K1/14/57, Licence No 118	A18NE (N)	833	2	378425 424779
175	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Top O'Slate Quarry Landfill Licence Number: 53994 Location: Land/ Premises At, Higher Lane, Haslingden, Rossendale, Lancashire, BB4 5UD Licence Holder: Rossendale Borough Council Authority: Environment Agency - North West Region, South Area Site Category: Landfills Taking Non-biodegradeable Wastes (Not Construction) Max Input Rate: Not Supplied **Licence Status: Modified** Issued: 29th July 1977 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A14NW (E)	483	2	378907 423922

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
176	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Hutch Bank Quarry Licence Number: 401508 Location: Hutch Bank Quarry, Hutch Bank Road, Haslingden, Rossendale, Lancashire, BB4 5EJ Licence Holder: Churchill Enviro Ltd Authority: Environment Agency - North West Region, North Area Site Category: Inert LF Max Input Rate: Not Supplied **Licence Status: Issued** Issued: 19th February 2019 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A7SE (SW)	679	2	377904 423125
177	**Licensed Waste Management Facilities (Landfill Boundaries)** Name: Duckworth Clough Landfill Site Licence Number: 53745 Location: Clough End Road, Haslingden, Rossendale, Lancashire, BB4 5AN Licence Holder: Lancashire County Council Authority: Environment Agency - North West Region, North Area Site Category: Household, Commercial And Industrial Waste Landfills Max Input Rate: Not Supplied **Licence Status: Closure** Issued: 1st May 1994 Positional Accuracy: Positioned by the supplier Boundary Accuracy: As Supplied	A19SE (NE)	911	2	379200 424407
178	**Licensed Waste Management Facilities (Locations)** Licence Number: 50440 Location: Units 4 & 17b Taylor Court, Todd Hall Road, Haslingden, Lancashire, BB4 5LA Operator Name: Recontainers Ltd Operator Location: Not Supplied Authority: Environment Agency - North West Region, North Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Modified** Issued: 28th June 2006 Last Modified: 28th October 2010 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m	A8NW (SW)	324	2	378102 423421
179	**Licensed Waste Management Facilities (Locations)** Licence Number: 53994 Location: Land/ Premises At, Higher Lane, Haslingden, Rossendale, Lancashire, BB4 5UD Operator Name: Rossendale Borough Council Operator Location: Not Supplied Authority: Environment Agency - North West Region, North Area Site Category: Landfills Taking Non-biodegradeable Wastes (Not Construction) **Licence Status: Closed** Issued: 29th July 1977 Last Modified: 5th July 2007 Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A14NW (E)	594	2	379008 423824
180	**Licensed Waste Management Facilities (Locations)** Licence Number: 401508 Location: Hutch Bank Quarry, Hutch Bank Road, Haslingden, Rossendale, Lancashire, BB4 5EJ Operator Name: Churchill Enviro Ltd Operator Location: Not Supplied Authority: Environment Agency - North West Region, North Area Site Category: Inert LF **Licence Status: Issued** Issued: 19th February 2019 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 10m	A7SE (SW)	813	2	377731 423084

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
181	**Licensed Waste Management Facilities (Locations)** Licence Number: 50045 Location: Underbrow Farm, Cribden Side, Haslingden, Rossendale, Lancashire, BB4 5UB Operator Name: Harding Andrew H Operator Location: Not Supplied Authority: Environment Agency - North West Region, North Area Site Category: Household, Commercial And Industrial Transfer Stations **Licence Status: Issued** Issued: 20th April 2001 Last Modified: Not Supplied Expires: Not Supplied Suspended: Not Supplied Revoked: Not Supplied Surrendered: Not Supplied IPPC Reference: Not Supplied Positional Accuracy: Located by supplier to within 100m	A19SE (NE)	951	2	379300 424300
	Local Authority Landfill Coverage Name: Rossendale Borough Council - Has supplied landfill data		0	3	378341 423814
	Local Authority Landfill Coverage Name: Lancashire County Council - Had landfill data but passed it to the relevant environment agency		0	6	378341 423814
182	**Potentially Infilled Land (Non-Water)** Bearing Ref: E Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A13NE (E)	109	-	378512 423837
183	**Potentially Infilled Land (Non-Water)** Bearing Ref: S Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A8NE (S)	257	-	378469 423458
184	**Potentially Infilled Land (Non-Water)** Bearing Ref: E Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A14NW (E)	477	-	378900 423926
185	**Potentially Infilled Land (Non-Water)** Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A19SW (NE)	536	-	378848 424259
186	**Potentially Infilled Land (Non-Water)** Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12SW (W)	858	-	377399 423782
187	**Potentially Infilled Land (Non-Water)** Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12NW (W)	873	-	377389 423829
188	**Potentially Infilled Land (Non-Water)** Bearing Ref: N Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A18NW (N)	884	-	378033 424777
189	**Potentially Infilled Land (Non-Water)** Bearing Ref: W Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12NW (W)	899	-	377382 423927
190	**Potentially Infilled Land (Non-Water)** Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A19NW (NE)	913	-	378880 424722
191	**Potentially Infilled Land (Non-Water)** Bearing Ref: NE Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A19SE (NE)	978	-	379326 424308
192	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13SE (S)	49	-	378386 423656
193	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13SE (S)	95	-	378340 423581

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
194	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13NE (N)	102	-	378381 424047
195	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13NE (NE)	127	-	378549 423950
196	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13SW (SW)	222	-	378149 423511
197	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13NE (E)	231	-	378642 423851
198	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A12SE (W)	266	-	377997 423774
199	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8NW (SW)	285	-	378158 423438
200	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1931	A13SE (E)	291	-	378660 423710
201	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13SW (SW)	297	-	378012 423535
202	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A18SE (NE)	299	-	378548 424203
203	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8NW (SW)	360	-	378108 423378
204	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A12SE (SW)	373	-	377949 423492
205	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A8NE (S)	447	-	378515 423267
206	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8NW (SW)	471	-	378028 423293
207	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8NW (S)	491	-	378123 423231
208	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A18SE (NE)	502	-	378610 424397
209	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1931	A8NW (SW)	533	-	378036 423221
210	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A8NW (SW)	579	-	378053 423164
211	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8SW (S)	699	-	378063 423031
212	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1911	A9NW (SE)	739	-	378969 423297
213	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A18NE (N)	764	-	378509 424697
214	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A12NW (W)	773	-	377505 423897

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
215	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8SW (S)	779	-	378169 422915
216	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1912	A18NE (N)	794	-	378492 424731
217	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1912	A18NE (N)	828	-	378492 424765
218	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A3NW (S)	889	-	378191 422799
219	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1931	A9SE (SE)	976	-	379100 423071
220	**Registered Landfill Sites** Licence Holder: Tarmac Construction Ltd Licence Reference: L 127 Site Location: Sunnyside Farm, Haslingden, Rossendale, Lancashire Licence Easting: Not Supplied Licence Northing: Not Supplied Operator Location: Knowsley Road, Haslingden, Lancashire Authority: Environment Agency - North West Region, Central Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 22nd January 1980 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Positioned by the supplier Boundary Accuracy: Good Authorised Waste Environment Agency must give specific authorisation for this waste to be acceptedWaste requires prior approval: Excavated Natural Materials $ Waste N.O.S	A13SW (W)	147	2	378098 423778
221	**Registered Landfill Sites** Licence Holder: Tarmac Construction Ltd Licence Reference: L 126 Site Location: Martin Croft Farm, Haslingden, Rossendale, Lancashire Licence Easting: Not Supplied Licence Northing: Not Supplied Operator Location: Knowsley Road, Haslingden, Lancashire Authority: Environment Agency - North West Region, Central Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 22nd January 1980 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Positioned by the supplier Boundary Accuracy: Moderate Authorised Waste Environment Agency must give specific authorisation for this waste to be acceptedWaste requires prior approval: Construction And Demolition Wastes Waste N.O.S	A18SE (N)	245	2	378377 424194

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
222	**Registered Landfill Sites** Licence Holder: Tarmac Construction Ltd Licence Reference: L 122 Site Location: South Shore Street, Haslingden, Rossendale, Lancashire Licence Easting: Not Supplied Licence Northing: Not Supplied Operator Location: Knowsley Road, Haslingden, Lancashire Authority: Environment Agency - North West Region, Central Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 25th October 1979 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Positioned by the supplier Boundary Accuracy: Good Authorised Waste Environment Agency must give specific authorisation for this waste to be acceptedWaste requires prior approval: Construction And Demolition Wastes Waste N.O.S	A8NW (S)	374	2	378258 423310
223	**Registered Landfill Sites** Licence Holder: Slate Developments Ltd Licence Reference: L 54 Site Location: Top O'Slate, Higher Lane, Haslingden, Rossendale, Lancashire Licence Easting: Not Supplied Licence Northing: Not Supplied Operator Location: 23 Tottington Road, Bury, Lancashire Authority: Environment Agency - North West Region, Central Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: Some restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 9th September 1977 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Positioned by the supplier Boundary Accuracy: Moderate Authorised Waste Environment Agency must give specific authorisation for this waste to be acceptedWaste requires prior approval: Constr'N/Demol. Inert/Non-Haz/Non-Tox Waste N.O.S	A14NW (E)	482	2	378906 423921

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
224	**Registered Landfill Sites** Licence Holder: Rossendale B.C. Licence Reference: L 60 Site Location: Top O'Slate Quarry, Higher Lane, Haslingden, Rossenda Licence Easting: Not Supplied Licence Northing: Not Supplied Operator Location: Henrietta Street, Bacup, Lancashire Authority: Environment Agency - North West Region, South Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Record supersededSuperseded Dated: 29th September 1977 Preceded By Licence: Not Given Superseded By Licence: 20060 (L 60) Positional Accuracy: Positioned by the supplier Boundary Accuracy: Moderate Authorised Waste Environment Agency must give specific authorisation for this waste to be acceptedWaste requires prior approval: Road Making Materials Waste N.O.S	A14SE (E)	657	2	379047 423707
225	**Registered Landfill Sites** Licence Holder: K & D Excavations Licence Reference: L 191 Site Location: Higher Barn Reclamation, Blackburn Road, Haslingden, Rossendale, Lancashire Licence Easting: Not Supplied Licence Northing: Not Supplied Operator Location: Victoria Millyard, Station Road, Haslingden, Lancashire Authority: Environment Agency - North West Region, Central Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st March 1984 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Positioned by the supplier Boundary Accuracy: Moderate Authorised Waste: Ceramic Waste Commercial Waste Construction And Demolition Wastes Excavated Natural Materials $ Glass/Cullet Hardcore And Rubble Industrial Wastes Metal Scrap Polymeric Material, Products/Scrap Wood Waste/Timber Prohibited Waste: Asbestos Carcasses And Flesh Chemical Wastes Food Waste Liquid Wastes Sawdust/Bark Sludge Wastes Textiles, Rag,Wool,Cloth,Hessian Etc Vegetable/Processing Waste	A19NW (NE)	727	2	378729 424591

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
226	**Registered Landfill Sites** Licence Holder: Rossendale B.C. Licence Reference: 20060 (L 60) Site Location: Top O'Slate Quarry, Higher Lane, Haslingden, Rossenda Licence Easting: 379150 Licence Northing: 423650 Operator Location: Henrietta Street, Bacup, Lancashire Authority: Environment Agency - North West Region, South Area Site Category: Landfill Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source Restrictions: Some restriction on source of waste Status: Operational as far as is knownOperational Dated: 1st June 1993 Preceded By Licence: L 60 Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Brick, Concrete, Tarmac Max.Waste Permitted By Licence Uncontam Soil, Clay, Nat'Sand, Rock Prohibited Waste: Clinical Wastes Liquid Wastes Waste N.O.S. Whether/Not Pre-Treated	A14SE (E)	773	2	379150 423650
227	**Registered Landfill Sites** Licence Holder: M Holden Licence Reference: L 310 Site Location: Caraluxe, Hall Park, Haslingden, ROSSENDALE, Lancashire, BB4 5BQ Licence Easting: 378670 Licence Northing: 424670 Operator Location: Hall Park, HASLINGDEN, Lancashire, BB4 5BQ Authority: Environment Agency - North West Region, Central Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st June 1990 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste: Concrete, Brick Glass, Slate, Ceramics Non-Haz. Metals Soil, Clay, Nat'L Sand, Rock Solid Fully Polymerised Plastic Tarmacadam Timber Prohibited Waste: Clinical Wastes Foliage Shavings, Sawdust Or Prod'S Of These	A18NE (N)	779	2	378670 424670

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
228	**Registered Landfill Sites** Licence Holder: Caralux Licence Reference: L 118 Site Location: Blackburn Road, Acre, Haslingden, Rossendale, Lancashire Licence Easting: 378440 Licence Northing: 424810 Operator Location: As Site Address Authority: Environment Agency - North West Region, Central Area Site Category: Landfill Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 11th September 1979 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned to the address or location Boundary Accuracy: Not Applicable Authorised Waste Environment Agency must give specific authorisation for this waste to be acceptedWaste requires prior approval: Construction And Demolition Wastes Waste N.O.S	A18NE (N)	865	2	378440 424810
229	**Registered Waste Transfer Sites** Licence Holder: A H Harding Licence Reference: Eawml50045 Site Location: Underbrow Farm, Cribden Side, Haslingden, Rossendale, Lancashire, Bb4 5ub Operator Location: Underbrow Farm, Cribden Side, Haslingden, Rossendale, Lancashire, Bb4 5ub Authority: Environment Agency - North West Region, South Area Site Category: Transfer Max Input Rate: Undefined Waste Source Restrictions: No known restriction on source of waste Licence Status: Operational as far as is knownOperational Dated: 20th April 2001 Preceded By Licence: 20424 (L 424 Superseded By Licence: Not Given Positional Accuracy: Approximate location provided by supplier Boundary Quality: Not Supplied Authorised Waste: Household/Commercial/Industrial Waste (Inferred From Regis Listing) New Licence, Wastes Not To Hand	A19SE (NE)	951	2	379300 424300

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
229	**Registered Waste Transfer Sites** Licence Holder: A H Harding Licence Reference: 20424 (L 424 Site Location: Underbrow Farm, Cribden Side, Haslingden, ROSSENDALE, Lancashire, BB4 5UB Operator Location: As Site Address Authority: Environment Agency - North West Region, South Area Site Category: Transfer Max Input Rate: Undefined Waste Source Restrictions: Some restriction on source of waste Licence Status: Record supersededSuperseded Dated: 6th November 1992 Preceded By Licence: Not Given Superseded By Licence: Eawml50045 Positional Accuracy: Approximate location provided by supplier Boundary Quality: Not Supplied Authorised Waste: Cement, Plasterboard/Plaster Glass,Slate,Concrete,Brick,Ceramics,Tarmac Max.Waste Permitted By Licence Non-Haz. Ferrous & Non-Ferr. Scrap Paper/Cardboard Waste Rubber Soil, Clay, Natural Sand, Rock Solid Fully Polymersed Material Textiles, Fibres (Nat'L/Manmade) Timber Prohibited Waste: Clinical Waste Foliage, Shavings, Sawdust Or Products Liquid Wastes Special Wastes Swarf/Finely Divided Metals Waste N.O.S.	A19SE (NE)	951	2	379300 424300
230	**Registered Waste Treatment or Disposal Sites** Licence Holder: David Holt Plastics Ltd Licence Reference: L 563 (WAS 449 2/93) Site Location: Todd Hall Road, Carrs Industrial Estate, Haslingden, ROSSENDALE, Lancashire, BB4 5LA Operator Location: As Site Address Authority: Environment Agency - North West Region, Central Area Site Category: Recovery - with reclamation Max Input Rate: Very Small (Less than 10,000 tonnes per year) Waste Source Restrictions: Some restriction on source of waste Licence Status: Licence lapsed/cancelled/defunct/not applicable/surrenderedCancelled Dated: 1st May 1994 Preceded By Licence: Not Given Superseded By Licence: Not Given Positional Accuracy: Manually positioned within the geographical locality Boundary Quality: Not Supplied Authorised Waste: Max.Waste Permitted By Licence Polyethylene (Low/Med/High Dens Grades Telephone Directories	A8NW (SW)	353	2	378080 423400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS 1:625,000 Solid Geology Description: Millstone Grit Group [See Also Migr]	A13NE (SW)	0	1	378341 423814
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: <15 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (SW)	0	1	378341 423814
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13NE (NE)	0	1	378401 423867
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SE (SE)	182	1	378560 423664
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A13SW (SW)	248	1	378115 423501
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A12SE (W)	580	1	377680 423792
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A18NE (N)	783	1	378658 424678

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	BGS Estimated Soil Chemistry Source: British Geological Survey, National Geoscience Information Service Soil Sample Type: Sediment Arsenic Concentration: 15 - 25 mg/kg Cadmium Concentration: <1.8 mg/kg Chromium Concentration: 60 - 90 mg/kg Lead Concentration: <100 mg/kg Nickel Concentration: 15 - 30 mg/kg	A24SW (N)	962	1	378693 424854
231	**BGS Recorded Mineral Sites** Site Name: Carr Mill Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93576 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	505	1	378878 424150
232	**BGS Recorded Mineral Sites** Site Name: Top O' Slate Location: Haslingden, Rossendale, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 19355 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Upper Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14NW (E)	532	1	378955 423920
233	**BGS Recorded Mineral Sites** Site Name: Clough End Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93575 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	538	1	378850 424259
234	**BGS Recorded Mineral Sites** Site Name: Top O' Slate Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 9644 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14SW (E)	605	1	379010 423780
235	**BGS Recorded Mineral Sites** Site Name: Hutch Bank Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93596 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	617	1	377859 423233

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
236	**BGS Recorded Mineral Sites** Site Name: Hutch Bank Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93595 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	667	1	377728 423296
237	**BGS Recorded Mineral Sites** Site Name: Hutch Bank Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93597 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	691	1	377847 423148
238	**BGS Recorded Mineral Sites** Site Name: Top O' Slate Location: Haslingden, Rossendale, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 19354 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Upper Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14SE (E)	759	1	379135 423650
239	**BGS Recorded Mineral Sites** Site Name: Hutch Bank Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 2645 Type: Opencast **Status: Ceased** Operator: Bardon Aggregates - Northern Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Unknown	A7SE (SW)	822	1	377700 423100
240	**BGS Recorded Mineral Sites** Site Name: Higher Swineheard Lowe Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93592 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Millstone Grit Group Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A12SW (W)	862	1	377395 423779
240	**BGS Recorded Mineral Sites** Site Name: Higher Swineheard Lowe Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93593 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Millstone Grit Group Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A12NW (W)	874	1	377388 423824

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
241	**BGS Recorded Mineral Sites** Site Name: Round Hill Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93565 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Millstone Grit Group Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A18NW (N)	885	1	378033 424777
242	**BGS Recorded Mineral Sites** Site Name: Acre Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93567 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A19NW (NE)	910	1	378885 424715
243	**BGS Recorded Mineral Sites** Site Name: Copy Farm Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93577 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Millstone Grit Group Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A12NW (W)	910	1	377380 423959
244	**BGS Recorded Mineral Sites** Site Name: Acre Location: Acre, Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93620 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A24SW (N)	955	1	378729 424836
245	**BGS Recorded Mineral Sites** Site Name: Hutch Bank Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93602 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A7SE (SW)	974	1	377723 422890
	BGS Measured Urban Soil Chemistry No data available				
	BGS Urban Soil Chemistry Averages No data available				
	Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13NE (SW)	0	7	378341 423814

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13NE (SW)	0	-	378341 423814
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	378412 423900
	Potential for Collapsible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	378339 423859
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Compressible Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	22	1	378303 423664
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	36	1	378381 423670
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
	Potential for Compressible Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	234	1	378027 423795
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	378358 423864
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	1	378267 423765
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	378339 423859
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	5	1	378297 423824
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	17	1	378279 423814
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	75	1	378508 423812
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	81	1	378363 424030

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	92	1	378486 423694
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	105	1	378258 424003
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	111	1	378465 423654
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	127	1	378548 423955
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	142	1	378556 423852
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	149	1	378557 423847
	Potential for Landslide Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	185	1	378297 423495
	Potential for Landslide Ground Stability Hazards Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	202	1	378299 423478
	Potential for Landslide Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	240	1	378033 423612
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	378412 423900
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	1	378263 423725
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	378361 423857
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
	Potential for Running Sand Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	234	1	378027 423795
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	378339 423859
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	102	1	378242 423971
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	120	1	378370 424068
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	217	1	378157 424053

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	240	1	378033 423612
	Radon Potential - Radon Affected Areas Affected Area: The property is in a Lower probability radon area (less than 1% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	0	1	378325 423814
	Radon Potential - Radon Affected Areas Affected Area: The property is an Intermediate probability radon area (3 to 5% of homes are estimated to be at or above the Action Level). Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Radon Potential - Radon Protection Measures Protection Measure: No radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	0	1	378325 423814
	Radon Potential - Radon Protection Measures Protection Measure: Basic radon protective measures are necessary in the construction of new dwellings or extensions Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
246	**Contemporary Trade Directory Entries** Name: Lodge Sheet Metal Fabrications Ltd Location: Vine Grove Works, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Classification: Sheet Metal Work **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (S)	71	-	378371 423616
246	**Contemporary Trade Directory Entries** Name: Rossendale Group Plc Location: Vine Grove Works, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Classification: Lifting Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (S)	71	-	378371 423616
246	**Contemporary Trade Directory Entries** Name: Planned Maintenance (Pennine) Ltd Location: Unit 2, Vine Grove Works, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Classification: Concrete Contractors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (S)	71	-	378371 423616
246	**Contemporary Trade Directory Entries** Name: N K F United Kingdom Ltd Location: Unit 2, Vine Grove Works, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Classification: Fibre Optics **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (S)	71	-	378371 423616
246	**Contemporary Trade Directory Entries** Name: Planned Maintenance (Pennine) Ltd Location: Unit 2, Vine Grove Works, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Classification: Mechanical Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (S)	71	-	378371 423616
246	**Contemporary Trade Directory Entries** Name: Planned Maintenance (Pennine) Ltd Location: Vine Grove Works, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Classification: Engineering Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (S)	71	-	378371 423616
246	**Contemporary Trade Directory Entries** Name: Warton Metals Ltd Location: Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, BB4 5JT Classification: Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (S)	92	-	378399 423611
247	**Contemporary Trade Directory Entries** Name: Advance Air Movements (Lancs) Ltd Location: Vine Grove Works,Commerce St, Haslingden, Rossendale, Lancashire, BB4 5JT Classification: Ventilators & Ventilation Systems **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A13NE (NE)	79	-	378494 423884
247	**Contemporary Trade Directory Entries** Name: Greenday U P V C Systems Location: Unit 3, Grove House, Carrs Industrial Estate, Booth Street, Haslingden, Rossendale, Lancashire, BB4 5JA Classification: Window Frame Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	80	-	378495 423884
247	**Contemporary Trade Directory Entries** Name: Rossendale Plastics Location: Unit 1, Station Road, Haslingden, Rossendale, Lancashire, BB4 5HX Classification: Machine Shops **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	97	-	378511 423880

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
248	**Contemporary Trade Directory Entries** Name: Stickwithus Ltd Location: Unit 2, Vale Street, Haslingden, Rossendale, Lancashire, BB4 5JB Classification: Adhesives, Glues & Sealants **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	102	-	378525 423934
248	**Contemporary Trade Directory Entries** Name: Bridge Catering Fabrications Ltd Location: Bridge House, Vale Street, Haslingden, Rossendale, Lancashire, BB4 5JB Classification: Metal Products - Fabricated **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	140	-	378563 423927
248	**Contemporary Trade Directory Entries** Name: Valley Building Supplies Location: Unit 1, Vale Street, Haslingden, Rossendale, BB4 5JB Classification: Builders' Merchants **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	153	-	378576 423934
249	**Contemporary Trade Directory Entries** Name: W H Good Ltd Location: W H Good Ltd, Commerce Street, Rossendale, BB4 5JT Classification: Mechanical Engineers **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	121	-	378173 423617
249	**Contemporary Trade Directory Entries** Name: Falcon Products Ltd Location: Falcon House, Carrs Industrial Estate, Commerce Street, Haslingden, ROSSENDALE, Lancashire, BB4 5JT Classification: Catering Equipment **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	145	-	378152 423604
250	**Contemporary Trade Directory Entries** Name: M C T Brattberg Location: Carrs Industrial Estate, Commerce Street, Haslingden, ROSSENDALE, Lancashire, BB4 5JT Classification: Sealant Compounds & Applications **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	149	-	378226 423558
250	**Contemporary Trade Directory Entries** Name: Solomon Location: Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Classification: Refrigeration Equipment Manufacturers & Distributors **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A13SW (SW)	149	-	378226 423558
250	**Contemporary Trade Directory Entries** Name: Pro Tech Sealants Location: Unit 1,Carrs Ind Est,Commerce St, Haslingden, Rossendale, Lancashire, BB4 5JT Classification: Chemical Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A13SW (SW)	149	-	378226 423558
251	**Contemporary Trade Directory Entries** Name: Reelvision Print Location: Q C L House, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (E)	154	-	378526 423745
252	**Contemporary Trade Directory Entries** Name: Vehicle Recovery Service Location: 186, Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HW Classification: Breakdown and Recovery **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (E)	185	-	378594 423849
252	**Contemporary Trade Directory Entries** Name: Vehicle Recovery Service Location: 186, Blackburn Road, Haslingden, Rossendale, BB4 5HW Classification: Car Breakdown & Recovery Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A13NE (E)	186	-	378596 423849

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
252	**Contemporary Trade Directory Entries** Name: Premier Ltd Location: Blackburn Rd, Haslingden, Rossendale, Lancashire, BB4 5QG Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A13SE (E)	202	-	378591 423780
252	**Contemporary Trade Directory Entries** Name: Njf Motor Services Location: 147, Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HN Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (E)	215	-	378614 423805
252	**Contemporary Trade Directory Entries** Name: Neil James Location: 147, Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HN Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (E)	215	-	378614 423805
253	**Contemporary Trade Directory Entries** Name: Canberra Scaffolding Ltd Location: Canberra House, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, BB4 5JT Classification: Scaffolding & Work Platforms **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	212	-	378089 423573
253	**Contemporary Trade Directory Entries** Name: Dermide Ltd Location: Carrs Ind Est,Commerce St, Haslingden, Rossendale, Lancashire, BB4 5JT Classification: Wallpapers & Wall Coverings **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A13SW (SW)	242	-	378088 423530
253	**Contemporary Trade Directory Entries** Name: Advanced Combustion Engineering Ltd Location: Unit 3, Carrs Industrial Estate, Commerce Street, Haslingden, ROSSENDALE, Lancashire, BB4 5JT Classification: Engineers - General **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	245	-	378073 423542
253	**Contemporary Trade Directory Entries** Name: Multi Crete Products Ltd Location: Unit 1, Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, Lancashire, BB4 5JT Classification: Builders' Merchants **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	276	-	378049 423521
254	**Contemporary Trade Directory Entries** Name: Carpet Clean Direct Location: 17, Cross Street North, Haslingden, Rossendale, Lancashire, BB4 5JD Classification: Carpet, Curtain & Upholstery Cleaners **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13NE (NE)	212	-	378625 423998
255	**Contemporary Trade Directory Entries** Name: E M T Box Ltd Location: 129, Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HN Classification: Packaging & Wrapping Equipment & Supplies **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (E)	216	-	378598 423758
255	**Contemporary Trade Directory Entries** Name: Puposet Ltd Location: 121, Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HL Classification: Electronic Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SE (E)	220	-	378586 423716
256	**Contemporary Trade Directory Entries** Name: Powerlink Components Location: Unit 8, Taylors Court, Todd Hall Road, Haslingden, Rossendale, BB4 5LA Classification: Electronic Component Manufacturers & Distributors **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	219	-	378178 423501

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
256	**Contemporary Trade Directory Entries** Name: Express C N C Location: Unit 1, Taylor Court, Todd Hall Road, Rossendale, BB4 5LA Classification: Machinery - Industrial & Commercial **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	219	-	378178 423501
256	**Contemporary Trade Directory Entries** Name: Tarox Location: Unit 9, Taylors Court, Todd Hall Road, Haslingden, Rossendale, BB4 5LA Classification: Brake & Clutch Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	219	-	378178 423501
256	**Contemporary Trade Directory Entries** Name: Saanro International Ltd Location: Unit 3, Taylors Court, Todd Hall Road, Haslingden, Rossendale, BB4 5LA Classification: Car Washing & Polishing Equipment & Supplies **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	219	-	378178 423501
256	**Contemporary Trade Directory Entries** Name: Frenitalia Ltd Location: Unit 9, Taylors Court, Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5LA Classification: Brake & Clutch Service Centres **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	233	-	378186 423484
256	**Contemporary Trade Directory Entries** Name: Wiltshire Farm Foods Location: Unit 2, Taylors Court, Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5LA Classification: Frozen Food Processors & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	233	-	378186 423484
256	**Contemporary Trade Directory Entries** Name: Insignia Location: Unit 7, Taylors Court, Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5LA Classification: Screen Process Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	233	-	378186 423484
256	**Contemporary Trade Directory Entries** Name: Recontainers Ltd Location: Unit 4, Taylors Court, Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5LA Classification: Drums, Kegs, Barrels & Casks **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	233	-	378186 423484
256	**Contemporary Trade Directory Entries** Name: Presentation Works Location: Unit 7, Taylors Court, Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5LA Classification: Stationery Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	233	-	378186 423484
256	**Contemporary Trade Directory Entries** Name: The Danwood Group Ltd Location: Unit 10, Taylors Court, Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5LA Classification: Office Equipment Manufacturers & Distributors **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	233	-	378186 423484
256	**Contemporary Trade Directory Entries** Name: Coldwater Jocell Ab Location: Unit 2, Taylors Court, Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5LA Classification: Plastic Products - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	233	-	378186 423484

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
256	**Contemporary Trade Directory Entries** Name: Bakewell Ovens Ltd Location: Unit 10-11, Taylors Court, Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5LA Classification: Catering Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	233	-	378186 423484
257	**Contemporary Trade Directory Entries** Name: Camel Cleaners Location: Martin Croft Road, Haslingden, Rossendale, Lancashire, BB4 5BS Classification: Blast Cleaning **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (N)	219	-	378307 424165
257	**Contemporary Trade Directory Entries** Name: Camel Cleaners Location: Martin Croft Road, Haslingden, Rossendale, Lancashire, BB4 5BS Classification: Blast Cleaning **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (N)	219	-	378307 424165
258	**Contemporary Trade Directory Entries** Name: Wilson'S Ranges & Stoves Location: 119, Blackburn Road, Haslingden, Rossendale, BB4 5HL Classification: Cookers - Sales & Service **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SE (SE)	220	-	378557 423639
259	**Contemporary Trade Directory Entries** Name: Integrated Facilities Ltd Location: Prinny Mill Business Centre,Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HL Classification: Electrical Engineers **Status: Active** Positional Accuracy: Manually positioned to the address or location	A8NE (S)	230	-	378431 423468
259	**Contemporary Trade Directory Entries** Name: Elekem Location: Wellbank Works, 68, Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5QF Classification: Plastic Products - Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NE (S)	230	-	378431 423468
259	**Contemporary Trade Directory Entries** Name: G Holt Mechanical Services Location: Prinny Mill Business Centre, Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HL Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NE (S)	230	-	378431 423468
259	**Contemporary Trade Directory Entries** Name: Reid Atkinson Ltd Location: Prinny Mill Business Centre, 68 Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5HL Classification: Road Haulage Services **Status: Active** Positional Accuracy: Manually positioned to the address or location	A8NE (S)	243	-	378431 423454
260	**Contemporary Trade Directory Entries** Name: Production Print Direct Ltd Location: Link 665 Business Centre, Todd Hall Road, Haslingden, Rossendale, BB4 5HU Classification: Press Tool Manufacturers & Distributors **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NW (S)	278	-	378207 423427
260	**Contemporary Trade Directory Entries** Name: Print On Location: Suite 1a Link 665 Business Centre,Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5HU Classification: Printers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A8NW (S)	278	-	378207 423427

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
260	**Contemporary Trade Directory Entries** Name: Protocol Communications Managment Ltd Location: Link Business Centre, 665, Todd Hall Road, Haslingden, Rossendale, Lancashire, BB4 5HU Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NW (S)	282	-	378203 423425
261	**Contemporary Trade Directory Entries** Name: New Street Garage Location: Hudrake Mill, Hudrake, Haslingden, Rossendale, BB4 5AL Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (NE)	291	-	378710 423983
261	**Contemporary Trade Directory Entries** Name: Hudrake Motors Location: Hudrake Mill, Hudrake, Haslingden, Rossendale, Lancashire, BB4 5AL Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A14NW (NE)	292	-	378712 423977
262	**Contemporary Trade Directory Entries** Name: Blast Clean & Paint Location: Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, BB4 5JT Classification: Blast Cleaning **Status: Active** Positional Accuracy: Automatically positioned to the address	A13SW (SW)	312	-	378018 423503
263	**Contemporary Trade Directory Entries** Name: Red Rose Classics Location: 1, Laburnum Street, Haslingden, Rossendale, Lancashire, BB4 5DW Classification: Classic Car Specialists **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	326	-	378420 423361
264	**Contemporary Trade Directory Entries** Name: Bill Meynell Haulage Location: 157, Hudrake, Haslingden, Rossendale, Lancashire, BB4 5AL Classification: Road Haulage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A14NW (NE)	354	-	378707 424143
265	**Contemporary Trade Directory Entries** Name: Lathepress Tyres Ltd Location: 2-4, Regent Street, Haslingden, Rossendale, Lancashire, BB4 5HQ Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	377	-	378605 423414
265	**Contemporary Trade Directory Entries** Name: Haslingden Tyres Ltd Location: 2-4, Regent Street, Haslingden, Rossendale, Lancashire, BB4 5HQ Classification: Tyre Dealers **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	377	-	378605 423414
266	**Contemporary Trade Directory Entries** Name: S D F Electronics Ltd Location: Unit 2,Unicorn Park,Carrs Ind Est, Haslingden, Rossendale, Lancashire, BB4 5LA Classification: Electronic Equipment - Manufacturers & Assemblers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8NW (S)	390	-	378159 423326
266	**Contemporary Trade Directory Entries** Name: T S Jeans Care Ltd Location: Unit 3, Bentwood Road, Rossendale, BB4 5HH Classification: Chemicals & Allied Products **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NW (S)	399	-	378156 423317
266	**Contemporary Trade Directory Entries** Name: Regency Fcb Uk Ltd Location: Unit 4, Bentwood Road, Haslingden, Rossendale, BB4 5HH Classification: Colour Manufacturers & Suppliers **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NW (S)	416	-	378152 423301

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
267	**Contemporary Trade Directory Entries** Name: Lincoln Street Garage Location: 12, Lincoln Street, Haslingden, Rossendale, Lancashire, BB4 5DT Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	391	-	378370 423287
268	**Contemporary Trade Directory Entries** Name: Hi-Speed Catering Services Location: Bell Street, Haslingden, Rossendale, Lancashire, BB4 5PX Classification: Catering Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	417	-	378556 423323
268	**Contemporary Trade Directory Entries** Name: Texaco Location: Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5QG Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	423	-	378532 423303
268	**Contemporary Trade Directory Entries** Name: Texaco Location: Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5QG Classification: Petrol Filling Stations **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NE (S)	423	-	378532 423303
268	**Contemporary Trade Directory Entries** Name: Haslingden Service Station Location: Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5QG Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	423	-	378532 423303
269	**Contemporary Trade Directory Entries** Name: Powder Coatings Northern Ltd Location: Todd Hall Road, Haslingden, Rossendale, BB4 5LA Classification: Powder Coatings **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	417	-	377955 423416
269	**Contemporary Trade Directory Entries** Name: Moto-Coat Location: Todd Hall Road, Haslingden, Rossendale, BB4 5LA Classification: Powder Coatings **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	417	-	377955 423416
269	**Contemporary Trade Directory Entries** Name: Thai Pac Location: Unit 5,Underbank Way, Haslingden, Rossendale, Lancashire, BB4 5HR Classification: Polythene & Plastic Sheeting Supplies **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A7NE (SW)	433	-	377964 423385
270	**Contemporary Trade Directory Entries** Name: Eaton Filtration Location: 5-7 Deardengate, Haslingden, Rossendale, Lancashire, BB4 5QN Classification: Filtration Systems & Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	420	-	378613 423363
271	**Contemporary Trade Directory Entries** Name: Harrison Saw & Tool Ltd Location: Underbank Way, Haslingden, Rossendale, Lancashire, BB4 5HR Classification: Builders' Tools & Equipment Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NW (SW)	424	-	378060 423330
271	**Contemporary Trade Directory Entries** Name: Combisofa.Com Location: Unit 1 Carrs Industrial Estate,Bentwood Road, Haslingden, Rossendale, Lancashire, BB4 5HH Classification: Seating Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A8NW (SW)	462	-	378040 423297

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
272	**Contemporary Trade Directory Entries** Name: M C E Ltd Location: Unit 1a, Fountain Mill, Rakefoot, Haslingden, Rossendale, Lancashire, BB4 5RE Classification: Catering Equipment **Status: Active** Positional Accuracy: Automatically positioned to the address	A14SW (SE)	433	-	378765 423585
273	**Contemporary Trade Directory Entries** Name: Holdens Pattern Tooling Ltd Location: 3, Hargreaves Street, Haslingden, Rossendale, Lancashire, BB4 5RQ Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A9NW (SE)	463	-	378727 423431
273	**Contemporary Trade Directory Entries** Name: Holdens Pattern & Tooling Location: 3, Hargreaves Street, Haslingden, Rossendale, Lancashire, BB4 5RQ Classification: Tool Design, Manufacturers & Makers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	464	-	378727 423431
273	**Contemporary Trade Directory Entries** Name: Filter Fabrications Location: Unit 10a Hargreaves Mill,10a Chapel Street, Haslingden, Rossendale, Lancashire, BB4 5QR Classification: Air Purification Equipment **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A9NW (SE)	481	-	378731 423405
274	**Contemporary Trade Directory Entries** Name: Reconditioned Heater Sales Location: Clough End Road, Haslingden, Rossendale, Lancashire, BB4 5AN Classification: Heating Equipment - Sales & Service **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19SW (NE)	469	-	378729 424288
275	**Contemporary Trade Directory Entries** Name: Advanced Colours & Chemicals Ltd Location: Unit 7, Bentwood Road, Haslingden, Rossendale, Lancashire, BB4 5HH Classification: Chemicals & Allied Products **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NW (S)	469	-	378133 423251
276	**Contemporary Trade Directory Entries** Name: P V I Products Location: Unit 4,Hud Hey Rd, Haslingden, Rossendale, Lancashire, BB4 5JH Classification: Car Accessories Manufacturers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A18SE (NE)	474	-	378582 424378
276	**Contemporary Trade Directory Entries** Name: A B Tyre Sales Ltd Location: Unit 4, Old Townsend Yard, Hud Hey Road, Rossendale, BB4 5JH Classification: Car Dealers - Used **Status: Active** Positional Accuracy: Automatically positioned to the address	A18SE (NE)	475	-	378581 424379
277	**Contemporary Trade Directory Entries** Name: Fabserv Location: Unit 1-2, Underbank Way, Haslingden, Rossendale, BB4 5HR Classification: Sheet Metal Work **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	479	-	377968 423322
277	**Contemporary Trade Directory Entries** Name: Multipol Ltd Location: Underbank Way, Haslingden, Rossendale, Lancashire, BB4 5HR Classification: Packaging Materials Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A7NE (SW)	479	-	377972 423320
277	**Contemporary Trade Directory Entries** Name: Innovative Nail Kreations Ltd Location: Unit 3, Underbank Way, Haslingden, Rossendale, BB4 5HR Classification: Distribution Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	491	-	377972 423305

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
277	**Contemporary Trade Directory Entries** Name: Option Technologies Europe Location: Unit 3, Underbank Way, Haslingden, Rossendale, BB4 5HR Classification: Printed Circuit Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	491	-	377972 423305
277	**Contemporary Trade Directory Entries** Name: Foam Cutting Ltd Location: Carrs Industrial Estate,Underbank Way, Haslingden, Rossendale, Lancashire, BB4 5HR Classification: Packaging Materials Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A7NE (SW)	498	-	377972 423296
278	**Contemporary Trade Directory Entries** Name: J W Shoes Ltd Location: 3, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Classification: Footwear Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (NE)	491	-	378657 424363
279	**Contemporary Trade Directory Entries** Name: Arena Textiles Location: Hargreaves St, Haslingden, Rossendale, Lancashire, BB4 5RQ Classification: Textile Manufacturing **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A14SW (SE)	502	-	378794 423476
279	**Contemporary Trade Directory Entries** Name: Brooklands Metalcraft Location: Hargreaves Mill, Hargreaves Street, Haslingden, Rossendale, Lancashire, BB4 5RQ Classification: Catering Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	541	-	378835 423472
279	**Contemporary Trade Directory Entries** Name: Sewglass Products Ltd Location: Unit 5, Elm Close, Haslingden, Rossendale, BB4 5QS Classification: Ropes & Hawsers **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	542	-	378823 423443
279	**Contemporary Trade Directory Entries** Name: Absolute Spill Kit Location: Unit 1, Hargreaves Mill, Hargreaves Street, Rossendale, BB4 5RQ Classification: Hygiene & Cleansing Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	542	-	378823 423443
280	**Contemporary Trade Directory Entries** Name: I D Catering Equipment Location: Unit 10 Hud Hey Business Park,Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Classification: Catering Equipment **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A18SE (N)	506	-	378536 424424
280	**Contemporary Trade Directory Entries** Name: Mpl Ltd Location: Unit 4,Hud Hey Ind Est,Hud Hey Rd, Haslingden, Rossendale, Lancashire, BB4 5JH Classification: Drilling & Boring Equipment & Supplies **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A18SE (N)	506	-	378536 424424
280	**Contemporary Trade Directory Entries** Name: 1st Class Finish Location: Unit 2 Old Towns Yard Hud Hey rd, Haslingden, Rossendale, Lancashire, BB4 5JH Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A18SE (N)	511	-	378557 424424
281	**Contemporary Trade Directory Entries** Name: Peter Merriman Location: Townsend Street Garage, Townsend Street, Haslingden, Rossendale, Lancashire, BB4 5DF Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (S)	509	-	378473 423187

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
281	**Contemporary Trade Directory Entries** Name: Autocare Location: Townsend St, Haslingden, Rossendale, Lancashire, BB4 5DF Classification: Garage Services **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A8NE (S)	509	-	378473 423187
282	**Contemporary Trade Directory Entries** Name: Mobile Link Location: 38, Deardengate, Haslingden, Rossendale, Lancashire, BB4 5QJ Classification: Mobile Phone Accessories and Car Kits **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	528	-	378602 423222
282	**Contemporary Trade Directory Entries** Name: Wendy Nicola Cleaning Services Location: 3, Pleasant Street, Haslingden, Rossendale, BB4 5LG Classification: Cleaning Services - Domestic **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	535	-	378614 423220
282	**Contemporary Trade Directory Entries** Name: J & M Mcintyre Location: 14, Manchester Road, Haslingden, Rossendale, Lancashire, BB4 5ST Classification: Wallpapers & Wall Coverings **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8NE (SE)	567	-	378628 423191
283	**Contemporary Trade Directory Entries** Name: Camel Cleaners Location: 2, Martin Croft Road, Haslingden, Rossendale, Lancashire, BB4 5BP Classification: Engineering Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SW (N)	528	-	378319 424478
284	**Contemporary Trade Directory Entries** Name: R & M Hayes Ltd Location: Old Market Hall, Chapel Street, Haslingden, ROSSENDALE, Lancashire, BB4 5QR Classification: Footwear Manufacturers & Wholesale **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	534	-	378765 423360
285	**Contemporary Trade Directory Entries** Name: T S Chemicals Ltd Location: Unit 3a, Bentwood Road, Haslingden, Rossendale, BB4 5HH Classification: Chemical Manufacturers **Status: Active** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	544	-	377986 423233
285	**Contemporary Trade Directory Entries** Name: Catering Equipment Solutions Location: Unit 3a, Bentwood Road, Haslingden, Rossendale, Lancashire, BB4 5HH Classification: Catering Equipment **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	544	-	377986 423233
285	**Contemporary Trade Directory Entries** Name: Pro-Lite Projection Location: Unit 3A, Bentwood Road, Haslingden, Rossendale, Lancashire, BB4 5HH Classification: Distribution Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A7NE (SW)	544	-	377986 423233
286	**Contemporary Trade Directory Entries** Name: Christal Clean Location: 69, Deardengate, Rossendale, BB4 5SN Classification: Dry Cleaners **Status: Active** Positional Accuracy: Automatically positioned to the address	A8NE (S)	549	-	378565 423178
287	**Contemporary Trade Directory Entries** Name: L P S Packaging Supplies Location: Unit 8, Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Classification: Packaging Materials Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (N)	551	-	378581 424459

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
287	**Contemporary Trade Directory Entries** Name: Spencer Synthetics Ltd Location: Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Classification: Textile Manufacturing **Status: Active** Positional Accuracy: Automatically positioned to the address	A18SE (N)	551	-	378581 424459
287	**Contemporary Trade Directory Entries** Name: A B Tyres Ltd Location: Unit 4, Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (N)	557	-	378589 424463
287	**Contemporary Trade Directory Entries** Name: Globe Recycling Services Ltd Location: Unit 4, Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Classification: Tyre Disposal **Status: Active** Positional Accuracy: Automatically positioned to the address	A18SE (N)	557	-	378589 424463
287	**Contemporary Trade Directory Entries** Name: Kens Garage Service Centre & M O T Station Location: Unit 1, Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A18SE (N)	557	-	378589 424463
287	**Contemporary Trade Directory Entries** Name: Clayton Part Print Finishers Ltd Location: Unit 2, Hud Hey Industrial Estate, Hud Hey Road, Rossendale, BB4 5JH Classification: Print Finishers **Status: Active** Positional Accuracy: Automatically positioned to the address	A18SE (N)	557	-	378589 424463
287	**Contemporary Trade Directory Entries** Name: Premier Plant Engineering Location: Unit 1A, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Classification: Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (NE)	562	-	378618 424458
287	**Contemporary Trade Directory Entries** Name: Plastic Coatings Location: Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5LB Classification: Spraying - Paint & Coatings **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (NE)	562	-	378618 424458
287	**Contemporary Trade Directory Entries** Name: Tyre World Location: Unit 11, Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (NE)	562	-	378618 424458
287	**Contemporary Trade Directory Entries** Name: Earnshaw International Spedition Location: Unit 6, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A18SE (NE)	562	-	378618 424458
288	**Contemporary Trade Directory Entries** Name: Townsend Street Garage Location: Deardengate, Haslingden, Rossendale, Lancashire, BB4 5SN Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Manually positioned within the geographical locality	A8SE (S)	596	-	378561 423125
289	**Contemporary Trade Directory Entries** Name: Electrical Services Management Ltd Location: The Yard, Chapel Street, Haslingden, Rossendale, Lancashire, BB4 5QR Classification: Electrical Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	601	-	378868 423400

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
289	**Contemporary Trade Directory Entries** Name: I P C Location: The Yard, Chapel Street, Haslingden, Rossendale, Lancashire, BB4 5QR Classification: Electrical Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	601	-	378868 423400
290	**Contemporary Trade Directory Entries** Name: Boxes & Packaging Location: Plantation Mill, Flip Road, Haslingden, Rossendale, Lancashire, BB4 5EJ Classification: Boxes & Cartons **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	606	-	378067 423130
291	**Contemporary Trade Directory Entries** Name: Premier Plant Engineering Location: Unit 6, Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Classification: Plant & Machinery Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	627	-	378695 424497
292	**Contemporary Trade Directory Entries** Name: Best Valley Doors Location: 25, Manchester Road, Haslingden, Rossendale, BB4 5SL Classification: Door Manufacturers - Domestic **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SE (SE)	658	-	378660 423105
293	**Contemporary Trade Directory Entries** Name: Print Clothes Location: Haslingden, Rossendale, Lancashire, BB4 5EB Classification: T-Shirts **Status: Active** Positional Accuracy: Manually positioned to the address or location	A8SE (S)	676	-	378539 423032
293	**Contemporary Trade Directory Entries** Name: G & N Auto Co Ltd Location: Helmshore Road, Haslingden, Rossendale, Lancashire, BB4 4BG Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SE (S)	699	-	378564 423016
294	**Contemporary Trade Directory Entries** Name: Premier Transport Services Location: 48-50, Manchester Road, Haslingden, Rossendale, Lancashire, BB4 5ST Classification: Road Haulage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	699	-	378714 423090
295	**Contemporary Trade Directory Entries** Name: Busby Location: Grane Road Mill, Haslingden, Rossendale, Lancashire, BB4 5EF Classification: Textile Manufacturing **Status: Active** Positional Accuracy: Manually positioned within the geographical locality	A8SE (S)	721	-	378415 422960
296	**Contemporary Trade Directory Entries** Name: D White Location: Flip Rd, Haslingden, Rossendale, Lancashire, BB4 5EJ Classification: Car Body Repairs **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A8SW (S)	732	-	378065 422996
297	**Contemporary Trade Directory Entries** Name: Texaco Location: Helmshore Road, Helmshore, Rossendale, Lancashire, BB4 4JR Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A8SE (S)	735	-	378562 422977
297	**Contemporary Trade Directory Entries** Name: Texaco Location: Helmshore Road, Haslingden, Rossendale, Lancashire, BB4 4BG Classification: Petrol Filling Stations **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	738	-	378575 422979

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
297	**Contemporary Trade Directory Entries** Name: Texaco Location: Helmshore Road, Helmshore, Rossendale, Lancashire, BB4 4JR Classification: Petrol Filling Stations **Status: Active** Positional Accuracy: Manually positioned to the address or location	A8SE (S)	741	-	378576 422976
297	**Contemporary Trade Directory Entries** Name: Star Forecourts Location: Helmshore Road, Haslingden, Rossendale, BB4 4BG Classification: Petrol Filling Stations - 24 Hour **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SE (S)	741	-	378576 422976
297	**Contemporary Trade Directory Entries** Name: Helmshore Road Garage Location: 1, Helmshore Road, Haslingden, Rossendale, Lancashire, BB4 4BG Classification: Garage Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	752	-	378558 422959
298	**Contemporary Trade Directory Entries** Name: H E R Quality Shavings Ltd Location: Duckworth Clough, Haslingden, Rossendale, Lancashire, BB4 5AW Classification: Sawmills & Wood Shavings **Status: Inactive** Positional Accuracy: Manually positioned to the address or location	A19SE (NE)	735	-	379015 424368
299	**Contemporary Trade Directory Entries** Name: G & J Contract Cleaning Location: 23, Piccadilly Street, Haslingden, Rossendale, Lancashire, BB4 5LU Classification: Cleaning Services - Commercial **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A9NW (SE)	748	-	378907 423196
300	**Contemporary Trade Directory Entries** Name: Wavel Motors Location: Bury Rd, Haslingden, Rossendale, Lancashire, BB4 5PG Classification: Garage Services **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A9SW (SE)	766	-	378848 423108
301	**Contemporary Trade Directory Entries** Name: The Filter Co Ltd Location: Unit 4,Three Point Business Park,Charles La, Haslingden, Rossendale, Lancashire, BB4 5EH Classification: Filter Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	818	-	378284 422860
301	**Contemporary Trade Directory Entries** Name: L E D Controls Location: Unit 10, Three Point Business Park, Charles Lane, Haslingden, Rossendale, Lancashire, BB4 5EH Classification: Distribution Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	830	-	378308 422847
301	**Contemporary Trade Directory Entries** Name: L E D Controls Factory Automation Location: Unit 10, Three Point Business Park, Charles Lane, Haslingden, Rossendale, Lancashire, BB4 5EH Classification: Electronic Component Manufacturers & Distributors **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	830	-	378308 422847
301	**Contemporary Trade Directory Entries** Name: Howdens Location: Unit 2, Three Point Business Park, Charles Lane, Haslingden, Rossendale, Lancashire, BB4 5EH Classification: Builders' Merchants **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	830	-	378308 422847
301	**Contemporary Trade Directory Entries** Name: Packaging Supplies Uk Location: Unit 10, Three Point Business Park, Charles Lane, Haslingden, Rossendale, Lancashire, BB4 5EH Classification: Packaging Materials Manufacturers & Suppliers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	830	-	378308 422847

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
302	**Contemporary Trade Directory Entries** Name: Stick With Us Location: Unit 15, Springvale Mill, Waterside Road, Haslingden, Rossendale, BB4 5EZ Classification: Adhesives, Glues & Sealants **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	**Contemporary Trade Directory Entries** Name: Platters Slate Location: Unit 20, Springvale Mill, Waterside Road, Haslingden, Rossendale, BB4 5EZ Classification: Slate & Slate Products **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	**Contemporary Trade Directory Entries** Name: Colourfolio Ltd Location: Unit 6, Springvale Mill, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EZ Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	**Contemporary Trade Directory Entries** Name: Gregory'S Of Helmshore Ltd Location: Unit 22, Springvale Mill, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EZ Classification: Cabinet Makers **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	**Contemporary Trade Directory Entries** Name: Harval Engineering Location: Unit 21, Springvale Mill, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EZ Classification: Precision Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	**Contemporary Trade Directory Entries** Name: Waterside Textiles Location: Unit 9, Springvale Mill, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EZ Classification: Soft Furnishings - Manufacturers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	**Contemporary Trade Directory Entries** Name: Millennium Blinds Ltd Location: Unit 5d, Springvale Mill, Waterside Road, Haslingden, Rossendale, BB4 5EZ Classification: Blinds, Awnings & Canopies **Status: Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	**Contemporary Trade Directory Entries** Name: Sprint Services Location: Unit 18, Springvale Mill, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EZ Classification: Print Finishers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	**Contemporary Trade Directory Entries** Name: Protofab Ltd Location: Unit 22, Springvale Mill, Waterside Road, Haslingden, ROSSENDALE, Lancashire, BB4 5EZ Classification: Sheet Metal Work **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	**Contemporary Trade Directory Entries** Name: Busi Clean Ltd Location: Unit 16e, Springvale Mill, Waterside Road, Rossendale, BB4 5EZ Classification: Commercial Cleaning Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	**Contemporary Trade Directory Entries** Name: Digital Insight Location: Unit 5, Springvale Mill, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EZ Classification: Printers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	824	-	378161 422871

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
302	**Contemporary Trade Directory Entries** Name: Palamar Location: Unit 4, Springvale Mill, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EZ Classification: Cable & Wire Equipment Manufacturers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	**Contemporary Trade Directory Entries** Name: Paul Andrew Design Location: Rossendale, BB4 5EZ Classification: Soft Furnishings - Manufacturers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A8SW (S)	824	-	378161 422871
302	**Contemporary Trade Directory Entries** Name: Riverside Polishing Location: Unit 16e,Springvale Mill,Waterside Rd, Haslingden, Rossendale, Lancashire, BB4 5EZ Classification: Metal Finishing Services **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A8SW (S)	825	-	378160 422870
302	**Contemporary Trade Directory Entries** Name: Gamma Technology Location: Springvale Mill,Waterside Rd, Haslingden, Rossendale, Lancashire, BB4 5EZ Classification: Computer Manufacturers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A8SW (S)	825	-	378161 422870
302	**Contemporary Trade Directory Entries** Name: Hurst Platt Display Ltd Location: Flip Rd, Haslingden, Rossendale, Lancashire, BB4 5EJ Classification: Shop Fittings Manufacturers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A8SW (S)	825	-	378160 422870
302	**Contemporary Trade Directory Entries** Name: Digital Insight Location: Springvale Mill,Waterside Rd, Haslingden, Rossendale, Lancashire, BB4 5EZ Classification: Printers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A8SW (S)	825	-	378160 422870
302	**Contemporary Trade Directory Entries** Name: Digital Insight Location: Springvale Mill,Waterside Rd, Haslingden, Rossendale, Lancashire, BB4 5EZ Classification: Printers **Status:** **Inactive** Positional Accuracy: Manually positioned to the address or location	A8SW (S)	825	-	378161 422870
302	**Contemporary Trade Directory Entries** Name: Stateside Foods Location: 5B-C,Unit,Springvale Mill,Waterside Rd, Haslingden, Rossendale, Lancashire, BB4 5EZ Classification: Food Products - Manufacturers **Status:** **Inactive** Positional Accuracy: Manually positioned within the geographical locality	A8SW (S)	869	-	378158 422825
303	**Contemporary Trade Directory Entries** Name: Inter Cover Ltd Location: Unit 17, Three Point Business Park, Charles Lane, Haslingden, Rossendale, Lancashire, BB4 5EH Classification: Bookbinding & Equipment **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	828	-	378243 422853
303	**Contemporary Trade Directory Entries** Name: E B K Location: Unit 16, Three Point Business Park, Charles Lane, Haslingden, Rossendale, Lancashire, BB4 5EH Classification: Petrol Pump Manufacturers & Suppliers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	828	-	378243 422853
303	**Contemporary Trade Directory Entries** Name: Forward Freight Services Ltd Location: Unit 3, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EN Classification: Freight Forwarders **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	855	-	378224 422828

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
303	**Contemporary Trade Directory Entries** Name: Waterside Auto Centre Location: Unit 1, Waterside Road, Haslingden, Rossendale, BB4 5EN Classification: Garage Services **Status: Active** Positional Accuracy: Automatically positioned to the address	A3NW (S)	890	-	378211 422795
304	**Contemporary Trade Directory Entries** Name: Hardy Utility Services Location: St. Crispin House, 4, St. Crispin Way, Haslingden, Rossendale, Lancashire, BB4 4PW Classification: Mechanical Engineers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	828	-	378041 422902
304	**Contemporary Trade Directory Entries** Name: P C B Machinery International Ltd Location: Unit 4, Bradwood Court, St. Crispin Way, Haslingden, Rossendale, Lancashire, BB4 4PW Classification: Printed Circuit Services **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	846	-	378016 422892
305	**Contemporary Trade Directory Entries** Name: Hutchbank Farm Feeds Location: 42 Grane Rd, Haslingden, Rossendale, Lancashire, BB4 5EB Classification: Pet Foods & Animal Feeds **Status: Inactive** Positional Accuracy: Manually positioned to the road within the address or location	A8SE (S)	837	-	378411 422843
306	**Contemporary Trade Directory Entries** Name: John Entwistle Light Engineering Location: 12, Willow Street, Haslingden, Rossendale, Lancashire, BB4 5NA Classification: Engineering Materials **Status: Active** Positional Accuracy: Automatically positioned to the address	A9SW (SE)	848	-	378922 423065
307	**Contemporary Trade Directory Entries** Name: Sunny Pools North Ltd Location: 1, Ryefield Avenue West, Haslingden, Rossendale, Lancashire, BB4 4BL Classification: Swimming Pool Contractors, Repairers & Service **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	860	-	378580 422852
308	**Contemporary Trade Directory Entries** Name: A C Truck Spares Location: 85, Grane Road, Haslingden, ROSSENDALE, Lancashire, BB4 5ED Classification: Commercial Vehicle Servicing, Repairs, Parts & Accessories **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	868	-	378378 422809
308	**Contemporary Trade Directory Entries** Name: Rossendale Road Springs Ltd Location: Grane Road, Haslingden, Rossendale, Lancashire, BB4 5HA Classification: Spring Manufacturers & Distributors **Status: Active** Positional Accuracy: Automatically positioned to the address	A3NE (S)	891	-	378409 422788
308	**Contemporary Trade Directory Entries** Name: Greenwoods Engineering Location: Grane Road, Haslingden, Rossendale, Lancashire, BB4 5HA Classification: Engine Rebuilding & Reconditioning **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A3NE (S)	891	-	378409 422788
309	**Contemporary Trade Directory Entries** Name: Etyres Bolton Location: 435, Blackburn Road, Acre, Rossendale, Lancashire, BB4 5AT Classification: Tyre Dealers **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (N)	876	-	378704 424761
309	**Contemporary Trade Directory Entries** Name: E Tyres Bolton Location: 435, Blackburn Road, Acre, Rossendale, BB4 5AT Classification: Tyre Repairs & Retreading **Status: Inactive** Positional Accuracy: Automatically positioned to the address	A19NW (N)	876	-	378703 424761

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
310	**Contemporary Trade Directory Entries** Name: The Real Lancashire Black Pudding Location: Unit 4, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EN Classification: Meat Product Manufacturers & Wholesalers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	876	-	378282 422802
310	**Contemporary Trade Directory Entries** Name: Real Lancashire Blackpudding Location: Unit 4, Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EN Classification: Food Products - Manufacturers **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A3NW (S)	896	-	378271 422783
311	**Contemporary Trade Directory Entries** Name: Als (Sales & Service) Ltd Location: 14, Ryefield Avenue West, Haslingden, Rossendale, Lancashire, BB4 4BL Classification: Engineers - General **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A8SE (S)	879	-	378474 422808
312	**Contemporary Trade Directory Entries** Name: Kempner Marketing Ltd Location: Unit 1a, Bradwood Court, St. Crispin Way, Haslingden, Rossendale, Lancashire, BB4 4PW Classification: Packaging & Wrapping Equipment & Supplies **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A8SW (S)	901	-	378018 422832
313	**Contemporary Trade Directory Entries** Name: Rospen Industries Location: Unit 7, Waterside Road, Haslingden, Rossendale, BB4 5EN Classification: Engineers - General **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A3NW (S)	949	-	378229 422733
314	**Contemporary Trade Directory Entries** Name: Home N Dry Location: (Ford), Top O Th Bank Farm, Kings Highway, Acre, Rossendale, BB4 5TZ Classification: Carpet, Curtain & Upholstery Cleaners **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A19NW (NE)	973	-	378844 424808
315	**Contemporary Trade Directory Entries** Name: Flexipol Packaging Ltd Location: 2, St. Crispin Way, Haslingden, Rossendale, BB4 4PW Classification: Paper & Cardboard Products & Packaging - Manufacturers **Status:** **Active** Positional Accuracy: Automatically positioned to the address	A3NW (S)	977	-	378031 422748
316	**Contemporary Trade Directory Entries** Name: L & S Wrigley Location: 51, Rising Bridge Road, Haslingden, Rossendale, Lancashire, BB4 5BL Classification: Road Haulage Services **Status:** **Inactive** Positional Accuracy: Automatically positioned to the address	A23SE (N)	998	-	378364 424948
317	**Fuel Station Entries** Name: Haslingden Service Station Location: Blackburn Road , Haslingden , Rossendale, Lancashire, BB4 5QG Brand: Texaco Premises Type: Petrol Station **Status:** **Open** Positional Accuracy: Manually positioned to the address or location	A8NE (S)	423	-	378532 423302
318	**Fuel Station Entries** Name: Star Garage Location: Helmshore Road , Haslingden , Rossendale, Lancashire, BB4 4BG Brand: Texaco Premises Type: Petrol Station **Status:** **Open** Positional Accuracy: Manually positioned to the address or location	A8SE (S)	741	-	378576 422976
319	**Points of Interest - Commercial Services** Name: Lodge Sheet Metal Fabrications Ltd Location: Vine Grove Works Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, BB4 5JT Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A13SE (S)	71	8	378371 423616

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
319	**Points of Interest - Commercial Services** Name: Lodge Sheet Metal Location: Carrs Industrial Estate, Commerce Street, Haslingden, Rossendale, BB4 5JT Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A13SE (SE)	94	8	378432 423668
320	**Points of Interest - Commercial Services** Name: G Holt Mechanical Services Location: Prinny Mill Business Centre, Blackburn Road, Haslingden, Rossendale, BB4 5HL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NE (S)	230	8	378430 423467
320	**Points of Interest - Commercial Services** Name: Reid Atkinson Ltd Location: Prinny Mill Business Centre, 68 Blackburn Road, Haslingden, Rossendale, BB4 5HL Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A8NE (S)	243	8	378431 423454
321	**Points of Interest - Commercial Services** Name: Tarox Location: Unit 9 Taylors Court, Todd Hall Road, Haslingden, Rossendale, BB4 5LA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SW (SW)	233	8	378186 423483
321	**Points of Interest - Commercial Services** Name: Tarox Location: Unit 9 Taylors Court, Todd Hall Road, Haslingden, Rossendale, BB4 5LA Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A13SW (SW)	233	8	378186 423484
321	**Points of Interest - Commercial Services** Name: Tarox Location: Unit 9 Taylors Court, Todd Hall Road, Haslingden, Rossendale, BB4 5LA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A13SW (SW)	233	8	378186 423484
322	**Points of Interest - Commercial Services** Name: Hudrake Motors Location: Hudrake Mill, Hudrake, Haslingden, Rossendale, BB4 5AL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14NW (NE)	292	8	378712 423977
322	**Points of Interest - Commercial Services** Name: Hudrake Motors Location: Hudrake Mill, Hudrake, Haslingden, Rossendale, BB4 5AL Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A14NW (NE)	292	8	378712 423976
323	**Points of Interest - Commercial Services** Name: Bill Meynell Haulage Location: 157 Hudrake, Haslingden, Rossendale, BB4 5AL Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14NW (NE)	353	8	378707 424142
323	**Points of Interest - Commercial Services** Name: Bill Meynell Location: 157 Hudrake, Haslingden, Rossendale, BB4 5AL Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A14NW (NE)	354	8	378707 424143
324	**Points of Interest - Commercial Services** Name: Fab Services Location: Unit 2, Bentwood Road, Haslingden, Rossendale, Lancashire, BB4 5HH Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A8NW (S)	383	8	378162 423332

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
324	**Points of Interest - Commercial Services** Name: Fab Serv Location: Unit 2, Bentwood Rd, Haslingden, Rossendale, Lancashire, BB4 5HH Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A8NW (S)	389	8	378160 423326
325	**Points of Interest - Commercial Services** Name: Lincoln Street Garage Location: 12 Lincoln Street, Haslingden, Rossendale, BB4 5DT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NE (S)	391	8	378370 423287
326	**Points of Interest - Commercial Services** Name: Haslingden Service Station Location: Blackburn Road, Haslingden, Rossendale, BB4 5QG Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A8NE (S)	423	8	378532 423302
326	**Points of Interest - Commercial Services** Name: Car Wash Location: Blackburn Road, Haslingden, Rossendale, BB4 5QG Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A8NE (S)	423	8	378532 423302
327	**Points of Interest - Commercial Services** Name: J D H Motor Repairs Location: Unit 5 Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SE (NE)	463	8	378578 424367
328	**Points of Interest - Commercial Services** Name: Fabserv Location: Unit 1-2, Underbank Way, Haslingden, Rossendale, BB4 5HR Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A7NE (SW)	479	8	377968 423322
328	**Points of Interest - Commercial Services** Name: Innovative Nail Kreations Ltd Location: Unit 3, Underbank Way, Haslingden, Rossendale, BB4 5HR Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A7NE (SW)	491	8	377972 423305
329	**Points of Interest - Commercial Services** Name: Scrap Yard Location: Not Supplied Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to an adjacent address or location	A18SE (N)	490	8	378490 424420
329	**Points of Interest - Commercial Services** Name: Scrap Yard Location: BB4 Category: Recycling Services Class Code: Scrap Metal Merchants Positional Accuracy: Positioned to address or location	A18SE (N)	494	8	378487 424424
330	**Points of Interest - Commercial Services** Name: Haslingdon Autocare Location: Townsend Street, Haslingden, Rossendale, BB4 5DF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NE (S)	509	8	378473 423187
330	**Points of Interest - Commercial Services** Name: Auto Fast Fix Location: Townsend Street, Haslingden, Rossendale, BB4 5DF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NE (S)	509	8	378473 423187

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
330	**Points of Interest - Commercial Services** Name: Peter Merriman Location: Townsend Street Garage, Townsend Street, Haslingden, Rossendale, BB4 5DF Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8NE (S)	509	8	378473 423187
331	**Points of Interest - Commercial Services** Name: Globe Recycling Services Ltd Location: Unit 4 Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A18SE (N)	557	8	378589 424463
331	**Points of Interest - Commercial Services** Name: Ken's Garage Location: Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SE (NE)	562	8	378618 424458
331	**Points of Interest - Commercial Services** Name: Spencer Synthetics Ltd Location: Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Category: Recycling Services Class Code: Recycling, Reclamation and Disposal Positional Accuracy: Positioned to address or location	A18SE (NE)	562	8	378618 424458
331	**Points of Interest - Commercial Services** Name: Kens Garage Location: Unit 1 Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, Lancashire, BB4 5JH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SE (NE)	562	8	378618 424458
331	**Points of Interest - Commercial Services** Name: Kens Garage Service Centre & M O T Station Location: Unit 1 Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A18SE (NE)	562	8	378617 424458
332	**Points of Interest - Commercial Services** Name: New Street Garage Location: 10 New Street, Haslingden, Rossendale, BB4 5TA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	617	8	378614 423127
332	**Points of Interest - Commercial Services** Name: New Street Garage Location: 10 New Street, Haslingden, Rossendale, BB4 5TA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	617	8	378613 423126
332	**Points of Interest - Commercial Services** Name: New Street Garage Location: 10 New Street, Haslingden, Rossendale, BB4 5TA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	617	8	378614 423127
333	**Points of Interest - Commercial Services** Name: G & N Auto Co Ltd Location: Helmshore Road, Haslingden, Rossendale, BB4 4BG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	699	8	378564 423016
333	**Points of Interest - Commercial Services** Name: G & Auto Location: Helmshore Road, Haslingden, Rossendale, BB4 4BG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	699	8	378564 423016

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
333	**Points of Interest - Commercial Services** Name: G & N Autoco Ltd Location: Helmshore Road, Haslingden, Rossendale, BB4 4BG Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	699	8	378564 423016
333	**Points of Interest - Commercial Services** Name: Star Garage Location: Helmshaw Road, Haslingden, Rossendale, BB4 4BG Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A8SE (S)	718	8	378565 422996
333	**Points of Interest - Commercial Services** Name: Car Wash Location: Helmshaw Road, Haslingden, Rossendale, Lancashire, BB4 4BG Category: Personal, Consumer and other Services Class Code: Vehicle Cleaning Services Positional Accuracy: Positioned to address or location	A8SE (S)	736	8	378562 422976
334	**Points of Interest - Commercial Services** Name: Premier Transport Services Location: 48-50 Manchester Road, Haslingden, Rossendale, BB4 5ST Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A9SW (SE)	699	8	378714 423090
335	**Points of Interest - Commercial Services** Name: Protofab Ltd Location: Unit 22 Springvale Mill, Waterside Road, Haslingden, Rossendale, BB4 5EZ Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A8SW (S)	824	8	378161 422871
335	**Points of Interest - Commercial Services** Name: D Chapburn Location: Unit 17 Springvale Mill, Waterside Road, Haslingden, Rossendale, BB4 5EZ Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SW (S)	824	8	378161 422871
335	**Points of Interest - Commercial Services** Name: Protofab Ltd Location: Unit 22 Springvale Mill, Waterside Road, Haslingden, Rossendale, BB4 5EZ Category: Construction Services Class Code: Metalworkers Including Blacksmiths Positional Accuracy: Positioned to address or location	A8SW (S)	824	8	378161 422871
335	**Points of Interest - Commercial Services** Name: L E D Controls Location: Unit 10 Three Point Business Park, Charles Lane, Haslingden, Rossendale, BB4 5EH Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A8SW (S)	830	8	378308 422847
335	**Points of Interest - Commercial Services** Name: Forward Freight Services Ltd Location: Unit 3, Waterside Road, Haslingden, Rossendale, BB4 5EN Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A8SW (S)	855	8	378224 422828
335	**Points of Interest - Commercial Services** Name: Forward Freight Services Ltd Location: Unit 3 Waterside Road, Haslingden, Rossendale, Lancashire, BB4 5EN Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A8SW (S)	855	8	378224 422828
335	**Points of Interest - Commercial Services** Name: Waterside Auto Centre Location: Unit 1, Waterside Road, Haslingden, Rossendale, BB4 5EN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A3NW (S)	891	8	378211 422794
336	**Points of Interest - Commercial Services** Name: Greenwoods Engineering Location: 42 Grane Road, Haslingden, Rossendale, BB4 5EB Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	857	8	378425 422824

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
336	**Points of Interest - Commercial Services** Name: A C Truck Spares Location: 85 Grane Road, Haslingden, Rossendale, BB4 5ED Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	868	8	378378 422809
336	**Points of Interest - Commercial Services** Name: A C Truck Spares Location: 85 Grane Road, Haslingden, Rossendale, BB4 5ED Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A8SE (S)	868	8	378378 422809
336	**Points of Interest - Commercial Services** Name: Rossendale Road Springs Ltd Location: Grane Road, Haslingden, Rossendale, BB4 5HA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A3NE (S)	891	8	378409 422788
336	**Points of Interest - Commercial Services** Name: Greenwoods Engineering Location: Grane Road, Haslingden, Rossendale, BB4 5HA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A3NE (S)	891	8	378409 422788
336	**Points of Interest - Commercial Services** Name: Rossendale Road Springs Ltd Location: Grane Road, Haslingden, Rossendale, BB4 5HA Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A3NE (S)	891	8	378409 422788
337	**Points of Interest - Commercial Services** Name: E Tyres Bolton Location: 435 Blackburn Road, Acre, Rossendale, BB4 5AT Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A19NW (N)	876	8	378703 424761
338	**Points of Interest - Commercial Services** Name: Universal Componets Location: Unit 7, Waterside Road, Haslingden, Rossendale, BB4 5EN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A3NW (S)	949	8	378229 422733
338	**Points of Interest - Commercial Services** Name: Pollard Beaumont Ltd Location: Unit 7, Waterside Road, Haslingden, Rossendale, BB4 5EN Category: Repair and Servicing Class Code: Vehicle Repair, Testing and Servicing Positional Accuracy: Positioned to address or location	A3NW (S)	949	8	378229 422733
339	**Points of Interest - Commercial Services** Name: Bell Micro Location: 2 St. Crispin Way, Haslingden, Rossendale, BB4 4PW Category: Transport, Storage and Delivery Class Code: Distribution and Haulage Positional Accuracy: Positioned to address or location	A3NW (S)	977	8	378030 422748
340	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (S)	63	8	378269 423634
340	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	65	8	378265 423633
341	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	84	8	378487 423986

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
341	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	88	8	378491 423987
341	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	89	8	378512 423926
341	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	92	8	378515 423928
342	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (E)	84	8	378497 423876
342	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (E)	85	8	378498 423873
342	**Points of Interest - Manufacturing and Production** Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A13NE (E)	94	8	378508 423877
342	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (E)	98	8	378512 423876
343	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	88	8	378423 423662
343	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	92	8	378427 423662
343	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	135	8	378485 423689
343	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13SE (SE)	136	8	378486 423689
344	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	186	8	378538 424077

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
344	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A13NE (NE)	189	8	378542 424078
345	**Points of Interest - Manufacturing and Production** Name: Industrial Estate Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	204	8	378148 423533
346	**Points of Interest - Manufacturing and Production** Name: Prinny Hill Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	243	8	378431 423454
346	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	245	8	378431 423451
346	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	247	8	378405 423440
346	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	247	8	378405 423440
347	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14NW (NE)	278	8	378697 423980
347	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14NW (NE)	282	8	378701 423981
348	**Points of Interest - Manufacturing and Production** Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A13NE (NE)	281	8	378622 424130
349	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	340	8	378546 423410
349	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	340	8	378546 423410
349	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	344	8	378594 423451

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
349	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	344	8	378594 423451
349	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	408	8	378570 423343
349	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8NE (SE)	408	8	378570 423343
349	**Points of Interest - Manufacturing and Production** Name: Works Location: 7 Ratcliffe Fold, Haslingden, Rossendale, BB4 5PZ Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to address or location	A8NE (SE)	417	8	378556 423323
350	**Points of Interest - Manufacturing and Production** Name: Carrs Industrial Estate Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A8NW (SW)	456	8	378106 423275
351	**Points of Interest - Manufacturing and Production** Name: Hud Hey Industrial Estate Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A18SE (N)	463	8	378551 424376
351	**Points of Interest - Manufacturing and Production** Name: Hud Hey Industrial Estate Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A18SE (N)	469	8	378559 424380
352	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14SW (SE)	511	8	378817 423507
353	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A14SW (SE)	514	8	378821 423508
353	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	539	8	378822 423447
353	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	539	8	378822 423447
353	**Points of Interest - Manufacturing and Production** Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	584	8	378864 423432

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
354	**Points of Interest - Manufacturing and Production** Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A19SW (NE)	567	8	378686 424433
355	**Points of Interest - Manufacturing and Production** Name: Pit Heads Location: BB4 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	714	8	378950 423316
356	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	735	8	379011 424372
357	**Points of Interest - Manufacturing and Production** Name: Quarries (Disused) Location: BB4 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A14SE (E)	761	8	379138 423650
358	**Points of Interest - Manufacturing and Production** Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to address or location	A9NW (SE)	771	8	378933 423191
359	**Points of Interest - Manufacturing and Production** Name: Hutch Bank Quarry (Dis) Location: BB4 Category: Extractive Industries Class Code: Unspecified Quarries Or Mines Positional Accuracy: Positioned to an adjacent address or location	A7NW (SW)	788	8	377661 423187
360	**Points of Interest - Manufacturing and Production** Name: Business Park Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	824	8	378273 422855
360	**Points of Interest - Manufacturing and Production** Name: Industrial Estate Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	887	8	378241 422794
360	**Points of Interest - Manufacturing and Production** Name: Industrial Estate Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	889	8	378233 422793
361	**Points of Interest - Manufacturing and Production** Name: Platters Slate Location: Unit 20 Springvale Mill, Waterside Road, Haslingden, Rossendale, BB4 5EZ Category: Extractive Industries Class Code: Stone Quarrying and Preparation Positional Accuracy: Positioned to address or location	A8SW (S)	825	8	378161 422870
362	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	859	8	378417 422821
362	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	860	8	378420 422821

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
362	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to address or location	A3NE (S)	886	8	378410 422794
362	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A3NE (S)	887	8	378410 422793
362	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A3NE (S)	894	8	378429 422787
362	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A3NE (S)	894	8	378425 422787
363	**Points of Interest - Manufacturing and Production** Name: Hurstwood Enterprise Park Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	922	8	378037 422804
363	**Points of Interest - Manufacturing and Production** Name: Hurstwood Enterprise Park Location: BB4 Category: Industrial Features Class Code: Business Parks and Industrial Estates Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	935	8	378012 422799
363	**Points of Interest - Manufacturing and Production** Name: Works Location: Not Supplied Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	981	8	378028 422744
363	**Points of Interest - Manufacturing and Production** Name: Works Location: BB4 Category: Industrial Features Class Code: Unspecified Works Or Factories Positional Accuracy: Positioned to an adjacent address or location	A3NW (S)	984	8	378023 422743
364	**Points of Interest - Manufacturing and Production** Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	936	8	379238 424393
365	**Points of Interest - Manufacturing and Production** Name: Hutch Bank Quarry (Stone) Location: BB4 Category: Extractive Industries Class Code: Stone Quarrying and Preparation Positional Accuracy: Positioned to an adjacent address or location	A7SE (SW)	946	8	377713 422931
366	**Points of Interest - Manufacturing and Production** Name: Tank Location: BB4 Category: Industrial Features Class Code: Tanks (Generic) Positional Accuracy: Positioned to an adjacent address or location	A4NW (S)	977	8	378714 422776
367	**Points of Interest - Public Infrastructure** Name: Sluice Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A18SE (NE)	273	8	378510 424190

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
367	**Points of Interest - Public Infrastructure** Name: Sluice Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A18SE (NE)	276	8	378515 424191
368	**Points of Interest - Public Infrastructure** Name: Weir Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	305	8	378046 423483
368	**Points of Interest - Public Infrastructure** Name: Weir Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A13SW (SW)	307	8	378043 423484
369	**Points of Interest - Public Infrastructure** Name: Islington Service Station Location: Blackburn Road, Haslingden, Rossendale, BB4 5QG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NE (S)	423	8	378532 423302
369	**Points of Interest - Public Infrastructure** Name: Texaco Location: Blackburn Road, Haslingden, Rossendale, BB4 5QG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NE (S)	423	8	378532 423302
369	**Points of Interest - Public Infrastructure** Name: Texaco Location: Blackburn Road, Haslingden, Rossendale, BB4 5QG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NE (S)	423	8	378532 423302
369	**Points of Interest - Public Infrastructure** Name: Samuel Cooke Haslingden Location: Blackburn Road, Haslingden, Rossendale, BB4 5QG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NE (S)	423	8	378532 423303
369	**Points of Interest - Public Infrastructure** Name: Haslingden Service Station Location: Blackburn Road, Haslingden, Rossendale, Lancashire, BB4 5QG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8NE (S)	423	8	378532 423302
370	**Points of Interest - Public Infrastructure** Name: Burial Ground Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	513	8	378770 423407
370	**Points of Interest - Public Infrastructure** Name: Burial Ground Location: BB4 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	513	8	378770 423407
371	**Points of Interest - Public Infrastructure** Name: Service Centre MOT Station Location: Hud Hey Road Unit 1, Hud Hey Industrial Estate, Haslingden, Rossendale, Lancashire, BB4 5JH Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A18SE (NE)	562	8	378618 424458
371	**Points of Interest - Public Infrastructure** Name: Spencer Synthetics Ltd Location: Hud Hey Industrial Estate, Hud Hey Road, Haslingden, Rossendale, BB4 5JH Category: Infrastructure and Facilities Class Code: Recycling Centres Positional Accuracy: Positioned to address or location	A18SE (NE)	562	8	378618 424458

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
372	**Points of Interest - Public Infrastructure** Name: Graveyard Location: Not Supplied Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	646	8	378593 423084
372	**Points of Interest - Public Infrastructure** Name: Graveyard Location: BB4 Category: Infrastructure and Facilities Class Code: Cemeteries and Crematoria Positional Accuracy: Positioned to an adjacent address or location	A8SE (S)	646	8	378593 423085
373	**Points of Interest - Public Infrastructure** Name: Weir Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	688	8	378984 424330
373	**Points of Interest - Public Infrastructure** Name: Sluice Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	766	8	379041 424384
373	**Points of Interest - Public Infrastructure** Name: Sluice Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	769	8	379019 424417
373	**Points of Interest - Public Infrastructure** Name: Sluice Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	773	8	379051 424383
373	**Points of Interest - Public Infrastructure** Name: Sluice Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	777	8	379028 424419
374	**Points of Interest - Public Infrastructure** Name: Texaco Location: Helmshore Road, Helmshore, Rossendale, BB4 4JR Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	735	8	378562 422977
374	**Points of Interest - Public Infrastructure** Name: Mister C Petrol Station Location: Helmshore Road, Haslingden, Rossendale, BB4 4BG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	736	8	378562 422976
374	**Points of Interest - Public Infrastructure** Name: Texaco Location: Helmshore Road, Haslingden, Rossendale, BB4 4BG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	736	8	378562 422976
374	**Points of Interest - Public Infrastructure** Name: Mister C Petrol Station Location: Helmshaw Road, Haslingden, Rossendale, BB4 4BG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	736	8	378562 422976
374	**Points of Interest - Public Infrastructure** Name: Star Forecourts Location: Helmshore Road, Haslingden, Rossendale, BB4 4BG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	741	8	378576 422976

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
374	**Points of Interest - Public Infrastructure** Name: Texaco Location: Helmshore Road, Haslingden, Rossendale, BB4 4BG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	741	8	378576 422976
374	**Points of Interest - Public Infrastructure** Name: Cordingleys Garage Location: Helmshore Road, Haslingden, Rossendale, BB4 4BG Category: Road And Rail Class Code: Petrol and Fuel Stations Positional Accuracy: Positioned to address or location	A8SE (S)	752	8	378558 422959
375	**Points of Interest - Public Infrastructure** Name: Weirs Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	829	8	378190 422860
375	**Points of Interest - Public Infrastructure** Name: Weirs Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	840	8	378180 422851
375	**Points of Interest - Public Infrastructure** Name: Weir Location: BB4 Category: Water Class Code: Weirs, Sluices and Dams Positional Accuracy: Positioned to an adjacent address or location	A8SW (S)	856	8	378190 422833
376	**Points of Interest - Public Infrastructure** Name: Haslingden Fire Station Location: Manchester Road, Haslingden, BB4 6NL Category: Central and Local Government Class Code: Fire Brigade Stations Positional Accuracy: Positioned to address or location	A9SW (SE)	850	8	378775 422950
376	**Points of Interest - Public Infrastructure** Name: Haslingden Police Station Location: Police Station, Manchester Road, Haslingden, Rossendale, BB4 6QW Category: Central and Local Government Class Code: Police Stations Positional Accuracy: Positioned to address or location	A9SW (SE)	877	8	378796 422931
377	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	432	8	378375 423246
377	**Points of Interest - Recreational and Environmental** Name: Playground Location: Laburnum Street, BB4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	432	8	378375 423246
378	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	552	8	378539 423164
378	**Points of Interest - Recreational and Environmental** Name: Playground Location: Ratcliffe Street, BB4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A8NE (S)	552	8	378540 423164
379	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A19SW (NE)	626	8	378746 424467

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
379	**Points of Interest - Recreational and Environmental** Name: Playground Location: Blackburn Road, BB4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A19SW (NE)	640	8	378755 424478
380	**Points of Interest - Recreational and Environmental** Name: Playground Location: Poplar Street, BB4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	740	8	378982 423319
380	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9NW (SE)	741	8	378982 423318
381	**Points of Interest - Recreational and Environmental** Name: Playground Location: Ryefield Avenue, BB4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to address or location	A9SW (SE)	803	8	378717 422971
381	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A9SW (SE)	804	8	378702 422962
382	**Points of Interest - Recreational and Environmental** Name: Playground Location: Nr Clough Gardens, BB4 Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	961	8	379224 424462
382	**Points of Interest - Recreational and Environmental** Name: Playground Location: Not Supplied Category: Recreational Class Code: Playgrounds Positional Accuracy: Positioned to an adjacent address or location	A19SE (NE)	963	8	379226 424464

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
383	**Areas of Adopted Green Belt** Authority: Rossendale Borough Council, Planning Department Plan Name: Proposal Map **Status: Adopted** Plan Date: 9th November 2011	A18SE (N)	548	9	378509 424475
384	**Areas of Adopted Green Belt** Authority: Rossendale Borough Council, Planning Department Plan Name: Proposal Map **Status: Adopted** Plan Date: 9th November 2011	A18SE (N)	548	9	378509 424475
385	**Sites of Special Scientific Interest** Name: West Pennine Moors Multiple Areas: Y Total Area (m2): 76154904.64000003 Source: Natural England Reference: 2000830 Designation Details: Common Land Designation Date: 17th November 2016 Date Type: Notified Designation Details: Ministry Of Defence Reserve Designation Date: 17th November 2016 Date Type: Notified Designation Details: National Trust Reserve Designation Date: 17th November 2016 Date Type: Notified Designation Details: Site Of Special Scientific Interest Designation Date: 17th November 2016 Date Type: Notified Designation Details: Woodland Trust Reserve Designation Date: 17th November 2016 Date Type: Notified	A12SW (W)	850	11	377404 423801

Agency & Hydrological	Version	Update Cycle
Contaminated Land Register Entries and Notices		
Burnley Borough Council - Planning and Environment	February 2013	Annual Rolling Update
Blackburn with Darwen Borough Council - Environmental Health Department	July 2013	Annual Rolling Update
Hyndburn Borough Council - Environmental Health Department	July 2013	Annual Rolling Update
Rossendale Borough Council - Environmental Health Department	November 2015	Annual Rolling Update
Bury Metropolitan Borough Council - Environmental Health Department	October 2013	Annual Rolling Update
Environment Agency - Head Office	September 2019	Annually
Discharge Consents		
Environment Agency - North West Region	January 2020	Quarterly
Enforcement and Prohibition Notices		
Environment Agency - North West Region	March 2013	Annual Rolling Update
Integrated Pollution Controls		
Environment Agency - North West Region	October 2008	Variable
Integrated Pollution Prevention And Control		
Environment Agency - North West Region	January 2020	Quarterly
Local Authority Integrated Pollution Prevention And Control		
Blackburn with Darwen Borough Council - Environmental Health Department	February 2015	Variable
Bury Metropolitan Borough Council - Environmental Health Department	February 2015	Variable
Rossendale Borough Council - Environmental Health Department	May 2016	Variable
Burnley Borough Council - Planning and Environment	November 2014	Variable
Hyndburn Borough Council - Environmental Health Department	October 2014	Variable
Local Authority Pollution Prevention and Controls		
Blackburn with Darwen Borough Council - Environmental Health Department	February 2015	Not Applicable
Bury Metropolitan Borough Council - Environmental Health Department	February 2015	Not Applicable
Rossendale Borough Council - Environmental Health Department	May 2016	Annual Rolling Update
Burnley Borough Council - Planning and Environment	November 2014	Not Applicable
Hyndburn Borough Council - Environmental Health Department	October 2014	Annual Rolling Update
Local Authority Pollution Prevention and Control Enforcements		
Blackburn with Darwen Borough Council - Environmental Health Department	February 2015	Variable
Bury Metropolitan Borough Council - Environmental Health Department	February 2015	Variable
Rossendale Borough Council - Environmental Health Department	May 2016	Variable
Burnley Borough Council - Planning and Environment	November 2014	Variable
Hyndburn Borough Council - Environmental Health Department	October 2014	Variable
Nearest Surface Water Feature		
Ordnance Survey	February 2020	
Pollution Incidents to Controlled Waters		
Environment Agency - North West Region	January 2000	Not Applicable
Prosecutions Relating to Authorised Processes		
Environment Agency - North West Region	March 2013	Annual Rolling Update
Prosecutions Relating to Controlled Waters		
Environment Agency - North West Region	March 2013	Annual Rolling Update
Registered Radioactive Substances		
Environment Agency - North West Region	June 2016	
River Quality		
Environment Agency - Head Office	November 2001	Not Applicable
River Quality Biology Sampling Points		
Environment Agency - Head Office	July 2012	Annually
River Quality Chemistry Sampling Points		
Environment Agency - Head Office	July 2012	Annually
Substantiated Pollution Incident Register		
Environment Agency - North West Region - Central Area	January 2020	Quarterly
Environment Agency - North West Region - North Area	January 2020	Quarterly
Environment Agency - North West Region - South Area	January 2020	Quarterly

Data Currency

Agency & Hydrological	Version	Update Cycle
Water Abstractions Environment Agency - North West Region	January 2020	Quarterly
Water Industry Act Referrals Environment Agency - North West Region	October 2017	Quarterly
Groundwater Vulnerability Map Environment Agency - Head Office	June 2018	As notified
Bedrock Aquifer Designations Environment Agency - Head Office	January 2018	Annually
Superficial Aquifer Designations Environment Agency - Head Office	January 2018	Annually
Source Protection Zones Environment Agency - Head Office	October 2019	Quarterly
Extreme Flooding from Rivers or Sea without Defences Environment Agency - Head Office	February 2020	Quarterly
Flooding from Rivers or Sea without Defences Environment Agency - Head Office	February 2020	Quarterly
Areas Benefiting from Flood Defences Environment Agency - Head Office	February 2020	Quarterly
Flood Water Storage Areas Environment Agency - Head Office	February 2020	Quarterly
Flood Defences Environment Agency - Head Office	February 2020	Quarterly
OS Water Network Lines Ordnance Survey	January 2020	Quarterly
Surface Water 1 in 30 year Flood Extent Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 100 year Flood Extent Environment Agency - Head Office	October 2013	Annually
Surface Water 1 in 1000 year Flood Extent Environment Agency - Head Office	October 2013	Annually
Surface Water Suitability Environment Agency - Head Office	October 2013	Annually
BGS Groundwater Flooding Susceptibility British Geological Survey - National Geoscience Information Service	May 2013	Annually

Data Currency

Waste	Version	Update Cycle
BGS Recorded Landfill Sites		
British Geological Survey - National Geoscience Information Service	June 1996	Not Applicable
Historical Landfill Sites		
Environment Agency - Head Office	October 2019	Quarterly
Integrated Pollution Control Registered Waste Sites		
Environment Agency - North West Region	October 2008	Not Applicable
Licensed Waste Management Facilities (Landfill Boundaries)		
Environment Agency - North West Region - Central Area	November 2019	Quarterly
Environment Agency - North West Region - North Area	November 2019	Quarterly
Environment Agency - North West Region - South Area	November 2019	Quarterly
Licensed Waste Management Facilities (Locations)		
Environment Agency - North West Region - Central Area	January 2020	Quarterly
Environment Agency - North West Region - North Area	January 2020	Quarterly
Environment Agency - North West Region - South Area	January 2020	Quarterly
Local Authority Landfill Coverage		
Blackburn with Darwen Borough Council	May 2000	Not Applicable
Burnley Borough Council	May 2000	Not Applicable
Bury Metropolitan Borough Council	May 2000	Not Applicable
Hyndburn Borough Council - Environmental Health Department	May 2000	Not Applicable
Lancashire County Council - Waste Management Group	May 2000	Not Applicable
Rossendale Borough Council - Environmental Health Department	May 2000	Not Applicable
Local Authority Recorded Landfill Sites		
Blackburn with Darwen Borough Council	May 2000	Not Applicable
Burnley Borough Council	May 2000	Not Applicable
Bury Metropolitan Borough Council	May 2000	Not Applicable
Hyndburn Borough Council - Environmental Health Department	May 2000	Not Applicable
Lancashire County Council - Waste Management Group	May 2000	Not Applicable
Rossendale Borough Council - Environmental Health Department	May 2000	Not Applicable
Potentially Infilled Land (Non-Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Potentially Infilled Land (Water)		
Landmark Information Group Limited	December 1999	Not Applicable
Registered Landfill Sites		
Environment Agency - North West Region - Central Area	March 2003	Not Applicable
Environment Agency - North West Region - North Area	March 2003	Not Applicable
Environment Agency - North West Region - South Area	March 2003	Not Applicable
Registered Waste Transfer Sites		
Environment Agency - North West Region - Central Area	March 2003	Not Applicable
Environment Agency - North West Region - North Area	March 2003	Not Applicable
Environment Agency - North West Region - South Area	March 2003	Not Applicable
Registered Waste Treatment or Disposal Sites		
Environment Agency - North West Region - Central Area	March 2003	Not Applicable
Environment Agency - North West Region - North Area	March 2003	Not Applicable
Environment Agency - North West Region - South Area	March 2003	Not Applicable

Hazardous Substances	Version	Update Cycle
Control of Major Accident Hazards Sites (COMAH)		
Health and Safety Executive	April 2018	Bi-Annually
Explosive Sites		
Health and Safety Executive	March 2017	Annually
Notification of Installations Handling Hazardous Substances (NIHHS)		
Health and Safety Executive	November 2000	Not Applicable
Planning Hazardous Substance Enforcements		
Blackburn with Darwen Borough Council	February 2016	Variable
Burnley Borough Council - Planning Services	February 2016	Variable
Bury Metropolitan Borough Council	February 2016	Variable
Hyndburn Borough Council - Planning	February 2016	Variable
Lancashire County Council	February 2016	Variable
Rossendale Borough Council - Planning Department	February 2016	Variable
Planning Hazardous Substance Consents		
Blackburn with Darwen Borough Council	February 2016	Variable
Burnley Borough Council - Planning Services	February 2016	Variable
Bury Metropolitan Borough Council	February 2016	Variable
Hyndburn Borough Council - Planning	February 2016	Variable
Lancashire County Council	February 2016	Variable
Rossendale Borough Council - Planning Department	February 2016	Variable

Geological	Version	Update Cycle
BGS 1:625,000 Solid Geology		
British Geological Survey - National Geoscience Information Service	January 2009	Not Applicable
BGS Estimated Soil Chemistry		
British Geological Survey - National Geoscience Information Service	October 2015	Annually
BGS Recorded Mineral Sites		
British Geological Survey - National Geoscience Information Service	October 2019	Bi-Annually
CBSCB Compensation District		
Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Coal Mining Affected Areas		
The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Mining Instability		
Ove Arup & Partners	October 2000	Not Applicable
Non Coal Mining Areas of Great Britain		
British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Potential for Collapsible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Compressible Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards		
British Geological Survey - National Geoscience Information Service	January 2019	Annually
Radon Potential - Radon Affected Areas		
British Geological Survey - National Geoscience Information Service	July 2011	Annually
Radon Potential - Radon Protection Measures		
British Geological Survey - National Geoscience Information Service	July 2011	Annually

Industrial Land Use	Version	Update Cycle
Contemporary Trade Directory Entries Thomson Directories	January 2020	Quarterly
Fuel Station Entries Catalist Ltd - Experian	April 2020	Quarterly
Gas Pipelines National Grid	July 2014	
Points of Interest - Commercial Services PointX	March 2020	Quarterly
Points of Interest - Education and Health PointX	March 2020	Quarterly
Points of Interest - Manufacturing and Production PointX	March 2020	Quarterly
Points of Interest - Public Infrastructure PointX	March 2020	Quarterly
Points of Interest - Recreational and Environmental PointX	March 2020	Quarterly
Underground Electrical Cables National Grid	October 2019	

Sensitive Land Use	Version	Update Cycle
Ancient Woodland		
Natural England	August 2018	Bi-Annually
Areas of Adopted Green Belt		
Blackburn with Darwen Borough Council	February 2020	As notified
Burnley Borough Council	February 2020	As notified
Bury Metropolitan Borough Council	February 2020	As notified
Hyndburn Borough Council	February 2020	As notified
Rossendale Borough Council - Planning Department	February 2020	As notified
Areas of Unadopted Green Belt		
Blackburn with Darwen Borough Council	February 2020	As notified
Burnley Borough Council	February 2020	As notified
Bury Metropolitan Borough Council	February 2020	As notified
Hyndburn Borough Council	February 2020	As notified
Rossendale Borough Council - Planning Department	February 2020	As notified
Areas of Outstanding Natural Beauty		
Natural England	June 2019	Bi-Annually
Environmentally Sensitive Areas		
Natural England	January 2017	
Forest Parks		
Forestry Commission	April 1997	Not Applicable
Local Nature Reserves		
Natural England	March 2019	Bi-Annually
Marine Nature Reserves		
Natural England	July 2019	Bi-Annually
National Nature Reserves		
Natural England	July 2019	Bi-Annually
National Parks		
Natural England	April 2017	Bi-Annually
Nitrate Sensitive Areas		
Natural England	April 2016	Not Applicable
Nitrate Vulnerable Zones		
Environment Agency - Head Office	December 2017	Bi-Annually
Department for Environment, Food and Rural Affairs (DEFRA - formerly FRCA)	October 2015	
Ramsar Sites		
Natural England	April 2019	Bi-Annually
Sites of Special Scientific Interest		
Natural England	March 2019	Bi-Annually
Special Areas of Conservation		
Natural England	June 2019	Bi-Annually
Special Protection Areas		
Natural England	April 2019	Bi-Annually

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	
Environment Agency	
Scottish Environment Protection Agency	
The Coal Authority	
British Geological Survey	
Centre for Ecology and Hydrology	
Natural Resources Wales	
Scottish Natural Heritage	
Natural England	
Public Health England	
Ove Arup	
Peter Brett Associates	

Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**Environment Agency - National Customer Contact Centre (NCCC)** PO Box 544, Templeborough, Rotherham, S60 1BY	Telephone: 03708 506 506 Email: enquiries@environment-agency.gov.uk
3	**Rossendale Borough Council - Environmental Health Department** Town Hall, Rawtenstall, Rossendale, Lancashire, BB4 7LZ	Telephone: 01706 217777 Fax: 01706 224958 Website: www.rossendale.gov.uk
4	**Environment Agency - Head Office** Rio House, Waterside Drive, Aztec West, Almondsbury, Bristol, Avon, BS32 4UD	Telephone: 01454 624400 Fax: 01454 624409
5	**Ordnance Survey** Adanac Drive, Southampton, Hampshire, SO16 0AS	Telephone: 03456 05 05 05 Email: customerservices@ordnancesurvey.co.uk Website: www.ordnancesurvey.gov.uk
6	**Lancashire County Council - Waste Management Group** Environment Directorate, Guild House, Cross Street, Preston, Lancashire, PR1 8RD	Website: www.lancashire.gov.uk
7	**The Coal Authority - Property Searches** 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com
8	**PointX** 7 Abbey Court, Eagle Way, Sowton, Exeter, Devon, EX2 7HY	Website: www.pointx.co.uk
9	**Rossendale Borough Council - Planning Department** Town Hall, Rawtenstall, Lancashire, BB4 7LZ	Telephone: 01706 217777 Fax: 01706 224958 Website: www.rossendale.gov.uk
10	**Hyndburn Borough Council** Development Services, Eagle Street, Accrington, Lancashire, BB5 1LN	Telephone: 01254 388111 Fax: 01254 391625 Website: www.hyndburnbc.gov.uk
11	**Natural England** County Hall, Spetchley Road, Worcester, WR5 2NP	Telephone: 0300 060 3900 Email: enquiries@naturalengland.org.uk Website: www.naturalengland.org.uk
-	**Public Health England - Radon Survey, Centre for Radiation, Chemical and Environmental Hazards** Chilton, Didcot, Oxfordshire, OX11 0RQ	Telephone: 01235 822622 Fax: 01235 833891 Email: radon@phe.gov.uk Website: www.ukradon.org
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk

Please note that the Environment Agency / Natural Resources Wales / SEPA have a charging policy in place for enquiries.

Geology 1:10,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	MGR	Made Ground (Undivided)	Artificial Deposit	Holocene - Holocene
	WMGR	Infilled Ground	Artificial Deposit	Holocene - Holocene
	WGR	Worked Ground (Undivided)	Void	Holocene - Holocene
	SLIP	Landslide Deposit	Unknown/Unclassified Entry	Quaternary - Quaternary

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Flandrian - Pleistocene
	TILLD	Till, Devensian	Diamicton	Devensian - Ipswichian
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Devensian - Ipswichian
	HEAD	Head	Diamicton	Quaternary - Ryazanian
	PEAT	Peat	Peat [Unlithified Deposits Coding Scheme]	Quaternary - Ryazanian

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	PLCM	Pennine Lower Coal Measures Formation	Mudstone, Siltstone and Sandstone	Langsettian - Langsettian
	WH	Woodhead Hill Rock	Sandstone	Langsettian - Langsettian
	LH	Lower Haslingden Flags	Sandstone	Yeadonian - Yeadonian
	RR	Rough Rock	Sandstone	Yeadonian - Yeadonian
	UH	Upper Haslingden Flags	Sandstone	Yeadonian - Yeadonian
	BBS	Brooksbottoms Grit	Sandstone	Marsdenian - Marsdenian
	HLBG	Holcombe Brook Grit	Sandstone	Marsdenian - Marsdenian
	HZG	Hazel Greave Grit	Sandstone	Marsdenian - Marsdenian
	MG	Millstone Grit Group [See also Migr]	Mudstone and Siltstone	Namurian - Namurian
	MG	Millstone Grit Group [See also Migr]	Sandstone	Namurian - Namurian
	Fault			
	Rock			

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Geology 1:10,000 Maps

This report contains geological map extracts taken from the BGS Digital Geological map of Great Britain at 1:10,000 scale and is designed for users carrying out preliminary site assessments who require geological maps for the area around a site. This mapping may be more up to date than previously published paper maps.

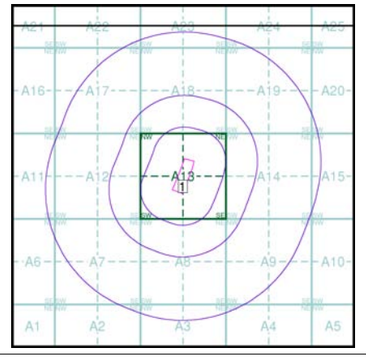
The various geological layers - artificial and landslip deposits, superficial geology and solid (bedrock) geology are displayed in separate maps, but superimposed on the final 'Combined Surface Geology' map. All map legends feature on this page.

Please Note: Not all of the layers have complete nationwide coverage, so availability of data for relevant map sheets is indicated below.

Geology 1:10,000 Maps Coverage

Map ID:	1	**Map ID:**	
Map Name:	SD72SE	**Map Name:**	SD72NE
Map Date:	2007	**Map Date:**	2007
Bedrock Geology:	Available	**Bedrock Geology:**	Available
Superficial Geology:	Available	**Superficial Geology:**	Available
Artificial Geology:	Available	**Artificial Geology:**	Available
Faults:	Available	**Faults:**	Available
Landslip:	Available	**Landslip:**	Available
Rock Segments:	Available	**Rock Segments:**	Available

Geology 1:10,000 Maps - Slice A

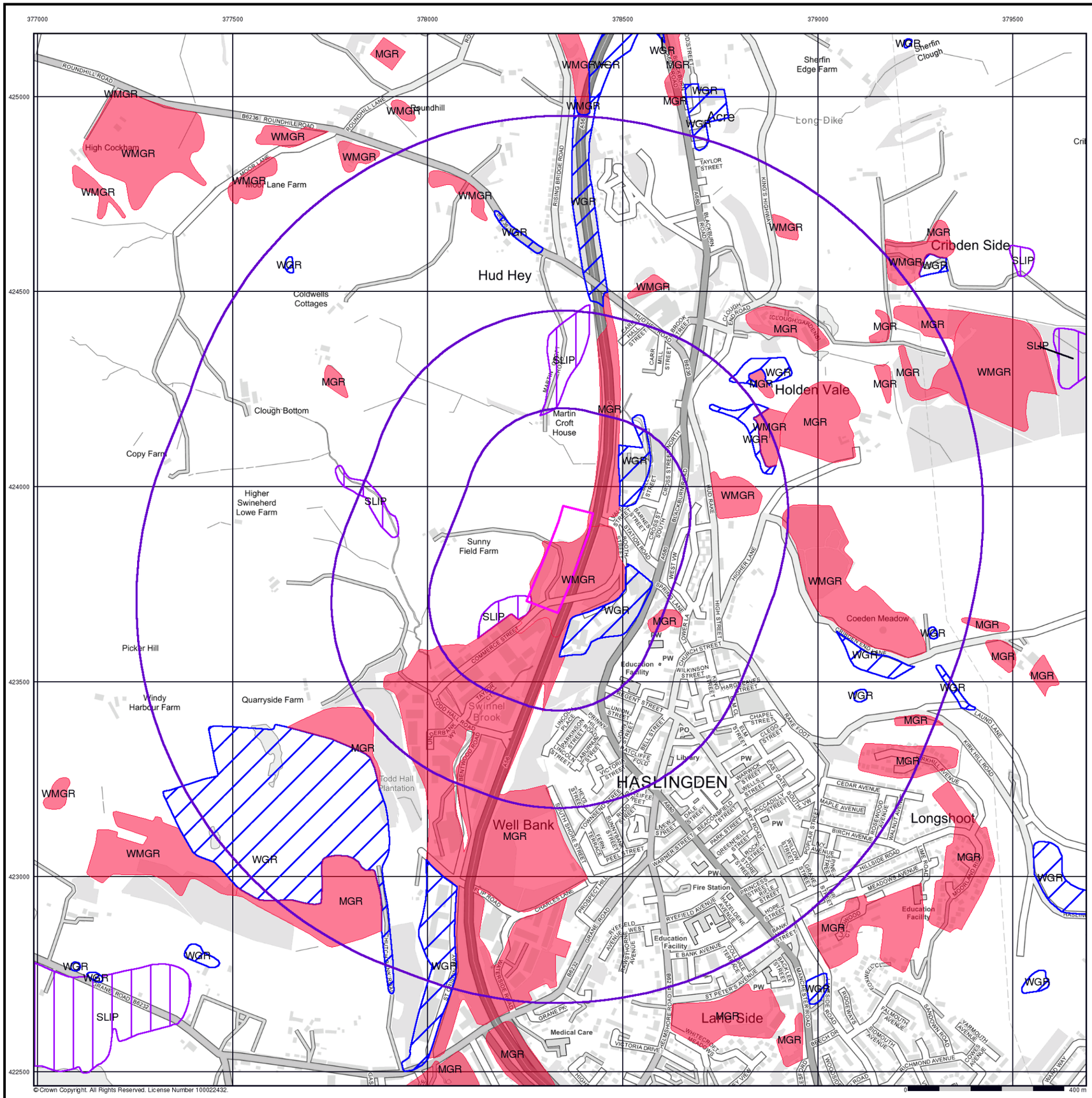


Order Details

Order Number:	241411014_1_1
Customer Ref:	391034AA06
National Grid Reference:	378340, 423810
Slice:	A
Site Area (Ha):	2.26
Search Buffer (m):	1000

Site Details

Site at, Rossendale Valley, Lancashire



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Artificial Ground and Landslip

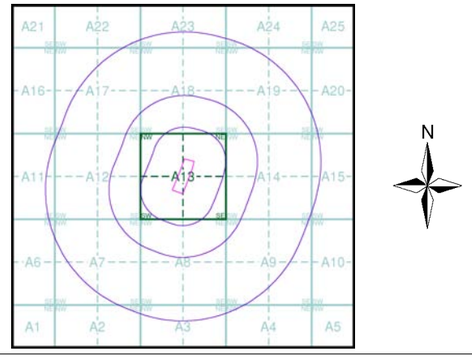
Artificial ground is a term used by BGS for those areas where the ground surface has been significantly modified by human activity. Information about previously developed ground is especially important, as it is often associated with potentially contaminated material, unpredictable engineering conditions and unstable ground.

Artificial ground includes:

- Made ground - man-made deposits such as embankments and spoil heaps on the natural ground surface.
- Worked ground - areas where the ground has been cut away such as quarries and road cuttings.
- Infilled ground - areas where the ground has been cut away then wholly or partially backfilled.
- Landscaped ground - areas where the surface has been reshaped.
- Disturbed ground - areas of ill-defined shallow or near surface mineral workings where it is impracticable to map made and worked ground separately.

Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



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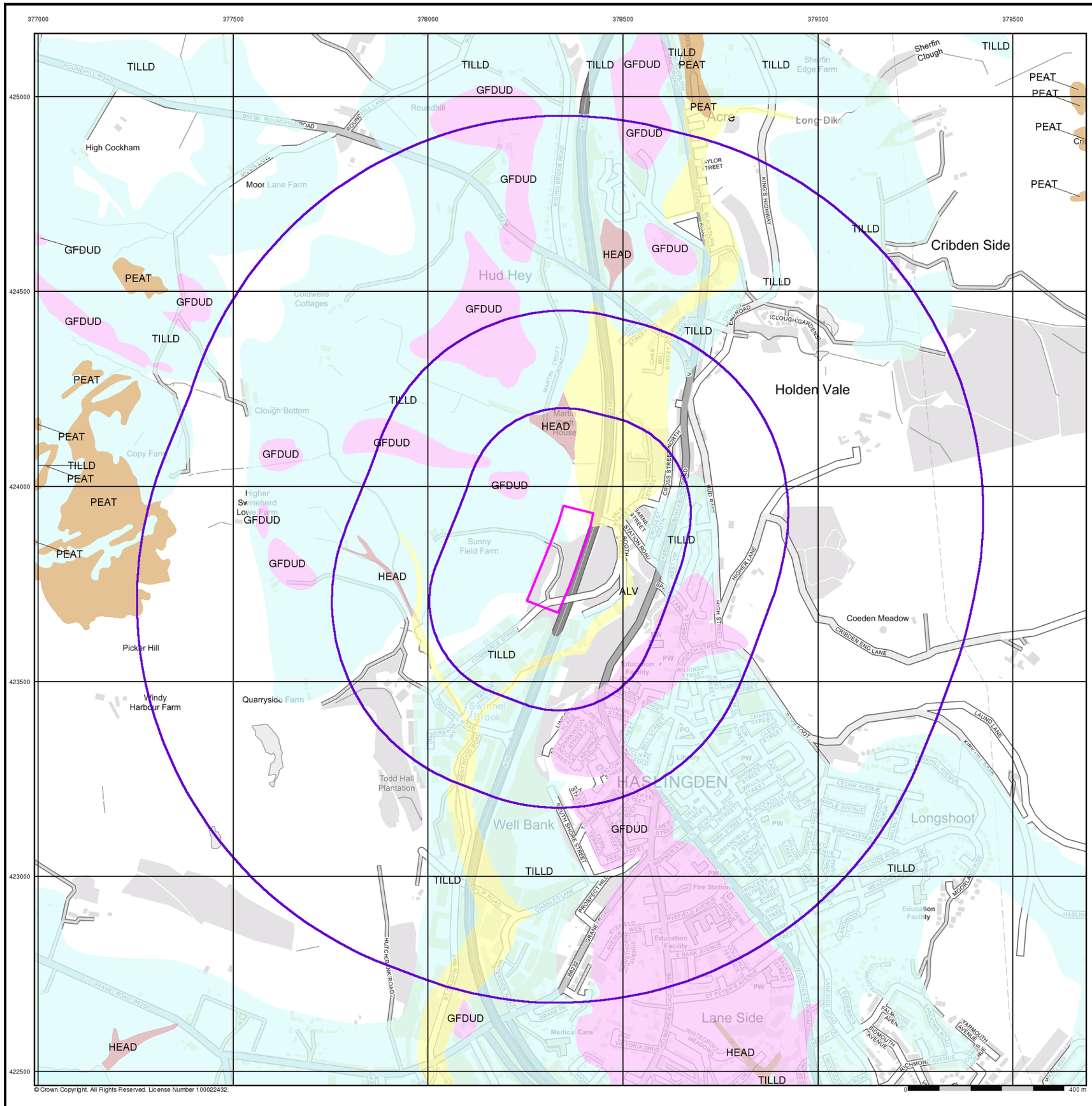
Site Details

Site at, Rossendale Valley, Lancashire

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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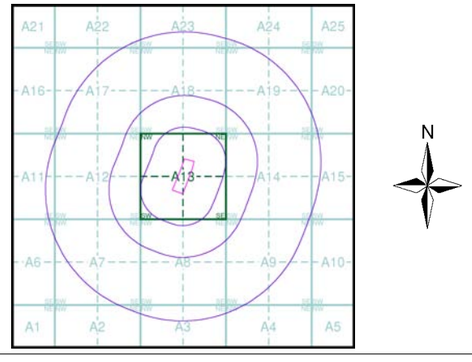
Superficial Geology

BGS 1:10,000 Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



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Customer Ref:	391034AA06
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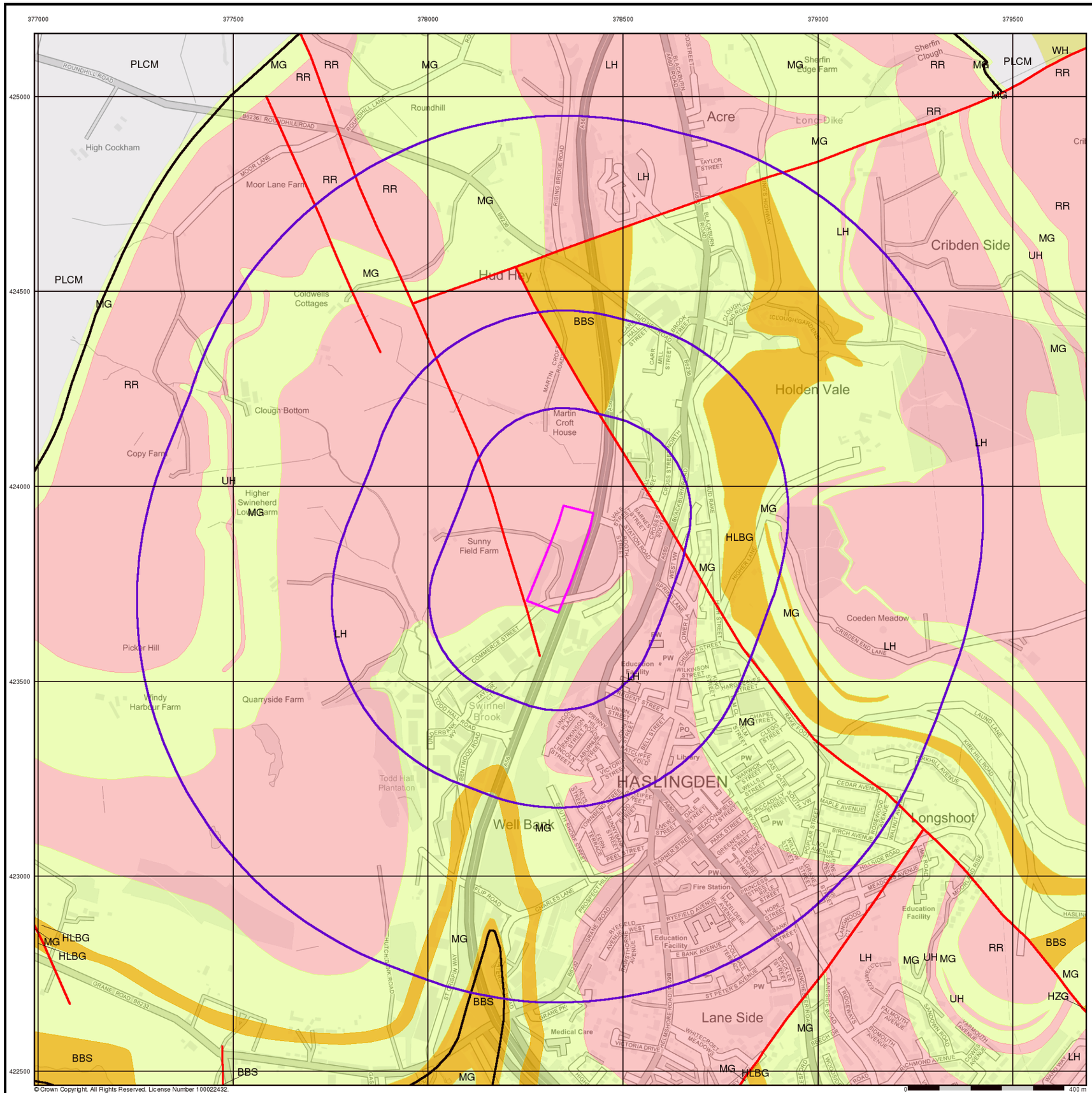

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Bedrock and Faults

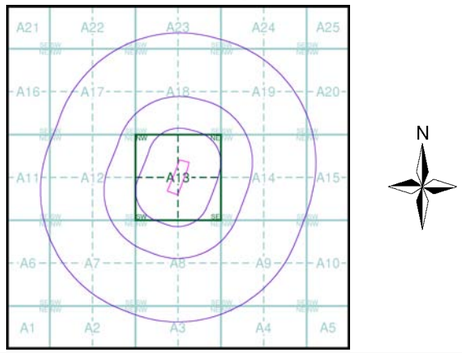
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults and thin beds mapped as lines such as coal seams and mineral veins. These are not restricted by age and could relate to features of any of the 1:10,000 geology datasets.

Bedrock and Faults Map - Slice A



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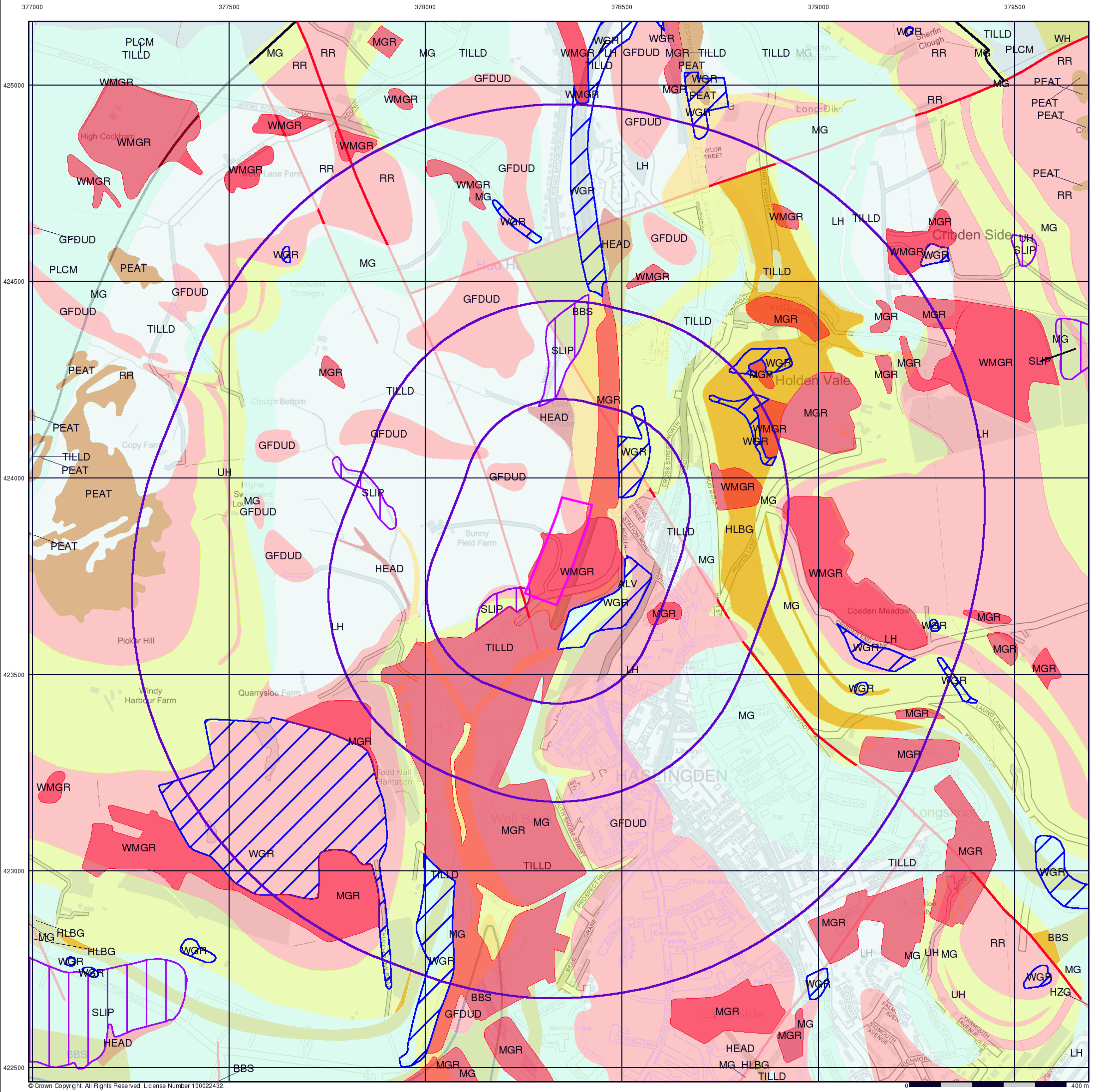

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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

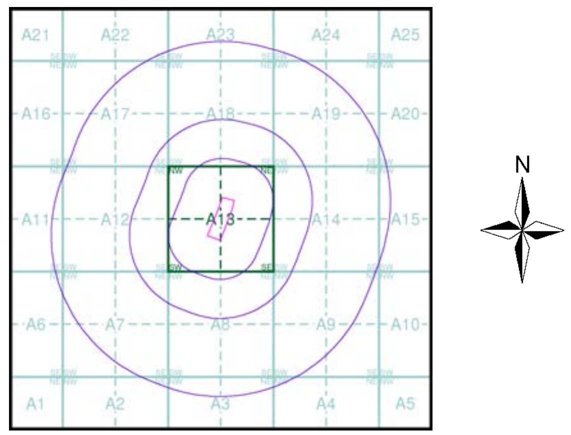
Additional Information

More information on 1:10,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A



Order Details

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Slice: A
Site Area (Ha): 2.26
Search Buffer (m): 1000

Site Details

Site at, Rossendale Valley, Lancashire

Geology 1:50,000 Maps Legends

Artificial Ground and Landslip

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	WMGR	Infilled Ground	Artificial Deposit	Not Supplied - Holocene
	MGR	Made Ground (Undivided)	Artificial Deposit	Not Supplied - Holocene
	WGR	Worked Ground (Undivided)	Void	Not Supplied - Holocene
	SLIP	Landslide Deposit	Unknown/Unclassified Entry	Not Supplied - Quaternary

Superficial Geology

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	ALV	Alluvium	Clay, Silt, Sand and Gravel	Not Supplied - Holocene
	TILLD	Till, Devensian	Diamicton	Not Supplied - Devensian
	GFDUD	Glaciofluvial Deposits, Devensian	Sand and Gravel	Not Supplied - Devensian
	HEAD	Head	Diamicton	Not Supplied - Quaternary
	PEAT	Peat	Peat	Not Supplied - Quaternary

Bedrock and Faults

Map Colour	Lex Code	Rock Name	Rock Type	Min and Max Age
	PLCM	Pennine Lower Coal Measures Formation	Mudstone, Siltstone and Sandstone	Not Supplied - Westphalian
	WH	Woodhead Hill Rock	Sandstone	Not Supplied - Westphalian
	HER	Helpet Edge Rock	Sandstone	Not Supplied - Westphalian
	MLRS	Milnrow Sandstone	Sandstone	Not Supplied - Westphalian
	ROSSE	Rossendale Formation	Mudstone and Siltstone	Not Supplied - Namurian
	LH	Lower Haslingden Flags	Sandstone	Not Supplied - Namurian
	RR	Rough Rock	Sandstone	Not Supplied - Namurian
	MARSD	Marsden Formation	Mudstone and Siltstone	Not Supplied - Namurian
	BBS	Brooksbottoms Grit	Sandstone	Not Supplied - Namurian
	HLBG	Holcombe Brook Grit	Sandstone	Not Supplied - Namurian
	GSYG	Guiseley Grit	Sandstone	Not Supplied - Namurian
	HSG	Helmshore Grit	Sandstone	Not Supplied - Namurian
	FLB	FLETCHER BANK GRIT	Sandstone	Not Supplied - Namurian
		Faults		
		Rock Segments		

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Geology 1:50,000 Maps

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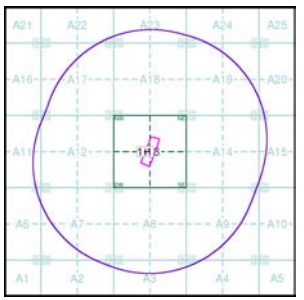
Geology 1:50,000 Maps Coverage

Map ID:	**1**
Map Sheet No:	**076**
Map Name:	**Rochdale**
Map Date:	**2008**
Bedrock Geology:	**Available**
Superficial Geology:	**Available**
Artificial Geology:	**Available**
Faults:	**Not Supplied**
Landslip:	**Available**
Rock Segments:	**Not Supplied**

Geology 1:50,000 Maps - Slice A



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Search Buffer (m):	1000

Site Details:

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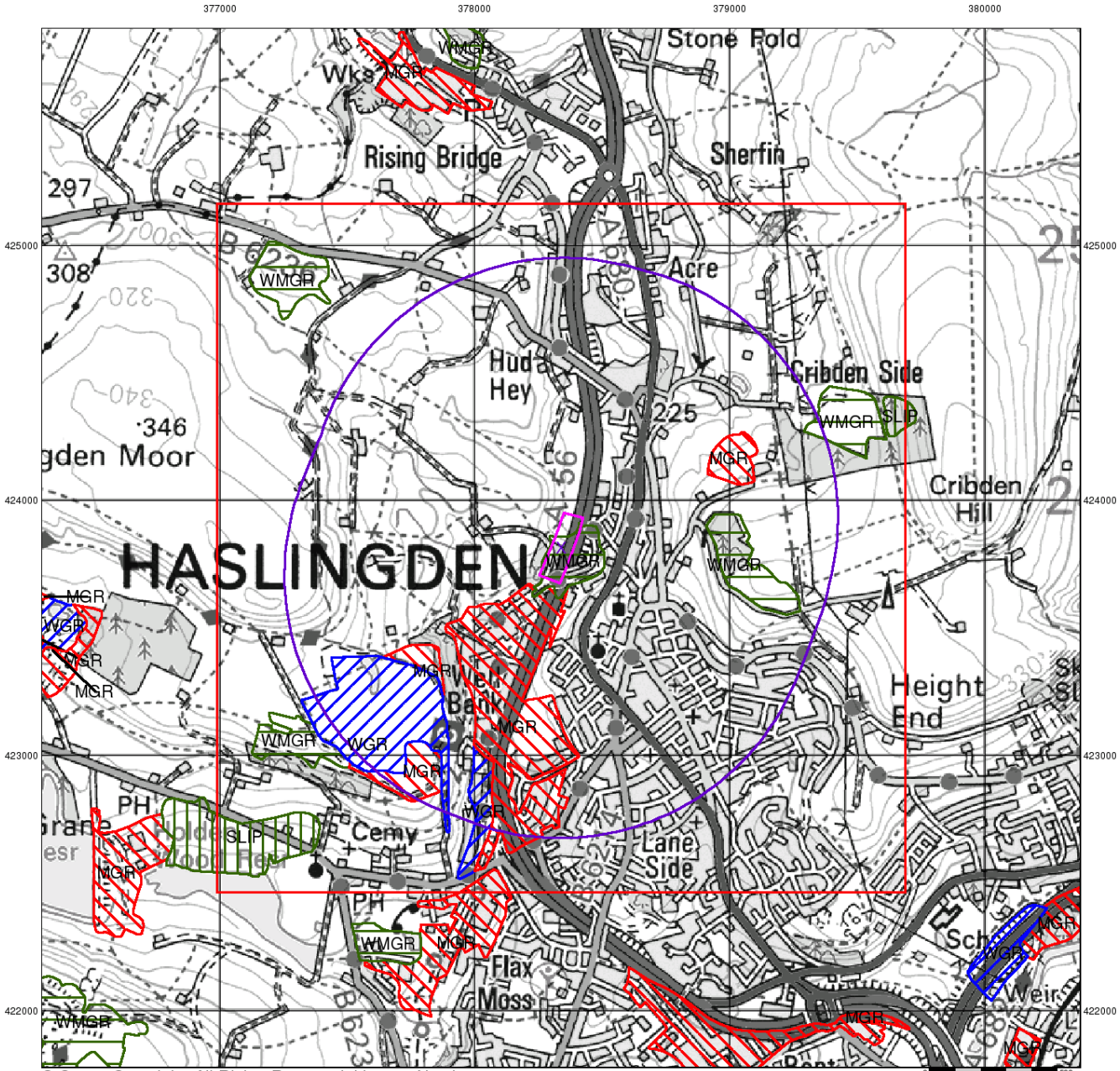

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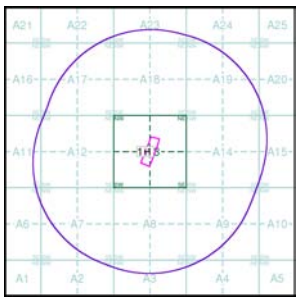
Mass movement (landslip) deposits on BGS geological maps are primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground. The dataset also includes foundered strata, where the ground has collapsed due to subsidence.

Artificial Ground and Landslip Map - Slice A



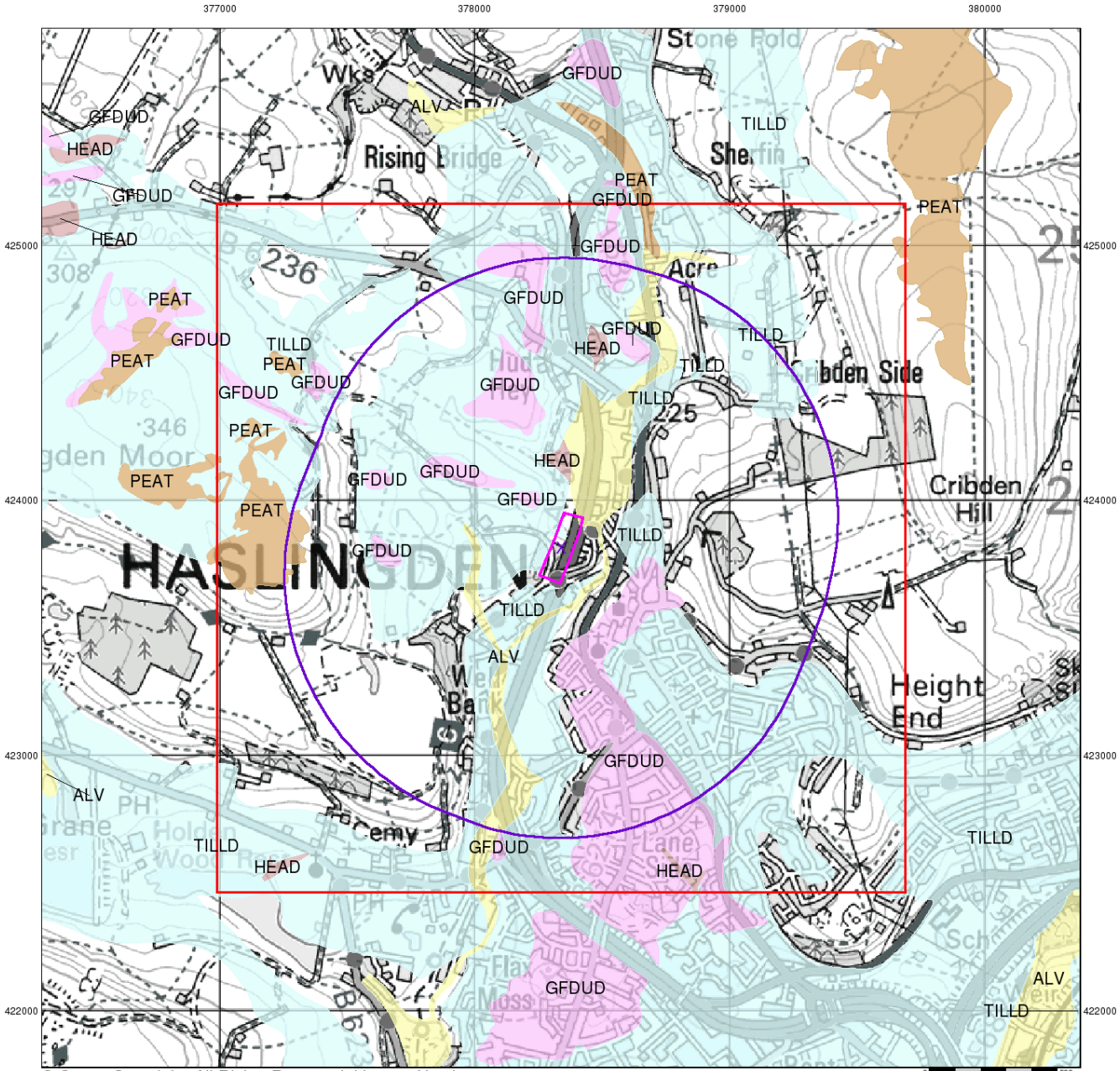
Order Details:

Order Number:	241411014_1_1
Customer Reference:	391034AA06
National Grid Reference:	378340, 423810
Slice:	A
Site Area (Ha):	2.26
Search Buffer (m):	1000

Site Details:

Site at, Rossendale Valley, Lancashire

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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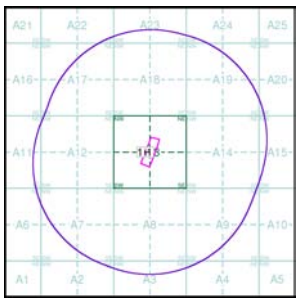
Superficial Geology

Superficial Deposits are the youngest geological deposits formed during the most recent period of geological time, the Quaternary, which extends back about 1.8 million years from the present.

They rest on older deposits or rocks referred to as Bedrock. This dataset contains Superficial deposits that are of natural origin and 'in place'. Other superficial strata may be held in the Mass Movement dataset where they have been moved, or in the Artificial Ground dataset where they are of man-made origin.

Most of these Superficial deposits are unconsolidated sediments such as gravel, sand, silt and clay, and onshore they form relatively thin, often discontinuous patches or larger spreads.

Superficial Geology Map - Slice A



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Search Buffer (m):	1000

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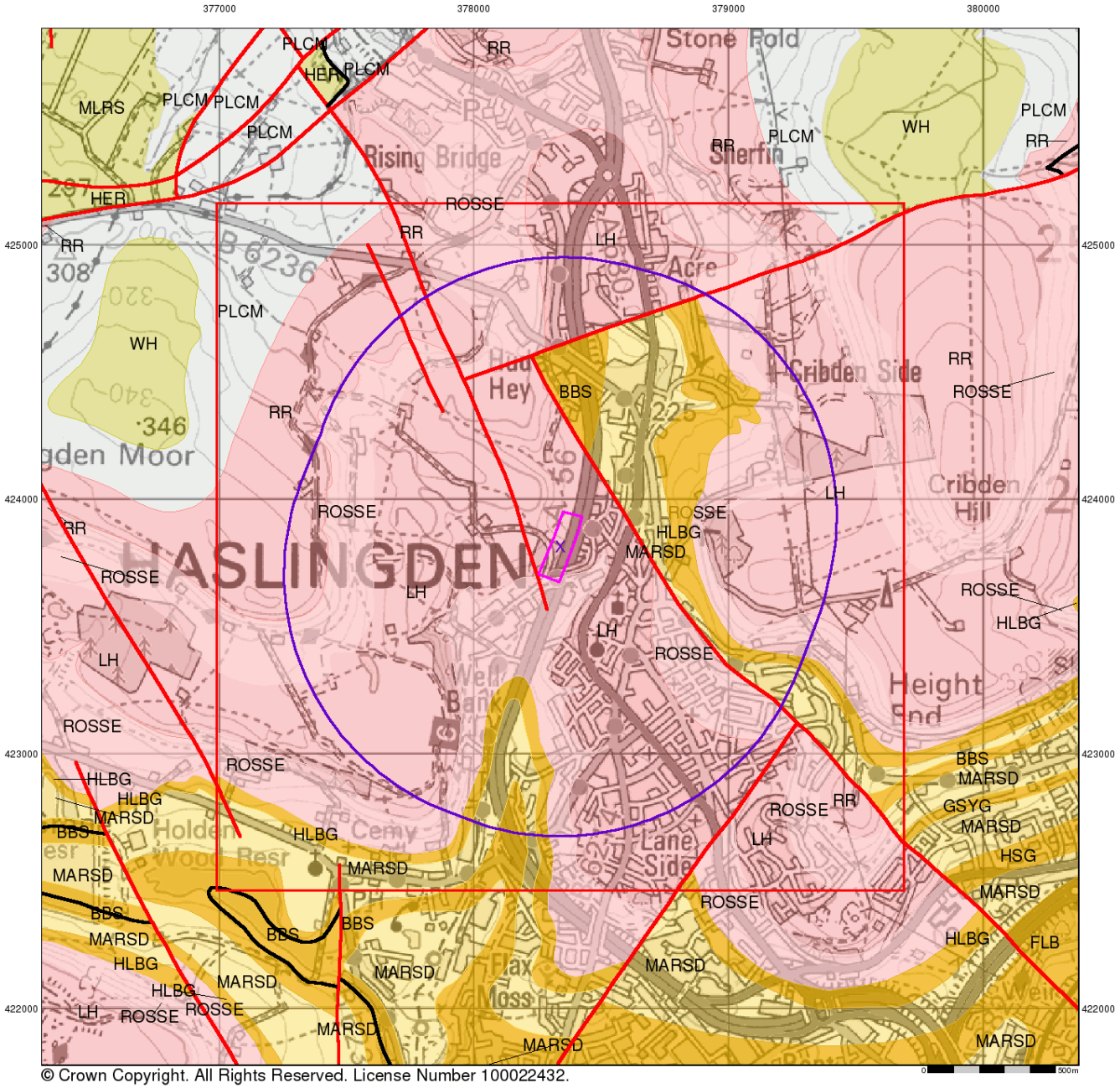

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Bedrock and Faults

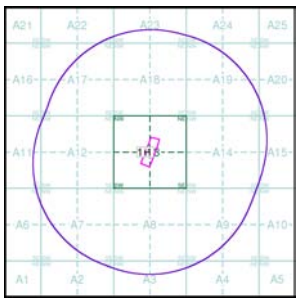
Bedrock geology is a term used for the main mass of rocks forming the Earth and are present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

The bedrock has formed over vast lengths of geological time ranging from ancient and highly altered rocks of the Proterozoic, some 2500 million years ago, or older, up to the relatively young Pliocene, 1.8 million years ago.

The bedrock geology includes many lithologies, often classified into three types based on origin: igneous, metamorphic and sedimentary.

The BGS Faults and Rock Segments dataset includes geological faults (e.g. normal, thrust), and thin beds mapped as lines (e.g. coal seam, gypsum bed). Some of these are linked to other particular 1:50,000 Geology datasets, for example, coal seams are part of the bedrock sequence, most faults and mineral veins primarily affect the bedrock but cut across the strata and post date its deposition.

Bedrock and Faults Map - Slice A



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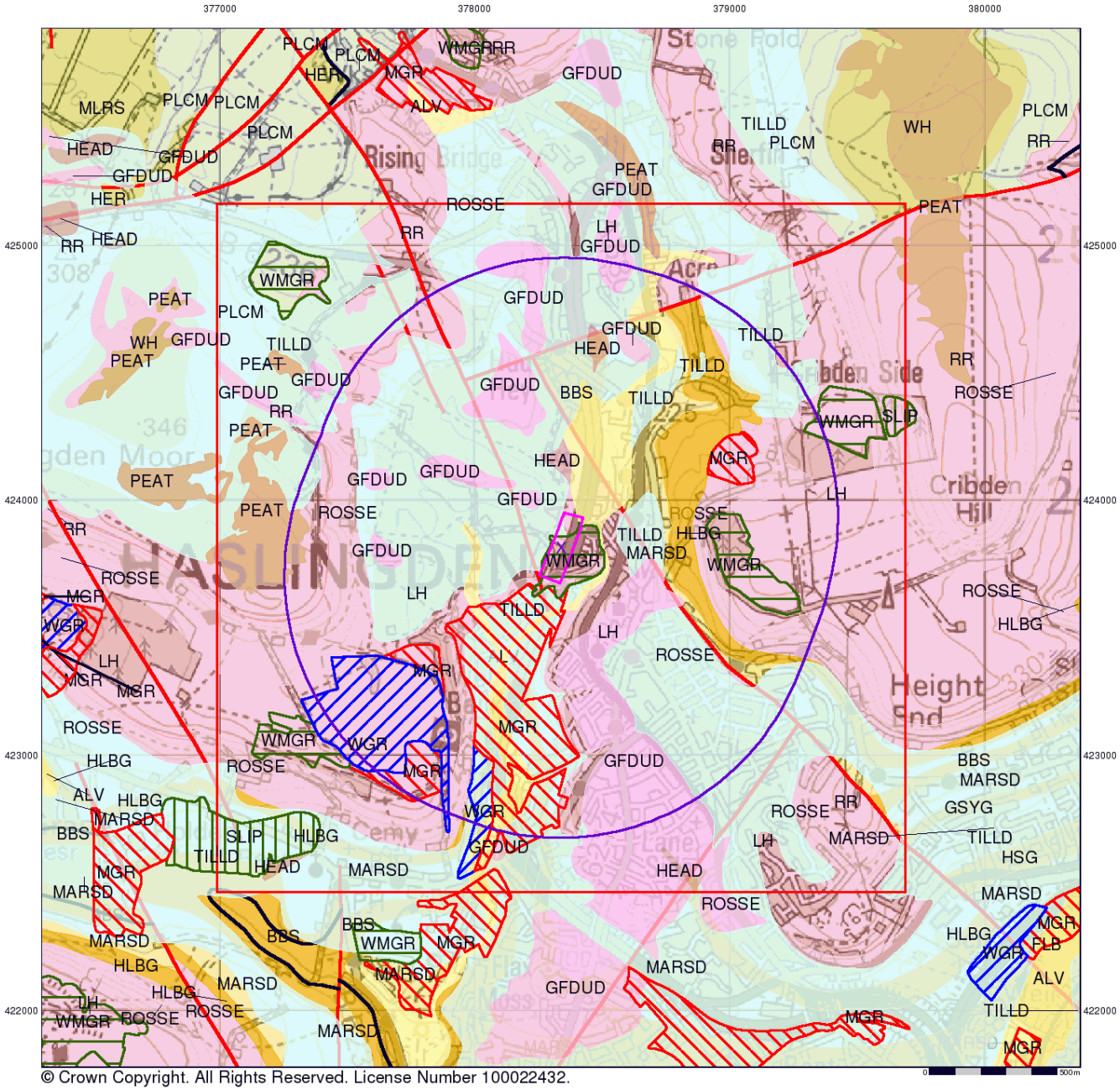
Slice:	A
Site Area (Ha):	2.26
Search Buffer (m):	1000

Site Details:

Site at, Rossendale Valley, Lancashire



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Combined Surface Geology

The Combined Surface Geology map combines all the previous maps into one combined geological overview of your site.

Please consult the legends to the previous maps to interpret the Combined "Surface Geology" map.

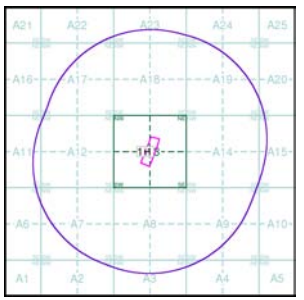
Additional Information

More information on 1:50,000 Geological mapping and explanations of rock classifications can be found on the BGS website. Using the LEX Codes in this report, further descriptions of rock types can be obtained by interrogating the 'BGS Lexicon of Named Rock Units'. This database can be accessed by following the 'Information and Data' link on the BGS website.

Contact

British Geological Survey
Kingsley Dunham Centre
Keyworth
Nottingham
NG12 5GG
Telephone: 0115 936 3143
Fax: 0115 936 3276
email: enquiries@bgs.ac.uk
website: www.bgs.ac.uk

Combined Geology Map - Slice A



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National Grid Reference:	378340, 423810
Slice:	A
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Search Buffer (m):	1000

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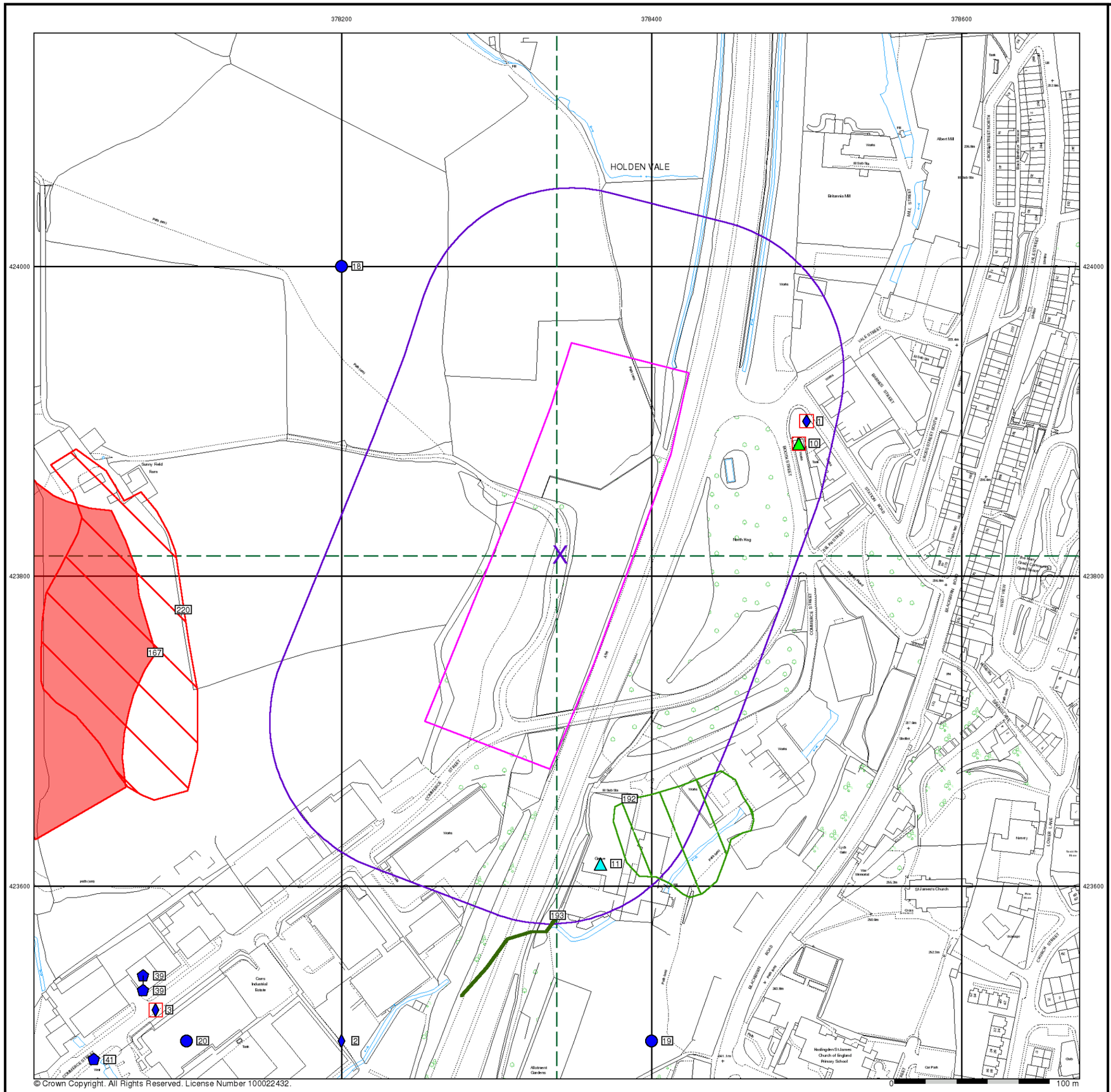
Site at, Rossendale Valley, Lancashire



MOTT MACDONALD

General

Specified Site
Specified Buffer(s)
Bearing Reference Point
Map ID
Several of Type at Location
Pylon
Overhead Transmission Line

Agency and Hydrological

- Contaminated Land Register Entry or Notice (Location)
- Contaminated Land Register Entry or Notice
- Discharge Consent
- Enforcement or Prohibition Notice
- Integrated Pollution Control
- Integrated Pollution Prevention Control
- Local Authority Integrated Pollution Prevention and Control
- Local Authority Pollution Prevention and Control
- Local Authority Pollution Prevention and Control Enforcement
- Pollution Incident to Controlled Waters
- Prosecution Relating to Authorised Processes
- Prosecution Relating to Controlled Waters
- Registered Radioactive Substance
- River Network or Water Feature
- River Quality Sampling Point
- Substantiated Pollution Incident Register
- Water Abstraction
- Water Industry Act Referral

Hazardous Substances

- COMAH Site
- Explosive Site
- NIHHS Site
- Planning Hazardous Substance Consent
- Planning Hazardous Substance Enforcement

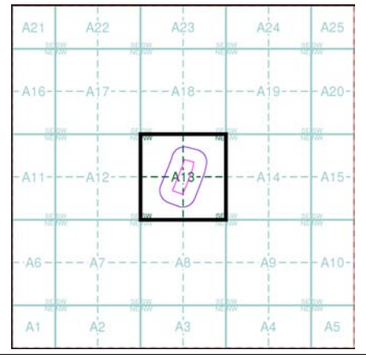
Geological

- BGS Recorded Mineral Site

Waste

- BGS Recorded Landfill Site (Location)
- BGS Recorded Landfill Site
- EA Historic Landfill (Buffered Point)
- EA Historic Landfill (Polygon)
- Integrated Pollution Control Registered Waste Site
- Licensed Waste Management Facility (Landfill Boundary)
- Licensed Waste Management Facility (Location)
- Local Authority Recorded Landfill Site (Location)
- Local Authority Recorded Landfill Site
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Non-water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Potentially Infilled Land (Water)
- Registered Landfill Site
- Registered Landfill Site (Location)
- Registered Landfill Site (Point Buffered to 100m)
- Registered Landfill Site (Point Buffered to 250m)
- Registered Waste Transfer Site (Location)
- Registered Waste Transfer Site
- Registered Waste Treatment or Disposal Site (Location)
- Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Segment A13



Order Details

Order Number:	241411014_1_1
Customer Ref:	391034AA06
National Grid Reference:	378340, 423810
Slice:	A
Site Area (Ha):	2.26
Plot Buffer (m):	100

Site Details

Site at, Rossendale Valley, Lancashire

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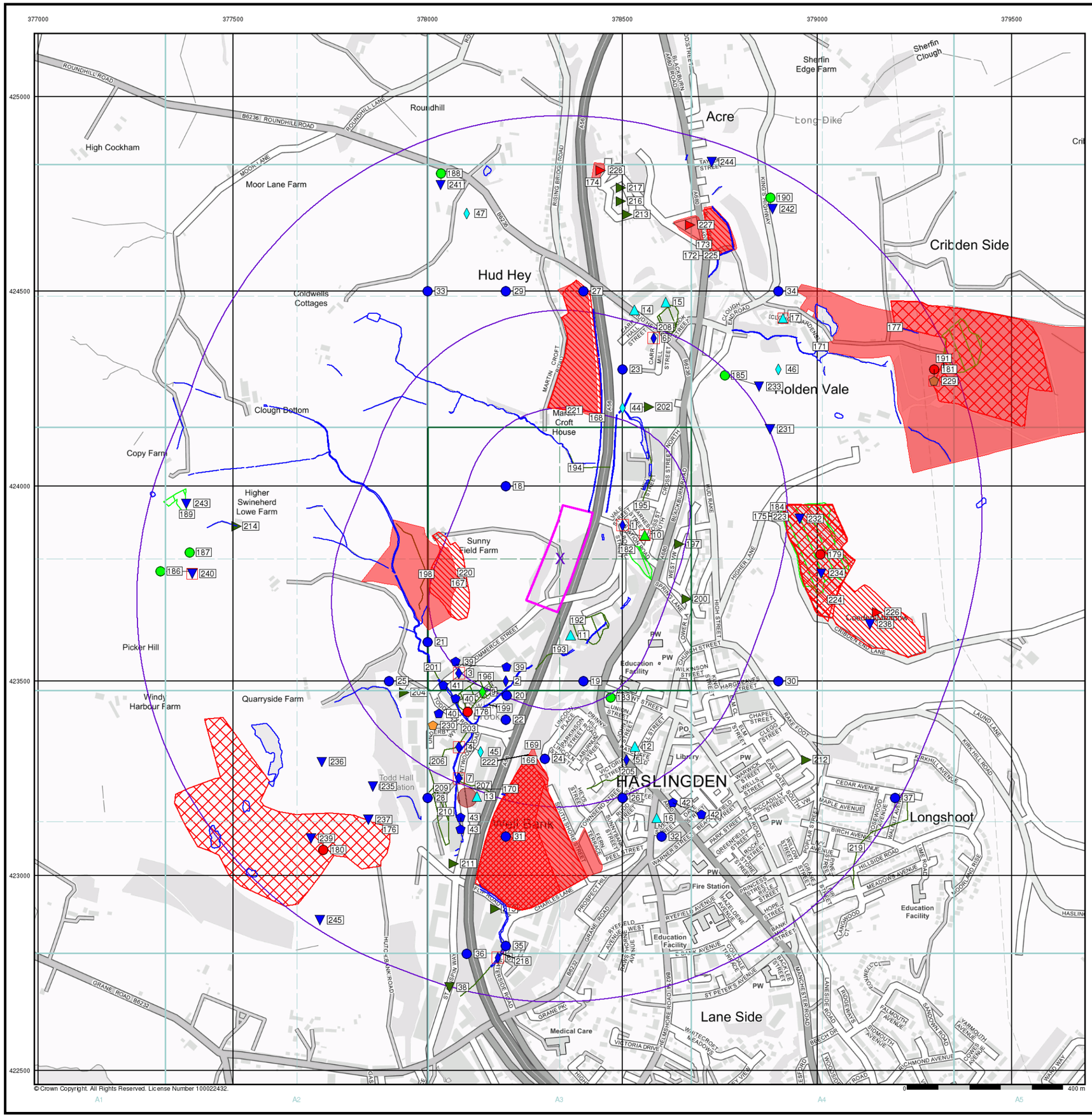

MOTT MACDONALD

General

Specified Site
Specified Buffer(s)
Bearing Reference Point
Map ID
Several of Type at Location

Agency and Hydrological

Contaminated Land Register Entry or Notice (Location)
Contaminated Land Register Entry or Notice
Discharge Consent
Enforcement or Prohibition Notice
Integrated Pollution Control
Integrated Pollution Prevention Control
Local Authority Integrated Pollution Prevention and Control
Local Authority Pollution Prevention and Control
Local Authority Pollution Prevention and Control Enforcement
Pollution Incident to Controlled Waters
Prosecution Relating to Authorised Processes
Prosecution Relating to Controlled Waters
Registered Radioactive Substance
River Network or Water Feature
River Quality Sampling Point
Substantiated Pollution Incident Register
Water Abstraction
Water Industry Act Referral

Hazardous Substances

COMAH Site
Explosive Site
NIHHS Site
Planning Hazardous Substance Consent
Planning Hazardous Substance Enforcement

Geological

BGS Recorded Mineral Site

Waste

BGS Recorded Landfill Site (Location)
BGS Recorded Landfill Site
EA Historic Landfill (Buffered Point)
EA Historic Landfill (Polygon)
Integrated Pollution Control Registered Waste Site
Licensed Waste Management Facility (Landfill Boundary)
Licensed Waste Management Facility (Location)
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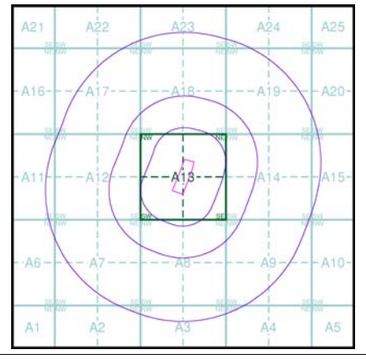
Local Authority Recorded Landfill Site
Potentially Infilled Land (Non-water)
Potentially Infilled Land (Non-water)
Potentially Infilled Land (Non-water)
Potentially Infilled Land (Water)
Potentially Infilled Land (Water)
Potentially Infilled Land (Water)
Registered Landfill Site
Registered Landfill Site (Location)
Registered Landfill Site (Point Buffered to 100m)
Registered Landfill Site (Point Buffered to 250m)
Registered Waste Transfer Site (Location)
Registered Waste Transfer Site
Registered Waste Treatment or Disposal Site (Location)
Registered Waste Treatment or Disposal Site

Site Sensitivity Map - Slice A



Order Details

Order Number:	241411014_1_1
Customer Ref:	391034AA06
National Grid Reference:	378340, 423810
Slice:	A
Site Area (Ha):	2.26
Search Buffer (m):	1000

Site Details

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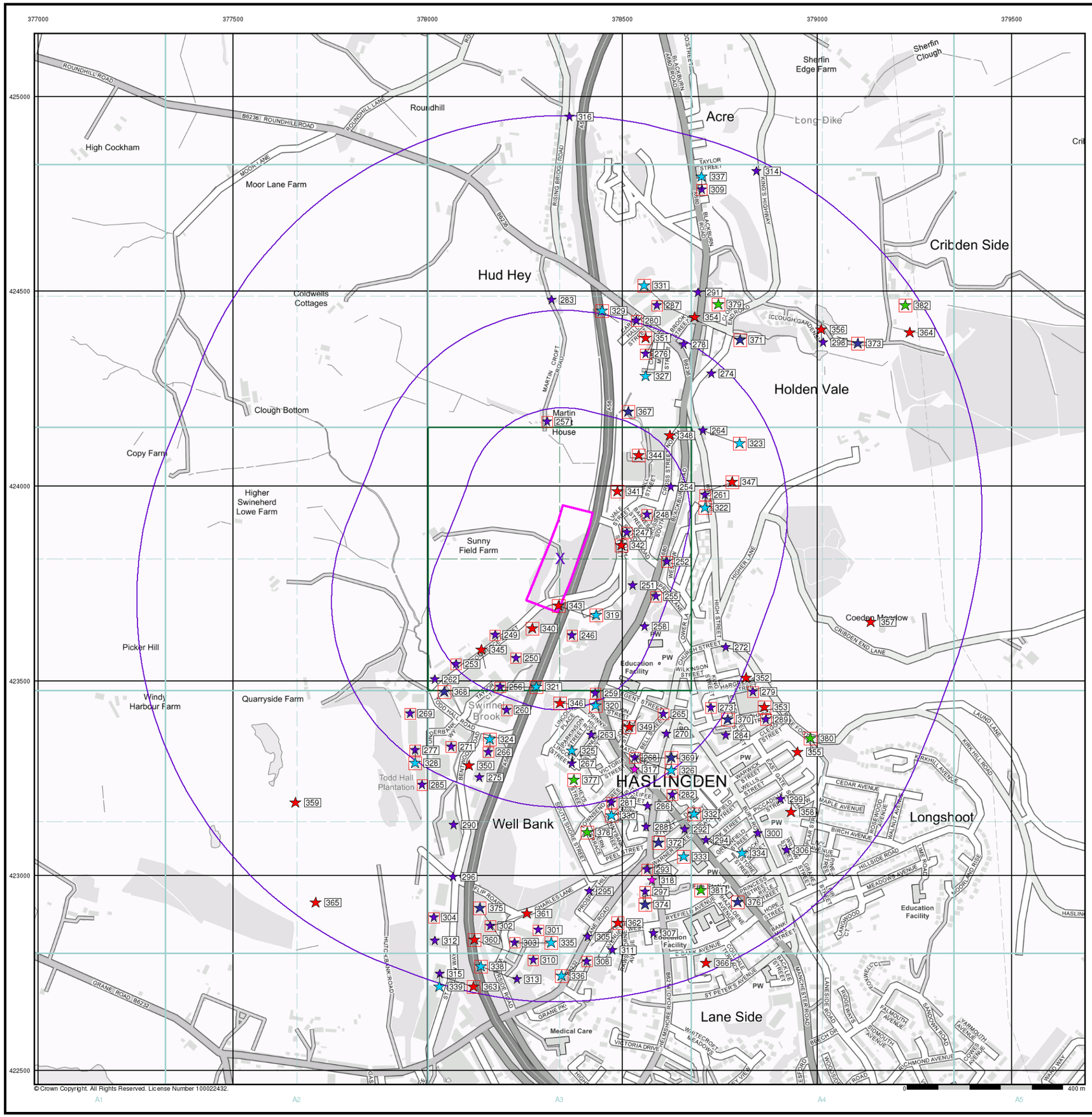

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Industrial Land Use Map

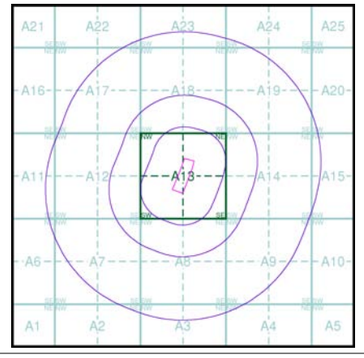
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Slice
- Map ID

Industrial Land Use

- Contemporary Trade Directory Entry
- Fuel Station Entry
- Gas Pipeline
- Points of Interest - Commercial Services
- Points of Interest - Education and Health
- Points of Interest - Manufacturing and Production
- Points of Interest - Public Infrastructure
- Points of Interest - Recreational and Environmental
- Underground Electrical Cables

Industrial Land Use Map - Slice A



Order Details

Order Number:	241411014_1_1
Customer Ref:	391034AA06
National Grid Reference:	378340, 423810
Slice:	A
Site Area (Ha):	2.26
Search Buffer (m):	1000

Site Details

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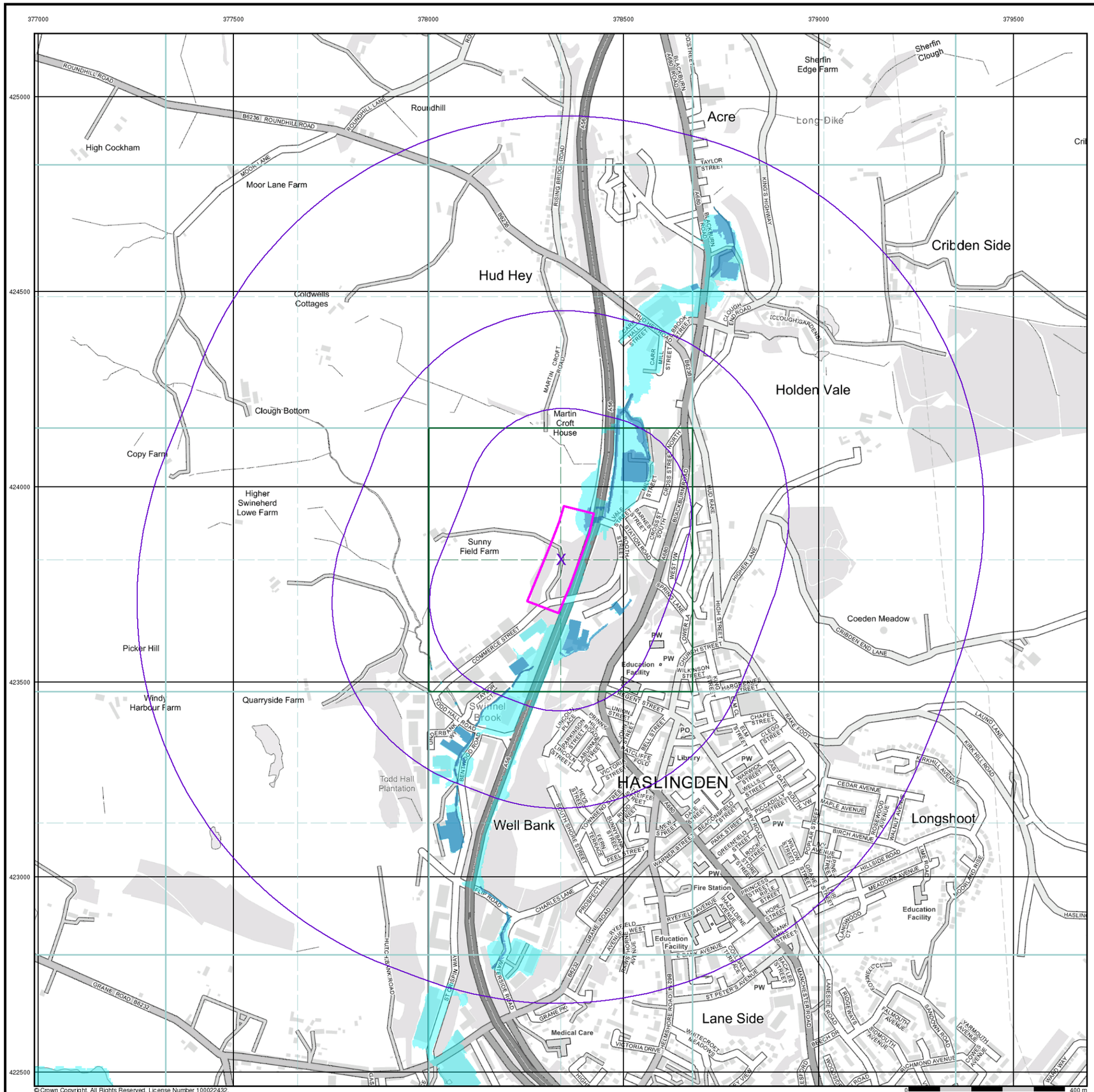

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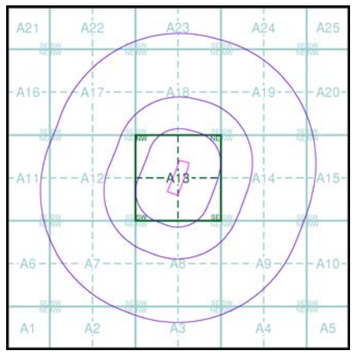
General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

Agency and Hydrological (Flood)

- Extreme Flooding from Rivers or Sea without Defences (Zone 2)
- Flooding from Rivers or Sea without Defences (Zone 3)
- Area Benefiting from Flood Defence
- Flood Water Storage Areas
- Flood Defence

Flood Map - Slice A



Order Details

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Customer Ref:	391034AA06
National Grid Reference:	378340, 423810
Slice:	A
Site Area (Ha):	2.26
Search Buffer (m):	1000

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Site at, Rossendale Valley, Lancashire

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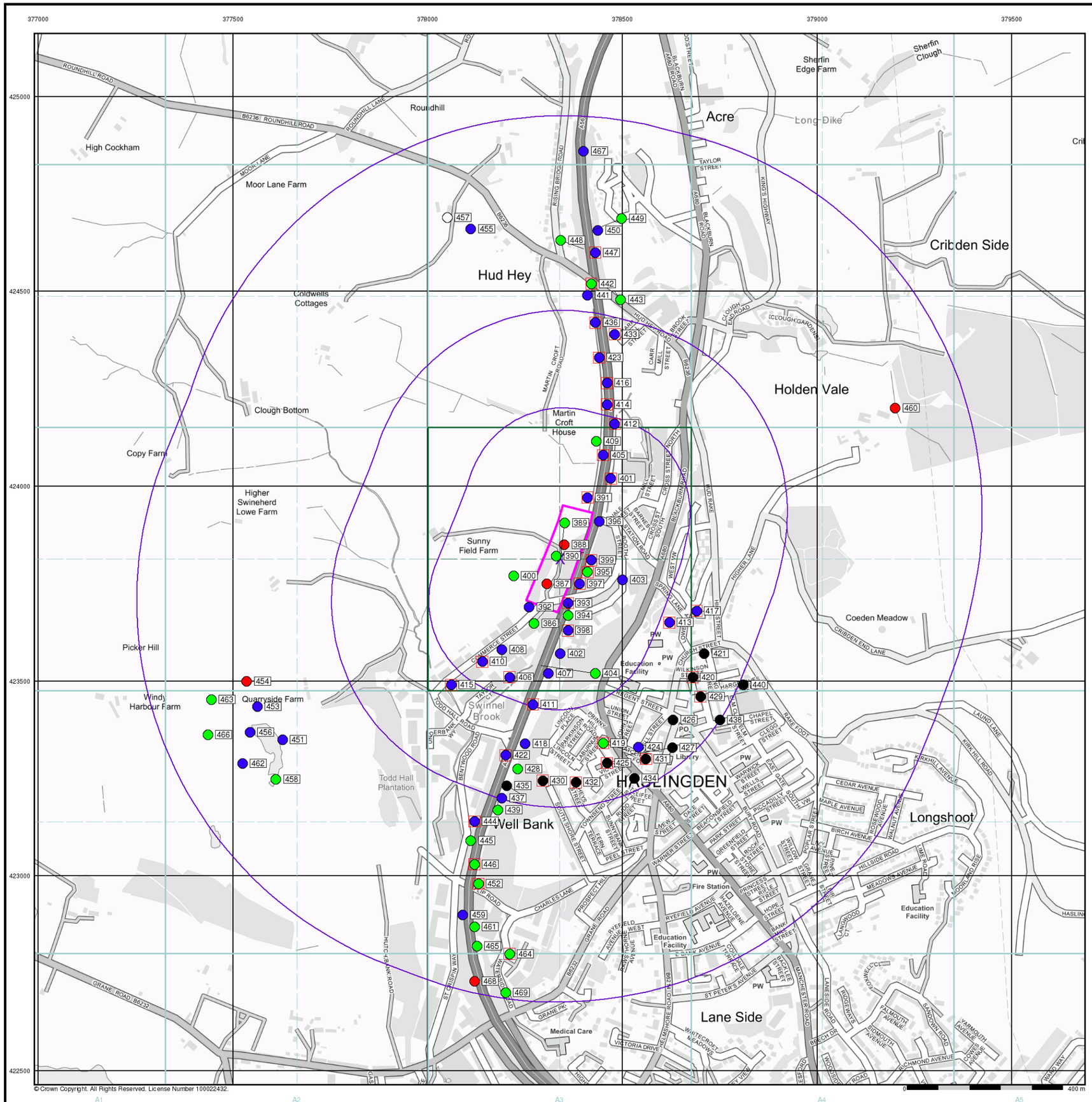

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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point
- Map ID
- Several of Type at Location

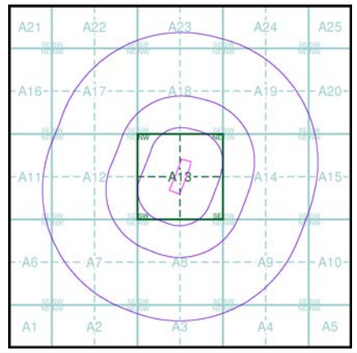
Agency and Hydrological (Boreholes)

- BGS Borehole Depth 0 - 10m
- BGS Borehole Depth 10 - 30m
- BGS Borehole Depth 30m +
- Confidential
- Other

For Borehole information please refer to the Borehole .csv file which accompanied this slice.

A copy of the BGS Borehole Ordering Form is available to download from the Support section of www.envirocheck.co.uk.

Borehole Map - Slice A



Order Details

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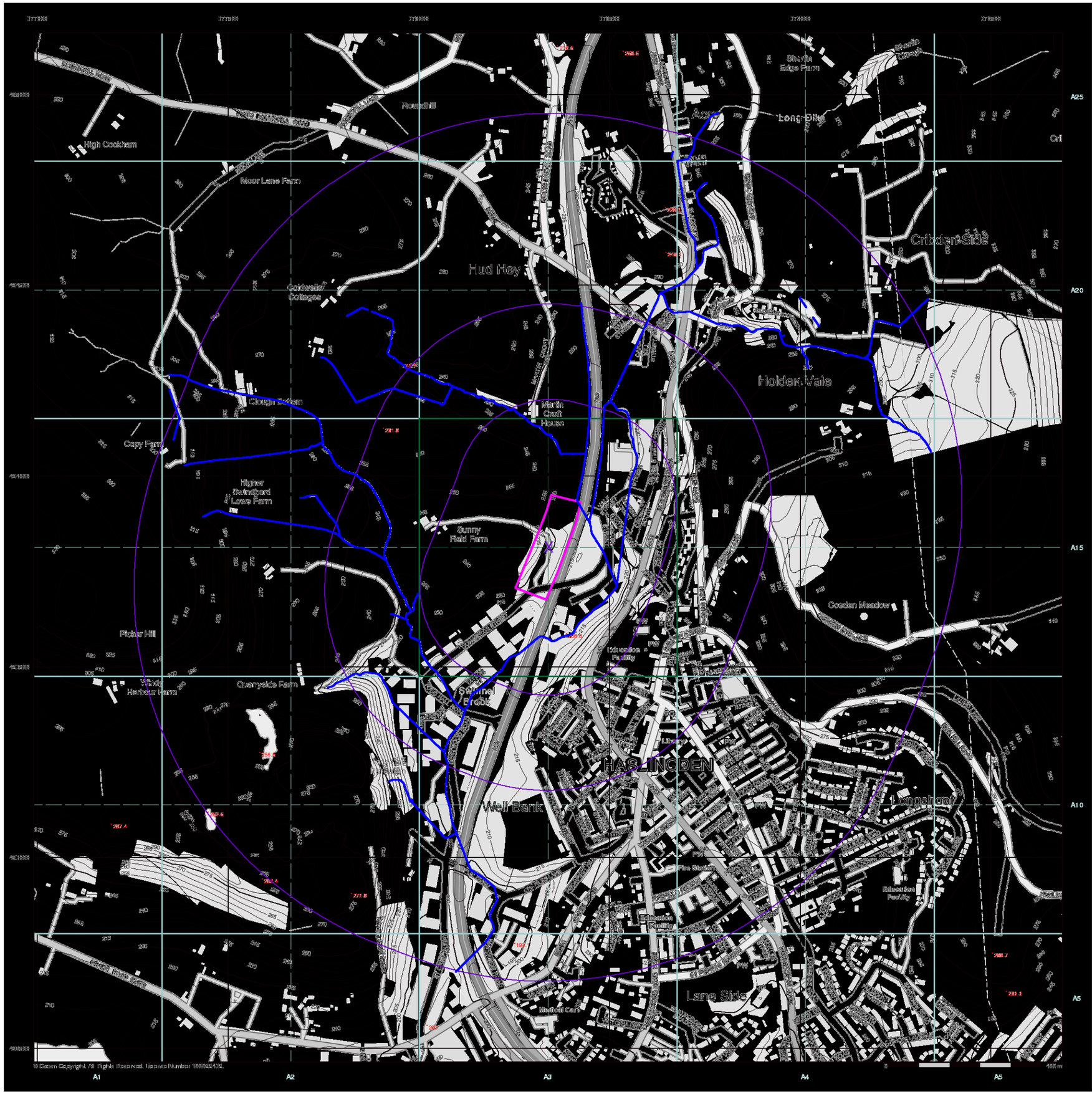
Customer Ref:	391034AA06
National Grid Reference:	378340, 423810
Slice:	A
Site Area (Ha):	2.26
Search Buffer (m):	1000

Site Details

Site at, Rossendale Valley, Lancashire



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General

- Specified Site
- Specified Buffer(s)
- Bearing Reference Point

OS Water Network Data

- Canal
- Reservoir
- Foreshore
- Marsh
- Tidal River
- Inland River
- Drain
- Other
- Lake
- Transfer
- Lock Or Flight Of Locks
- Sea

Contours (height in meters)

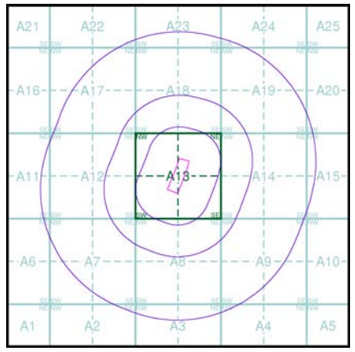
Standard Contour 105

Master Contour 100

Spot Height 167.3

- MLW Mean Low Water
- MHW Mean High Water

OS Water Network Map - Slice A



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Site Details

Site at, Rossendale Valley, Lancashire

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Web: www.envirocheck.co.uk

MOTT MACDONALD

General

- Specified Site
- Specified Buffer(s)
- X Bearing Reference Point

Risk of Flooding from Surface Water

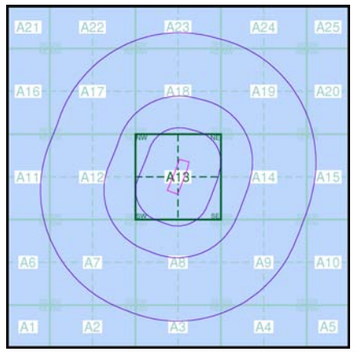
- High - 30 Year Return
- Medium - 100 Year Return
- Low - 1000 Year Return

Suitability

See the suitability map below

- National to county
- County to town
- Town to street
- Street to parcels of land
- Property

EA/NRW Suitability Map - Slice A



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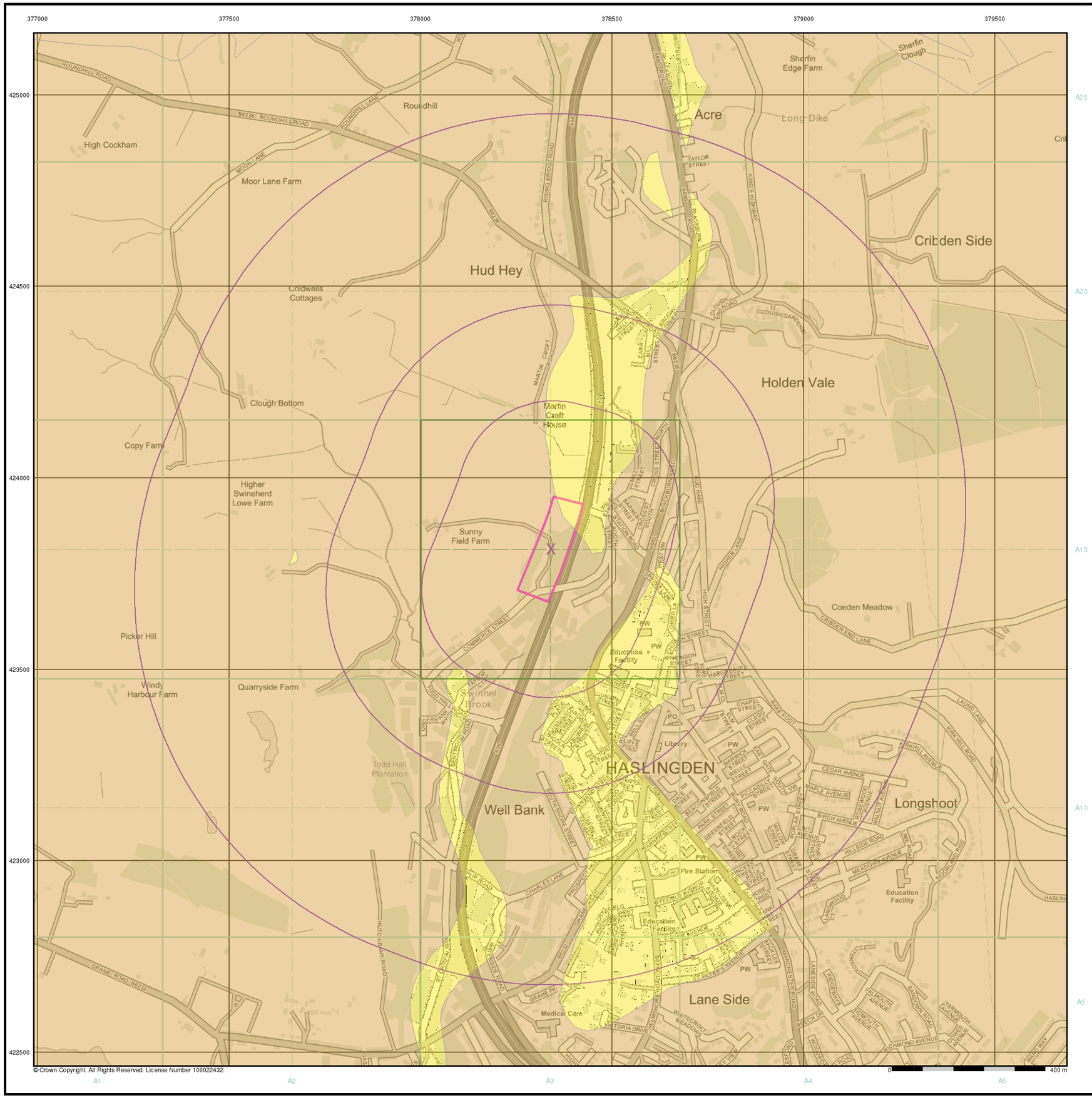


MOTT MACDONALD

General

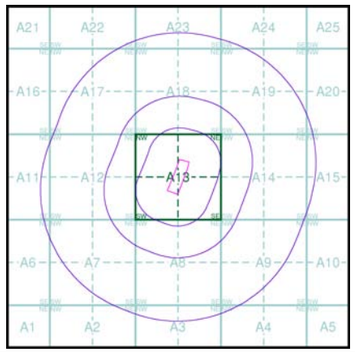
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Arsenic

Arsenic Concentrations mg/kg

- < 15
- 15 - 25
- 25 - 35
- 35 - 45
- 45 - 60
- 60 - 120
- > 120

Estimated Soil Chemistry Arsenic - Slice A



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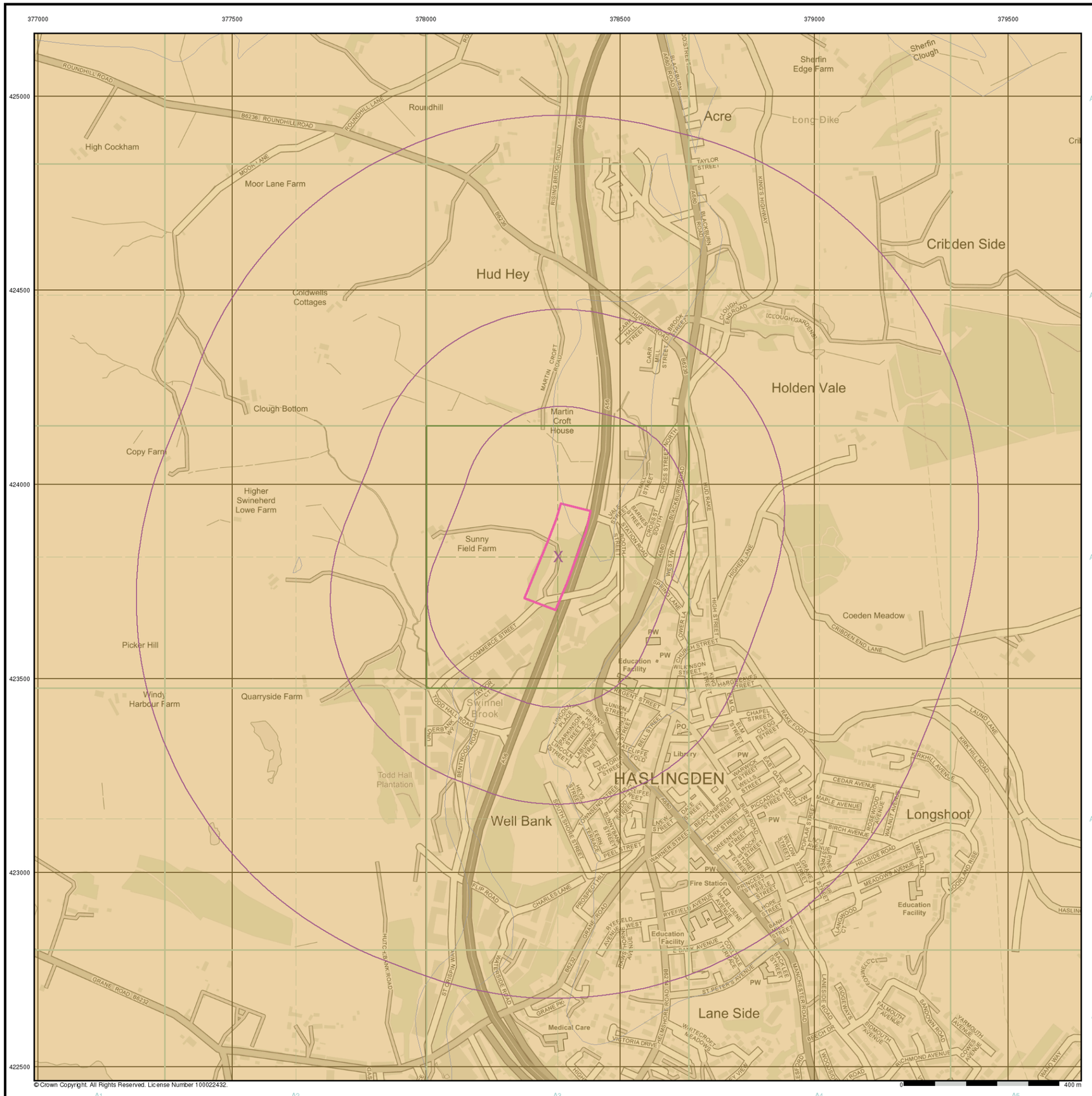


MOTT MACDONALD

General

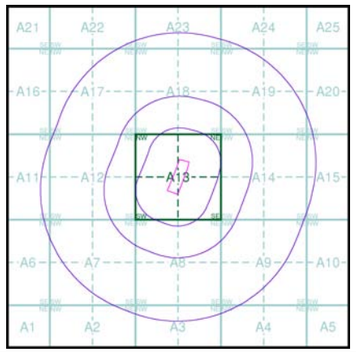
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Cadmium

Cadmium Concentrations mg/kg

	< 1.8
	1.8 - 2.2
	2.2 - 3.0
	> 3.0

Estimated Soil Chemistry Cadmium - Slice A



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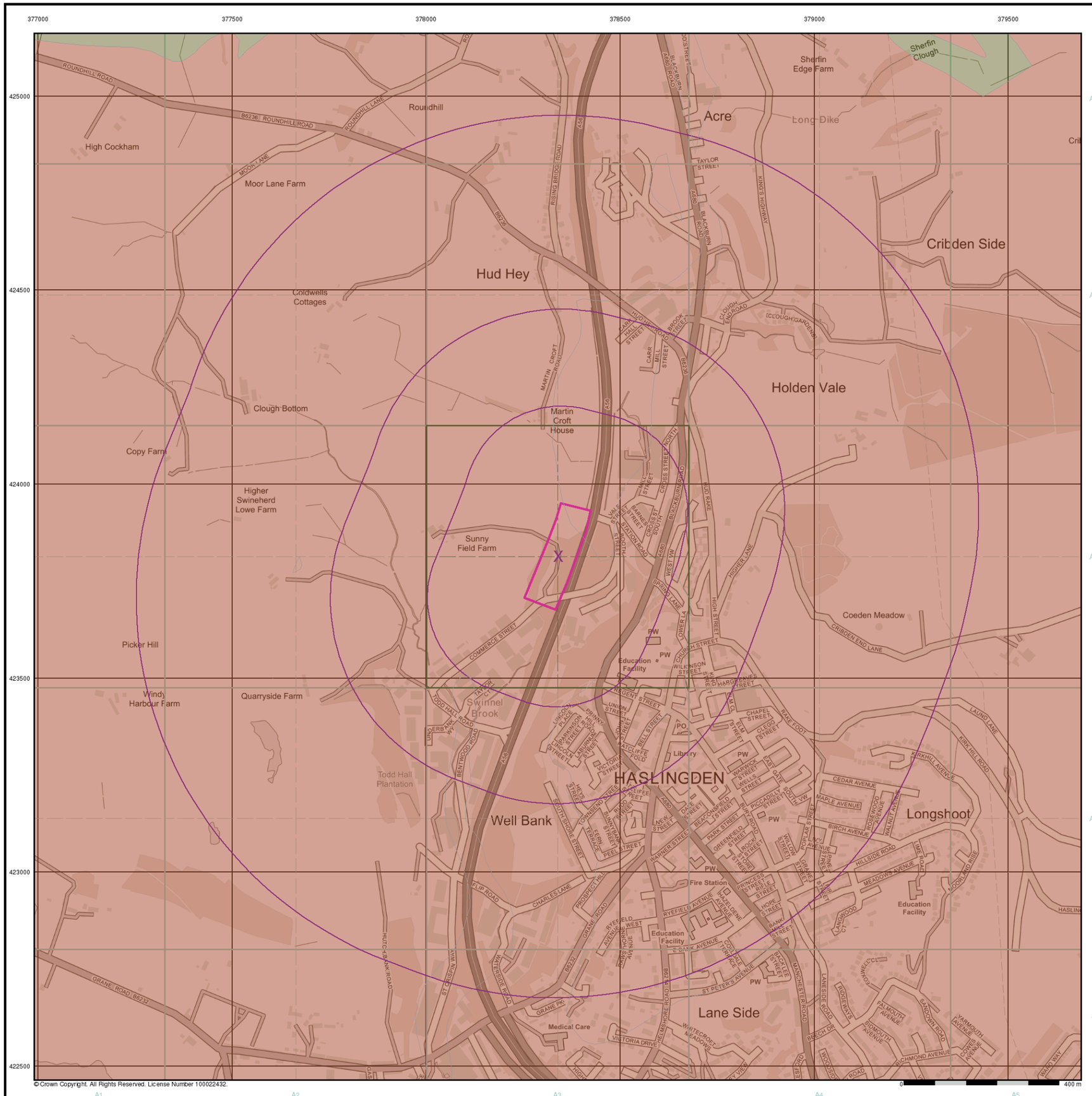


General

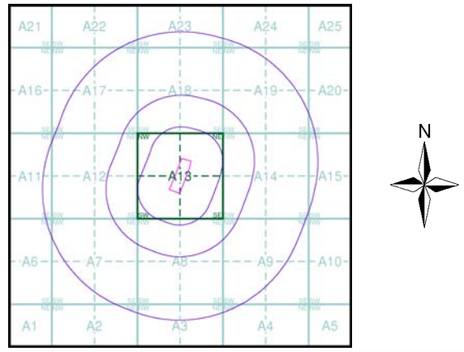
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Chromium

Chromium Concentrations mg/kg

- < 20
- 20 - 40
- 40 - 60
- 60 - 90
- 90 - 120
- 120 - 180
- > 180

Estimated Soil Chemistry Chromium - Slice A



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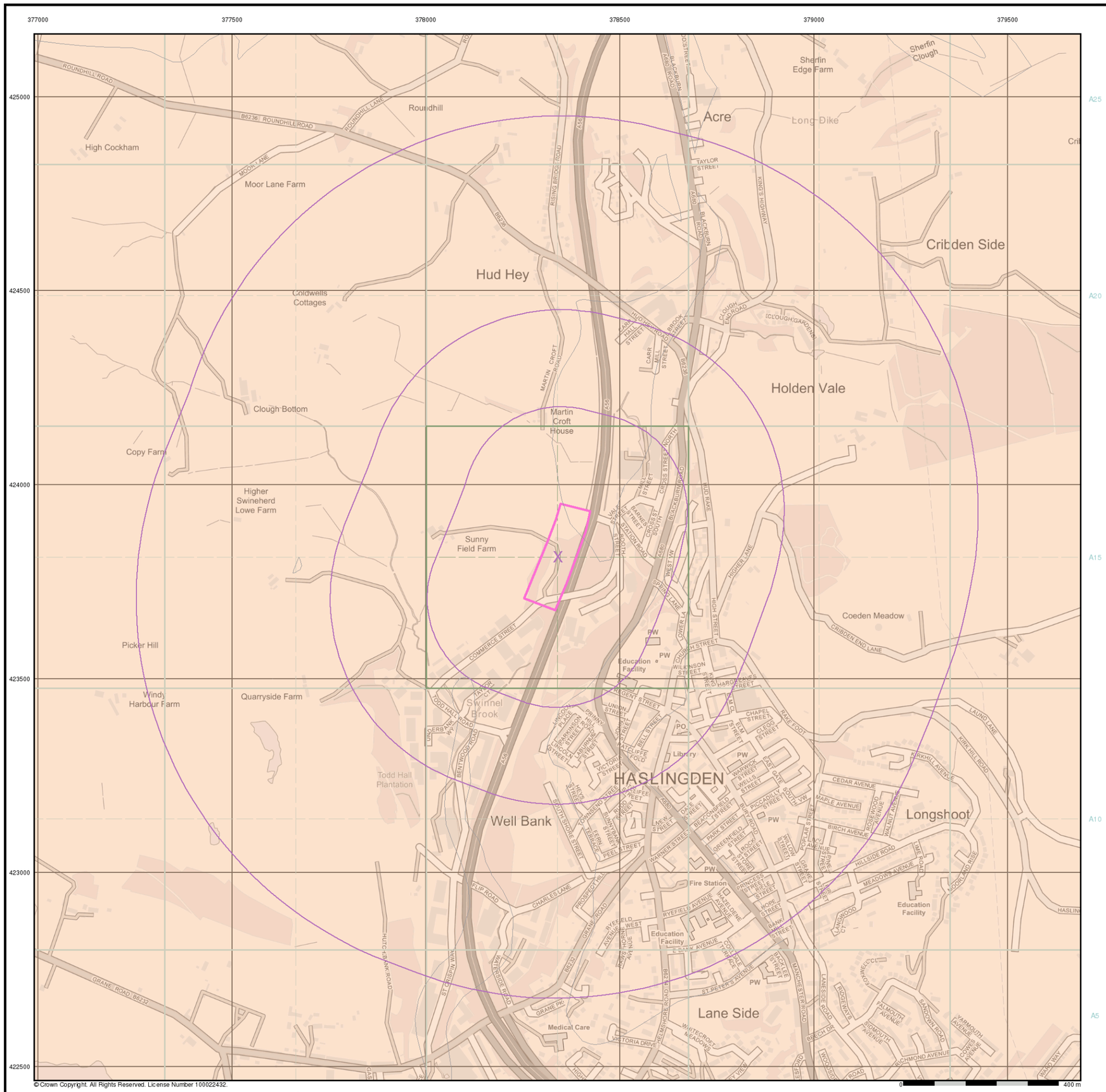


MOTT MACDONALD

General

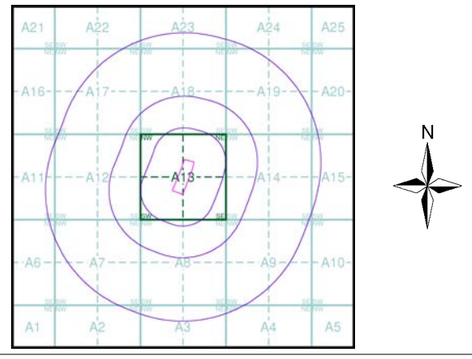
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Lead

Lead Concentrations mg/kg

- <100 mg/kg
- 100 - 200
- 200 - 300
- 300 - 600
- 600 - 1200
- >1200

Estimated Soil Chemistry Lead - Slice A



Order Details

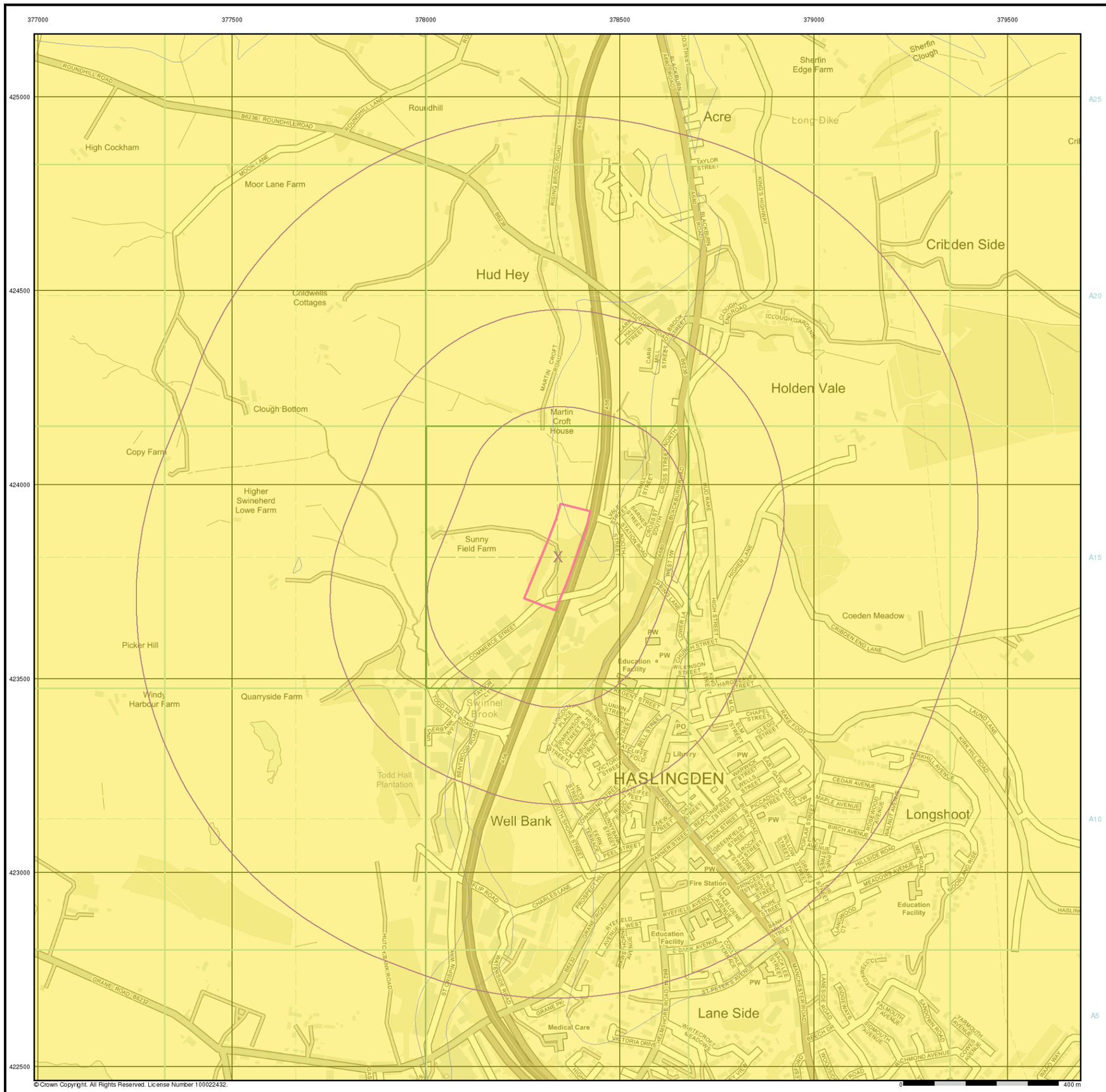
Order Details:	241411014_1_1
Customer Ref:	391034AA06
National Grid Reference:	378340, 423810
Slice:	A
Site Area (Ha):	2.26
Search Buffer (m):	1000

Site Details

Site at, Rossendale Valley, Lancashire

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



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General

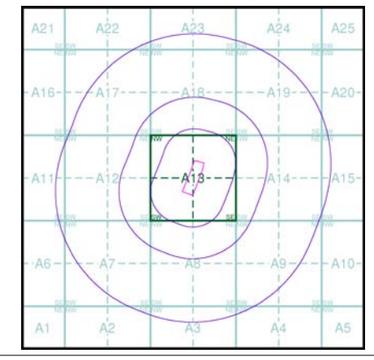
Specified Site | Specified Buffer(s) | X Bearing Reference Point

Estimated Soil Chemistry Nickel

Nickel Concentrations mg/kg

- < 15
- 15 - 30
- 30 - 45
- 45 - 60
- 60 - 80
- 80 - 100
- > 100

Estimated Soil Chemistry Nickel - Slice A



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Site Details

Site at, Rossendale Valley, Lancashire

Landmark INFORMATION GROUP

Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

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Envirocheck® Report:

Mining and Ground Stability Datasheet

Order Details:

Order Number:
241411014_1_1

Customer Reference:
391034AA06

National Grid Reference:
378340, 423810

Slice:
A

Site Area (Ha):
2.26

Search Buffer (m):
1000

Site Details:

Site at
Rossendale Valley
Lancashire

Client Details:

Mr S Myles
Mott Macdonald
Spring Bank House
33 Stamford Street
Altrincham
Manchester
WA14 1ES

MOTT MACDONALD

Contents

Report Version v53.0

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Man Made Mining Cavities					
Mining Instability	pg 3	Yes	n/a	n/a	n/a
Natural Cavities					
Non Coal Mining Areas of Great Britain	pg 3	Yes		n/a	n/a
Potential Mining Areas					
Historical Land Use Information (1:2,500)					
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Extractive Industries or Potential Excavations from 1893-1915 (100m)	pg 4	1	3	n/a	n/a
Extractive Industries or Potential Excavations from 1906-1937 (100m)	pg 4	1	3	n/a	n/a
Extractive Industries or Potential Excavations from 1924-1949 (100m)				n/a	n/a
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Brine Subsidence Solution Area					
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Potential for Compressible Ground Stability Hazards	pg 9	Yes	Yes	n/a	n/a
Potential for Ground Dissolution Stability Hazards	pg 9	Yes		n/a	n/a
Potential for Landslide Ground Stability Hazards	pg 9	Yes	Yes	n/a	n/a
Potential for Running Sand Ground Stability Hazards	pg 10	Yes	Yes	n/a	n/a
Potential for Shrinking or Swelling Clay Ground Stability Hazards	pg 10	Yes	Yes	n/a	n/a
Salt Mining Related Features					

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Summary

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Mining and Natural Cavities Data

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
1	**BGS Recorded Mineral Sites** Site Name: Carr Mill Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93576 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14NW (NE)	505	1	378878 424150
2	**BGS Recorded Mineral Sites** Site Name: Top O' Slate Location: Haslingden, Rossendale, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 19355 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Upper Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14NW (E)	532	1	378955 423920
3	**BGS Recorded Mineral Sites** Site Name: Clough End Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93575 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A19SW (NE)	538	1	378850 424259
4	**BGS Recorded Mineral Sites** Site Name: Top O' Slate Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 9644 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14SW (E)	605	1	379010 423780
5	**BGS Recorded Mineral Sites** Site Name: Hutch Bank Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93596 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	617	1	377859 423233
6	**BGS Recorded Mineral Sites** Site Name: Hutch Bank Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93595 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	667	1	377728 423296

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
7	**BGS Recorded Mineral Sites** Site Name: Hutch Bank Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93597 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A7NE (SW)	691	1	377847 423148
8	**BGS Recorded Mineral Sites** Site Name: Top O' Slate Location: Haslingden, Rossendale, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 19354 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Upper Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A14SE (E)	759	1	379135 423650
9	**BGS Recorded Mineral Sites** Site Name: Hutch Bank Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 2645 Type: Opencast **Status: Ceased** Operator: Bardon Aggregates - Northern Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Unknown	A7SE (SW)	822	1	377700 423100
10	**BGS Recorded Mineral Sites** Site Name: Higher Swineheard Lowe Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93592 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Millstone Grit Group Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A12SW (W)	862	1	377395 423779
10	**BGS Recorded Mineral Sites** Site Name: Higher Swineheard Lowe Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93593 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Millstone Grit Group Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A12NW (W)	874	1	377388 423824
11	**BGS Recorded Mineral Sites** Site Name: Round Hill Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93565 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Millstone Grit Group Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A18NW (N)	885	1	378033 424777

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
12	**BGS Recorded Mineral Sites** Site Name: Acre Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93567 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A19NW (NE)	910	1	378885 424715
13	**BGS Recorded Mineral Sites** Site Name: Copy Farm Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93577 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Millstone Grit Group Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A12NW (W)	910	1	377380 423959
14	**BGS Recorded Mineral Sites** Site Name: Acre Location: Acre, Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93620 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A24SW (N)	955	1	378729 424836
15	**BGS Recorded Mineral Sites** Site Name: Hutch Bank Location: Haslingden, Lancashire Source: British Geological Survey, National Geoscience Information Service Reference: 93602 Type: Opencast **Status: Ceased** Operator: Unknown Operator Operator Location: Not Supplied Periodic Type: Carboniferous Geology: Lower Haslingden Flags Commodity: Sandstone Positional Accuracy: Located by supplier to within 10m	A7SE (SW)	974	1	377723 422890
	Coal Mining Affected Areas Description: In an area which may be affected by coal mining activity. It is recommended that a coal mining report is obtained from the Coal Authority. Contact details are included in the Useful Contacts section of this report.	A13NE (SW)	0	2	378341 423814
	Mining Instability Mining Evidence: Inconclusive Coal Mining Source: Ove Arup & Partners Boundary Quality: As Supplied	A13NE (SW)	0	3	378341 423814
	Non Coal Mining Areas of Great Britain Risk: Rare Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814

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Historical Land Use Information (1:2,500)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
16	**Extractive Industries or Potential Excavations from 1855-1909** Use: Railway Cutting First Map Published Date: 1893 Last Map Published Date: Not Applicable	A13SE (S)	0	-	378350 423738
17	**Extractive Industries or Potential Excavations from 1855-1909** Use: Tunnel First Map Published Date: 1893 Last Map Published Date: Not Applicable	A13SE (E)	18	-	378399 423793
18	**Extractive Industries or Potential Excavations from 1855-1909** Use: Reservoir First Map Published Date: 1893 Last Map Published Date: Not Applicable	A13SE (SE)	81	-	378420 423662
19	**Extractive Industries or Potential Excavations from 1893-1915** Use: Unspecified Pit First Map Published Date: 1911 Last Map Published Date: Not Applicable	A13SE (S)	0	-	378354 423737
20	**Extractive Industries or Potential Excavations from 1893-1915** Use: Tunnel First Map Published Date: 1911 Last Map Published Date: Not Applicable	A13SE (E)	16	-	378400 423796
21	**Extractive Industries or Potential Excavations from 1893-1915** Use: Railway Embankment First Map Published Date: 1911 Last Map Published Date: Not Applicable	A13SE (S)	40	-	378358 423642
22	**Extractive Industries or Potential Excavations from 1893-1915** Use: Reservoir First Map Published Date: 1911 Last Map Published Date: Not Applicable	A13SE (SE)	77	-	378418 423664
23	**Extractive Industries or Potential Excavations from 1906-1937** Use: Railway Cutting First Map Published Date: 1930 Last Map Published Date: Not Applicable	A13SE (S)	0	-	378351 423736
24	**Extractive Industries or Potential Excavations from 1906-1937** Use: Tunnel First Map Published Date: 1930 Last Map Published Date: Not Applicable	A13SE (E)	16	-	378398 423794
25	**Extractive Industries or Potential Excavations from 1906-1937** Use: Railway Embankment First Map Published Date: 1930 Last Map Published Date: Not Applicable	A13SW (S)	44	-	378330 423632
26	**Extractive Industries or Potential Excavations from 1906-1937** Use: Reservoir First Map Published Date: 1930 Last Map Published Date: Not Applicable	A13SE (SE)	77	-	378414 423663

Historical Land Use Information (1:2,500)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
27	**Extractive Industries or Potential Excavations from 1950-1980** Use: Railway Cutting First Map Published Date: 1961 Last Map Published Date: N/A	A13NE (E)	0	-	378391 423832
28	**Extractive Industries or Potential Excavations from 1950-1980** Use: Railway Cutting First Map Published Date: 1961 Last Map Published Date: N/A	A13SW (S)	0	-	378337 423704
29	**Extractive Industries or Potential Excavations from 1950-1980** Use: North Hag Tunnel First Map Published Date: 1961 Last Map Published Date: N/A	A13SE (E)	17	-	378399 423795
30	**Extractive Industries or Potential Excavations from 1950-1980** Use: Unspecified Deposited Material First Map Published Date: 1961 Last Map Published Date: N/A	A13SE (SE)	93	-	378431 423667
31	**Extractive Industries or Potential Excavations from 1950-1980** Use: Unspecified Deposited Material First Map Published Date: 1961 Last Map Published Date: 1961	A13NE (NE)	98	-	378493 424000

Historical Land Use Information (1:10,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
32	**General Quarrying** Use: Not Supplied Date of Mapping: 1849	A13NE (E)	109	-	378512 423837
33	**General Quarrying** Use: Not Supplied Date of Mapping: 1849 - 1894	A14NW (NE)	452	-	378822 424144
34	**General Quarrying** Use: Not Supplied Date of Mapping: 1849 - 1911	A14NW (E)	477	-	378900 423928
35	**General Quarrying** Use: Not Supplied Date of Mapping: 1849	A14NW (E)	511	-	378934 423926
36	**General Quarrying** Use: Not Supplied Date of Mapping: 1849	A19SW (NE)	536	-	378848 424259
37	**General Quarrying** Use: Not Supplied Date of Mapping: 1849 - 1990	A7NE (SW)	562	-	377864 423302
38	**General Quarrying** Use: Not Supplied Date of Mapping: 1849	A7NE (SW)	586	-	377877 423258
39	**General Quarrying** Use: Not Supplied Date of Mapping: 1849	A7NE (SW)	649	-	377889 423170
40	**General Quarrying** Use: Not Supplied Date of Mapping: 1849	A7NE (SW)	665	-	377724 423305
41	**General Quarrying** Use: Not Supplied Date of Mapping: 1849	A12SW (W)	858	-	377399 423782
41	**General Quarrying** Use: Not Supplied Date of Mapping: 1849 - 1911	A12NW (W)	873	-	377389 423829
42	**General Quarrying** Use: Not Supplied Date of Mapping: 1849	A18NW (N)	884	-	378033 424777
43	**General Quarrying** Use: Not Supplied Date of Mapping: 1849 - 1911	A12NW (W)	899	-	377382 423927
44	**General Quarrying** Use: Not Supplied Date of Mapping: 1849	A19NW (NE)	913	-	378880 424722
45	**General Quarrying** Use: Not Supplied Date of Mapping: 1912	A19SE (NE)	935	-	379226 424411
46	**General Quarrying** Use: Not Supplied Date of Mapping: 1912	A24SW (N)	955	-	378729 424836
47	**General Quarrying** Use: Not Supplied Date of Mapping: 1894	A7SW (SW)	993	-	377523 423035
48	**Mineral Railway** Use: Not Supplied Date of Mapping: 1894 - 1931	A7SE (SW)	988	-	377805 422826
49	**Quarrying of sand & clay, operation of sand & gravel pits** Use: Not Supplied Date of Mapping: 1849	A8NE (S)	257	-	378469 423458
50	**Quarrying of sand & clay, operation of sand & gravel pits** Use: Not Supplied Date of Mapping: 1955	A14SE (E)	762	-	379102 423550
51	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A13NE (E)	109	-	378512 423837

Historical Land Use Information (1:10,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
52	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A8NE (S)	257	-	378469 423458
53	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A14NW (E)	477	-	378900 423926
54	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A19SW (NE)	536	-	378848 424259
55	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12SW (W)	858	-	377399 423782
56	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12NW (W)	873	-	377389 423829
57	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A18NW (N)	884	-	378033 424777
58	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A12NW (W)	899	-	377382 423927
59	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A19NW (NE)	913	-	378880 424722
60	**Potentially Infilled Land (Non-Water)** Use: Unknown Filled Ground (Pit, quarry etc) Date of Mapping: 1990	A19SE (NE)	978	-	379326 424308
61	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13SE (S)	49	-	378386 423656
62	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13SE (S)	95	-	378340 423581
63	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13NE (N)	102	-	378381 424047
64	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A13NE (NE)	127	-	378549 423950
65	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13SW (SW)	222	-	378149 423511
66	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13NE (E)	231	-	378642 423851
67	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A12SE (W)	266	-	377997 423774
68	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8NW (SW)	285	-	378158 423438
69	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1931	A13SE (E)	291	-	378660 423710
70	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A13SW (SW)	297	-	378012 423535
71	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A18SE (NE)	299	-	378548 424203
72	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8NW (SW)	360	-	378108 423378

Historical Land Use Information (1:10,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
73	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A12SE (SW)	373	-	377949 423492
74	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A8NE (S)	447	-	378515 423267
75	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8NW (SW)	471	-	378028 423293
76	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8NW (S)	491	-	378123 423231
77	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A18SE (NE)	502	-	378610 424397
78	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1931	A8NW (SW)	533	-	378036 423221
79	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1849	A8NW (SW)	579	-	378053 423164
80	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8SW (S)	699	-	378063 423031
81	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1911	A9NW (SE)	739	-	378969 423297
82	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A18NE (N)	764	-	378509 424697
83	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A12NW (W)	773	-	377505 423897
84	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A8SW (S)	779	-	378169 422915
85	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1912	A18NE (N)	794	-	378492 424731
86	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1912	A18NE (N)	828	-	378492 424765
87	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1955	A3NW (S)	889	-	378191 422799
88	**Potentially Infilled Land (Water)** Use: Unknown Filled Ground (Pond, marsh, river, stream, dock etc) Date of Mapping: 1931	A9SE (SE)	976	-	379100 423071

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
	CBSCB Compensation District The site does not fall within the brine compensation area.				
	Brine Subsidence Solution Area The site does not fall within the brine subsidence solution area.				
89	**Potential for Collapsible Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
90	**Potential for Collapsible Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
	Potential for Collapsible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	378412 423900
91	**Potential for Compressible Ground Stability Hazards** Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
92	**Potential for Compressible Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	22	1	378303 423664
93	**Potential for Compressible Ground Stability Hazards** Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	234	1	378027 423795
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	378339 423859
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SE (S)	36	1	378381 423670
	Potential for Compressible Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
	Potential for Ground Dissolution Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
94	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	378358 423864
95	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
96	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	1	378267 423765
97	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	378339 423859
98	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	5	1	378297 423824
99	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NW (W)	17	1	378279 423814
100	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (E)	75	1	378508 423812
101	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	81	1	378363 424030
102	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	92	1	378486 423694

Ground Stability Data (1:50,000)

Map ID	Details	Quadrant Reference (Compass Direction)	Estimated Distance From Site	Contact	NGR
103	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	105	1	378258 424003
104	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SE (SE)	111	1	378465 423654
105	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	127	1	378548 423955
106	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	142	1	378556 423852
107	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	149	1	378557 423847
108	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	185	1	378297 423495
109	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Moderate Source: British Geological Survey, National Geoscience Information Service	A13SW (S)	202	1	378299 423478
110	**Potential for Landslide Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	240	1	378033 423612
111	**Potential for Running Sand Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	378412 423900
112	**Potential for Running Sand Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
113	**Potential for Running Sand Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13SW (W)	234	1	378027 423795
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	0	1	378263 423725
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (NE)	0	1	378361 423857
	Potential for Running Sand Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
114	**Potential for Shrinking or Swelling Clay Ground Stability Hazards** Hazard Potential: Very Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	0	1	378339 423859
115	**Potential for Shrinking or Swelling Clay Ground Stability Hazards** Hazard Potential: Low Source: British Geological Survey, National Geoscience Information Service	A13NE (N)	120	1	378370 424068
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (SW)	0	1	378341 423814
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NE (E)	79	1	378498 423845
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	102	1	378242 423971
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13NW (NW)	217	1	378157 424053
	Potential for Shrinking or Swelling Clay Ground Stability Hazards Hazard Potential: No Hazard Source: British Geological Survey, National Geoscience Information Service	A13SW (SW)	240	1	378033 423612

Historical Map List

The following mapping has been analysed for Historical Land Use Information (1:2,500):

1:2,500	Mapsheet	Published Date
Lancashire And Furness	071_08	1893
Lancashire And Furness	071_12	1893
Lancashire And Furness	071_08	1911
Lancashire And Furness	071_12	1911
Lancashire And Furness	071_08	1930
Lancashire And Furness	071_12	1930
Ordnance Survey Plan	SD7824	1963

The following mapping has been analysed for Historical Land Use Information (1:10,000):

1:10,560	Mapsheet	Published Date
Lancashire And Furness	071_00	1849
Lancashire And Furness	071_NE	1894
Lancashire And Furness	071_SE	1894
Lancashire And Furness	071_SE	1911
Lancashire And Furness	071_NE	1912
Lancashire And Furness	071_NE	1931
Lancashire And Furness	071_SE	1931
Ordnance Survey Plan	SD72SE	1955
Ordnance Survey Plan	SD72NE	1956
1:10,000	**Mapsheet**	**Published Date**
Ordnance Survey Plan	SD72SE	1990
Ordnance Survey Plan	SD72NE	1991

Data Currency

Mining and Cavities Data	Version	Update Cycle
BGS Recorded Mineral Sites British Geological Survey - National Geoscience Information Service	October 2019	Bi-Annually
Coal Mining Affected Areas The Coal Authority - Property Searches	March 2014	Annual Rolling Update
Man Made Mining Cavities Peter Brett Associates	December 2019	Bi-Annually
Mining Instability Ove Arup & Partners	October 2000	Not Applicable
Natural Cavities Peter Brett Associates	December 2019	Bi-Annually
Non Coal Mining Areas of Great Britain British Geological Survey - National Geoscience Information Service	May 2015	Not Applicable
Historical Land Use Information (1:2,500)	**Version**	**Update Cycle**
Subterranean Features Landmark Information Group Limited	February 2020	Bi-Annually
Ground Stability Data (1:50,000)	**Version**	**Update Cycle**
CBSCB Compensation District Cheshire Brine Subsidence Compensation Board (CBSCB)	August 2011	Not Applicable
Potential for Collapsible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Compressible Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Ground Dissolution Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Landslide Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Running Sand Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Potential for Shrinking or Swelling Clay Ground Stability Hazards British Geological Survey - National Geoscience Information Service	January 2019	Annually
Brine Subsidence Solution Area Johnson Poole & Bloomer	January 2015	Annual Rolling Update

Data Suppliers

A selection of organisations who provide data within this report

Data Supplier	Data Supplier Logo
Ordnance Survey	Map data
British Geological Survey	British Geological Survey, NATURAL ENVIRONMENT RESEARCH COUNCIL
The Coal Authority	The Coal Authority
Ove Arup	ARUP
Peter Brett Associates	pba peterbrett
Wardell Armstrong	wardell armstrong, your earth our world
Johnson Poole & Bloomer	JPB

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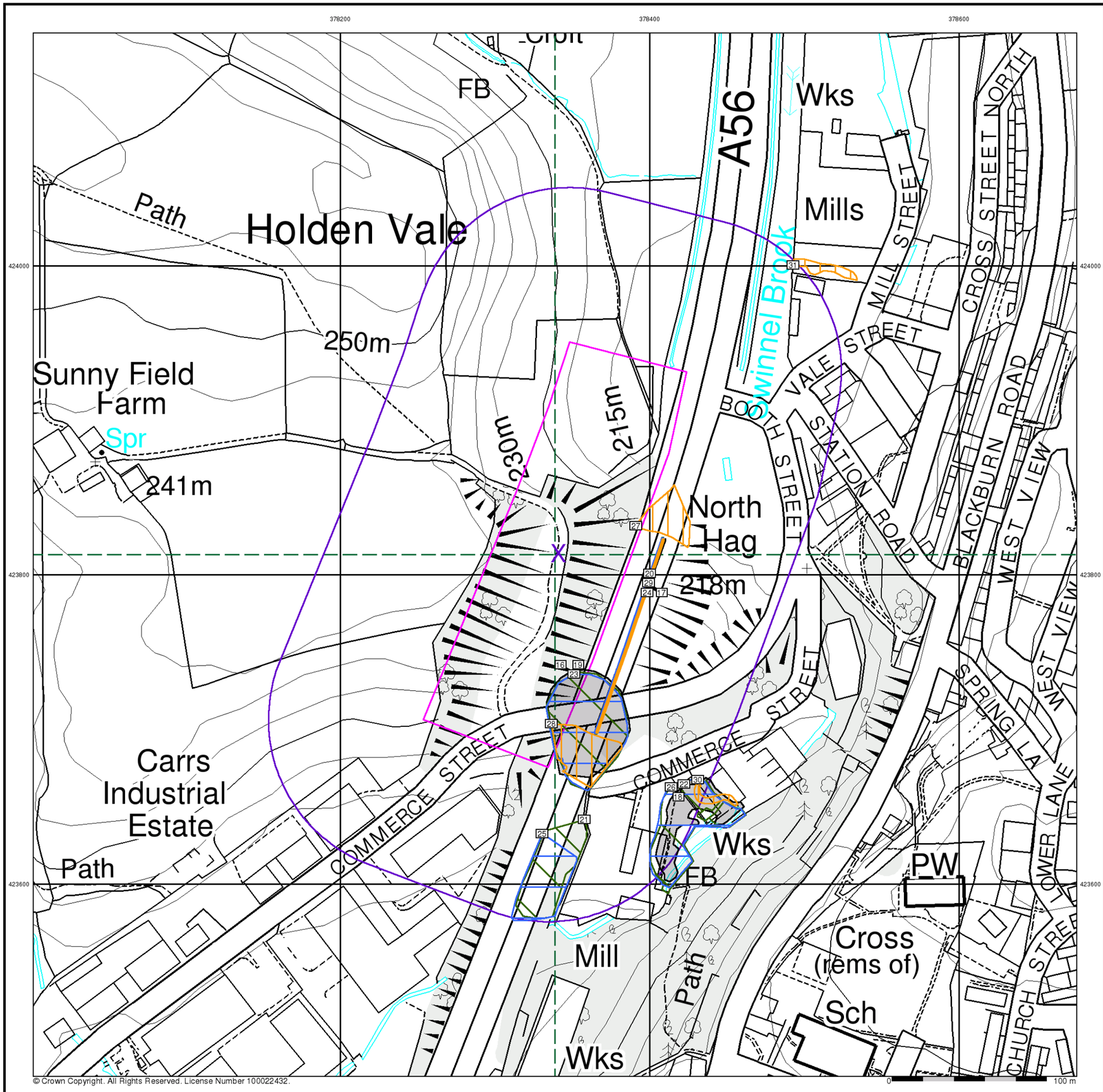
Useful Contacts

Contact	Name and Address	Contact Details
1	**British Geological Survey - Enquiry Service** British Geological Survey, Environmental Science Centre, Keyworth, Nottingham, Nottinghamshire, NG12 5GG	Telephone: 0115 936 3143 Fax: 0115 936 3276 Email: enquiries@bgs.ac.uk Website: www.bgs.ac.uk
2	**The Coal Authority - Property Searches** 200 Lichfield Lane, Mansfield, Nottinghamshire, NG18 4RG	Telephone: 0345 762 6848 Fax: 01623 637 338 Email: groundstability@coal.gov.uk Website: www2.groundstability.com
3	**Ove Arup & Partners** Central Square, Forth Street, Newcastle upon Tyne, Tyne and Wear, NE1 3PL	Telephone: 0191 261 6080 Fax: 0191 261 7879
-	**Landmark Information Group Limited** Imperium, Imperial Way, Reading, Berkshire, RG2 0TD	Telephone: 0844 844 9952 Fax: 0844 844 9951 Email: customerservices@landmarkinfo.co.uk Website: www.landmarkinfo.co.uk



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Historical Land Use Information (1:2,500)

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Map ID | Several of Type at Location

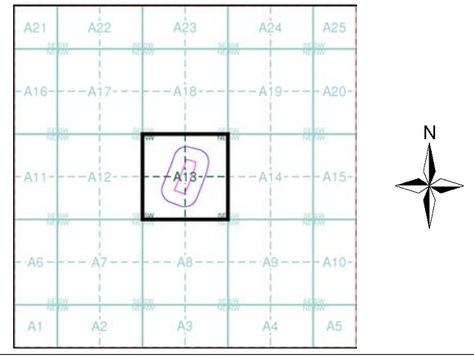
Potentially Contaminative Industrial Uses (Extractive Industries Activity)

	Point	Line	Polygon
Extractive Industries Activity from 1855 - 1909	▲	—	▭
Extractive Industries Activity from 1893 - 1915	▲	—	▨
Extractive Industries Activity from 1906 - 1937	▲	—	▦
Extractive Industries Activity from 1924 - 1949	▲	—	▨
Extractive Industries Activity from 1950 - 1980	▲	—	▥

Subterranean Features

	Point	Line	Polygon
Subterranean Features	▼	- - -	▭

Mining and Ground Stability - Segment A13



Order Details

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Customer Ref:	391034AA06
National Grid Reference:	378340, 423810
Slice:	A
Site Area (Ha):	2.26
Plot Buffer (m):	100

Site Details

Site at, Rossendale Valley, Lancashire

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk

Historical Land Use Information (1:10,000)

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Map ID

Several of Type at Location

Potentially Contaminative Industrial Uses (Past Land Uses - Mining)

	Point	Line	Polygon
Air Shafts	◆		
Disturbed Ground	◆		
General Quarrying	◆		
Heap, unknown constituents	◆		
Mineral Railway	◆		
Mining and Quarrying General	◆		
Mining of Coal & Lignite	◆		
Quarrying of Sand and Clay, Operation of Sand and Gravel Pits	◆		

Historical Land Use

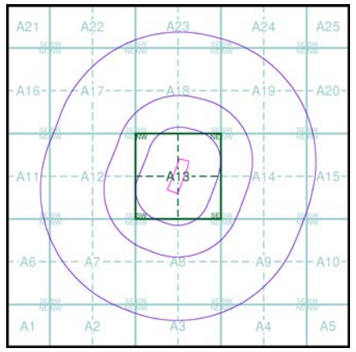
	Point	Line	Polygon
Potentially Infilled Land (Non-Water)	●		
Potentially Infilled Land (Water)	●		
Former Marsh	✠		

Mining Data

Potential Mining Area

BGS Recorded Mineral Site

Mining and Ground Stability - Slice A



Order Details

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Customer Ref:	391034AA06
National Grid Reference:	378340, 423810
Slice:	A
Site Area (Ha):	2.26
Search Buffer (m):	1000

Site Details

Site at, Rossendale Valley, Lancashire

Landmark INFORMATION GROUP

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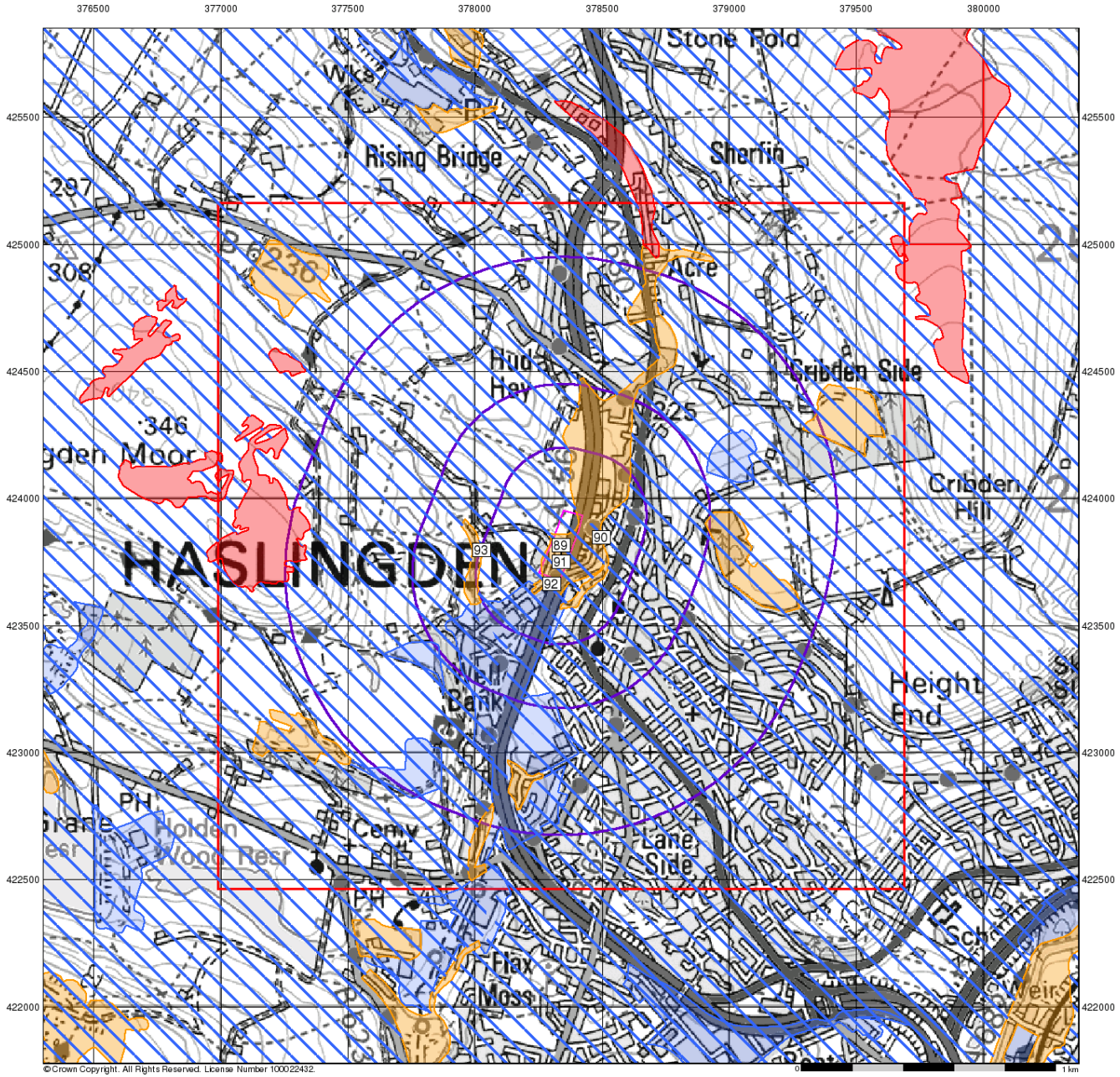


MOTT MACDONALD

Ground Stability Data (1:50,000)

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

Potential for Compressible Ground Stability Hazards

High | Low | Moderate | Very Low

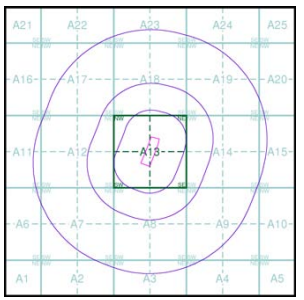
Potential for Collapsible Ground Stability Hazards

High | Low | Moderate | Very Low

Brine Pumping and Salt Mining

	Point	Polygon
Brine Pumping Related Feature	▲	▨
Salt Mining Related Feature	▲	▨

Mining and Ground Stability - Slice A

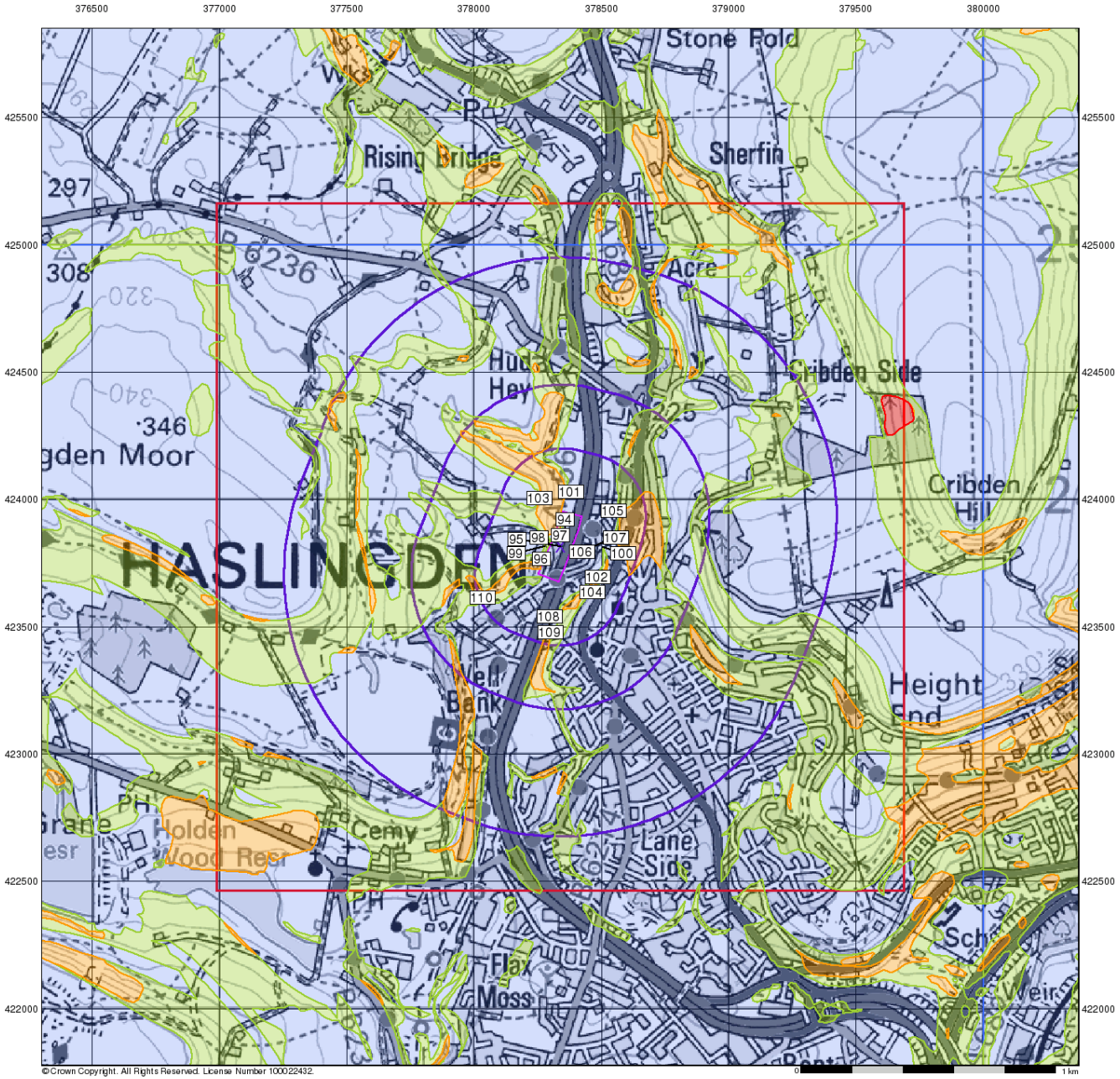


Order Details

Order Number:	241411014_1_1
Customer Ref:	391034AA06
National Grid Reference:	378340, 423810
Slice:	A
Site Area (Ha):	2.26
Search Buffer (m):	1000

Site Details

Site at, Rossendale Valley, Lancashire



MOTT MACDONALD

Ground Stability Data (1:50,000)

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

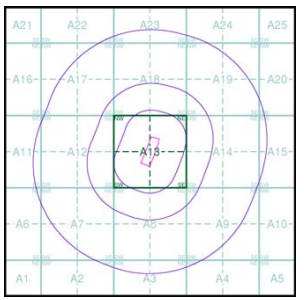
Potential for Landslide Ground Stability Hazards

High | Low | Moderate | Very Low

Potential for Ground Dissolution Stability Hazards

High | Low | Moderate | Very Low

Mining and Ground Stability - Slice A



Order Details

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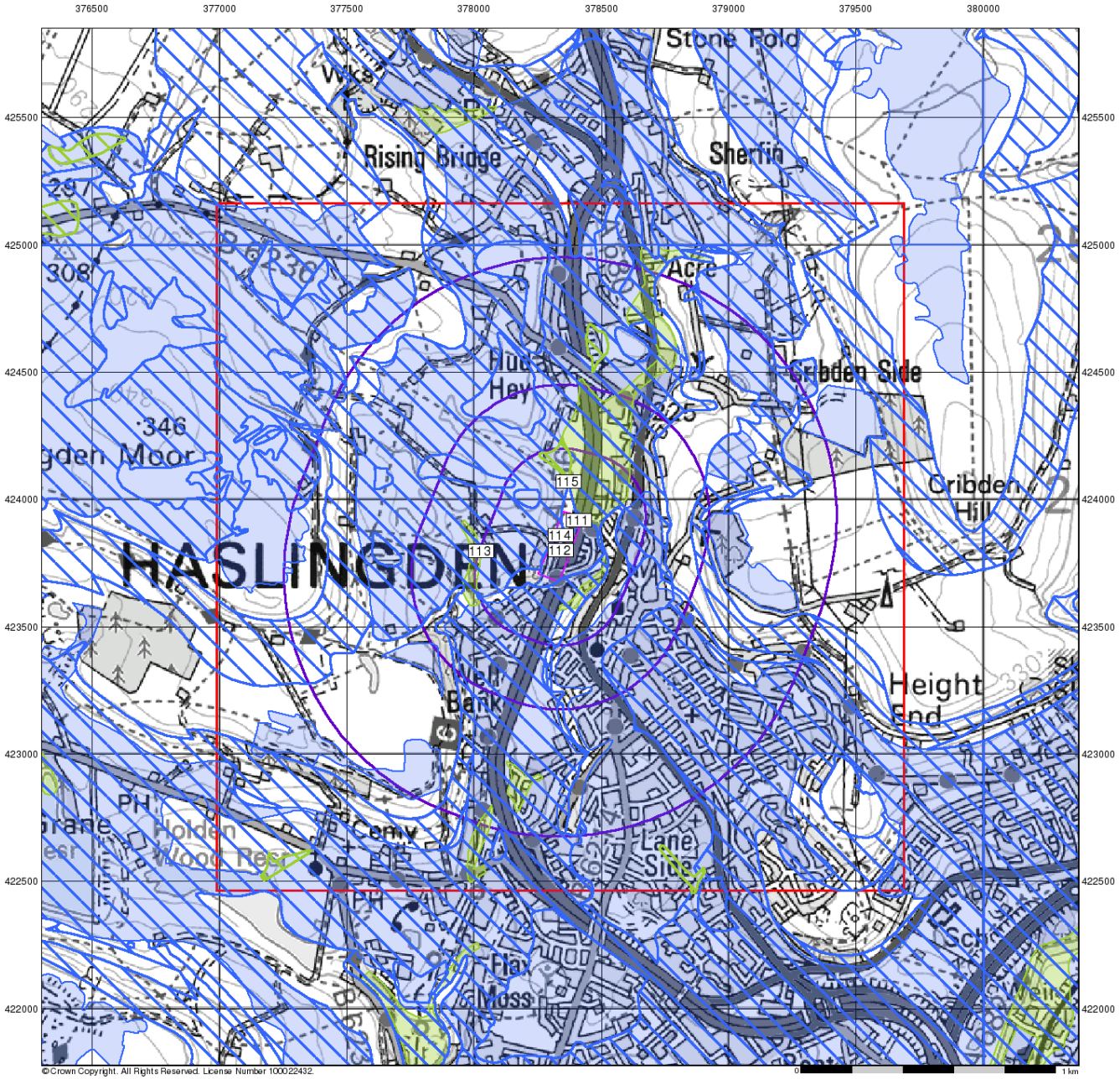
Customer Ref:	391034AA06
National Grid Reference:	378340, 423810
Slice:	A
Site Area (Ha):	2.26
Search Buffer (m):	1000

Site Details

Site at, Rossendale Valley, Lancashire

Landmark INFORMATION GROUP
Tel: 0844 844 9952
Fax: 0844 844 9951
Web: www.envirocheck.co.uk



MOTT MACDONALD

Ground Stability Data (1:50,000)

General

Specified Site | Specified Buffer(s) | Bearing Reference Point | Slice | Map ID

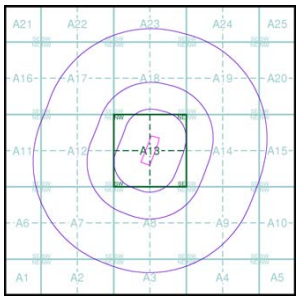
Potential for Running Sand Ground Stability Hazards

High | Low | Moderate | Very Low

Potential for Shrinking or Swelling Clay Ground Stability Hazards

High | Low | Moderate | Very Low

Mining and Ground Stability - Slice A



Order Details

Order Number:	241411014_1_1
Customer Ref:	391034AA06
National Grid Reference:	378340, 423810
Slice:	A
Site Area (Ha):	2.26
Search Buffer (m):	1000

Site Details

Site at, Rossendale Valley, Lancashire

E. Site Investigation Report No. 367

SCALES:-
HORIZONTAL 1:1000
VERTICAL 1:100

SHEET SUFFIX	AMENDMENTS	DATE
A		
B		
C		
D		

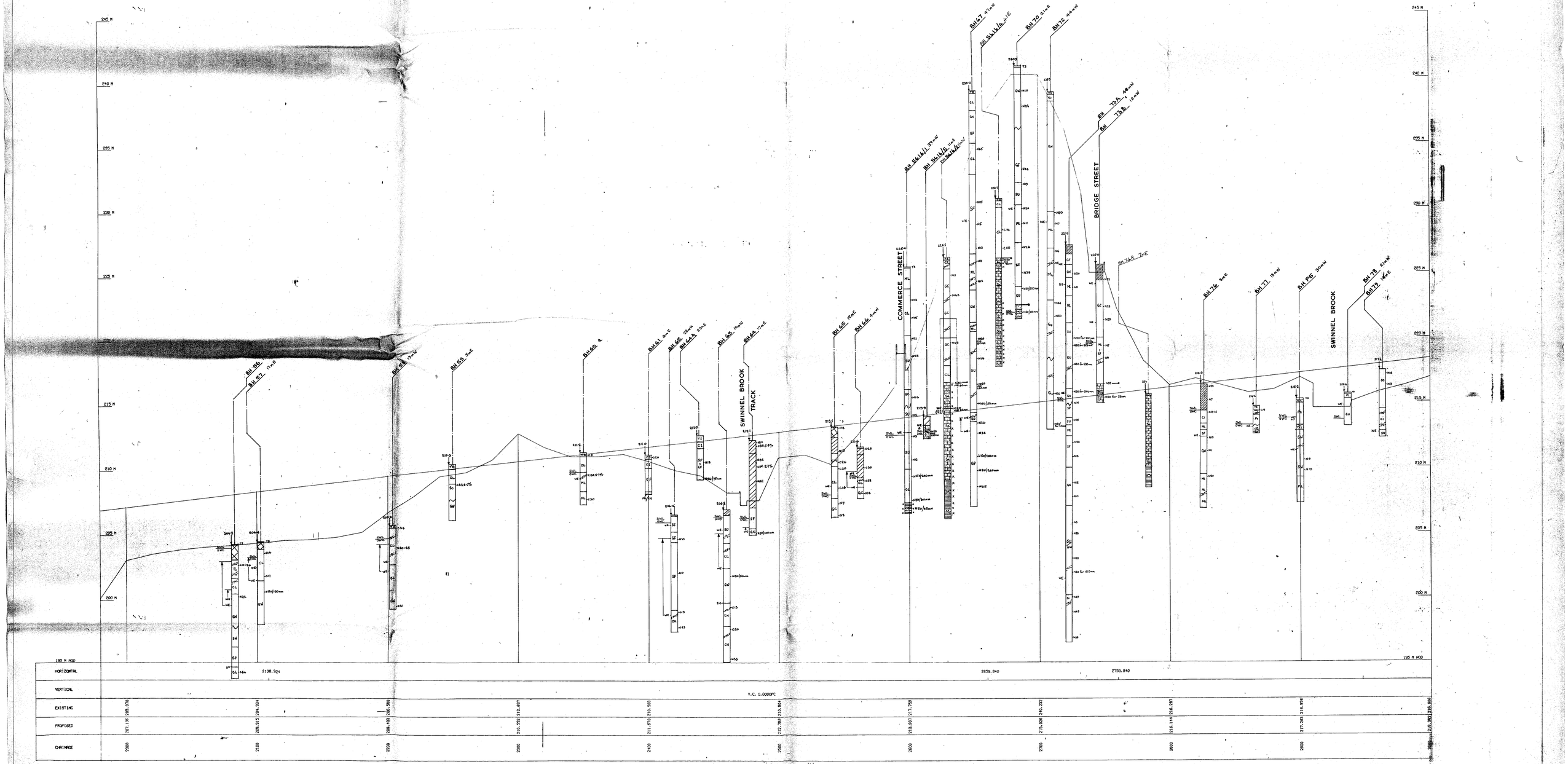
A 56 DIVERSION HASLINGDEN BY PASS
LONGITUDINAL SECTION

DEPARTMENT OF THE ENVIRONMENT
NORTH WESTERN ROAD CONSTRUCTION UNIT

H.L.Yeadon B.Sc.Tech., F.I.C.E., F.I.Mun.E., F.I.M.E.
CHIEF ENGINEER
LANCASHIRE SUB-UNIT

D.F.Dean B.Sc. F.I.C.E. F.I.M.E.
DIRECTOR

SHEET No. 3 of 5
DRAWING No. HA75/2
DATE MARCH 1976



Revised May 1975

LANCASHIRE COUNTY COUNCIL

HIGHWAYS LABORATORY

SITE INVESTIGATION REPORT NO. 367

MANCHESTER TO BURNLEY TRUNK ROAD
A56 DIVERSION
HASLINGDEN BY-PASS SECTION

INTRODUCTION

It is intended that this Report should be read in conjunction with the "Preliminary Site Investigation Report - December 1972". Comments relating to Geology and Mine Workings in general remain unaltered. Since the date of the Preliminary Report the design of the junction with the A680 near Rising Bridge has been altered, reducing the land take, and omitting the diversion of the A677 which now retains its original line and requires a bridge over the by-pass. This report relates to the line published on 5th July, 1975.

The A56 Diversion as a whole is a scheme intended to form part of a through route to link the M62 near White Field with the M65 Calder Valley Route at Huncoat. The M66 Bury Easterly By-Pass forms the beginning of the through route connecting the M62 with the Edenfield By-Pass.

A link from the Edenfield By-Pass has already been constructed as far as Bent Gate roundabout where the A56 Diversion scheme commences. The first length of the new route is intended to provide a by-pass around Haslingden skirting the town via Spring Vale, Holden Vale and Hud Hey to connect with a new roundabout on the A680 near Rising Bridge.

The second length, Accrington Easterly By-Pass, takes a line east of Baxenden and through the disused part of Huncoat Quarry, eventually meeting the M65 at Huncoat Junction.

Haslingden By-Pass is being designed as an all purpose two lane dual carriageway with severely restricted access. Side roads will cross the route by grade separation and there will be only one intermediate junction that being at Grane Road where slip roads will give connections to and from the south. The main route length is 4.2 km.

Recommendations for the make up of pavement construction are presented in the General Recommendations together with those concerning the classification and use of material.

The Site Investigation field work was started in September 1972 with the Preliminary Survey which included ten boreholes along the line of the By-Pass. Drilling for the carriageway main survey commenced at Syke Side in June 1973 and was completed as far north as Hud Hey Road by December 1973. In April 1974 when firm layouts for the bridgeworks had become available boring was recommenced, but suspended from July 1974 to September 1974 to allow public consultation to take place. Drilling was further deferred until April 1975 pending the revised layout for the north end of the by-pass becoming available. Drilling for the main survey was finally completed on 25th November, 1975.

The total amount of boring to date is as follows:-

Hand Auger Holes	42m
Machine Dug Trial Pits	14m
Shell and Auger Drilling	1678m
Rotary Drilling - Open Hole	61m
Rotary Drilling - Rock Coring	51m

GEOLOGY OF THE AREA

The route chosen for the proposed By-Pass takes a general south to north line around the west side of the town and for the most part follows the valley containing Swinnel Brook.

The bedrock below the route is the upper part of the Millstone Grit series. Very few of the boreholes penetrated to bedrock and it appears that the depth of drift exceeds 30m in several places. Only through North Hag cutting will any exposure of the bedrock be seen (the Lower Haslingden Flags). There, along the by-pass centre line, the rock head rises to 4m above finished road level.

Few faults are recorded in the area. A minor fault within the Lower Haslingden Flags is shown crossing the route, trending WSW - ENE at chainage 3570m, with the down throw to the north.

The drift material is mainly glacial, with some superficial deposits of peat and alluvium, but varies considerably from place to place. However, the general order of superposition is as follows:-

(Made Ground)
Alluvium, Alluvial Fan, Peat
Fluvioglacial sand and gravel
Boulder Clay (upper)
Varved Clay
Boulder Clay (lower)

From Bent Gate roundabout northwards boulder clay predominates but soon gives way across Helmcroft to varved clays with silt partings. The prevalance of silt increases towards Victoria Park where very wet silt to a depth of 21m was encountered, overlying varved clay to 35m. Beyond Helmshore Road there is an abrupt change to fluvioglacial silty sand with gravel. Peat occurs in the valley bottom around chainages 1300m and 1550m.

From Grane Road through to Flip Road in the valley of Swinnel Brook silt seems to predominate with interspersed layers of varved clay. At Flip Road up to 8m of boulder clay overlies the silt but soon gives way to the north to fluvioglacial silty sands and silty sandy gravels, with occasional peat inclusions at the surface.

Much of the ground surface between Flip Road and North Hag has been covered with man-made filling thus obscuring the natural features.

Boreholes drilled through North Hag have revealed stratified deposits of silty sand and silty sandy gravel interspersed mid-way to finished road level with layers of silt and varved clay.

Through Holden Vale the line of the route crosses a flat area which is probably an outwash deposit. Gravels, sands and silts are overlain by a layer of peat approximately 2m thick.

From Hud Hey Road to Blackburn Road the line runs through a thick moundy deposit of gravel. sand, and clay. Surface hollows contain peat, and some small pockets of peat are present within the deposit.

Immediately east of Blackburn Road where the new roundabout is planned there is a peat filled trapped valley. Boreholes have revealed up to 3m of peat overlying mainly granular material. Bedrock occurs at a depth of about 11m in this area.

MINEWORKINGS

The buried outcrop of the Holcombe Brook Coal crosses the Syke Side slip road near Syke Mill, and the main route just south of Victoria Park. The only evidence of past working is a small tip of coal, shale and ironstone fragments near Holme Spring Mill opposite chainage 1350m. The spot is shown on the plan by 'M'. There are no active mines.

No other coal seams outcrop along the line of the By-Pass.

GENERAL RECOMMENDATIONS

The recommendations made in this report are based on the Department of the Environment's Specification for Road and Bridge Works 1969, and Method of Measurement for Road and Bridge Works 1971.

Additional clauses which are proposed include the following special filling specifications:-

Clause 619 : S.F.1	A granular fill, well graded from a maximum size of 150mm down to a 75 μm sieve, with 55% - 25% passing the 20mm sieve and not more than 10% passing the 75 μm sieve; and having a minimum Slake Durability Index of 96% after two cycles.
Clause 619 : S.F.2	A granular fill, well graded from a maximum size of 50mm down to a 75 μm sieve with not more than 10% passing the 75 μm sieve; and having a Uniformity Coefficient of not less than 10.
Clause 619 : S.F.3	A coarse grained non-cohesive fill, graded from 150mm down with not more than 10% passing the 75 μm sieve and a Plasticity Index not exceeding 6.
Clause 619 : S.F.4	As S.F.1 but without a restriction on the Slake Durability Index.

Topsoil Strip Beneath Embankments

In general where embankment heights exceed 3m to formation level topsoil strip need not necessarily be carried out. However, where the thickness of topsoil or surface organic material is significant, or where the embankment is on side-long ground, and it is thought that topsoil strip is advisable, this is mentioned in the detailed recommendations.

Where embankment heights do not exceed 3m to formation level it is assumed that topsoil strip will be carried out.

Recommended depths of topsoil strip beneath embankment for those lengths where the operation is advised, together with those for cuttings, are given in tabular form in the summary at the end of the Report. Thicknesses given refer to the depth of true organic topsoil, which is generally dark in colour, and do not include the light coloured clayey or sandy loam subsoil.

Side Slopes

Unless otherwise stated in the detailed recommendations standard side slopes are proposed both in cutting and on embankment as follows:-

Cuttings: 1 in 3

Embankments: 1 in 2

Classification and Suitability of Cut Material

The cut material willconsist of mainly glacial and fluvio-glacial drift. Small depths of peat occur in various places along the route. Rock will be encountered between 2m and 7m above finished road level in the deep cutting through North Hag.

The majority of the material to be excavated from the cuttings will be 'uniformly graded material' as defined by Clause 601.2 (iii) - silts and silty fine sands being common. Materials satisfying the special materials requirements for S.F.2 occur on site in isolated pockets but it is unlikely that any of these could be worked economically.

Only in the vicinity of Syke Side does 'cohesive soil' as defined by Clause 601.2.(i) occur as the dominant material in excavation and here it consists of almost equal proportions of low, medium and high plasticity clays.

In order to allow for the efficient operation of the normal types of scraper unit it has been established previously that the in-situ shear strength of clay for use as fill material should be not less than 50 kN/m^2. The use of a minimum shear strength of this value would also be consistent with embankment construction up to a height of 12 or 13m allowing for a reasonable factor of safety of about 1.5. This would provide for all the fills on this site.

A study of the relationship between the natural moisture contents, the plastic limits and shear strengths of the clays from the cuttings on the scheme revealed that for a satisfactory suitability criterion the natural moisture content of the clay should not exceed 1.3 times the plastic limit. (See graph Appendix No. 1).

In order to define the suitability of excavated drift Clause 601.2 should contain addenda to include the following criteria:-

1) For cohesive soils the moisture content of the fraction of the soil which passes a 20mm B.S. sieve shall be not greater than 1.3 times the value of the Plastic Limit as determined in accordance with B.S. 1377 Test No. 3.

ii) For well graded granular soils the moisture content of the fraction of the soil which passes a 20mm B.S. sieve shall not exceed 11%.

iii) For uniformly graded material the moisture content shall not be less than 8% nor greater than 15%.

Many of the uniformly graded and well graded granular materials to be excavated on this scheme have in-situ natural moisture contents in excess of the figures given above. These deposits are mostly layered, the silts having bands of clay, and the sands and gravels having bands of silt or silty fine sand, or sometimes clay. Consequently induced drainage of these materials during excavation is not likely to lower the moisture content significantly and therefore they have been classified as unsuitable.

The depth of weathering of the in-situ rock is variable and it is not possible to determine with any accuracy the percentage of material in this condition. It is therefore proposed that this weathered material should be regarded as 'rock' for measurement purposes. However, to distinguish this from rock fragments carried in the overburden it is proposed for the purposes of Clause 601.1(iv) that 'rock' shall include weathered rock only where it is residual soil contiguous with the parent rock, and showing distinct layering associated with its original bedding.

Although the use of such a definition will simplify the measurement of rock during construction, it will result in the general term 'rockfill' comprising a proportion of softer clayey rock material. It has been considered prudent therefore to assume the use of 'rockfill' material mainly as general filling, omitting it from use in any particular situations requiring 'hard' filling.

Filling Material

Provisional earthworks quantities for this scheme indicate a fill requirement of 452,000m^3 compared with a total excavation of 650,000m^3. The percentages of 'suitable material' to be expected from each cutting excavation are given in the detailed recommendations and summarised at the end of the Report.

Taking these figures as they stand it follows that there will be a large requirement for imported filling, (estimated at 152,400m^3). In order to make the best use of the suitable excavated material and to rationalise the requirements for imported filling the following recommendations are made:

i) Except where stated otherwise in the Detailed Recommendations the contractor should be given the option of completing the embankments to formation level either in 'soft suitable material' or with a layer of S.F.1 not less than 400mm thick (flexible) or 225mm (rigid). Tables of construction depths appropriate to each case are given on pages 13, 14 and 15.

ii) For constructing shallow embankments, defined as being generally less than 1.5m high from existing ground level prior to soil strip, to proposed finished road level, S.F.1, or 'rock fill' material should be used, as indicated in the main body of this Report.

iii) Starter layers, where required beneath embankments constructed on soft ground, should be of 'rock fill' placed 600mm thick in one operation.

iv) For backfilling excavated soft areas and soft spots under embankments, where the soft material is wholly removed and ground water is insignificant, 'rock fill' may be used.

v) 'Subgrade layers' should be used through cuttings not penetrating to rock so that a standard construction can be placed thereon. These should normally consist of a 400mm thick layer of S.F.1 material for flexible construction. At cut/fill lines (see page 12) and in several other instances a 600mm thickness has been specified. In the case of rigid construction however, the 'subgrade layer' would normally be 225mm thick, being increased to 425mm only at cut/fill lines.

vi) For backfilling excavated soft areas and soft spots below the 'subgrade layer' in cuttings, where the soft material is wholly removed and ground water is insignificant, 'rock fill' material may be used.

vii) Approved granular material complying with Clause 605 Table 2 "Free Draining Material", shall be used for backfilling ponds, soft areas and soft spots where the material has to be deposited below standing water level, or below the likely future water level as decided by the Engineer.

Pavement Construction

Pavement thicknesses are based on Road Note 29 (3rd Edition) as modified by Technical Memorandum H10/71. On the main route a 20 year cumulative traffic volume of 11 - 15 m.s.a. has been used for flexible and composite pavements, and 40 years (20 - 40m.s.a.) for rigid pavements, calculated on a growth rate of 3%.

Formation level is defined as the top of the 'subgrade layer' where employed, or the upper surface of the subgrade where a 'subgrade layer' is not used.

Cut/fill transitions will normally be treated by increasing the 'subgrade layer' thickness (or in the absence of a 'subgrade layer' the sub-base thickness) by 200mm for a distance extending on the cut side of the cut/fill line for 15m, unless otherwise stated in the detailed recommendations.

Construction depths for the main route including slip roads and roundabout are given in the tables on page 13. The side roads are covered in Part II.

Tables of Construction Thicknesses

1. Main route 11 - 15 m.s.a. (over 20 years).

Standard Flexible and Composite Construction on a 'Subgrade Layer' (minimum C.B.R. = 8%) of S.F.1 material at least 400mm thick.

Roadbase Clause	Sub-base Group L	Roadbase		Base-course Group V	Wearing Course Group V	Total Construction Depth
		Group R	Group P			
	mm	mm	mm	mm	mm	mm
812	215	-	135	60	40	450
810 or 811	195	-	155	60	40	450
807*	150	190	-	90	40	470

* Refer to page 16

2. Main route 11 - 15 m.s.a. (over 20 years).

Standard Flexible and Composite Construction on an Embankment completed to formation level using 'soft material' (minimum C.B.R. = 2%).

Roadbase Clause	Sub-base Group L	Roadbase		Base-course Group V	Wearing Course Group V	Total Construction Depth
		Group R	Group P			
	mm	mm	mm	mm	mm	mm
812	540	-	135	60	40	775
810 or 811	540	-	155	60	40	795
807*	540	190	-	90	40	860

* Refer to page 16

3. Main Route 11 - 15 m.s.a. (over 20 years).

Modified Flexible and Composite Construction in Cutting on Intact Non-Frost Susceptible Rock (minimum C.B.R. = 30%).

Roadbase Clause	Sub-base Group R mm	Roadbase Group R mm	Roadbase Group P mm	Base-course Group V mm	Wearing Course Group V mm	Total Construction Depth mm
812	160+	-	60+	60	40	320
810 or 811	160+	-	60+	60	40	320
807*	-	190	-	90	40	320

* Refer to page 16

+Note:- The lean concrete blinding thickness of 160mm has been chosen as being a reasonably practical minimum cover necessary to protect the trimmed rock formation from weathering before the base material is laid. Having decided in principle on having a layer of lean concrete next to the formation it follows that, as the resulting overall construction depth should be no greater for flexible construction than for composite, then the required thickness of Group P Roadbase should be no greater than the 60mm recommended for the modified composite construction shown in Table 7.

4. Main route 20 - 40 m.s.a. (over 40 years).

Standard Rigid Construction on a 'Subgrade Layer' (minimum C.B.R. = 8%) of S.F.1 material at least 225mm thick.

Sub-base Group N	80mm
Concrete Slab Thickness	245mm
Total Construction Depth	325mm

Note:- This design ignores the slight possibility of the 'Subgrade layer' being frost-susceptible but is in line with current N.W.R.C.U. requirements.

5. Main route 20 - 40 m.s.a. (over 40 years).

Standard Rigid Construction on an Embankment completed to formation level using 'soft material' (minimum C.B.R. = 2%).

Sub-base Group N	205mm
Concrete Slab Thickness	245mm
Total Construction Depth	450mm

6. Main route 20 - 40 m.s.a. (over 40 years).

Modified Rigid Construction in Cutting on Intact Non-Frost Susceptible Rock (minimum C.B.R. = 30%).

Sub-base Group R (Lean Concrete, Clause 807S)	160mm
Concrete Slab Thickness	245mm
Total Construction Depth	405mm

Note:- The lean concrete blinding thickness of 160mm has been chosen as being a reasonably practical minimum cover necessary to protect the trimmed rock formation from weathering before the base slab is laid.

It is appreciated that this approach creates an anomolous situation in that the total construction depth (405mm) is greater than that proposed for construction on a 'subgrade layer' (325mm) but it is contended that there would be no worthwhile saving in reducing the base slab thickness for such a short length of formation (180m).

Note on Composite Construction

The thicknesses shown for composite construction using a lean concrete base to Clause 807 are those recommended in Technical Memorandum H10/71 for the appropriate traffic category.

Experience elsewhere has shown that cracks which develop in lean concrete reflect through the surfacing in a relatively short time. The previously accepted D.O.E. policy was to overlay lean concrete with a minimum thickness of 175mm (7 ins) of bituminous surfacing. The extra layer of base has the added advantage of enabling a better surface tolerance to be achieved.

For traffic flows exceeding 25 m.s.a. H10/71 recommends thicknesses of bituminous overlay varying from 160 - 200 mm, which are broadly in keeping with their previous policy. For traffic flows less than 25 m.s.a. the thickness of bituminous overlay is reduced below 160mm and for traffic figures of 11 - 15 m.s.a. as on this scheme, it is only 130mm. There is adequate evidence to indicate that this amount of cover would be insufficient to prevent the appearance of reflection cracks within a short space of time. It is strongly recommended that a minimum overlay thickness of 160mm be adopted as a standard on this scheme. This would overcome the problem of early reflection cracking, and would provide more practical layer thicknesses thereby enabling the surfacing contractor to work within the tolerances laid down in the Specification. It is envisaged that the construction depth would remain unchanged in each case by making a corresponding reduction in the combined thickness of the basecourse and lean concrete. The revised figures for insertion in the tables 1, 2 and 3 (pages 13 and 14) would be as follows:

Table 7

Table No.	Roadbase Clause	Sub-base	Roadbase		Basecourse	Wearing Course	Total Construction Depth
		Group L	Group R	Group P	Group V	Group V	
		mm	mm	mm	mm	mm	mm
1.	807	150	160	60	60	40	470
2.	807	540	160	60	60	40	860
3.	807	-	160	60	60	40	320

Soft Area Treatment and Stabilisation

Soft area treatment (paragraph (i) below) should be applied to flexible and composite, but not rigid, pavements. Stabilisation (paragraph (ii) below) should be applied equally to flexible, composite and rigid pavements.

Soft areas should be treated by one of the following methods:

i) Where the sub-grade is soft clay having an apparent cohesion of less than 25 kN/m^2 the 'sub-grade layer' thickness should be increased by 200mm to 600mm.

ii) Where the sub-grade is waterlogged sandy or clayey silt, the area should be stabilised by excavating an additional 300mm of material, and backfilling to the underside of the 'sub-grade layer' with S.F.1 material. The 400mm thick (225mm rigid) 'sub-grade layer' should then be continued through at the normal level.

iii) Where the sub-grade is a layered structure of waterlogged sandy or clayey silt interspersed with bands of soft clay, the treatment should be in accordance with i) or ii) above depending upon the predominant material.

Drainage

In cuttings not penetrating to rock the formation drains should normally be laid a minimum depth of 600mm below formation level as defined earlier i.e. 1070mm below finished road level allowing for the thickest permitted form of construction (H10/71 Part III page 56.4).

In the cutting at North Hag where the formation is in rock the depth of the formation drains may be reduced to 300mm below formation level, i.e. 705mm below finished road level allowing for the thickest permitted form of construction. At this level rock will be encountered in formation drain trenches between chainages 2590m and 2770m.

Throughout this scheme, for formation drains and french drains, it is recommended that the trenches be backfilled with material complying with Clause 505 Table 1 Type B. However, on lengths where the excavation is through silt or sand it will be necessary to take special precautions to prevent the pipes and catchpits from silting up. On these lengths, which are summarised on page 41, it is recommended that the pipe and filter media together be completely wrapped in a proprietary non-woven filter fabric.

MAIN ROUTE AND ADJOINING SLIP ROADS: SUPPLEMENTARY RECOMMENDATIONS

SYKE SIDE: Northbound Carriageway - Special Chainage 540m to 620m

This section of the Report concerns the cutting slope to the south of the maim route. Due to the restricted nature of the site this cutting slope will need to be steeper than the standard 1 in 3. The plan length of the slope at any section is governed to the south by the position of the offside verge of the north-bound exit slip-road, and to the north by the sight-line of the northbound carriageway of the main route. To suit this layout the resulting cutting slope would vary from 1 in 3 at chainage 540m to 1 in 2 at chainage 620m.

Originally a toe retaining wall was planned for this location supporting a standard 1 in 3 cutting slope above, but due to the poor foundation conditions this was likely to be an expensive solution. Nearly half the length of the wall would have needed piling or alternatively the weak foundation material replaced by selected granular material. Also a large amount of ground behind the wall would have needed replacing with selected granular material simply to keep the earth pressures on the wall within tolerable limits. To have carried out the necessary excavation would have required a sheet piled temporary support to the slip road.

SITE INVESTIGATION

Two Shell and Auger boreholes, Nos. 5610R/1 and 2, were drilled specifically for the wall during the course of the site investigation. Two other boreholes, Nos. 5610/1 and 2, drilled for the adjoining Syke Side East Bridge provide information relevant to the west end of this site. Carriageway borehole No. 4 provides an indication of soil conditions at the east end of the site.

Later, when it became apparent that a cutting slope, even if buttressed, would be preferable to a retaining wall, two additional boreholes, Nos. 4A and 4B, were drilled at the top of the proposed batter.

The natural drift material consists of a firm to stiff, low to intermediate plasticity upper boulder clay layer some 4 - 10m thick overlying a layer of stiff to very stiff, low plasticity, lower boulder clay of unproved thickness. Between the two layers is a lens of firm high plasticity varved clay.

The upper surface of the boulder clay has weathered to a higher plasticity to depths of 1 - 2m and is generally soft to firm. However, towards the east end of the site, this weathered material has been removed, possibly by previous roadworks. Much of the area of land, where the cutting slope is to be formed, has been disturbed by construction activities and various depths of made-ground, most of it clayey, occur, the maximum depth recorded being 5.3m in borehole 5610/1. The presence of ashes in borehole 5610R/1 suggests that some of the made-ground is older than the roadworks and that part of the site contains an old domestic refuse tip.

Water entries in the boreholes were generally slight.

Design

The presence at a relatively shallow depth of the layer of soft to firm varved clay reduces the overall stability of the cutting slope. Also the presence of various depths of made-ground on the soft weathered surface layers of the natural ground, which falls at about 1 in 5 to 1 in 15 towards the main route, could give rise to localised slips.

Both these aspects have been considered and calculations of the factor of safety at three cross-sections made assuming both circular slips and sliding planes. The lowest factor of safety obtained was 1.5 for a deep circular failure at chainage 618m.

In view of these results it is concluded that a cutting slope no steeper than 1 in 2 is feasible. Even allowing for the mixed nature of the ground, it is not thought liekly that localised slips will occur, but it would be prudent to make some allowance in the contract for toe buttresses (say 1000m^3 of selected granular material Type S.F.1 together with 100m^3 of Type A drainstone) in case some movement occurs during construction. To ensure that buttresses, if installed, can be effectively drained it will be necessary for the invert level of the verge drain to be kept below a level of 188.8m at chainage 580m.

It is not thought that any change need be made in the location of the proposed gas main diversion planned to cross the main route at chainage 560m.

SYKE SIDE: Southbound 'Exit' Slip Road

Ch. 325m to 375m

Further investigation has been carried out on the stability problem on the south batter and the following addendum applies:-

Replace the recommendations of Part I, page 21, paragraph 1, sentences 3 and 4, with the following:-

The south batter of this embankment will be unstable between chainages 325m and 375m due to the presence of a surface layer of soft varved clay some 3m - 11m thick. A toe trench will be necessary here, taken down to the following depths:-

Ch. of North Channel m	Offset South m	Invert of Trench m A.O.D.	
325	19.0 - 21.5	E.G.L.	194.7
330	18.7 - 21.2		191.5
340	17.8 - 20.3		191.5
360	16.7 - 19.2		191.5
365	16.3 - 18.8		191.5
375	16.1 - 18.6	E.G.L.	197.7

The toe trench should be 2.5 metres wide at the base with side slopes of 1 in 1. Provided the operation is carried out expeditiously these slopes should be adequate. The excavation should be backfilled to natural ground level with S.F.1 to Clause 619. A typical cross-section is shown in Appendix No. 4.

WATERFOOT AND SPRING VALE

Ch. 1225m to 2000m

In Part I of the Report it was recommended (see page 24) that the rate of filling be controlled so as to allow the underlying varved silty clays/ clayey silts time to consolidate as construction proceeds. During the Design Meeting held on 26th September, 1977 it was agreed that the rate of filling should be 300mm (vertically) per week. This restriction would apply to all the earthworks above existing ground level including those in bridgeworks. In addition piezometers and inclinometers would be installed in selected locations so as to monitor the situation as the filling is placed. These arrangements should ensure that adequate control is maintained.

WATERFOOT: Grane Road Junction

Ch. 1385m - 1470m

In order to reduce the land take where the northbound 'exit' slip road encroaches on the property in Jubilee Road a retaining wall has been proposed to support the toe of the batter between the main route and the slip road (see page B.5614R/1). In addition the side slope of the earthworks has been steepened to 1 in 2.

The design of the wall, which is of reinforced concrete crib construction, includes a 1 in 1 slope for the bulk filling to the main embankment, supported by the S.F.2 back-fill to the crib wall. This form of construction will be satisfactory if suitable granular material is used for the bulk filling, but will be inherently unstable if the contractor opts to use suitable cohesive material. It is therefore recommended that suitable granular material be specified for the bulk filling to the west half of the main embankment for the whole length of the retaining wall.

Seeing that the average slope of the batter between the main route and the slip road, where the retaining wall is highest, is approximately 1 in 1.6, and that suitable granular material would stand satisfactorily at such a slope, it would appear that a more economical solution could be obtained by using suitable granular material for the west half of the main embankment and omitting the wall altogether. The overall stability would be only slightly affected as regards a deep seated failure. As regards a shallow failure of the slope it will still be necessary to excavate out the shallow surface deposits of soft clay (page B.5614R/1) from below the toe of the batter, to form a toe trench.

SPRING VALE MILL

Ch. 1695m to 1765m

Stability calculations carried out on cross-sections through the retaining wall planned for this location show that, even with a controlled rate of filling, the F.O.S. against circular types of failure through the upper varved clay is only just over unity.

It has therefore been proposed (see page B.5615R/1 et. seq.) that, over this length, the part of the existing railway embankment which would remain after construction of the wall be dug out, and the whole width of the new embankment, clear of the reinforced earth construction, be constructed in P.F.A. This treatment alone would not be sufficient to achieve the overall factor of safety of 1.5 which is deemed necessary for structures, and it is therefore proposed that the potential slip circles be intercepted by a line of steel sheet piling driven vertically into the ground 1m in front of the face of the retaining wall.

Beyond the north end of the wall where the new embankment spills over onto the existing railway embankment, but no retaining wall is required, it will be necessary to extend the P.F.A. construction, (but without the sheet pile wall), to chainage 1765m, in order to ensure reasonable stability.

With these provisions, ground movements are not expected to be large as the construction proceeds, but in view of the close proximity of the mill (6m from the face of the wall at the nearest position) it is recommended that some instrumentation be provided to monitor the situation (see page B.5615R/4).

PLANTATION MILL

Ch. 1900m to 2010m

In order to maintain access around the side of Plantation Mill a retaining wall has been planned for this location. In addition, the embankment side slope on the west side has been steepened to 1 in 2.

The construction takes the form of two reinforced concrete crib walls, one above the other, backed by an S.F.2 wedge supporting the bulk filling. The side slope of the bulk filling is set at 1 in 1 which will be satisfactory if suitable granular filling is used, but which will be inherently unstable if the contractor opts to use suitable cohesive material. It is therefore recommended that suitable granular material be specified for the bulk filling to the west half of the main embankment for the whole length of the retaining wall.

HUD HEY

Chainage 3400m to 3500m

In Part I of the Report it was recommended (see page 33) that the small pocket of peat found in borehole No. 5617/5 be removed before the approach fill (to Hud Hey Road) is placed.

The design of Hud Hey Road Bridge is now such that the loads from the east bank-seat will be taken down through the abutment of the old railway bridge. The filling inside the old abutment is to be investigated for peat and other soft material at the construction stage (see Part II, page B.5617/5). Any small pockets of peat outside the area of the old abutment can therefore be left in place (see page B.5617/6).

SIDE ROADS

Note: The tables of construction depths which follow have been determined by the N.W.R.C.U. in consultation with the L.C.C. Maintenance Section and have been included in this Report for the sake of completeness.

Manchester Road A.680, Broadway, and Northbound 'Entry' Slip Road

The existing Manchester Road is on shallow to medium fill approaching Bent Gate roundabout. The existing embankment will need widening on both sides to accommodate the new alignment. Topsoil should be stripped from the old embankment, and the new fill benched into the existing. Standard side slopes of 1 in 2½ will be satisfactory.

A 400mm thick sub-grade layer of S.F.1 carrying the following construction (based on 5.1 m.s.a. over 20 years at 3% rate of growth) should be satisfactory:

40mm	Rolled Asphalt wearing course to Clauses 907S and 901.
60mm	Rolled Asphalt base-course to Clause 902.
180mm	Dense Bitumen Macadam road-base to Clause 811.
170mm	Type 1 sub-base to Clause 803S.

Narrow widths of less than 2.0m should be constructed in lean concrete to within 160mm of finished road level. Where the new surfacing covers the same area as the existing, a minimum overlay of 75mm should be provided

if possible. Where this is impracticable, because of the relative levels, the existing surfacing should be removed to a depth of 75mm below the proposed finished road level before adding the new construction. The existing construction is finished in rolled asphalt and appears to be in reasonable condition.

The existing Broadway is in shallow cutting approaching Bent Gate roundabout. The proposed diversion of Broadway will be partly in shallow cutting, where the sub-grade is firm to stiff boulder clay, and partly on granular back-fill to Syke Side West Retaining Wall. The existing ground has been disturbed by several construction works, and various shallow depths of fill, mostly clayey, are present oversite. It is not expected that any of this fill will be deep enough to affect the road construction, but in view of the complexity of the proposed works in this location, and the small area involved, it would be preferable to increase the S.F.1 sub-grade layer thickness to 600mm. The proposed carriageway construction is as for Manchester Road.

The existing construction of Broadway is finished in dense bitumen macadam and appears to be in reasonable condition. Piecing in the new work also should be as described for Manchester Road.

Topsoil in this area is sparse but it should be possible to win an average of 100mm. All the other excavated material should be classified as unsuitable and carted to tip.

Syke Side north-bound 'entry' slip road will be entirely in new construction in shallow cut and fill. The sub-grade here is variable, consisting of soft to firm boulder clays, and soft to firm varved silty clays. A 600mm thick sub-grade layer of S.F.1 would be appropriate, carrying the same construction as is proposed for Manchester Road.

The existing ground has been disturbed by several construction works, and various shallow depths of fill, mostly clayey, are present oversite. Topsoil in this area is therefore sparse but it should be possible to win an average of 100mm. All the other excavated material should be classified as unsuitable and carted to tip.

Helmshore Road, B.6214

The existing Helmshore Road has a single carriageway falling at a gradient of approximately 1 in 40 from north to south, and is to be diverted onto a new alignment slightly to the east, crossing the main route on a three span bridge (No. 5613). The approaches to the bridge will be in mainly shallow to medium cutting, with a short length of shallow embankment at the north bank-seat.

Topsoil should be stripped from the area of the diversion, an average of 600mm being available in the park. The excavated material, which, apart from some peaty and silty surface deposits, will be mainly silty sand and gravel above the water table, is expected to comprise:

Soft suitable	25%
Unsuitable	75%

A 400mm sub-grade layer of S.F.1 will be appropriate, carrying the following construction:

20mm	Dense Bitumen Macadam wearing course to Clause 908.
75mm	Dense Bitumen Macadam base-course to Clause 903.
150mm	Dense Bitumen Macadam road base to Clause 811.
150mm	Type 1 sub-base to Clause 803S.

Narrow widenings of less than 2.0m should have the following construction plus surfacing:

150mm	Dense Bitumen Macadam road-base to Clause 811. Regulating course to Clause 811 or 903.
150mm	Lean Concrete to Clause 807.
150mm	Type 1 sub-base to Clause 803S.

Where the new surfacing covers the same area as the existing, a minimum overlay of 75mm should be provided if possible. Where this is impracticable, because of the relative levels, the existing surfacing should be removed to a depth of 75mm below the proposed finished road level before adding the new construction.

The existing construction has a fine cold asphalt wearing course. Alongside Victoria Park the surface has been tar sprayed and chipped, and is in a fair condition. North of the Park the surfacing has been re-newed recently.

Just north of the bridge site it will be necessary to remove up to 1.3m of very soft organic clay (estimated quantity 250m^3) before placing the carriageway fill. A starter layer will also be necessary here for a distance of 20m.

Formation drains should be backfilled with Type B drainstone but, because of the preponderance of silt and fine sand, the pipe and filter-media together should be completely wrapped in a proprietary non-woven filter fabric.

Grane Road B.6232

The existing Grane Road has a single carriageway falling at a gradient of approximately 1 in 13 from north-east to south-west, and is to be widened to up to 11.0m on an improved alignment, crossing under the main route through bridge No. 5614.

There is no topsoil available in this area. The small amount of excavation required, once the existing domestic property has been cleared from the site, is expected to be unsuitable for re-use and should be carted to tip. The existing property has cellars which, where coincident with the road should be cleaned out and backfilled with S.F.2 material to the underside of the sub-grade layer (or to the underside of the sub-base layer where a sub-grade layer is not used).

The sub-grade material is a medium dense slightly clayey, silty, sandy, gravel above the water table, and with lenses of silty sand. A 400mm sub-grade layer of S.F.1 material would be appropriate. The road construction for normal widenings ($>$ 2.0m) and for narrow widenings ($<$ 2.0m) should be as recommended for Helmshore Road. The existing construction is finished in dense bitumen macadam and is in poor condition having had service trenches recently dug through it.

Formation drains should be backfilled with Type B drainstone, but, because of the preponderance of silt and fine sand, the pipe and filter-media together should be completely wrapped in a proprietary non-woven filter fabric.

Waterside Road Diversion

The existing Waterside Road, which crosses the line of the by-pass at chainage 1600m, is to be diverted onto a berm on the north-east batter of the main embankment. The construction of this embankment has been discussed in Part I (see page 24).

A 400mm thick sub-grade layer of S.F.1 carrying the same construction as for Helmshore Road should be satisfactory.

Flip Road

The existing Flip Road is an unclassified road running west to east in shallow cutting on a falling gradient of about 1 in 21, and passing under the main route through a reinforced concrete box (Bridge No. 5615) at approximately chainage 1850m.

Over the western part of the site there are thin layers of residual soil (mostly soft weathered sandstones), possibly solifluction deposits drifted in from the adjoining hillside. Elsewhere over the site there are surface layers of alluvial silts, sands and gravels, probably associated with earlier courses of Swinnel Brook.

Flip Road is to be widened to 5.4m to serve as an access to a new industrial estate. Narrow widenings of less than 2.0m should have the following construction:

20mm	Dense Bitumen Macadam wearing course to Clause 908.
75mm	Dense Bitumen Macadam base-course to Clause 903. Regulating Course to Clause 811 or 903.
350mm	Lean Concrete to Clause 807.
150mm	Type 1 sub-base to Clause 803S.

Where the new surfacing covers the same area as the existing, a minimum overlay of 75mm should be provided if possible. Where this is impracticable, because of the relative levels, the existing surfacing should be removed to a depth of 75mm below the proposed finished road level before adding the new construction. However, the existing construction should be checked first and, if proved inadequate, the full width of the road should be totally reconstructed. The existing surfacing appears to be very thin fine cold asphalt and is in only a fair condition.

Verge drains should be backfilled with Type B drainstone, but, because of the preponderance of silt and fine sand, the pipe and filter-media together should be completely wrapped in a proprietary non-woven filter fabric.

Commerce Street

The existing Commerce Street is a single carriageway unclassified road which crosses the line of the by-pass at approximately chainage 2600m. Between Booth Street and Jane Street the road is to be diverted to the north of its present adlignment, cutting through a promontory known as North Hag. The maximum depth of cutting is about 10m on centre-line, but the height of side slope to appear finally will depend upon how much of the promontory is removed when the area is land-scaped. Between the proposed Commerce Street Bridge (No. 5616), and Swinnel Brook to the north-east, the formation is likely to be in sandstone rock (Lower Haslingden Flags), as far as chainage 290m, although this has not been proved because of the difficulty of siting a rig on the steeply sloping ground. The rock-head falls away steeply to the west so that to the south-west of Commerce Street Bridge the formation will be in glacial drift consisting of mainly gravelly silty sands, some of which may be slightly clayey. Along the lower lengths of road the formation is likely to be below the water-table necessitating the construction of the verge drains at an early stage.

Topsoil should be stripped from the whole of the area an average of 100mm being available.

Standard side slopes of 1 in 3 in cutting, and 1 in 2½ on embankment should be satisfactory. The excavated material is expected to comprise 60% soft suitable south-west of the bridge, and 75% rock north-east of the bridge, the remainder being unsuitable.

Considering that, where the formation is on rock, the rock may not extend across the full width of the carriageway for more than a short length, it is recommended that a 400mm thick sub-grade layer of S.F.1 be employed throughout the length of the diversion. The superimposed construction should be as for Helmshore Road.

The existing Commerce Street is paved with setts. Towards the ends of the proposed diversion the setts have been surfaced with dense bitumen macadam. Where the new surfacing covers the same area as the existing, it should be possible to provide a minimum overlay of 95mm on the setts which should be satisfactory. Narrow widenings of less than 2.0m should be constructed as is recommended for Helmshore Road.

The verge drain on the west side is likely to be in rock between chainages 190m and 290m. The backfill to all of the verge drains should be Type B, but the pipe and filter-media together should be completely wrapped in a proprietary non-woven filter fabric.

Some small allowance for face drainage west of Commerce Street Bridge should be made.

Bridge Street Diversion

Bridge Street, which at present crosses the line of the by-pass at approximately chainage 2748m, is to be diverted clear of the main route onto a berm set into the west batter of the cutting through North Hag. The south end of the diversion is to connect into Commerce Street diversion.

The design of the earthworks in this area has been discussed in Part I (page 28).

The formation will be in layered, gravelly, silty sands, some of which may be clayey. The formation along the central part of the diversion is likely to be below the natural water table necessitating early construction of the west verge drain.

A 400mm thick sub-grade layer should be satisfactory supporting the following construction:

20mm Dense Bitumen Macadam wearing course to Clause 908.
75mm Dense Bitumen Macadam base-course to Clause 903.
75mm Dense Bitumen Macadam roadbase to Clause 811.
150mm Type 1 sub-base to Clause 803S.

Verge drains should be backfilled with Type B drainstone but, because of the preponderance of silt and fine sand, the pipe and filter-media together should be completely wrapped in a proprietary non-woven filter fabric.

Hud Hey Road A.677

Hud Hey road at present crosses the line of the by-pass at chainage 3452m approximately, on a gradient falling at about 1 in 30 from west to east. It is proposed to keep the present width and alignment and carry the new road over the by-pass on a three-span bridge (No. 5617).

Short lengths of new construction will be required at each end of the bridge and are likely to be on back-fill to the contractor's temporary excavations. A 400mm thick sub-grade layer of S.F.1 should be satisfactory

carrying the same construction as is recommended for Manchester Road (A.680), (page SR/6).

The existing carriageway is finished in rolled asphalt wearing course and appears to be in good condition.

Blackburn Road A.680, and Rising Bridge Roundabout

The by-pass at its northern end has been designed to terminate at a new roundabout (on Blackburn Road) which will form part of the ultimate scheme when the main route is extended northwards towards the M.65 at Huncoat. The proposed earthworks in this area have been discussed in Part I (page 35).

Since Part I was published additional boreholes have been taken to define the thicknesses of peat present over the area of the proposed widening of Blackburn Road south of the roundabout. The depth to the base of the peat varies from nil to 1.9m. This peat must be removed before any fill is placed. The quantity involved is estimated to be 2000m^3.

The width of the base of the peat excavation at any cross section should be determined by projecting the toe of the proposed batter at a slope of 45° away from the carriageway to meet the bottom of the peat excavation. The side slopes of the excavation, being temporary, may be set at 45°. Any slumping which occurs before backfilling can take place should be minimal.

Additional boreholes have been taken along the line of the adjoining sewer diversion. From the information available the line of the sewer diversion appears to be clear of the area of peat excavation required for the carriageway.

A 400mm sub-grade layer of S.F.1 should be satisfactory carrying standard construction as is proposed for Manchester Road (page SR/6).

The existing carriageway of Blackburn Road is surfaced in rolled asphalt wearing course and appears to be in reasonable condition. Where the new surfacing covers the same area as the existing, a minimum overlay of 75mm should be provided, if possible. Where this is impracticable, because of the relative levels, the existing surfacing should be removed to a depth of 75mm below the proposed finished road level before adding the new construction.

Narrow widenings of less than 2.0m should have the following construction plus surfacing:

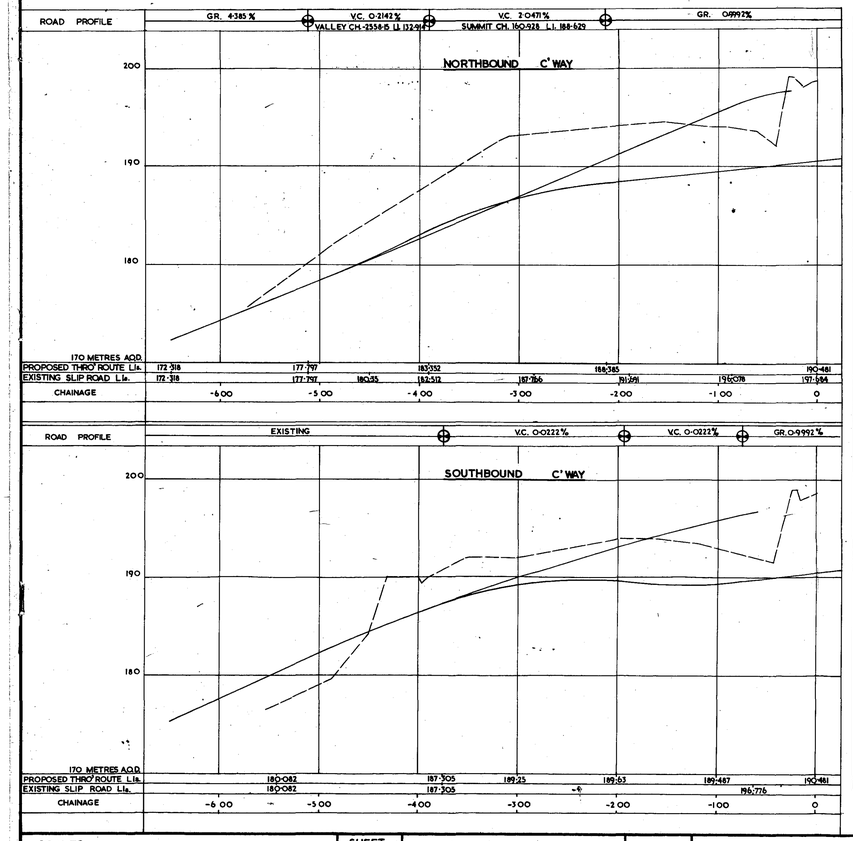
150mm Dense Bitumen Macadam road-base to Clause 811.

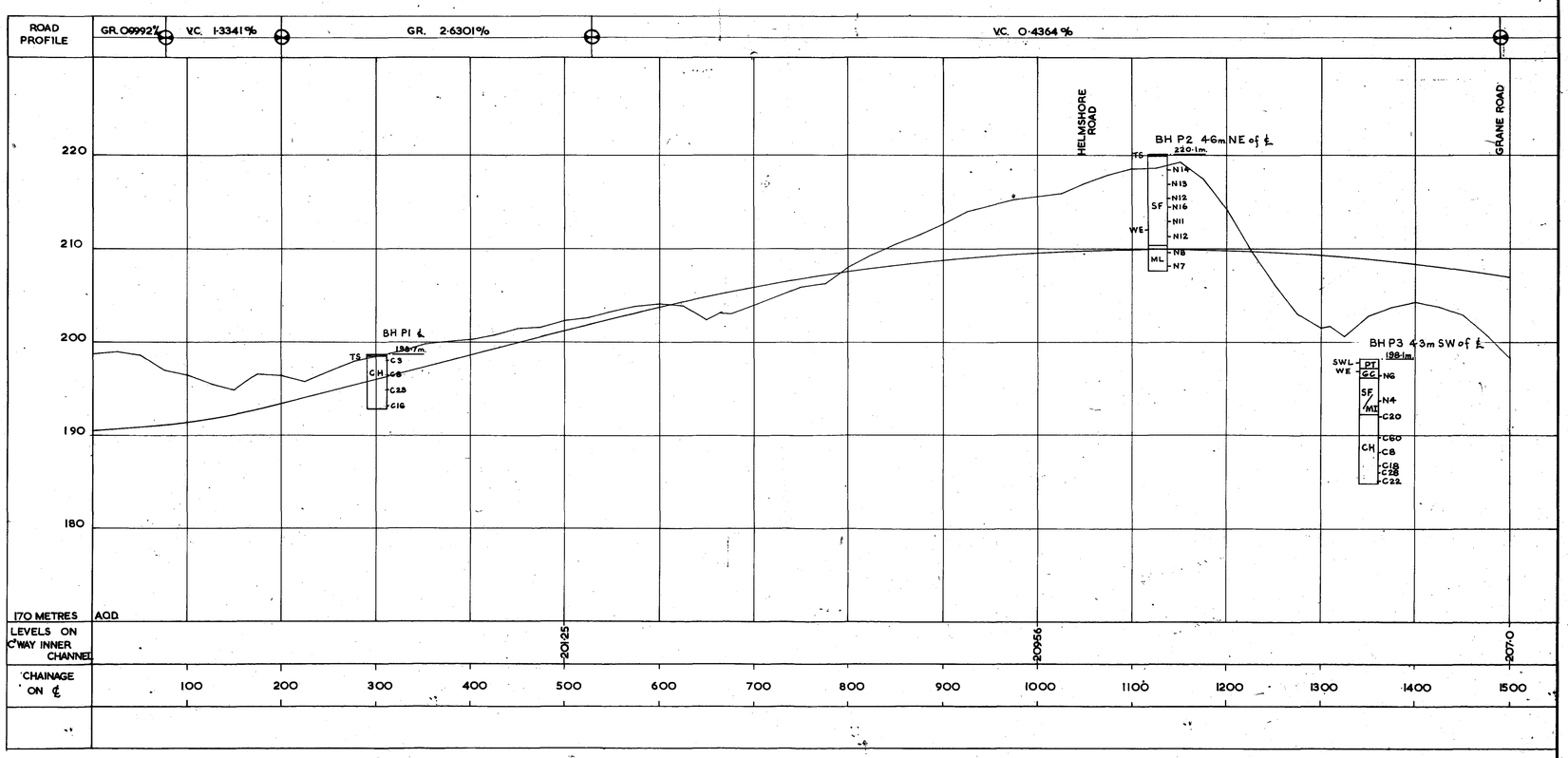
150mm Lean Concrete to Clause 807.

450mm Type 1 sub-base to Clause 803S.

Verge drains should be backfilled Type B drainstone, but, because of the preponderance of wet silt and fine sand, the pipe and filter media together should be completely wrapped in a proprietary non-woven filter fabric.

DRAWING NO.	SHEET NO.
HA/22/3	1 OF 6





SCALES:
PLAN 1/2500 Metric
LONGITUDINAL SECTION
HORIZONTAL 1/2500 Metric
VERTICAL 1/250 Metric

SHEET SUFFIX	AMENDMENTS	DATE
A		
B		
C		
D		

A56 DIVERSION
PRELIMINARY SITE INVESTIGATION

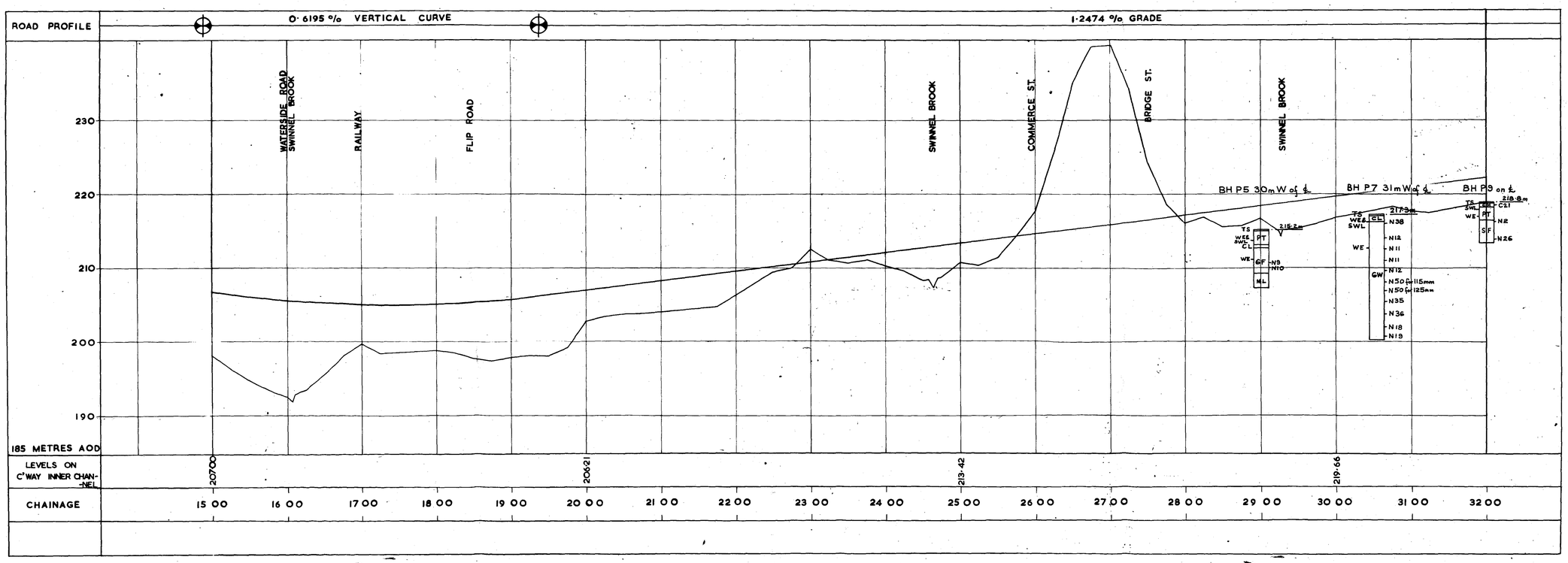
DEPARTMENT OF THE ENVIRONMENT
NORTH WESTERN ROAD CONSTRUCTION UNIT

J.R. INGRAM F.I.C.E., M.R.T.P.I., F.Inst.H.E.
CHIEF ENGINEER
LANCASHIRE SUB-UNIT

D.F. DEAN B.Sc., F.I.C.E., M.Inst.H.E.
DIRECTOR

SHEET NO. 1 OF 6.
DRAWING NO. HA/ /
DATE:

DRAWING NO.	SHEET NO.
HA/22/3	2 OF 6



SCALES:
PLAN 1/2500 Metric
LONGITUDINAL SECTION
HORIZONTAL 1/2500 Metric
VERTICAL 1/250 Metric

SHEET SUFFIX	AMENDMENTS	DATE
A		
B		
C		
D		

A56 DIVERSION

PRELIMINARY SITE INVESTIGATION

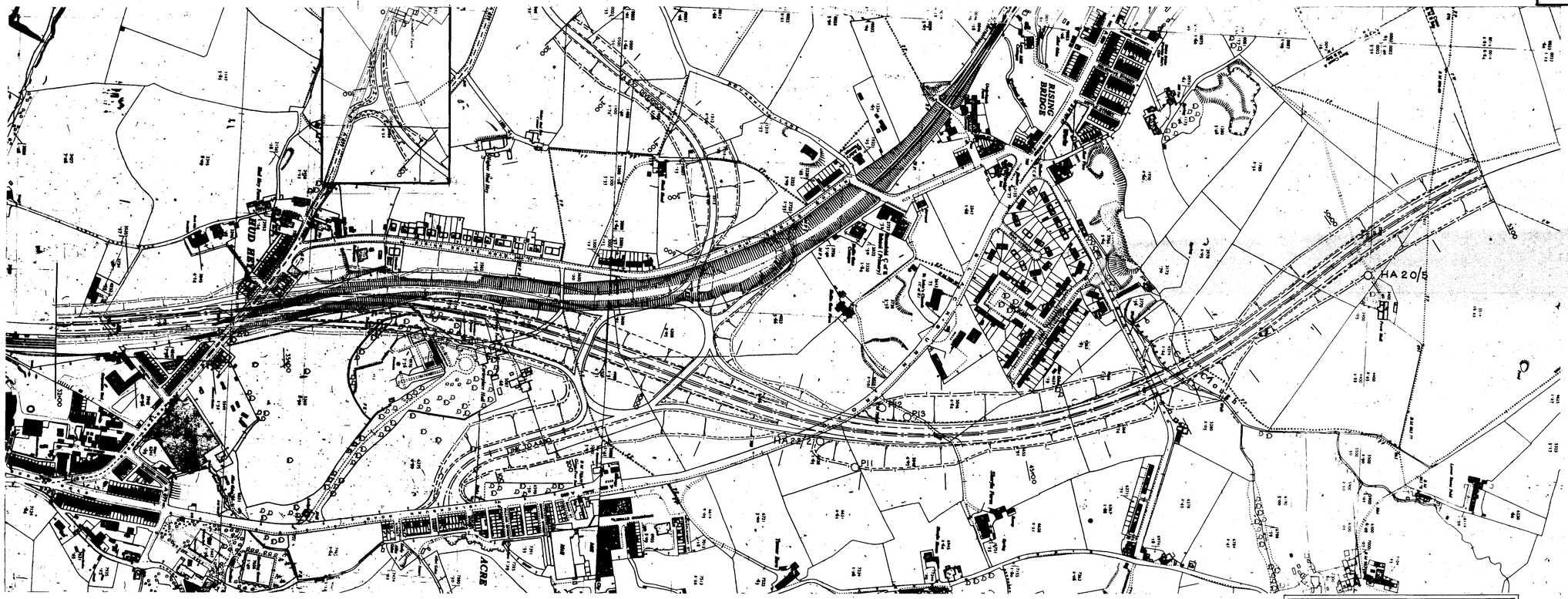
DEPARTMENT OF THE ENVIRONMENT
NORTH WESTERN ROAD CONSTRUCTION UNIT

J.R. INGRAM F.I.C.E., M.R.T.P.I., F.Inst.H.E.
CHIEF ENGINEER
LANCASHIRE SUB-UNIT

D.F. DEAN B.Sc., F.I.C.E., M.Inst.H.E.
DIRECTOR

SHEET NO. 2 OF 6
DRAWING NO. HA/ /
DATE :

DRAWING NO.	SHEET NO.
HA/22/3	3 OF 6



SCALES:			SHEET SUFFIX	AMENDMENTS	DATE
PLAN	1/2500	Metric	A		
LONGITUDINAL SECTION			B		
HORIZONTAL	1/2500	Metric	C		
VERTICAL	1/250	Metric	D		

A56 DIVERSION
PRELIMINARY SITE INVESTIGATION

DEPARTMENT OF THE ENVIRONMENT
NORTH WESTERN ROAD CONSTRUCTION UNIT

J. R. INGRAM F.I.C.E., M.R.T.P.I., F.Inst.H.E.
CHIEF ENGINEER
LANCASHIRE SUB-UNIT

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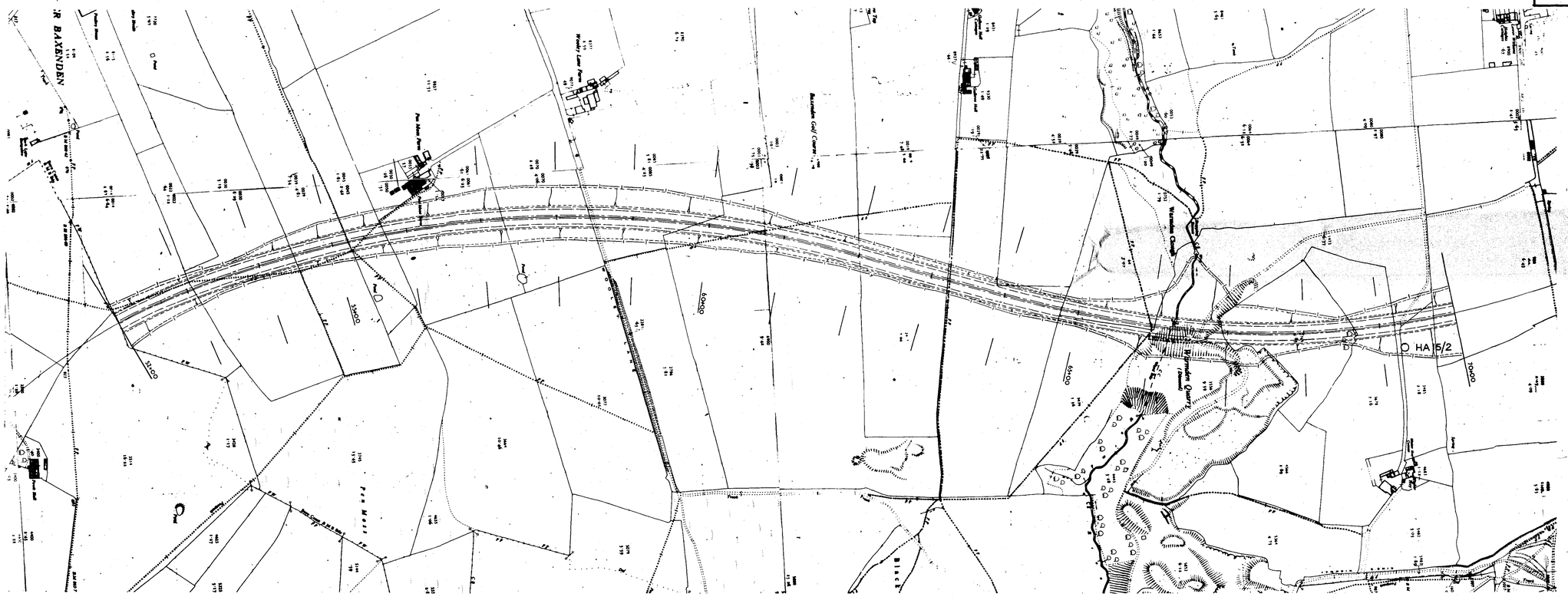
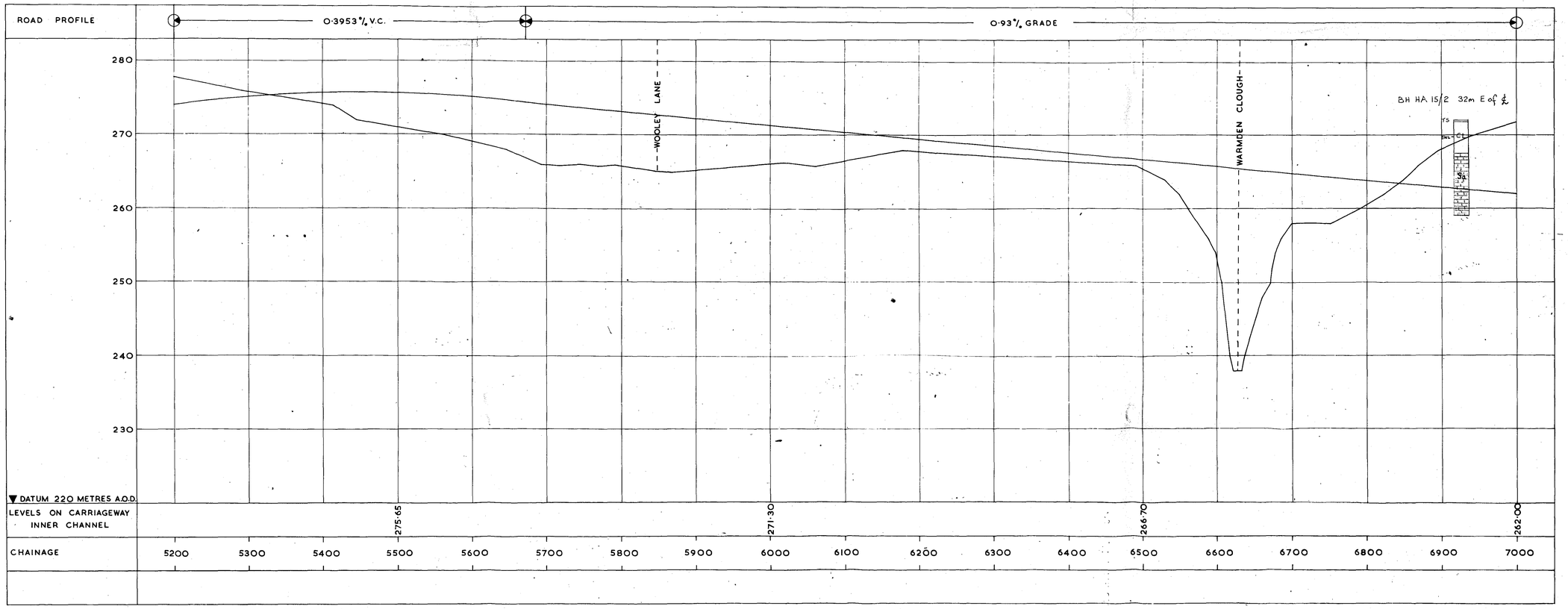
DIRECTOR

SHEET NO. 3 OF 6
DRAWING NO. HA/ /
DATE:

DRAWING NO.	SHEET NO.
HA/22/3	4 OF 6





SCALES:
PLAN 1/2500 Metric
LONGITUDINAL SECTION
HORIZONTAL 1/2500 Metric
VERTICAL 1/250 Metric

SHEET SUFFIX	AMENDMENTS	DATE
A		
B		
C		
D		

A56 DIVERSION
PRELIMINARY SITE INVESTIGATION

DEPARTMENT OF THE ENVIRONMENT
NORTH WESTERN ROAD CONSTRUCTION UNIT

J. R. INGRAM F.I.C.E., M.R.T.P.I., F.Inst.H.E.
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LANCASHIRE SUB-UNIT

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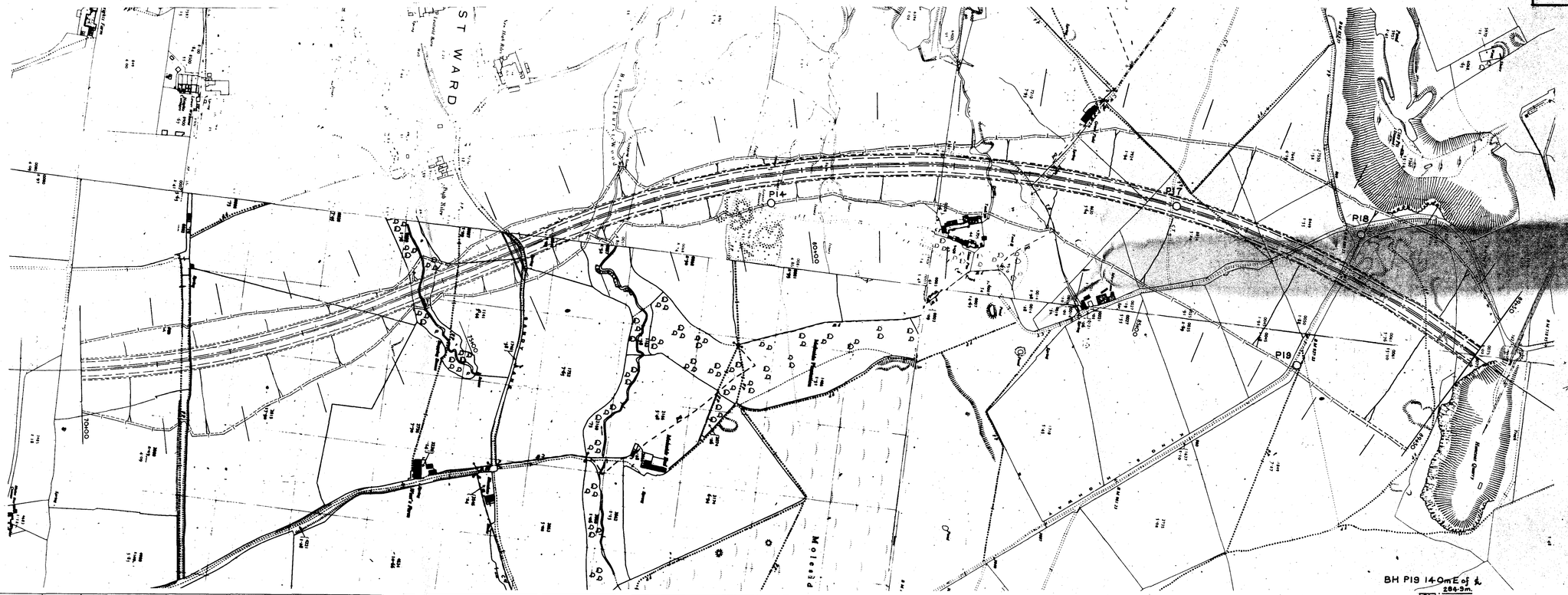
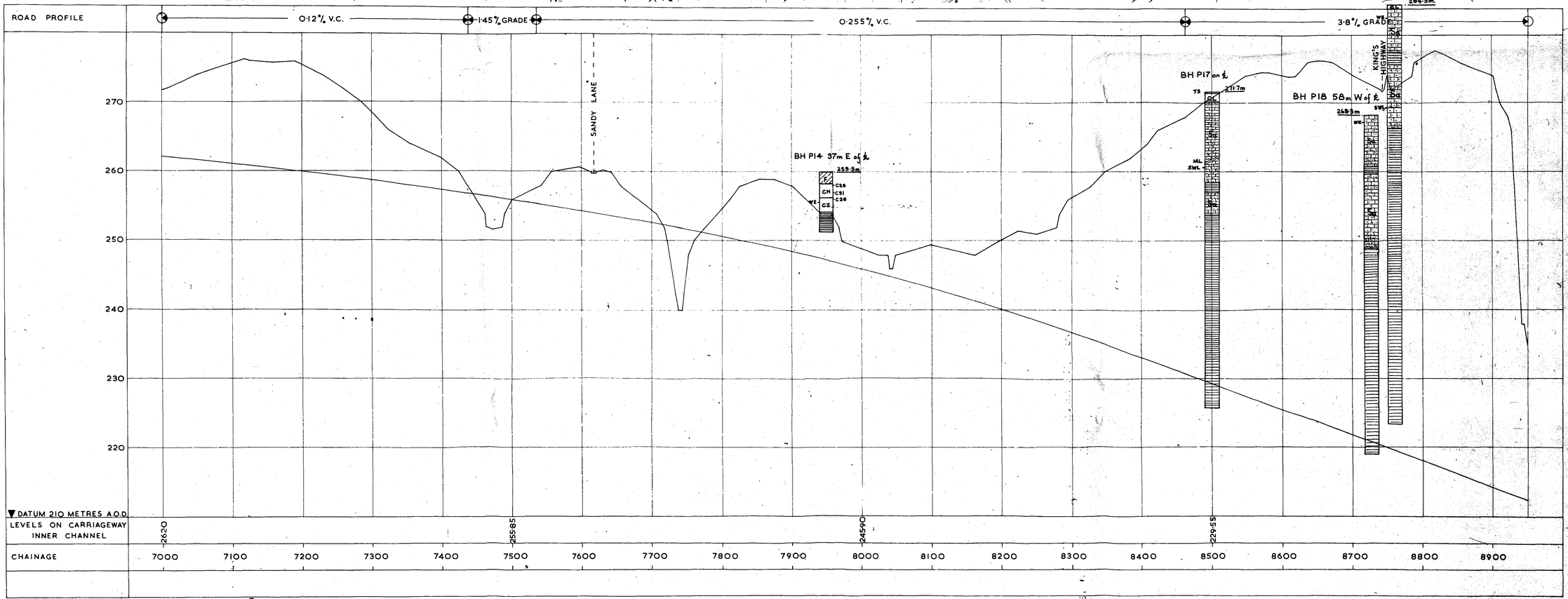
DIRECTOR

SHEET NO. 4 OF 6
DRAWING NO. HA/ /
DATE:

DRAWING NO.	SHEET NO.
HA/22/3	5 OF 6





SCALES:
PLAN 1/2500 Metric
LONGITUDINAL SECTION
HORIZONTAL 1/2500 Metric
VERTICAL 1/250 Metric

SHEET SUFFIX	AMENDMENTS	DATE
A		
B		
C		
D		

A56 DIVERSION
PRELIMINARY SITE INVESTIGATION

DEPARTMENT OF THE ENVIRONMENT
NORTH WESTERN ROAD CONSTRUCTION UNIT

J. R. INGRAM F.I.C.E., M.R.T.P.I., F.Inst.H.E.
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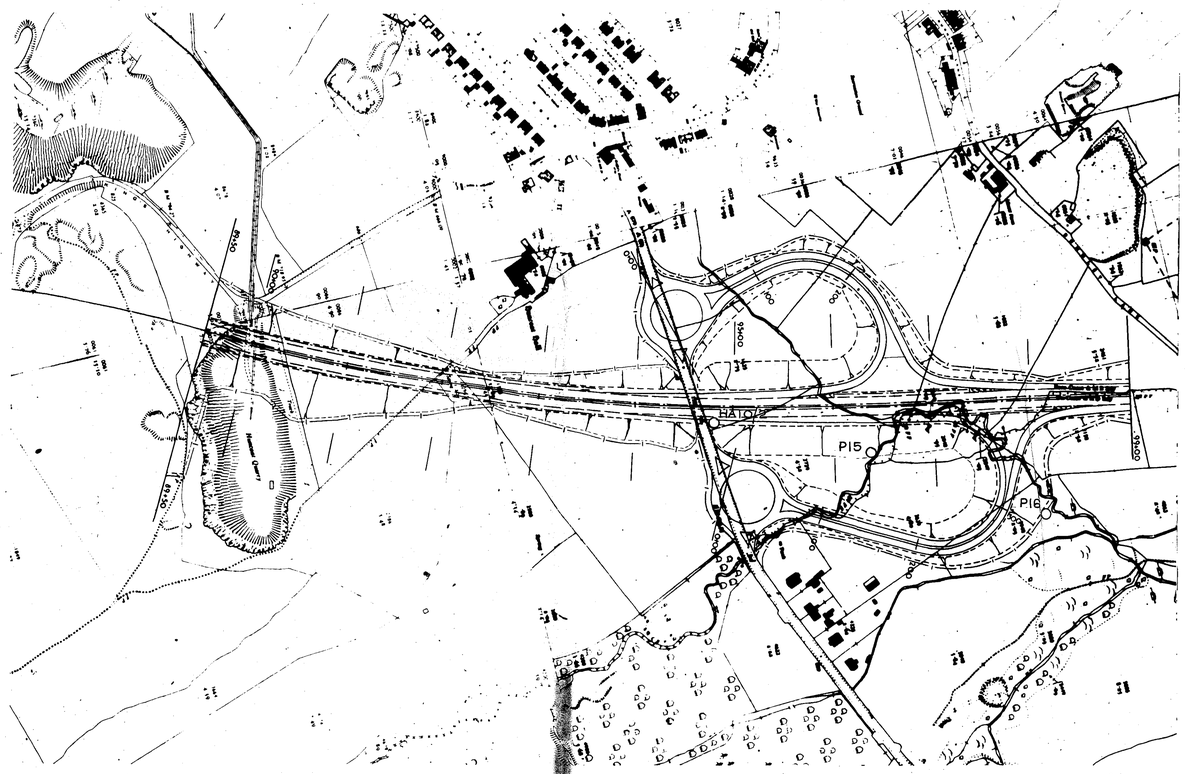
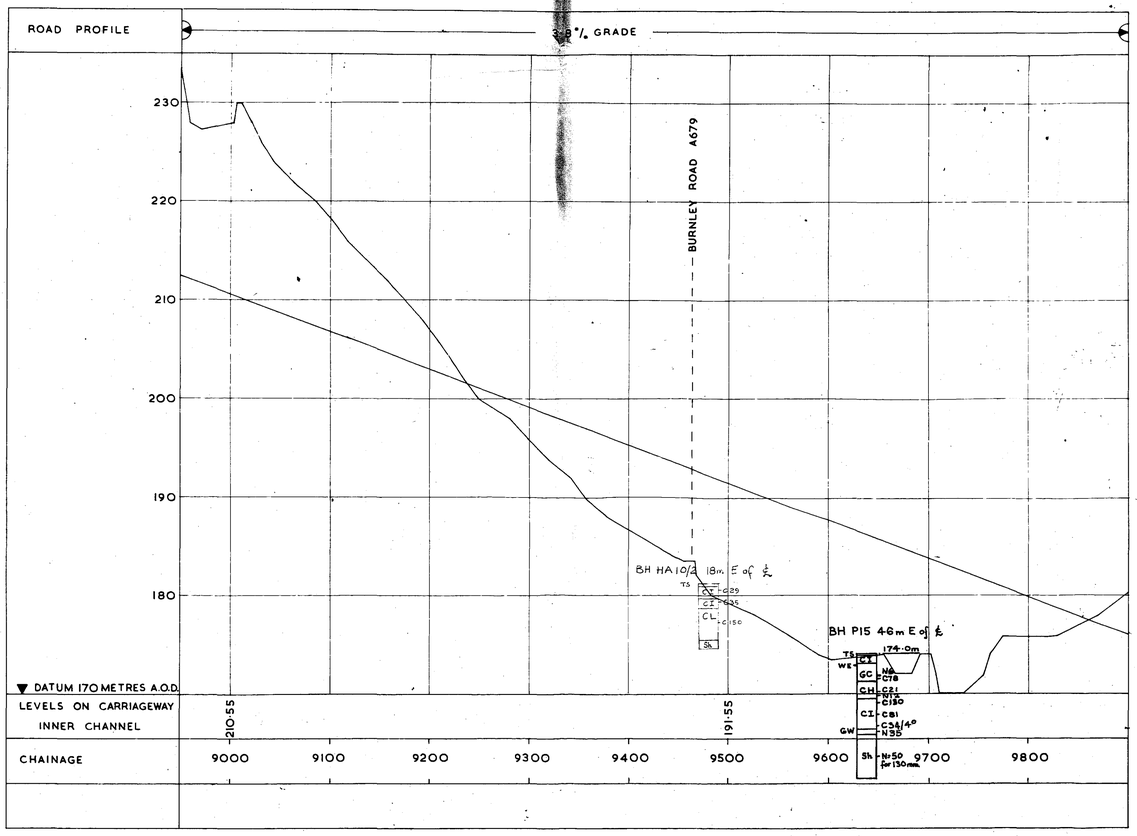
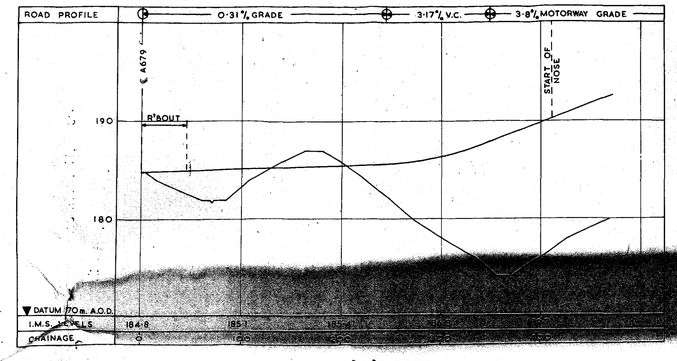
SHEET NO. 5 OF 6
DRAWING NO. HA/ /
DATE:

December 1972

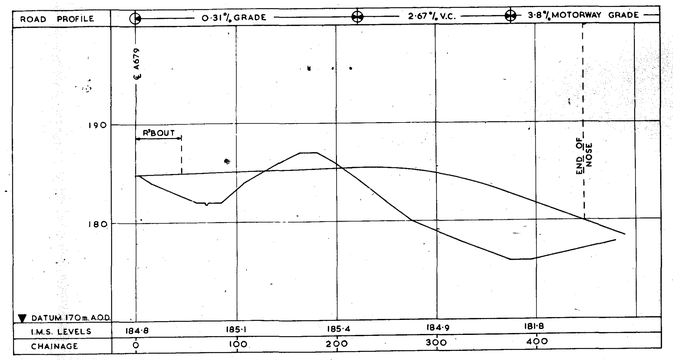
DRAWING NO.	SHEET NO.
HA/22/3	6 OF 6







WEST "OFF" SLIP ROAD



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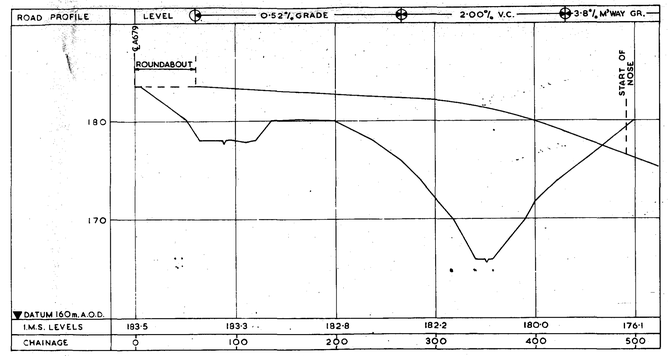
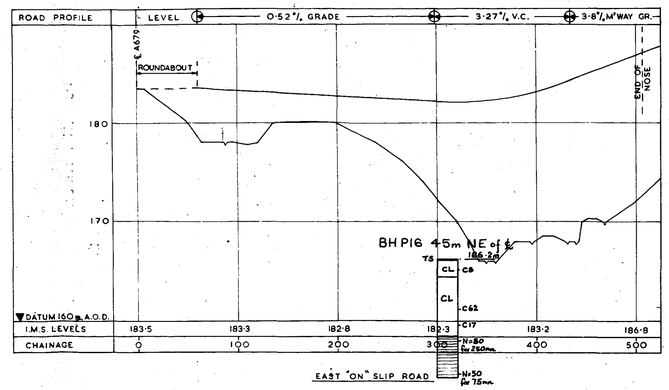


EAST "OFF" SLIP ROAD



EAST "ON" SLIP ROAD

SCALES:			SHEET SUFFIX	AMENDMENTS	DATE
PLAN	1/2500	Metric	A		
LONGITUDINAL SECTION			B		
HORIZONTAL	1/2500	Metric	C		
VERTICAL	1/250	Metric	D		

A56 DIVERSION

PRELIMINARY SITE INVESTIGATION

DEPARTMENT OF THE ENVIRONMENT
NORTH WESTERN ROAD CONSTRUCTION UNIT

J. R. INGRAM F.I.C.E., M.R.T.P.I., F.Inst.H.E.
CHIEF ENGINEER
LANCASHIRE SUB-UNIT

D. F. DEAN B.Sc., F.I.C.E., M.Inst.H.E.
DIRECTOR

SHEET NO. 6 OF 6
DRAWING NO. HA/ /
DATE:

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. .../... OF .../.....

JOB No. .....

B.H. No. .....

SCHEME A56 DIVERSION. HASLINGDEN TO ACCRINGTON

DEPTH .....

LOCATION 300m ℄

GROUND .....

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Tip
TOPSOIL.	0.05						START
SOFT MOTTLED BROWN/GREY SILTY CLAY.	0.8	U4 KJ	37.7 35.5	75/32/43	CH		
FIRM DARK BROWN SILTY CLAY WITH GRAVEL.	1.5						
SOFT DARK GREY-BROWN VARVED SILTY CLAY WITH PARTINGS OF SILT AND SILTY FINE SAND		U4 KJ	36.1 34.6	55/24/35 29/11/18	CH CL		
AN INCLUSION OF BOULDER CLAY AT 3.5m.		U4 KJ	35.8 32.1	57/22/35	CH		
		U4 KJ	35.5	67/22/45	CH		
	5.8 6.0	U4 KJ	27.1 17.7	59/19/40	CH		6.10.72 CASING 6.0m. B.H. "DRY" 0.m
FIRM TO STIFF DARK GREY-BROWN SILTY CLAY WITH SOME FINE GRAVEL. (BOULDER CLAY)							

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)'	Ø	Remarks
0.50-0.95	1925	1395	37.7	6	3	-	200mm x 100mm dia.
2.00-2.45	1990	1460	36.1	16	8	-	200mm x 100mm dia
3.50-3.95	2065	1520	35.8	58	29	-	200mm x 100mm dia. TRIAX
5.50-5.95	2065	1625	27.1	32	16	-	200mm - 100mm dia.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

CB7A L627.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

LOCATION 1126m OFFSET 46mNE

JOB No. 367

B.H. No. P2

DEPTH 12.2 m

GROUND LEVEL 220.1 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.2	U4	20.1 23.1	GRADING	SF		STARTED 14.9.72
MEDIUM DENSITY MEDIUM BROWN SILTY FINE TO MEDIUM SAND AND FINE TO MEDIUM GRAVEL. STRATIFIED		U4 KJ SP B B	9.1 5.5 7.9 10.6	GRADING	SU	14	
		B	8.1	GRADING	SP		
		SP.B B.	8.9 7.6	GRADING	GP	13	19.9.72 B.H. DRY CASING 3.5m. 20.9.72. B.H. "DRY"
		SP.B	10.2	GRADING.	SP	12.	
	5.3	B	17.1	GRADING	SP		
		SP.B B	21.1 19.6 22.2			16	
MEDIUM DENSITY MEDIUM BROWN VERY SILTY FINE TO MEDIUM SAND. STRATIFIED. OCCASIONALLY WITH SOME FINE GRAVEL AND VERY THIN LENSES OF FIRM BROWN CLAY.		SP.B B	23.3 25.4	GRADING GRADING	SP SP	11	W.E. 2.0m
		SP.B	27.6			12	
	9.8	B	29.2	GRADING	S F.		

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. P2

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH 12.4 m

LOCATION 1126m OFFSET 46m NE

GROUND LEVEL 220.1 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
			34.3				S.O 10.5m
LOOSE BLUE GREY CLAYEY SILT. SATURATED		SP B B'	33.9			8	
							20.9.72 B.H. "DRY"
	12.5	SP	33.6			7	CASING 11.5m B.H. "DRY" on c.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

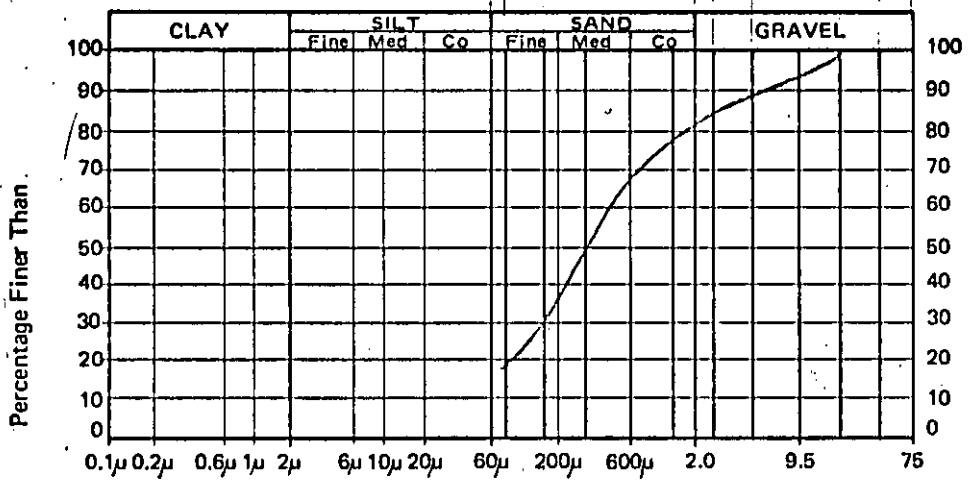
Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

LANCASHIRE COUNTY COUNCIL

JOB No. 367

PARTICLE SIZE DISTRIBUTION



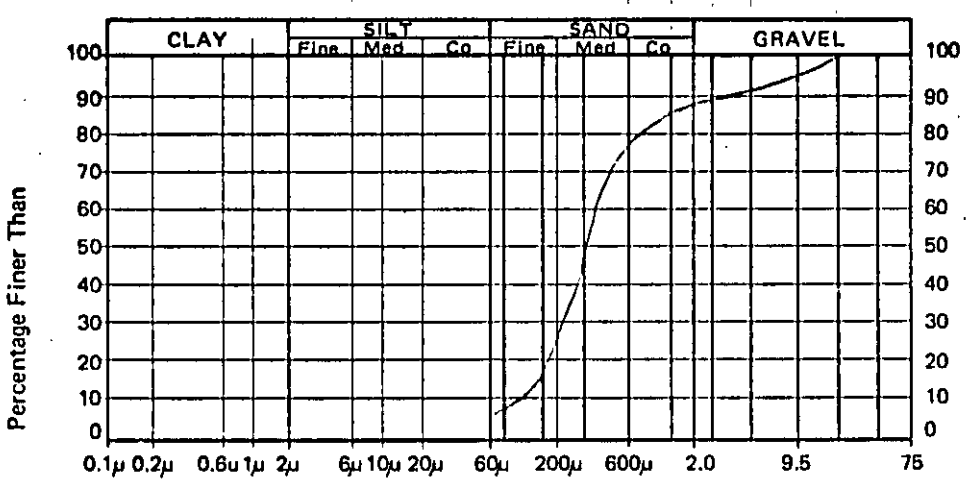
Percentage Finer Than

Particle Size in mm.

B.H. No. P2

Depth 1·0 m

Description S. F.



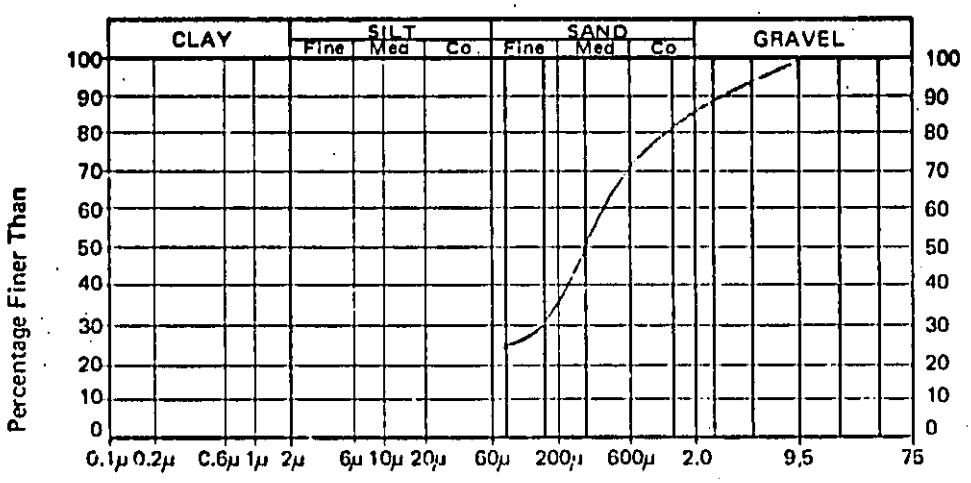
Percentage Finer Than

Particle Size in mm.

B.H. No. P2

Depth 1·5 m

Description S. U.



Percentage Finer Than

Particle Size in mm.

B.H. No. P2

Depth 2·5 m

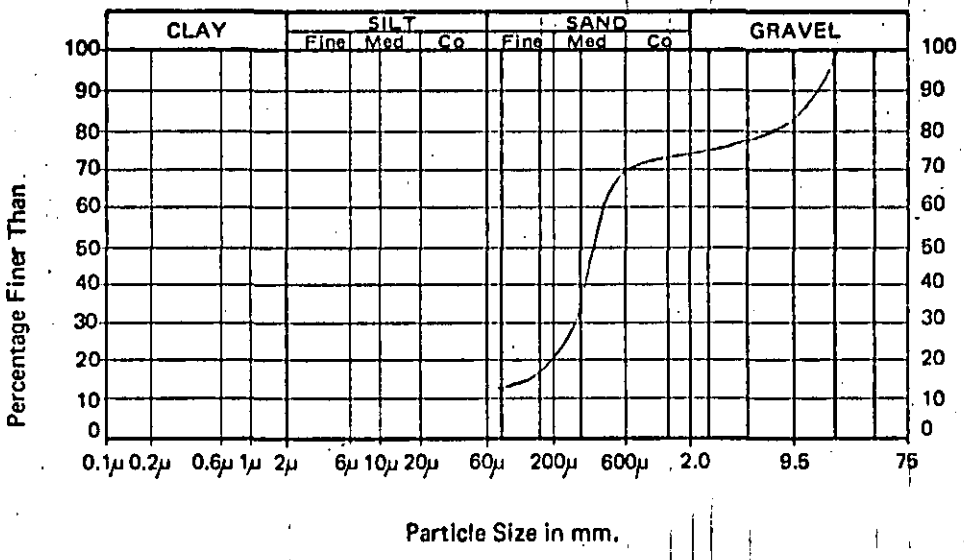
Description S. F

SIEVE APERTURES USED			
	75.0 mm	9.50 mm	600 μm
	37.5 mm	4.75 mm	300 μm
	19.0 mm	2.36 mm	150 μm
		1.18 mm	75 μm

LANCASHIRE COUNTY COUNCIL

JOB No. 367

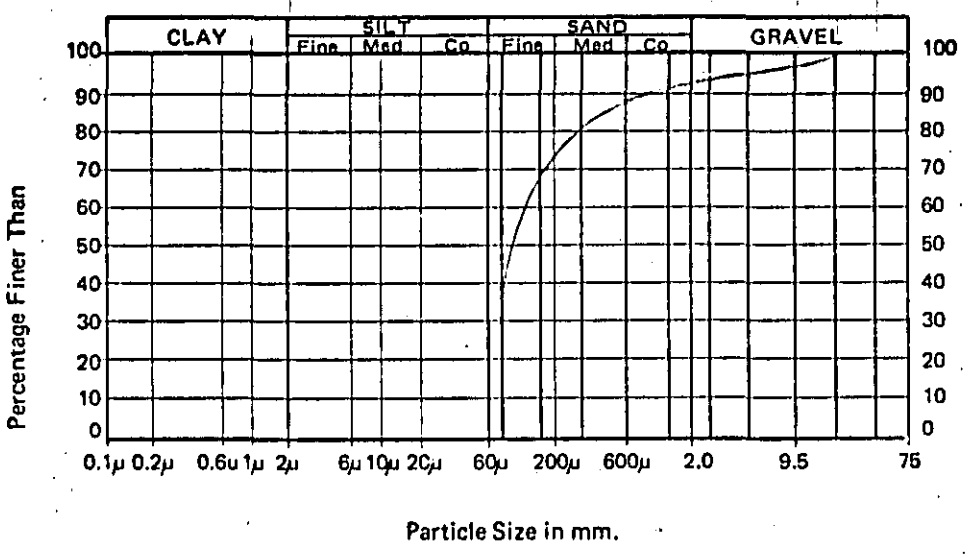
PARTICLE SIZE DISTRIBUTION



B.H. No. D2

Depth 4.0 m

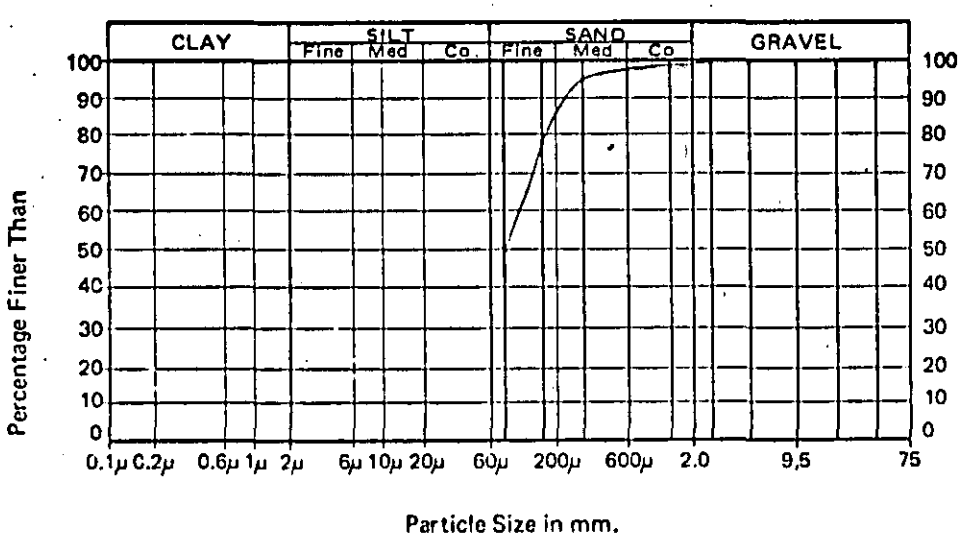
Description G P



B.H. No. D2

Depth 5.0 m

Description S F



B.H. No. D2

Depth 5.5 m

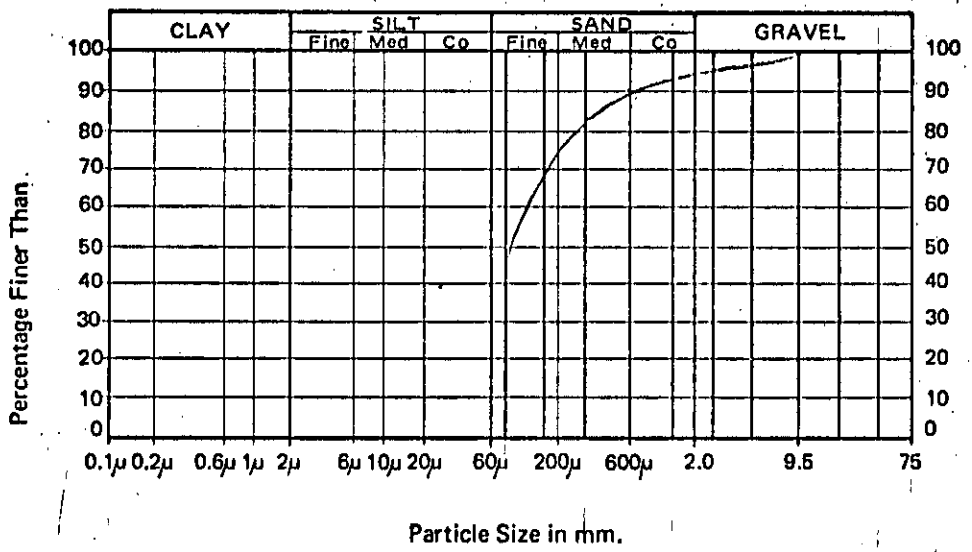
Description S. F

SIEVE APERTURES USED			
	75.0 mm	9.50 mm	600 μm
	37.5 mm	4.75 mm	300 μm
	19.0 mm	2.36 mm	150 μm
		1.18 mm	75 μm

LANCASHIRE COUNTY COUNCIL

JOB No. 367

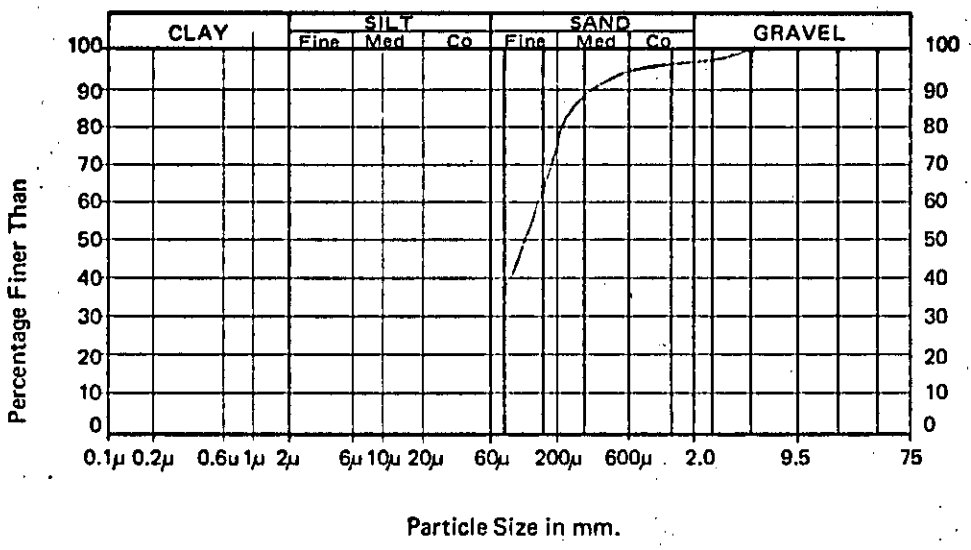
PARTICLE SIZE DISTRIBUTION



B.H. No. P2

Depth 7.5m

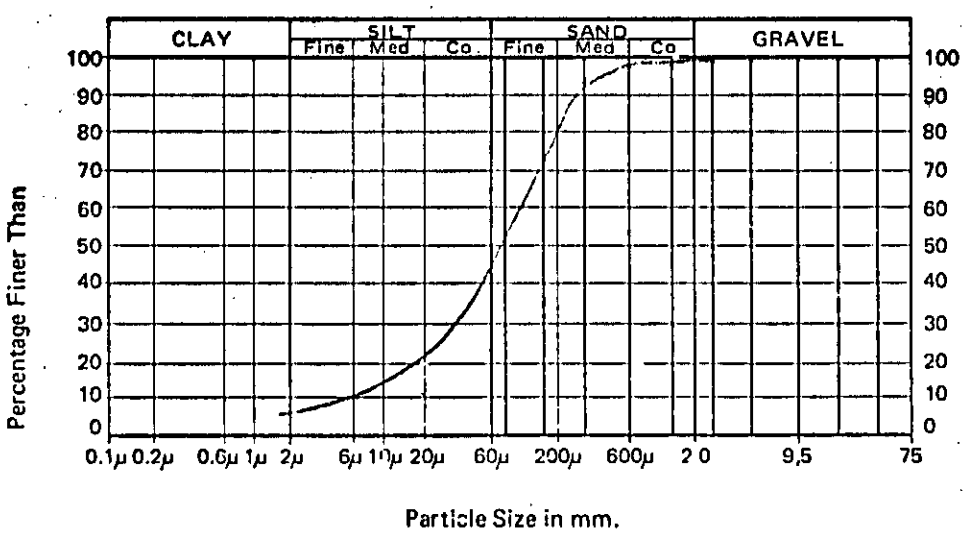
Description S F



B.H. No. P2

Depth 8.0 m

Description S F



B.H. No. P2

Depth 9.5 m

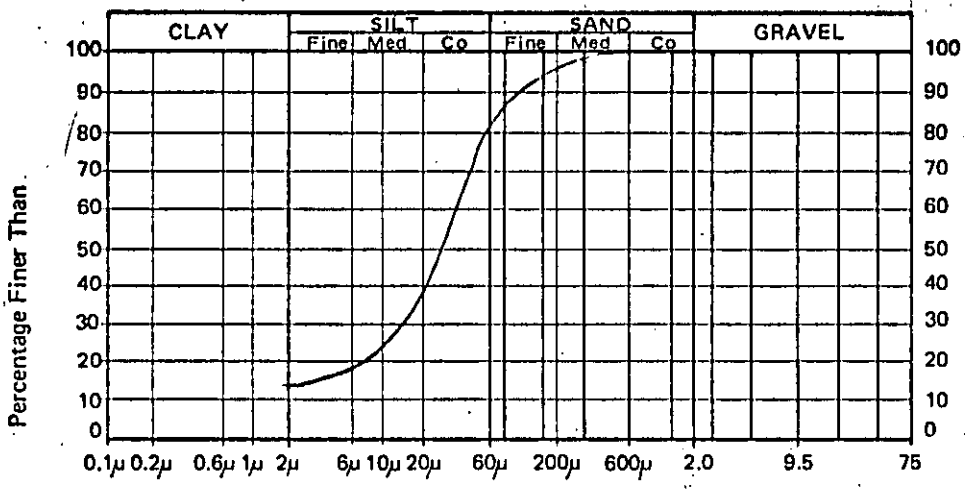
Description M.L.

SIEVE APERTURES USED			
	75.0 mm	9.50 mm	600 μm
	37.5 mm	4.75 mm	300 μm
	19.0 mm	2.36 mm	150 μm
		1.18 mm	75 μm

LANCASHIRE COUNTY COUNCIL

JOB No. 367

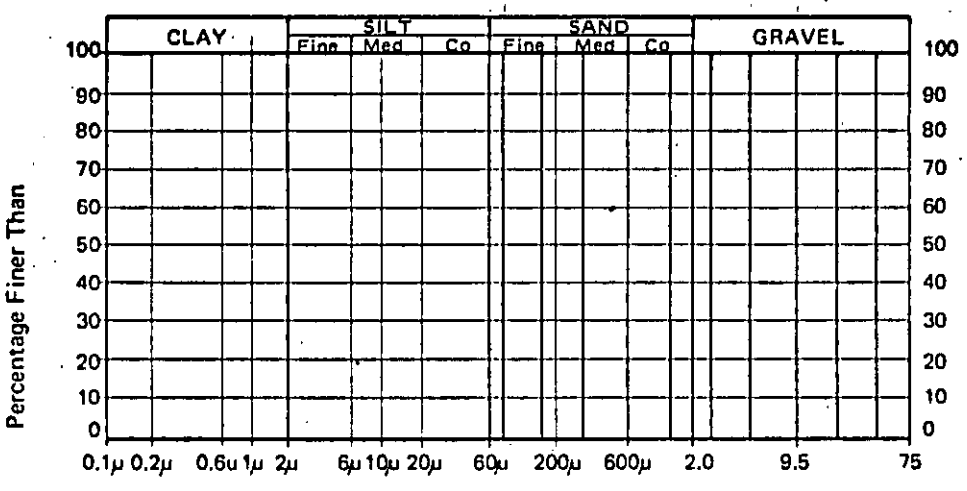
PARTICLE SIZE DISTRIBUTION



B.H. No. P2

Depth 10.0 m

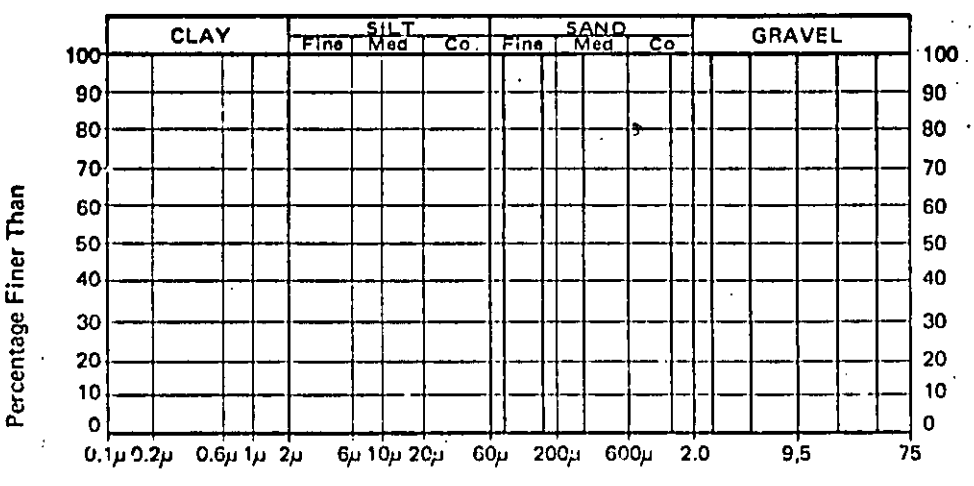
Description M.L.



B.H. No. .....

Depth .....

Description .....



B.H. No. .....

Depth .....

Description .....

SIEVE APERTURES USED			
	75.0 mm	9.50 mm	600 μm
	37.5 mm	4.75 mm	300 μm
	19.0 mm	2.36 mm	150 μm
		1.18 mm	75 μm

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. P3

SCHEME A56 DIVERSION HASLINGDEN - ACCRINGTON

DEPTH 13.4 m

LOCATION 1350m. OFFSET. 43m S.W

GROUND LEVEL 198.1 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
PEAT.		U4	1133				STARTED 21.4.72.
	1.0	B	251.3				
VERY SANDY GRAVEL WITH WITH V. SOFT. BLUE-GREY SANDY CLAY MATRIX.		U4		GRADING	GC		W.E. 1.3m ROSE TO 0.3m AFTER 45 min.
	2.0	B	23.3				
VERY LOOSE BLUE-GREY SANDY SILT, SANDIER IN PARTS WITH VERY THIN LENSES OF VERY SOFT CLAY AT LOWER DEPTHS.		SP. B	26.0			6	
		B		GRADING	SP		
		SP B	30.5 27.3	SEDIMENTATION	MJ	4	S.O. AT 4.8m
		B	34.5 30.8	64/23/31	CH		
	6.0	U4	30.8				
VARIABLE VERY SOFT-FIRM DARK GREY-BROWN VARVED VERY SILTY CLAY WITH LENSES OF DARK GREY-BROWN SANDY SILT		B.	34.0				
		W					
		U4 B	32.8	SEDIMENTATION	ML		24 9 72 B.H. DRY CASING 7.5m. 22 9 72 SWL 7.0m
		SP B				8	
		B	32.5	68/21/47	CH		
		U4					
		B	38.0				
		U4		57/20/37	CH		

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.00-0.45	-	-	-	-		-	PEAT
1.50-1.80	-	-	-	-	-	-	GRADING
6.00-6.45	1950	1490	30.8	40	20	-	200MM x 100MM
7.25	-	-	-	-		-	NO RECOVERY
8.25	-	-	32.8	-	-	-	TOO SOFT. TO TEST
8.25-8.70	1790	1297	38.0	120	60	-	76MM x 38MM DIA REMOULDS.
9.75-10.20	-	1456	-	15	8	-	200MM x 100MM DIA

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
7.0							NIL	7.0/7.5	WATER SAMPLE

GENERAL REMARKS

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. .....

J.H. No. 93

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH .....

LOCATION 1550m OFFSET 11.5m S. W/

GROUND ...

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n.	N Value	
VARIABLE VERY SOFT TO FIRM DARK GREY-BROWN VARVED VERY SILTY CLAY WITH LENSES OF DARK GREY BROWN SANDY SILT.		B	32.3				
		U4	29.2				
		B	55.0	42/20/35	CH		
							22.9.78 CASING 13.0m S.W.L. 0.3m O.W.S. AFTER 60 MINS
	13.4	U4	34.9				

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
11.25-11.70	1910	1490	28.2	36	18	—	300mm x 150m DIA
12.00	1875	1395	35.0	55	28	—	75mm x 38m DIA REMOULDS
13.00-13.45	1785	1325	34.9	44	22	—	300 mm x 150 m DIA

COMPACTION AND OTHER TEST RESULTS

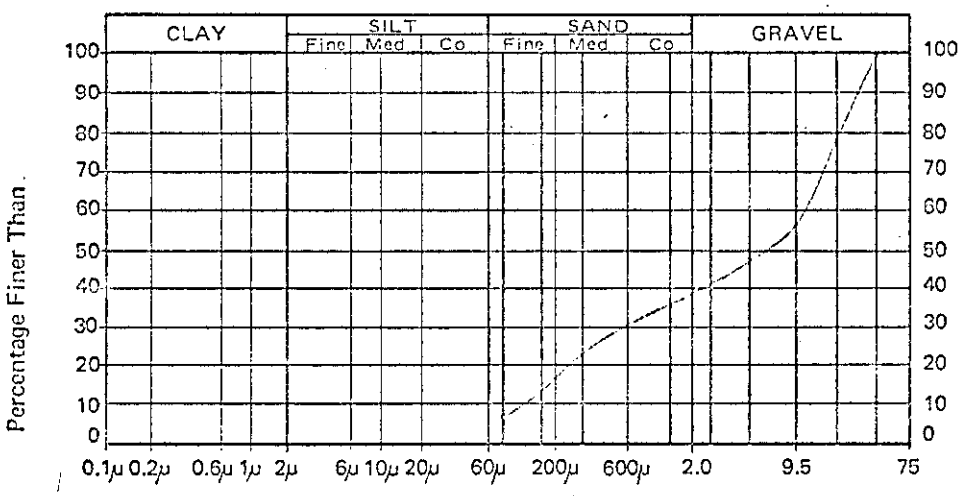
Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

LANCASHIRE COUNTY COUNCIL

JOB No. 367

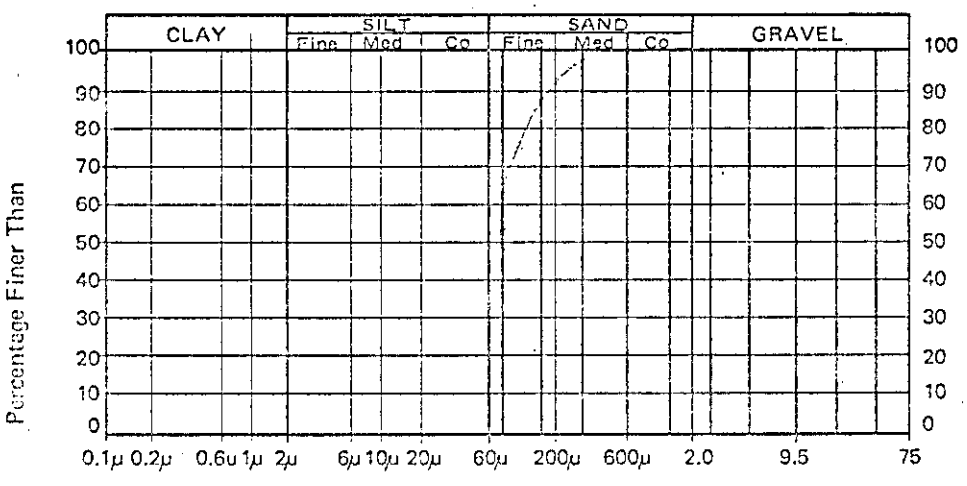
PARTICLE SIZE DISTRIBUTION



B.H. No. P3

Depth 1.5 m

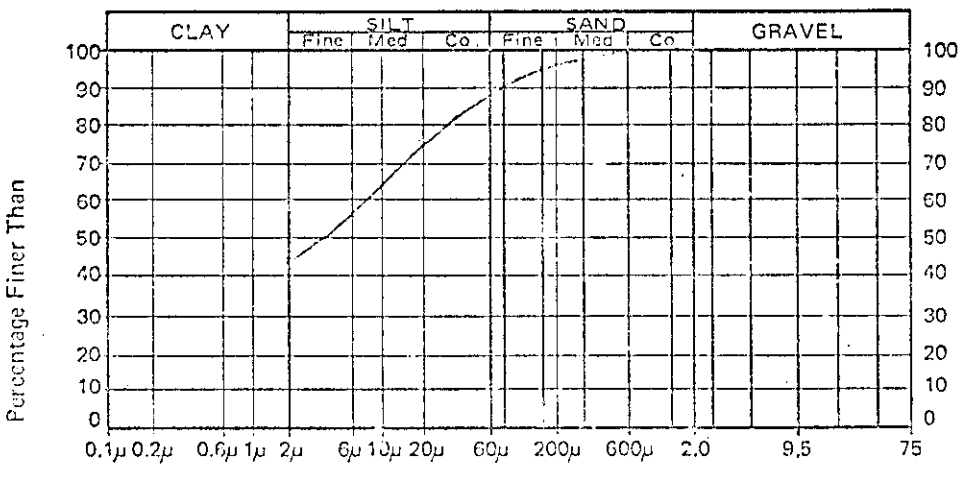
Description GC



B.H. No. P3

Depth 3.3 m

Description S F



B.H. No. P3

Depth 4.8 m

Description M F

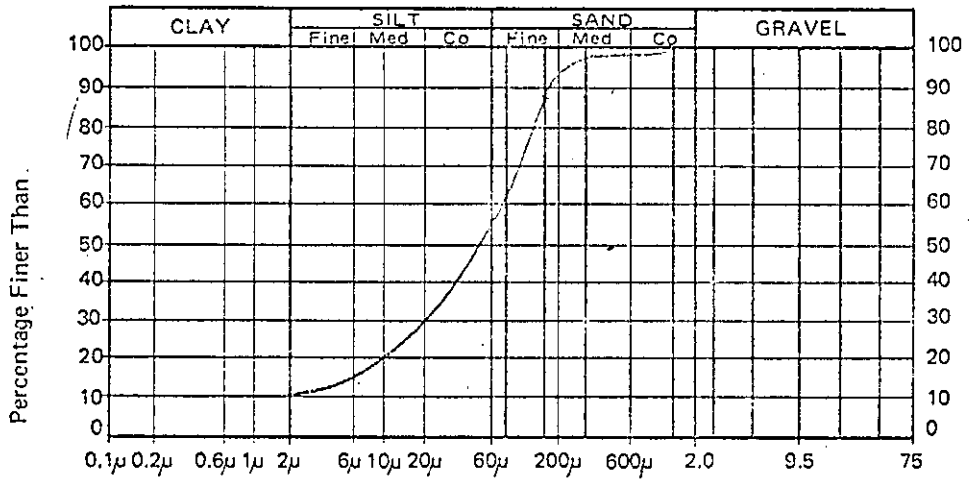
SIEVE APERTURES USED

75.0 mm	9.50 mm	600 μm
37.5 mm	4.75 mm	300 μm
19.0 mm	2.36 mm	150 μm
1.18 mm	75 μm	

LANCASHIRE COUNTY COUNCIL

JOB No. 367

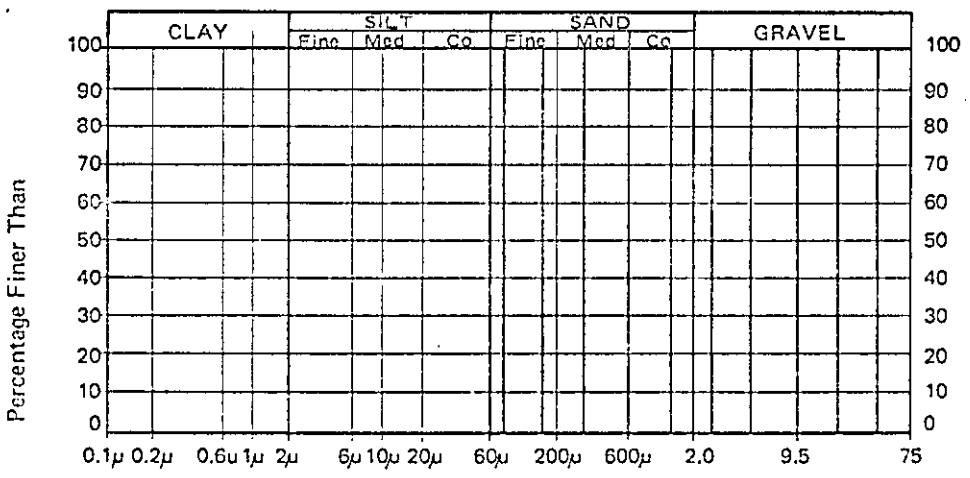
PARTICLE SIZE DISTRIBUTION



B.H. No. TP3

Depth 7.5 m

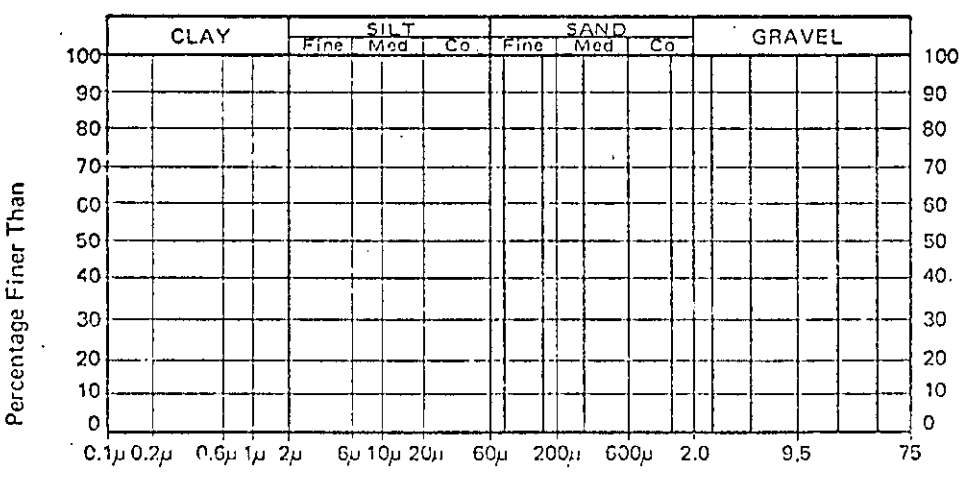
Description ML



B.H. No. .....

Depth .....

Description .....



B.H. No. .....

Depth .....

Description .....

SIEVE APERTURES USED

75.0 mm	9.50 mm	600 μm
37.5 mm	4.75 mm	300 μm
19.0 mm	2.36 mm	150 μm
	1.18 mm	75 μm

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. PS

SCHEME A.56 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH 8.0 m

LOCATION 2900m OFFSET 30m W

GROUND LEVEL 215.2 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.1						STARTED 25.9.72
SOFT BROWN SANDY CLAY + GRAVEL	0.3	U4					
		B	100.0				
PEAT.		U4	547.0				
		B	101.6				W.E. 1.5m (STANDING) S.O. 1.5m
V. SOFT BLUE GREY SANDY CLAY + SOME ORGANIC (PEAT) INCLUSIONS	2.0		442.6				
	2.4	U4					
LOOSE BLUE-GREY FINE TO MEDIUM SAND AND GRAVEL WITH BANDS OF GREY SANDY SILT.		B	23.4				
		U4		GRADING	GP		W.E. 4.0 m
		B	12.4				
		C.P B	9.0			9	
		SPT B.		GRADING GRADING	S.W. SW	10	
	6.0	B.	25.9				
LOOSE BLUE GREY VERY SANDY SILT WITH LENSES OF DARK GREY-BROWN SILTY FINE TO MEDIUM SAND.		U4		SEDIMENTATION	ML		
		B.	88.9				
	8.0	U4.					28.9.72
							CASING 7.5m S.W.L. 1.5m O.W.C

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Φ	Remarks
0.00-0.35	-	-	-	-	-	-	TOPSOIL
1.00-1.40	-	-	547	-	-	-	PEAT
2.00-2.40	-	-	-	-	-	-	
3.50-3.95	-	-	-	-	-	-	GRADING
6.50-6.90	-	-	-	-	-	-	TOO FRIABLE TO TEST

COMPACTION AND OTHER TEST RESULTS

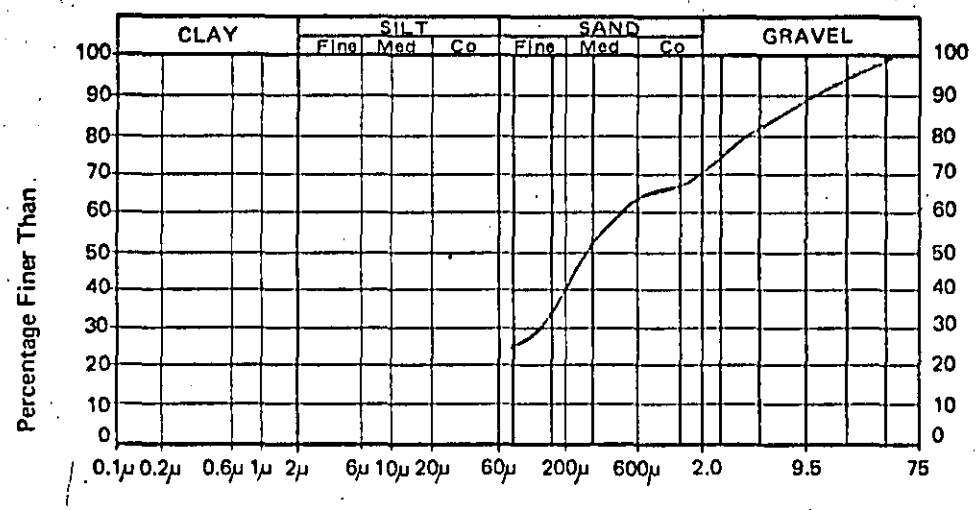
Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
7.50							TRACE	7.0	WATER SAMPLE

GENERAL REMARKS SATURATED BELOW 1.5m.

LANCASHIRE COUNTY COUNCIL

JOB No. 367

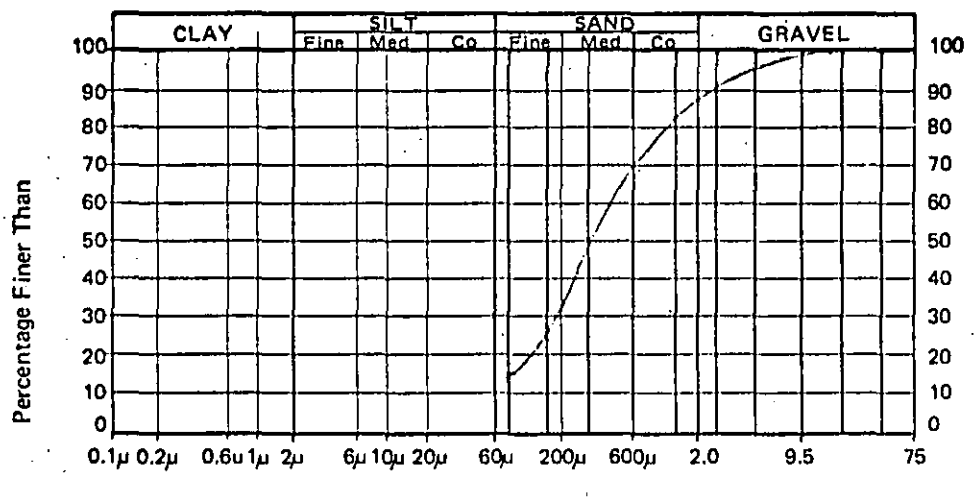
PARTICLE SIZE DISTRIBUTION



B.H. No. P5

Depth 3.5 m

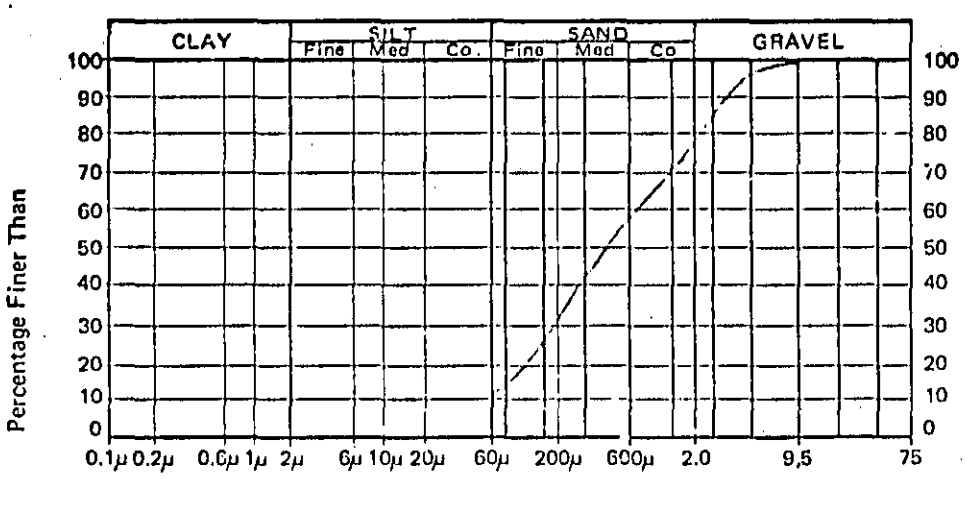
Description G.F.



B.H. No. P5

Depth 5.3 m

Description S.W.



B.H. No. P5

Depth 5.5 m

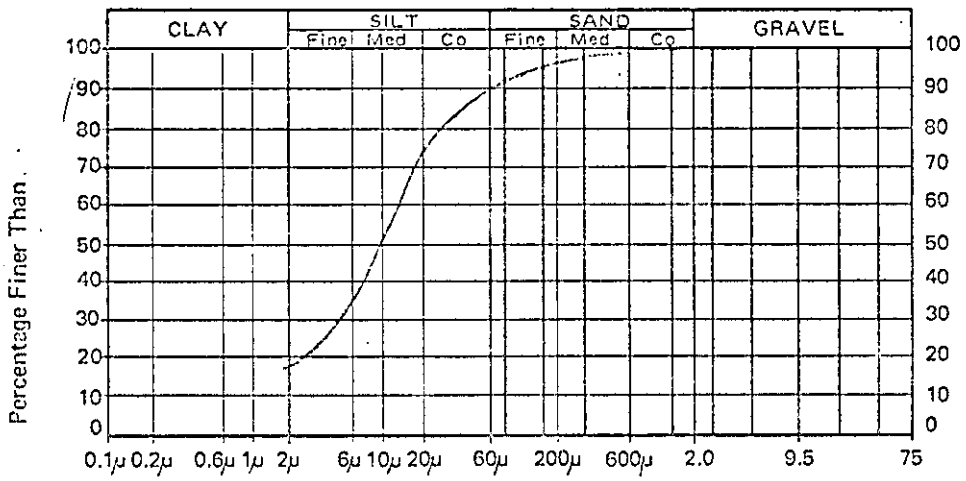
Description S.W.

SIEVE APERTURES USED			
	75.0 mm	9.50 mm	600 μm
	37.5 mm	4.75 mm	300 μm
		2.36 mm	150 μm

LANCASHIRE COUNTY COUNCIL

JOB No. 367

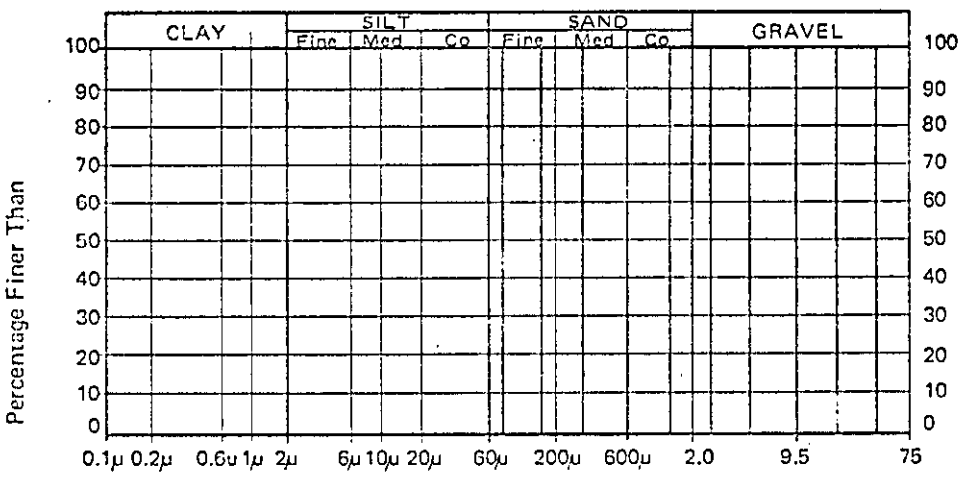
PARTICLE SIZE DISTRIBUTION



B.H. No. P5

Depth 6.5m

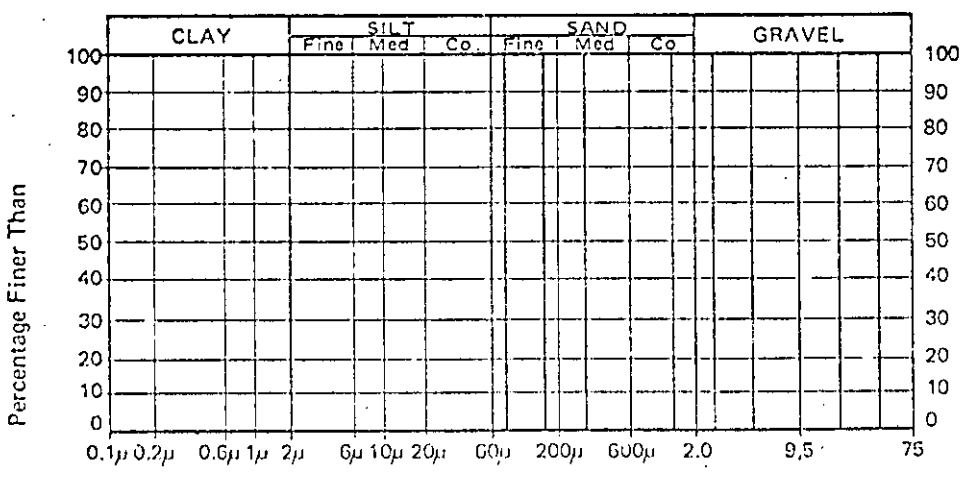
Description M.L



B.H. No. .....

Depth .....

Description .....



B.H. No. .....

Depth .....

Description .....

SIEVE APERTURES USED			
	75.0 mm	9.50 mm	600 μm
	37.5 mm	4.75 mm	300 μm
		2.36 mm	150 μm

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. P7

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON DEPTH 17.0 m

LOCATION 3054m OFFSET 31m W GROUND LEVEL 217.3 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL.	0.2	U4					STARTED 25.9.72
SOFT GREY SILTY SANDY CLAY WITH SOME GRAVEL	1.0	B	20 %		CL		W.E. 1.0 m
		B		GRADING	GW.		ROSE TO 0.8 m
		U4 W B					
		CP				38	
MEDIUM DENSITY.		B					
GRAVEL AND COBBLES.		B					
WITH A DARK BROWN		CP.B.		GRADING	GW	12.	
SAND MATRIX, SOME-		B					S.O. 3.0 m
TIMES CLAYEY.							W.E. 4.5m (STANDING
SATURATED BELOW 1m.		CP.B				11	
		B					
		CP B		GRADING	GW	11	
		B					
		CP.B		GRADING	SW	12	
		CP. B		GRADING	SP	N = 50 for 112mm	25 9 72 CASING 9.0 m 26 9 72 S.W.L. 1.5

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.00-0.20	-	-	-	-	-	-	TOPSOIL
1.25	-	-	-	-	-	-	GRADING

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
1 50							TRACE	6.2-6.5	WATER SAMPLE

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 4 OF 9

JOB No. 367

B.H. No. P7

SCHEME A56 DIVERSION HASSINGDEN TO ACCRINGTON

DEPTH 17.0 m

LOCATION 3054m OFFSET 31m W

GROUND LEVEL 217.3 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
MEDIUM DENSITY GRAVEL AND COBBLES WITH A DARK BROWN SAND MATRIX SOMETIMES CLAYEY. SATURATED.	17.0	CP B				30/107	
		B					
		B					
		CP B				35	
		B		GRADING	GW		26.9.72 CASING 12.8m 27.9.72. SWL 1.0m
		CP B B				36	
		CP B				18	
		B					
		CP B				19	27/9/72. CASING 16.5m SWL 1.0m O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

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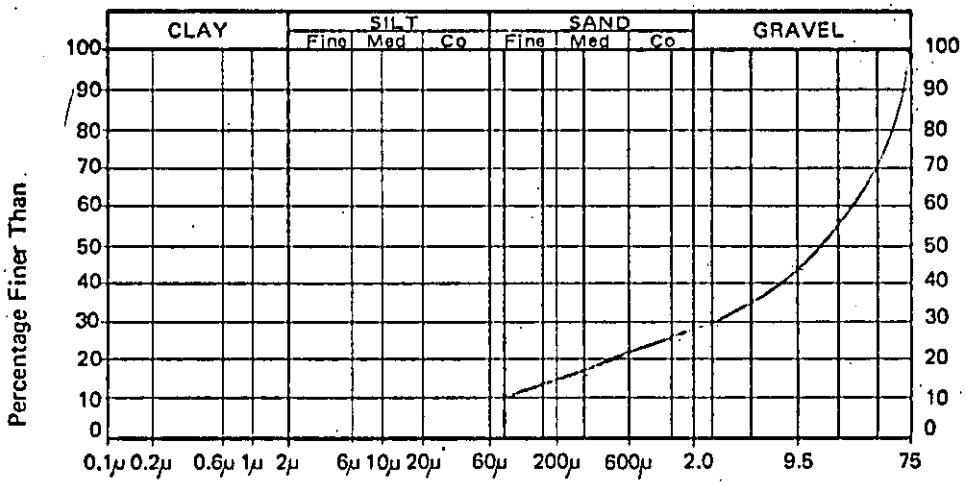
LANCASHIRE COUNTY COUNCIL

JOB No. 367

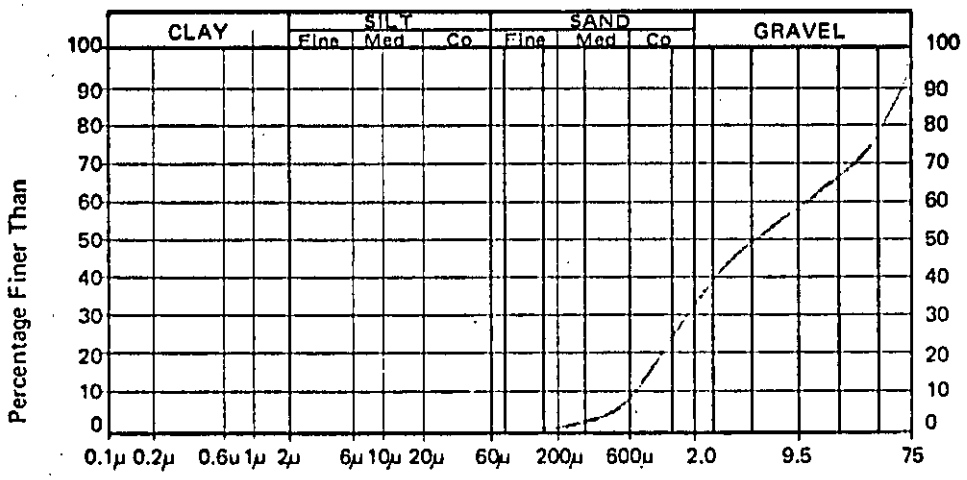
PARTICLE SIZE DISTRIBUTION



B.H. No. P7

Depth 1.3 m

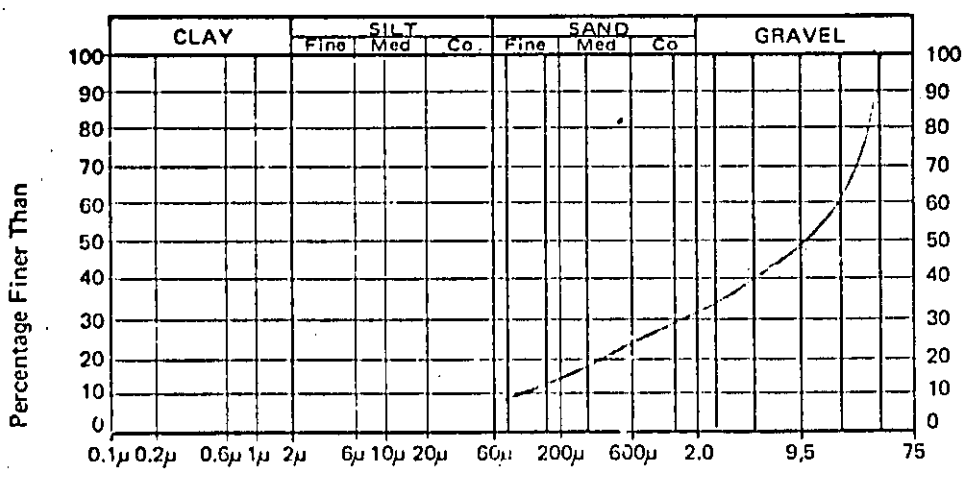
Description G.W



B.H. No. P7

Depth 3.5 m

Description G.W



B.H. No. P7

Depth 6.5 m

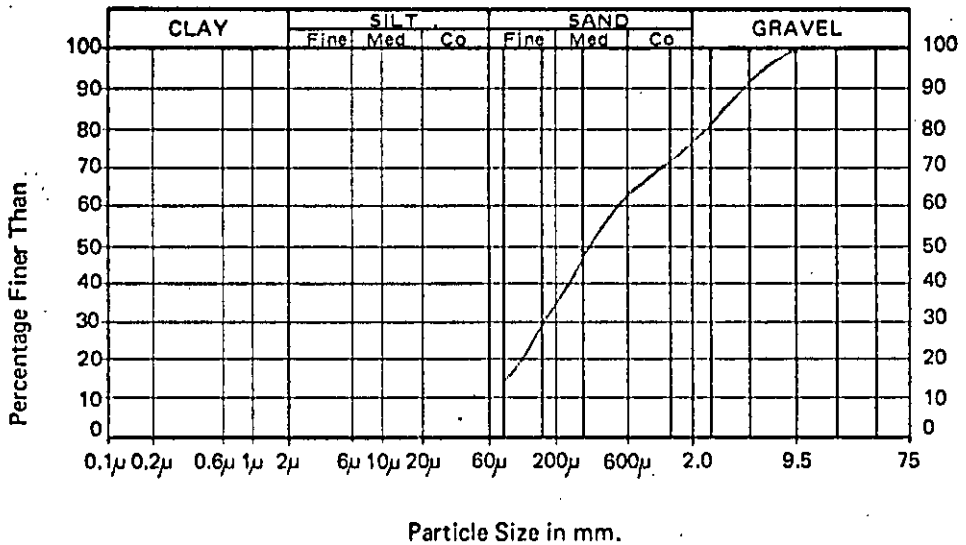
Description G.W

SIEVE APERTURES USED			
	75.0 mm	9.50 mm	600 μm
	37.5 mm	4.75 mm	300 μm
		2.36 mm	150 μm

LANCASHIRE COUNTY COUNCIL

JOB No. 367

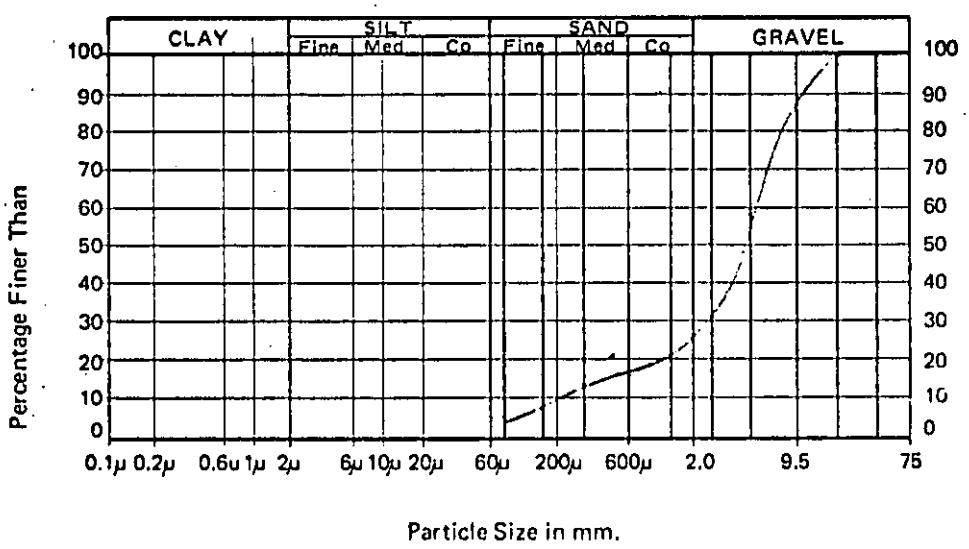
PARTICLE SIZE DISTRIBUTION



B.H. No. P7

Depth 8.0 m

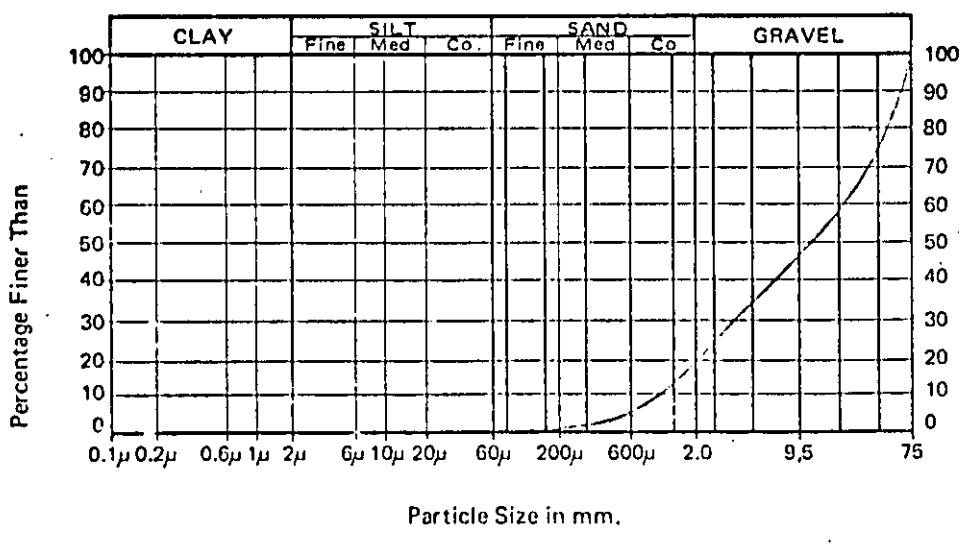
Description S.W



B.H. No. P7

Depth 9.5 m

Description G.P



B.H. No. P7

Depth 12.8 m

Description G W

SIEVE APERTURES USED

75.0 mm	9.50 mm	600 μm
	4.75 mm	300 μm

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

LOCATION 3200m E

JOB No. 367

B.H. No. P9

DEPTH 5.5 m

GROUND LEVEL 218.3 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.15	U4					STANDPIPE 03.9.72
SOFT MOTTLED GREY/BROWN/ORANGE VERY SILTY CLAY. ORGANIC	0.7	B	49.2	56/24/32	CH		
		B	1100				
		W					
PEAT		U4	681.6				
		B	46.0				WE AT 2.0m
	2.5						
VERY LOOSE BLACK VERY SILTY SAND WITH SOME GRAVEL, COBBLES AND BOULDERS, PEAT INCLUSIONS		SP	71.4	GRADING	SW	2	
		B					
		U4					
	5.5	CP				26	03.9.72 CASING 5.5m SWL 1.0m O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.00 - 0.40	1735	1231	40.5	42	21	-	76mm x 38mm DIA REMOULDS
1.00 - 1.45	-	-	681.6	-	-	-	PEAT
3.00	-	-	-	-	-	-	TOO WET TO TEST

COMPACTION AND OTHER TEST RESULTS

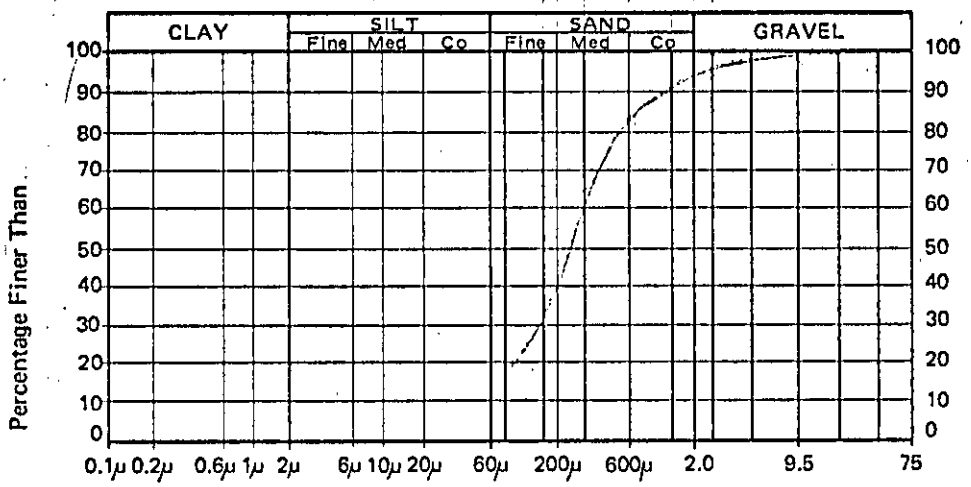
Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
1.0							TRACE	7.1	WATER SAMPLE

GENERAL REMARKS SATURATED BELOW 1m.

LANCASHIRE COUNTY COUNCIL

JOB No. 347

PARTICLE SIZE DISTRIBUTION



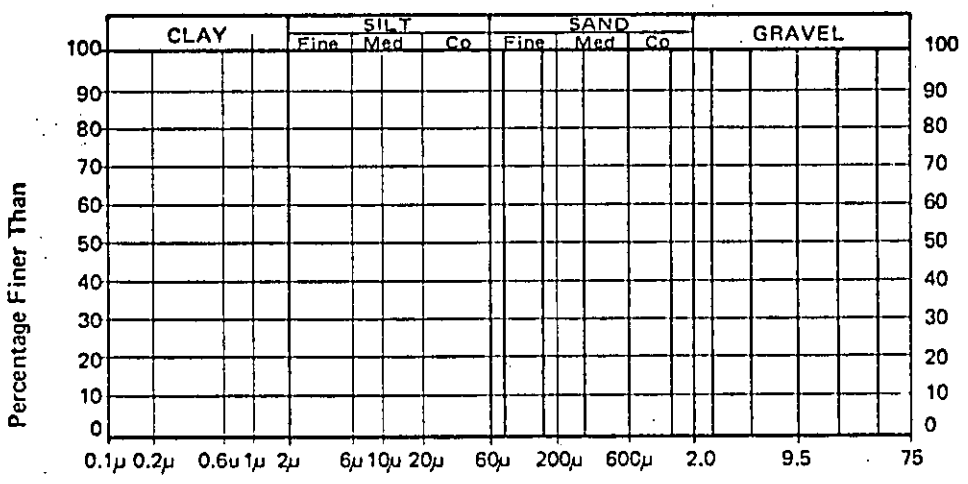
Percentage Finer Than

Particle Size in mm.

B.H. No. P9

Depth 2.8 m

Description S.W



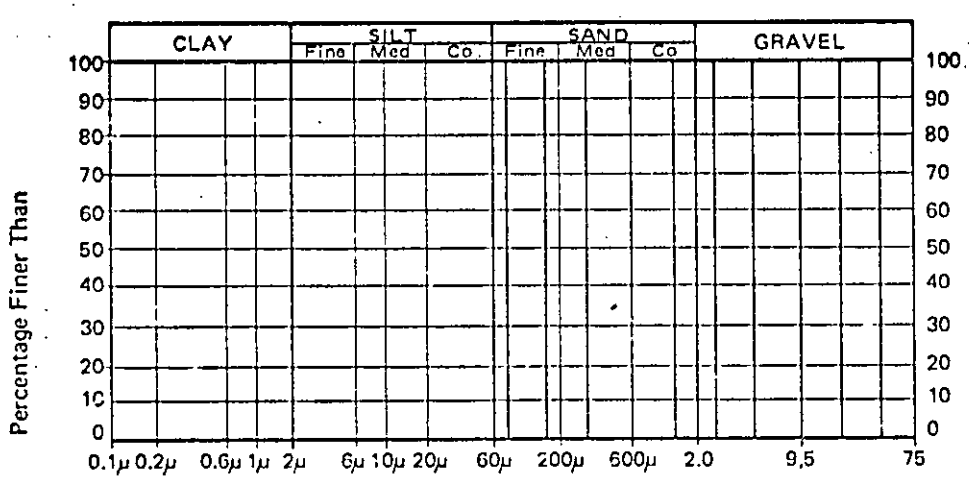
Percentage Finer Than

Particle Size in mm.

B.H. No. .....

Depth .....

Description.....



Percentage Finer Than

Particle Size in mm.

B.H. No. .....

Depth .....

Description.....

SIEVE APERTURES USED

	75.0 mm	9.50 mm	600 μm
		4.75 mm	300 μm

20

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. P11

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH 11.1 m

LOCATION 4290m OFFSET 49m E

GROUND LEVEL 236.2 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL.	0.15						CASED 26.4 m
PEAT WITH SOME COBBLES AT THE BASE		U4 KJ	890.0 270.5				
		B					
		B					
	3.1	U4 KW	22.5 15.2	GRADING	S.F		
MEDIUM DENSITY GRAVEL WITH COBBLES AND A CLAYEY SANDY SILTY MATRIX.		CP.				21	
		B					WE AT 5.0m ROSE TO 3.7m AFTER 15 MINS.
		CP				22.	
		B					
		CP				19	
		B					
		CP				21	
		B	42.7				
		SP.				75/115mm	

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.50-0.90	—	—	890.0	—	—	-	PEAT
3.25-3.65	2030	1658	22.5	60	30		TEST ON CLAYEY MATRIX. 76MM x 35MM DIA REMOULDS

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
5.0							TRACE	5.5-6.9	WATER SAMPLE

GENERAL REMARKS

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Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. P11

SCHEME A56 DIVERSION ACCRINGTON TO HASLINGDEN

DEPTH 11.1 m

LOCATION 4-290m OFFSET 4-9m E

GROUND LEVEL 236.2 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
VERY FINE GRAINED SILTY SANDSTONE.	10.3						
	11.1	S.P				75/110mm	06.9.72 CASING 11.0m 07.9.72 S.W.L. 3.0m O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

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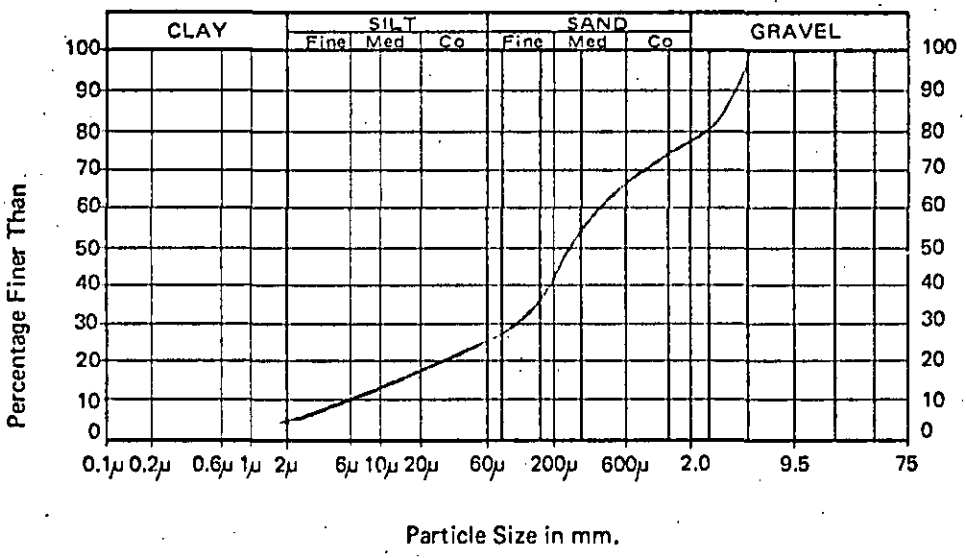
LANCASHIRE COUNTY COUNCIL

JOB No. 367

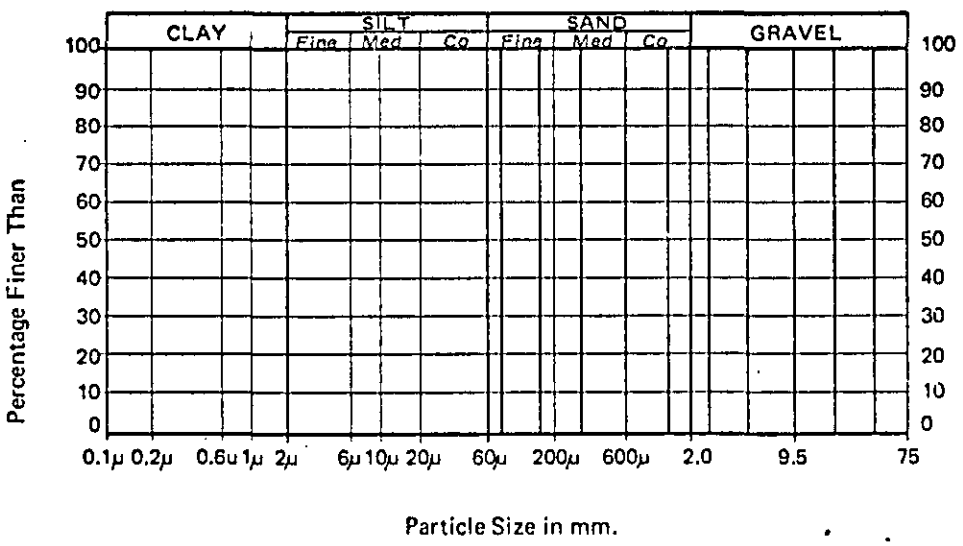
PARTICLE SIZE DISTRIBUTION



B.H. No. P11

Depth 3.3 m.

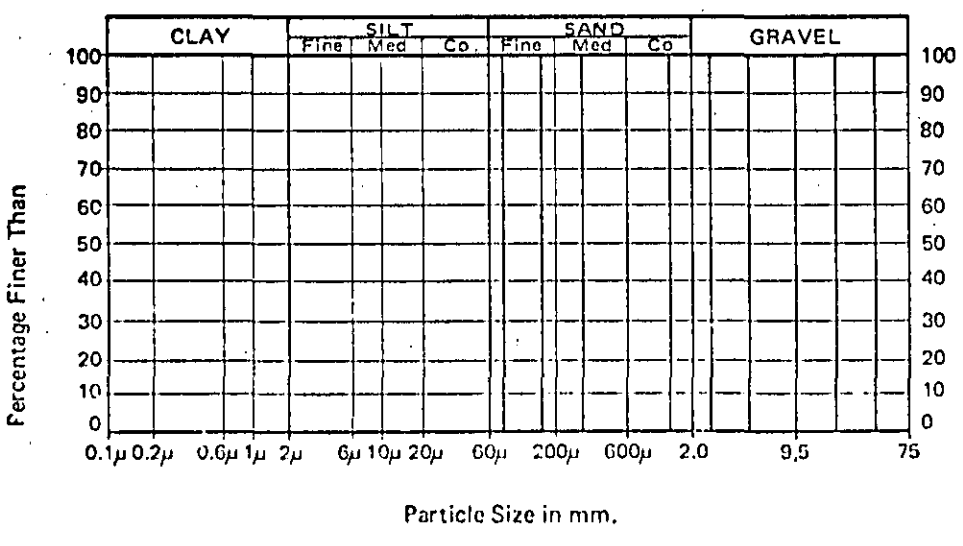
Description S.F.



B.H. No. .....

Depth .....

Description .....



B.H. No. .....

Depth .....

Description .....

• SIEVE APERTURES USED

75.0 mm	4.75 mm	300 μm
9.50 mm		600 μm

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. P12

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH 11.5 m

LOCATION 4319 m OFFSET 29 m W

GROUND LEVEL 220.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FIRM MOTTLED GREY/ BROWN FRIABLE SANDY CLAY WITH GRAVEL SANDSTONE COBBLES AND BRICK FILL		U4 KJ	21.6				STARTED 4.10.72
		U4 KJ	18.5 16.2				
FIRM PEAT	2.7						
SOFT-FIRM GREY-BROWN SILTY SANDY CLAY. GRAVEL	3.6 NIC 3.8	U4 KJ	31C.9 40.4 25.7	30/19/11	CL		
MEDIUM DENSITY GRAVEL WITH A CLAYEY SANDY SILTY MATRIX. AT 52 mm BAND OF UNIFORM MEDIUM SAND AT 5.4m.		U4 KJ	12.7				
		B		GRADING	GW		SLIGHT W/E AT 7.0m
		W CP				22	
FIRM TO STIFF GREY-BROWN SANDY SILTY CLAY WITH GRAVEL AND SOME COBBLES. (BOULDER CLAY)	8.3	U4 KJ	10.3 11.6				4 10 72 B/H DRY CASING 9.0 m 5 10 72 SWL 7.0 m.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.50 - 0.95	-	-		64	32		VANE TEST.
2.00 - 2.45	-	-	18.5	-	-	-	TOO FRIABLE TO TEST
3.50 - 3.95	-	-	316.9 HD H	-	-	-	TOP 110mm PEAT, REST SOFT/F.M SANDY SILTY ORGANIC CLAY
5.00 - 5.45	-	-	-	-	-	-	GRAVEL
6.50	-	-	-	-	-	-	NO RECOVERY
8.50 - 8.95	2327	2110	10.3	150	75	-	100mm DIA
10.00 - 10.50	2110	-	-	156	78	-	178mm & 150mm DIA

COMPACTION AND OTHER TEST RESULTS

Depth of Samole	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
7.00							TRACE	7.0-7.5	WATER SAMPLE

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

SCHEME A56 DIVERSION HASLINGDEN - ACCRINGTON

LOCATION 4.3/9m OFFSET 29m W.

JOB No. 367

B.H. No. P12

DEPTH 11.5 m

GROUND LEVEL 240.0 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FIRM TO STIFF DARK GREY - BROWN SANDY SILTY CLAY WITH GRAVEL AND SOME COBBLES (BOULDER CLAY)					U4					S.O. 10.0m
					KJ	10.8				
VERY FINE GRAINED SILTY SANDSTONE	11.1				CP				50/10mm	5/10/92
BEDROCK ?	11.5				CP				50/10 mm	CASING 10.5m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

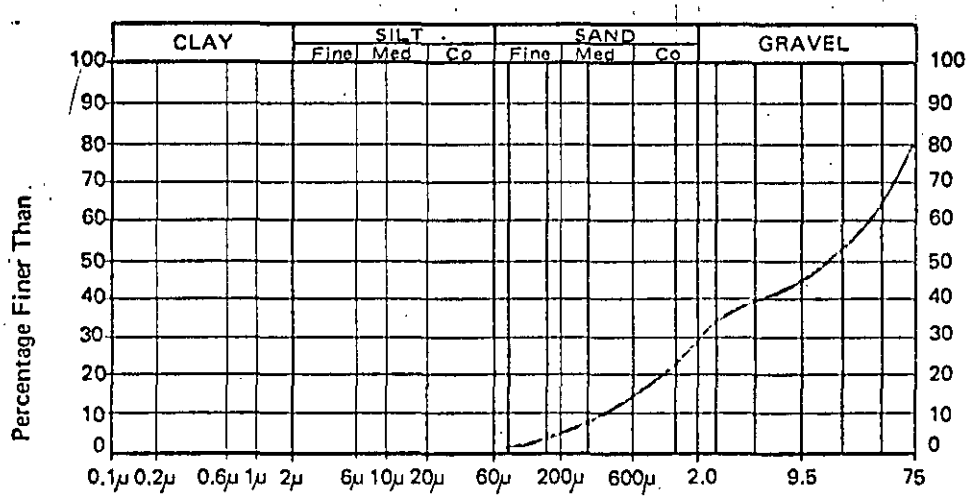
Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

LANCASHIRE COUNTY COUNCIL

JOB No. 367

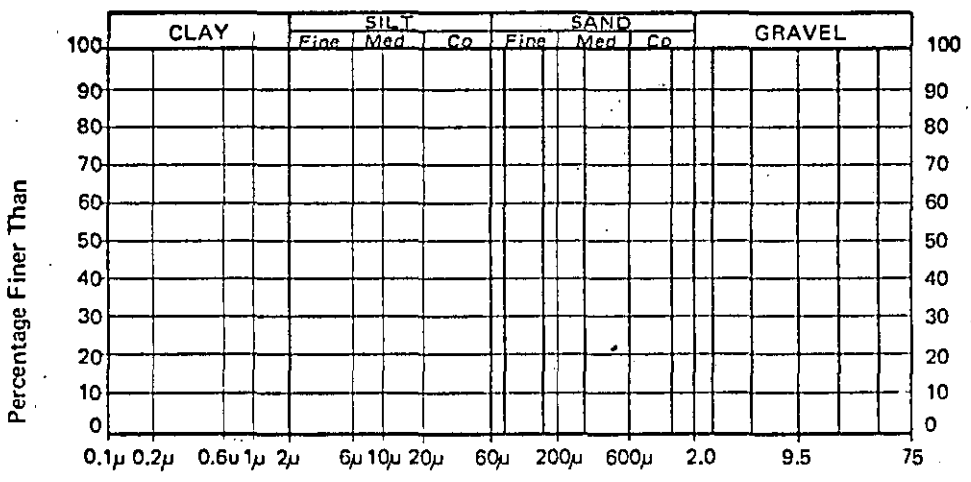
PARTICLE SIZE DISTRIBUTION



B.H. No. P12

Depth 6.5m

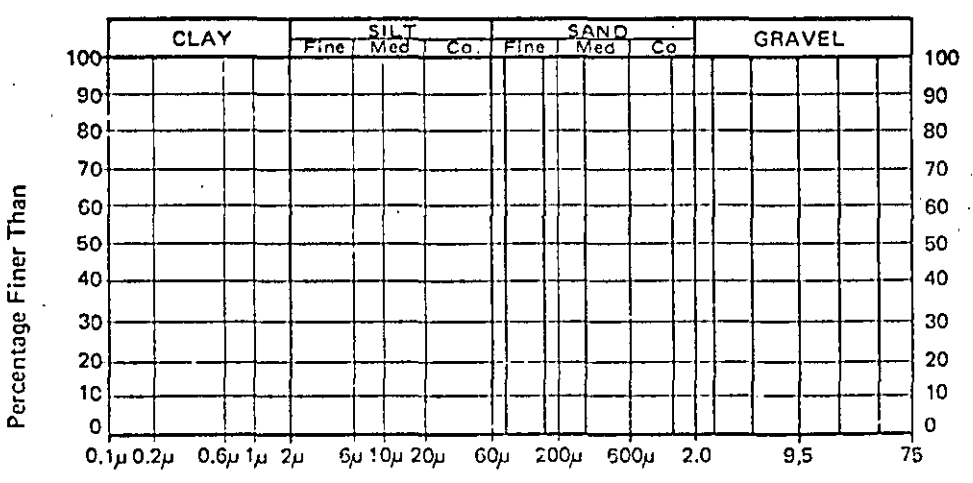
Description GW



B.H. No. .....

Depth .....

Description .....



B.H. No. .....

Depth .....

Description .....

SIEVE APERTURES USED

75.0 mm	4.75 mm	300 μm
9.50 mm	600 μm	

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. P13

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH 13.4 m

LOCATION 4354 m OFFSET 17m N

GROUND LEVEL 238.5 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.15						STARTED 29 9 72.
MEDIUM TO COARSE SAND.	0.8	U4 kJ B	909.3 609.0				
PEAT		U4 KJ	641.4				
	3.6	U4 KJ	33.5 24.4				
MEDIUM DENSITY GRAVEL WITH COBBLES AND A CLAYEY SANDY SILTY MATRIX.		U4 KJ W U4 B	13.5 13.9				WE AT 6.0 m
		U4 KJ	12.6 11.5				29.9.72 CASING 8.5 m 3.10.72 S.W.L 3.5 m
	9.4	B CP		GRADING	GW	19.	

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.50 - 0.95	-	-	-	-	-	-	TOP 225mm COARSE SAND PEAT PEAT
2.00 - 2.45	-	-	-	-	-	-	PEAT
3.50 - 3.95	1930	1550	23.5	-	-		CLAYEY GRAVEL
5.00 - 5.45	2250	1950	13.5	-	-	-	" "
6.50	-	-	-	-	-	-	NO RECOVERY
8.00 - 8.30	2240	1990	12.6	-	-	-	CLAYEY GRAVEL

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
6.00							NIL	6.5	WATER SAMPLE

GENERAL REMARKS

97

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. P13

SCHEME A59 DIVERSION WASHINGTON TO ACCRINGTON

DEPTH 13.4 m

LOCATION 4354 m OFFSET 17m W

GROUND LEVEL 238.5 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
WELL GRADED. GRAVEL WITH COBBLES.		B. CP		GRADING	GW	42	
	11.6						
STIFF SILTY WEATHERED MUDSTONE		U4 KJ.	11.9 74				
	12.8	CP. B.				51/76mm	
SILTY MUDSTONE	13.4	C.P.				50/10mm	3/10/72 CASING 12.8m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
12.00-12.45	2070	2025	11.9	154	77		200mm x 100mm

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

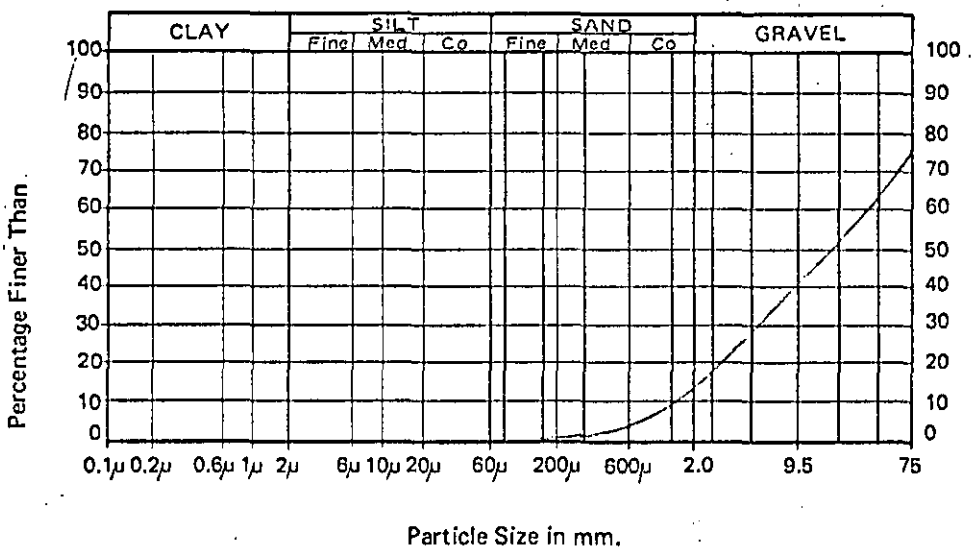
GENERAL REMARKS

93

LANCASHIRE COUNTY COUNCIL

JOB No. 367

PARTICLE SIZE DISTRIBUTION



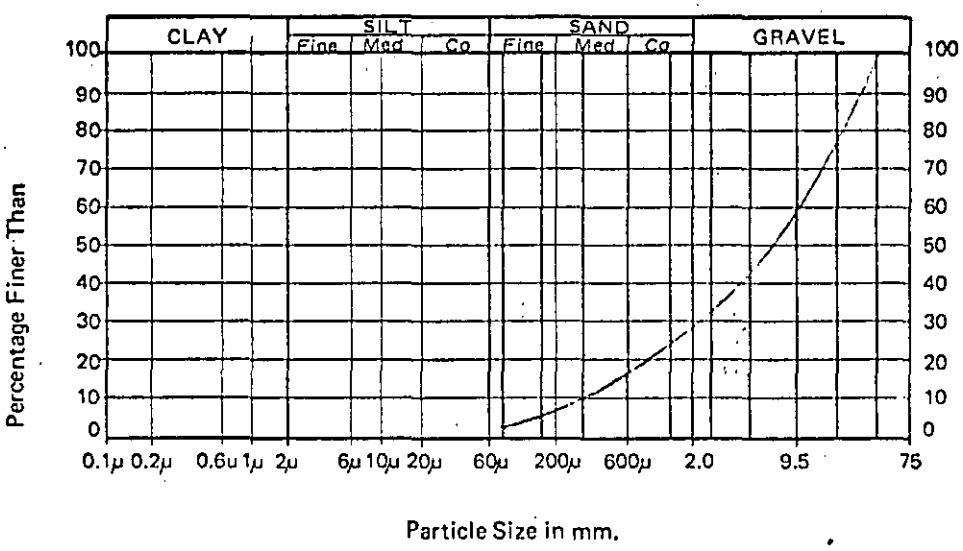
Percentage Finer Than

Particle Size in mm.

B.H. No. P13

Depth 9·5 m

Description G W



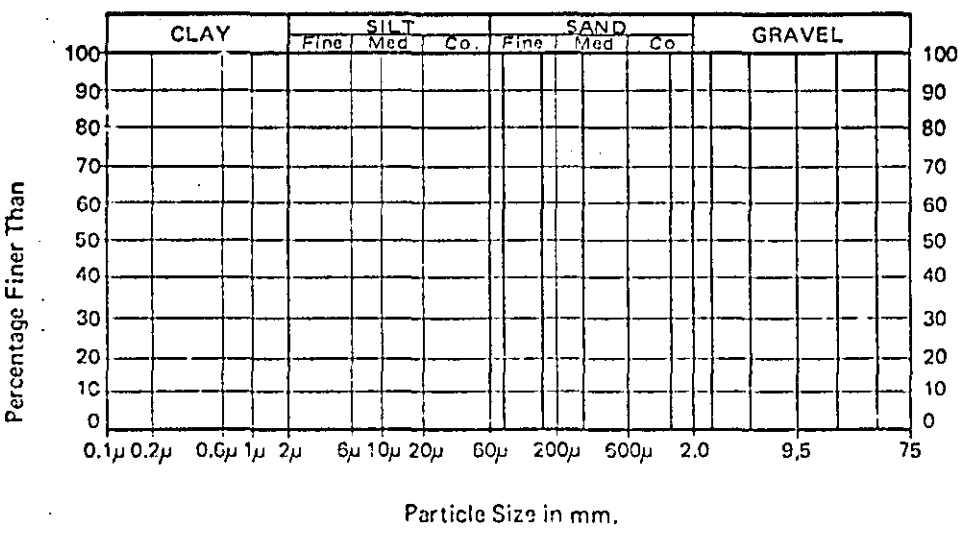
Percentage Finer Than

Particle Size in mm.

B.H. No. P13

Depth 11·0 m

Description G W



Percentage Finer Than

Particle Size in mm.

B.H. No. .....

Depth .....

Description .....

SIEVE APERTURES USED

75.0 mm	9.50 mm	600 μm
	4.75 mm	300 μm

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. P12

SCHEME A56 DIVERSION: HASLINGDEN TO ACCRINGTON

DEPTH 8.5 m

LOCATION 7950m OFFSET 37m E

GROUND LEVEL 259.5 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
PARTIALLY BURNT WELL GRADED COLLIERY WASTE. FILL.	1.8	U4 U4 U4 U4	10.3 13.3 8.2 14.8				SEALED 3/10/72
SOFT TO FIRM MOTTLED GREY/BROWN SILTY CLAY WITH GRAVEL. ABUNDANT PIECES OF MICACEOUS SHALE TOWARDS THE BASE	3.7	U4 U4 U4 B	20.0 23.0 25.8 10.2 20.2	43/33/40	CH		
LIGHT GREY WEATHERED MUDSTONE WITH CLAY FILLED JOINTS	5.8	U4 B S.P	11.6 16.2 10.6	44/21/25	CI	41	WE AT 4.5m
LIGHT GREY MUDSTONE	7.8	B. B C.R B. B.				50/104mm	3/10/72 CASING 6.0m. 4/10/72 S.WL 4.5m
DARK GREY MUDSTONE	8.5	CP				50/85mm	4/10/72 CASING 6.0m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.00-0.45	-	-	10.8	-	-		BURNT COLLIERY SHALE
0.50-0.95	-	-	13.3	-	-	-	"
1.00-1.45	-	-	8.2 14.8	-	-	-	AS ABOVE WITH BOTTOM 80mm UNBURNT SHALE
1.50-1.95	2040	1660	23.0	24	12	-	170mm x 100mm DIA.
2.00	-	-	25.8	-	-	-	CLAY & GRAVEL FILL
2.25	-	-	-	-	-	-	"
2.75-3.20	2240	1550	19.2	60	31	-	200mm x 105mm DIA
3.75-4.20	2440	2185	11.6	52	26	-	200mm x 100mm DIA

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
4.5							TRACE	6.0	WATER SAMPLE

GENERAL REMARKS

5

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. P15

SCHEME A59 DIVERSION HASLINGDEN/ACCRINGTON

DEPTH 12.5 m

LOCATION 9635m OFFSET 46m E

GROUND LEVEL 174.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.25	U4					CASING 2.15 m
SOFT MOTTLED GREY/BROWN SILTY CLAY WITH GRAVEL, SOME COBBLES AND COAL	0.9	U4	22.6		CI		
LOOSE WELL GRADED SAND AND GRAVEL WITH A VERY SOFT GREY-BROWN CLAYEY MATRIX.		U4					WE AT 1.3m
		B	16.7	32/13/9	CI		
		U4	18.1	GRADING	GC		
		KJ	17.8				
		SP.B	16.3			6	
	2.8	B	19.4	40/19/63	CI		SO AT 3.0m
VERY SOFT TO FIRM GREY-BROWN SILTY CLAY WITH GRAVEL. SANDIER IN PARTS, AND WITH VARVED SILTY CLAY INCLUSIONS. (BOULDER CLAY).		U4	11.6	61/25/36	CH		5.10.72 WL DRY CASING 3.0m 6.10.72 S.W.L. 1.25m
		KJ. W	10.4				
			10.1	69/25/44	CH		
		B					
	4.5	SP. B	14.8			12	
FIRM TO STIFF DARK GREY-BROWN SILTY CLAY WITH GRAVEL. SOME SMALL LENSES OF COARSE RED SAND. AT 4.75 M. INCLUSIONS OF VARVED SILTY CLAY. TOWARDS THE BASE (BOULDER CLAY).		U4	16.2				
		KJ	17.4				
		KJ	15.8				
		U4	14.2	42/17/25	CI		
		KJ	15.6				
		KJ	16.9				
		U4	29.2				6.10.72 CASING 7.0m 7.10.72 A/HOLE DRY
	7.5	CP.B	22.7	GRADING	G.W.	35	
DENSE WELL GRADED SANDY GRAVEL.	8.0	B	16.5				
		SP B.	22.8			50/230mm	
		B	25.4				7.10.72 A/H DRY
WEATHERED CARBONACEOUS SHALE		B	17.9				CASING 8.5m 8.10.72 BN--,
		U4					

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)*	Ø	Remarks
0.00-0.45	—	—	—	—	—	-	254mm OF TOPSOIL
0.75	—	—	—	—	—	-	SOFT CLAY COBBLES & GRAVEL
1.00	—	—	20.6	—	—	-	TOO SOFT & SANDY TO TEST
1.75-2.05	—	—	13.1	—	—	-	V SOFT & V WET, GRADING
2.75	1999	1712	16.6	156	78	-	75mm x 38mm DIA REMOULDS
3.00-3.30	2360	2113	11.6	42	21	-	300mm x 150mm DIA
4.50-4.95	2410	—	—	260	130	-	152mm x 100mm DIA
6.00-6.45	2432	2100	14.0	160	81	-	200mm x 100mm DIA
7.00-7.45	1921	1683	22.3	—	34	11°	100mm DIA TRIAXIALS

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO3 gm/litre	pH	Remarks or other tests
3.50							WATER	7.3	WATER SAMPLE

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. P15

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH 12.5 m

LOCATION 9658m OFFSET 46m E

GROUND LEVEL 174.0 m

Description of Stratum	Depth	Sample 1	Sample 2	Sample 3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
WEATHERED CARBONACEOUS SHALE					S.P B	7.0			50/152mm	
					B					
					SP B	11.2 11.7			50/133mm	
	12.5				SP B	9.1 12.1			50/80mm	9/10/72 CASING 10.5m.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2),	Ø	Remarks
9.50-9.90	-	-	-	-	-	-	WEATHERED MUDSTONE TOO FRIABLE TO TEST

COMPACTION AND OTHER TEST RESULTS

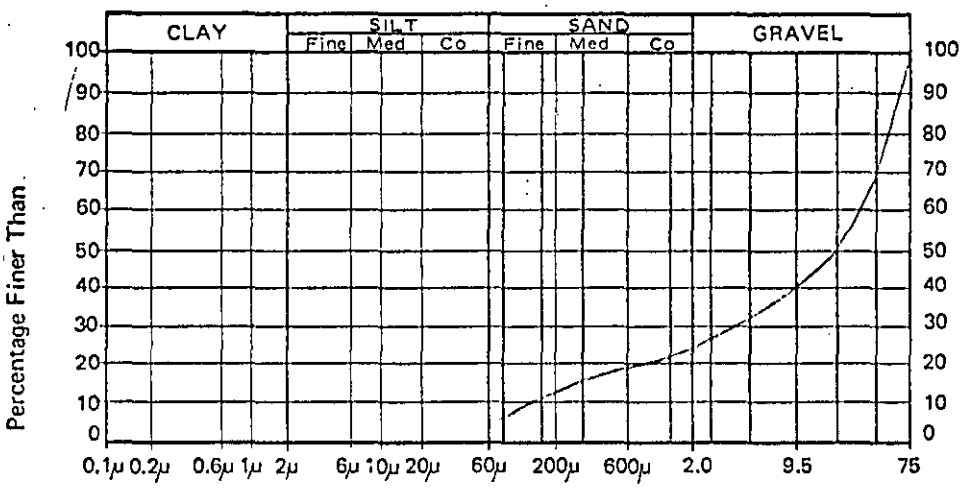
Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

LANCASHIRE COUNTY COUNCIL

JOB No. 367

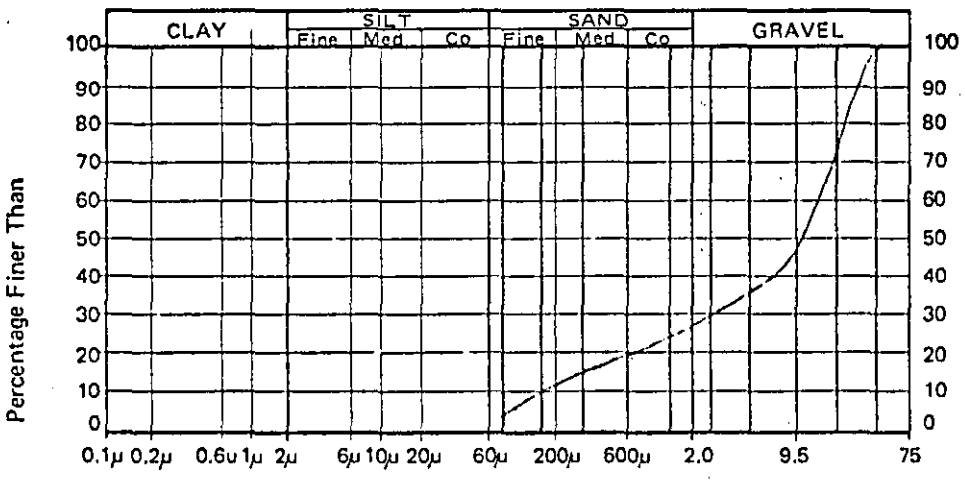
PARTICLE SIZE DISTRIBUTION



B.H. No. P15

Depth 1·8m

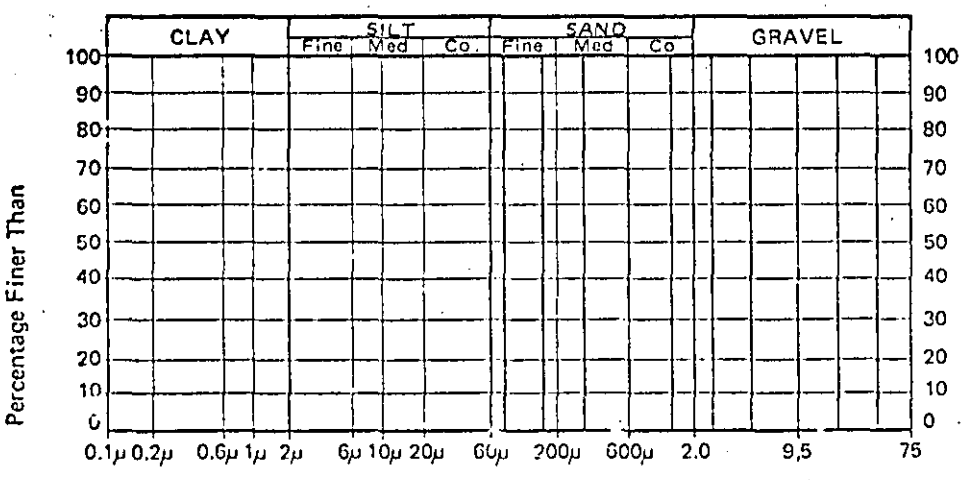
Description G.C.



B.H. No. P15

Depth 7·5m

Description G.W.



B.H. No. .....

Depth .....

Description.....

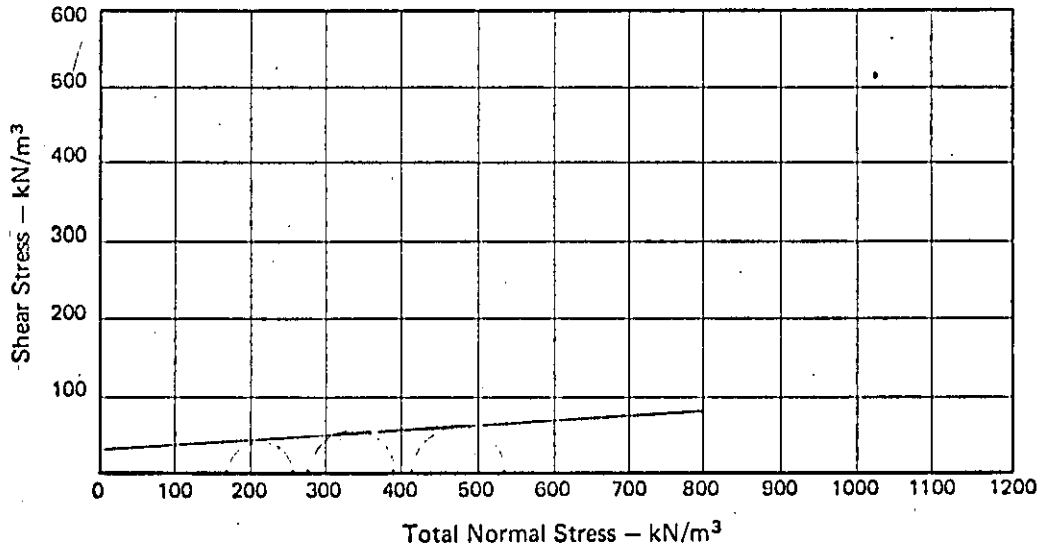
SIEVE APERTURES USED

	9.50 mm	600 μm
75.0 mm	4.75 mm	300 μm
37.5 mm	2.36 mm	150 μm

LANCASHIRE COUNTY COUNCIL

JOB No. 347

TRIAXIAL COMPRESSION TESTS (MOHR'S CIRCLES)



B.H. No. P15

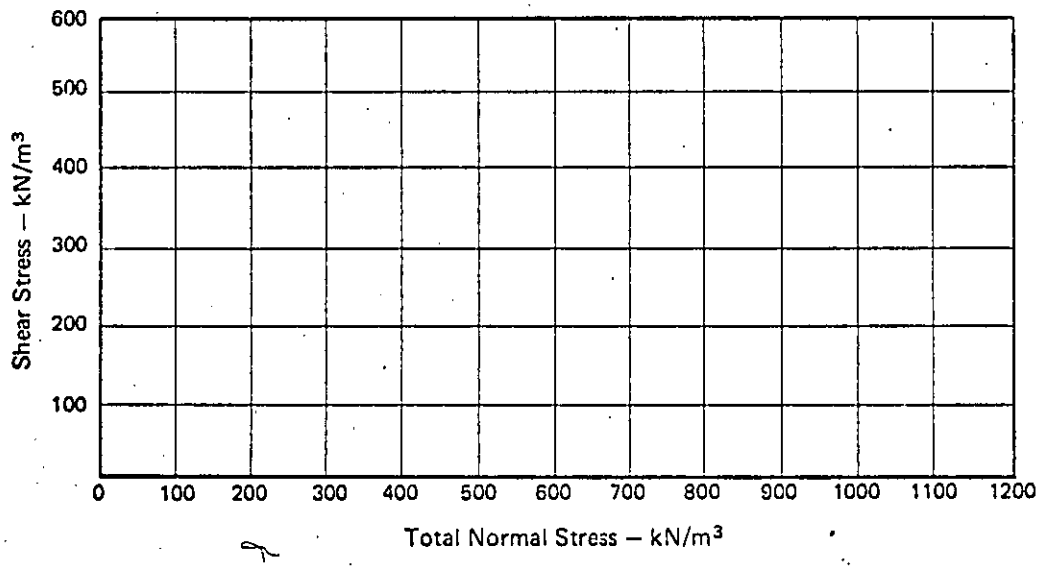
Depth 7.0m

Description

VARVED SILTY CLAY

c = 34 kN/m²

ϕ = 4°



B.H. No. .....

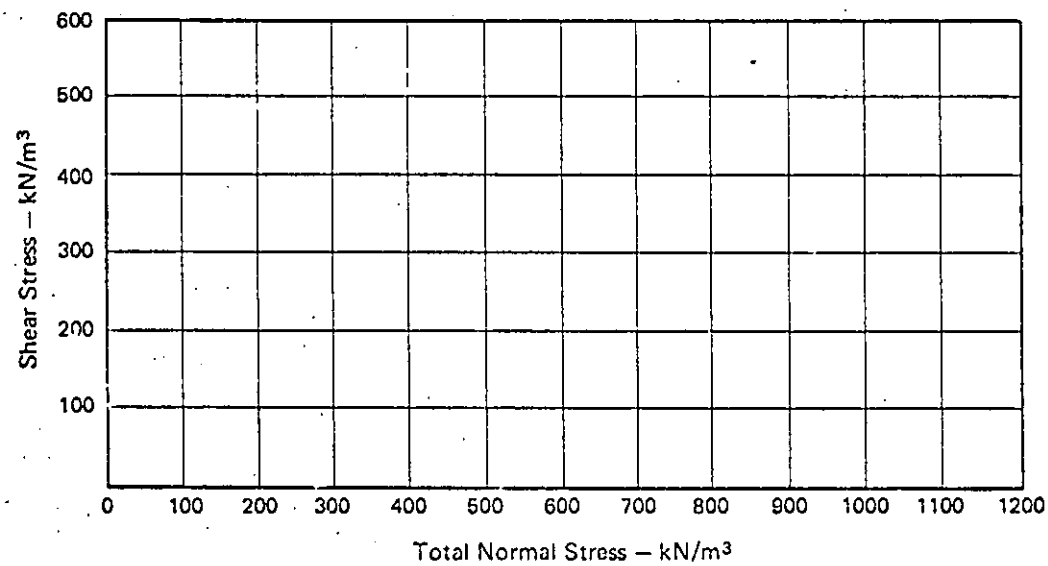
Depth .....

Description .....

.....

c = ...

ϕ = ...



B.H. No. .....

Depth .....

Description .....

.....

c = ...

ϕ = ...

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. P16

SCHEME A58 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH 12.0 m

LOCATION 0309 m (SLIP ROAD CHAINAGE) 45m NC of ℄

GROUND LEVEL 166.2 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL.	0.5						
SOFT TO FIRM. MOTTLED. YELLOW/BLUE-GREY/LIGHT BROWN. SILTY CLAY WITH SOME VEGATION. SOME SOFTER SANDIER PATCHES		U4	40.4				START'D 10.10.72
		KT	39.3				
		U4	30.9				
		KT	18.7	35/16/19	CL.		
				32/13/9	CL		
	1.8	U4	23.4				
		KT	15.3				10.10.72 B.H. "DRY"
							NO CASING. 11.10.72 S.W.L. 1.8m
SOFT TO FIRM GREY-BROWN SILTY CLAY WITH GRAVEL. (BOULDER CLAY)		KT	17.6	23/11/12	CL.		
		U4	11.1				
		KT	13.5				
		KT	17.2				
		U4	16.6				
		KT	16.7				
		KT	19.3				
		U4	14.9				
		KT	18.0				
		KT	17.7				
	7.8						
		U4	7.4				
WEATHERED BLACK CARBONACEOUS MUDSTONE		KT	9.6				
		SP.8	9.6			50/250mm	11.10.72 B.H. "DRY" CASING 8.0m 12.10.72 B.H. "DRY"
		8	9.4				

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.00 - 0.45	-	-	40.4	-	-	-	TOP 50mm TOPSOIL
0.75 - 1.15	1945	1455	30.9	16	8	-	200mm x 100mm DIA
1.50 - 1.80	-	-	23.4	-	-	-	TOO SHORT TO TEST
3.50 - 3.90	-	-	11.1	-	-	-	TOO SOFT & STONEY TO TEST
5.00 - 5.45	2168	1858	16.8	124	62		76mm x 38mm DIA CENSULDS
6.50 - 6.95	2025	1735	14.9	34	17		200mm x 100mm DIA
7.75 - 8.15	-	-	7.4	-	-		WEATHERED MUDSTONE TOO FRIABLE TO TEST

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

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Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 6 OF 9

JOB No. 367

B.H. No. P16

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH 12.0 m

LOCATION 03094m OFFSET 4.5m N.E

GROUND LEVEL 166.2 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
WEATHERED BLACK CARBONACEOUS MUDSTONE		ST B				50/175mm	
			7 6				
	12.0	SP				50/75mm	12.10.72 CASING 8.8m B.H. "DRY" O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion, (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

36

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 5

JOB No. 567

B.H. No. P17

SCHEME A56 DUKESSION HASLINGDEN TO ACCRINGTON

DEPTH 11.6 : 0 m

LOCATION 8500 m ℄

GROUND LEVEL 171.7 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.3	U/4 KJ					STARTED 24/11/82. B/H UNCASED.
FIRM MOTTLED YELLOW/ BROWN SANDY CLAY. (SUBSOIL)	1.5						
HARD BROKEN GREY - GREEN THINLY CROSS BEDDED FINE GRAINED SANDSTONE. (COLD LAWRENCE ROCK). JOINTING MAINLY VERTICAL; AT 7 IN JOINT AT 45°. BEDDING ALMOST HORIZONTAL. MARKED OXIDATION OF JOINTS AND BEDDING PLANES NEAR THE SURFACE AND AT 7.5M. A VERTICAL 5MM WIDE CLAY FILLED JOINT BETWEEN 7.5 AND 7.8M. SILTY BANDS BETWEEN 9.3 AND 10.2 M.				1.5 - 4.2 m 30% REC'Y			
				4.2 - 7.2 m 50% REC'Y			
				7.2 - 10.2 m 100% REC'Y			

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.00-0.40	-	-	27.9	-	-	-	TOPSOIL.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS ROTARY - AIR FLUSH.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 5

JOB No. 367

B.H. No. P17

SCHEME A56 DIVERSION HASSINGDEN TO ACCRINGTON

DEPTH 46.0 m

LOCATION 8500 m ℄

GROUND LEVEL 271.72 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
HARD MASSIVE GREY GREEN FINE GRAINED SANDSTONE JOINTS MAINLY VERTICAL BEDDING ALMOST HORIZONTAL	10.2			10.2 - 15.2 m 80% RECOVERY			
VERY HARD UNBROKEN GREY-GREEN SILTY MUDSTONE. MASSIVE.	15.2			15.2 - 15.6 m 65% RECOVERY			
DENSE RED-BROWN FINE TO MEDIUM SAND.	14.6						
VERY SOFT RED-BROWN FINE TO MEDIUM GRAINED SANDSTONE	15.6						
VERY HARD RED-BROWN FINE TO MEDIUM GRAINED SANDSTONE	15.8						
HARD BROKEN GREY-GREEN FINE GRAINED SANDSTONE SOME OXIDATION ON THE HORIZONTAL BEDDING PLANES.	16.3			15.6 - 16.6 m 80% RECOVERY			
SEE SHEET 3.	17.7						24/11/92
MUDSTONE PIECES IN A RESIDUAL CLAY MATRIX BETWEEN 17.7m AND 22.0m							

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 3 OF 5

JOB No. 367

B.H. No. P17

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH 46.0 m

LOCATION 8500 m S

GROUND LEVEL 211.5 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
HARD BROKEN DARK GREY MASSIVE SPHEROIDAL MUDSTONE. (ACCRINGTON MUDSTONE).				18.6 - 21.6 m 60% RECY			
JOINTING MAINLY VERTICAL BEDDING ALMOST HORIZONTAL				21.6 - 24.6 m 50% RECY			
SOME OXIDATION ON JOINTS AND BEDDING PLANES							
MUDSTONE PIECES IN A RESIDUAL CLAY MATRIX BETWEEN 26.0 AND 27.6 m.				24.6 - 27.6 m 50% RECY			
JOINTS OF 80° AND 60° AT 27.6 m.							27/11/72 SWL 11.1m
				27.6 - 30.6 m 60% RECY			

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 4 OF 5

JOB No. 367

B.H. No. P17

SCHEME A56 DIVERSION MASLINGDEN TO ACCRINGTON DEPTH 41.6 m

LOCATION 8500 m E GROUND LEVEL 127.4 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
HARD BROKEN DARK GREY MASSIVE SPHEROIDAL MUDSTONE (ACCRINGTON MUDSTONE) JOINTS MAINLY VERTICAL BEDDING ALMOST HORIZONTAL. SOME OXIDATION ON AND BEDDING PLANES. JOINT OF 60° AT 33.7m. MUDSTONE PIECES IN A RESIDUAL CLAY MATRIX BETWEEN 30.0 AND 33.7m.				30.6 - 33.7m 40% RECOV			SWL 14.7m AFTER 5 MINS 14.2m " 10 " 14.1m " 15 "
							SWL 16.2m AFTER 5 MINS 16.0m " 10 " 15.8m " 15 "
				33.7 - 36.8m 70% RECOV			
							SWL 18.4m AFTER 5 MINS 17.6m " 10 " 17.2m " 15 "
				36.8 - 40.0m 30% RECOV			
							SWL 20.6m AFTER 5 MINS 19.4m " 10 " 17.8m " 15 "
JOINT AT 37.0 AT 42.3m							

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 5 OF 5

JOB No. 367

B.H. No. P17

SCHEME A56 DUALLING WASHINGTON TO ACCRINGTON

DEPTH 46.0 m

LOCATION 8500m E

GROUND LEVEL 27.7 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
40 HARD BROKEN LIGHT GREY MASSIVE SPHEROIDAL MUDSTONE							
41 (ACCRINGTON MUDSTONE). JOINTING MAINLY VERTICAL BEDDING ALMOST HORIZONTAL				40.0 – 43.0m 50% REC'Y			
42 SOME OXIDATION ON JOINTS AND BEDDING PLANES.							SWL 14.0m AFTER 5M 15.0m " 12 12.4m " 15
43 JOINTS OF 30° AND 50° BETWEEN 43.2 AND 46.0m.							
44 MUDSTONE PIECES IN A RESIDUAL CLAY MATRIX BETWEEN 40.0 AND 40.3m 43.0 AND 43.2m				113.0 – 116.0m 60% RECOV			
45							SWL 20.6m AFTER 5M 19.4m " 10 18.4m " 15 27/11/72
46	46.0						

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 5

JOB No. 367

B.H. No. P18

SCHEME A56 DIVERSION HALLAGDEAL TO ACCRINGTON

DEPTH 49.4 m

LOCATION 5737m OFFSET 58m W.

GROUND LEVEL 269.3 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
LOOSE MUDSTONE AND SANDSTONE PIECES.							STARTED 6/12/72 B/H CASED TO 2.5 m
	1.5						
HARD BROKEN GREY-GREEN FINELY BEDDED FINE GRAINED SANDSTONE (OLD LAWRENCE ROCK) JOINTS MAINLY VERTICAL. JOINT OF 45° AT 5.5M BEDDING ALMOST HORIZONTAL. MARKED OXIDATION OF JOINTS AND BEDDING PLANES.				1.5 - 4.0 m 30% Rec'y			6/12/72 P/L DRY CASING 2.5m 7/12/72 SWL 1.0m
				4.0 - 7.0 m 30% Rec'y			S.W.L 1.5m AFTER 5m " 1.5m " 10 " 1.5m " 15 "
	7.5						
HARD BROKEN DARK GREY MUDSTONE OXIDATION ON ALMOST HORIZONTAL BEDDING PLANES				7.0 - 10.0 m 20% Rec'y			
	5.5						
							SWL 2.5m AFTER 5 MIN. " 2.4m " 10 " " 2.3m " 15 "

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS ROTARY - AIR FLUSH

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 5

JOB No. 367

B.H. No. P18

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH 142.4 m

LOCATION 8737m OFFSET 58m W.

GROUND LEVEL 245.3 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
THINLY BEDDED GREY FINELY GRAINED SANDSTONE. JOINTS MAINLY VERTICAL BEDDING PLANES DIP AT 10° MARKED OXIDATION OF JOINTS AND BEDDING PLANES. CROSS BEDDED BETWEEN 10.0 AND 10.1m				10.0 - 13.0m 30% REC'Y			
	13.0						S.W.L. 2.90m AFTER 5m " 2.80m " 10 " 2.70 " 15.
HARD BROKEN GREY - GREEN THINLY CROSS BEDDED FINE GRAINED SANDSTONE (CARB LAWRENCE ROCK). JOINTS MAINLY VERTICAL JOINT OF 45° AT 14.5 M BEDDING ALMOST HORIZONTAL				13.0 - 16.3m 25% REC'Y			
BANDS OF HARDER UNBEDDED SANDSTONE BETWEEN 16.3 AND 19.4m							7/12/72. S.W.L. 3.0m AFTER 5m " 2.9m " 10 " 2.8m " 15" 8/12/72 S.W.L 2.80m
				16.3 - 19.4m 30% REC'Y			
	19.4						S.W.L 16.10m AFTER 5m " 12.20m " 10 " 10.05m " 15"

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 3 OF 5

JOB No. 367
B.H. No. P18
DEPTH 49.4 m
GROUND LEVEL 268.3 m

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

LOCATION SYxxx OFFSET 58m W

Scale (m)	Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
20	HARD BROKEN DARK GREY MASSIVE SPHEROIDAL				19.4 - 22.4m			
21	MUDSTONE. (ACCRINGTON MUDSTONE) JOINTING MAINLY VERTICAL				30% RECY			
22	BETWEEN 22.4 AND 31.4m VERTICAL JOINTS AT 90°							S.W.L 11.60m AFTER 5m " 8.10m " 10 " " 6.60m " 15 "
23	TO EACH OTHER. OXIDATION ON SOME JOINTS AND BEDDING PLANES.				22.4 - 25.4m			
24	MUDSTONE PIECES IN A RESIDUAL CLAY MATRIX ARE FOUND BETWEEN:-				30% REC'Y			
25	22.4 AND 25.4m.							S.W.L 14.10m AFTER 5m " 13.70m " 10 " " 13.10m " 15 "
26					25.4 - 28.4m			
27					50% REC'Y			
28					28.4 - 31.4m			8/10/72 S.W.L 18.20m AFTER 5m " 17.60m " 10 " 16.60m " 15
29					20% REC'Y			9/10/72 S.W.L 5.?
30								

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 4 OF 5

JOB No. 367

B.H. No. P16

SCHEME A56 WIDENING WASHINGTON TO ACCRINGTON.

DEPTH 49.41 m

LOCATION 5785m OFFSET 58m W

GROUND LEVEL 26.83 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
HARD BROKEN DARK GREY MASSIVE SPHEROIDAL MUDSTONE (ACCRINGTON MUDSTONE) JOINTING MAINLY VERTICAL BEDDING ALMOST HORIZONTAL OXIDATION ON SOME JOINTS AND BEDDING PLANES. JOINT OF 45° AT 36.0m MUDSTONE PIECES IN A RESIDUAL CLAY MATRIX BETWEEN 32.0. AND 34.4m				31.41 - 31.41 m 30% REC'Y			SWL 19.1m AFTER 5 MIN " 17.8m " " " " 17.1m " " "
							SWL 26.6m AFTER 5 MIN " 25.6m " 10 " " 25.0m " 15 " 9/12/72 11/12/72 S.WL 20.1
				34.4 - 37.41 m 50% REC'Y			
							S.WL. 30.60m AFTER 5. " 29.40m " 10 " 29.10m " 15.
				37.41 - 110.4 m 25% REC'Y			

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 5 OF 5

JOB No. 367

B.H. No. P19

SCHEME A56 TRUNKROAD IMPROVEMENT ACCRINGTON

DEPTH 49.4 m

LOCATION [illegible] m OFFSET 58m W.

GROUND LEVEL 268.3 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
40 MUDSTONE BROKEN INTO GREY MASSIVE SPHEROIDAL MUDSTONE. (ACCRINGTON MUDSTONE) JOINTING MAINLY VERTICAL 41 BEDDING ALMOST HORIZONTAL OXIDATION ON SOME 42 JOINTS AND BEDDING PLANES. 43 MUDSTONE PIECES IN A RESIDUAL CLAY MATRIX BETWEEN 41.0 AND 43.4m 44 45.0 AND 49.4m. 45 46 47 48 49	49.4			40.4 – 43.4m 50% REC'Y 43.4 – 46.4m 90% REC'Y 46.4 – 49.4m 20% REC'Y			SWL 33.3 m AFTER 5' " 32.3 m " 10' " 31.3 m " 15' 11/10/72 13/10/72 SWL 30.6m AFTER 5' " 29.0 " " 10' " 28.1 " " 15' SWL 42.6 m AFTER 5' " 42.1 " " 10' " 41.1 " " 15' SWL 44.1 AFTER 5' " 45.9m " 10' " 45.1m " 15' 10/10/72.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 7

JOB No. 367

B.H. No. P19

SCHEME A56 DUALLING M6 JUNCTION 19 TO ACCRINGTON

DEPTH 61.0 m

LOCATION 8748 m OFFSET 140m E

GROUND LEVEL 234.2 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FIRM MOTTLED GREY/BROWN SANDY SILTY CLAY.	0.6	U4					STARTED 22/11/72.
HARD BROKEN GREY-BLUE FINELY CROSS BEDDED FINE TO MEDIUM GRAINED SANDSTONE. (OLD LAWRENCE ROCK) JOINTS MAINLY VERTICAL. BEDDING ALMOST HORIZONTAL. OXIDATION ON JOINTS AND BEDDING PLANES.				0.6 - 3.6m 20% REC'Y			WE AT 2.00M.
				3.6 - 6.6m 40% REC'Y			S.W.L. 5.8 AFTER 5 MIN " 5.6 " 10 " " 5.6 " 15 "
VERY WEATHERED DARK GREY-GREEN MUDSTONE IN A RESIDUAL CLAY MATRIX. SOME COARSER SILTY MUDSTONE PARTS.	7.0			6.6 - 9.5m 65% REC'Y			S.W.L. 7.4M AFTER 5 MIN " 6.9M " 10 " " 6.1M " 15 "
	9.8						

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 7

JOB No. 367

B.H. No. P 17

SCHEME A56 DUALLING M6 JUNCTION 31 TO ACCRINGTON

DEPTH 61.0 m

LOCATION 5748m OFFSET 120m E

GROUND LEVEL 93.0 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
HARD BROWN GREY MOTTLED FINELY CROSS BEDDED FINE TO MEDIUM GRAINED SANDSTONE. (OLD LAWRENCE ROCK) JOINTS MAINLY VERTICAL JOINTS OF 11.5° BETWEEN 8.5 AND 9.6m. A 5mm WIDE CLAY FILLED JOINT AT 15.5m. BEDDING ALMOST HORIZONTAL. OXIDATION OF JOINTS AND BEDDING PLANES.				8.5 - 12.5m 95% Rec'y			SWL 9.5m AFTER 5mi " 8.3m " 10 " " 7.3m " 15 "
				12.0 - 15.0m 100% Rec'y			
							S.WL. 10.8m AFTER 5mi " 9.4m " 10 " " 8.1m " 15 " 28/1/72 29/1/72 S.W.L 11.1
				15.0 - 18.0m 75% Rec'y			
							S.WL 16.5m AFTER 5mi " 16.3m " 10 " " 15.9m " 15 "
HARD BROKEN DARK GREY MASSIVE, SPHEROIDAL MUDSTONE (ACCRINGTON MUDSTONE)	18.0			15.0 - 21.0m 100% Rec'y			

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

C87A L6272 TayPic

(2)

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 5 OF 7

JOB No. 567

B.H. No. P19

SCHEME A56 DUALLING LANSLEY HALL - ACCRINGTON

DEPTH 61.9 m

LOCATION 8748m OFFSET 140m T

GROUND LEVEL 111.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
HARD BROWN DARK GREY MASSIVE SPHEROIDAL MUDSTONE (ACCRINGTON MUDSTONE). JOINTS MAINLY VERTICAL BEDDING ALMOST HORIZONTAL OXIDATION ON SOME JOINTS AND BEDDING PLANES.				P1.0 - 21.4m 50% REC'y			S.W.L 20.5m AFTER 5 MIN. " 20.5m " 10 " " 20.0m " 15 "
							S.W.L 25.7m AFTER 5 MINS. " 25.6m " 10 " " 22.1m " 15 "
				24.4 - 27.4m 60% REC'y			
							S.W.L 26.9m AFTER 5 MINS. " 26.2m " 10 " " 25.5m " 15 "
				27.4 - 30.6m 60% REC'y			

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 4 OF 7

JOB No. 367

B.H. No. P19

SCHEME A56 DUALLING WHALLEY - ACCRINGTON

DEPTH 61.0 m

LOCATION 874.0 m OFFSET 1140 m E

GROUND LEVEL 23.1 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
HARD BROKEN DARK GREY MASSIVE SPHEROIDAL MUDSTONE (ACCRINGTON MUDSTONE) JOINTS MAINLY VERTICAL BEDDING MOST HORIZONTAL OXIDATION ON SOME JOINTS AND BEDDING PLANES. JOINTS OF 45° AT 38.0 AND 40.0m VERTICAL JOINTS AT 15° AND 50° TO EACH OTHER AT 32.0 & 35.0m MUDSTONE PIECES IN A RESIDUAL CLAY MATRIX BETWEEN 30.0 AND 36.0m.								SWL 29.7M AFTER 5 MIN " 28.9M " 10 " " 28.5M " 15 "
				30.6 - 33.6m 30% REC'Y			
							SWL 31.0M AFTER 5 MIN " 29.1M " 10 " " 28.7M " 15 " 29/11/72 30/11/72 S.WL 16.2
				33.6 - 37.0m 30% REC'Y			
							SWL 35.0M AFTER 5' " 34.1M " 10 " " 33.8M " 15 "
				37.0 - 40.0m 75% REC'Y			SWL 38.1 AFTER 5 MIN " 37.2 " 10 " " 37.2 " 15 "

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 5 OF 7

JOB No. 367

B.H. No. P19

SCHEME A56 DUALLING HASLINGDEN TO ACCRINGTON

DEPTH 61.0 m

LOCATION 8748m OFFSET 14.0m E

GROUND LEVEL 208.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
HARD BROKEN DARK GREY MASSIVE SPHEROIDAL MUDSTONE. (ACCRINGTON MUDSTONE). JOINTS MAINLY VERTICAL BEDDING ALMOST HORIZONTAL OXIDATION ON SOME JOINTS AND BEDDING PLANES. JOINTS OF 115° AT 41.5m AND 49.8m. MUDSTONE PIECES IN A RESIDUAL CLAY MATRIX BETWEEN 43.0 AND 45.0m				40.0 - 45.0m 75% REC'Y			SWL 41.0m AFTER 5 MIN " 40.1m " 10 " " 39.6m " 15 "
				45.0 - 46.0m 40% REC'Y			SWL 44.0m AFTER 5 MIN " 43.7m " 10 " " 42.9m " 15 "
				46.0 - 49.0m 100% REC'Y			SWL 46.9m AFTER 5 " 46.1m " 10 " " 45.4m " 15 "

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 6 OF 7

JOB No. 367

B.H. No. P19

SCHEME A56 DUALLING HASLINGDEN TO ACCRINGTON

DEPTH 61.0 m

LOCATION [illegible] OFFSET 11.0m R

GROUND LEVEL [illegible] m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
HARD BROKEN DARK GREY MASSIVE SPHEROIDAL MUDSTONE. (ACCRINGTON MUDSTONE.) JOINTS MAINLY VERTICAL BEDDING ALMOST HORIZONTAL. OXIDATION ON SOME JOINTS AND BEDDING PLANES. MUDSTONE PIECES IN A RESIDUAL CLAY MATRIX BETWEEN 51.0 AND 52.0m 56.5 AND 58.0m				49.0 - 50.0m 50% RECY			30/11/72 2/12/72 S.W.L 14.4
				52.0 - 55.0m 50% RECY			S.W.L 15.0 AFTER 5 MINS " 14.6H " 10 " " 14.4H " 15 "
				55.0 - 58.0m 40% RECY			S.W.L 15.5 AFTER 5 MINS " 15.9 " 10 " " 15.1 " 15 " 2/12/72 4/12/72 S.W.L 14.0
				58.0 - 61.0m 10% RECY			

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

C87A L6272 TayPig

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 11 OF 7

JOB No. 367

B.H. No. P19

SCHEME ASC DIVERSION HASLINGDEN TODDRINGTON

DEPTH 61.0 m

LOCATION 8748 m OFFSET 1.40m E

GROUND LEVEL 284.2 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
60 HARD BROKEN DARK GREY MASSIVE SPHEROIDAL MUDSTONE							
61 (TODDRINGTON MUDSTONE)	61.0						SWL 14.2m AFTER 5mins " 15.0m " 10 " " 15.0m " 15 " 4/12/72

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

C87A L6272 TayPig

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. HA 10/2

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH 6.5 m

LOCATION 9480 m OFFSET 18m E

Est. GROUND LEVEL 180.5 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.3						STARTED 9.10.72
SOFT MOTTLED YELLOW/ GREY/BROWN FRIABLE SILTY SANDY CLAY WITH GRAVEL AND COBBLES		U4 KJ	36.6 12.7 18.5		CI.		
FIRM DARK GREY-BROWN SILTY CLAY WITH GRAVEL (BOULDER CLAY)	1.50						
	2.50	U4 KJ	24.2 16.9		CI		
VERY STIFF DARK GREY-BROWN SILTY CLAY WITH GRAVEL (BOULDER CLAY)		U4 KJ	13.5 14.0 11.6		CL		
		U4 KJ	11.6 11.7				
	5.7	SP	9.8			38/75mm	9.10.72 B.H. DRY CASING 5.8m
BLACK MICACEOUS SHALE		B					10.10.72 B.H. DRY.
	6.5	SP.	11.5			75/63mm	10.10.72 CASING 6.0m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.50 - 0.95	2255	1650	36.6	58	29	-	200mm x 100mm DIA
2.00 - 2.45	2240	1800	24.2	70	35	-	200mm x 100mm DIA
3.50 - 3.95	2325	-	-	300	150	-	200mm x 100mm DIA
5.00 - 5.25	-	-	11.6	-	-	-	SAMPLE TOO SHORT TO TEST

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS LOW RESULT AT 0.50m PROBABLY CAUSED BY SAND PATCHES.

54

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. HA 15/2

SCHEME A56 DUALLING HASLINGDEN TO ACCRINGTON

DEPTH 13.0 m

LOCATION [illegible] OFFSET 32 m E

Est. GROUND LEVEL 272.0 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL. SOFT TO FIRM MOTTLED GREY/BROWN/ORANGE FRIABLE SANDY SILTY CLAY WITH GRAVEL.	0.2	U4 KJ	23.9				STARTED 15.12.71 UNCASED HOLE
		U4	16.2	28/12/10	CL		
		KJ	13.1				
STIFF DARK GREY BROWN SILTY CLAY WITH GRAVEL.	2.5			26/19/7	CL		
		U4	9.4				
		KJ	15.2				
HARD, BROKEN MEDIUM GREY THINLY BEDDED MEDIUM TO COARSE GRAINED MICACEOUS SANDSTONE. JOINTS MAINLY VERTICAL. BEDDING ALMOST HORIZONTAL. BLACK WEATHERING DEPOSITS ON SOME BEDDING PLANES.	4.5			4.5 - 6.0 m 30% REC'Y			
				7.5 - 10.5 m 55% REC'Y			

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.00 - 0.35	–	–	-	–	-	-	TOPSOIL
1.50 - 1.80			16.2				TOO STONEY TO TEST
3.00 - 3.30			9.4				TOO STONEY TO TEST

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS ROTARY - AIR FLUSH

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 3 OF 3

JOB No. 367

B.H. No. HA 15/2

SCHEME A56 DUKINFIELD - HASLINGDEN TO ACCRINGTON

DEPTH 13.0 m

LOCATION 6000m OFFSET 9.2m L

Est GROUND LEVEL 222.0 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
HARD BROWN MUDSTONE GREY THINLY BEDDED MEDIUM TO COARSE GRAINED MICACEOUS SANDSTONE JOINTS MAINLY VERTICAL BEDDING ALMOST HORIZONTAL BLACK WEATHERING DEPOSITS ON SOME BEDDING PLANES.	13.0			10.5 - 13.0 m 50% REC'Y			15.12.72 B.H. DRY 16.12.72 S.W.L 1.0m 16.12.72 S.W.L. 2.2m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS ROTARY - AIR FLUSH

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. HA 20/5

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH 9.5 m

LOCATION 5000 m OFFSET 37m E

GROUND LEVEL 227.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL							STARTED 27.9.72
SOFT TO FIRM MOTTLED GREY/BROWN V. SANDY CLAY WITH GRAVEL. LEECHED.	0.2	U4					
		U4	18.6				
	1.5	B	19.7				
STIFF DARK GREY-BROWN SILTY CLAY WITH GRAVEL, COBBLES AND SOME SAND LENSES. A SOFT ZONE AT 2.5 M.		B	11.6				
		U4					29.9.72 B/H DRY CASING 1.5 m
		B	16.5	32/14/18	CL.		30.9.72 B/H DRY
	3.5	SPT B	13.1			22.	
WEATHERED CARBONACEOUS SHALE WITH A VERY SOFT DARK BROWN CLAY MATRIX (SHALE BOULDER)		B					
	4.4						
STIFF BROWN SILTY CLAY WITH GRAVEL.	5.0	SPT B	12.1			19	
			19.0				
SOFT DARK GREY-BROWN SILTY CLAY WITH SOME SAND LENSES.		U4					30.9.72 B/H DRY
		B					CASING 5.5 m 2.10.72 B/H DRY
	6.8	U4					
VERY WEATHERED MEDIUM GRAINED SANDSTONE.		CP				50/64mm	2.10.72 CASING 7.0m B/H DRY & W.C.
	8.5	CP				50/51	

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.00-0.35	—	—	—	—	—	—	TOP 229 mm TOPSOIL REMAINDER SOFT SANDY CLAY
0.75-1.15	2315	1905	18.6	119	59	—	
1.75-2.20	—	—	11.5	—	—	—	TOO MUCH GRANULAR MATERIAL TO TEST
5.25-5.70	—	—	—	—	—	—	NO RECOVERY
6.75	—	—	—	—	—	—	WEATHERED MED. GRAINED SANDSTONE

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m.3)	M.C. (%)	S G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

LANCASHIRE COUNTY COUNCIL

JOB No. 367

BOREHOLE DATA SHEET No. 1 OF 2

B.H. No. 114 22/2

SCHEME A56 DIVERSION HASLINGDEN TO ACCRINGTON

DEPTH 12.0 m

LOCATION 4830 m OFFSET 15m E

E.N. GROUND LEVEL 239.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.3						STARTED 27/9/72
FIRM TO STIFF GREY-BROWN SILTY CLAY WITH GRAVEL AND SOME COBBLES	1.0	B U4					
		B.				30/75mm	
FIRM TO STIFF GREY-BROWN SILTY CLAY WITH GRAVEL AND COBBLES. THE GRAVEL IS STRATIFIED IN PLACES. SOFTER ZONES AT 1.50m, 6.0m AND 17.5m.		SP B	9.7			37.	
			11.3				
		SP B				24	
		SP B	9.8			43	
			12.5 12.0				
			12.9				
		SP B.	14.6	23/11/12	CL	37	27.9.72 S/H DRY CASING 7.0m 28.9.72 C/H DRY
		U4 KJ	12.1 16.2	32/12/20	CL		
	8.8						
SOFT TO FIRM DARK-GREY BROWN VARVED SILTY CLAY		U4 KJ W	32.5 32.9	55/23/32	CH		W.E. AT 9.8m
	9.9						

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.50-0.80	—	—	—	—	—	—	MOTTLED SILTY CLAY + ABUNDANT GRAVEL
8.00-8.15	2175	1900	14.1	386	193	—	76mm x 38mm dia. REMOULDS
9.00-9.30	2210	1920	14.1	92	46	—	76mm x 38mm dia REMOULDS
9.00-9.30	1550	1385	32.5	—	60	5	76mm x 38mm DIA REMOULD TRIAXIAL

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
9.75							TRACE	7.0-7.5	WATER SAMPLE

GENERAL REMARKS

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. IIA 22/2

SCHEME A.50 DIVISION HASLINGDEN TO ACCRINGTON

DEPTH 12.0 m

LOCATION 4.2 U.S. OFFSET 15m E

Est GROUND LEVEL 239.0 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
MEDIUM DENSITY. WELL GRADED GRAVEL.		C.P				28	
FINE GRAINED SILTY SANDSTONE.	11.5	B C.P.		GRADING	GP	N = 50 for 60mm N = 50 for 10mm	28.9.72 B.H. "DRY" CASING 11.5m 29.9.72 S.W.L. 6.0m
	12.0	B.CP					29.9.72 B.H. "DRY" CASING 11.8m.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

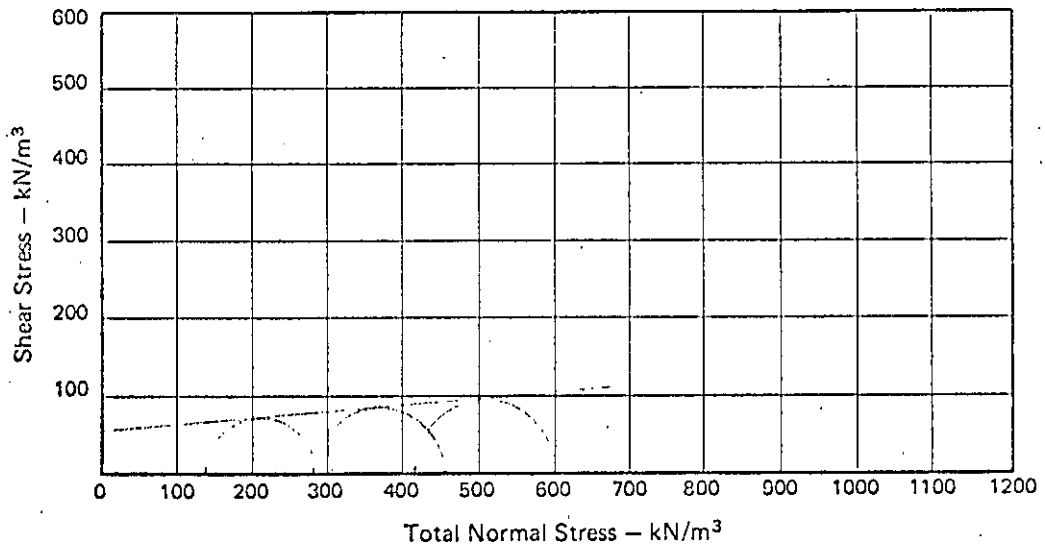
Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

LANCASHIRE COUNTY COUNCIL

JOB No. 367

TRIAXIAL COMPRESSION TESTS (MOHR'S CIRCLES)



B.H. No. HA 22/B

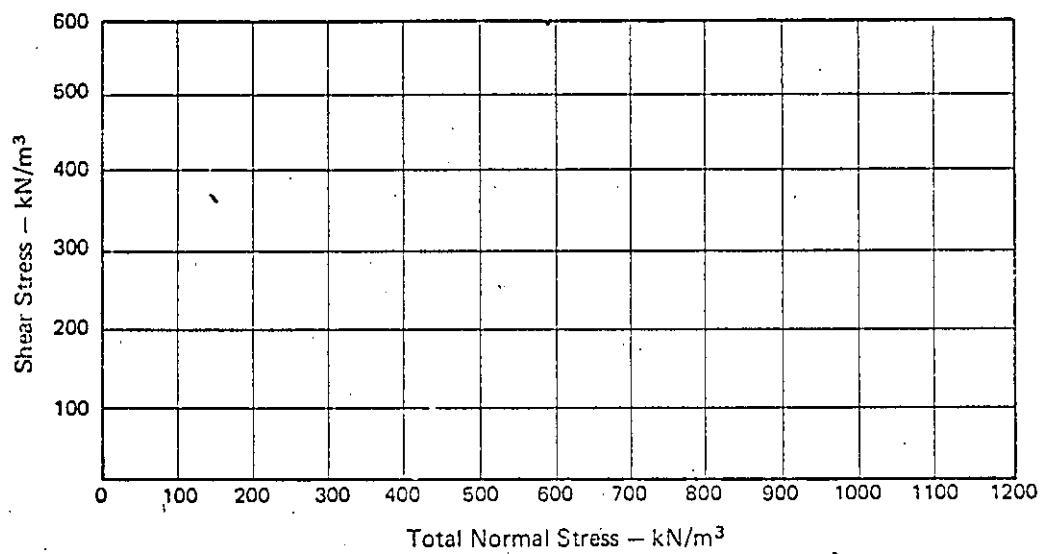
Depth 9.0 m

Description

VARVED SILTY CLAY

c = 60 KN/m²

ϕ = 5°



B.H. No. .....

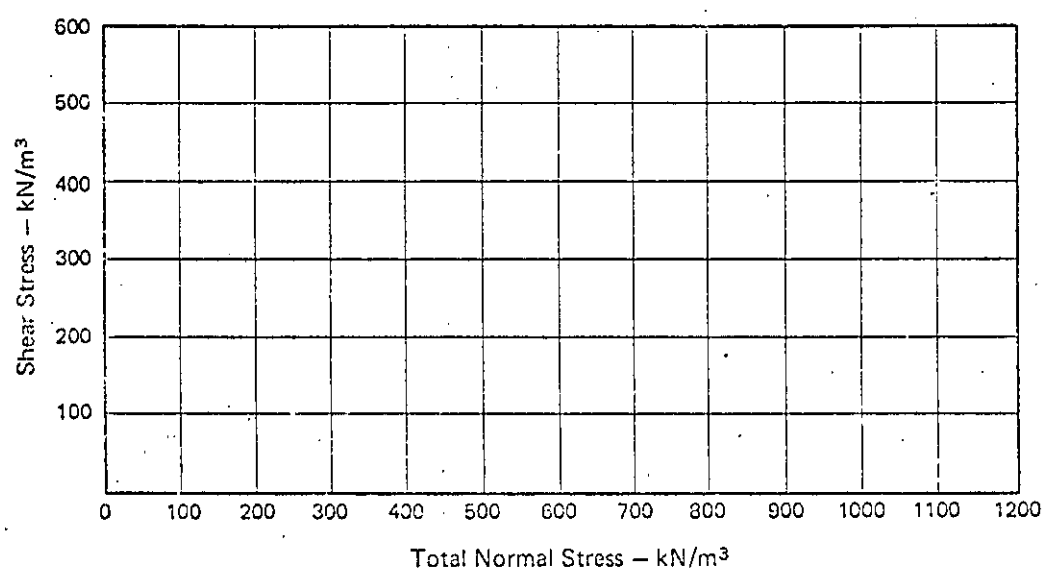
Depth .....

Description .....

.....

c = ...

ϕ = ...



B.H. No. .....

Depth .....

Description .....

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c = ...

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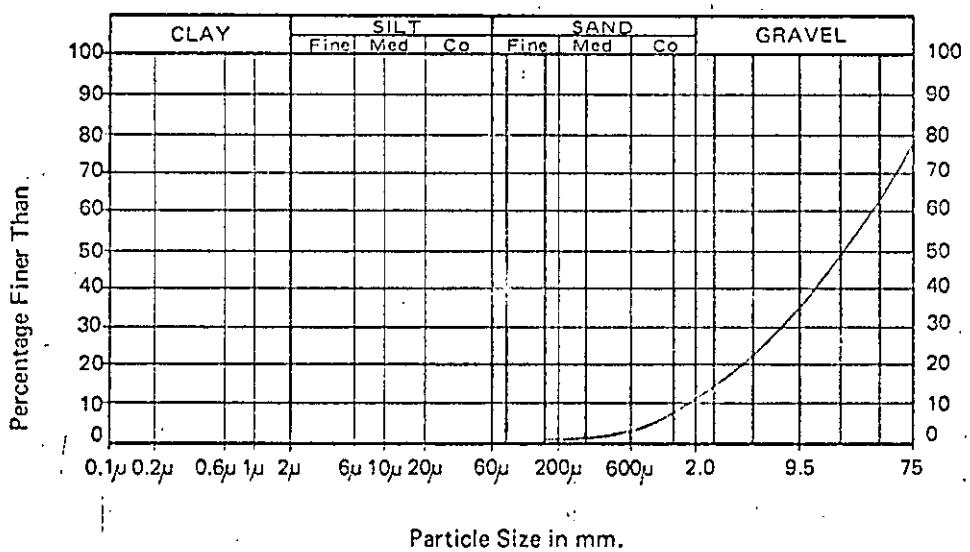
LANCASHIRE COUNTY COUNCIL

JOB No. 367

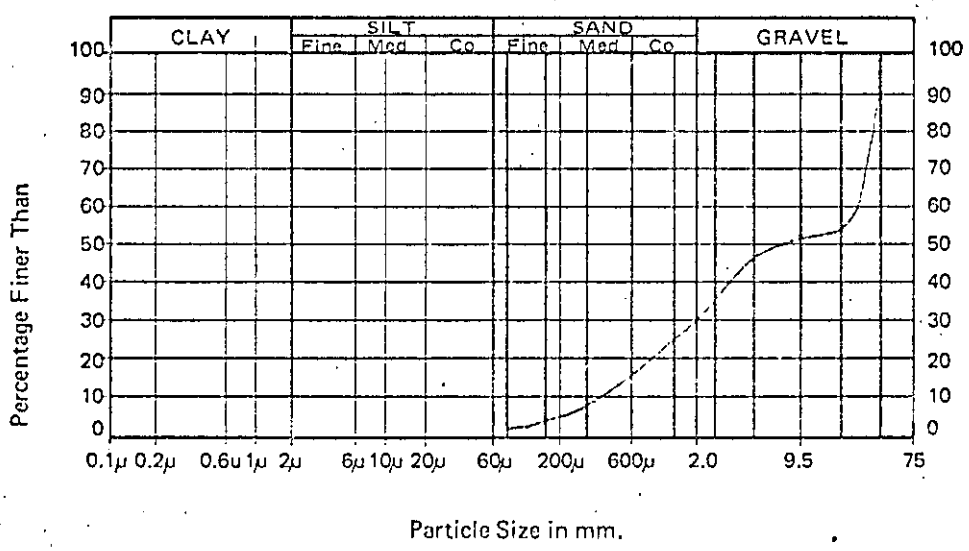
PARTICLE SIZE DISTRIBUTION



B.H. No. HA 22/2

Depth 10.0 m

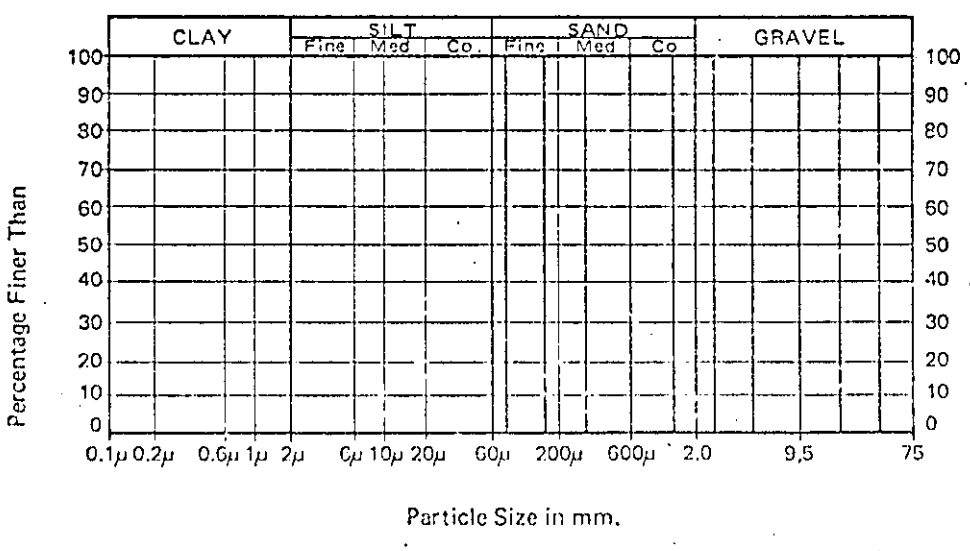
Description G W



B.H. No. HA 22/2

Depth 11.5 m

Description G P



B.H. No. .....

Depth .....

Description .....

SIEVE APERTURES USED

75.0 mm	9.50 mm	600 μm
37.5 mm	4.75 mm	300 μm
	2.36 mm	150 μm

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 47H

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 1.9 m

LOCATION CHAINAGE 1532m OFFSET 44m EAST

GROUND LEVEL 194.8 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.1						Started 16.7.75
Very soft brown pseudo-fibrous PEAT					Pt		
-Saturated	1.7						
Light grey SAND and GRAVEL	1.9				SW		16.7.75 BH 'Dry'

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Hand Auger Hole

C87A L6272 Ta/Pig

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 47J

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 0.4 m

LOCATION CHAINAGE 1570m OFFSET 43m EAST

GROUND LEVEL 193.4 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.1						
Grey-brown slightly peaty SAND	0.3				SU/Pt		Started 16.7.75 W.E. 0.3m
Light grey SAND and fine GRAVEL	0.4				SW		16.7.75 S.W.L. 0.3m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS Hand Auger Hole.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 47K

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 1.3 m

LOCATION CHAINAGE 1568m OFFSET 34m EAST

GROUND LEVEL 193.5 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.1						Started 16.7.75
Grey-brown organic very sandy CLAY	0.4				OL		
Soft brown pseudo fibrous PEAT	1.2				Pt		
Light grey gravelly SAND	1.3				SW		W.E. 1.2m 16.7.75 S.W.L. 1.2m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.C.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Hand auger hole

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 47L

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 0.7 m

LOCATION CHAINAGE 1591m OFFSET 33m EAST

GROUND LEVEL 192.8 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL Dark grey-brown friable sandy CLAY	0.1 0.3				CL		Started 16.7.75
Soft mottled grey/orange-brown silty CLAY	0.7				CI		16.7.75 BH 'Dry'

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS Hand auger hole

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 47M

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 1.5 m

LOCATION CHAINAGE 1595m OFFSET 46m EAST

GROUND LEVEL 192.8 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.2						Started 16.7.75
Brown slightly peaty friable sandy CLAY	0.7				CL +Pt		
Grey slightly clayey SILT with traces of PEAT	1.0				MI.		
Soft brown slightly peaty silty CLAY	1.4				CL +Pt		
Brown clayey gravelly SAND	1.5				SC		16.7.75 BS 'Dry'

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS Hand Auger hole

LANCASHIRE COUNTY COUNCIL

JOB No. 367

BOREHOLE DATA SHEET No. 1 OF 2

B.H. No. 48

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 13.5 m

LOCATION CHAINAGE 1672m OFFSET 12m WEST

GROUND LEVEL 202.1 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL		SP	(10.7)		GC	N = 14	Started 11.9.73
		B	(12.3)				
Medium dense slightly clayey sand with gravel size stones.							
		SP	12.6			N = 13	
Some firm sandy clay.							
A little ash and clinker.							
		B	11.2				
Occasional cobbles.							
		SP	12.2			N = 4	
		B	9.5				
		SP	13.1			N = 14	
		B	9.6	Grading	GW		
		SP	10.1			N = 17	
		R	(10.1)	Grading	GC		
		SP	-			N = 50 for 110mm	
		B	(13.5)				W.E. 8.2m Standing
		SP	13.9			N = 27	
	9.0						
Very dense fine to medium GRAVEL with a sandy silty CLAY binder.		B	-	Grading	GW		
	10.0	SP.B	18.8			N = 50	11.9.73 S.W.L. 9.2m Casing 9.5m 12.9.73 S.W.L. 8.7m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
2.50 - 2.80	2050	1845	11.2	46	23	-	38 U.C.T. (R) (?)

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
0.75	D4.5 CBR	2029	12.3	-	-	4%	-	-	C.B.R. on sandy gravelly clay
8.00	D4.5 CBR	1934	13.5	-	-	7%	-	-	C.B.R. on sandy gravelly clay

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. 48

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 13.5 m

LOCATION CHAINAGE 1672m OFFSET 12m WEST

GROUND LEVEL 202.1 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
Soft to firm dark grey-brown varved silty CLAY.	10.0	SP	22.0			N = 15	WE. 10.0m (Slight)
Occasional lenses of SAND and SILT.		KJ	26.7		CH/ML		
		B	26.4	37/20/17	CI		
		B	30.5	Grading	CH		
		KJ	35.1				
		U4	29.6				12.9.73 Casing 13.0m SWL. 3.6m OWC.
	13.5						

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
11.75 - 12.00	1960	1590	26.4	62	31	-	38 U.C.T. (R) (2)
12.00 - 12.30	1840	1410	30.5	74	37	-	38 U.C.T. (R) (2)
13.00 - 13.45	-	-	29.6	-	26 - 28	-	L.V.T. (2)

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 51

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 5.0 m

LOCATION CHAINAGE 1767m OFFSET 22m WEST.

GROUND LEVEL 198.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.1	U4	31.3				Started 7.9.73
Very soft to firm mottled orange/light grey/mid grey silty CLAY. Small pockets of SAND. Occasional gravel size stones and cobbles.		KJ	-				
		U4	16.1		CI		
		KJ	-				
Firm to stiff mottled mid grey/dark grey/brown silty CLAY. With gravel size stones and cobbles. Occasional veins of SAND.	3.0	SP	-			N = 38	WE. 3.0m
		KJ	-		CL		
		SP	-			N = 44	
	5.0	KJ	-				7.9.73 Casing 5.0m SWL. 3.0m OWC.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
G.L. - 0.30	-	-	31.3	-	-	-	Topsoil
1.50 - 1.85	2135	1840	16.1	104	52	-	38 U.C.T. (R) (2)

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS U4 at 3.0m No recovery : boulder

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. 52

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 12.0 m

LOCATION CHAINAGE 1903m OFFSET 8m WEST

GROUND LEVEL 198.5 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Black ash		B	24.5				
		KJ	26.7	–			
Very soft to soft mottled orange/mid brown silty sandy CLAY with a few gravel size stones.	1.0	U4	36.1		CI		W.E. 1.8m
	1.8	KJ	33.9				S.W.L. 1.6m After 10 mi
Very loose dark grey-brown clayey very silty SAND with a few gravel size stones.		SP	–			N = 2	
-Saturated		B	–	Grading	SC		S.O. 3.4m
	3.4	KJ	15.4		GP+		
		U4	27.4				
Firm to stiff dark grey-brown silty sandy CLAY with gravel size stones.		KJ	10.5				3.9.73 BH 'Dry'
		U4	27.4	53/28/26	CH		Casing 5.0m 10.9.73 BH 'Dry'
Occasional lenses of SILT and SAND.		KJ	19.2	29/15/14	CL		
		U4	14.0				
		KJ	23.2	33/17/16	CL		
		U4	–				
		KJ	22.2				
		U4	18.5				
		KJ	13.0				

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
1.20 - 1.55	1905	1400	36.1	10	5	-	100 U.C.T. (H = 190)
3.50 - 3.95	1915	1500	27.4	130	65	-	38 U.C.T. (R) (2)
5.00 - 5.45	1915	1505	27.4	120	60	-	38 U.C.T. (R) (2)
6.60 - 6.95	2270	1990	14.0	80	40	-	100 U.C.T.
9.00 - 9.45	2195	1855	18.5	78	39	-	100 U.C.T.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. 52

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 12.0 m

LOCATION CHAINAGE 1903m OFFSET 8m WEST

GROUND LEVEL 138.5 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N. Value	Water & Casing Details
See Sheet No. 1					U4	-	-			
	11.1				KJ	23.6				WE. 11.1m (Slight)
Medium dense dark grey-brown clayey sandy SILT					U4	26.8	Grading	MI		10.9.73
	12.0									Casing 11.0m SWL. 4.2m OVC.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
11.30 - 11.75	1955	1540	26.8	38	19	-	100 U.C.T.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. 53

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 11.0 m

LOCATION CHAINAGE 1930m OFFSET 16m EAST

GROUND LEVEL 198.0 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL.		U4	31.9				Started 7.9.73
Loose dark red and black Ash.		KJ	20.9				W.E. 1.4m (Slight)
Some clayey sand and cobbles.		SP				N = 6	Not sealed off
		B	18.1				
	4.7						W.E. 4.7m W.L. 3.6m after 15mins.
Loose well graded dark grey-brown coarse SAND with gravel size stones.		SP	16.8			N = 9	Not sealed off.
		B	8.4				
		B	10.0	Grading	SW		
	9.6	KJ	12.4				
See Sheet No. 2							

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
G.L. - 0.45	-	-	31.9	-	-	-	Ash fill
9.80 - 10.25	2150	1980	11.1	169	85	-	38 U.C.T. (R) (2)

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
3.6	-	-	-	-	-	-	Slight trace	7.0/7.9	Water Sample

GENERAL REMARKS

Chiselling boulder 2.0 - 4.6m

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. 53

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON.

DEPTH 11.0 m

LOCATION CHAINAGE 1930m OFFSET 16m EAST

GROUND LEVEL 199.8 m

Description of Stratum	Depth	Sample 1	Sample 2	Sample 3	Sample Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
Firm to stiff, dark grey-brown silty CLAY with gravel size stones cobbles and lenses of sand					U4	11.1				
					KJ	10.9		CL		
	11.0				U4	12.4				7.9.73
										Casing 10.5m SWL 1.7m OWC.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
10.50 - 10.95	2295	2040	12.4	192	96	-	100 U.C.T.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 54

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 8.5 m

LOCATION CHAINAGE 1998m OFFSET 25m WEST

GROUND LEVEL 202.5 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.05				SP	41.9			N = 2	Started 11.9.73
FILL Loose dark grey and black ash, cinders, glass. Some soft clay.					SP	40.2			N = 7	
					B	38.3				
					SP	38.3			N = 6	
					B	40.0				
					SP	32.2			N = 3	
					KJ	25.8				
Very soft to soft mottled mid grey/dark grey-brown silty sandy CLAY with an abundance of gravel size stones.	4.1				U4	(20.6)	Grading	GC CL		W.E. 4.8m (Slight)
					KJ	15.3				
Mid brown silty clayey SAND with a few gravel size stones.	5.8				U4	12.9		SC		
Dense gravel and cobbles with a very soft silty sandy CLAY matrix.	6.3				SP	(11.8)			N = 50 for 260mm	W.E. 6.3m rose to 5.3m in 15min
					B	(17.1)		GF		
	7.8				KJ	12.4		CL		
Firm to stiff dark grey-brown sandy silty CLAY with gravel size stones and cobbles. Lenses of SAND and GRAVEL.	8.5				U4	13.3 (12.2)	Grading	SP		11.9.73 Casing 8.0m SWL. 5.0m OWC

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
4.20 - 4.65	-	-	(20.6)	-	-	-	Sandy clay with gravel size stones
5.80 - 6.20	2160	1915	12.9	100	50	-	38 U.C.T. (R)
8.00 - 8.40	2070	1830	13.3	253	126	-	38 U.C.T. (R)

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
6.3	-	-	-	-	-	-	Slight Trace	6.0	Water sample

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 55

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 5.9 m

LOCATION CHAINAGE 1998m OFFSET 19m EAST

GROUND LEVEL 203.4 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.05						
FILL. Dark red and black ash, broken brick, glass and stone.		SP B	24.0			N = 12	Started 10.9.73
		SP B	22.5			N = 19	
		SP	20.2			N = 50 for 75mm	
		KJ	507.0				10.9.73 BH. 'Dry'
Black fibrous PEAT	3.0				Pt		Casing 3.0m 11.9.73 BH. 'Dry'
Very soft mid grey silty CLAY with gravel size stones. Occasional bands of SAND.	3.3	U4	31.4				
		KJ	31.0				WR. 3.6m (Slight)
		U4	24.5				
			25.1	Grading	SF		
		KJ	37.0		CI		
		SP	-			N = 4	11.9.73 Casing 5.9m
	5.9						SWL 5.8m OWC.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
3.10 - 3.55	-	-	31.4	-	-	-	Peat on very soft silty clay
3.80 - 4.25	2035	1635	24.5	18	9	-	39 U.C.T. (R)

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. ...1.... OF ..2.....

JOB No. ....367....

B.H. No. ....56....

SCHEME ....A.56 DIVERSION - HASLINGDEN TO ACCRINGTON....

DEPTH ....10.5.... m

LOCATION CHAINAGE 2093m OFFSET 17m WEST

GROUND LEVEL ....204.2.... m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.05						Started 12.9.73
FILL Black ash.		SP	-			N = 2	
		B	40.1	-			
	1.2	KJ	53.3				
Very soft Black PEAT and organic silty CLAY.		U4	255.7		Pt/OH		
		KJ	-				
	2.6	U4	17.3	25/15/10	CL		
Soft to firm mid grey silty sandy CLAY with gravel size stones and pockets of PEAT.	3.8						
Medium dense dark grey-brown well graded SAND with gravel size stones.		CP	-			N = 22	W.E. 4.2m S.W.L. 3.5m After 15m W.E. 4.7m
		B	17.9		GW		S.W.L. 1.3m After 15m
		B	-	Grading	SW		
-Saturated	8.0						
Medium dense dark brown silty fine to medium SAND.		B	19.0		SP		
-Saturated	9.6	KJ	14.9				S.O. 9.6m
See Sheet No. 2							

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
1.40 - 1.80	-	-	255.7	-	10 - 26	-	L.V.T. (3)
2.60 - 3.05	-	-	17.?	-	-	-	Sandy clay with gravel size stones
9.80 - 10.25	2290	2020	13.4	128	64	-	100 U.C.T.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
1.3	-	-	-	-	-	-	Trace	6.0	Water Sample
3.5	-	-	-	-	-	-	No Trace	7.0	Water Sample

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. 56

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 10.5 m

LOCATION CHAINAGE 2093m OFFSET 17m WEST

GROUND LEVEL 204.2 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
Firm dark grey-brown silty very sandy CLAY with gravel size stones.	10.5	U4	13.4		CL		12.9.73 Casing 9.8m SWL 0.3m OWC.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 57

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 6.5 m

LOCATION CHAINAGE 2093m OFFSET 17m EAST

GROUND LEVEL 204.4 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Peat'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.05						Started 12.9.73
FILL Black ash, broken brick, glass.	0.6	SP.D	30.9			N = 3	
		KJ	42.6				
FILL Very soft mottled orange/dark grey-brown silty, and silty very sandy clay with some gravel size stones		U4	34.0				
		KJ	17.1				W.E. 2.0m (Slight)
		U4	15.6	Grading	SF		W.E. 3.0m
	3.0						S.W.L. 1.2m After 5mi
Very dense dark grey-brown well graded SANDY GRAVEL with cobbles.		CP	-			N = 50 for 150mm	
					GW		
			(11.1)				
	6.5						12.9.73 Casing 6.5m S.W.L. 1.2m O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.80 - 1.10	1955	1455	34.0	28	14	-	38 U.C.T. (R)
2.50 - 2.95	1915	1655	15.6	34	17	-	38 U.C.T. (R)

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
1.2	-	-	-	-	-	-	0.1	< 4	Water Sample

GENERAL REMARKS Chiselling boulder 5.5 to 6.5m

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 58

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 6.4 m

LOCATION CHAINAGE 2204m OFFSET 19m WEST

GROUND LEVEL 205.6 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.2	U4	20.8				Started 13.9.73
Very soft mid brown silty very sandy CLAY layered with loose clayey silty SAND .		KJ	18.8		CL		
		U4	14.9	Grading	SC		
Occasional gravel size stones .		KJ	16.5		SC		W.E. 2.8m (Slight)
	3.0	U4	(13.8)				
Stiff mottled orange/dark grey silty sandy CLAY with an abundance of gravel size stones .					CL		W.E. 3.5m S.W.L. 1.4m After 5 Mi
	5.0	B	-				
Dense well graded sandy GRAVEL with cobbles.					GW		
-Saturated	6.4	SP	-			N = 31	13.9.73 Casing 7.0m S.W.L. 1.0m O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
G.L. - 0.35	1990	1650	20.8	68	34	-	38 U.C.T. (R)
1.50 - 1.95	-	-	14.9	-	20 - 25	-	L.V.T. (2)
3.00 - 3.45	-	-	13.8	-	-	-	Stiff clay with cobbles

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
1.4	-	-	-	-	-	-	0.05	< 4	Water Sample

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 59

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 4.3 m

LOCATION CHAINAGE 2250m OFFSET 5m EAST

GROUND LEVEL 210.3 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL										Started 13.9.75
Soft mid brown silty very sandy CLAY with gravel size stones.	0.4				B	21.2		CL		
					KJ	21.0				
	1.5				U4	12.2		SC		
Very dense mid brown slightly clayey silty well graded SAND with fine to medium gravel size stones.					KJ	13.0				
					U4	9.8	Grading	GW		
					KJ	12.7				
					U4	13.1				
	4.3									13.9.73 Casing BH'Dry' C.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
1.60 - 2.00	-	-	12.3	-	-	-	Clayey sand with gravel size stones
3.00 - 3.45	-	-	9.8	-	-	-	Sand and gravel.
3.70 - 4.10	-	-	13.1	-	-	-	Sand and gravel.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
1.6	D4.5 C.B.R.	2010	12.3	-	-	8.0%	-	-	C.B.R.

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 60

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 4.0 m

LOCATION CHAINAGE 2350m CENTRE LINE

GROUND LEVEL 211.2 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.3	U4	29.4				Started 14.9.73
Soft mid brown silty very sandy CLAY with fine gravel size stones.		KJ	16.3		CL		
Loose mid grey-brown slightly clayey sandy SILT. A few fine gravel size stones.	1.5	U4	16.2 12.1	Grading	SF		Slight W.E. 2.0m
		KJ	17.1		ML		
	3.0	U4	-				
Soft to firm dark grey-brown sandy silty CLAY with gravel size stones and occasional cobbles.		KJ	15.2				
		U4	14.7		CL		
	4.0	KJ	23.2				14.9.73 Casing 3.0m S.W.L. 1.5m O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
G.L. - 0.45	1640	1185	38.4	18	9	-	38 U.C.T. (R)
1.50 - 1.95	2105	1810	16.2	-	c' = o	$\phi' = 37^{\circ}$	38 Cu (R) with Ppn.
2.60 - 3.05	-	-	-	-	-	-	Clayey silt with gravel size stones
3.40 - 3.85	2270	1980	14.7	60	30	-	100 U.C.T.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
1.50 - 1.95	94.5 C.B.R.	1850	12.1	-	-	5.7%	-	-	C.B.R.

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 361

B.H. No. 61

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 3.0 m

LOCATION CHAINAGE 2400m OFFSET 3m EAST

GROUND LEVEL 211.0 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.3	U4	35.5				14.9.73
Soft mottled orange/light grey silty sandy CLAY with a few gravel size stones.	1.0	KJ	27.8		CI		
Mid brown silty fine SAND with gravel size stones. Slightly clayey in parts.		U4	13.4	Grading	SF		
		KJ	16.2				
		U4	21.4		ML/CH		14.9.73 Casing 3.0m
Firm dark grey-brown varved clayey SILT	2.8 3.0						BH 'Dry' O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Strecs (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
G.L. - 0.45	-	-	35.5	-	20	-	L.V.T.
1.50 - 1.95	-	-	13.4	-	-	-	Fine sand with gravel size stones
2.50 - 2.95	-	-	21.4	-	-	-	Clayey silt

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 61A

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 9.3 m

LOCATION CHAINAGE 2387m OFFSET 96m EAST

GROUND LEVEL 228.3 m

Description of Stratum	Depth	Sample 1 2 3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Mixture of dark brown topsoil brick fragments, broken stone .			B	59.7				Started 6.6.73
	0.7		B	(19.8)	Grading	GP		
FILL Black ashes, gravel and cobbles .								
	1.2		B	20.4	Grading	GP		
Medium density dark grey clayey silty SAND	1.5		U4	25.9 22.0	42/23/19	CI		6.6.73 7.6.73
Soft mottled yellow/light brown sandy CLAY with gravel size stones, with a band of orange/brown SAND, with shale fragments at 2.2m to 2.4m .			KJ	37.4				
	3.0		U4	-		SF/CL		
Medium density brown SAND with gravel size stones. Lenses of very sandy clay . Occasional cobbles .			SP	-			N = 28	
	4.2		B	10.7	Grading	SF		
Medium density becoming dense brown silty fine to medium SAND with occasional bands of SILT . Fragments of shale .			SP	10.8	Grading	SP	N = 32	
			B	22.6				
			SP	23.9			N = 24	
			B	-	Grading	SF		
			KJ	22.9				
			SP	19.?			N = 28	
			KJ	18.6				
			SP	18.3	Grading	SF	N = 50 for 250mm	7.6.73
	7.6		B CP	5.5			N = 50 for 150mm	8.6.73
Hard yellow/brown coarse grained SANDSTONE .			KJ	-				BH. 'Dry' O/C.
	8.3							
Boulder or bedrock .								

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
1.50 - 1.95	1950	1550	25.9	34	17	-	38 U.C.T. (R)

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 62

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 9.0 m

LOCATION CHAINAGE 2416m OFFSET 29m WEST

GROUND LEVEL 206.4 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.1	U4	30.2		SF		Started 26.11.73
Loose mottled orange/grey-brown clayey, silty, fine to medium SAND							W.E. 0.8m
	1.3	KJ	-				S.W.L. 0.5m (10 mins) 26.11.73 S.W.L. 1.0m
Dense dark grey-brown clayey silty sandy GRAVEL.		SP	-		GF	N = 33	Casing - 1.4m 27.11.73 S.W.L. 0.7m
-Saturated	2.1						
		B	-	Grading	SF		
Loose dark grey-brown silty fine to medium SAND							
		SP	-			N = 4	
		B	-				
							27.11.73 S.W.L. 6.0m Casing - 6.8m 28.11.73 S.W.L. 5.6m
-Saturated		B	-				
	7.3	U4	34.1	70/28/42	CH/ML		W.E. 7.7m S.W.L. 1.8m (35 mins)
Soft dark grey-brown varved silty CLAY							28.11.73 S.W.L. 1.8m Casing - 6.8m
		U4	33.7				29.11.73 S.W.L. 0.6m 29.11.73
	9.0						Casing 8.8m S.W.L. 0.6m O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
G.L. - 0.45	-	-	30.2	-	-	-	Topsoil and sand
7.30 - 7.75	1920	1435	34.1	38	19	-	100 U.C.T.
8.55 - 9.00	1900	1420	33.7	46	23	-	100 U.C.T.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
C.S	-	-	-	-	-	-	Nil	6.1	Water sample

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. 63

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 11.6 m

LOCATION CHAINAGE 2454m OFFSET 15m WEST

GROUND LEVEL 206.8 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL A little topsoil, black ash, gravel, glass.	0.4	B	29.1				Started 15.9.73
Loose mid grey to mid grey-brown medium SAND with plenty of PEAT inclusions.		B	64.2	Grading	SU		
		KJ	69.5		Pt+		Slight W.E. 1.5m
		U4	46.3				
	2.6	KJ	95.8				
		KJ	12.3				
Firm mid grey-brown silty very sandy CLAY with gravel size stones and lenses of wet SAND.		U4	(11.3)	Grading	SF		
		KJ	15.7		CL		
	4.5	U4	-				W.E. 4.5m S.W.L. 1.8m After 15 mins
Very dense dark grey-brown silty sandy GRAVEL with cobbles.		SP,B	-		GW	N = 50 for 50mm.	
							15.9.73 S.W.L. 4.2m Casing 6.0m 17.9.73 S.WL 4.3m
	7.2	KJ	32.8				
Soft to firm mid brown very silty CLAY. Occasionally varved. Occasional gravel size stones.		U4	30.2	70/28/42	CH/ML		S.O. 7.2m
		KJ	29.4				
	9.0	U4	34.7				
See Sheet No. 2		KJ	35.7		CH/ML		

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
1.60 - 2.05	-	-	46.3	-	-	-	Sand
2.70 - 3.15	-	-	(11.3)	-	-	-	Sand and gravel
7.30 - 7.75	1860	1430	30.2	26	13	-	100 U.C.T.
9.00 - 9.45	1875	1390	34.7	40	20	-	100 U.C.T.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
1.8	-	-	-	-	-	-	No Trace	7.0	Water sample

GENERAL REMARKS

Chiselling boulder 6.2m - 7.1m

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. 63

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 11.8 m

LOCATION CHAINAGE 2454m OFFSET 15m WEST

GROUND LEVEL 206.8 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
Soft to firm mid brown varved silty CLAY. Occasional distorted varves.		KJ	35.8				
		U4	36.7				17.9.73 Casing : 11.0m S.W.L. 0.6m O.W.C.
	11.8						

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
11.30 - 11.75	1880	1380	36.7	66	33	-	100 U.C.T.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y. (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 64

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 7.3 m

LOCATION CHAINAGE 2473m OFFSET 17m EAST

GROUND LEVEL 212.1 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Black ash and firebrick .		SP B	18.5 17.9			N = 10	Started 13.9.73
FILL Soft mottled mid brown/mid grey-brown silty sandy clay with gravel size stones. Some mid brown silty very clayey sand .	1.0	SP B	18.0 14.7			N = 32	13.9.73 BH. 'Dry' Casing 2.0m 14.9.73 BH. 'Dry'
		SP B	16.2 11.2			N = 21	
		U4 B	10.5 22.4				
Loose grey-brown slightly clayey silty medium SAND . More clayey in parts and occasionally organic .	5.2	U4	25.6	Grading	SF		
		KJ	28.7				WE. 7.0m rose to 5.7m (15mins) 14.9.73 SWL. 5.9m
Very dense mid brown silty sandy GRAVEL with a very soft silty sandy CLAY binder. Saturated	6.8 7.3	U4 CP	(18.1) -	Grading	GC	N = 50 for 100mm	Casing 6.0m SWL. 6.0m OWC.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
4.50 - 4.95	-	-	10.5	-	-	-	Peat and sandstone gravel
5.25 - 5.45	-	-	25.6	-	-	-	Clayey sand and gravel
6.75 - 6.20	-	-	(18.1)	-	-	-	Silty sand and gravel

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
G.L. - 0.75	D4.5 C.B.R.	1710	17.9	-	-	5.8%	-	-	C.B.R. on slightly clayey Black ash
1.50 - 2.50	S. C.B.R.	1865	14.7	-	-	2.7%	-	-	C.B.R. on soft clay with gravel size stones

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 64A

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 3.4 m

LOCATION CHAINAGE 2425m OFFSET 23m EAST

GROUND LEVEL 212.5 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
Black TOPSOIL grave size stones and cobbles.	0.5				KJ	22.5				Started 6.6.73
Soft friable yellow-brown sandy LOAM	1.0				U4	33.3		CI		
Medium density brown silty fine to medium SAND with some gravel size stones, cobbles and angular shale fragments.					KJ	20.3				
					U4	-	Grading	SF		
					KJ	14.8				
					SP	14.1			N = 18	
					U4	13.7				
Sandstone Boulder?	3.4				CP.B	(9.5)	Grading	GP	N = 50 for 150mm	6.6.73 BH 'Dry' O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.50 - 0.95	-	-	33.3	-	-	-	Soft sandy loam

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

At 3.4m sandstone chiselled for one hour

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 65

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 6.9 m

LOCATION CHAINAGE 2543m OFFSET 12m EAST

GROUND LEVEL 213.1 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Black ash.		SP B	12.5			N = 13	Started 13.9.73
FILL Soft to firm, mottled orange/mid grey/ mid brown silty very sandy clay with gravel size stones and black ash.	0.8	SP B	15.7			N = 15	
PEAT with very soft mid grey-brown silty CLAY Some gravel size stones. -Fill?	2.0	U4	39.3	120/39/81	CH		
		B	27.5				
Soft dark grey silty very sandy CLAY with gravel size stones.	3.0	U4	13.7	34/17/17	CL		
		KJ	18.9				
		U4	16.7 19.2				WE 4.5m SWL 4.4m (15mins.)
Loose dark grey-brown sandy GRAVEL with a very soft sandy CLAY matrix.	5.5	SP B	-	Grading	GC	N = 7	
	6.9	SP	13.2			N = 8	13.9.73. Casing c.5m SWL. 5.2m O/C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
2.00 - 2.45	-	-	39.3	-	-	-	Peat
2.50 - 3.00	1930	1530	26.7	48	24	-	38 U.C.T. (R)
3.00 - 3.45	2075	1630	20.1	60	30	-	38 U.C.T. (R)
4.50 - 4.95	2145	1840	16.7	33	16	-	38 U.C.T. (R)

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 66

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 4.0 m

LOCATION CHAINAGE 2559m OFFSET 4m WEST

GROUND LEVEL 211.6 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL										
FILL. Black organic loam.	0.1				U4	32.1				Started 14.9.73
	0.6				KJ	78.4				
FILL Very soft to firm dark grey silty very sandy clay with lenses of gravelly sand.						12.5		CL		
					U4	13.7	Grading	SW		W.E. 2.0m (Slight)
					KJ	38.6				
Soft dark grey silty very sandy CLAY with lenses of gravelly SAND.	2.4				KJ	19.3				
					U4	(13.6)	Grading	SW		
						16.0		CL		
Very loose dark grey well graded sandy GRAVEL with a very soft CLAY matrix.	3.1				SP.B	(13.4)	Grading	GC	N = 4	W.E. 3.1m S.W.L. 1.9m After 5min 14.9.73
	4.0									Casing 2.5m S.W.L. 2.3m O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
G.L. - 0.40	1775	1345	32.1	58	29	-	38 U.C.T. (R)
1.50 - 1.85	2295	2040	12.5	69	39	-	100 U.C.T.
2.50 - 2.75	2185	1885	16.0	56	28	-	38 U.C.T. (R)

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.C.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
1.9	-	-	-	-	-	-	No Trace	6.5/7.0	Water sample

GENERAL REMARKS

C87A L6272 TayPig

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 66A

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 4.1 m

LOCATION MAIN ROUTE CHAINAGE 2563m OFFSET 75m WEST
SIDE ROAD CHAINAGE 48m OFFSET 2m WEST

GROUND LEVEL 217.3 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.1						Started 25.6.75
FILL Very loose dark grey-brown silty sand, with pieces of broken brick, pottery.	0.8	SP	19.5			N = 1	Uncased hole.
Soft mottled mid grey/orange-brown silty sandy CLAY becoming very sandy.		U4	26.6	32/18/14	CL		
		KJ	26.9				
		U4	16.3				25.6.75 SWL. 2.7m
	2.7	KJ	19.3		SC		26.6.75 SWL. 2.7m
Medium dense dark grey-brown clayey silty SAND with fine to medium gravel size stones.							WE. 3.4m (Slight)
		SP	-			N = 14	
	4.1						26.6.75 SWL. 4.1m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
1.30 - 1.75	1970	1560	26.6	56	28	-	100 U.C.T.
2.30 - 2.70	2170	1860	16.3	41	20	-	100 U.C.T.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. 66C

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 18.8 m

LOCATION MAIN ROUTE CHAINAGE 2647m OFFSET 97m WEST
SIDE ROAD CHAINAGE 35m OFFSET 39m WEST

GROUND LEVEL 235.8 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.2									Started 24.7.75
Dark orange-brown silty fine to medium SAND with gravel size stone.	0.6				U4	15.2 17.3		SF CL		200mm Ø casing.
Firm dark orange-grey-brown silty very sandy CLAY with gravel size stones.	0.8				KJ	-	-	SC		
Loose mid brown slightly clayey silty SAND. Occasional gravel size stones.	1.5					11.7				
Firm dark grey-brown silty sandy very stony CLAY					SP B	- 12.0 14.0	28/16/12	CL	N = 23	
						12.5				
					SP B	- 12.4			N = 26	
						14.8				
Medium dense, dark brown, layered, slightly clayey sandy SILT and slightly clayey fine to medium SAND. Partings of soft silty clay. Occasional stones.	4.5				SP B	17.6	Grading	ML + SC + CH	N = 10	24.7.75 BH. 'Dry' Casing 5.2m 28.7.75 BH. 'Dry'
Stiff dark grey-brown silty sandy very stony CLAY Occasional cobbles.	6.2					11.9				
	7.6				SP B	10.0	28/16/12 Grading	CL CL	N = 16	
Medium dense, layered dark brown, fine and very silty fine SAND and mid brown fine to medium SAND					SP B	14.2 13.7	Grading	SF + SU	N = 13	
	9.0					21.5				
See Sheet No. 2										WL 9.8m (Slight)

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.60 - 0.80	2130	1815	17.3	82	41	-	38 U.C.T. (R) (2)
2.05 - 2.50	2180	1905	14.6	94	47	-	38 U.C.T. (R) (3)
3.60 - 4.05	2180	1900	14.8	108	54	-	38 U.C.T. (R) (3)
7.20 - 7.65	2175	1950	11.8	194	97	-	38 U.C.T. (R) (3)
7.20 - 7.65	2180	1955	11.3	-	17	37°	Quick S.R. on matrix

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y. (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. 66C

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 18.8 m

LOCATION MAIN ROUTE CHAINAGE 2647m OFFSET 97m WEST
SIDE ROAD CHAINAGE 35m OFFSET 39m WEST

GROUND LEVEL 238.8 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
Medium dense, layered, dark brown, very slightly clayey sandy SILT, and mid brown very silty fine SAND. - Saturated		SP B	32.5	Grading	SF/ML	N = 19	28.7.75 SWL. 10.2m Casing 9.8m 29.7.75 SWL. 8.9m
	11.6						
Loose to medium dense dark grey-brown clayey sandy SILT with thin partings of soft silty CLAY and very silty fine SAND.		SP B	29.3 "	Grading 30/21/9	ML CL	N = 8	
							S.O. 14.0m
- Saturated		SP B	24.1 34.6		ML/CH + SP	N = 22	
Very dense, dark grey brown, layered, silty medium - coarse SAND/ clayey silty fine SAND/ silty fine to medium SAND, with fine to medium gravel size stones.	15.2	KJ	10.4		SU + SC		29.7.75 BH. 'Dry' Casing 14.4m 30.7.75 BH. 'Dry'
	16.4	SP B	8.7 11.6			N = 50 for 240mm	
Stiff dark grey-brown silty very sandy, very stony, CLAY.			13.2				30.7.75 BH. 'Dry' Casing 16.0m 31.7.75 BH. 'Dry' 31.7.75 BH. 'Dry'
	13.8	SP B	- 12.3	Grading	CL	N = 50 for 210mm	4.8.75 BH. 'Dry' 4.8.75 BH. 'Dry' Casing 16.0m
							Casing withdrawn. 6.8.75 BH. Collapsed to 9.2m SWL. 9.1m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
18.35 - 18.80	2270	1970	15.3	-	105	25°	Quick S.B. on matrix

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 66D

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 1.8 m

LOCATION CHAINAGE 2579m OFFSET 12m EAST

GROUND LEVEL 213.5 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Black clinker ash and broken stone.	0.4									Started 9.10.75
FILL Weathered fine grained sandstone fragments in a soft to firm mottled brown/orange silty clay matrix.	0.9									
FILL Hard fine grained clayey sandstone	1.2									
FILL Very soft mottled orange/grey silty clay with sandstone fragments.	1.5									
Firm light grey silty CLAY	1.8									9.10.75

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Machine excavated trial pit.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 66E

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 0.7 m

LOCATION CHAINAGE 2591m OFFSET 10m EAST

GROUND LEVEL 213.6 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL										Started 9.10.75
Black clinker ash and broken stone.	0.5									
Soft fine grained clayey SANDSTONE.	0.7									9.10.75

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS Machine excavated trial pit.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 66F

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 2.7 m

LOCATION CHAINAGE 2614m OFFSET 11m EAST

GROUND LEVEL 213.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Black clinker ash and broken stone.	0.5						Started 8.10.75
Soft to medium hard, light brown, cross bedded fine grained SANDSTONE. Bedding sensibly horizontal. One open bedding plane is infilled with soft clay. One open vertical joint.	2.7						W.E. 0.8m (Slight)
							8.10.75 trial pit making water slowly on completion.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS Machine excavated trial pit.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 660

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 1.0 m

LOCATION CHAINAGE 2617m OFFSET 11m EAST

GROUND LEVEL 213.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Black clinker ash and broken stone.	0.3						Started 8.10.75
Sandy GRAVEL.	0.6						
Soft to hard, cross bedded, fine grained SANDSTONE.	1.0						8.10.75

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Machine excavated trial pit.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 66H

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 1.5 m

LOCATION CHAINAGE 2628m OFFSET 10m EAST

GROUND LEVEL 214.1 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL: Black clinker ash and broken stone.	0.4						Started 8.10.75
Hard light brown cross bedded, fine grained SANDSTONE.	1.5						8.10.75

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.C.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS Machine excavated trial pit

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 661

SCHEME A.56 DIVERSION HASLINGDEN - ACCRINGTON

DEPTH 0.7 m

LOCATION CHAINAGE 2646m OFFSET 10m EAST

GROUND LEVEL 214.3 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Black clinker ash and broken stone.	0.4						Started 8.10.75
Very hard, cross bedded, fine grained SANDSTONE'.	0.7						8.10.75

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Machine excavated trial pit.

C87A L6272 Tevfig

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 661

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 1.4 m

LOCATION CHAINAGE 2676m OFFSET 9m EAST

GROUND LEVEL 214.6 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL: Black clinker ash and broken stone.	0.2						Started 9.10.75
Soft light brown, fine grained, clayey SANDSTONE.	0.8						
Hard light brown, fine grained flaggy SANDSTONE.	1.4						9.10.75

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Machine excavated trial pit.

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 66K

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 1.4 m

LOCATION CHAINAGE 2706m OFFSET 8m EAST

GROUND LEVEL 215.0 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL. Black clinker ash and broken stone.	0.2									Started 9.10.75
Hard, light brown, fine grained, closely jointed, flaggy SANDSTONE. Joints are open and infilled with clayey GRAVEL.	1.4									9.10.75

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS Machine excavated trial pit.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 66A

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 0.2 m

LOCATION CHAINAGE 2736m OFFSET 8m EAST

GROUND LEVEL 215.4 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Black clinker ash and broken stone	0.05						Started 9.10.75
Hard flaggy SANDSTONE	0.2						9.10.75

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS Machine excavated trial pit.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 66M

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 1.2 m

LOCATION CHAINAGE 2766m OFFSET 8m EAST

GROUND LEVEL 215.7 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Black clinker ash and broken stone with rounded sandstone cobbles and boulders.	0.6						Started 8.10.75
Slabs of weathered light brown SANDSTONE, bedding dipping 2° North.	1.2						8.10.75

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Machine excavated trial pit.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 66N

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 1.0 m

LOCATION CHAINAGE 2791m OFFSET 8m EAST

GROUND LEVEL 216.0 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Black clinker ash and broken stone.	0.2						Started 9.10.75
Firm mottled blue/mid brown silty CLAY with fine to medium gravel size stones.	1.0						9.10.75
Hard flaggy SANDSTONE.							

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Machine excavated trial pit.

C87A 16272 TayPig

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 4

JOB No. 367

B.H. No. 67

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

LOCATION MAIN ROUTE CHAINAGE 2650m OFFSET 47m WEST
SIDE ROAD CHAINAGE 52m OFFSET 6m EAST

DEPTH 32.0 m

GROUND LEVEL 239.0 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.2	U4	28.9				Started 20.9.73
Soft mottled mid grey/mid brown sandy silty CLAY with gravel size stones.		KJ	17.5		CL		
	1.5	U4	13.4	Grading	GW		
Dense dark grey-brown silty sandy GRAVEL with cobbles and boulders.		KJ	31.6				
		KJ	10.6				
Occasional lenses of SILT.		U4	11.6	Grading	GP		
		KJ	15.8				
Firm friable mottled orange/grey/mid brown silty very sandy CLAY with plenty of gravel size stones.	4.0	U4	13.7	29/17/12	CL		
		KJ	14.1				
	6.4	U4	9.1	Grading	SW		
Loose to medium dense mid brown silty to very silty fine SAND.		KJ	22.5				
		U4	8.3	Grading	SU		
		KJ	-				
		SP	-			N = 15	
							20.9.73 BH. 'Dry'
							Casing 9.0m 21.9.73 BH. 'Dry'

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
G.L. - 0.45	-	-	28.9	-	-	-	Topsoil and stony clay
1.50 - 1.95	-	-	13.4	-	-	-	Sand and gravel
2.90 - 3.35	-	-	11.6	-	-	-	Sand and gravel
4.20 - 4.65	2295	2015	13.9	130	65	-	100 U.C.T.
5.80 - 6.25	-	-	9.1	-	-	-	Sand
7.50 - 7.95	-	-	8.3	-	-	-	Sand and gravel

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 4

JOB No. 367

B.H. No. 67

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 32.0 m

LOCATION MAIN ROUTE CHAINAGE 2650m OFFSET 47m WEST
SIDE ROAD CHAINAGE 52m OFFSET 5m EAST

GROUND LEVEL 239.0 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
See Sheet No. 1		SP	-			N = 5	WE (Slight) 10.0m
		B	10.6	Grading	SP		
		SP	12.5			N = 13	
	12.5	KJ	29.1				
Very loose to medium dense dark grey-brown varved clayey SILT with partings of fine SAND.		SP	36.2		ML/CH	N = 3	
		B	23.7	Grading	SP		
		SP	30.0	Grading	ML/CH	N = 13	
		B	27.8				
	15.3	KJ	9.1				
Dense dark grey-brown sandy GRAVEL. Claybound to 15.4m		U4	6.7	Grading	GW		
		KJ	7.0				
		U4	-				
	17.8						
Soft dark grey-brown varved clayey SILT.		B	30.8		ML/CH		
	18.5	SP	5.5		SU+GP	N = 50 for 250mm	
See Sheet No. 3		B	7.0	Grading	GW		21.9.73 BH. 'Dry' Casing 20.0m 22.9.73 BH. 'Dry'

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
15.40 - 15.85	-	-	6.7	-	-	-	Sand and gravel
17.80 - 18.50	-	-	30.8	-	29	26°	Quick S.B.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 3 OF 4

JOB No. 367

B.H. No. 67

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

LOCATION MAIN ROUTE CHAINAGE 2650m OFFSET 47m WEST
SIDE ROAD CHAINAGE 52m OFFSET 6m EAST

DEPTH 32.0 m

GROUND LEVEL 239.0 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
		KJ	5.3				
		SP	6.1			N = 19	
Dense to very dense dark grey-brown fine to medium SAND with some fine to coarse gravel size stones.		B	-				
		SP	6.1			N = 50 for 230mm	
		B	7.6	Grading	GP		
		SP	-			N = 50 for 50mm	22.9.73 BH. 'Dry' Casing 23.5m 24.9.73 BH. 'Dry'
		B	9.3				
Medium dense dark grey-brown very silty fine SAND with CLAY partings	24.8	KJ	25.0		SF/CL		
	25.5	SP	30.9			N = 16	WE. (Slight) 25.0m
Dense to very dense dark grey-brown well graded GRAVEL with some SAND and a slight CLAY binding.		SP	-			N = 34	WE. 26.0m WL. 25.0m (15mins.) 24.9.73 SWL. 26.1m Casing - 26.0m 25.9.73 SWL. 25.0m
		B		Grading	GP		
		SP	-			N = 50 for 200mm	
		B	-				25.9.73 SWL. 28.2m
		CP	-			N = 50 for 240mm	Casing - 29.0m 26.9.73 SWL. 24.0m
- Saturated		B	-				

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
25.0	-	-	-	-	-	-	Nil	7.0	Water sample.

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 4 OF 4

JOB No. 367

B.H. No. 67

SCHEME A.56 DEVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 32.0 m

LOCATION MAIN ROUTE CHAINAGE 2650m OFFSET 47m WEST
SIDE ROAD CHAINAGE 52m OFFSET 6m EAST

GROUND LEVEL 239.0 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
30							
See Sheet No. 3		SP	-			N = 35	
31		B	-				
32	32.0						26.9.73 Casing - 32.0m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 68

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

LOCATION MAIN ROUTE CHAINAGE 2724m OFFSET 109m EAST
SIDE ROAD CHAINAGE 283m OFFSET 19m EAST

DEPTH 5.6 m

GROUND LEVEL 216.5 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Black clinker ash, clayey sand and gravel, pieces of metal, broken brick, glass, and soft clay.					SP	17.5			N = 9	Started 30.6.75
					SP	27.6			N = 5	
					B	15.2				
Very dense, orange-brown very silty SAND with gravel size stones.	3.0				SP	12.3		SF	N = 44	30.6.75 BH. 'Dry' Uncased hole.
Medium to very dense, dark grey-brown clayey silty sandy GRAVEL.	3.8				SP	-			N = 20	1.7.75 BH. 'Dry' W.E. 3.8m (Slight) 150mm Ø Casing.
					B	-	Grading:	GC		W.E. 4.7m rose to 3.2m in 15 mins. (casing 4.7m)
	5.6				SP	-			N = 38	1.7.75 S.W.L. 3.0m Casing 5.5m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 68A

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 1.0 m

LOCATION MAIN ROUTE CHAINAGE 2632m OFFSET 55m EAST
SIDE ROAD CHAINAGE 200m OFFSET 24m SOUTH

GROUND LEVEL 221.0 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL.	0.1				SF		Started 19.12.73
Loose mid brown silty SAND with fine gravel size stones.	0.6	KJ	19.4		CI		
Soft to firm mottled grey/mid brown silty sandy CLAY with gravel size stones.	1.0	KJ	17.1				19.12.73 'Dry'
		KJ	21.4				

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS Hand dug trial pit.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. 69

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 18.8 m

LOCATION MAIN ROUTE CHAINAGE 2685m OFFSET 77m WEST
SIDE ROAD CHAINAGE 91m OFFSET 26m WEST

GROUND LEVEL 239.3 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.25	U4	17.8				Started 18.9.73
		KJ	19.0				
Dense to very dense mid brown slightly clayey, silty, well graded SAND with many fine to medium gravel size stones.		U4	(8.4)	Grading	GW		
		KJ	12.4		SW		
		SP	-			N = 50 for 75mm	
Occasional cobbles.		B	10.3	Grading	GF		
		SP	-			N = 42	
		B	(9.6)				
		SP	11.4			N = 46	
		B	(9.6)				
		SP	8.8			N = 21	
		B	8.1	Grading	SP		
	9.3	KJ	26.0				
See Sheet No. 2		SP B	27.6	Grading	SF	N = 18	

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
G.L. - 0.45	-	-	17.8	-		-	Topsoil and friable clay
1.50 - 1.95	-	-	(8.4)	-	-	-	Sand and gravel

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
9.7	-	-	-	-	-	-	Slight trace	7.0	Water sample

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. 69

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 18.8 m

LOCATION MAIN ROUTE CHAINAGE 2685m OFFSET 77m WEST
SIDE ROAD CHAINAGE 91m OFFSET 26m WEST

GROUND LEVEL 239.3 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
Medium dense mid brown very silty fine SAND.							18.9.73 BH. 'Dry' Casing 10.5m 19.9.73 SWL. 9.7m
	11.0	SP	-			N = 4	
Medium dense dark grey-brown varved clayey SILT and sandy SILT with CLAY partings.		B	23.3	Grading	ML		
		SP	30.0	Grading	ML	N = 15	
		B	30.6				
		SP	29.3			N = 13	
		B	31.4		ML/CH		
	16.0	SP	13.1			N = 16	
Medium to very dense dark grey-brown slightly clayey silty to very silty SAND with gravel size stones.		B	-				
		KJ	16.1	Grading	SF		
		SP	9.8			N = 50 for 120mm	
		B	10.3				
	18.0	SP	-			N = 50 for 75mm	
Hard broken, light brown SANDSTONE. Boulder?	18.8						19.9.73 Casing 18.0m SWL. 9.3m O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
11.0 - 12.50	-	-	23.3	-	0	35°	Quick S.B.
14.30 - 15.80	-	-	29.3	-	41	23°	Quick S.B.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Chiselling 18.0 - 18.8m 1 hour.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. 70

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 19.5 m

LOCATION CHAINAGE 2685m OFFSET 21m EAST

GROUND LEVEL 240.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.15	U4	21.4				Started 26.11.73
Medium dense mid grey-brown slightly clayey silty sandy GRAVEL		KJ	-				
		SP B	14.7	Grading	GW	N = 10	
A few cobbles and pockets of sandy SILT.		SP B	8.1 11.4			N = 28	
		SP B	11.2	Grading	GF	N = 24	26.11.73 BH. 'Dry' Casing 7.5m 27.11.73 BH. 'Dry'
Medium dense mid brown slightly silty fine to medium SAND	9.0	SP L	7.6		SU	N = 19	

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
0.6	-	-	-	-	-	-	Slight trace	7.5	Water sample

GENERAL REMARKS

Chiselling boulder 6.2 - 7.5m 1 hour.

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. 70

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 19.5 m

LOCATION CHAINAGE 2685m OFFSET 21m EAST

GROUND LEVEL 240.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
See Sheet No. 1	10.7	SP B	23.8		ML	N = 20	WE. 11.0m (Trace)
Medium dense mid brown slightly clayey sandy SILT		SP	27.1			N = 11	
	13.6	KJ	7.3				
Medium dense dark grey-brown slightly clayey silty fine to medium SAND with gravel size stones and cobbles.		SP B	9.5			N = 26	
		SP B	6.5 10.4	Grading	SF	N = 39	27.11.73 BH. 'Dry' Casing 15.5m 28.11.73 BH. 'Dry'
	17.0	SP	-		GU	N = 50 for 200mm	
Hard broken mottled orange/light brown medium to coarse grained SANDSTONE (Boulders?)		KJ SP	- -				
	18.4	KJ	-				28.11.73 BH. 'Dry' Casing 18.4m 29.11.73 SWL. 18.4m
Hard broken light brown fine grained SANDSTONE. Presumed bedrock.		SP	-			N = 50 for 60mm	29.11.73 Casing SWL 19.0m OWC.
	19.5						

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

3 hours chiselling 18.4m - 19.5m

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. 71

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 11.7 m

LOCATION CHAINAGE 2696m OFFSET 54m EAST

GROUND LEVEL 236.2 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.15	SP	14.5			N = 6	Started 17.12.73
Loose to medium dense dark grey-brown slightly clayey silty gravelly SAND, with a few cobbles, and boulders.		B	15.3				
		SP	15.0			N = 9	
		B	12.0	Grading	SW		
		SP	14.0			N = 26	
		B	10.3				
		SP	-			N = 14	WE. 4.5m (Slight)
Stiff dark grey-brown sandy silty CLAY with fine to medium gravel size stones. Occasional veins of SAND.	5.1	KJ	12.9	22/13/9	CL		
		U4	(11.4)				
		KJ	12.2				
		U4	11.9				
	7.8	KJ	13.1				
Hard very broken light brown fine grained SANDSTONE in a silty SAND matrix.		B	-				
		CP	-			N = 50	
		B	-				

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
5.50 - 5.95	2135	1915	(11.4)	112	56*	-	100 U.C.T.
					* Weakened by a stone.		

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. 71

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 11.7 m

LOCATION CHAINAGE 2696m OFFSET 54m EAST

GROUND LEVEL 236.2 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
See Sheet No. 1	10.5	CP	-			N = 50 for 125mm	19.12.73 BH. 'Dry' Casing
		CP	-			N = 50 for 30mm	19.12.73 BH. 'Dry'
Hard broken light brown fine grained SANDSTONE. Presumed bedrock		B	-				
	11.7	CP	-			N = 50 for 30mm	19.12.73 Casing 11.6m BH. 'Dry' O.W.C. 20.12.73 S.W.L. 4.5m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Chiselling 10.5m - 11.7m 3 hours.

C67A L6272 Taylor

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 3

JOB No. 367

B.H. No. 72

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 26.0 m

LOCATION MAIN ROUTE CHAINAGE 2710m OFFSET 44m WEST
SIDE ROAD CHAINAGE 109m OFFSET 9m EAST

GROUND LEVEL 239.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.2	U4	25.5		CI		Started 9.11.73
Loose mid grey-brown sandy LOAM with gravel size stones.	0.7	KJ	16.5				
Dense to very dense mid grey-brown silty sandy GRAVEL.		U4	16.2	Grading	GW		9.11.73 BH. 'Dry'
Occasionally slightly clayey.		KJ	13.8				Casing 2.0m 12.11.73 BH. 'Dry'
A lens of soft, mid brown sandy clayey silt at 5.2m.		B	14.0	Grading	GW		
		U4	9.5				
		KJ	14.1				
		KJ	13.3				12.11.73 BH. 'Dry'
	9.2	SP B	16.4	Grading	ML	N = 50	Casing 9.0m 13.11.73 BH. 'Dry'
See Sheet No. 2							

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
G.L. - 0.45	-	-	25.5	-	-	-	Peaty topsoil
1.50 - 1.95	-	-	16.2	-	-	-	Sand and gravel
4.50 - 4.95	-	-	9.5	-	-	-	Sand and gravel

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS Chiselling boulder from 5.8 to 9.0m

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 CF 3

JOB No. 367

B.H. No. 72

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 26.0 m

LOCATION MAIN ROUTE CHAINAGE 2710m OFFSET 44m WEST
SIDE ROAD CHAINAGE 109m OFFSET 9m EAST

GROUND LEVEL 239.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
Medium dense dark brown sandy SILT. Becoming Saturated towards the base.		SP	-			N = 17	WE. 10.0m (Trace)
	12.0	KJ	27.8				
Soft dark grey-brown varved clayey SILT/ silty CLAY.		SP B	33.1		ML/CH	N = 6	
		SP B	28.9			N = 5	
	16.0						
Dense to very dense dark grey-brown sandy GRAVEL. Occasionally silty with a slightly clayey binder. Occasional layers of silty fine to medium SAND.		SP	5.9			N = 44	
		B	9.3	Grading	GF		
		SP B	10.5			N = 50	
							13.11.73 BH. 'Dry'
		B	6.7				Casing 19.0m 14.11.73 BH. 'Dry'

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
12.20 - 12.65	-	-	28.1	-	26	24°	Quick S.B.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 3 OF 3

JOB No. 367

B.H. No. 72

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

LOCATION MAIN ROUTE CHAINAGE 2710m OFFSET 44m WEST
SIDE ROAD CHAINAGE 109m OFFSET 9m EAST

DEPTH 26.0 m

GROUND LEVEL 238.9 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
		KJ	12.6				
		U4	7.8	Grading	GW		
		KJ	9.7				
See Sheet No. 2		U4	-				
							14.11.73 BH. 'Dry' Casing 22.5m
							15.11.73 BH. 'Dry'
		SP	4.9			N = 50	
		SP	-			N = 50 for 115mm	15.11.73 Casing 26.0
Very hard broken light grey medium to coarse grained SANDSTONE. Boulder?	25.9 26.0						

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 4

JOB No. 367

B.H. No. 73A

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 30.6 m

LOCATION CHAINAGE 2747m OFFSET 49m WEST

GROUND LEVEL 227.1 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Pieces of broken sandstone.		B	-				Started 26.4.74
	0.7	B	-	Grading	GF		
Loose mottled orange-brown/mid grey slightly clayey silty fine SAND.		W					WE. 1.5m (Slight) 26.4.74 SWL. 1.5m Not cased.
	1.5						
Medium dense grey-brown silty sandy GRAVEL.		SP B KJ	21.4 -	Grading	GW	N = 20	27.4.74 SWL 1.2m 200mm ϕ Casing. S.O. 3.0m
	2.5						
Loose layered mid brown/dark grey sandy SILT with fine partings of soft CLAY.		SP B	30.1 -	Grading	ML	N = 8	
	3.9						
Loose dark grey-brown SILT with fine partings of soft CLAY.		B U4 KJ KJ	- 31.6 31.4 -	Grading Grading	ML ML		27.4.74 BH. 'Dry' Casing 5.0m 29.4.74 SWL. 4.9m
- Saturated		KJ	34.2				
	6.0						
Very dense layered mid brown/dark grey-brown/ mid grey slightly silty fine to medium SAND, with fine to medium gravel size stones. Some lenses of very silty gravelly SAND.		U4 KJ KJ SP B SP B	30.7 28.5 - - 12.9 - -	Grading	SU SF	N = 0 for 200mm N = 50 for 225mm	29.4.74 Bd. 'Dry' Casing 8.1m 30.4.74 BH. 'Dry'
		SP B KJ	- 11.6	Grading	GP	N = 50 for 210mm	

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	ϕ	Remarks
4.5 - 4.9	-	-	29.5	-	7	33°	Quick S.B.
6.1 - 6.5	-	-	30.7	-	13	22°	Quick S.B.

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
1.5	-	-	-	-	-	-	Trace	5.3	Water Sample

GENERAL REMARKS

Formerly borehole No. HA 25/1
Hand dug trial pit to 1.5m

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 4

JOB No. 367

B.H. No. 73A

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 30.6 m

LOCATION CHAINAGE 2747m OFFSET 48m WEST

GROUND LEVEL 227.1 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
See Sheet No. 1							
Loose to medium dense dark grey-brown silty gravelly SAND. with a soft clayey matrix.	11.1	SP B	- -	Grading	GW	N = 50 for 240mm	30.4.74 BH. 'Dry' Casing 11.4m 1.5.74 BH. 'Dry'
		SP B	21.0 -	Grading	SP	N = 14	Slight WE. 11.4m not sealed
Loose mid brown fine to medium SAND -Saturated.	13.3	SP B	-	Grading	SU	N = 5	
Loose dark grey-brown slightly clayey sandy SILT.	13.9	KJ W	29.0		ML		
Medium dense dark grey-brown slightly clayey gravelly very silty fine to medium SAND with thin bands of soft CLAY.	14.7	SP B	-	Grading	SF	N = 20	
-Saturated		SP B	-			N = 13	1.5.74 SWL. 17.1m Casing 17.1m
Medium dense dark grey-brown silty sandy GRAVEL.	17.1						2.5.74 SWL. 10.6m Not sealed
		SP B	- -	Grading	GW	N = 12	
-Saturated		SP	-			N = 10	

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
14.2	-	-	-	-	-	-	Nil	6.6	Water sample

GENERAL REMARKS Formerly Borehole No. HA 25/1

Metric

LANCASHIRE COUNTY COUNCIL

JOB No. 367

BOREHOLE DATA SHEET No. 3 OF 4

B.H. No. 73A

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 30.6 m

LOCATION CHAINAGE 2747m OFFSET 49m WEST

GROUND LEVEL 227.1 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
See Sheet No. 2	20.1									
Loose becoming medium dense dark grey-brown layered silty gravelly SAND and silty sandy GRAVEL. Occasional lenses of gravelly silty sandy CLAY.					B	-				
					SP	16.0			N = 5	
					B	-	Grading	SU		
										2.5.74 SWL. 16.5m Casing 22.3m 3.5.74 SWL. 11.8m
					SP B	12.0			N = 25	
					SP B	-			N = 23	
					SP	14.3			N = 50 for 150mm	3.5.74 SWL. 15.6m Casing 29.5m 6.5.74 SWL. 12.1m
					B	-	Grading	GW		
										Not sealed, stronger W.E. at 25.7m
	27.0									
Medium dense dark grey-brown silty fine to medium SAND.					SP	18.5		SU/SP	N = 27	
					SP	17.2			N = 43	

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Formerly borehole No. HA 25/1

Chiselling boulders 25.5 - 26.6m ¾ hour.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. ...4... OF ...4...

JOB No. 367

B.H. No. 73

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 30.6 m

LOCATION CHAINAGE 2747m OFFSET 48m WEST

GROUND LEVEL 227.1 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
See Sheet No. 3	30.6	SP				N = 38	6.5.74 S.W.L. 9.8m Casing 30.6m 7.5.74 S.W.L. 11.9m C.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS Formerly borehole No. HA 25/1

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 2

JOB No. 367

B.H. No. 73B

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 10.7 m

LOCATION CHAINAGE 2747m OFFSET 12m WEST

GROUND LEVEL 225.6 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL Black ash, clinker, with gravel size stones.		B	(12.6)				Started 20.9.73
	1.2						
Medium dense dark grey-brown sandy GRAVEL with a slightly clayey matrix.		SP B	9.6 11.5			N = 23	WE. 1.5m (Slight)
							20.9.73 BH. 'Dry' Casing 3.0m
		SP B	14.6 13.3	Grading	GC	N = 23	21.9.73 BH. 'Dry'
		SP	13.1			N = 29	WE. 4.5m (Slight)
	5.6						
Loose mid grey-brown layered sandy SILT and very silty fine SAND with thin partings of CLAY.		SP B	28.0	Grading	ML + SF + CL	N = 7	
		SP B	29.0			N = 9	
							21.9.73 BH. 'Dry' Casing 9.0m
	9.2	SP	13.6			N = 35	22.9.73 BH. 'Dry' 22.9.73 BH. 'Dry' Casing 10.0m 24.9.73 BH. 'Dry'
Very soft, broken, weathered, mid brown fine grained SANDSTONE.							

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Formerly Borehole No. HA 25/2

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 2 OF 2

JOB No. 367

B.H. No. 73B

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 10.7 m

LOCATION CHAINAGE 2747m OFFSET 12m WEST

GROUND LEVEL 225.6 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
See Sheet No. 1 Boulder or bedrock	10.7	KJ SP	-			N = 50 for 75mm	24.9.75 Casing 10.7m S.W.L. 6.0m O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Formerly borehole No. HA 25/2

5 Hours chiselling 10.0 - 10.7m

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 74

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 0.5 m

LOCATION CHAINAGE 2754m OFFSET 6m EAST

GROUND LEVEL 215.6 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL. Very dense brown clayey gravel with cobbles and boulders.					SP	15.0			N = 50	Started 22.9.75
Hard light brown fine grained SANDSTONE.	0.45 0.50						–			

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS 10.5m long trial pit dug to the north.
sandstone dips 2° North.

C87A L6272 Ta)Pto

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 74R

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 7.2 m

LOCATION CHAINAGE 2761m OFFSET 7m EAST

GROUND LEVEL 215.6 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
FILL: Limestone chippings and Black ash	0.2						Started 22.9.75
Open hole to 5.0m. Hard intact mid green-grey (with ferruginous staining) fine grained SANDSTONE. Bedding dipping 2° north. Becoming softer with clay filled joints. Occasional bands of sandy mudstone.							Uncased hole. 22.9.75 23.9.75 90% Return of Flushing water. Reducing to Zero at 7.0m.
Hard mid green-grey cross bedded fine grained SANDSTONE with dark organic partings	5.0						
Soft to hard very broken to broken dark grey (with ferruginous staining) thinly bedded sandy MUDSTONE With thin bands of hard fine grained SANDSTONE.	5.5			5.0 - 7.2m Rec'y 45%			23.9.75
	7.2						

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests

GENERAL REMARKS

Rotary Borehole (Water flush).
Description of strata from G.L. to 5.0m deduced from drill flushings and machine dug trial pit to 1.2m.

C87A 16272 Ta/Pfg

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 75

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 9.5 m

LOCATION CHAINAGE 2827m OFFSET 8m EAST

GROUND LEVEL 216.3 m

Description of Stratum	Depth	Sample 1	2	3	Key	M.C.	LL/PL/PI Core Rec'v	Class'n	N Value	Water & Casing Details
FILL. Black ash with medium dense slightly clayey very silty sand and gravel.					SP	-			N = 29	Started 14.9.73
					B	9.9				14.9.73 BH 'Dry' Casing - 1.2m
					SP	26.2			N = 7	15.9.73 BH 'Dry'
Very soft mottled orange/dark grey silty CLAY with bands of sandy clayey SILT.	2.0				U4	34.2	38/15/23	CI		
Soft mid grey-brown organic clayey SILT.	3.0				KJ	41.8		ML		
Loose mid grey-brown silty SAND with peaty inclusions.	3.5				U4	36.7	Grading	SF		W.E. 4.0m
Medium dense dark grey-brown clayey silty sandy GRAVEL.	4.0				SP	17.4			N = 19	S.W.L. 3.9m (10 mins)
					B	(10.9)	Grading	GW		
					CP	-			N = 11	15.9.73 S.W.L. 3.9m Casing - 5.5m
					B	12.2				17.9.73 S.W.L. 2.0m
Loose dark grey-brown varved clayey SILT layered with medium dense dark grey clayey silty SAND.	6.9				U4	23.4				
					KJ	27.3				
					SP	-			N = 20	
					B	-	Grading	ML		
								ML/SF		
	9.5				U4	24.4	33/19/14	CL		17.9.73 Casing - 8.0m
					KJ	22.1				S.W.L. 2.0 O.W.C.

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
2.00 - 2.45	-	-	34.2	-	12 - 14	-	LVT (3)
3.50 - 3.95	-	-	36.7	-	-	-	Sand and silt.
6.90 - 7.35	-	-	23.4	-	-	-	Silt
9.15 - 9.60	-	-	24.4	-	-	-	Silt

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
G.L. - 1.50	D4.5 C.B.R.	1934	9.9	-	-	47%	-	-	C.B.R.
4.0	-	-	-	-	-	-	Slight Trace	7.0/7.5	Water sample

GENERAL REMARKS

C67A 16272 Tay/Fig

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 77

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 2.1 m

LOCATION CHAINAGE 2867m OFFSET 18m WEST

GROUND LEVEL 214.6 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL (0.2m) on silty SUBSOIL							Started 2.10.73
Soft dark grey silty CLAY	0.3	U1½	39.9				Uncased hole
Mid brown fibrous PEAT	0.7	KJ	62.7	87/45/42	MH/OH		
becoming silty at 1.5m		KJ	225.2		Pt		
		W					W.E. 1.6m
		KJ	73.5				
	2.0	KJ	31.2	46/29/17	CI/OI		
GRAVEL	2.1	KJ	-		GU		S.W.L. on completion 1.4m

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks
0.32 - 0.39	1733	1250	39.9	38	19	-	38 U.C.T. (2)

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
1.4	-	-	-	-	-	-	Nil	7.0	Water sample

GENERAL REMARKS

Hand Auger Hole.

Metric

LANCASHIRE COUNTY COUNCIL

BOREHOLE DATA SHEET No. 1 OF 1

JOB No. 367

B.H. No. 78

SCHEME A.56 DIVERSION - HASLINGDEN TO ACCRINGTON

DEPTH 2.5 m

LOCATION CHAINAGE 2950m OFFSET 21m WEST

GROUND LEVEL 215.6 m

Description of Stratum	Depth	Sample 1 2 3 Key	M.C.	LL/PL/PI Core Rec'y	Class'n	N Value	Water & Casing Details
TOPSOIL	0.1						Started 2.10.73 Uncased Hole.
Dark brown silty SUBSOIL	0.4						
Dark brown fibrous PEAT				-	Pt		W.E. 0.9m
Silty CLAY band at 2.2m with GRAVEL at the base.		KJ	52.2		GU		2.10.73 SWL. 2.0m
	2.5						
GRAVEL							

STRENGTH TEST RESULTS

Depth of Sample	Bulk Dens'y (kg/m3)	Dry Dens'y (kg/m3)	M.C. (%)	Comp. Stress (kN/m2)	Cohesion (kN/m2)	Ø	Remarks

COMPACTION AND OTHER TEST RESULTS

Depth of Sample	Compaction	Dry Dens'y (kg/m3)	M.C. (%)	S.G.	Air Voids	C.B.R.	SO_3 gm/litre	pH	Remarks or other tests
2.0	-	-	-	-	-	-	Nil	6.5	Water Sample

GENERAL REMARKS

Hand Auger Hole.

DETAILED RECOMMENDATIONS

Main Route and Adjoining Slip Roads

Minus 500m to plus 780m (Syke Side)

Shallow to medium cutting - maximum depth 8m on centre line preceeding a short length of shallow embankment - maximum height 2m on centre line.

Over this section low to intermediate plasticity clays to the east give way to high plasticity varved clays to the north west. The underlying bedrock is shaley mudstone at a depth of about 20m. Due to past activities connected with roadworks and sewers the surface layers over much of the area near the roundabout consist of filling, mostly firm clays with some broken rock. Water entries were generally slight.

Topsoil where present should be stripped from the whole of the area of the main route and the northbound "entry" slip road. Depths are variable from nil up to 400mm. An average of 110mm is suggested as far as chainage 500m. Between chainages 500m and 780 an average of 225mm would be a better estimate.

Excavation for the cutting will be entirely within the drift and the overlying fill. The strengths of the clays are extremely variable and only 15% of the excavated material is expected to be suitable for re-use arising from mainly the lower third of the cutting south of chainage zero. Standard side slopes of 1 in 3 are proposed.

For standard flexible and composite construction a 400mm thick 'subgrade layer' of S.F.1 material is proposed for the main route as far as chainage 150m. Between there and chainage 630m soft varved clay will be present at excavation level and the 'subgrade layer' will require thickening to 600mm. The short length of main route on embankment should be constructed to formation level entirely in 'rockfill' or S.F.4 the first layer being placed 600mm thick as a starter layer. Standard construction is proposed for the northbound "entry" slip-road, requiring a 'subgrade layer' (S.F.1) thickness of 600mm in cutting.

For rigid construction the 'subgrade layer' thickness would be 225mm throughout.

When constructing tapering widths of less than 3m where the main carriageways tie in to the existing slip roads lean concrete to Clause 807 should be used to replace the sub-base and part of the roadbase to within 160mm below finished road level.

Syke Side Southbound "Exit" Slip Road.

Shallow cuttings-maximum depth 3m on centre-line with short lengths of shallow to medium embankment - maximum height 8m on centre-line.

To the west of chainage 350m the underlying material is predominantly soft, high plasticity varved clay whilst to the east there is an abrupt change to stiff low plasticity boulder clay. A thin surface layer of peat was found in the area of borehole 16. Water entries were generally slight.

Topsoil should be stripped from the areas in cutting - an average of 150mm is available. Where the embankment height exceeds 3m topsoil-strip is not necessary technically but could be undertaken if there is a shortage of topsoil.

None of the material excavated from the cuttings is expected to be suitable for re-use. Side slopes of 1 in 3 are proposed.

For excavating the thin surface layer of peat in the vicinity of chainage 400m a quantity of 100m^3 should be allowed. For backfilling the excavation to natural ground level 'rock fill' may be used.

Where the embankment between chainages 300m and 375m spills over into Syke Mill Lodge it will be necessary to clean out the soft material from the bottom and vegetation from the sides of the lodge. Filling material tipped below water level should be approved granular material complying with Clause 605 Table 2 "Free Draining Material". The south batter of the same embankment will be unstable between chainages 275m and 380m due to the presence of a surface layer of soft varved clay some 3m - 6m thick. A toe trench will be necessary here, taken down to the stiff boulder clay and backfilled to natural ground level with 'rock fill'. Side slopes of 1 in 2 are proposed for all lengths of fill.

For standard flexible and composite construction a 400mm thick 'subgrade layer' of S.F.1 material is proposed from Rawtenstall Road as far as chainage 400m. West of this point the 'subgrade layer' thickness should be increased to 600mm on account of the soft varved clays present at excavation level.

For standard rigid construction the 'subgrade layer' thickness should be 225mm throughout.

For the short length of embankment between chainages 350m and 410m a 600mm thick starter layer of 'rock fill' material will be required.

For excavating soft material from the pond at chainage 165m a quantity of 50m^3 should be allowed. Backfill should be in S.F.1 material.

The strength of the existing culvert which crosses the route near chainage 370m should be checked in relation to the additional 4m of fill which is to be placed in that locality. In view if the toe trench requirement it may be beneficial to re-route this culvert. Also the two sewers which cross the line in the same vicinity will require protection during construction of the embankment.

780m to 1225m (Victoria Park)

Medium cutting - maximum depth 9m on centre-line.

The material in this cutting can be considered in two parts. From chainage 780m to Helmshore Road interbedded deposits of soft high plasticity varved clay and loose saturated silts and sands totalling some 30m in thickness overlie firm to stiff high plasticity varved clay. North of Helmshore Road interbedded gravelly sands and silty sands have been proved to depths of up to 12m overlying silt. Although much of the silt and sand appeared to be saturated no strong water entries were evident during drilling.

Topsoil thicknesses are very variable over this length. In Victoria Park topsoil depths average 1.0m. South of the Park some 350mm of topsoil overlie approximately 500mm of peaty organic loam. The latter could be stripped along with the topsoil in the event of a shortfall. North of Helmshore Road the situation is different; depths are much less, averaging only 100mm.

South of Helmshore Road excavation is likely to be extremely difficult and the use of scrapers is not envisaged. In spite of the weak water entries recorded during drilling seepages of groundwater are expected to be considerable during excavation causing a great deal of erosion to batters and slumping of working faces. Attention will have to be paid to temporary drainage and to early soft area treatment on the slopes coupled with permanent face drainage. North of Helmshore Road conditions should be easier and the use of scrapers possible especially if material can be taken downhill towards Waterfoot.

With extensive face drainage it should be possible to bring the ground water sufficiently under control to permitseeding of the slopes to take place. Normal topsoiling is not recommended because of the tendency of topsoil to slide when saturated. Preferably seeding should be carried out hydraulically, coupled with a light scattering of topsoil material, say 25mm. With these provisions standard side slopes of 1 in 3 should be satisfactory.

The material to be excavated north of Helmshore Road would be suitable if drained, but seeing that natural drainage is more likely horizontally than vertically, drainage will be slow. This material has therefore been classified as unsuitable along with that from the remainder of the cutting.

For the carriageway standard construction on a 'subgrade layer' of S.F.1 (400mm flexible, 225mm rigid) is proposed. An additional excavation of 300mm followed by stabilisation and backfilling with S.F.1 will be necessary throughout this cutting in view of the wet silt and sand, and soft varved clays, to be expected at formation level.

Backfilling to formation drains should be in Type B material but because of the preponderance of wet silt and fine sand the pipe and filter media together should be completely wrapped in a proprietary non-woven filter fabric.

An external french drain will be required along the top of the east batter where the natural ground falls towards the cutting; backfilling as for formation drains.

1225m to 2000m (Waterfoot and Spring Vale)

Medium to high embankment - maximum height 14m on centre line.

This embankment takes the road into Spring Vale to follow the line of the valley and crosses Swinnel Brook twice in the process.

No rock was found along this length. The bridge boreholes which reached depths in the region of 30m revealed mainly loose saturated silts and sands, and very soft to firm varved clays. South-east of Grane Road this material was overlain by a thin layer of gravel, and in the vicinity of Flip Road by up to 8m of boulder clay. Sporadic pockets of gravel were found close to Swinnel Brook. Some surface peat was located in boreholes P3, 40 and 47.

South-east of Grane Road water entries in the boreholes during drilling were not strong although the granular material was clearly saturated below a certain level. North of Grane Road water entries were much stronger and the final standing water level was close to ground level as would be expected close to the Brook. Water entries from the deeper silt tended to rise to a high level and were artesian in the case of boreholes 5615/3 and 5616R/1.

Around Grane Road, Coronation Street and Waterside Road where five blocks of terraced houses are to be demolished shallow depths of fill (mainly ash with sand and soft clay) occur over the site. Underground constructions such as cellars are present. Alongside Spring Vale Mill two underground air-raid shelters are shown on the aerial survey. Elsewhere the building of various structures, some since demolished, has led to the disturbance of the ground surface in several places. Depths of fill of up to 4.7m (B.H. 53) have been recorded. There is a well 24m west of the centre line at chainage 1697m.

Depths of topsoil are variable. Where, encountered i.e. at about half the borehole sites, depths of from 75mm to 400mm were present averaging 145mm, Topsoil should be stripped from the whole of the area between chainages 1225m and 1460m (average 120mm); also from the abandoned railway embankment where the new fill abuts it. Elsewhere topsoil-strip is optional (average 150mm, where it is present).

Although the existing railway embankment which the new route parallels appears to be stable it was probably built slowly. Borehole information obtained along this section indicates that the higher lengths of embankment could pose stability problems during construction if built too quickly. Particularly over the two lengths 1220 - 1480m and 1500 - 1700m the rate of filling may be critical and must therefore be controlled so as not to exceed the rate at which the underlying varved silty clays/clayey silts can gain the required strength by consolidation. It is estimated that a rate which gave steadycompletion over a period greater than twelve months would be satisfactory. The installation of piezometers to measure the changes in pore water pressure as construction proceeds is strongly recommended. All but the top 10m of fill should be in granular material.

Some small amounts of differential settlement can be expected from the alluvium close to Swinnel Brook and from the pockets of old fill which are allowed to remain. It is not thought necessary to remove the old railway embankment where the new route crosses it. It should be sufficient simply to bench the existing slopes as construction of the new embankment proceeds and work any loose material into the new fill. The parts of the old embankment which flank the new may be landscaped if desired. The trapped valley which may still remain between the two fills in the vicinity of Flip Road should be filled with unsuitable material sloped away from the east verge at 1 in 20.

Layers of peat were found near the surface in boreholes P3, 40, 47, 47E, 47H and 47K. Small pockets of peat were found within the soft surface deposits in some of the other boreholes in the same areas. Before any fill is placed, these surface deposits of peat and soft soil must be removed and replaced by free draining granular material to Clause 605 Table 2. Quantities involved are 5500m^3 between chainages 1250m and 1360m on the west side (maximum depth around 2.7m) and 5600m^3 between chainages 1515m and 1600m on the east side (maximum depth 3.8m).

Provision for underdrainage of the embankment will have to be made between chainages 1220m and 1360m where the line traverses a series of springs in the hillside. Treatment should take the form of 100mm dia. porous pipes laid 600mm deep in herringbone pattern to fall to the nearest watercourse. Trenches should be backfilled with Type B material. Both the porous pipe and the backfill should be completely wrapped in a proprietary non-woven filter fabric.

A starter layer, consisting of 'rock fill' placed 600mm thick in one operation, will be required across the full width of the embankment (except where peat is replaced by free draining granular material) between chainages 1220m and 1360m.

For cleaning out the ditches/watercourses at chainages 1315m and 1600m quantities of 170m^3 and 120m^3 respectively should be allowed.

The effect of settlement on the existing sewer and proposed culvert at Waterside Road should be taken into consideration, (see foundation report for culvert).

All the material excavated from the short lengths of slip roads which are in cutting will be unsuitable for re-use. For these carriageways standard construction on a 'subgrade layer' of S.F.1 (400mm flexible, 225mm rigid) is proposed.

The proposed shallow retaining wall alongside the northbound "exit" slip road at Grane Road Junction may be satisfactorily rafted in the surface layer of gravel. The wall may be of reinforced earth, or of precast concrete cribbing or a conventional reinforced concrete type; but whatever the type, it should be constructed at a late stage in the contract so as to avoid disfigurement due to settlement of the adjoining embankment.

2000m to 2560m (Carrs)

Shallow to medium embankment - maximum height 5m on centre line.

Along this section the proposed route parallels and partly coincides with the abandoned railway line. The site is at present used mainly for playing fields and allotments. The area for the playing fields has been levelled by tipping refuse (mainly black ash, glass, broken stone and some soft clay) to a depth of up to 4m. Unfortunately no attempt was made at the time to strip off the surface layer of peat which now underlies the fill in thicknesses up to 1.4m. There are also small pockets of peat in the underlying gravelly clay.

The lithological structure along this section is very mixed due possibly to the valley having been a glacial outwash channel, Soft, sandy and gravelly clays are interbedded with sands and gravels, sometimes silty or clayey, sometimes well graded and clay free.

Frequent water entries were experienced when drilling along this section and the final standing water level was generally found to be within one or two metres of the natural ground level. Some water entries rose up into the filling.

Topsoil should be stripped from the whole of the area of this embankment. Depths are generally shallow varying from 50mm to 200mm. An average of 100mm should be allowed. It is recommended that the underlying organic sub-soil which exists in some areas should be stripped also. In these areas the combined depth of topsoil and subsoil reaches 300mm - 400mm.

Before any new filling is placed between chainages 2000m and 2100m the old filling should be removed (it can be re-used elsewhere) and the underlying peat and organic material excavated out and replaced by approved free draining material to Clause 605 Table 2. The quantity of old fill which may be re-used after excavation is estimated as 7000m^3 and the volume of peat and organic soil requiring removal and replacement 3500m^3.

Between chainages 2225m and 2400m on the northbound carriageway and between 2200m and 2560m on the southbound carriageway the filling should be completed to formation level wholly in S.F.1 material, the small areas in cutting being excavated sufficiently to accomodate a minimum of 600mm of S.F.1 material. Elsewhere the embankment should be completed to formation level in the normal way. The appropriate standard construction should be laid thereon in each case.

The strength of the existing culvert which crosses the route near chainage 2100m should be checked in relation to the additional 4m of fill which is to be placed in the locality. It is assumed that a new culvert will be required at chainage 2475m, the existing railway bridge being demolished.

2560m to 2800m (North Hag)

Deep cutting - maximum depth 24m on centre line.

Over this short section the new route cuts through a promontory known as North Hag following the line of an abandoned railway tunnel. Here a sequence of flaggy sandstones (Lower Haslingden Flags) rests on sandy shaley mudstone above the Holcombe Brook Coal. Both rotary and shell and auger boreholes were drilled in this location and indicate that whilst the bedding of the rock dips approximatley 5° to the north the rock head dips approximately east - west at about 10°, at a level of about 7m to 2m above the east and west verges respectively.. Only the sandstone will be seen during excavation for the cutting. The mudstone lies a few metres lower. The drift material overlying the rock consists of stratified deposits of silty sand and silty sandy gravel interspersed at mid height with layers of silt and varved clay. The gravel tends to have a slightly clayey binder. Some of the boreholes show a thin layer of boulder clay immediately above the rock.

Water entries in the boreholes were slight, with final standing water levels at or below finished road level except where the rock-head is higher. In contrast the abandoned railway tunnel (which has a formation level similar to the new route) is fairly wet. It is concluded that the line of seepages into the tunnel probably coincides with the intersection of the tunnel lining with the rock-head.

Depths of topsoil over the site vary from 75mm to 275mm with an average of 185mm.

Granular deposits both above and below the silt and varved clay appear to be well drained and have been classified as suitable for re-use as filling. It is thought unlikely that extraction of any of these granular deposits for use as special materials would be economically feasible.

Sandstone rock will be encountered in excavation between chainages 2600m and 2780m approximately. Some of the more weathered layers will be rippable but some of the harder sandstone will require blasting. In view of the granular nature of much of the drift material it is proposed that side slopes of 1 in $2\frac{1}{2}$ be adopted. The slope in the sound rock on the east side may be steepened to 1 in $1\frac{1}{2}$ if desired but in either event the sandstone may be stepped along its bedding planes to present an outcropping appearance.

Flatter slopes than these should win additional suitable material. It is suggested also that the area remaining enclosed between the new route, Bridge Street and the diverted Commerce Street could be used as a source of suitable material, and landscaped on completion.

On the basis of slopes of 1 in $2\frac{1}{2}$ the excavated material from the main cut is expected to comprise:

Soft suitable	50%
Unsuitable	40%
Rock	10%

Care should be taken when excavating around the existing tunnelto unload the structure equally on both sides.

The area of rock at formation level is considered to be sufficient to make it worthwhile modifying the carriageway construction, as shown in Tables 3 and 6 on pages 14 and 15. Although the rock is not frost susceptible it will be susceptible to weathering. It is therefore recommended that as soon as the rock has been excavated to formation level it should be covered with a blinding and regulating layer, 160mm thick, of lean concrete to Clause 807S.

Excavation for formation drains will encounter rock between chainages 2615m and 2790m in the west verge and 2590m and 2770m in the east verge.

Some allowance should be made for face drainage where silt is exposed in the batters, and where sand overlies clay.

North of chainage 3900m peat will be found below formation level to a depth of 5.0m and 20,000m^3 will require excavation and replacement by free draining granular material to Clause 605 Table 2. The depths to which the excavation of peat is to be taken are summarised at the end of the report. The width of the peat excavation and the temporary side slopes should be determined as described for Holden Vale (page 31). It is assumed that the existing H.P. gas main to the west of this length will have been diverted before excavation commences otherwise its safety will be in question.

For the finished cross-section standard side slopes of 1 in 3 (cut) and 1 in 2 (fill) are proposed except in the vicinity of Hud Hey Road Bridge and Carterplace Hall where cutting slopes of 1 in 2 are preferred in order to limit the land take and the demolition of private property.

To maintain a 1 in 2 slope between chainages 3440m and 3550m, is, on the west side, a drainage problem basically. Borehole No. L94 shows soft to firm clay to 2.5m, well-drained slightly clayey silty sandy gravel to 6.1m, and silty sand to 10.5m, (saturated below 6.9m); formation level being at 8.2m. The two nearby bridge boreholes both show relatively slightly higher water tables, 2.9m and 3.1m above formation level, in silty sandy gravel. It is envisaged that verge drains, set at the normal level for draining the formation, will be adequate for permanently lowering the water table in this area to a satisfactory level. It would be prudent, however, to make provision (on the west side only) for 5% replacement of the cutting slope material by heavy buttress drains rising from the toe to the recorded standing water level. On the east side the batter below the bridge bank seat requires making up in fill material in which case a slope of 1 in 2 can be safely achieved by specifying suitable granular material. A small pocket of peat found in borehole 5617/5 will require removal before the approach fill is placed - see Part II.

Most of the glacial deposits along this section are granular and have been classified as suitable where above the standing water table. Allowance has been made for the effect of cohesive layers in the areas where these occur. It is thought unlikely that extraction of any of the granular deposits for use as special materials would be economically feasible.

The excavated material is expected to comprise:

Soft suitable	80%
Unsuitable	20%

For the carriageways throughout this section standard construction on a 'subgrade layer' of S.F.1 material (400m flexible, 225m rigid) is proposed. In the areas of fill the void between original ground level after topsoil strip and the underside of the 'subgrade layer' should be made up using suitable granular material. Where any of this fill abuts a side slope of the existing railway cutting the old side slope should be benched as construction proceeds and any loose material there worked in with the new fill.

Backfilling to formation drains should be in Type B material. Both the porous pipe and the backfill together should be completely wrapped in a proprietary non-woven filter fabric.

Rising Bridge Roundabout

Part cut and part fill - maximum depth of cut 16m maximum depth of fill 9m.

The site for the roundabout is best considered in two parts. The part which lies to the west of Blackburn Road is in cut and the ground conditions are similar to those for the previous section - hummocky glacial deposits of mainly granular soil with occasional pockets of peat. The soil appears to be very well drained - no water entries were found in any of the boreholes.

The part of the roundabout which lies to the east of Blackburn Road is in fill occupying part of the site of a glacial drainage channel. Three boreholes (P11 - 13) show up to 3m of peat overlying mainly granular material. A fourth borehole L103 shows only firm to very stiff boulder clay before bedrock at 6.8m. Although this channel is now a trapped valley it appears to be relatively well drained, possibly via the underlying Lower Haslingden Flags. During the winter months standing water level appears to be approximately at ground level.

Considering firstly the western part of the site, topsoil depths vary considerably from 100mm to 400mm with an average of 250mm. Topsoil should be stripped from the whole of this area.

Standard cutting slopes of 1 in 3 are proposed for this part of the roundabout area.

The material to be excavated is mainly of a gravelly nature (soft to hard weathered sandstones and mudstones) but is layered with several lenses of sand, silt and clay. Although all this material has been classified as suitable some allowance has been made for the difficulties which will be experienced in working with it in wet weather, and for the occasional pocket of peat. The excavated material is expected to comprise:

Soft suitable	80%
Unsuitable	20%

For the carriageways standard construction on a 'subgrade layer' of S.F.1 material (400mm flexible, 225mm rigid) is proposed. No peat was found below formation level in any of the boreholes.

For backfilling the verge drains Type B material is proposed with both the porous pipe and the backfill together completely wrapped in a proprietary non-woven filter fabric.

Considering secondly the eastern part of the site, topsoil should be stripped from the whole of this area. Depths vary from 150mm to 500mm with an average of 200mm.

A surface layer of peat up to 3m thick is present over much of this area and should be removed before any fill is placed. The quantity is estimated as 15,750m^3. For backfilling the excavation it is recommended that the granular material to be excavated from the opposite part of the roundabout be used in view of its close proximity. This material will be suitable for placing below standing water level if necessary.

Standard side slopes of 1 in 2 are proposed for the fill in this area. Where the new fill abuts the existing embankment carrying Blackburn Road the old batter should be benched as construction proceeds and any loose material worked in with the new fill. In any location where the height of fill required is less than 1.5m, measured from existing ground level prior to soil strip to proposed finished road level, 'rock fill' should beused as the fill material.

It is assumed that the existing H.P. gas main and sewer which cross the site will be diverted or given adequate protection before any fill is placed.

Where the new carriageways join into the existing Blackburn Road the latter surface will require regrading to the new, higher, levels. Where the amount of lift required is between 0mm and 100mm the existing surfacing should be broken out sufficiently to accommodate 100mm of new surfacing. Where the amount of lift is between 100mm and the standard construction depth (as in Table 1, page 13) the required regulation should be carried out in roadbase material. For greater lifts the appropriate standard construction should be used.

When constructing tapering widths of less than 3m where the new carriageways join the existing lean concrete to Clause 807 S should be used to replace the sub-base and part of the road base to within 160mm below finished road level.

At this site the route of the by-pass follows the line of the disused Haslingden to Accrington railway and has a similar formation level. Commerce Street is at present carried over the railway line by a single span bridge. Just a few metres north of this bridge the railway line runs into a tunnel through a promontory known as North Hag.

Commerce Street, which is a single carriageway unclassified road, is to be diverted to the north of its present alignment and is to be carried over the by-pass on a three span composite concrete bridge (deck continuous for live load) at a skew of approximely 30°. The line of the new bridge passes over the south portal of the existing railway tunnel.

SITE INVESTIGATION

Considerable difficulty was experienced in siting the boreholes for this bridge on account of the steep nature of the ground and the lack of reasonable access. North Hag rises to a height of 27m above the proposed road level and falls away on three sides. Four shell and auger holes were drilled from natural ground level along the line of the bridge and in two of these rock was proved by rotary coring. In addition one shell and auger and three rotary holes were drilled from the level of the railway formation in the vicinity of the east verge pier position.

A sandstone - Lower Haslingden Flags - overlies mudstone on this site. From the borehole information the bedding dips gently to the north at about 5° but the rock-head dips much more steeply, at about 10° to the west. The erosion is such that at the west bankseat the sandstone has been completely removed. The degree of weathering of the sandstone is very variable resulting in large flags separated by bands of soft rock. Joints which have opened up both vertically and along bedding planes are mostly clay-filled. The rock-head lies about two to three metres above finished road level at the west verge pier and about seven metres above at the east verge pier so that rock will be encountered during excavation both for the main carriageway and for the verge pier foundations. The rock-head is also about four metres above side road level at the site of the east bank-seat but about eleven metres below at the west bank-seat.

The drift material overlying the bedrock varies in depth from twenty-two metres at the west bank-seat to five metres at the east bank-seat and is a stratified glacial deposit of silty sand and silty sandy gravel. Much of the gravel and some of the sand has a slightly clayey binder. There is a layer of stiff boulder clay immediately above the rock-head and thin lenses occur elsewhere. There are also a few thin (< 0.1m) lenses of firm high plasticity varved clay within the sand and gravel strata.

The water table in the drift material appears to be standing at a level around 215m A.O.D. (B.H. 5616/3), slightly above finished road level on the main route. The few water entries recorded above this level were only slight. In contrast the abandoned railway tunnel (which has a formation level similar to the main carriageway) is fairly wet. It is concluded that the line of seepages into the tunnel probably coincides with the intersection of the tunnel lining with the rock-head.

FOUNDATION DESIGN

West Bank-seat

At a proposed founding level of 217.0m A.O.D. a spread footing would be in medium dense silty fine to medium sand containing small pockets or lenses of sandy silt, underlain at a level of 211.9m A.O.D. by medium dense silty fine sand. The highest standing water level was found to be at 215.0m A.O.D., a level which is unlikely to be lowered during construction.

The low standard penetration test results recorded in borehole 5616/1 are probably due to disturbance of the saturated sand by the drilling operations and should be disregarded for design purposes. In the repeat borehole 5616/3, great care was taken to ensure that there was no out of balance hydrostatic head between the inside and outside of the cased borehole. In this instance the lowest S.P.T. value recorded was $N = 18$.

Calculations based on an N value of 18 indicate that the allowable bearing pressure should be based on considerations of settlement rather than ultimate bearing capacity. For an acceptable settlement of 25mm the allowable bearing pressure should be limited to 120 kN/m^2 (net), and for 50mm limited to 240 kN/m^2 (net). Intermediate values can be obtained by interpolation.

Verge Piers and East Bank-seat

At proposed founding levels of 212.5m A.O.D. for the verge piers and 217.0m A.O.D. for the bank-seat it will be possible to construct footings in the sandstone bedrock. Taking into account the variable degrees of weathering of this rock and the presence of clay filled joints it is considered that the net allowable bearing pressure should be limited to 400 kN/m^2.

GENERAL REMARKS

Side slopes of 1 in 3 as shown on the strip plan are satisfactory. On the east side where the slope will be in sandstone bedrock a steeper slope could be employed but it has been decided elsewhere (see Part I, page 29) that, considering this location (North Hag) is one of the few sources of suitable material on the scheme, a flatter slope could be justified. Nevertheless, the bands of harder sandstone which will be found in the cutting slope could be left exposed as outcrop features if desired.

The soft excavated material should be classified as 55% suitable for re-use. All the rock to be excavated should be classified as 100% suitable for re-use.

Excavations in bedrock should be taken out net and the structural concrete compacted up to the sides of the excavation. Backfilling to the west bank-seat should be in selected suitable filling Type S.F.2.

Samples of ground water taken from the boreholes have been tested for soluble sulphates and only a slight trace found. No special precautions are necessary with structural classes of concrete.

The likelihood of shallow mine workings below this structure can be discounted.

PLANTATION MILL RETAINING WALL BRIDGE NO. 5616R

This retaining wall is required in order to maintain access around Plantation Mill where the main-route embankment, 8m high, would otherwise encroach on the property. On the site for the wall once stood another mill building long since demolished.

A planned diversion of Swinnel Brook which runs alongside the mill will take it under the retaining wall in a box culvert at a skew angle of approximately 47°.

Construction of the wall is to take the form of two levels of pre-cast concrete crib-walling set at a rake of 4 in 1, on mass concrete base slabs. The maximum height of the lower wall is about 2.8m above final ground level which is slightly higher than existing. The maximum height of the upper wall is approximately 1.7m.

SITE INVESTIGATION

Four Shell and Auger boreholes have been drilled for this structure, during the course of the site investigation, to a maximum depth of 22.4m. Bedrock was not encountered within this depth nor any sign of the strata normally found within close proximity of bedrock.

At the surface, shallow depths of made ground, soft and firm weathered clays, and some organic silt overlie a bed of medium dense silty, sandy, and partly clayey gravel, found to be variable in thickness from 1.9m to 8.3m. The upper surface of the gravel appears to have a fairly constant level of around 197.0m A.O.D. Beneath the gravel is a bed of firm to stiff, low to medium plasticity boulder clay varying in thickness between the boreholes from 0.4m to 4.5m.(In borehole 5616R/4 it appears to be missing altogether). Below a fairly constant level of 188m to 191m A.O.D. is an extensive deposit of glacial varved silts and clays which was proved for a depth of 14m. Great difficulty was experienced in drilling through these varved silts and clays due to considerable adhesion on the side of the borehole casing, and to artesian pore water pressures tending to blow the silt up inside the casing. An attempt to counter this latter effect was made by keeping the casing full of water during drilling, but even so, some disturbance of the natural state of the ground took place prior to sampling and in-situ testing.

Ground water first became noticeable at depths of around 1m to 2m, the highest standing level recorded being at 0.8m (197.5m A.O.D.). The pore water pressure in the deep silts was sufficient in borehole 5616R/1 to give a standing level equal to ground level (198.6m A.O.D.) and in 5616R/4 equal to 0.9m above ground level (199.4m A.O.D.).

FOUNDATIONS

The lower mass concrete foundation block, with its upper surface battered at a slope of 1 in 4, is to be founded at stepped levels varying from 197.706m A.O.D. at the north end, to 199.191m at the south end. At these levels the northern part of the wall will be founded in either made-ground or in the soft surface layers of the natural ground. The southern part of the wall will be founded above existing ground level. These surface layers of soft clay, organic silt, and made-ground will require digging out and replacing with selected granular filling type S.F.2. It is not expected that the depth of additional excavation will anywhere exceed 2m. The width of the bottom of the excavation should be greater than the combined width of foundation block and S.F.2 backing by an amount equal to twice the excavation depth. The total amount of additional excavation is estimated to be 450m^3.

The filling around and immediately behind the crib-walling units should be carried out in S.F.2 material, the back slope of which (up against the suitable filling forming the remainder of the embankment) should be no steeper than 1 in 1. The horizontal width of this S.F.2 filling behind the lower foundation block is shown on the drawings as varying between 0.6m and 2.2m. These widths will be satisfactory where the bulk filling to the main embankment is in suitable granular material but will be inadequate, as regards overall stability, if the contractor opts to use suitable cohesive fill. It is therefore recommended that the bulk filling to the west half of the main embankment be specified as suitable granular material for the whole length of the retaining wall.

The maximum bearing pressure at the toe of the wall at its highest point is given as 110 kN/m^2 which will be satisfactory on the gravel layer and the underlying boulder clay. Some of the varved clay lenses in the thick silt bed beneath may be overstressed leading to a certain amount of lateral creep as the main embankment is built up, but this should not have a detrimental affect on a retaining wall of this type.

Stability analyses carried out on the main embankment, at the position of maximum height of the upper wall, show that there could be an instability problem during construction if built too quickly. Calculations based on a circular type of failure have given factors of safety of the order of 1.25 in the short term and 1.5 in the long term.

The rate of filling may be critical and must therefore be controlled so as not to exceed the rate at which the underlying varved silty clays/clayey silts can gain the required strength by consolidation. Standard laboratory oedometer tests are not appropriate in this case, for estimating the rate of consolidation, but a filling rate of 0.3m (vertically) per week, as is proposed for the contract specification, should be satisfactory, provided this approach is coupled with in-situ instrumentation which can be monitored as construction proceeds.

GENERAL REMARKS

The side slopes of the main-route embankment above each section of wall are assumed to be set at 1 in 2.5.

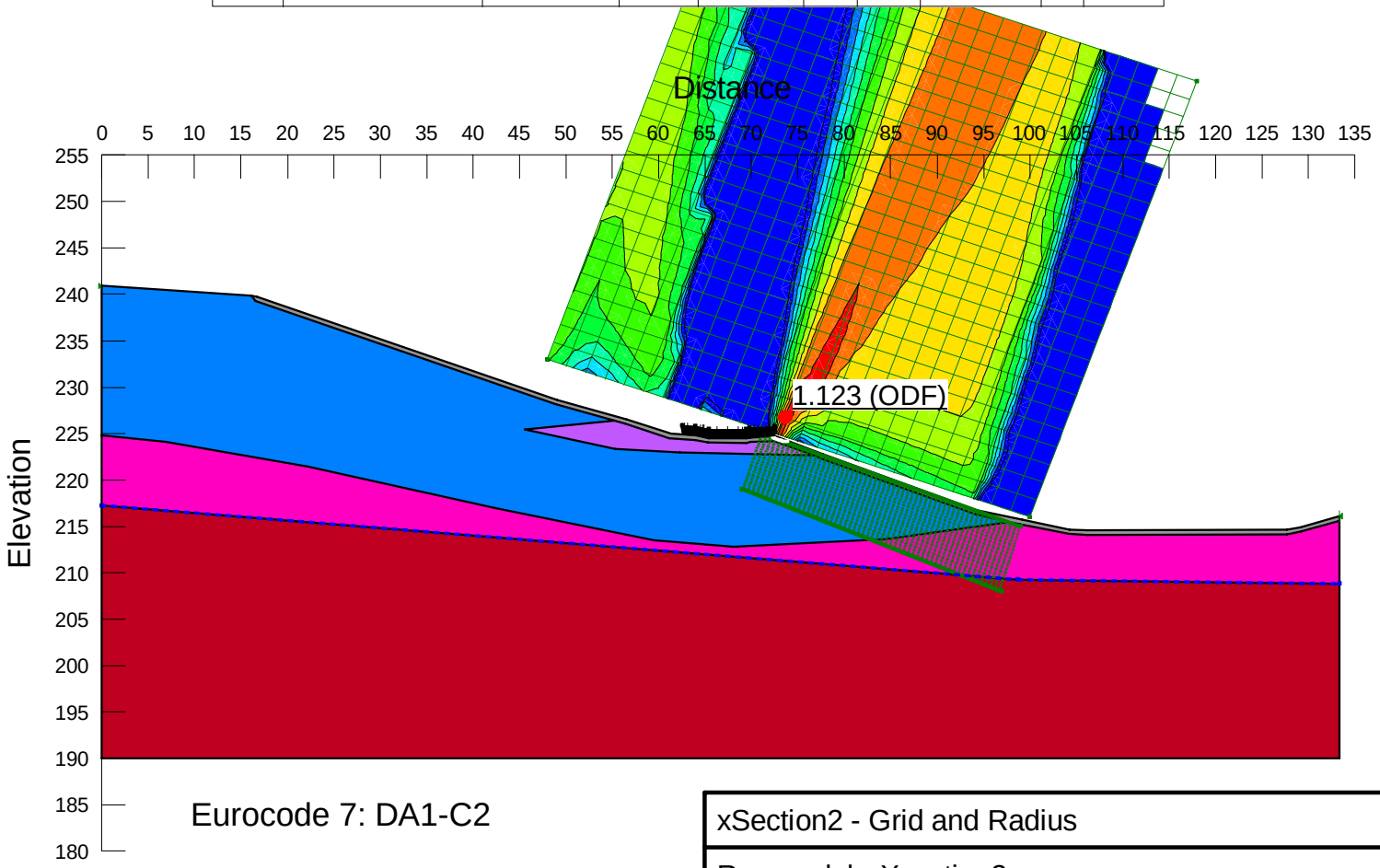
All the material to be excavated for the lower foundation block should be classified as unsuitable for re-use and carted to tip.

A total of six samples of ground water have been taken from the boreholes and in all but one only a trace of soluble sulphates found when tested in the laboratory. The exception was in borehole 5616R/4 at 1.8m where a soluble sulphate content of 48 parts per 100,000 (Class 2) was recorded. This relatively high figures may be due to the ashy back-fill on the site of the old mill. Considering that to avoid this contamination it would be necessary to remove the ash over a wide area, it would be cheaper and safer to specify sulphate resisting cement for the concrete in the lower foundation block. The pre-cast units should be safe in ordinary portland cement.

24th July, 1978.

F. Slope Stability Assessment Outputs

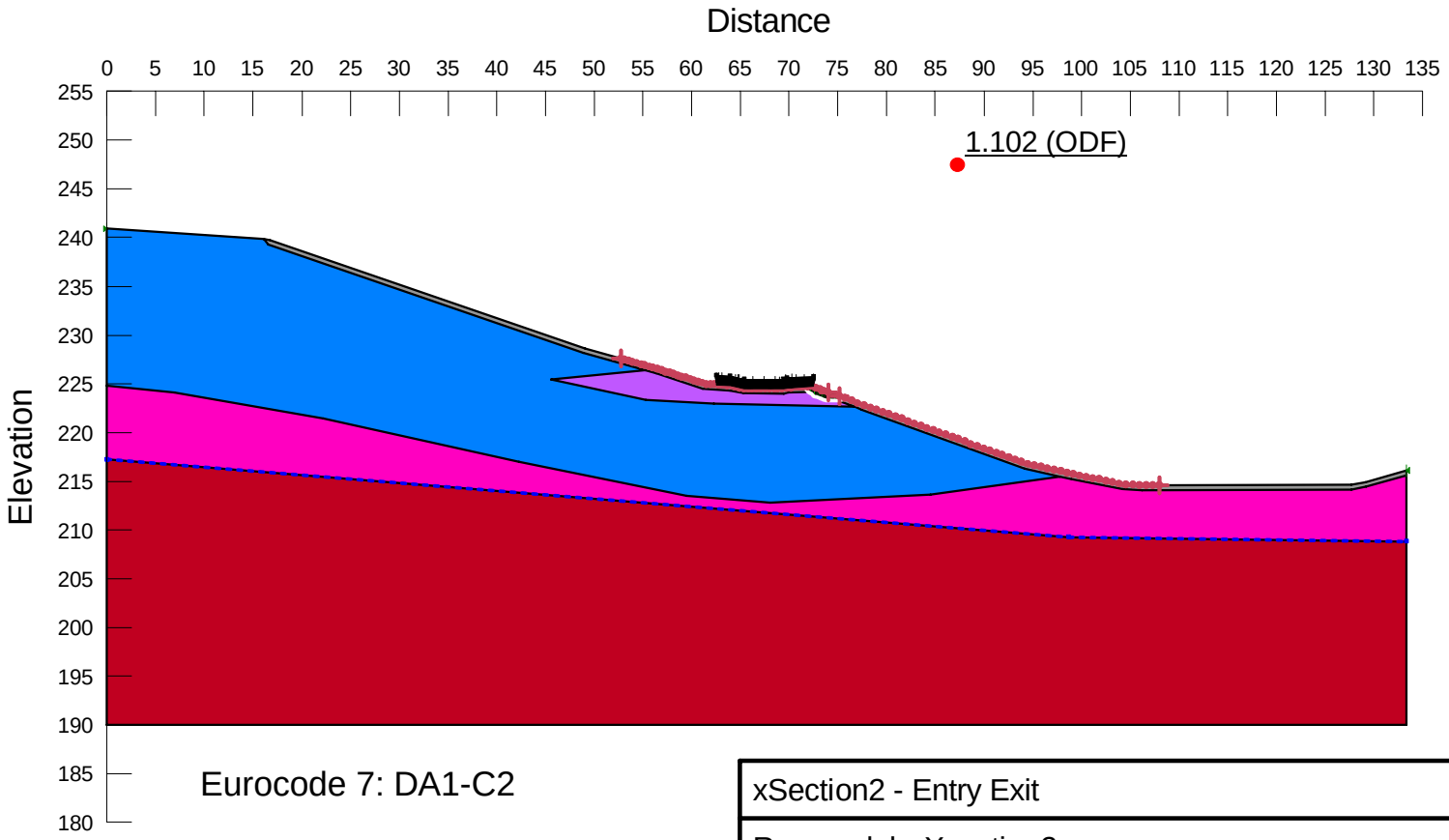
Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)	Phi-B (°)	Piezometric Line	Ru	Include Ru in PWP
	Filling	Mohr-Coulomb	18	0	34	0	1		No
	Glaciofluvial Deposits	Mohr-Coulomb	19	0	30	0	1	0.2	Yes
	Saturated Mudstone	Mohr-Coulomb	23	22	20	0	1		No
	Unsaturated Mudstone	Mohr-Coulomb	22	22	20	0	1	0.2	Yes
	Varved Clay	Mohr-Coulomb	17	1	24	0	1	0.2	Yes



Eurocode 7: DA1-C2

xSection2 - Grid and Radius	
Rossendale-Xsection2.gsz	
19/05/2020	1:750

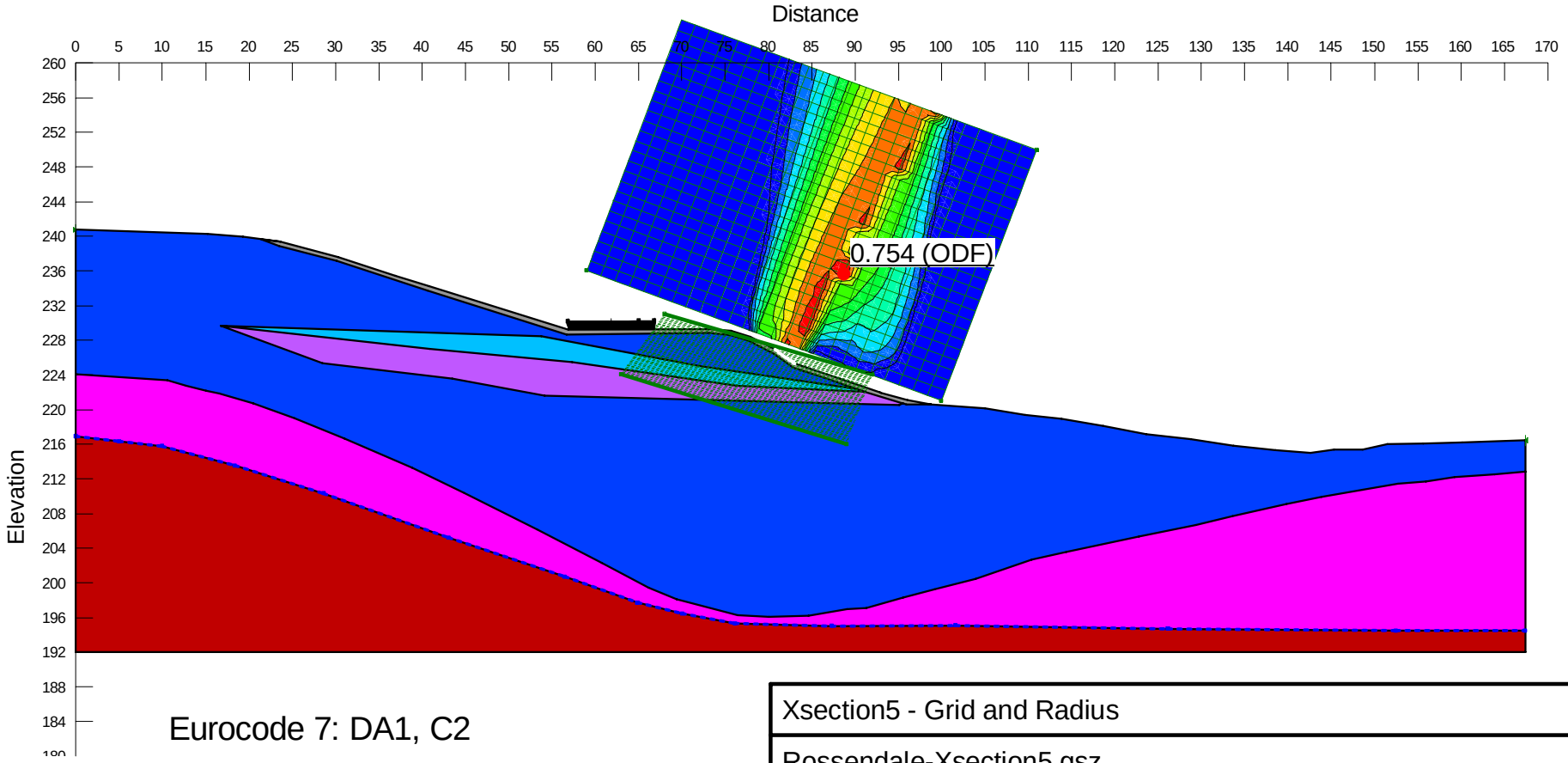
Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)	Phi-B (°)	Piezometric Line	Ru	Include Ru in PWP
	Filling	Mohr-Coulomb	18	0	34	0	1		No
	Glaciofluvial Deposits	Mohr-Coulomb	19	0	30	0	1	0.2	Yes
	Saturated Mudstone	Mohr-Coulomb	23	22	20	0	1		No
	Unsaturated Mudstone	Mohr-Coulomb	22	22	20	0	1	0.2	Yes
	Varved Clay	Mohr-Coulomb	17	1	24	0	1	0.2	Yes



Eurocode 7: DA1-C2

xSection2 - Entry Exit	
Rossendale-Xsection2.gsz	
19/05/2020	1:750

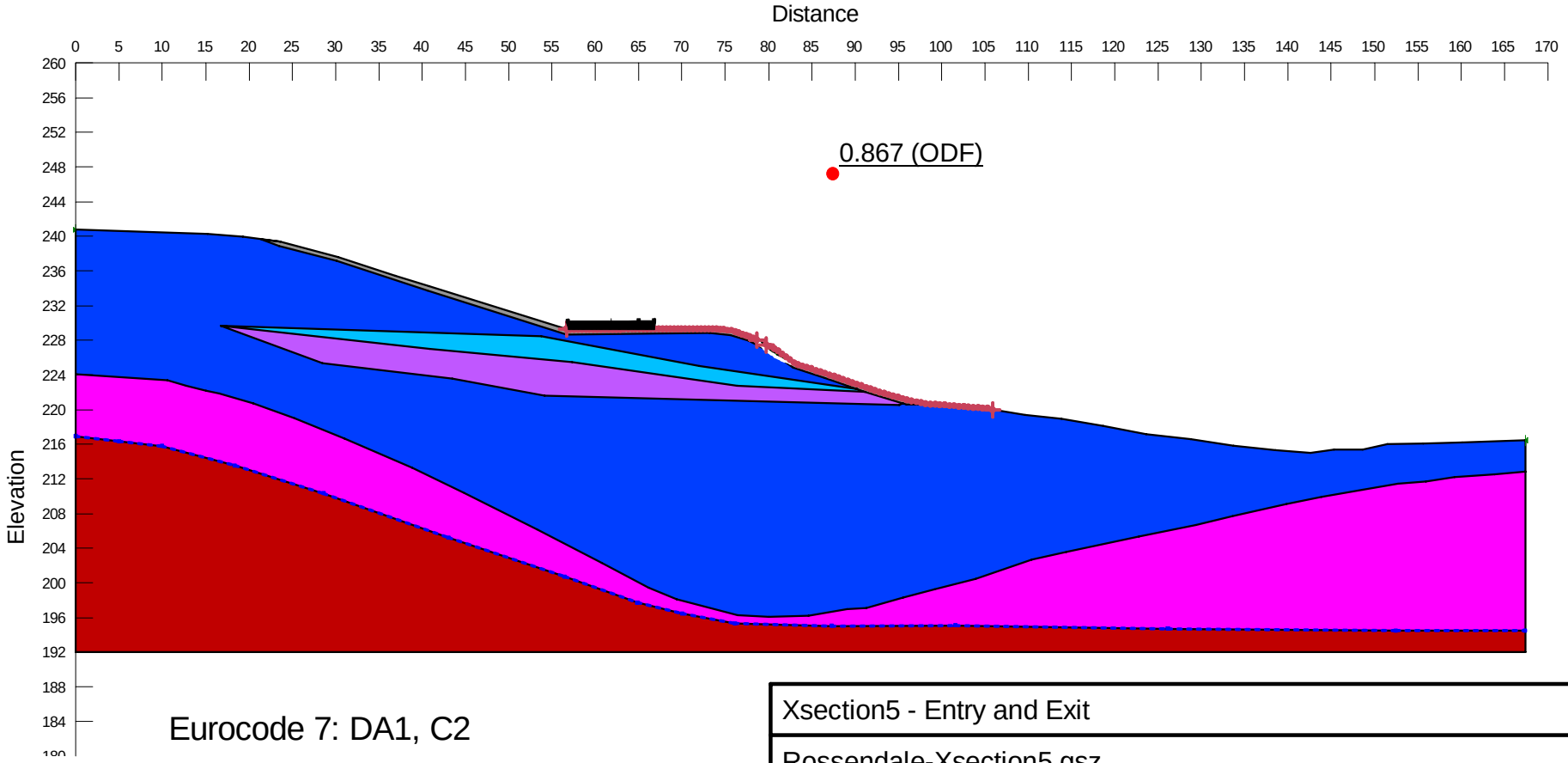
Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)	Phi-B (°)	Piezometric Line	Ru	Include Ru in PWP
	Filling	Mohr-Coulomb	18	0	34	0	1		No
	Glacial Till	Mohr-Coulomb	18	2	28	0	1	0.2	Yes
	Glaciofluvial Deposits	Mohr-Coulomb	19	0	30	0	1	0.2	Yes
	Saturated Mudstone	Mohr-Coulomb	23	22	20	0	1		No
	Unsaturated Mudstone	Mohr-Coulomb	22	22	20	0	1	0.2	Yes
	Varved Clay	Mohr-Coulomb	17	1	24	0	1	0.2	Yes



Eurocode 7: DA1, C2

Xsection5 - Grid and Radius	
Rossendale-Xsection5.gsz	
01/06/2020	1:750

Color	Name	Model	Unit Weight (kN/m³)	Cohesion' (kPa)	Phi' (°)	Phi-B (°)	Piezometric Line	Ru	Include Ru in PWP
	Filling	Mohr-Coulomb	18	0	34	0	1		No
	Glacial Till	Mohr-Coulomb	18	2	28	0	1	0.2	Yes
	Glaciofluvial Deposits	Mohr-Coulomb	19	0	30	0	1	0.2	Yes
	Saturated Mudstone	Mohr-Coulomb	23	22	20	0	1		No
	Unsaturated Mudstone	Mohr-Coulomb	22	22	20	0	1	0.2	Yes
	Varved Clay	Mohr-Coulomb	17	1	24	0	1	0.2	Yes



Eurocode 7: DA1, C2

Xsection5 - Entry and Exit	
Rossendale-Xsection5.gsz	
01/06/2020	1:750

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