

Catalogue of the papers and correspondence of

Edgar Morton M.Sc.

(1898-1973)

VOLUME I

Introduction

EM/1 Biographical

EM/2 Notes and drafts

EM/3/1-225 Consultancies: Public Water Supply

By Heather Bird and Timothy E. Powell

John Rylands University Library of Manchester
reference EM

NCUACS catalogue no.141/6/05

Title: Catalogue of the papers and correspondence of Edgar Morton (1898-1973),
engineering geologist

Compiled by: Heather Bird and Timothy E. Powell

Date of material: 1885-2004

Extent of material: ca 170 boxes

Deposited in: John Rylands University Library of Manchester

Reference code: GB 0133 EM

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NCUACS catalogue no. 141/6/05

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The work of the National Cataloguing Unit for the
Archives of Contemporary Scientists in
the production of this catalogue is made possible
by the support of

The Institution of Civil Engineers Research and Development Fund

John Rylands University Library of Manchester Research Institute

Miss Catherine Morton

The University of Manchester, Simon Fund

GENERAL INTRODUCTION

PROVENANCE

The papers were received for cataloguing from the John Rylands University Library of Manchester in May 2004.

OUTLINE OF THE CAREER OF EDGAR MORTON

Edgar Morton was born at Timperley, Cheshire, on 28 December 1898. He was educated privately. During the First World War he served with the Royal Flying Corps. In 1919 Morton entered the Victoria University of Manchester, studying geology and graduating B.Sc. in 1922. He undertook postgraduate research in the department (M.Sc. 1924) and in 1923 he was appointed Special Lecturer in Engineering Geology. Morton remained on the staff of Manchester University, mainly in a part-time or special capacity from 1923 to retirement in 1966, pioneering courses in applied geology for civil engineering students. He was made Reader in Applied Geology in 1963.

Morton was a student at a time when the Manchester geology department was still under the influence of Sir William Boyd Dawkins, Professor of Geology 1872-1908. Boyd Dawkins was the pioneer of engineering geology in Britain and through his consultancies had done much to forge links between geology and industry. He was still active in the 1920s and Morton worked with him on a number of projects. On Boyd Dawkins' death in 1929 Morton established his own consultancy in engineering geology. From the establishment of his practice to his death, Morton undertook well over 500 projects, and the company he created, Edgar Morton and Partner, continued into the 1990s.

Morton had considerable ability in analysing the physical and microscopical properties of stone and the relation of these properties to the behaviour of stone in roads and buildings. He was a pioneer in this subject, amassing a great deal of factual data as well as a valuable collection of rock specimens from all over the British Isles, now housed in the Manchester Museum. His professional advice was sought by quarrying companies anxious to establish the qualities of their rocks for building and other purposes. His growing reputation in this area led to service on technical committees of the Ministry of Transport and the British Standards Institution advising on standards for road and kerb stones. Morton was also consulted in relation to silicosis. From 1929 legislation required quarries to pay compensation to workers affected by the disease and the Sandstone Industries Compensation Fund was established for this purpose. Morton analysed samples of stone and gave advice to the Fund and individual quarry owners on their liability.

Many of Morton's principal consultancies arose from his expertise in hydrogeology. He was involved

in numerous major water schemes undertaken in Britain in the mid-twentieth century, being concerned to various degrees with more than 150 dams and reservoirs, including those at Grimwith in Yorkshire, the Roadford, Colliford and Wimbleball reservoirs in the south west of England, the Carsington reservoir in Derbyshire and many others. He also specialised in the problems of underground water (including the legal implications) and throughout his career gave advice on boreholes for public, private and industrial water supplies. Morton's consultancies also included advising on an extensive range of foundation, stability and construction problems, such as road construction, subsidence resulting from coal mining and salt extraction, land stability for sewerage schemes and refuse disposal, and site assessments for power plants and housing developments. He continued to advise on planning issues and mineral workings, in particular in his capacity as Geological Adviser to Cheshire County Council. In 1952 P.W. Rowe joined the University of Manchester from St Andrew's, and Morton invited him to work with him in his consultancy as adviser in soil mechanics.

In addition to his university lecturing duties, Morton gave many public and invitation lectures to a wide variety of audiences. His publications output was closely related to his professional interests and he wrote a number of technical papers arising from his work. His final paper, 'A review of the influence of geology on the design and construction of impounding dams', *Journal of the Institution of Water Engineers*, vol. 27 (1973), presented at the Summer Meeting of the Institution in 1973, won him the Institution's Whitaker Medal (awarded posthumously). Morton also gave evidence as an expert witness in arbitration and legal cases, including the Inquiry into the 1966 Aberfan disaster at which Morton acted for the National Union of Teachers.

Morton was a member of the Institution of Water Engineers from 1928 and was elected an Honorary Member in 1971 (Whitaker Medal 1973). In 1954 he became an Associate (subsequently Companion) of the Institution of Civil Engineers. He was an Honorary Member of the Institute of Quarrying from 1931, and a member of the British Waterworks Association.

Morton's interests in geology, soil mechanics and geochemistry were of long standing but he was always open to new ideas and their application. He was direct and straightforward in his lectures, with a very practical approach - his audiences greatly appreciated his use in lectures of numerous drawings relating to work on which he was actually engaged. Morton's extensive knowledge and untiring enthusiasm for engineering geology greatly benefited the water engineering profession, while his contribution to teaching at Manchester was recognised by the endowment of the Edgar Morton Prize awarded annually to the top final year student in geotechnical subjects. Morton had a great love for the Highlands and Islands of Scotland, and had a cottage on the Isle of Skye. He died on 21 November 1973 in the Royal Northern Infirmary in Inverness.

DESCRIPTION OF THE COLLECTION

The material is presented as shown in the List of Contents. Morton left a very substantial archive that comprehensively documents his own work as a consulting engineering geologist from the late 1920s to his death in 1973, and also the work of his company Edgar Morton and Partner which continued to practice into the 1990s. This archive thus includes considerable material relating to work undertaken by his colleagues C.W. Isherwood and P.W. Rowe and should be consulted in particular alongside the archive of Rowe, previously catalogued for the John Rylands Library as GB 0133 PWR (NCUACS no. 132/4/04). There is also significant material of Morton's mentor at Manchester, Sir William Boyd Dawkins (papers catalogued for the John Rylands Library in 1992 as GB 0133 WBD). Together the Morton, Rowe and Dawkins archives constitute a source of national importance for the history of geotechnical science and civil engineering in the late nineteenth and twentieth centuries.

The Morton archive received a preliminary outline listing in 1992 by T. Procter at the John Rylands Library, and the arrangement of the archive has largely followed the organisation set out in that list.

Section EM/1, Biographical, is slight. There is a little information about Morton's life and work but the largest group of material (EM/1/C) relates to Morton's lakeside bungalow and property at Rudyard Lake, Staffordshire, which he acquired in the mid 1920s. There is also a little material relating to Morton's professional affiliations, chiefly with Institution of Water Engineers.

Section EM/2, Notes and drafts, chiefly comprises drafts and associated material for lectures and publications by Morton. There are notes for his university and evening course lectures at Manchester in engineering geology and applied geology for engineering students. These incorporate notes taken by Morton as an undergraduate, lectures by and correspondence to Boyd Dawkins and other earlier material (EM/2/A). The section also presents draft chapters prepared for an intended text book on 'Engineering Geology' (EM/2/B) and material assembled by Morton for his D.Sc. application (EM/2/C). Morton's widespread lecturing and writing activities outside the University are well documented. In the 1920s and 1930s Morton frequently attended meetings of the British Waterworks Association, often presenting papers at them. The files at EM/2/D include documentation of Morton's contributions to the meetings (both in terms of papers and discussion). Other lectures and publications are documented in a sequence of lectures, talks and publications material 1925-1954 (EM/2/E). Audiences for lectures ranged from local bodies such as the Manchester Microscopical Society and professional societies such as the Institution of Civil Engineers, to national trade organisations including the Central Association of the Lime and Limestone Industry of Great Britain. Publications of note include a series of articles on building stone for *The Quarry Managers' Journal* in the early 1930s and contributions to *The Water Engineer's Handbook & Directory* 1932-1938. Also documented in this section are two radio broadcasts from 1925 and 1926: 'What a water tap means' and 'Cave hunting in Derbyshire'.

Section EM/3, Consultancies, is the largest in the collection. It offers extensive documentation following, in varying degrees of detail, the development of Morton's consultancy work from the 1920s. The section includes work carried out by the company Morton established, Edgar Morton and Partner, which continued in practice after his death in 1973 and covers work undertaken into the early 1990s. It is divided into four subsections: Public Water Supply; Private Water Supply; Foundation, Stability and Construction Problems; and Planning and Mineral Workings.

Public Water Supply (EM/3/1-225) covers Morton's extensive consultancy work on public water supply projects in Britain. It comprises files relating to over two hundred public water supply projects with which Morton (and his company Edgar Morton and Partner) was involved as a geotechnical engineering consultant. Morton was working at a time when the water industry in Britain was required to meet a rapidly increasing need for assured supplies of water for domestic and industrial use. After the Second World War local authorities had been given greater powers to build and extend reservoirs and search for potential new sources of supply. Morton and his company, Edgar Morton and Partner, were much in demand in advising on public water supply. He himself was involved with more than 150 dams and reservoirs throughout Britain, many being long-term projects with Morton advising on different aspects of investigation, design, construction, litigation and site monitoring over many years. The largest bodies of material relate to the construction and development of Grimwith Reservoir for the Bradford Corporation Waterworks (later Yorkshire Water Authority); the Roadford, Colliford and Wimbleball Reservoirs (South West Water Authority); and the Foremark Reservoir and Carsington Reservoirs (Severn Trent Water Authority). Significant amounts of material occur also for the Isle of Man Water Board (Sulby Reservoir and Druidale Scheme, and others), the North West Water Authority, the Staffordshire Potteries Water Board, St Helens Corporation, Buckinghamshire Water Board, Nottingham Corporation, Portsmouth and Gosport Water Company, North Devon Water Board (the Meldon Reservoir Scheme) and the City of Cardiff Corporation Waterworks (Llandegfedd Scheme).

Not all the public water supply projects for which Morton was acting involved reservoirs and dams. Morton was also concerned in the construction of pumping stations, sewage works, water treatment works and other such water supply projects. Morton gave advice to many local authorities on water sources, often subterranean, for augmenting the public water supply, protection of gathering grounds, new well sites, etc., and advised on borehole licence applications. The majority of the material dates from the 1930s to the early 1990s, although in some cases, where a related project or the same local authority was involved, the working papers incorporate earlier Boyd Dawkins material, dating from the late nineteenth and early twentieth centuries and used for background engineering and geological information. Others represented in the papers include colleagues in his consultancy, P.W. Rowe, C.W. Isherwood and J. Scriven.

While most of Morton's hydrogeological work was concerned with public water supply, he also acted as a consultant for private cases, from the supply of drinking water to individual farms to the industrial

scale water requirements of major companies such as Imperial Chemical Industries and Whitbread. These Private Water Supply cases are presented at EM/3/226-EM/3/404. The bulk of the material relates to Morton's support in applications to bore for water under section 14 of the Water Act, or opposition thereto, and to general advice on augmentation of water supply from local sources. Much relates to sites in the north-west of England, though there are also cases from the Midlands and southern England. Little of the material post-dates Morton's death in 1973, although there is significant material 1978-1991 relating to water supply to British Nuclear Fuels Chapelcross Power Station.

Foundation, Stability and Construction Problems (EM/3/405-EM/3/588) presents a wide range of consultancy activities of Morton and Edgar Morton and Partner principally focused on issues of site assessment. There is a considerable variety of client and project, although there is a geographical concentration in the English counties of Lancashire and Cheshire and in North Wales. Projects include cases of subsidence, both resulting from coal mining and salt extraction; sewerage schemes, particularly relating to land stability; suitable sites for refuse disposal; power plant developments, fossil fuel and nuclear; and housing developments. There is particularly voluminous coverage of Edgar Morton and Partner's involvement with the Scottish engineering company Babbie Shaw and Morton's work on the A890 Strome Ferry by-pass, a particularly challenging engineering feat which was to require ongoing inspection and remedial work (documented to 1996), and the M90 motorway. Work was also undertaken for a number of public authorities. Those best represented are the British Electricity Authority/Central Electricity Generating Board (site investigations and ash disposal for power stations), Lancashire County Council (M62 motorway), Manchester Regional Hospital Board and the North West Gas Board (Bradford Road gasworks in Manchester and other sites). Also of note is material relating to Trinidad Leaseholds, investigating possible oil storage sites immediately prior to and during the early years of the Second World War, and the Inquiry into the 1966 Aberfan disaster. Edgar Morton and Partner material postdating Morton's death includes, for example, projects undertaken for the North West Water Authority (site stability at Giant's Seat, near Bolton), Rhuddlan Borough Council (main drainage scheme), UK Atomic Energy Authority (geological implications of sites for nuclear waste) and the Welsh Water Authority (Bangor sewerage scheme). As well as such large-scale, concerns Morton also acted for small companies and individuals, including subsidence claims affecting individual homes.

Planning and Mineral Workings (EM/3/589-EM/3/665), the final subsection. It brings together material relating to advice given by Morton (and Edgar Morton and Partner) on planning issues - usually site investigations, planning appeals and public or local inquiries, and consultancies on mineral workings - generally sand, gravel and brine extraction. Much of the material is similar in nature to work undertaken by Morton in the 1920s, 1930s and 1940s documented in section EM/4, Research and minor consultancies. Furthermore, as both planning and mineral workings often impinged on water supply or had site stability implications, so there is considerable overlap with material elsewhere in this section. There is a geographical concentration on Cheshire, as the largest bodies of material relate to

the Cheshire Brine Subsidence Compensation Board and to Cheshire County Council, with advice on brine subsidence problems, planning applications, inquiries and appeals, sand and gravel workings.

Section EM/4, Research interests and minor consultancies, brings together Morton's files on small consultancies not included in EM/3, together with research material. The material has been grouped together by broad area where possible and the section is arranged in an alphabetical sequence. The bulk of the consultancies date from the 1920s and 1930s, with a geographical concentration in the counties of Cheshire, Derbyshire and Lancashire, and many relate to Morton's expertise in determining properties and qualities of stone. Thus there is material relating to Road Stone (EM/4/H) including work for the Ministry of Transport and the British Standards Institute, Silicosis (EM/4/J), mostly relating to Morton's analyses of the silica content of stones, evidence given in silicosis compensation cases and reports for the Sandstone Industries Compensation Fund, and Stone Testing for quarry owners 1927-1964 (EM/4/O). Morton also undertook site investigations, advising quarries and landowners on the geological nature and mineral possibilities of their land (EM/4/K). Other areas covered include the legal background to water supply (EM/4/Q/2), with particular reference to underground water (EM/4/P).

LOCATIONS OF OTHER MATERIAL

Morton's collection of rock specimens is held by the Manchester Museum.

ACKNOWLEDGEMENTS

We are grateful to Miss Catherine Morton (sister) for making the papers available for cataloguing and for the assistance of John Scriven, civil engineer, with geotechnical matters.

Heather Bird
Timothy E. Powell
Bath 2005

SECTION EM/1 BIOGRAPHICAL

1925-2004

EM/1/A	BIOGRAPHICAL INFORMATION
EM/1/B	PERSONAL AND PROFESSIONAL CORRESPONDENCE
EM/1/C	LAKESIDE BUNGALOW AND LAND, RUDYARD LAKE, STAFFORDSHIRE
EM/1/D	PROFESSIONAL AFFILIATIONS
EM/1/E	PHOTOGRAPHS AND MEMORABILIA

EM/1/A BIOGRAPHICAL INFORMATION ?1930s-2004

EM/1/A/1 Biographical information on Morton 2002, 2004

Taken from University of Manchester School of Engineering website and from Manchester 'Geotechnical Archive Resource Project' literature.

EM/1/A/2 Personal curriculum vitae ?1930s

This is a light-hearted piece, including observations such as 'Future outlook. In this world - contracting silicosis in the granite quarries on Dartmoor. Next world - discovering new coalfields to keep the furnaces going'.

EM/1/A/3 'Talk with Eminent Cheshire Geologist [Mr Edgar Morton]', 1946
Macclesfield Times, 3 October 1946

Newspaper cutting.

EM/1/B PERSONAL AND PROFESSIONAL CORRESPONDENCE 1928-1976

EM/1/B/1 1928-1964

EM/1 Biographical

Includes correspondence *re* university appointments, 1928-1964, and divorce, 1936.

EM/1/B/2 1957-1960

2 folders.

Correspondence *re* visit of P.L. Paradela, Chief Engineer in the Underground-Water Division of South Portugal, to the UK in 1957.

Morton arranged a programme of visits to water departments of local authorities in England.

Also includes copy of 'A radiestesia na prospeccao de aguas subterraneas' by Paradela, critical of water divining, with English translation.

EM/1/B/3 Correspondence *re* Morton's estate 1974, 1976

EM/1/C **LAKESIDE BUNGALOW AND LAND, RUDYARD LAKE, STAFFORDSHIRE** 1925-1945

9 folders.

This was Morton's holiday home.

The material is the contents of Morton's three envelopes relating to land transactions (rental and purchase), maintenance of the property and dealings with neighbours and local authorities and others.

EM/1/D **PROFESSIONAL AFFILIATIONS** 1934-1974

EM/1/D/1 Institution of Water Engineers 1934, 1960-1974

4 folders.

Chiefly correspondence *re* General Meetings of the Institution and Morton's contributions to discussions of papers.

EM/1 Biographical

At the 1973 meeting Morton presented a paper 'A review of the influence of geology on the design and construction of impounding dams', for which he was awarded the Institution's Whitaker Medal. He died shortly thereafter and it was bestowed posthumously.

EM/1/D/2	Geological Society of London	1969
	Correspondence with J.L. Knill <i>re</i> Society's Engineering Group Section Report on Logging of Rock Cores. Includes typescript 6th draft of the report.	
EM/1/E	PHOTOGRAPHS AND MEMORABILIA	1931-1972
EM/1/E/2	Contents of Morton's envelope inscribed 'Personal Photos'	1951, n.d.
	Three photographs: two dated 1951, third (group) photograph inscribed on verso 'Centenary of St Helen's Electricity Undertaking'.	
EM/1/E/2	Chiefly relating to Morton's motor cars	1931-1939
EM/1/E/3	Newspaper cuttings relating to geology, water supply and engineering, town and country planning	1945-1972

SECTION EM/2 NOTES AND DRAFTS

1901-?1970s

This section brings together papers relating to some of Morton's lecturing and publications output, together with notes and background material. It is presented following the arrangement of the outline list.

EM/2/A	UNIVERSITY LECTURE NOTES
EM/2/B	NOTES FOR TEXT BOOK
EM/2/C	NOTES FOR D.Sc. THESIS
EM/2/D	BRITISH WATERWORKS ASSOCIATION LECTURES
EM/2/E	OTHER LECTURES, TALKS AND ARTICLES
EM/2/F	OFFPRINTS
EM/2/G	PHOTOGRAPHS

EM/2 Notes and drafts

EM/2/A UNIVERSITY LECTURE NOTES 1911-?1970s

This material was found in Morton's titled folders or envelopes stored in labelled hanging files. The titles are reproduced in the catalogue entries.

There are typescript and manuscript notes, drafts, tables and diagrams, duplicated typescript course notes, etc. Some notes are written on the verso of earlier correspondence, other notes or other material, for example occasionally Conservative and Unionist Party circulars. Much of the material is in poor condition and most of the items are undated and dates where given are those of dated items only.

The material formed the basis of Morton's university lectures and evening courses at Manchester (initially the Victoria University of Manchester), although they incorporate notes taken by Morton as an undergraduate, lectures by Boyd Dawkins, correspondence to Boyd Dawkins and other earlier material. Although the sets of notes are frequently fragmentary, some, for example, those at EM/2/A/10-18 appear as if they may have formed a single series for a geology course.

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|----------|---|------------|
| EM/2/A/1 | 'Chalk water' | |
| EM/2/A/2 | 'Cores, borings for coal on the Isle of Man' | 1917, 1929 |
| | Includes 20pp typescript 'Borings for coal in the north of the Isle of Man' by [?] B. Atkinson, 1917. | |
| EM/2/A/3 | 'Stone testing 2w. M. J.' and 'Attrition test' | |
| EM/2/A/4 | 'Notes on: Tunnels and tunneling' | 1911 |
| | Notes on feasibility of Severn, Humber and Channel tunnels and tunneling techniques. | |
| | Includes 6pp typescript 'Humber Tunnel. Report by Sir William Boyd Dawkins', and 'Lecture 4' by Boyd Dawkins on 'Tunnels', May 1911 (for lectures 1-3 in the series see EM/2/A/20). See also EM/2/A/33. | |

EM/2 Notes and drafts

EM/2/A/5	'Mining'	1901-1923
	Contents of two of Morton's files so inscribed.	
EM/2/A/5/i	File 1	1921, 1923
	2 folders.	
	Manuscript notes on mining techniques; sample colliery forms and regulations (from Sherwood Colliery Co. Ltd, Hucknall No. 2 Colliery).	
EM/2/A/5/ii	File 2	N.d., 1901
	Includes apparently unrelated letter to Boyd Dawkins on water supply to Newton in Makerfield, 1901	
EM/2/A/6	'Derbyshire'	1911, 1933
EM/2/A/7	'Coalfields'	1927
	One item on verso of letter reporting Morton's lapse of Fellowship of the Geological Society on his non-payment of dues.	
EM/2/A/8	'Hidden coalfields'	1926
	Notes for Morton's lecture with newspaper cuttings reporting on it.	
EM/2/A/9	'Building Stones'	1928-1943
	The material found in these four files so inscribed appears to relate to a University of Manchester course by Morton on 'The selection of stone for building and engineering masonry in post-war planning and reconstruction', October 1943.	
EM/2/A/9/i	File 1	1928-1934
	Chiefly on limestones and marbles. Includes letter to Morton on types of marble used in building.	

EM/2 Notes and drafts

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|--------------|---|-----------|
| EM/2/A/9/ii | File 2 | 1936 |
| | Chiefly on sandstone. Includes (incomplete) lecture 'The proper uses of natural sandstone' by Morton for Manchester Engineering Geology course. | |
| EM/2/A/9/iii | File 3 | 1930-1934 |
| | Chiefly granites, use of stone in road building. Includes 'The properties, testing and selection of stone for tar-macadam and concrete roads' by Morton, paper read at meeting of the Institution of Highway Engineers, King's Lynn, Norfolk, December 1930; abstract of discussion on silicosis, 1934. | |
| EM/2/A/9/iv | File 4 | 1943 |
| | Duplicated typescript sheets on types of rocks and their properties. Includes examples of rock types used in buildings in Liverpool. Also manuscript notes on Wiltshire rock types. | |
| EM/2/A/10 | 'Classification: Chemical and Mineralogical composition' | |
| | Relates chiefly to igneous rocks. See also EM/2/A/12. | |
| EM/2/A/11 | 'Natural history of stones' | |
| | Sets of geology notes. | |
| EM/2/A/12 | Notes on various aspects of igneous rocks | |
| | Possibly related to EM/2/A/10. | |
| EM/2/A/13 | 'Petrology: textures and structure' | |
| EM/2/A/14 | 'Crystallography' | |
| | 3 folders. | |

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EM/2 Notes and drafts

- /... Series of notes on crystallography, optical, physical and chemical properties of minerals etc.
- EM/2/A/15 'Practical crystallography' 1919
Includes duplicated manuscript Manchester University Geology Department course notes and set of examination questions.
- EM/2/A/16 'Physical geology' 1924
3 folders.
Series of notes on sedimentary rocks, transport and corrosion, terrestrial deposits, glaciation etc.
- EM/2/A/17 'Surveying' 1921
Includes question sheet on Mine Surveying.
- EM/2/A/18 'Natural/Pre-history' 1919
4 folders.
Series of notes on animal taxonomy and characteristics of phyla.
- EM/2/A/19 Geological data arranged by county
See also EM/2/A/32.
- EM/2/A/19/i File 1 1920, 1924
2 folders.
Folder 1: general typescript list of (?borehole) sites (Boveney to York); Berkshire; Dorset; Hampshire and Isle of Wight.
Folder 2: Kent; Surrey; Sussex; offprint on Norfolk greensand 1920.

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- EM/2/A/19/ii File 2, 'Clay/soils notes County by County'
- 5 folders.
- Folder 1: Bedfordshire; Buckinghamshire; Cambridgeshire and Huntingdonshire; miscellaneous notes.
- Folder 2: Essex; Hertfordshire.
- Folder 3: Leicestershire and Rutland; Lincolnshire; Norfolk.
- Folder 4: Northamptonshire; Nottinghamshire; Oxfordshire.
- Folder 5: Suffolk; Worcestershire and Warwickshire; Yorkshire; 'Additional references'.
-
- EM/2/A/20 'Applied Geology Lecture notes' 1911-1928
- 5 folders.
- Includes articles on 'New discoveries at Creswell caves', 'An interpretation of scenery' and 'The Water Diviner'; chapter on geological maps and sections by Morton; lecture on 'Future water resources of Britain'; notes on fossils and prehistoric anatomy; account by Morton of his contributions to Engineering Geology courses and research at Manchester; and lectures 1-3 by Boyd Dawkins on 'Applied Geology', 1911 (for lecture 4 see EM/2/A/4).
-
- EM/2/A/21 'Miscellaneous tables. Petrology'
- File also inscribed 'Practical sheets 1'.
- Includes duplicated typescript material for evening courses on Engineering Geology, including 'The strength and durability of building stones'.
-
- EM/2/A/22 'Geology I'
-
- EM/2/A/23 'Rivers & coastal erosion' 1928-1929
- 3 folders.
- Includes paper 'Some aspects of engineering geology' by Morton, read to Institution of Civil Engineers Yorkshire Association, 24 April 1930; 38pp typescript notes on 'The character, work and control of rivers'; manuscript notes on

EM/2 Notes and drafts

coastal problems.

Some notes on verso of student scripts.

- EM/2/A/24 'Practical course in geological mapping'
- 4 folders.
- Manuscript and typescript notes on geological maps, illustrative diagrams.
- EM/2/A/25 'Lecture notes on mineral ore deposits'
- EM/2/A/26 'Town planning course Evening Lectures' 1941, 1943
- Course notice; typescript lecture notes; correspondence (chiefly with L.A. Leaver); manuscript notes; newspaper cuttings on post-war reconstruction 1943.
- Morton delivered a course of five evening lecture-demonstrations on Geological Aspects of Town and Country Planning, University of Manchester, October-November 1941.
- EM/2/A/27 'Uni Open Day' 1937
- Plans of exhibits for Geology Open Day on applied geology, captions. See also EM/2/A/28.
- EM/2/A/28 'Museum exhibits: stone decay' 1935, 1937
- 2 folders.
- Correspondence *re* samples; photographs of stone decay (some mounted); captions.
- Stone decay was a feature illustrated in the Geology Open Day (EM/2/A/27).
- EM/2/A/29 Note on slate quarrying, maps for examination questions
- File entitled 'Copies of exam papers'.

EM/2 Notes and drafts

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|-----------|---|-------------|
| EM/2/A/30 | <p>'Lecture notes'</p> <p>2 folders.</p> <p>Material <i>re</i> Engineering Geology course including 'Engineering geology - a retrospect' by Morton, lecture in Engineering Geology, 5pp typescript, April 1926; first year book list; memorandum <i>re</i> Applied Geology Laboratory by Boyd Dawkins; 'Summary of Progress in the Teaching of Engineering Geology' by Morton; notices, summaries and notes for evening lecture courses, 1934 (Engineering Geology), 1943 (The selection of stone for building and engineering masonry), 1945 (Public water supply), 1946 (The influence of geology on planning), 1947 (the control of mineral workings).</p> <p>Later material includes ?1960s notes on engineering geology.</p> | 1926-1960s |
| EM/2/A/31 | <p>Miscellaneous notes, calculations, diagrams, etc.</p> <p>5 folders.</p> <p>Includes notes for courses; captions for exhibition 1934; typescript account of 'The geological succession of strata in Britain'.</p> | 1925-1954 |
| EM/2/A/32 | <p>Borehole data, map listings and gault notes.</p> <p>4 folders.</p> <p>See also EM/2/A/19.</p> | |
| EM/2/A/33 | <p>'Book and lecture notes on tunnels and tunneling'</p> <p>3 folders.</p> <p>Includes notes on Severn, Humber and Channel tunnels and ?1970s lecture notes.</p> <p>See also EM/2/A/4.</p> | 1944-?1970s |
| EM/2/A/34 | <p>Lecture notes and other material on uses of types of rocks</p> <p>2 folders.</p> <p>Includes manuscript notes for lectures 2-4; duplicated</p> | |

EM/2 Notes and drafts

typescript course notes; printed material.

EM/2/A/35	'Exams. Civil engineers' Engineering geology examinations for Civil and Municipal Engineering students.	1947-1969
EM/2/A/36	'Exam papers. Planning' 2 folders. Examination papers for diploma and degree students in town and country planning.	1949-1968
EM/2/A/37	'Exam papers Evening class'	1951-1964
EM/2/A/38	'General. Incl Yearly excursion' 3 folders. General teaching material for engineering geology including examinations, arrangements for field excursions and manuscript and typescript notes.	1950-1964
EM/2/B	NOTES FOR TEXT BOOK Material assembled for chapters of intended text book 'Engineering Geology'. Includes full typescript drafts for some chapters and manuscript notes for others. Morton began work for this textbook, to be published by Chapman & Hall in 1926 but it was never completed.	1926-1934
EM/2/B/1	'Chapter I: Classification of rock' Typescript draft + inserts.	
EM/2/B/2	'Chapter II: Structural characteristics of rock' 2 folders.	

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EM/2 Notes and drafts

- /... Typescript draft; manuscript and typescript notes.
- EM/2/B/3 'Chapter III: Stratigraphy'
Typescript draft.
- EM/2/B/4 'Chapter IV: Surface Water Supply'
Typescript draft with some interleaved notes.
- EM/2/B/5 'Chapter V: Rainfall'
Typescript draft; manuscript and typescript notes.
- EM/2/B/6 'Building materials'
2 folders.
Rough typescript drafts; manuscript notes.
- EM/2/B/7 'Roadstones'
3 folders.
Typescript draft; manuscript and typescript notes; typescript drafts on rock varieties etc.
- EM/2/B/8 'Shaft-sinking'
Typescript outline and rough draft.
- EM/2/B/9 'TEXT BOOK Additional notes'
- EM/2/B/10 'Synopsis of text book'
Typescript draft; manuscript notes; brief correspondence from publishers Chapman & Hall.

EM/2 Notes and drafts

EM/2/B/11	Correspondence <i>re</i> book with Chapman & Hall. The original contract was signed in 1926 but the book was still uncompleted in 1934.	1926, 1934
EM/2/B/12	Miscellaneous notes	
EM/2/C	NOTES FOR D.Sc. THESIS	1928-1930s
EM/2/C/1	'Memorandum accompanying a Thesis presented for the Degree of Doctor of Science' Typescript provisional draft; manuscript rough draft.	late 1930s
EM/2/C/2	'D.Sc. Thesis Gault' 2 folders. Contents of envelope so inscribed: miscellaneous typescript and manuscript notes, chiefly on gault formation with borehole data.	1928, 1930s
EM/2/C/3	File of offprints accompanying EM/2/C/1 The numbers given to the papers are Morton's and refer to his Memorandum. Papers 3 ('The new British Standard Specifications for the Testing of Roadstone and Sandstone Kerbstones') and 6 ('The Properties, Testing and Specification of Sandstone Masonry') were described as 'in preparation' for the thesis. Only items 1, 5 and 11 were found in the file. 1: 'The Microscopical Determination of the Strength and Durability of Building Stones', <i>Engineering</i> , 1928. 2: 'The Properties, Selection and Specification of Sandstones for use as Kerbstones on Main Thoroughfares', <i>Journal of the Institution of Municipal and County Engineers</i> , March 1931. 4: 'British Standards Specification No 706 (1936) for Sandstone Kerbs, Quadrants, Channels and Setts'. 5: 'The Proper Uses of Natural Sandstone', paper for Liverpool Engineering Society, 1935. 7: 'Stone Preservation', <i>Architectural Design and Construction</i> , May 1931.	1930s

EM/2 Notes and drafts

8: 'Some Aspects of Engineering Geology', paper for Institution of Civil Engineers, Yorkshire branch, 1930.

9: 'The Properties, Testing and Selection of Stone for Tar Macadam and Concrete Roads', *The Highway Engineer*, February 1931.

10: 'The Use of Limestone for Road Making', paper for Central Limestone Association, 1937.

11: 'An Economic Geology Map of England and Wales, with Explanatory Notes'.

12: 'Silicosis - Some Geological Comments', paper for Institute of Quarrying, 1929.

13: 'Silicosis - The Geological Aspect', *The Policy-Holder*, 1931.

Memo 3A: 'Report on Investigations Made to Determine the Accuracy or otherwise of Absorption Data Obtained by Rough and Ready Methods'.

Memo 3B: 'On the Grading of Sand for Use in the Abrasion Test'.

EM/2/D	BRITISH WATERWORKS ASSOCIATION LECTURES	1928-1938
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Morton frequently attended meetings of the British Waterworks Association (BWA) and presented many papers. The files here include notes and scripts for Morton's contributions as well as miscellaneous material relating to the meetings themselves in the form of correspondence *re* arrangements, programmes etc.

EM/2/D/1	Summer Meeting, July 1928	1928
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Morton spoke on 'The underground distribution, thickness and structure of the secondary formations in England, with special reference to the sources of subterranean water'.

EM/2/D/1/1	Correspondence
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EM/2/D/1/2	Manuscript and typescript drafts of paper
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EM/2/D/1/3	Proof copy of Morton's paper
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EM/2/D/2	Winter Meeting and First Public Health Congress, London, November 1928	1928-1929
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/...

EM/2 Notes and drafts

- /... Morton spoke on 'The subterranean water resources of Great Britain'.
- EM/2/D/2/1 Correspondence *re* Morton's paper
- EM/2/D/2/2 Manuscript and typescript drafts and notes
2 folders.
- EM/2/D/2/3 Proof copy with manuscript corrections, and offprint 1928, 1929
- EM/2/D/2/4 Copy of *Municipal Engineering, Sanitary Record and Municipal Motor* no. 2033 (29 Nov 1928).

With report on part of the Congress on pp588-591 and on Morton's paper on p600.
- EM/2/D/3 Summer Meeting, Portsmouth, 2-5 July 1929 1929

Programme, arrangements; 6pp typescript transcript of Morton's discussion of paper by Halton Thompson.
- EM/2/D/4 Summer Meeting, Blackpool, Lancashire, 13-17 June 1933 1932-1933

Morton spoke on 'Rural water supply'.
- EM/2/D/4/1 Programme and arrangements
- EM/2/D/4/2 18pp typescript draft of Morton's paper
- EM/2/D/4/3 Proofs of papers delivered

Includes Morton's.
- EM/2/D/4/4 Offprint of Morton's paper

EM/2 Notes and drafts

EM/2/D/5	Winter Meeting, London, 13-18 November 1933 Programme; correspondence <i>re</i> Morton's membership of the BWA; 3pp typescript discussion by Morton on paper by A.E.L. Chorlton.	1933
EM/2/D/6	Winter Meeting and Public Health Congress, London, 19-24 November 1934 Programme; papers; correspondence; manuscript notes.	1934
EM/2/D/7	Winter Meeting and Eighth Public Works Congress, London, 18-23 November 1935	1935
EM/2/D/7/1	Programme, notices etc.	
EM/2/D/7/2	'The distribution of population with special reference to water supplies', paper by S.V. Pearson, with 3pp typescript comments by Morton Folder also includes manuscript notes and newspaper cutting reporting Pearson's lecture.	
EM/2/D/8	Winter Meeting and Ninth Public Works Congress, London 15-20 November 1937	1937
EM/2/D/8/1	Programme; papers by G.H. Thiselton-Dyer and E.G. Bilham; manuscript notes	
EM/2/D/8/2	Correspondence <i>re</i> H. Dewey's paper on 'Lower Greensand'; Morton's typescript discussion on paper by Thiselton-Dyer.	
EM/2/D/9	Summer Meeting, Plymouth, 21-25 June 1938 Notice; paper by Morton; etc. Morton was to have delivered his paper 'The protection of underground sources of water supply with special reference to the town and country planning acts' at the summer meeting but it was postponed to the winter meeting (EM/2/D/10).	1938

EM/2 Notes and drafts

EM/2/D/10 Winter Meeting and Public Health Service Congress, 1938
November 1938

Morton delivered his paper 'The protection of underground sources of water supply with special reference to the town and country planning acts'.

EM/2/D/10/1 15pp typescript and published copies of Morton's paper

EM/2/D/10/2 Typescript additions; background information; manuscript notes; account of the proceedings of the meeting in *The Surveyor*, 18 November 1938

EM/2/E OTHER LECTURES, TALKS AND ARTICLES 1925-1954

This series covers Morton's wide ranging lecturing and writing activities outside the University. Again, the size of the files and their content, varies. Most include notes, correspondence and typescripts and manuscripts relating to the articles and papers.

There is some duplication of material also to be found in EM/2/C.

EM/2/E/1 'An Interpretation of Scenery', paper for The Geological Association, January 1925 1924

10pp typescript; typescript and manuscript notes.

EM/2/E/1A 'A further conquest of Ham Tor', submitted to *Sheffield Daily Telegraph* 1926

2pp typescript; copy of article from the *Sheffield Daily Telegraph* prompting Morton's response.

EM/2/E/2 'Some Applications of Geology'. Set of three lectures by Morton at the Manchester Museum, October-November 1926 1926

The lectures were 'Buildings and building stones', 'The water-supply of Manchester', 'Coast erosion and protection'.

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EM/2 Notes and drafts

- /... Typescripts for second and third lectures; notice; typescript report on second lecture.
- EM/2/E/3 'Microscopic determination of the strength and durability of building stones', lecture to Oxford meeting of the British Association, 1926 1926
16pp typescript + appendix; proof copy.
- EM/2/E/4 'The Shivering Road', *Morris Owner* magazine 1926/1927
Manuscript and typescript drafts; brief correspondence with publishers.
- EM/2/E/5 'Factors Governing the Strength and Durability of Building Stones', lecture to Manchester Society of Architects 1928, 1930
31pp typescript draft; captions and layout for figures; letter declining to publish the article as it stood in the RIBA Journal.
- EM/2/E/6 'Decay of sandstones as revealed by the microscope', lecture to the Manchester Microscopical Society, 2 February 1928 1928
Manuscript and typescript draft; 2pp typescript report; notice.
- EM/2/E/7 Papers for Institute of Quarrying 1930, 1933, n.d.
- EM/2/E/7/1 'Recent investigations into the properties of sandstones. Causes of their decay, and how they affect the quarry owner', lecture to Institute of Quarrying, Leeds, October 1930 1930
Typescript and manuscript notes; typescript drafts.
- EM/2/E/7/2 'A British Standards Institute specification for sandstone kerbs, quadrants and channels', Institute of Quarrying conference, Leamington, Warwickshire, July 1933 1933
Typescript drafts; manuscript notes; papers for Institute of Quarrying AGM 1933.

EM/2 Notes and drafts

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|------------|---|-----------|
| EM/2/E/7/3 | 'The testing and specification of sandstones in relation to the quarry owner'

Offprint only. | 1930s |
| EM/2/E/8 | 'Silicosis: The Geological Aspect', booklet published by <i>The Policy-Holder</i> , 1931

11pp typescript draft; copy of booklet; correspondence re publication and arising, including reader's letter and Morton's reply.

<i>The Policy Holder</i> was an insurance industry journal. | 1930-1931 |
| EM/2/E/9 | 'Stone preservatives', <i>Architectural Design and Construction</i> , 1931

10pp typescript; exchange with publishers. | |
| EM/2/E/10 | 'Silicosis', <i>Crushing and Grinding</i> , 1931

Manuscript outline; typescript draft; correspondence with publishers. | 1931 |
| EM/2/E/11 | 'Algernon Curtis'

4 folders.

Correspondence and papers re articles by Morton for the journal <i>Sands, Clays & Minerals</i> (publishers Algernon Lewin Curtis) on 'Silicosis in industry' and 'Industrial Water Supply'.

Correspondence 1934 includes letters re supply of crushed quartz for use on grouse moors (see EM/4/Q/3/1).

The article on silicosis was published in vol 2 (1935) and republished in <i>The Mining & Industrial Magazine of Southern Africa</i> vol 21 (1935). The article on 'Industrial Water Supply' was submitted in 1936. | 1934-1936 |
| EM/2/E/12 | Series of articles on building stone for <i>The Quarry Managers' Journal</i> | 1931-1933 |

EM/2 Notes and drafts

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|-------------|--|-----------|
| EM/2/E/12/1 | 'The properties and testing of stone for roadmaking', January
Offprint. | 1931 |
| EM/2/E/12/2 | 'Elements of engineering geology applied to the quarrying
industry. Part 1. A practical classification of rocks', December

Rough typescript draft; offprint. | 1931 |
| EM/2/E/12/3 | 'Elements of engineering geology applied to the quarrying
industry. Part 2. Road-making stone', March 1932-February
1933

Four articles: offprints and typescript draft of one of the
articles.

The first article is a Student's Supplement. | 1932-1933 |
| EM/2/E/12/4 | 'Elements of engineering geology applied to the quarrying
industry. Part 2. Road-making stone'

Correspondence <i>re</i> Student's Supplement. | 1931-1932 |
| EM/2/E/12/5 | 'The properties, selection and specification of sandstones for
use as kerbstones on main thoroughfares', n.d.

Offprint. | 1930s |
| EM/2/E/12/6 | Background material | |
| EM/2/E/13 | 'The geology of the Goyt Valley', lecture to the Institution of
Water Engineers, December

10pp typescript + 2pp typescript addendum 'for discussion at
the Annual Meeting in London on 2nd December 1932';
discussion remarks and reply to written contribution;
correspondence; offprint.

This was subsequently published in the journal <i>Water and
Water Engineering</i> . | 1932-1933 |

EM/2 Notes and drafts

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|-------------|---|----------------|
| EM/2/E/14 | 'Some geological factors affecting clayworks', Ceramic Society Building Materials Section autumn meeting, Exeter, 13-14 September 1933

7pp typescript draft; offprint; programme of meeting; correspondence <i>re</i> lecture and subsequent publication.

The paper was published in <i>Transactions of the Ceramic Society</i> , vol 34, 1935. | 1932-1934 |
| EM/2/E/15 | 'The evolution of various types of crushers for stone and ore, and the characteristics of rocks as affecting abrasion in crushing machinery', lecture to the Institution of Civil Engineers, 20 November 1934

3pp typescript report on lecture; discussion remarks; correspondence. | 1934 |
| EM/2/E/16 | 'Engineering Geology', lecture to Liverpool Engineering Society, 26 February 1936

10pp typescript; offprint; correspondence; <i>Bulletin of Society</i> with report on Morton's lecture. | 1934-1936 |
| EM/2/E/17 | 'A brief review of hydro-electric problems affecting modern waterworks practice'

10pp typescript. | <i>ca</i> 1936 |
| EM/2/E/18 | Lectures to the Central Association of the Lime and Limestone Industry of Great Britain | 1934-1937 |
| EM/2/E/18/1 | 'Roadstone tests and their interpretation'

Notice of meeting; typescript outline of address and discussion of Morton's paper; tables; correspondence with the Association.

This was delivered as a lecture to a meeting of the Association in Manchester, 28 November 1934. | 1934 |
| EM/2/E/18/2 | 'The use of limestone for roadmaking'

Manuscript and typescript drafts; offprint (published in the | 1936-1937 |

EM/2 Notes and drafts

Bulletin of the Institute of Highway Engineers, no 8
(Supplement) November 1937); correspondence.

This was originally delivered as a lecture to a meeting of the
Association in Harrogate, 1936.

- EM/2/E/18/3 Miscellaneous manuscript data; tables; photographic figures of
limestone samples.
- EM/2/E/19 'British stone for building, engineering and monumental
masonry', article for the *Stone Trades Journal* published in a
series 1941-1945 1941-1945
- 5 folders.
- Typescript draft; extracts from issues of the *Stone Trades
Journal* containing the series; lists of figures, etc.
- Photographs used to illustrate the series are at E/2/E/20
below.
- EM/2/E/20 Illustrations for 'British stone for building, engineering and
monumental masonry' 1940s
- 2 folders.
- Photographs, tables etc used as figures for the article. See
EM/2/E/19 above.
- EM/2/E/21 'The geological basis of planning', lecture to the Town
Planning Institute, Essex Hall, London, 16 December 1943 1943-1945
- 2 folders.
- Manuscript and typescript drafts; offprint annotated by Morton;
correspondence with the Institute; notice; background material
including list of publications and Institute examinations.
- The lecture was published in the *Journal of the Town Planning
Institute*, vol. 30 (1944)
- EM/2/E/22 'Water divining - the case against', *Journal of the Institution of
Water Engineers*, vol 8 (1954) 1925-1954
- Typescript drafts; offprint; two letters on water divining sent to

EM/2 Notes and drafts

Morton 1925; correspondence *re* publication of article 1948-1949, 1954.

Background material on water divining is at E/2/E/23 below.

EM/2/E/23	Background material on water divining	1925-1938
	Article on 'The Water-Diviner' for <i>The Cornhill Magazine</i> 1925; correspondence arising 1925; borehole data 1928; lectures by Morton 'Water-divining and water-finding', 1927 and 1938.	
	The material chiefly relates to an article on the subject by Morton published in <i>The Cornhill Magazine</i> 1925. It was later used in connection with 'Water divining - the case against', see EM/2/E/22 above.	
EM/2/E/24	BBC Radio broadcasts	1925, 1926
EM/2/E/24/1	'What a water tap means', 7 December 1925	1925
	Manuscript draft; typescript script; correspondence with BBC.	
EM/2/E/24/2	'Cave hunting in Derbyshire', 23 March 1926	1926
	Typescript script; correspondence with BBC; newspaper cutting reporting the forthcoming broadcast.	
EM/2/E/25	Lectures to local associations of the Institution of Civil Engineers	1928-1930
EM/2/E/25/1	'Some problems in engineering geology', Manchester and District Association, 13 March 1929	1928, 1929
	Letter suggesting lecture; manuscript and typescript drafts.	
EM/2/E/25/2	'The superficial deposits in relation to foundations', Manchester and District Association, 18 December 1929	1929
	Typescript draft; preprint.	

EM/2 Notes and drafts

EM/2/E/25/3	'Some aspects of engineering geology', Yorkshire Association, 24 April 1930 Preprint. See also EM/2/A/23.	1930
EM/2/E/26	Lectures to the National Association of Clayworks Managers (NACM)	1931-1939
EM/2/E/26/1	'The geology of the Manchester district with special reference to clayworking measures', Manchester branch, 2 November 1931 10pp typescript; figure; correspondence.	1931-1932
EM/2/E/26/2	'Recent investigations into the sources and causes of fluorescence on brickwork', North Wales branch, Wrexham, 2 December 1931 15pp typescript + figure for lecture; brief correspondence; typescript background material.	1931
EM/2/E/26/3	'The problem of efflorescence on brickwork', South West Lancashire branch, Blackburn, 23 March (later rearranged for 7 April) 1932 Typescript outline; correspondence.	1932
EM/2/E/26/4	'Efflorescence', Manchester branch, 13 December 1932 Correspondence <i>re</i> arrangements; general correspondence with the NACM.	1932
EM/2/E/26/5	'The sources and character of water supply in relation to clayworks', 6th NACM Annual Conference, Buxton, Derbyshire, June 1933 11pp typescript draft; offprint; brief correspondence.	1933
EM/2/E/26/6	'The geology of water supply in relation to the clayworks', Yorkshire branch, 4 October 1934 and Central Lancashire branch, Blackburn, 14 February 1935	1935 /...

EM/2 Notes and drafts

/...	Typescript summary.	
EM/2/E/26/7	Correspondence <i>re</i> lectures to various NACM branches	1934-1937
EM/2/E/26/8	'Industrial water supply', Chorley, 16 February 1939 Typescript summary.	1939
EM/2/E/26/9	Manuscript and typescript notes	
EM/2/E/27	Articles for <i>The Water Engineer's Handbook & Directory</i>	1932-1938
EM/2/E/27/1	'Engineering geology as applied to Waterworks Practice', <i>The Water Engineer's Handbook & Directory</i> 1932 16pp typescript + references; offprint.	1932
EM/2/E/27/2	'Geology in relation to water supply', <i>The Water Engineer's Handbook & Directory</i> 1933 Correspondence, a little <i>re</i> the 1932 Handbook.	1932-1933, 1937-1938
EM/2/E/28	Miscellaneous shorter drafts <i>re</i> water supply Morton's discussion remarks on 'Notes on the Construction of the Watergrove Reservoir (Rochdale)' by N.G. Elliott, Institution of Water Engineers meeting, 6 December 1935; 'Regional schemes of water supply', typescript notes for lecture to Manchester Geological Association, 10 December 1935; 'Geological reflections on water orders', manuscript notes, n.d.	1935, n.d.
EM/2/E/29	'Geological factors affecting the construction of large impounding dams' Manuscript and typescript drafts.	N.d.

EM/2 Notes and drafts

EM/2/E/30	'The Lake District in Three Days' Manuscript and (incomplete) typescript drafts.	N.d.
EM/2/E/31	'Landslides' Manuscript and typescript draft.	N.d.
EM/2/E/32	Miscellaneous drafts Includes 'Alton from prehistoric times', manuscript and typescript drafts; 'The aristocratic cockroach', 1p typescript; 'A day in caveland', 6pp typescript; 'The limestone scenery of Derbyshire', 5pp typescript; 'Materials used in buildings and roads', 3pp typescript Manchester Museum demonstration, 6 February 1935.	1935 and n.d.
EM/2/E/33	Brief correspondence <i>re</i> lectures Also includes manuscript notes for lectures.	1943-1952, n.d.
EM/2/E/34	Editorial correspondence Referee's report on 'Raw Materials for Architects and Engineers' by A. Bray; review of <i>Road Aggregates; their uses and testing</i> by B.H. and R.G. Knight, <i>Science Progress</i> .	1946, 1949
EM/2/E/35	Typescript and manuscript lists of lantern slides Arranged in alphabetical series from Aa ('Diagrammatic & processes of weathering') to Pf ('Scenery in relation to geology'). Other series include D, 'Silicosis' and E, 'Water supply'.	N.d.
EM/2/F	OFFPRINTS Not a complete set. See also EM/2/C/3 and EM/2/E passim.	1926-1944

EM/2 Notes and drafts

EM/2/G	PHOTOGRAPHS	1927-1932, n.d.
	Photographs of rock formations, landscapes illustrating geological features, dam construction and other engineering works.	
EM/2/G/1	Photograph album Photographs of dam engineering, quarries and geological features, most identified, some featuring Morton and colleagues. Also some intercalated photographs loose.	1927-1932
EM/2/G/2	'Photographs of stone samples' Contents of Morton's envelope so inscribed: photographs mounted on card.	N.d.
EM/2/G/3	Loose photographs 2 folders. Some photographs mounted on card.	N.d.
EM/2/G/4	Composite photograph ?of quarry face Roll made from a number of photographs sellotaped together to create a panoramic effect.	N.d.

SECTION EM/3 CONSULTANCIES

1885-1998

This section presents the great bulk of the material in the archive. It comprises the contents of Morton's files relating to the hundreds of geotechnical consultancies with which he and his company, Edgar Morton and Partner, were involved from the 1920s to early 1990s. As the company continued in being after Morton's death in 1973, there are considerable quantities of papers from after that date. Many projects initiated in Morton's lifetime continued through the 1970s and beyond.

Following the organisation of the outline list, the section is divided into four: Public Water Supply; Private Water Supply; Foundation, Stability and Construction Problems; and Planning and Mineral Workings. Within these subsections the arrangement of material has largely followed the listing of the outline list. There was found to be a considerable overlap of material between the subsections, particularly between Public Water Supply and Foundation, Stability and Construction Problems.

In a number of cases projects listed in the outline list proved either to have no documentation or the material listed was subsequently found filed elsewhere. This has resulted in a number of ghost entries in this catalogue indicated by the formula 'Not used'.

Abbreviations used in the text:

BC Borough Council
BDC Borough District Council
CPO Compulsory Purchase Order
DWB District Water Board
JDWD Joint District Water Board
JWC Joint Water Committee
PS Pumping station(s)
RA River Authority
WA Water Authority
WB Water Board
WO Water Order
WW Waterworks

EM/3/1-225	PUBLIC WATER SUPPLY
EM/3/226-404	PRIVATE WATER SUPPLY
EM/3/405-588	FOUNDATION, STABILITY AND CONSTRUCTION PROBLEMS
EM/3/589-665	PLANNING AND MINERAL WORKINGS

Consultancies

EM/3/1-225 PUBLIC WATER SUPPLY

1885-1998

This subsection covers Morton's extensive consultancy work on public water supply projects in Britain. It comprises files relating to over two hundred public water supply projects with which Morton (and his company Edgar Morton and Partner) was involved as a geotechnical engineering consultant.

Morton was working at a time when the water industry in Britain was required to meet a rapidly increasing need for assured supplies of water for domestic and industrial use. After the Second World War local authorities had been given greater powers to build and extend reservoirs and search for potential new sources of supply. Morton and his company, Edgar Morton and Partner, were much in demand in advising on public water supply. He himself was involved with more than 150 dams and reservoirs throughout Britain, many being long-term projects with Morton advising on different aspects of investigation, design, construction, litigation and site monitoring over many years.

The largest bodies of material relate primarily to the construction and development of Grimwith Reservoir for the Bradford Corporation Waterworks (later the Yorkshire Water Authority); the Roadford, Colliford and Wimbleball Reservoirs (South West Water Authority); and the Foremark Reservoir and Carsington Reservoirs (Severn Trent Water Authority). Significant amounts of material occur also for the Isle of Man Water Board (Sulby Reservoir and Druidale Scheme, and others), the North West Water Authority, the Staffordshire Potteries Water Board, St Helens Corporation, Buckinghamshire Water Board, Nottingham Corporation, Portsmouth and Gosport Water Company, North Devon Water Board (the Meldon Reservoir Scheme) and the City of Cardiff Corporation Waterworks (Llandegfedd Scheme).

Much of the material covers the initial stages before reservoir construction, such as site investigation, involving the siting and drilling of numerous trial and exploratory boreholes to search for new sources of supply, the question of the mining position (old and abandoned or working mine shafts situated underground below the proposed reservoir site) and site stability, so as to avoid possible embankment slips and reservoir cracking later on. Several of the projects on which Morton advised were not constructed. After extensive site investigation, monitoring and testing, they were found to be technically or economically unfeasible, even when alternative sites had been proposed and subjected to similar investigation.

Not all the public water supply projects for which Morton was acting involved reservoirs and dams. Morton was also

Consultancies

concerned in the construction of pumping stations, sewage works, water treatment works and other such water supply projects. Morton gave advice to many local authorities on water sources, often subterranean, for augmenting the public water supply, protection of gathering grounds, new well sites, etc., and advised on borehole licence applications.

The majority of the projects date from the 1930s to the early 1990s, although in some cases, where a related project or the same local authority was involved, the working papers incorporate earlier Boyd Dawkins material, dating from the late nineteenth and early twentieth centuries and used for background engineering and geological information. Others represented extensively in the papers include colleagues in the consultancy, P.W. Rowe, C.W. Isherwood and J. Scriven.

The material has been arranged in alphabetical order by principal client, following the outline listing. The client is generally a public authority - County Council, City, Borough, Rural or Urban District Council, River Authority, Water Board, etc. Morton frequently was acting for more than one public authority on any major project and this is indicated in the catalogue entries. Another complication is that the jurisdiction of these public authorities frequently changed over time as they merged, divided, expanded or diminished.

Some of the material was found in folders marked 'Selected Papers'. It appears the contents of these were chosen as worthy of preservation by Morton himself and it is therefore possible that material not so selected was discarded. In many sequences of correspondence there is evidence that documents have been removed, sometimes torn out. Key documents relating to any given project were generally kept in reverse chronological order and this arrangement has been retained.

The papers may include correspondence, plans and maps, draft and final reports (during his lifetime, most of the reports were written by Morton himself), borehole logs, drilling logs, rainfall records, rock test data, calculations, tender documents, photographs etc. There is much manuscript material, including beautifully hand-drawn and coloured geological diagrams, maps, plans and sketches. Morton's manuscript annotations occur throughout the documentation, sometimes the two copies of the same document being differently annotated.

Where there is significant material relating to a collaborating engineering, surveying or similar company, this is indicated in parentheses.

Consultancies

- | | | |
|--------|---|-----------|
| EM/3/3 | Alsager Urban District Council | 1940-1956 |
| | 2 folders. | |
| | Extensions to Audley Road Waterworks, Staffordshire: duplication of water supplies, Royal Ordnance Factory, Radway Green, etc; proposals <i>re</i> obtaining underground additional water supplies in the Alsager area, and establishment of a searchlight camp unit adjoining the Audley Road Waterworks (1940-1942); licence to sink a borehole at Foxley Gorse, Audley (1953-1956). | |
| | Notebook, test data, correspondence, notes, document concerning official opening of the Waterworks Extensions, 16 Sept 1942, reports, Private Inquiry material, and minutes. | |
| EM/3/4 | Amesbury Rural District Council | 1959-1961 |
| | Regional Water Supply, Shrewton area: Esso Petroleum Co. Pipeline. | |
| | Correspondence including letter to P.W. Rowe dated 4 April 1961 (including reference to Rowe's recent 'return from the Arctic regions'), and map, concerning possibility of pipeline leakage into the Shrewton boreholes, which would result in water supply contamination. Including press cutting <i>re</i> jet fuel underground pipeline leak, Laindon, Essex. | |
| | (Lemon and Blizard, civil engineers and surveyors). | |
| EM/3/5 | Anglesey County Council | 1961-1966 |
| | 3 folders. | |
| | Alaw Reservoir and Dam: Afon Alaw Scheme. | |
| | Correspondence, notes, progress report, geological and other reports, maps, plans, diagrams and cross-sections, graphs and plottings, site meeting notes, daily progress sheets, Water Order documents, Public Inquiry documents, Minutes extract, and contract and subcontract documents, grouting logs, and commemorative booklet <i>re</i> Official Opening of the Scheme, October 1966. | |
| | Includes Contract no.3 relating to complete job, from the proposed reservoir up to construction and completion, 1961-1964. | |

Consultancies

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|--------|--|-----------|
| EM/3/6 | Anglian Water Authority | 1975-1976 |
| | River Ancholme Scheme: Elsham Treatment Works | |
| | Plans, maps, correspondence, Morton's observations, diagrams, and vibration investigation etc, <i>re</i> effects of blasting operations at a quarry in close proximity to the Treatment Works. | |
| EM/3/7 | Ashby-de-la-Zouch Rural District Council | 1943-1971 |
| | 2 folders. | |
| | Water supply: various | |
| | Notebook, correspondence, notes, maps, plans, diagrams, and Public and Local Inquiry material <i>re</i> the Acresford Waterworks and new borehole scheme (1943-1951); Pisca Lane to Mill Lane boreholes, Heather, Leicestershire, and proposed opencast working at Coalfield Farm (National Coal Executive, and NW Leicestershire Water Board) (1971); Mill Lane PS, Heather - filling of old clay pit for the Ibstock Brick and Tile Co. (1961); backfilling of proposed quarries, Heather Waterworks (1960). | |
| EM/3/8 | Ashton-under-Lyne, Stalybridge and Dukinfield District Waterworks Joint Committee | 1947-1957 |
| | 2 folders. | |
| | Swineshaw Valley Scheme augmentation of water supply; development of underground water supply sources; proposed reservoir in Greenfield Valley | |
| | Scheme inauguration commemorative booklet, 12 September 1957, test data including boreholes, notes, correspondence, diagrams, reports, daily drill shift reports, and plan (Dove Stone Reservoir). | |
| EM/3/9 | Babtie Shaw and Morton | 1986 |
| | Lew Trenchard Estate: Lake Inspection under Reservoirs Act, 1975. | |
| | Correspondence, maps and plans, <i>re</i> proposed hydrological survey at Lewtrenchard Lake to determine if it could be considered a reservoir for the purposes of the Act. | |
| | The lake appeared to have been formed by limestone quarry | |

Consultancies

excavations, believed to have been abandoned 'at least 140 years ago'.

EM/3/10	Bakewell Rural District Council	1930-1955
	4 folders.	
	Proposed new water supply schemes for Birchover, Winster and Elton (Shothouse Springs), and Ivonbrook Grange, and related Ministry of Health Inquiry (1933-1935); Eyam Reservoir failure and proposed new reservoir sites (1930-1932); proposed Stoke Flat storage reservoir; Hathersage Water Supply and Burbage Spring Supply; Mag Clough Waterworks, Grindleford (1949-1950); alleged depletion of water hole on Mr. Shirt's land adjoining Manchester Road, Tideswell, by the laying of a Council water main (1955).	
	Maps including geological, correspondence, press cutting, reports by Morton and others including geological, notes, plans, photographs, and diagrams.	
EM/3/11	Bexhill Corporation Water Works	1948-1953
	4 folders.	
	Augmentation of water supply: proposed new boreholes; proposed development scheme and utilisation of underground water sources; Henleys Bridge Reservoir site.	
	Correspondence, plans and other documents including copies dating back to 1935, pumping stations plans and diagrams booklet, specifications and contract documents, maps including Ordnance Survey, reports, notebook, etc.	
EM/3/12	Biddulph Urban District Council	1940-1963
	Augmentation of water supply: Elmhurst Waterworks and related matters	
	Various copy reports (Morton and others) dated 1926 to 1960, correspondence 1941-1945 and 1961-1963, yield estimates and readings, notebook, contract and tender documents for proposed borehole at Bands Wood, Biddulph Park, plans, report, water pumping record, and notes.	

Consultancies

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| EM/3/13 | <p>Biggleswade Water Board</p> <p>Morton's Paper on the Lower Greensand Formation, Dunton boreholes, etc.</p> <p>Letter from Morton to T.A. Staniforth, Waterworks Engineer, Biggleswade Water Board, and his reply.</p> | 1939 |
| EM/3/14 | <p>Bishops Castle Corporation</p> <p>Bishops Castle Reservoir, Shropshire.</p> <p>Correspondence including diagram, notes, and copy reservoir inspection report dated 1898 for Maes Gwyn Reservoir, <i>re</i> Bishops Castle [Water Supply] Scheme.</p> | 1945 |
| EM/3/15 | <p>Blackburn Corporation Waterworks</p> <p>5 folders.</p> <p>Blackburn Corporation Waterworks and Blackburn Rural District Council</p> <p>Proposed Dunsop Reservoir, and Bowland gathering grounds development; Footholme borehole; Brennand and Whitendale dam and reservoir sites; Mellor Water; abandoned colliery underground water supplies proposals for the Blackburn area; Daisy Green Reservoir; Blackburn WO.</p> <p>Notebook, technical data including flow rate and gallons per hour, and water bacterial examination, <i>re</i> the Dunsop catchment area, plans, correspondence with National Coal Board and others, Morton reports, geological survey and specification, weekly reports, photographs (mostly Whitendale and Brennand valleys), notes, test data, etc.</p> | 1934-1960 |
| EM/3/16 | <p>Bletchley Urban District Council</p> <p>4 folders.</p> <p>Bletchley UDC and Buckinghamshire WB: Sandhouse Waterworks and Pumping Station, including boreholes</p> <p>Borehole and pumping test data, notebook, Morton's and other reports, correspondence, South Midlands Water Survey material, notes, plans, etc. Includes Luton Rural District Council copy document.</p> | 1948-1970 |

Consultancies

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| EM/3/17 | Bollington Corporation Waterworks | 1944-1955 |
| | Augmentation of water supplies. | |
| | Morton's handwritten notes <i>re</i> boreholes etc, and visit to 'main reservoir', 20 January 1944 (2 sheets). | |
| EM/3/18 | Bolton Corporation Waterworks | 1920-1975 |
| | 3 folders. | |
| | Augmentation of water supplies: Bolton and District (Croal and Upper Irwell) Regional Sewage Disposal Scheme - proposed sewer (1947-1954), including development implications of the proposed Agecroft Colliery for the Ringley Fold and Rhodes Farm sites; Bolton Corporation Waterworks and Irwell Valley Water Board - Fordington PS and boreholes (1939). | |
| | Correspondence including <i>re</i> borehole 'sand trouble', notebook, plans, notes, and Morton's reports, mostly dated 1920 and 1951. | |
| EM/3/19 | Bradford Corporation Waterworks | 1963-1993 |
| | 147 folders. | |
| | (later part of Yorkshire WA) | |
| | Grimwith Reservoir Development: Public Inquiry and WO including mineral rights; proposed Heights Lane (?Chellow) and Wibsey Service Reservoirs; Chelker Treatment Works (Lobwood Supply Scheme); grouting; rock anchors; landslips including access road; site investigations including second stage; quarry and mineshaft investigations; surveys; etc | |
| | Morton, J. Scriven and other notebooks (including Hallgates Reservoir), contract documents, test data including piezometer and other instrumentation readings, borehole logs, notes, correspondence including University of Manchester (folder 110), plans, diagrams, maps, Public Inquiry documents, published papers, photographs including aerial, negatives, chemical analyses, calculations, reports including drafts, sketches, mining activities material including California adit and mineshaft investigation (the latter being in folders 123-124, dated 1979 and 1980-1981), daily drill shift reports, users manual and instructions for the operation, maintenance, and surveillance of Grimwith Reservoir (including geotechnical instrumentation), Rowe and J. Scriven material including notebooks (folder 88 etc), Yorkshire WA documents, etc. | |

Consultancies

Individual items of note include poem 'Grimwith Air' *re* the building of Grimwith Reservoir (folder 15), author unknown, site staff advertisements (folder 30), material *re* the possible flooding effects on Stump Cross Caverns cave system of the Grimwith impounding works in the vicinity (folder 42), material *re* Chellow Dean Reservoir (Lower), John Young's University of Leeds MSc dissertation on Grimwith, 1976 (folder 47), copy material including dating back to the nineteenth century such as articles and mining maps; photographs of Rowe and others at a dinner 'held in honour of Peter Hallas to commemorate his leadership of the "Grimwith Team" ', 10 April 1985, and another meal, 13 January 1983; and photocopies of the Grimwith model centrifuge test bed, before and after testing, n.d. (folder 145).

EM/3/20	Brighton Corporation Waterworks	1971-1972
	Southover Pumping Station: Lewes Southern By-pass	
	Correspondence, test data, plans and sections, etc. <i>re</i> trial borings concerning the possible effects of the proposed roadworks on the yield of the water source for the pumping station.	
EM/3/21	British Waterways Board	1978-1981
	5 folders.	
	Beeston Weir, River Trent, Nottinghamshire	
	Site investigation and preliminary reports, test data, correspondence, plans, calculations, borehole records, piezometer readings, and photographs and negatives (including weir, borehole samples) concerning reconstruction of damaged weir.	
	(A.H.S. Waters and Partners).	
EM/3/22	Buckinghamshire Water Board	1960-1972
	19 folders.	
	Proposed central storage area reservoirs at Waddesdon and Whitchurch including ?Lizard Mill, and proposed service reservoir on Lower Greensand formation, The Warren, Little Brickhill (Woburn); Pumping Stations at Pann Mill, Ash Hill, Radnage, Wendover, Hambleden, Hawridge, Marlow, and Bourne End (the latter three <i>re</i> water pollution protection, invoking local Byelaws); Parliamentary Water Bills; planning	

Consultancies

applications and problems; Ampthill Trunk Main

Correspondence, photographs, negatives, test data, Morton's reports, maps, plans, drilling reports, exploratory boreholes and contract material, graphs, well readings and observations, rainfall records, and Water Bills material concerning other local authority areas covered by or connected with Bucks. Water Board, mostly published material, House of Commons Session 1957-1958, with background material going back to the 1940s. Includes letter from Rowe to Morton, Christmas Eve 1967: 'I cannot think of a nicer way of celebrating Christmas than making you a present of the Report on the Bucks Water Board Scheme!'

EM/3/23

Burnley Corporation Waterworks

1900-1962

12 folders.

Burnley Corporation Waterworks and Burnley Rural District Council (parish of Briercliffe).

Augmentation of water supply: remedial works, Hurstwood Reservoir, including Cant and Thursden Reservoirs, 1900-1925; Shedden Clough and trial boreholes in Thursden Valley at Cockden Bridge and Worsthorpe; Swinden No.1 Reservoir slope slips.

Printed and copy reports by Professor Sir William Boyd Dawkins and others, Boyd Dawkins manuscript and other notes, plans including waxed linen, maps including old OS maps and geological sections, graph, contract, newspapers with articles marked (dated 1921 and 1923), correspondence dating back to 1938, test data, rainfall records, notebook, and copy press cutting *re* Hapton Valley Colliery flooding, near Burnley.

(James Diggle & Son, Civil Engineers, Francois Cementation Co. Ltd, and John Thom Ltd).

EM/3/24

Bury and District Joint Water Board

1932-1935

2 folders.

Proposed new reservoir and boreholes at Dearden Clough; Public Inquiry and Water Board Bill in Parliament

Press cuttings, borehole data, Morton's geological report, correspondence, Morton handwritten House of Lords Committee notes, maps including large tracing, graphs, and Bill, Select Committee Minutes of Proceedings, etc.

Consultancies

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| EM/3/25 | <p>Buxton Corporation</p> <p>3 folders.</p> <p>(later part of Severn Trent Water)</p> <p>Stanley Moor Reservoir and leak, and Stanley Moor borehole; Stockport WO <i>re</i> Goyt Valley boreholes, Derbyshire; thermal spring waters investigation (1972-1973); proposed Portobello Bar boreholes (?1930s to 1940s).</p> <p>Morton, Boyd Dawkins, and other reports, plans, maps, notes, correspondence, etc, dating back to 1904, Stockport Water Order Memorandum, 1960, notebook, leaflet detailing history of St Ann's Well, Buxton, report by S.A. des Eaux Minerales d'Evian, references to Italian geologist's comments <i>re</i> possible contamination of the waters, graphs, test data, and copy of Morton's publication 'Rural Water Supply' dated 1933.</p> | 1904-1973 |
| EM/3/26 | <p>Calderdale Water Board/Calder Water Board</p> <p>12 folders.</p> <p>Calderdale Water Board - Hebden Valley Reservoir sites proposals: Overwood Reservoir and impounding dam, including Calderdale WB Bill, 1969.</p> <p>Calder Water Board - Augmentation of resources, North West Area: proposed new reservoirs including Lanehead Service Reservoir, Burnley, and trial boreholes at Cant Clough, Rams Clough, and Hurstwood 'Top End' (1963-1965); site investigation at Overwood Cottage, Hebden Bridge (The Cementation Co. Ltd), <i>re</i> proposed dam, and stability of landslip at reservoir site; oil prospection drilling, Boulsworth Moor (1962-1963).</p> <p>Contract, site investigation material, reports (Morton, Rowe, and others), test data, graphs, instrumentation readings, borehole logs, notes, correspondence, press cuttings, Hansard, legal notes, maps, plans, further Rowe material, etc.</p> | 1962-1970 |
| EM/3/27 | <p>Cardiff Corporation Waterworks</p> <p>17 folders.</p> <p>City of Cardiff Corporation Waterworks (?later superseded by the Glamorgan River Authority) and Welsh National Water Development Authority, Taff Water Division, Cardiff Water Unit</p> <p>Llandegfedd Water Scheme: Construction of impounding reservoir at Llandegfedd, and later post-construction</p> | 1959-1984 |

Consultancies

investigation into cracking of access bridge piers; Leckwith Reservoir; Llwyn-on Reservoir; Cantref Reservoir site investigation and feasibility study.

Notebook, test data, borehole logs, plans, piezometer readings, correspondence, graphs, maps, plans, Morton's and Rowe's reports etc, earlier Boyd Dawkins material including manuscript dated 1912, *Proceedings of The South Wales Institute of Engineers*, vol. 23 (1902).

Including notes on Tittesworth, Staunton Harold, and ?Clatwrithen [Reservoirs].

EM/3/28	Cardiganshire Water Board Repairs to Llyn Craig-y-Pistyll Reservoir Plans and correspondence.	1965-1966
EM/3/29	Central Electricity Generating Board 7 folders. Thorpe Marsh Power Station, Doncaster, Yorkshire: Augmentation of water supply including boreholes. Correspondence, test data, accounts, press cutting (photograph of the power station), plans, maps, diagrams, graphs, calculations, etc. Including notebook <i>re</i> proposed supply on gas works extension site, 1944-1945, and the Central Electricity Authority Thorpe Marsh site, Doncaster Corporation Gas Dept., 1957.	1956-1976
EM/3/30	Central Flintshire Water Board 7 folders. Central Flintshire WB (formerly Hawarden and District Water Co.) and Denbigh Corporation. Augmentation of Water Supply - various: Connah's Quay UDC (see also EM/3/43), Kinnerton borehole, etc. Morton notebooks, correspondence, map, plans, graphs, diagrams, test data, press cutting including picture of Morton and others.	1937-1969

Consultancies

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| EM/3/31 | Chapel-en-le-Frith Rural District Council | 1930-1955 |
| | 7 folders. | |
| | Legal dispute <i>re</i> Whitehall Moor Springs, Combs Moss area: Bleachers Association Ltd vs Chapel-en-le-Frith Rural District Council; Cheshire and Derbyshire proposed Administrative County Boundaries alteration Public Inquiry, held at Buxton; Water Supply - Castleton, Peak Forest, Chapel and Chinley, and Nook Reservoir. | |
| | Morton notebooks, Morton's reports and abstracts, copy legal documents such as judgement and Proof of Evidence, correspondence, press cuttings, plans, maps, photographs, notes, test data, meteorological readings, etc. | |
| EM/3/32 | Chatham and District Water Co. | 1953-1954 |
| | Augmentation of water supply: proposed new PS, Stockbury Valley; Chatham and District Water Co. opposition to Bowaters' Lloyd Pulp and Paper Mills Ltd. Inquiry under section 14 of the Water Act, concerning application to develop new boreholes. | |
| | Correspondence, sketches and diagrams, notebook, Inquiry documents, Morton and other reports. | |
| EM/3/33 | Cheadle Rural District Council | 1956-1959 |
| | Application under section 14 of the Water Act to abstract water from Sheepwash borehole (Cheddleton Water Scheme), 1958-1959. | |
| | Copy Statements of Evidence, correspondence including copies going back to 1956, plans, agreement, sketches, etc <i>re</i> opposition to the application by Staffordshire Potteries WB and E.J. Holdcroft & Sons Ltd. | |
| EM/3/34 | Cheltenham Corporation | 1943-1944 |
| | Spa Waters Development. | |
| | Correspondence, Morton and other reports dating back to 1904, notebook, and Cheltenham Spa illustrated booklets. | |

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| EM/3/35 | <p>Cheshire County Council</p> <p>4 folders.</p> <p>Cheshire County Council and various Rural and Urban District Councils</p> <p>Boreholes including Booth Bank, Crabtree Green, and Thornton-le-Moors - the latter for Shell Marketing Co. Ltd (Shell-Mex water supply); East Cheshire Regional Water Scheme, 1938, including Evesham Water Supply; Macclesfield Forest C.E. School Water supply, 1959, including Water Conservation Orders; Mid- and SE Cheshire Water Board Bill 1946, and Mid-Cheshire Joint Water Committee; Delamere Area Water Supply; West Cheshire WB 1949-1950; Dee Supply Inquiry (objectors including Connah's Quay UDC) and Water Board Order 1950; proposed artesian well at Devonshire Road for Altrincham Ice Rink Co. Ltd, 1962.</p> <p>Cross sections, notes, correspondence including copy letters, notebook, reports including printed, press cutting, test data, Inquiry documents, etc.</p> <p>See also Mid- and S.E. Cheshire WB EM/3/112.</p> | 1933-1965 |
| EM/3/36 | <p>Chesterfield, Bolsover and Clowne Water Board</p> <p>Augmentation of water supply.</p> <p>Correspondence, notebook including references to Cheshire County Council Brine subsidence, Morton's report, and test data and rainfall records dated 1930s to 1940s.</p> | 1930s-1955 |
| EM/3/37 | <p>Cleveland Water Co.</p> <p>Scaling Dam and Reservoir Scheme, Scaling, Cleveland.</p> <p>Correspondence, Morton's reports, and notes, including <i>Memoirs of the Geological Survey, England and Wales</i> with 'The Geology of North Cleveland', 1888.</p> | 1954-1958 |
| EM/3/38 | <p>Clitheroe Corporation Waterworks</p> <p>4 folders.</p> <p>Augmentation of water supply: Clitheroe UDC/Rural District Council and Bowland Rural District Council <i>re</i> trial boreholes (Simshey, Lowcocks Farm, and others), and related Public Inquiry.</p> | 1943-1961 |

Consultancies

Notebook, reports including printed, correspondence including copy letter *re* Clerk Hill Estate Water (for Whalley Lunatic Asylum supply), April 1916, notes, contract documents, maps and plans, and press cuttings including photograph depicting Morton and others.

Includes reference to the Grindleton Fell underground water source being 'a huge, well-soaked sponge which never went dry', Oct. 1958.

(Thomas Matthews Ltd; Ward, Ashcroft and Parkman).

EM/3/39 Coalville Urban District Council 1943-1964

2 folders.

Augmentation of water supply: Public Inquiry, and related Holly Hayes and Battle Flats boreholes; Leicester Corporation Water Bill, 1945-1946; new source works, 1962-1964 and involvement of National Coal Board, East Midlands Division.

Notebook, correspondence, reports including printed report dated 1893, test data, graphs, plans, and maps.

EM/3/40 Not used.

EM/3/41 Colne Corporation Waterworks 1929-1959

Colne Corporation WW and Colne Valley Sewerage Board (later the West Hertfordshire Main Drainage Authority).

6 folders.

Corn Close borehole, 1929-1938.

Morton's reports, correspondence, and notes, 1929-1934, and illustrated booklet and menu card *re* official inauguration of the Corn Close borehole, 10 June 1938.

Colne Valley Sewerage Board Public Inquiry, April 1959.

Public Inquiry documents dated 1954-1959, including Minutes of Proceedings, Inspector's Report, maps, etc.

Consultancies

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| EM/3/42 | <p>Congleton Rural District Council</p> <p>4 folders.</p> <p>Congleton Rural District Council, Congleton BC and Congleton Corporation WW.</p> <p>Augmentation of water supply: Mow Cop borehole and PS; Hug Bridge Scheme, Bosley (1939-1945); Forge Lane WW yield; trial borehole at Ruston Spencer; water supply problems, Pot Bank Farm, Mow Cop (1973-1975).</p> <p>Notebook, test data, rainfall figures, press cuttings, reports including printed, notes, correspondence, etc. Including reference to 'student of Morton's: 'Mr Chandler has been here for a fortnight and is proving very useful, he has gone to Manchester to-day to receive his first class Honours which he has obtain[ed] at the University' (letter from H.V. Lynam, Alsager UDC Surveyor, to Morton, 5 July 1941). Also documents <i>re</i> Buglawton UDC water supply and The Silver Springs Bleaching & Dyeing Co. Ltd, dated 1922 and 1926.</p> | 1922-1975 |
| EM/3/43 | <p>Connah's Quay Urban District Council</p> <p>Proposed borehole scheme, new PS, etc</p> <p>Morton's report, Nov. 1956, notes, and correspondence including Morton's own reference to having 'been down with Lumbago for over a month...', Sept. 1949, and references to Clitheroe work (see EM/3/38), 1948.</p> <p>(Ward, Ashcroft and Parkman).</p> <p>See also Central Flintshire EM/3/25.</p> | 1948-1956 |
| EM/3/44 | <p>Cornwall River Authority</p> <p>14 folders.</p> <p>Water Resources Development, River Plym: Erosion of Blacka Brook including Lee Moor works (Big Pond and Contour Leat); proposed reservoirs at Colliford, Lamelgate, Scribble Downs, Bickleigh, Milton Brook, etc. including WOs and site investigation</p> <p>Correspondence, test data, maps, plans, calculations, Morton and other reports including draft hydrology section and Water Resources Act 1963 section 14 survey documents, notes, borehole logs, borehole sample photographs (Bickleigh Reservoir), etc. Including letters <i>re</i> Wimbleball Reservoir, 1972.</p> | 1968-1974 |

Consultancies

See also East Cornwall WB EM/3/55 and West Cornwall WB EM/3/204; Plymouth City WW EM/3/147; and South West Water Authority EM/3/177.

EM/3/45	<p>Craven Water Board</p> <p>1959-1978</p> <p>16 folders.</p> <p>Craven WB including Skipton Rural District Council</p> <p>Augmentation of water supply for Bentham area including Skipton, Yorkshire: Boreholes at Clogger Lane, Elslack (including WO, 1963, and Aire Valley Scheme [gravels]), Cowling, Eshton, Bentham, Hodge Clough (Earby), Redfirth Gill (Manor Farm Supply), Hetton, Airton, etc; Reservoir sites: Newsholme Dean and Slippery Ford (site investigation), Glusburn, Keasden, Keighley Moor (leaks under embankment), Whinny Gill Reservoir, and Thornton Service Reservoir; Threshfield Private Water Supply; Kilnsey Limestone Springs.</p> <p>Borehole logs and bored tube daily reports, tender and contract documents, diagrams, sketches, test data including pumping, correspondence including Rowe, reports including bacterial examination, maps including Ordnance Survey, plans, notes, diagrams, photographs (including borehole rock samples), graphs, etc. Including note on original Keasden envelope: 'See also Mid-Ches[hire]. J.W.B for Statistics relating to 1944'.</p>
EM/3/46	<p>Crewe Corporation</p> <p>1929-1938</p> <p>2 folders.</p> <p>Parliamentary Bill and proposed Eaton PS and trial boreholes, 1937-1938.</p> <p>Notes, correspondence, Corporation Parliamentary Bill and Petitions, copy and other reports dating back to 1929, etc.</p>
EM/3/47	<p>Darwen Corporation</p> <p>1938-1946</p> <p>2 folders.</p> <p>Augmentation of water supply: Tockholes borehole (1938-1942); Eccleshill water (1945-1946); payment of outstanding account owed to Morton (1950).</p>

Consultancies

Morton notebooks (one lacking cover), correspondence, calculations, instrumentation readings, Darwen Borough monthly rainfall 1932-1945, etc.

Morton was working also for the Blackburn Corporation to investigate the site for proposed Dunsop Valley Reservoir, 1942, and Morton's suggestion for a related possible joint water scheme between Blackburn, Darwen, Accrington, and Haslingden Corporations.

EM/3/48	Derwent Valley Water Board	1934-1953
	3 folders.	
	Derwent Valley Scheme - Ashopton landslip; Construction of Ladybower Reservoir and Dam, Ashopton Viaduct vicinity.	
	Morton's reports including printed, correspondence, plans including blueprints, press cuttings, sketches, and notes. Including copy papers, chairmen's addresses, committee report, minutes, etc. <i>re</i> various Institution of Water Engineers' Northern Section meetings.	
EM/3/49	Devizes Corporation Waterworks	1919-1947
	3 folders.	
	Devizes Corporation including Devizes Rural District Council, Devizes Borough Council, and Bletchley UDC.	
	Augmentation of water supply: Bourton borehole, 1944-1947; Shepherds Shore WW.	
	Correspondence, notes, Morton's report, water sample analysis, August 1944, etc. Including Morton letters <i>re</i> seemingly fruitless search for missing maps and diagrams in brown paper roll left behind by Morton on train, September 1944; photographs of Bourton borehole '& pumping test Sept. 1944'; and Boyd Dawkins material including handwritten in ink, 1919-1920.	
EM/3/50	Devon River Authority (formerly Devon River Board)	1957-1972
	10 folders.	
	North Devon Water Bill: Taw Marsh Scheme (1957-1959); SW Devon Water Supplies; North Devon Hydro Electric Power Bill including CGB Pumped Storage Scheme, Bucks Mill, Clovelly (1965-1967); possible effects of the Tiverton Flood Relief	

Consultancies

Scheme on St. Peter's Church foundations (1968-1969); proposed reservoir sites at Woodcourt, Bow Cross, Torcorn Hill, and others (1971-1972); WO and Public Inquiry *re* Wimbleball Reservoir (1972); West Somerset WB: River Exe Augmentation Scheme.

Correspondence, reports, maps, plans, daily drilling records, press cutting, geological reports, notes, photographs (Woodcourt and Bowcross reservoir sites), test data, technical data, contract documents, and Public Inquiry documents.

See also North Devon WB EM/3/128, West Somerset WB EM/3/211.

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| EM/3/51 | Dewsbury and Heckmondwike Waterworks | 1936-1937 |
| | Augmentation of water supply: Harden Clough Valley borehole | |
| | Correspondence, notebook, and ?Morton's reports. | |
| EM/3/52 | Doncaster and District Joint Water Board | 1943-1975 |
| | 16 folders. | |
| | Doncaster and District Joint Water Board/Doncaster and Tickhill JWB and Doncaster Corporation. | |
| | Augmentation of water supply, including Yorkshire WA and Trent RA, and Don Valley WB: Boreholes and PS including at Lindholme, Boston Park, Nutwell, Thornham, Dadsley Well (Tickhill), Littleworth, Finningley, Stanton Little Wood, Hindley, Highfield Lane, Hatfield Woodhouse, and Armthorpe; proposed balancing reservoir at Blaxton, River Torne; Rossington Bridge PS and general effects of coal workings on Doncaster and DJWB; Public Inquiry <i>re</i> Application for Provisional WO; fly ash disposal, Drax Power Station; sand and gravel workings, Hatfield/Lindholme, etc. | |
| | Correspondence including with various Water Advisory Committees, test data including pumping, plans including Rossington Colliery (Barnsley Seam), maps including OS, notes, Morton and other reports, water analysis, contract and specification documents, and Public Inquiry documents, Morton notebooks, press cutting (borehole application), television inspection report, etc. | |
| EM/3/53 | Drayton Rural District Council | 1945-1962 |
| | Longslow Water Supply: Ellerton borehole (South Eastern | |

Consultancies

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Correspondence, plans comprising site plan and refuse collection distribution, and reports including printed Medical Officer of Health Reports for the years 1945 and 1947 respectively.

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| EM/3/54 | Durham County Water Board | 1951-1960 |
| | 2 folders. | |
| | Proposed Derwent Valley Reservoir Scheme: Castleside Service Reservoir and Tunnel including Derwent WO trunk main; proposed Park Head [also referred to as 'Parkhead'] Reservoir, Waskerley Valley, 1951-1954. | |
| | Reports, correspondence, notes, plans, borehole logs, etc. Including notes <i>re</i> grouting, Burnhope Reservoir, n.d., 1 sheet. | |
| EM/3/55 | East Cornwall Water Board | 1962-1977 |
| | 6 folders. | |
| | Higher and Lower Harrowbridge, and Siblyback (?River Fowey) Reservoir sites including trial borings and site investigation, and East Cornwall WO, 1964. | |
| | Maps, plans, photographs and negatives including Crowdy Dam and Siblyback Dam (including of the commemorative plaque concerning the reservoir opening, 21 June 1969, <i>re</i> the latter), Morton and other reports, daily grouting sheets, correspondence, test and technical data, notes, rainfall records, borehole logs, contract documents, etc. | |
| EM/3/56 | East Devon Water Board | 1960-1973 |
| | 4 folders. | |
| | East Devon WB and Devon County Council | |
| | Stoke Cannon Area Development - Exe Valley boreholes, and Planning Application <i>re</i> sand workings etc; Otter Valley Scheme - Harford and Axmouth boreholes. | |
| | Maps, plans, correspondence, Morton's reports, contract documents and specifications, test data including pumping test charts, and ?borehole logs. | |
| | See also Exeter Corporation WW EM/3/65. | |

Consultancies

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| EM/3/57 | East Lincolnshire Water Board | 1954-1955 |
| | Water supply: Spilsby Sandstone. | |
| | Correspondence and printed article 'Water Supply in East Lincolnshire with particular reference to the Boston area', 1955. | |
| EM/3/58 | East Shropshire Water Board | 1962-1972 |
| | 5 folders. | |
| | East Shropshire WB, Wem Rural District Council and Severn RA. | |
| | River Severn Scheme: Ellerton borehole and proposed pumped storage reservoir, Buildwas; Market Drayton Supply - boreholes including Shiffords Bridge, Standford Bridge (Lee Brockhurst site), Lizard Mill, Diddlebury, Great Soudley, RAF boreholes (Tern Hill Camp), Oxford Bridge (Newport), Neachley, Bolus Bridge, etc; Brodder Springs; Telford Development Corporation Basic Plan water and sewage proposals Inquiry <i>re</i> River Tern. | |
| | Correspondence, test data including pumping tests, notebook, plans including blueprint, maps, chemist's and engineer's reports, notes, photographs (Bolus Bridge), water sample analysis, Geophysical Resistivity Surveys, etc. | |
| | See also Wem Rural District Council EM/3/202. | |
| EM/3/59 | East Worcestershire Waterworks Co. | 1955-1970 |
| | Brockhill PS: alleged depletion of wells, springs, etc | |
| | Notes, plans, maps, meeting notes, and correspondence, including copy material, 1955-1957, and further correspondence dated 1970 detailing the Company's future pumping station programme. | |
| EM/3/60 | Eastbourne Waterworks Co. | 1965-1988 |
| | 4 folders. | |
| | Augmentation of water supply, Bexhill area: Buckholt PS; River Cuckmere Scheme: Arlington Reservoir. | |
| | Correspondence and Morton's interim report concerning | |

Consultancies

redevelopment of the above pumping station, abandoned and closed down in 1950, and the employing of Morton as consultant, 1965-1966; Arlington Reservoir: certification document, November 1973, and notes, plans, photographs, negatives, correspondence, etc, 1971-1988.

EM/3/61	Ebbw Vale Urban District Council	1950-1953
	2 folders.	
	Claisfer Dam Scheme: 'The possibility of constructing a new impounding reservoir between the existing Llangynidr and Carno reservoirs'.	
	Correspondence, reports including site investigation, 'borehole data and seepage computations' including notebook, notes, plans including Usk Reservoir (Swansea Corporation Water) and geological sections of adit and of Talybont Reservoir, borehole logs, etc.	
EM/3/62	Ellesmere Rural District Council	1951-1959
	Ellesmere Rural District Council and Oswestry Rural District Council	
	Investigation of underground water supply; Borehole at Lee Bridges; Bridgewater Estate water supply - Colemere Scheme; etc	
	Correspondence, reports, geological diagram, and notes.	
EM/3/63	Epsom and Ewell Water Department	1970-1971
	Epsom Feasibility Study.	
	Geological maps and sections, calculation, and correspondence including historical notes.	
EM/3/64	Evesham Borough Council	1938-1939
	Evesham Borough Council, Borough of Crewe and Snowhill and Great Brockhampton WW.	
	Eaton PS; Subterranean water supplies - Pinnock Wood Springs excavations, and Snow Hill Springs.	
	Notebook, Inquiry documents, Morton and joint reports, and	

Consultancies

correspondence.

EM/3/65 Exeter Corporation Waterworks 1957-1969

10 folders.

Exeter Corporation WW, Exeter City and East Devon WB

Augmentation of water supply: Exeter WO (1963); boreholes - Stoke Canon, Frog Street Bridge, etc; Exe Bridge Improvement Scheme including Countess Wear Sewage Works site investigation and construction of canal bank road access (1959-1960); Public Inquiry *re* East Devon Water (Regrouping) Order (1963).

Correspondence, test data, trial borehole completed site work accounts figures, contract and tender documents, reports including soil investigation, borehole logs, magazine article with photographs (Exe Bridge), 1969, notes, maps, geological diagrams, plans, and Public Inquiry documents including mostly Proofs of Evidence, Petitions and Counter-Petitions by East Devon UDC's and others, and Minutes.

See also East Devon WB EM/3/56.

EM/3/66 Flintshire County Council 1965

River Dee Crossing, North Wales: Proposed barrage.

Geological survey map overlay for Sheet 96 (Liverpool), correspondence, and manuscript notes.

(Ward Ashcroft and Parkman, Chartered Civil Engineers).

EM/3/67 Friends of the Lake District and Whitehaven Corporation 1960-1964

Ennerdale Lake and Reservoir Scheme (1960); sources of water for Manchester including the Salmon and Trout Association (1963-1964).

Correspondence including memorandum, and sketch map *re* concerns as to effects of the above Scheme on the Lake District National Park, the feasibility of suggested alternative water supplies, and effects of proposed expansion of Marchon Products (detergent and chemical manufacturers at Whitehaven) and its associated company Solway Chemicals Ltd.

See also Whitehaven EM/3/217.

Consultancies

EM/3/68	Not used.	
EM/3/69	Fulwood Urban District Council	1936-1959
	Additional subterranean water supplies, Chipping Valley (1936-1937), and vicinity of Houghton Service Reservoir (1952); investigation of borehole supply (1952-1957).	
	Correspondence, reports, Schedule of Boring Operations, plans, and notes. Including Fylde WB plan, January 1959, trial boreholes graph plot, etc.	
EM/3/70	Furness Water Board	1955-1970
	Furness WB, Barrow Corporation WW and County Borough of Barrow-in-Furness Water Department	
	Augmentation of water supply: Boreholes including Vale of Nightshade, Leith Flat Brow, and Thorncliffe Road; Underground supplies: Limestone resources in the Lowick area	
	Test data, correspondence, plans, maps, and notes.	
EM/3/71	Fylde Water Board	1950-1973
	17 folders.	
	Proposed boreholes including Tosside, Pendleside, Broughton, Garstang, Halstead Farm, Dunsop and Langden Valleys, Lower Brock Bridge; proposed reservoirs including Rathmell, Hellfield, Dunsop, and Stocks including geological investigation; Bottoms Beck measuring Flume; Fylde WO 1958 including ICI observation wells; Fylde WB Bill in Parliament, 1956.	
	Test data, notes, correspondence, contract and tender documents, notes, Public Inquiry documents including Proofs of Evidence and Petitions, photographs including panoramic, maps, plans, diagrams, reports, water sample analyses, calculations, borehole logs, seismic and seismic refraction surveys, press cuttings, and Minutes of Evidence and Petitions <i>re</i> the WB Bill, 1956. Also 21" borehole Y1 [rock] sample, Waddington Fell, 30 November 1968.	
	Additional material (folder A): reservoir notes, 1972 and n.d, and Driller's Logs, 1971, letter <i>re</i> . proposed Whitewell Tunnel, 1957, and correspondence and plan <i>re</i> Geophysical	

Consultancies

	Resistivity Survey, Cod Beck Reservoir, 1950.	
EM/3/72	Not used.	
EM/3/73	Not used.	
EM/3/74	Gloucester Corporation Waterworks Gloucester Corporation WW and Malvern Urban District Council [City of] Gloucester - pumping stations at Newent, Ketford including borehole, and Berrow's Farm at Red Marley D'Abitot. Plans, report, graph plot, notebook (lacks cover), test data, correspondence, notes, etc. Also published copies of legislation including Gloucester Corporation Act 1911.	1945-1957
EM/3/75	Grange-over-Sands Urban District Council Water supply: proposed dam at Simpson Ground Correspondence including data relating to 'Trial Holes Along Dam', at Grange Water.	1948
EM/3/76	Grantham Waterworks Grantham Waterworks and West Kesteven Rural District Council. Augmentation of Water Supply: Local Inquiry <i>re</i> possible effects on water supply of application by Stanton Ironworks and others, to work the ironstone at Denton and Harlaxton Correspondence, plans, notes, diagrams, etc.	1939-1954
EM/3/77	Greater London Area Water Supplies Departmental Committee 7 folders. Greater London Water Area proposals for Joint Water Undertaking 1946-1949, and opposition.	1946-1954

Consultancies

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| EM/3/80 | Guildford, Godalming and District Water Board | 1945-1966 |
| | 6 folders. | |
| | Augmentation of water supply: Albury WO, proposed boreholes, and Public Inquiry; proposed development at Dapdune PS; Millmead PS proposed Greensand borehole and Inquiry - draft WO, draft agreement with Friary Meux, and contract; Witley Common PS proposed boreholes; Mid-Wessex Water Co. proposal (?and objections) <i>re</i> water supply for Bracknell New Town. | |
| | Meeting notes, television inspection report, factual and other reports, development plan, correspondence, Morton's reports, copy press cutting, local Inquiry documents, water sample analysis, test data including pumping, plans including geological sections, Public Inquiry documents including <i>re</i> standing conference of Departmental Committee on Greater London Area Water Supplies, <i>ca</i> 1945, annual reports dated 1954-1962, and printed copy of the Guildford Corporation Act, 1926. | |
| EM/3/81 | Not used. | |
| EM/3/82 | Halifax Corporation Waterworks | 1934-1950 |
| | 3 folders. | |
| | Halifax Corporation Bill and Waterworks Extensions: Proposal to build a reservoir and dam in the Hebden Valley 'just above Hardcastle Crags'; question of alternative site; opposition to the Bill. | |
| | Water Bill documents, Halifax Corporation Acts, and Parliamentary Select Committee, Minutes, etc, Morton's reports including geological, correspondence, notes, Petitions from Hepton Rural District Council, Hardcastle Crags Preservation Committee, West Riding County Council, Batley and Dewsbury Corporations, and others, plans, opposition poster, and photographs (Hardcastle Crags, Hebden Valley and 'Ogden'). | |
| EM/3/83 | Halstead Rural District Council | 1963 |
| | Great Yeldham Scheme: application to increase abstraction of water under section 14 of the Water Act and Inquiry <i>re</i> application; Colchester and DWB opposition. | |
| | Borehole depth records, correspondence, plan, and Inquiry | |

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| EM/3/86 | Hayfield Rural District Council | 1929 |
| | <p>Ministry of Health Public Inquiry: Hayfield Rural District Council vs New Mills UDC Inquiry <i>re</i> possible affects of underground works proposed under the New Mills UDC Provisional Water Order 1929, on the existing Harrymoor works of the Hayfield Rural District Council.</p> <p>Diagrams and sketches including hand coloured, Morton geological report, notes including geological, correspondence, and press cuttings.</p> | |
| EM/3/87 | Hemsworth Urban and Rural Joint Water Committee | 1959 |
| | <p>Water Supply Extensions Part 3.</p> <p>Three plans: General Plan, Reservoir Sections, and Typical Reservoir Roof & Floor Plans.</p> | |
| EM/3/88 | Heywood and Middleton Water Board | 1949-1966 |
| | <p>2 folders.</p> <p>Augmentation of water supply: borehole licence application to abstract underground water, Samuel Heap and Co. Ltd., Caldershaw Mills, Rochdale; Heywood and Middleton WO; Ashworth Colliery, Tweedworth Colliery (NCB), and Carr Wood Sough mining considerations; proposed Birtles borehole; proposed Greenbooth and Naden Brook Reservoirs, and trial borings; Greenbooth Reservoir under construction (Contract 'H'), and related Tail Bay Pool site investigation.</p> <p>Correspondence, notes, graphs, Morton's reports, plans including geological diagrams, sketches, diagrams, meetings notes, and progress reports.</p> | |
| EM/3/89 | Horwich Urban District Council | 1959-1965 |
| | <p>Horwich UDC and Blackrod UDC.</p> <p>Augmentation of water supply: proposed Markland Service Reservoir; W. T. Taylor & Co. Ltd Victoria Mills boreholes.</p> <p>Plans including geological sections, maps, Morton's reports, test data including pumping.</p> | |

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| EM/3/90 | <p>Hull Corporation Waterworks</p> <p>[Kingston-upon-]Hull Corporation WW and Kirkbymoorside Rural District Council.</p> <p>Hull Corporation Water Bill: Opposition by Kirkbymoorside Rural District Council, Milburn Estates Ltd, <i>re</i> proposed Farndale Reservoir Scheme and aqueduct; mineral concerns and question of whether chalk can be considered a mineral.</p> <p>Morton's reports including geological, notebook (cover missing), Water Bill documents including Petitions, and copy documents including dated 1916.</p> | 1932-1939 |
| EM/3/91 | <p>Ipswich Corporation</p> <p>4 folders.</p> <p>Ipswich Corporation Water Undertaking - Alton WO, 1971, under section 23 of the Water Act 1945; Public Local Inquiry and opposition including that of S.O.F. Bateman, owner of Alton Hall Estate, and East Suffolk County Council; Tattingstone Reservoir.</p> <p>Ipswich Corporation were seeking WO authorisation for a reservoir scheme and ancillary works, and to 'acquire compulsorily the necessary lands'. Alton Hall was one of a number of Grade II listed buildings in the area due to be flooded by the proposed reservoir.</p> <p>Correspondence, Morton and other reports, maps, plans, Inquiry documents, notebook, press cutting, etc.</p> <p>Material includes reference to Alton WO being finally authorised by the Minister, subject to various provisos, and letter from S.O.F. Bateman thanking Morton for his support.</p> <p>(Binnie and Partners: Chartered Engineers)</p> | 1967-1972 |
| EM/3/92 | <p>Irwell Valley Water Board</p> <p>5 folders.</p> <p>Proposed Calf Hey Filtration Works; Clarke's Hill Service Reservoir including mining position; Loveclough Service Reservoir; Musberry Valley Reservoir and trial boreholes; Walmsley borehole</p> <p>Morton's reports, plans, map, graphs, correspondence including Rowe, site investigations material, notes, and daily drilling reports.</p> | 1937-1962 |

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| EM/3/93 | <p>Isle of Man Water Board</p> <p>20 folders.</p> <p>Isle of Man WB and Isle of Man Water and Gas Authority</p> <p>Augmentation of water supply (1936-1958): Glen Rushen Reservoir Scheme (impounding reservoir) including site investigation and trial boreholes; Northern Water Scheme: Block Eary Reservoir, subterranean water sources, Northern Plain boreholes, etc; Southern Water Scheme: proposed Cringle Brook Reservoir, etc; and Corransy Intake Scheme; Sulby Reservoir and Druidale Reservoir Scheme, including G. H. Hill and Sons, Consulting Engineers, site investigation at Sulby Glen, and saline water study including 'milky water' problem. (1976-1992).</p> <p>Correspondence, test data including borehole records, piezometer readings, and settlement gauge, aerial and other photographs including Sulby Reservoir during and after construction, negatives including microfilm, plans, maps, notes, notebook, Morton and other reports, contract document, J. Scriven (working for Mott Macdonald as a consultant) material (Sulby Reservoir) including letter and notes dated 1998, etc. Also Corransy Intake Scheme inauguration commemorative booklet, Sulby Reservoir opening ceremony commemorative booklet, 14 July 1983, and pamphlets, printed paper by Boyd Dawkins 'On the Geology of the Isle of Man', and manuscript letter in ink from J.M Lamplugh of Chatsworth House, Ramsay, Isle of Man, to Boyd Dawkins, 9 Nov [18]94.</p> <p>See also EM/3/642.</p> | <p>1894, 1936-
1998</p> |
| EM/3/94 | <p>Keighley Corporation Waterworks</p> <p>Sladen Valley Scheme: Lower Laithe Reservoir including leakage</p> <p>Correspondence, borehole logs, rainfall records, plans, notes, Morton's reports, copy report dated 1911 and annual report, 1937, etc.</p> | <p>1933-1939</p> |
| EM/3/95 | <p>Lancaster Corporation Waterworks</p> <p>Langthwaite Reservoir (1933-1934); proposed Sparrow Ghyll Reservoir (1941-1945).</p> <p>Correspondence, Morton's reports, notebook, etc.</p> | <p>1933-1945</p> |

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| EM/3/96 | <p>Leeds Corporation Waterworks</p> <p>10 folders.</p> <p>Ilton Reservoir and Dam; Laverton Reservoir; Thruscross Reservoir (1950-1967); Eccup Filtration Works including site investigation; Carlesmoor and Colsterdale reservoir sites.</p> <p>Maps, plans including geological sections, correspondence, notes, Morton observations and reports, Waterworks Committee printed report 1945, calculations, Manchester College of Science and Technology Test Reports, borehole logs, daily grouting sheets, and press cutting and photographs (Thruscross) including panoramic, and earlier supporting material, etc.</p> <p>Also cutting from the <i>New Civil Engineer</i>, 19 March 1987, re invitation to tender for the contract for the Removal of Ilton Dam, near Masham, North Yorkshire, and Thruscross Reservoir pamphlet, May 1964.</p> | 1945-1987 |
| EM/3/97 | <p>Not used</p> <p>Note by Morton on original file divider read: 'Pool End Pumping Station now under Staffs. Potts. WB'. See Staffordshire Potteries Water Board EM/3/180.</p> | |
| EM/3/98 | <p>Leicester Corporation Waterworks</p> <p>Snarestone boreholes.</p> <p>Correspondence, maps, plans including NCB Measham Mine and geological, copy borehole logs dated 1941, calculations, test pumping reports, etc.</p> <p>Manifold Valley Scheme for Leicester Corporation Water Bill documents and objections see Trent RA EM/3/191.</p> | 1970-1974 |
| EM/3/99 | <p>Lincolnshire River Authority</p> <p>6 folders.</p> <p>Skegness UDC: Welton WW proposed extensions including Candlesby borehole, and Inquiry; Boston Corporation Scheme and Inquiry: Skegness UDC in opposition; various boreholes including Maltby.</p> <p>Notes, Lincoln Corporation Bill 1908 (marked Boyd Dawkins),</p> | 1908-1969 |

Consultancies

and Minutes of Proceedings, plans, reports, correspondence, copy documents going back to 1926, press cuttings, test data, water sample analysis, etc.

See also North Lindsey WB EM/3/130.

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| EM/3/100 | Liverpool Regional Hospital Board

Objections to Warrington WO, 1951

Correspondence including notes. | 1950-1951 |
| EM/3/101 | Luton Water Co.

7 folders.

Luton Water Co. and Eastern Gas Board (Dunstable Water Undertaking)

Luton WO, 1957-1958, including Bow Bridge Scheme and PS, Shafford Farm Scheme, Ouse Scheme, and objections; Leagrave Common and other greensand boreholes

Inquiry documents and Proceedings, correspondence, press cutting, Morton notebooks, maps, plans, rainfall records and graphs, test data, notes, photographs (River Ver), etc. | 1951-1961 |
| EM/3/102 | Mablethorpe and Sutton Urban District Council

Mablethorpe and Sutton UDC, Lindsey County Council etc

Wastage of water from Maltby borehole, Lincs., and borehole control

Correspondence between Morton and Council officials, including reference to Morton being very busy as 'I have had no less than 6 [water] Bills in Parliament this year', written 21 Sept. 1938. | 1937-1938 |
| EM/3/103 | Macclesfield and District Water Board

9 folders.

Macclesfield and DWB, Macclesfield Rural District Council and Macclesfield BC

Proposed Stockport WO, 1963, and Inquiry; boreholes | 1937-1981 |

Consultancies

including Adlington, Dane-in-Shaw Mill, Over Alderley (Hayman's Farm), Prestbury, Whirley, Fallibroome, Lowerhouse, Rushton, and Pott Shrigley; Hug Bridge Treatment Works - augmentation of supply; Congleton supply including West Heath Quarry sand extraction; proposed refuse tip at Mow Cop Quarry; Tytherington PS; Kettleshulme supply; North Rode water; proposed Dams Valley Relief Sewer including site investigation; Lamaload Dam Scheme.

Correspondence, calculations, maps, plans, Inquiry and contract documents, notes, press cuttings, test data, photographs (Adlington), borehole records, Morton and other reports including Mersey and Weaver RA report, 1970, on future resources (Whirley Scheme), Cheshire County Council booklet, April 1976, etc. Also reference to Morton renting additional office accommodation in Oxford Road, Manchester, 1938.

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| EM/3/104 | Makerfield Water Board | 1962-1979 |
| | 6 folders. | |
| | Makerfield WB, Lancashire RA and Chorley Rural District Council | |
| | Proposed Mawdsley Aquifer, Croston, including Slate Farm boreholes; Prospect Reservoir No. 2; other boreholes including Pocket Nook (arbitration), and Landsythes; Boars Head Service Reservoir reconstruction (originally constructed in the 1860s), including proposed Hall o' th' Hill Reservoir, Adlington. | |
| | Correspondence, reports, maps, plans, notes, test data, borehole records, calculations, etc. Also printed Institution of Water Engineers (Northern Section) paper, Nov. 1962 (N. Hoyle). | |
| EM/3/105 | Maltby Urban District Council | 1936-1937 |
| | Feasibility of acquiring water supply from Norwood Springs and generally from the Magnesian limestone in the area. | |
| | Correspondence and Morton's report. Including one note headed 'Maltby Rural District Council'. | |
| EM/3/106 | Mansfield Corporation Waterworks | 1949-1962 |
| | 3 folders. | |

Consultancies

Mansfield Corporation WW, Mansfield BC and Mansfield Water Dept

Augmentation of water supply (1956-1962) including Amen Corner borehole and proposed Rainworth PS, remedial works on No. 3 bore; WOs (1961-1962); Clipdone PS.

Test data, correspondence, notes, geological diagrams, Inquiry documents, calculations, statistics, photographs of well shaft(s) and adit (Rainworth PS), etc.

EM/3/107 Marlborough and Ramsbury Rural District Council 1958-1959

Water supply: opposition by Marlborough and Ramsbury Rural District Council to proposal by Swindon Corporation for new PS at Axford.

Notebook, river flow gaugings (the latter being *re* Swindon Borough Council Kennet Valley Water Supply Scheme), and correspondence.

EM/3/108 Marlow Water Co. 1958-1966

Protection of sources of supply (gathering grounds): Proposed mineral workings (gravel pits) at Little Marlow, by Folley Bros. Ltd; Public Inquiry *re* building development adjoining Marlow PS.

Notebook, correspondence, Morton's reports, test data including for Bourne End PS, Public Inquiry documents, etc.

EM/3/109 Medway Water Board 1960-1974

13 folders.

River Medway Scheme: proposed Bewl Bridge and Ticehurst Storage Reservoirs including Valley Crumple boreholes and Chingley Fault Zone; Medway WO (Bewl Bridge Reservoir), Parliamentary Bill, and Public Inquiry; proposed Burham Treatment Works; Eccles Lake and Treatment Works.

Photographs and negatives (Bewl Bridge Reservoir), maps, plans, correspondence including Mid-Kent Water Co., test data, piezometer records, borehole logs, contract documents, reports including site investigation, calculations, press cutting, Morton and other reports, diagrams, etc.

Consultancies

- EM/3/110 Meirionnydd District Council 1978-1982
- Proposed refuse disposal scheme and site investigation: Harlech Pulveriser Plant (Ffridd Rasmus, Morfa Harlech, Gwynedd).
- Correspondence, maps including printed map of Harlech, 1838, plans, site photographs and negatives, notes, report, article from *Surveyor Public Works Weekly* magazine.
- EM/3/111 Mersey and Weaver River Authority 1949-1967
- Mersey and Weaver RA and Mersey and Irwell Catchment Board
- Proposed multi-purpose reservoir based on 'Winsford Flashes' [the two lakes in the Weaver Valley - Top Flash and Bottom Flash] and question of subsidence due to brine-pumping; appeal under section 72 of the Water Resources Act 1963 *re* discharges into underground strata, Malkin's Bank Estates Ltd, 1966.
- Correspondence, notes, photographs (Winsford Flashes), plans, maps, sketch diagrams, appeal documents, etc.
- EM/3/112 Mid- and South East Cheshire Water Board 1927-1952
- 15 folders.
- Water supply: Mid-Cheshire Water Supplies including protection of gathering grounds; West Cheshire WB WO - River Dee abstraction, and Inquiry into proposed boreholes of Shell Mex Ltd; Mid- and SE Cheshire Water Bill 1946; Delamere Sewerage Scheme, and Inquiry *re* development of Source Works, including Cotebrook and Delamere PS and borehole; water conference *re* proposed Joint Water Board (Middlewich, Sandbach, and Winsford)
- Correspondence, reports and drafts, plans, Joint Water Board proposal material, maps, notes, test data, Morton notebooks, etc. Including documents *re* Cheshire County Council, Northwich UDC (including typescript Boyd Dawkins Proof of Evidence *re* Northwich UDC Bill 1914), Middlewich UDC, Winsford UDC, and West Cheshire WB; Morton's Proof of Evidence (Mid- and SE Cheshire Water Bill 1946); and Leicester Corporation Bill Minutes of Proceedings, 1948.
- Also press cutting *re* address by Morton on rural water supplies to Macclesfield RDC and others, ca 1948.
- See also Cheshire County Council EM/3/35.

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| EM/3/113 | <p>Mid-Glamorgan Water Board</p> <p>10 folders.</p> <p>Mid-Glamorgan WB, Glamorgan RA, Welsh National Water Development Authority and Welsh WA</p> <p>Llanharri [also spelt 'Llanharri'] PS, sewer tunnel, and Iron Ore Mine, including proposed opencast coal working, Llanilid site, and Llanharri Secondary School surface water drainage; Llantrisant New Town including industrial waste disposal, Tythegston Quarry; Pwllwy Source Works and PS; River Ogmere Abstraction Scheme: Proposed pumped storage reservoir sites and site investigation, and Cefn Hirgoed Reservoir.</p> <p>Correspondence, plans, maps, reports including joint Morton and Rowe, diagrams, rainfall figures, photographs and negatives (including Tythegston Quarry), contract documents, borehole records, test data, etc.</p> <p>Also Ogwr BC correspondence <i>re</i> proposed waste disposal sites, 1975-1978, under the Control of Pollution Act 1974, Refuse Disposal.</p> <p>(Morton was recommended to Ogwr BC as a consultant by the Mid-Glamorgan WB).</p> | 1955-1979 |
| EM/3/114 | <p>Mid-Northamptonshire Water Board</p> <p>Proposed Lings Service Reservoir site investigation</p> <p>Correspondence, photographs and negatives, plans, maps, notes, reports, diagrams, etc.</p> | 1973 |
| EM/3/115 | <p>Mid-Southern Water Co.</p> <p>2 folders.</p> <p>Augmentation of water supply: proposal to increase abstraction from Lasham PS, and feasibility of new Source Works development (1971-1973); Refuse Disposal Study, NE Hampshire and SW Surrey <i>re</i> potential pollution problem (1987).</p> <p>Calculations, correspondence including copy of manuscript letter sent by Morton from Skye, 4 September 1971, notes, cutting, Morton and other reports, maps, plans, notebook, observation well records, earlier dated copy material, etc.</p> | 1971-1987 |

Consultancies

EM/3/116	Middleton Borough Council River Irk diversion	1957
EM/3/117	Middlewich Urban District Council Sewerage and sewage disposal, 1964-1965 and 1971-1977 (A.H.S. Waters)	1964-1977
EM/3/118	'Miss Mary Fisher' Boreholes at Lyneham, Wiltshire. Correspondence (including dated 1934 in error) and Morton notes. Mary Fisher came to Morton for geological and borehole advice <i>re</i> water supply for proposed poultry farm site.	1935
EM/3/119	Nantwich Rural District Council Water supply. Brief correspondence re loan of water mains map for Mr Pyne (of the City Engineer's Department, Manchester), to aid him with his university course's Town Planning thesis.	1942
EM/3/120	National Farmers Union (Staffordshire County Branch) Various farmers' objections to applications to sink boreholes on their land, seen as affecting their water supplies, 1957 and 1963-1964, including application by Britains Ltd of Cheddleton Paper Mills to abstract water under section 14 of the Water Act. Correspondence, notes, report, etc.	1957-1964
EM/3/121	Neath Rural District Council Augmentation of water supply: potential underground water sources especially in the Resolven-Glynneath area.	1946-1959

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| EM/3/122 | Nelson Corporation Waterworks | 1945-1956 |
| | <p>Proposed augmentation from underground water supplies: Nelson WO; Inquiry and objections; Whitehough and Blacko boreholes.</p> <p>Correspondence, pumping and other test data, Morton and other reports, specification, notes, Inquiry documents, notebook, etc.</p> <p>See also North Calder WB EM/3/127 for further Blacko borehole material.</p> | |
| EM/3/123 | New Mills Urban District Council | 1899-1934 |
| | <p>2 folders.</p> <p>Chiefly investigation into possible additional water supply source: Grove Mill borehole [at Garrison Bleachworks], 1933-1934.</p> <p>Correspondence, chemical analysis of water samples, notes, and report, etc; also includes material re 1899 New Mills Bill: Boyd Dawkins Proof [of Evidence], printed copy of Bill, petitions against the Bill, maps and geological section.</p> | |
| EM/3/124 | Newark-upon-Trent Corporation | 1955-1962 |
| | <p>Newark-upon-Trent Corporation and Borough of Newark-on-Trent.</p> <p>Farnsfield Waterworks extensions: Newark WO Inquiry 1958; Farnsfield PS; proposed new service reservoir; etc.</p> <p>Reports including maps, notes, Inquiry documents, correspondence, and geological diagram.</p> | |
| EM/3/125 | Newcastle and Gateshead Water Co. | 1946 |
| | <p>Copy of Address by S.G. Barrett, Chairman of the Institution of Water Engineers, Northern Section, annotated by Morton.</p> | |
| EM/3/126 | Newton-le-Willows Urban District Council | 1915-1960 |
| | <p>3 folders.</p> <p>Augmentation of water supply: Makerfield and Park Road</p> | |

Consultancies

boreholes (including National Coal Board); Public Inquiry and proposed WO; Sankey Sugar Co. Ltd borehole licence application, 1960.

Plans, correspondence, notes, test data, specifications, Morton and other reports including mineral valuer's and water samples analysis, Inquiry documents, rainfall figures (1915-1944), copies of earlier documents (including Boyd Dawkins) going back to 1870, notebook, etc.

EM/3/127 North Calder Water Board 1964-1970

Augmentation of water supply: Trawden Service Reservoir Scheme: Blacko (Craven Laithe Farm, etc) and Corn Close Farm boreholes; trial boreholes at Ogden and Wood Nook *re* Nelson WO, 1953.

Maps, plans, correspondence, Morton and other reports, notes, specification, test data, etc.

See also Nelson Corporation WW EM/3/122 for other Blacko borehole material.

EM/3/128 North Devon Water Board 1951-1977

18 folders.

Meldon Reservoir Scheme: Gorhuish, Lower Slade, Wistlandpound, Stengator, and Meldon Reservoir and Reservoir sites; question of pollution of impounded waters by arsenic from the old mine workings of Forest Mine, Homerton Mine, and Meldon Mine, in the catchment area; North Devon WOs, Inquiry and objections; proposed new dam and reservoir, Tamar Lake

Plans including aerial survey (Gorhuish), reports including Rowe's, site investigation, maps including bound 'Hand Map', borehole logs, notes, correspondence, photographs (including aerial) and negatives, contract and Inquiry documents, press cuttings, borehole logs, calculations, grouting records (Upper Tamar Reservoir), etc. Also printed booklet, *The Meldon Story*, published by the Dartmoor Preservation Association, ca 1972, against the flooding of the West Okement River at Meldon, in the Dartmoor National Park, part of the Meldon Reservoir Scheme.

EM/3/129 North Kesteven Rural District Council 1942

Question of effluent from proposed flax factory likely to 'join

Consultancies

the main body of...water...being drawn upon by the [Dunston] Pumping Station' in the vicinity

Letter from H. Raeburn, Ministry of Health, and Morton's pencilled draft and typescript reply.

EM/3/130 North Lindsey Water Board 1950-1971

17 folders.

North Lindsey WB and Lincs. RA etc.

Augmentation of chalk (limestone) water supply: boreholes including Ulceby Chase, Goxhill, Thornton Curtis (including WO), Deepdale Farm, Barton PS, and Barrow PS (the latter including pollution); proposed Humber Bridge (1959); proposed underground ironstone workings, Worlaby and Bonby parishes (1960); North Lindsey WB and other WOs; borehole licence applications and Inquiries, including objections; proposed industrial waste tipping at Coleby; River Ancholme Valley Reservoir Scheme including proposed storage reservoir, Cadney Carrs site; Trent and Lincs. Water Bill; proposed Scunthorpe to Immingham effluent pipeline, British Steel Corporation; Hilbaldstow and Winterton Carrs abstractions and trial boreholes

Correspondence, notes including inspection, plans including geological sections, maps including printed coloured geological map, rainfall records, photographs (slip in railway cut near Wrawby), borehole logs, booklets including *re* pipeline above, test data, Morton notebooks, press cuttings, reports, Inquiry documents, etc.

See also Lincolnshire RA EM/3/99.

EM/3/131 North-East Lincolnshire Water Board 1954-1973

15 folders.

(?formerly the Grimsby, Cleethorpes and District Water Board)

Augmentation of water supply including Louth area: Great Eau Scheme: Proposed Alvingham Reservoir (1971-1973); River Trent Scheme; Limber Grange irrigation supplies; Newsham Lake; industrial water supply schemes including Birds Eye Foods Ltd.; Water Board proposals; various Water Orders and Pumping Stations including Tetney, Habrough, Little London, Crystal Springs, and Healing; storage reservoirs, Saltfleetby site and Fulstow; Waddingham and other boreholes; limestone resources.

Consultancies

Rowe's and other reports including site investigation, and (Fulstow Reservoir) soil tests report, correspondence, test data and other technical data, contract and tender documents, press cuttings, earlier-dated copy documents, Inquiry documents, observation well records, borehole records, etc.

See also Grimsby, Cleethorpes and DWB EM/3/79.

EM/3/132	North-East Warwickshire Water Board	1965-1970
	5 folders.	
	Future water supply: Shuttington Pools Reservoir - River Anker Scheme; exploratory (trial) boreholes including Austrey, Newton Regis and Appleby Parva.	
	Report, Strata Sheets, test data including pumping tests and laboratory tests report, press cutting, maps and diagrams, correspondence, notes, and contract document.	
	Including Trent RA general instructions for conducting pumping tests on new boreholes, n.d.	
EM/3/133	Not used.	
EM/3/134	North West Leicestershire Water Board	1969-1982
	4 folders.	
	Proposed new water sources: opencast coal workings supply; Heather PS and borehole; Belton borehole; High Tor Reservoir.	
	Plans including dated 1968, correspondence, test data, contract documents, notes, diagrams, etc.	
	See also Leicestershire County Council EM/3/634.	
EM/3/135	North West Sussex Water Board	1943-1971
	Pipe crossing of Rivers Rother and Arun at Hardham, near Pulborough, Sussex: Hardham pipe culvert site investigation, 1967-1971.	
	Plans, borehole logs, test data, piezometer and observation well readings, correspondence, and Soil Mechanics Ltd Report.	

Consultancies

EM/3/136 North West Water Authority 1960-1988

20 folders.

Buckton Castle Water Treatment Works; proposed Hartshead Reservoir; Chelburn Reservoirs (Upper and Lower), part of the seven former Rochdale Canal Reservoirs in the Warland Reservoir Group - including involvement of Rowe; Hollingworth Lake; Ribble Division including Lancashire Conjunctive Use Scheme (LCUS) - Chorley Treatment Plant and proposed service reservoir; Featl(e)y Products Ltd legal Claim vs the Authority *re* alleged damage to River Irwell bankside buildings; Heapy Service Reservoir; site investigation (including coal mining position) *re* proposed Rossendale Road Service Reservoir, Burnley; Worthington Lakes including Adlington and Arley Reservoirs; St. Helens Water Supply Unit: Rainford Sewage Works including site investigation; Milnrow Service Reservoir Clause 12 Contractual Claim, West Pennine WB.

Morton notebooks, borehole records including copies dated 1963, test data, notes, photographs including panoramic (several sellotaped together in a fan shape) and aerial, geological and other reports and observations, correspondence, plans, contract documents, notes, etc. Including copy of Reservoirs Act inspection report, Worthington Reservoir, July 1960.

Also correspondence between Rowe, C.W. Isherwood, and North West Water, 1986, *re* appointment of J. Scriven as 'stand-in' geotechnical specialist for Rowe during periods of the former's absence, to maintain progress of construction for the Lostock Reservoir modifications.

See also St Helens Corporation WW EM/3/160 *re* Rainford Sewage Works.

EM/3/137 Northallerton-in-the-Dales Urban District Council 1947-1969

6 folders.

Augmentation of water supply (1964-1969); Cod Beck Reservoir and landslip (1947-1955).

Press cutting, correspondence, minutes of meetings, plans, weekly drilling reports, notes, grouting reports, technical and test data, etc. Including article from *Water and Water Engineering*, entitled 'The Cod Beck Reservoir and Works of the Northallerton and District Water Board', March 1954.

Consultancies

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| EM/3/138 | Northumbrian River Authority | 1971-1973 |
| | 11 folders. | |
| | Northumbrian RA and Northumbrian WA. | |
| | Kielder WO Inquiries including effect of mineral workings on Tyne Tees tunnels construction, alternative sites, and objections; Waskerley Reservoir; effluent disposal applications <i>re</i> disposal into Silksworth (?Silkstone) Colliery, and by Monsanto Textiles Ltd. into a deep borehole at Seal Sands; new Kielder Reservoir. | |
| | Inquiry documents including proofs of evidence, plans, press cutting, notebook, maps including geological, correspondence, reports including geological, borehole logs, notes, calculations, feasibility study, etc. | |
| EM/3/139 | Northwich Rural District Council | 1933-1947 |
| | 3 folders. | |
| | Augmentation of water supply: Eddisbury borehole extension. | |
| | Correspondence, Morton's and other reports, much copy material including document marked 'Letter from A. Timmins. 3rd. October, 1911', Inquiry and Waterworks Inspection documents, plans, test data including pumping (Cotebrook, and Sandyford PS), notes, maps, Morton lecture series details, Oct. and Nov. 1935, Boyd Dawkins copy Proof of Evidence for Northwich UDC parliamentary bill, and printed map, 1914, notebook (mostly blank), etc. | |
| | Also reference to Morton 'being at present at Llandudno recuperating after his recent and rather serious illness', Jan. 1936. | |
| EM/3/140 | Nottingham Corporation | 1897-1968 |
| | 19 folders. | |
| | Nottingham Corporation/City Water Department. | |
| | Augmentation of water supply including Derbyshire and South Nottinghamshire: applications under section 14 of the Water Act for borehole licences from Nottingham University, Boots Pure Drug Co. Ltd, and British Railway Executive; Public and Private Inquiries; developments at Lambley, Markham Clinton, and other PS, etc; Nottingham and Newark WOs; Nottingham Corporation Bills in Parliament, and opposition to same; proposed sites for new wells. | |

Consultancies

Printed and other maps (some dating to 1897), Inquiry documents, River Trent chemical analysis, plans including colliery workings, correspondence, notes, contract document, test data, Morton and other reports including mining, and printed reports, field and other notebooks, Hydro-geological Survey including photographs, calculations, printed Parliamentary Bills and petitions, etc. Also Boyd Dawkins documents (some copies), especially *re* Nottingham Corporation Bills in Parliament.

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| EM/3/141 | Oldham Corporation Water Undertaking | 1956-1990 |
| | 6 folders. | |
| | Augmentation of water supply: future supplies including potential borehole sites at Blackstone Edge Works, Piethorne Works, Denshaw Works, Castleshaw Works, Strinesdale Works (Brushes Clough), and Clegg Moor area (1956-1959); North West Water Ltd - Piethorne and Denshaw Valley Reservoirs remedial works and discontinuance works including Ogden (Milnrow), Kitcliffe, Hanging Lees, Norman Hill, Crookgate, Dowry, Readycon Dean, and New Years Bridge Reservoirs (1988-1990). | |
| | Maps, plans, correspondence, copy material dating back to 1935, notes, rainfall readings, reports, site investigation material, test data, progress meetings notes, photographs and negatives (especially Kitcliffe Reservoir), etc. | |
| EM/3/142 | Orrell Urban District Council | 1937-1958 |
| | 3 folders. | |
| | Augmentation of water supply: Dean Wood WW and PS – National Coal Board borehole <i>re</i> new underground water supply from coal measures strata. | |
| | Notes, correspondence, reports, plans, map, water sample analysis, notebook, test data, press cutting, etc. | |
| EM/3/143 | Oswestry Rural District Council | 1938-1954 |
| | Augmentation of water supply: 'W.D.' [War Department] and other boreholes - Brookside, Kinnerley Railway Station, Acksea Farm, etc; proposed Whittington PS under the Oswestry Rural District Council and Ellesmere Rural District Council Joint Water Supply Scheme. | |

Consultancies

Correspondence, test data, borehole records, water sample analysis, plans, Morton's reports, notes, etc.

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| EM/3/144 | Pembrokeshire Water Board | 1963-1977 |
| | 3 folders. | |
| | Llys-y-Fran Reservoir including site investigation of the two proposed dam sites at Llys-y-Fran and Farthings Hook, locating of suitable concrete aggregate for the dam, and grouting. | |
| | Photographs including panoramic (several sellotaped together overlapping in a fan shape), notes, minutes of meeting, stability analysis, research paper, plans, map, correspondence, report (Soil Mechanics Ltd), test data, grouting analysis and job notes, contract document, etc | |
| EM/3/145 | Penmaenmawr Urban District Council | 1948 |
| | Potential underground water supplies | |
| | Correspondence between Penmaenmawr UDC and Morton <i>re</i> request for Morton's geological opinion on the question of 'the practicality of boring for artesian wells' in the district, and his consultancy fees therein, August to October, 1948. Reference to Morton being on holiday in Switzerland, September 1948. | |
| EM/3/146 | Peterborough Corporation | 1951-1961 |
| | Applications by Park Gate Iron and Steel Co. Ltd to mine ironstone in the Stamford area and by Nassington Barrowden Mining Co. Ltd to mine ironstone in Ketton and South Luffenham, and concerns <i>re</i> possible pollution effects on the Corporation's water supplies, 1961. | |
| | Correspondence, plan, notes, etc, 1961, and (mostly copy) documents <i>re</i> previous ironstone working applications and consultancy work Morton undertook for Peterborough Corporation (dated 1951), etc. | |
| EM/3/147 | Plymouth City Waterworks | 1940-1977 |
| | 16 folders. | |
| | Plymouth City/Corporation WW and Plymouth and SW Devon Water Board | |

Consultancies

Proposed Reservoir and Dam Schemes: Lee Mill, Tavy, Harter [?Hart Tor], Cowsic Valley, Townleigh, Hill Bridge, Lee Mill, Milton Brook, Swincombe (including tunnel repairs), Huccaby, Hexworthy PS, etc., including site investigation, and trial boreholes; 'suggested raising of the Burrator and Sheepstor Dams or building new dams below them'; Curtisknowle and Woodcourt dam sites; water resources - Buckland Abbey Estate; Plymouth and SW Devon Water Bill, 1969-1970 including proposed Morley Reservoir; mining position concerns.

Correspondence, maps and plans including mining and geological, test data, Morton's and other reports including geological and site investigation (Lee Mill report has photographs pasted in), press cuttings, notes, Morton notebooks, borehole and mining data, contract documents, parliamentary committee and Bill documents, proofs of evidence, copy documents dating back to 1928, site reports and site drilling logs, photographs (test pit, Townleigh Reservoir site), etc.

See also Cornwall RA EM/3/44.

EM/3/148 Portsmouth and Gosport Water Co. 1945-1986

19 folders.

(Formerly Portsmouth and District Water Co.)

Augmentation of water supply: WOs including *re* Soberton, Walderton, and other PS, Public Inquiry, 1951, Regnum underground water resources, Ems Valley Scheme, Worlds End Scheme, and South East Study *re* area water supply, Southampton and Portsmouth; proposals for tipping at gravel pits, West Hampnett, modernisation of Warnford Estate watercress beds, Havant Thicket Storage Reservoir including site investigation, and for Lovedean and other Source Works; Meon Valley; Loveland and Loveland vs Chichester DC, West Sussex County Council, and Portsmouth Water Co. *re* Summersdale Road subsidence, Chichester

Correspondence, press cuttings including *re* seeming earth tremor or earthquake felt at Chichester, 1963, Morton's, Rowe's and other reports including printed, plans, maps, notes, test data, parliamentary Inquiry documents including printed and bound Minutes of Proceedings, Session 1929-1930, notebook, Weekly Pumping Returns and instrumentation readings, various printed booklets, copy documents dating back to 1905, and aerial photographs (Summersdale Road subsidence).

Consultancies

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| EM/3/149 | <p>Prescelly Water Board</p> <p>4 folders.</p> <p>Proposals for River Dau Cleddau Tidal Barrage, Milford Haven, and Diamond Hill Reservoir; Prescelly Headworks extension: trial boreholes for the new dam.</p> <p>Plans including admiralty chart, colliery plans and aerial view of Barrage 'B' (Black Tar site), press cuttings, notes, Morton and other reports including site investigation, correspondence, borehole logs, test data, etc.</p> | 1952-1963 |
| EM/3/150 | <p>Preston Corporation Waterworks</p> <p>8 folders.</p> <p>Preston Corporation WW, Preston and DWB and Preston BC</p> <p>Augmentation of water supply: WO, 1959, and Preston Corporation Bill, 1946-1947; Smelt Mill borehole including Claim by John Thom Ltd <i>re</i> unexpected ground conditions; underground resources: Langden Valley (including Dunsop Valley) and Houghton (including Fulwood) boreholes; Alston No. 2 Reservoir, including pollution and brick testing; proposed new Spade Mill Reservoir</p> <p>Notes, correspondence, test data, Morton and other reports including Ministry of Agriculture and Fisheries report, 1947, contract documents, accounts, copy documents dated 1957, photographs (including Langden borehole cores), Morton notebooks, plans including Ribble navigation, maps, etc.</p> | 1939-1970 |
| EM/3/151 | <p>Radnorshire and North Breconshire Water Board</p> <p>2 folders.</p> <p>Hay-on-Wye Area Water Supplies: intake at Lake Llanbwchlllyn [Llan-bwch-Llyn], 1969</p> <p>Correspondence, reports, photographs, plans, calculations, maps, etc. Including Rowe involvement in the work, and letter post script commenting, 'I do hope the Professor [Rowe] has had an enjoyable as well as stimulating visit to Mexico; doubtless he is now fully occupied examining his "moon dust"!', Sept. 1969.</p> | 1966-1972 |
| EM/3/152 | <p>Not used.</p> | |

Consultancies

- EM/3/153 Not used.
- EM/3/154 River Dove Water Board 1952-1975
- 15 folders.
- River Dove Scheme: Doveridge Reservoir; Foremark Valley Reservoir Scheme including Milton WW, 1966-2000 Project, and proposed balancing reservoir; WOs; Staunton Harold Reservoir including puddle core clay sources; City of Leicester Water Department investigation as to cause of major burst at 27" diameter water distribution main, Rushey Fields, Leicester, 21 October 1960, and Water Supplies Area No. 2 - Rutland: possible effects of proposed opencast ironstone workings on the Clisham Ford and Empingham spring sources (River Dove system).
- Contract documents, plans including piezometric survey (Rushey Fields), reports, notes, correspondence including between Morton and Rowe re Dutch and other experience with bituminous reservoir coatings (Foremark Reservoir), minutes of meetings, site and progress meeting notes, press cutting, *New Civil Engineer* article, test data, maps, photographs (Rushey Fields) etc. Including borehole daily progress sheets (Staunton Harold). Also Rowe documents including manuscript notes.
- See also Severn Trent WA EM/3/164.
- EM/3/155 Rochdale Corporation Waterworks 1913-1967
- 4 folders.
- Watergrove Reservoir Scheme including West Wing trench and boreholes; Wardle Valley Reservoir Scheme; Rochdale Canal Bridges Bill, 1952, and Rochdale Corporation Bill, 1930; Rochdale Corporation Development Plan, 1951; proposed Caldershaw Housing Estate and CPO including Samuel Heap and Son Ltd. objections, and Case for the Opinion of Counsel re water rights; augmentation of resources including Buersil Reservoir, and Python Mill borehole, Littleborough
- Correspondence, Morton's reports, notes, maps, plans, Bill documents, photographs, etc. Including references to the Ballymoney (Ballymena) Dam, Co. Antrim, Northern Ireland, which Morton worked on as consultant. Also Borough of Rochdale Description of Waterworks booklet (reprinted from 1906 original), annotated (?by Boyd Dawkins) 'C.4', 'Rochdale Water 1913-[19]14'.

Consultancies

EM/3/156	Not used.	
EM/3/157	Rugby Joint Water Board 11 folders. Future water supplies: River Leam Project - Draycote Reservoir including site investigations, Draycote Minor embankment failure, grouting, etc; Rugby and South Warwickshire WO and Inquiry, 1966; contractual Claims Correspondence, Morton's, Rowe's and other reports, notes including inspection, test data including pumping and lab tests, progress reports, plans, diagrams, Inquiry documents, daily grouting sheets, contract documents, photographs, borehole logs, piezometer records, etc.	1963-1974
EM/3/158	'Rushton' Arnold B. Turnock, joiner, builder and contractor: access to water supply for proposed driven tube well near Hanging Gate, Rushton, near Macclesfield, Cheshire.	1930-1933
EM/3/159	Ryedale Joint Water Board 6 folders. Protection of gathering grounds, and augmentation of resources: Boreholes including licence applications: Amotherby including canning factory effluent waste disposal, Keld Head (Pickering) including Inquiry 1970, North Grimston (Settrington), and Sand Hutton (Thirsk) boreholes Correspondence, notes, photographs, contract and tender documents, Inquiry documents, maps, plans, copy documents dating back to 1940, test data, borehole logs, etc.	1964-1973
EM/3/160	St Helens Corporation Waterworks 25 folders. St Helens Corporation WW, Mersey and Weaver RA etc Augmentation of Water Supply: Boreholes and PS including Eccleston, Randles Bridge, Maidens Bower, Kirkby, Park Road, Haydock, Melling, and Tan House; Reservoirs including	1943-1973

Consultancies

Brenig, Haydock, and Billinge; Inquiries *re* borehole licence applications including British Enka Ltd., Peerless Refining Co. Ltd., and Cobb Moor PS; Rainford Sewage Works (Rookery); Parr Sewage Works; proposed cemetery and other land developments, including at Field Lane RAF Fazackerley site, and Rainhill; protection of gathering grounds; Clockface Colliery water supply; Warrington and other WOs; tipping and waste disposal; St Helens Electricity Bill, 1947-1948 including proposed British Electricity Authority power station, Bold Colliery; etc.

Correspondence, test and technical data, plans, maps, notes, Morton notebooks, borehole records, reports, calculations, photographs, instrumentation readings, Morton and other reports, Water Committee Annual Inspection report, Sept. 1973, contract and tender documents, Parliamentary and Inquiry documents, etc. Also Parr Sewage Works Official Opening commemorative booklet, July 1958.

See also NW Water Authority EM/3/136 *re* Rainford Sewage Works.

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| EM/3/161 | Salesian Trustees Ltd | 1970-1978 |
| | Salesian Trustees Ltd [SDB Trustees Ltd], Salesian Missionary College, Shrigley Park, near Macclesfield: objection to application for proposed extension of quarrying operations at Moorside Quarry, Pott Shrigley, and possible effects on the College Spring water supply, 1970. | |
| | Notes, plans, correspondence, Morton's report, press cuttings, sketches, etc. | |
| EM/3/162 | Salisbury Corporation Waterworks | 1934-1952 |
| | 2 folders. | |
| | Augmentation of Wiltshire water supplies including Deans Farm and other boreholes | |
| | Notes, correspondence, Morton's reports, wells survey, plans, test data, etc. | |
| EM/3/163 | Scarborough Corporation | 1937-1939 |
| | Protection of water gathering grounds; proposed cemetery and refuse tip, etc | |
| | Correspondence, copy documents, Morton and other reports, | |

Consultancies

plans including copy plan dated 1873, maps, and notes.

EM/3/164 Severn Trent Water Authority 1967-1997

172 folders

Severn Trent Water Authority [later includes the NW Gloucestershire WB], Trent RA, River Dove WB, Rugby JWB, Melton BC, etc

Carsington Aqueduct and Dam (including Contract No. 6), and Reservoir Scheme, Derbyshire, 1972-1995: Failure of dam embankment, and subsequent investigations, Claim, various contracts, contract counter-Claim, site investigation, and rebuilding; Foremark including grout curtains; Hallgates Terminal, Bradgate Road, and Stanford Reservoirs; Markfield to Groby Trunk Sewer, 1981; River Strine improvement works, 1975-1976; miscellaneous including Draycote, Churchdown (including NW Gloucs. WB), Cowleigh 'New', and Ardleigh Reservoirs, and Nanpantan hydrosand filters; Rothley Valley Trunk Sewer, Phase 1: Thurcaston to Wanlip Tunnel Section; Scalford Brook Flood Alleviation Scheme ['F.A.S.'], Leicestershire, including Melton Country Park (Melton Mowbray BC appears to be the client): Site investigation, progress, dam cracks, etc

Correspondence, test data, maps, plans, reports, notes, graphs and plots, notebooks, photographs and negatives, borehole logs, drilling records, instrumentation readings, J. Scriven material including for talk (Scalford Brook FAS) and Design Practice course, University of Manchester, etc (folder 158).

Carsington material also includes various published articles including *New Civil Engineer* magazine, reports by Rowe and others including 'The Mechanism of Failure' December 1985 and March 1986, Claim documents, Rowe material including handwritten letters and notes, diary (P.G. Eccles [G.H. Hill and Sons]), 1984, press cuttings, photographs including aerial (some dated 1966), negatives, photographic slides, Carsington Slip Investigation Official Register of [rock] Samples, 1984, chronological 'Key Dates' sheet (both in folder 32), Berrymans (solicitors) correspondence and other documents, Rock Classification notes and petrology (especially in folder 59), calculations, piezometer data, rainfall records, policy minutes, Hognaston North Instrumented Readings, Meerbrook Sough report, and Morton and J. Scriven notebooks including general notebooks (folder 87) found with the Carsington material covering various reservoir and other projects, such as Burnley, Grimwith, Foremark, Winscar, Scalford Brook, Hallgates, Colliford, and the Markfield to Groby Trunk Sewer. Including *Stream*, Severn Trent Water publication, no. 113, Feb./Mar. 1985 (folder 145).

Consultancies

Additional material (in folders A-H): Carsington sites and slip investigations (including Trent RA material); NW Gloucs. WB/Severn Trent WA Gloucester Water Supply Division material - River Wye Abstraction Scheme and Cheltenham Northern Water Supply Scheme: Mitcheldean Treatment Works and Reservoir, proposed Stroud Reservoir, Westrip reservoir site, Bigwell Adit, Woodmancote Reservoir, River Severn crossing,

See also W. Somerset WB (Wimbleball) EM/3/211, Trent RA EM/3/191 and River Dove WB EM/3/154.

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| EM/3/165 | Sheffield Corporation Waterworks | 1947-1948 |
| | Development of South Yorkshire water supplies and West Riding water resources: Proposed Farndale Reservoir Scheme. | |
| | Correspondence, reports, and notes. | |
| EM/3/166 | Sherbourne Urban District Council | 1944 |
| | Ministry of Health Inquiry 1944 <i>re</i> proposal by Sherbourne UDC to construct a PS at Osborne, and ancillary works for water supply: Wincanton Rural District Council in opposition | |
| | Printed report and copy documents dating back to 1934 and other background material, notes, plans, correspondence, etc. | |
| EM/3/167 | Shipley Urban District Council | 1935-1948 |
| | 4 folders. | |
| | Additional underground water supplies from Rombalds Moor springs; Baildon UDC Bill in Parliament, 1935; Shipley Rural District Council opposition to Bradford Extension Bill 1938. | |
| | Borehole records, instrumentation readings, and rainfall figures, copy agreements and other copy documents dating back to 1885, Morton's reports, correspondence, maps including hand-drawn map, plans, notebook, press cuttings, notes, petitions, photographs (Rombalds Moor, 1938), etc. | |
| EM/3/168 | South Buckinghamshire and Oxfordshire Water Board | 1958-1959 |
| | 9 folders. | |

Consultancies

Water Bills in Parliament, Inquiry, and WO.

Reports, notebook, plans, maps, notes, statistics, Engineering Tables (water data), correspondence, press cuttings, copy House of Commons Minutes of Evidence and other copy documents, etc.

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| EM/3/169 | South Derbyshire Water Board | 1968-1970 |
| | 2 folders. | |
| | Wirksworth Reservoir Scheme: proposed Wirksworth (Washgreen) Service Reservoir including site investigation. | |
| | Instrumentation readings, correspondence, plans, maps, notes, test data, boring records, etc. | |
| EM/3/170 | South Devon Water Board | 1954-1957 |
| | Proposed concrete dam on the River Avon: Morton requested to be consultant geologist for the project | |
| | Negatives [no accompanying photographs], notes, correspondence, progress reports, list of boreholes, etc. | |
| EM/3/171 | South Kesteven Rural District Council | 1952-1956 |
| | Proposed sites for 'nightsoil disposal' <i>re</i> underground water supply sources. | |
| | Correspondence, notes, report, etc. | |
| EM/3/172 | South Lincolnshire Water Board | 1962-1972 |
| | 8 folders. | |
| | South Lincolnshire WB, Lincolnshire RA and Welland and Nene RA. | |
| | Augmentation of water supply: proposed Holbeach Booster Station and Reservoir; Public Inquiries, Section 14 borehole licence application(s), various PS and boreholes; South Lincs. WO, 1966, and Aslackby and Rippingale Fens boreholes; proposed National Farmers Union reservoir sites at Empingham and Manton in Rutland, 1969, and related Welland and Nene and Mid-Northamptonshire Water Bill. | |

Consultancies

Maps, plans, correspondence, reports including Inspector's and Spalding UDC WW Engineer's Second Report, test data including soil survey results (Holbeach), notes, contract documents, etc. Including Empingham Reservoir article in *The Consulting Engineer*, vol. 36 (November 1972).

EM/3/173 South Staffordshire Waterworks Co. 1950-1984

15 folders.

Correspondence, calculations, test data, plans, notes, photographs, borehole logs, report, etc. *re* Shavers End No. 1 Reservoir, Dudley: Investigation of roof cracking, followed by proposed remedial works to roof drainage, 1981-1984 (folders 1-6 inclusive). Including company publications, 1982-1983. Chelmarsh Reservoir material comprises grouting tracings, plans, and daily [drilling] report sheets.

Stafford Corporation WW and Water Undertaking - Weston Jones and Aqualate (Park Farm) boreholes, 1964-1970; proposed experiments *re* Power Station fly ash disposal, 1968; augmentation of resources, Wolseley and Essex bridge sites.

Test data including pumping, notebook, correspondence, etc. including copy documents dating back to 1939.

Contract document *re* Hagley PS boreholes, 1956; notes, 'GDN' draft report etc *re* 'Variation of Well Water Composition' 1950-1969 (?aquifer prot. 4039E01'); J. Scriven file of correspondence, test data, plans, photographs, negatives, notes, earlier-dated background material, etc. *re* Barr Beacon Reservoir No. 1 pollution incidents, May-June 1993.

Also Stafford Water Supply Division (Severn Trent Water Authority) documents found with the above material - *re* trial bore at Pegg's Farm, Higher Offley.

S. Staffs. (Draft) WO Public Inquiry Transcripts of Proceedings, November 1959.

A large number of files were removed and passed to the S. Staffs. WW Co., October 1992 (including the Green Lane offices files): covering dates approx. 1937-1985.

See also Spilsby Rural District Council EM/3/179.

EM/3/174 South Westmoreland Rural District Council 1946-1959

Millrigg source of supply, Staveley; Lupton and Helsington

Consultancies

water supplies and the proposed reservoir at Wyndhammere.

Notes, maps, Morton's report, plans, sketches, correspondence, etc.

EM/3/175 South-East Breconshire Water Board 1963-1977

3 folders.

Cairn Mound Reservoir, Bryn Mawr, including embankment leakage, October 1976.

Reports including site investigation, notes, correspondence, photographs and negatives, test data, plans, borehole logs, etc.

EM/3/176 South-West Devon Water Board 1968

Swincombe Reservoir: site investigation.

Contract No. J1 (City of Plymouth and SW Devon WB), Nov. 1968.

EM/3/177 South-West Water Authority 1966-1993

165 folders.

Roadford reservoir including Woodland and Higher Horslett Reservoirs, and tunnel Scheme; Colliford Reservoir including Park Pit sand waste and Kernick Dam; Wimbleball Reservoir; Milton Brook Reservoir, and Plymouth (Tavy) Interim Supply Scheme including Lopwell intake and PS; Isle of Scilly: water supply, St. Mary's; etc

Correspondence, plans, maps, notes, calculations, drilling records and borehole logs, reports, test data, water sample analyses, press cuttings (including Edgar Morton & Partner advertisements), commemorative booklets, site investigation and contract material, reservoir monitoring, photographs and negatives, slides, notebooks, Geophysical Surveys, siesmicity (Roadford), *New Civil Engineer* magazine articles (Wimbleball etc), documents *re* various Inquiries, site investigation material, monitoring, and grouting, 'appraisal of hazards at water supply installations following the Abbeystead Incident', etc. Also material from related Water Boards, tip sample (Lamelgate site, Colliford), Sheepstor Dam (Burrator Reservoir) material, and Boyd Dawkins paper on 'China Clay: Its Nature and Origin', Institution of Mining Engineers, 1908.

Consultancies

Including additional material (folders A-Q) for Colliford Reservoir, Wimbleball Reservoir, and Roadford Reservoir (including Woodland Reservoir).

See also Cornwall RA EM/3/44.

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| EM/3/178 | Spalding Urban District Council | 1951-1961 |
| | Applications <i>re</i> proposed ironstone workings: Stanton Ironworks Co. Ltd with reference to underground water supplies, 1951; Parkgate Iron and Steel Co., Stamford area, 1961. | |
| | Correspondence, notes, plans, etc. | |
| EM/3/179 | Spilsby Rural District Council | 1935-1952 |
| | 6 folders. | |
| | Augmentation of water supply: Fen Parishes Coastal Water Supply Scheme and Inquiry, including Mumby borehole and remedial works; Twentylands water supply including Air Ministry source works extension. | |
| | Morton notebooks, correspondence, notes, reports, test data, plans, copy documents dating back to the early 1930s, press cutting, contract documents, instrumentation readings, etc. | |
| | Documents for Aqualate and Weston Jones boreholes including test pumping see South Staffs. WW Co. EM/3/173 folder 8. | |
| EM/3/180 | Staffordshire Potteries Water Board | 1936-1975 |
| | 36 folders. | |
| | Staffordshire Potteries Water Board; Cheadle Rural District Council; Leek UDC | |
| | Amalgamation of protective areas around source works; abandonment of mining shafts, Berry Hill and Adderley Green (1960); Ashley contamination - petrol pipeline spillage (1972); borehole licence applications including Croxden Gravel Ltd, Hull and Gravel Co., and Brittain's Ltd; proposed reservoirs: Deep Hayes, Talke, Birches Head, Ashley, Goldenhill, Meir, and Swynnerton; Tittesworth Reservoir and Treatment Works; boreholes and PS: Wall Grange, Draycott Cross, Great Gate, Newcastle, Holbourn Paper Mills, Tower Wood, Pool End, Stone, Elmhurst, Sheepwash, Moddershall, Fulford, Tattenhall | |

Consultancies

including Inquiry, etc; Peckforton Scheme including Water Bill, 1936-1937; proposed private source works, The Wellings; protection of gathering grounds: various, including planning appeals, etc; controlled tipping, Rough Quarry, Hollington (Cheadle Rural District Council); proposed Midlands-Mersey oil pipeline, Milford Haven;

Gosworth Water Co.; FW Hall; and petitions by Tarvin Rural District Council and others, 1936-1937; etc

Plans, maps, test data, correspondence, photographs and negatives, Morton's reports, notes, borehole logs, grouting logs, contract documents, press cutting, water sample chemical analysis, etc.

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| EM/3/181 | Stockport Corporation Waterworks

6 folders.

Stockport Corporation WW and Stockport and DWB

Augmentation of water supply: Corporation Bill in Parliament, 1929-1930; Fernilee Reservoir leakage; boreholes including at Mill Hill, Horwich End, and Goyt Valley; Wilmslow borehole and PS; proposed refuse disposal plant (NE Cheshire Joint Refuse Disposal Committee), 1972-1973; water supplies <i>re</i> cottage homes at Styal, 1902.

Plans, maps, correspondence, Mersey and Weaver RA documents including survey booklet, test data, Bill documents, reports including geological, Institution of Water Engineers' publication 'The Geology of the Goyt Valley' by Morton, 1932, press cuttings, invoices, notes, History and Description of Works document <i>re</i> Kinder Reservoir Scheme, copy, contractual, and Boyd Dawkins documents, etc. | 1902-1975 |
| EM/3/182 | Stone Rural District Council

Moddershall proposed borehole, 1962-1963, and Well water quality, 1971.

Correspondence, maps, and copy water sample analysis data. | 1962-1971 |
| EM/3/183 | Stour Fishery Association

Public Local Inquiry: Association's opposition to borehole licence application by the Mid-Kent Water Co. <i>re</i> water abstraction, River Stour Valley, near Canterbury. | 1964-1968 |

Consultancies

Correspondence including letter from the Association thanking Morton for his help, press cuttings, photographs, maps, plans, Inquiry documents, reports including hydrological and engineering, test data, notes, biological survey, instrumentation readings, etc.

EM/3/184 Sunderland and South Shields Waterworks Co. 1947-1964

12 folders.

Augmentation of water supply: Derwent Reservoir Scheme: Proposed reservoir and dam including cut-off trench, grouting, de-watering, valve shaft, diversion tunnel, etc; Hartlepoons WO, 1959; Mill Hill, Hawthorn, and Harton boreholes; Sunderland wells abstraction including Burdon PS; borehole licence application by J. Nimmo and Son Ltd *re* Castle Eden Brewery, Co. Durham.

Correspondence, reports including Rowe's, plans, maps, notes, test data including pumping and soil tests, drilling logs, contract and tender documents, sand samples (Mill Hill borehole), notebook, photographs, copy documents dating back to 1900, etc.

The Derwent Reservoir was a major project with which Rowe was involved with Edgar Morton and Partner, working on site investigation, design, testing and construction.

EM/3/185 Sutton and District Water Co. 1944-1968

6 folders.

Augmentation of water supply including to Croydon 'B' power station; Croydon Corporation WW water abstraction, Waddon PS; Oaks PS including WO and Inquiry *re* effluent discharge, BP Chemicals (UK) Ltd; subsidence in Gander Green Lane, Sutton, near to Cheam PS; other WOs.

Morton notebooks, observation well data, graphs, reports including Television Inspection Report, test data, notes, correspondence, photographs, plans, maps, Inquiry documents, etc. Including Boyd Dawkins paper 'On the Relation of Geology to Engineering', with manuscript notes, 1898, and other 19th century background material.

EM/3/186 Swansea Corporation Waterworks 1962-1967

2 folders.

Consultancies

Proposed Windmill Hill Service Reservoir including consolidation of old mine workings underneath the proposed site.

Notes, calculations, press cutting, correspondence, plans, reports, borehole records, maps, contract documents, etc.

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| EM/3/187 | Tarvin Rural District Council | 1934-1943 |
| | Regional Water Scheme, 1934-1937: proposed borehole; feasibility of possible spring source to supply the Townships of Barrow and Guilden Sutton from Ashton Brook Valley, near Swinfordmill Farm. | |
| | Reports, correspondence, water sample analysis, statistical data, notes including dated 1943, etc. | |
| EM/3/188 | Taunton Corporation Waterworks | 1949-1965 |
| | 3 folders. | |
| | Taunton Corporation WW and Borough of Taunton | |
| | Proposed Clatworthy Reservoir; possible underground water supply sources | |
| | Reports, notes, plans, correspondence, contract documents, notebook, photographs, etc. Including booklet 'Description of the Clatworthy Scheme' for Institution of Water Engineers visit, 22 April 1960. | |
| | Photographs include Lee Mill (Plymouth City WW), Siblyback Dam (E. Cornwall WB), Thruscross Dam (Leeds Corporation WW) including overview of dam amidst surrounding countryside during construction, and a group photograph depicting 'Monthly Site Inspection by the Gane'. | |
| EM/3/189 | Tavistock Urban District Council | 1949-1952 |
| | Augmentation of water supply: proposed borehole; Tavistock WO; Wilminstone Quarry; etc. | |
| | Plans, notes, Morton's report, and correspondence. | |
| EM/3/190 | Tees Valley and Cleveland Water Board | 1952-1966 |
| | 11 folders. | |

Consultancies

Proposed reservoir at Balderhead, Upper Teesdale. Includes alternative proposals for dam at Cauldron Snout and reservoir at Dineholme, and construction of Balderhead Reservoir; Selset Reservoir.

The Balderhead site was favoured over Dineholme and Cauldron Snout, despite its higher cost and lower water yield, following successful opposition by the Royal Botanical Society, Baron Barnard and others. The opposition was prompted in part by the discovery of a rare Alpine plant, the Blue Gentian, in the valleys at Dineholme and Cauldron Snout.

Correspondence, plans including geological sections, maps, Morton and other reports including mines and geological, press cuttings, test and observation wells data, grouting, notes, borehole logs, Inquiry documents, photographs and negatives (Cauldron Snout), notebook, etc.

See also EM/3/84 Hartlepoons Water Co.

EM/3/191 Trent River Authority 1965-1974

10 folders.

Development of Rivers Dove and Derwent: Carsington Reservoir: Public Inquiry *re* proposed reservoir sites of Carsington and Hassop; proposed Brund and Winkhill Reservoirs including Leicester Corporation Water Bill and objections (Manifold Valley Scheme) - National Trust and others in opposition; River Sow [Sowe] Scheme, Stafford

Plans, photographs (Dale End, Babington House, and aerial), Inquiry documents, reports, maps, published booklets (Manifold Valley Scheme) one with a foreword by Sir John Betjeman, borehole logs, contract document, copy documents dating back to the 1940s, correspondence, meetings notes, press articles and cuttings, notebook, etc.

See also Severn Trent WA EM/3/164.

EM/3/192 Trowbridge, Melksham and District Water Board 1939-1960

3 folders.

WO, 1954, and Inquiry including proposed new borehole at Biss Bottom, Upton Scudamore, Wiltshire, its effects upon Biss Brook, and development of Upton Scudamore PS

Correspondence, notes, plans, maps, reports and drafts,

Consultancies

Inquiry documents, etc.

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| EM/3/193 | Tynemouth Corporation Waterworks | 1933-1947 |
| | 4 folders. | |
| | Proposed Font Valley Reservoir and extensions including Pigdon Reservoir site (1933-1934); Tynemouth Water Bill (1946-1947). | |
| | Reports, notebook, plans, Bill and Parliamentary documents, correspondence, background material dating back to 1926, plans, maps, notes, press cutting, etc. | |
| EM/3/194 | Ulverston Rural District Council | 1941-1943 |
| | Legal dispute: [George] Dickinson vs Ulverston Rural District Council <i>re</i> infringement of Dickinson's water rights concerning Gibbs Spring, which allegedly detrimentally affected the grinding at Little Mill, Cark-in-Cartmel, North Lancs. | |
| | Correspondence, report, notes, Opinion of Counsel, Statement of Claim, etc. Including letters and detailed personal plea by G. Dickinson, owner of Big and Little Mill, Cark-in-Cartmel. | |
| | Morton was employed on behalf of G. Dickinson. | |
| EM/3/195 | Up Holland Urban District Council | 1937-1949 |
| | Possible arbitration case <i>re</i> Up Holland UDC purchase of land near Wigan containing underground water supply; water supply problems; and discussion of Morton's fees charged, 1937 and 1949. | |
| | Correspondence, Memorandum, and notes <i>re</i> Assessment of Compensation Act. | |
| EM/3/196 | Uttoxeter Rural District Council | 1955-1966 |
| | Mayfield water supply; proposed development and boreholes at Crumpwood PS and Alton Hume Springs; borehole licence application. | |
| | Correspondence, map, borehole diagram, agreement with Staffs. Potteries WB, etc. | |

Consultancies

(Willcox Raikes & Marshall).

EM/3/197 Wakefield and District Water Board 1948-1974

9 folders.

Wakefield and DWB [?later under North West Water Authority]
and Wakefield Corporation WW

Proposed Booth Wood Reservoir and Dam including Public Inquiry, 1966, ?Cragg Vale PS and boreholes; Pildacre PS, Ossett: possible pollution from proposed opencast mining; Wakefield Municipal Golf Course, Lupset: water supply for greens; Baitings Dam and Reservoir works including proposed Manshead Tunnel (1948-1958); WO and Inquiry, 1951-1952; Withens Clough Reservoir [transferred to Wakefield DWB from Morley Corporation].

Plans, maps, notes including site visit, correspondence, borehole logs, photographs (Booth Wood Reservoir) including composite panoramic, reports including exploratory boreholes, drilling logs, test data including observation and relief wells data and analyses, 'V' Notch Readings, Inquiry documents, notebook, etc.

EM/3/198 Warrington Corporation 1889-1916

Water supply: Bill in Parliament, 1899 including Colliery water supply considerations; opposition to the Liverpool Bill; Winwick and Houghton Green PS.

Correspondence, Bill documents, Boyd Dawkins material including manuscripts, report, notes, plans, test and technical data and instrumentation readings, etc.

Including manuscript letters to Boyd Dawkins: *re* well boring and the [?Winwick] Red Sand Stone, including sketch and details of a possible fossil tusk found by the sender, dated 22 May [18]89; seemingly unrelated British Museum letter *re* the 'Belgian Saiga' [type of antelope], dated 6 Nov. 1890.

Further material relating to the Warrington Corporation Bill is EM/4/Q/1/5.

Morton was also acting for Warrington Corporation in opposition to ICI proposed boreholes, 1947-1955: see British Insulated Cables EM/3/254.

Consultancies

EM/3/199	Wellington (Civil Engineering) Ltd	1974-1975
	<p>Llandonna, Llandgoed, and Penmon Sewerage and Sewage Disposal Scheme contract [?for Aethwy Rural District Council] and later Claim; sewer trench excavation difficulties in south east Anglesey.</p> <p>Photographs including composite panoramic and negatives, notes, maps, plans, correspondence, report, etc.</p>	
EM/3/200	Welsh Water Authority	1980-1988
	<p>26 folders.</p> <p>Welsh WA including Taff Division - Aberystwyth Sewerage: proposed trunk sewer from Park Avenue to PS at Tan-y-Cae, including site investigation; Alwen Treatment Works including contractual Claim; Llandegfedd Reservoir: emergency by-pass pipeline main; proposed deep cutting, M4 motorway (from Castleton to Coryton), adjoining the Wenallt Service Reservoir</p> <p>Test data, maps, plans, notes, reports, notebooks, correspondence, A.H.S. Waters & Partners and site investigation material, copy material dating back to the 1940s, glass negatives (marked Marple[?'s Ridgway] 1, 2, and 3 respectively), borehole logs, calculations, photographs, laboratory test results and other tests (Geo-Research Ltd.), etc.</p>	
EM/3/201	Welwyn Garden City Urban District Council	1956-1958
	<p>3 folders.</p> <p>Proposed new source works at Fulling Mill, by Metropolitan WB and the Lee Conservancy Catchment Board; Public Inquiry, 1957, including Objections</p> <p>Plans, notes, notebook, Inquiry documents including shorthand notes transcripts, correspondence, and copy material dating back to 1955.</p>	
EM/3/202	Wem Rural District Council	1945-1949
	<p>Wem Rural District Council and Wem Urban District Council</p> <p>Future sources of water supply: proposed boreholes at Lee Brockhurst.</p> <p>Correspondence, Morton's reports, etc.</p>	

Consultancies

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| EM/3/203 | West Cheshire Water Board

Wirral Peninsula: Water Supply Survey

Two letters, and copy of Cheshire County Council's 'observations on the Vail Report'. | 1936-1940 |
| EM/3/204 | West Cornwall Water Board

Lower Drift Dam: Grouting questions

Correspondence between Edgar Morton & Partner and Rofe, Kennard and Lapworth, Chartered Engineers; copy grouting diagrams, 1959. Including annotated article 'The Drift Water Scheme of the West Cornwall Water Board', <i>Water and Water Engineering</i> , vol. 65 (July 1961). | 1959-1961 |
| EM/3/205 | West Dean Rural District Council

Water supply.

Plan, Morton's report, and correspondence.

(Willcox Raikes and Marshall). | 1951 |
| EM/3/206 | West Denbighshire and West Flintshire Water Board

Proposed borehole at Rhuddlan, near Rhyl, Nov. 1967: 'Until the viability of this proposal has been determined the borehole scheme has been held in abeyance', May 1968.

Three letters only. | 1967-1968 |
| EM/3/207 | West Dorset Water Board

WO, 1961, and Inquiry including Objections: proposed Litton Cheney source development

Correspondence, plans, notes, maps, Inquiry documents, technical data, etc.

Morton was asked to work for Major Edward Golding of Court Farm, Litton Cheney, and others, <i>re</i> WO Objections, but he declined due to conflict of interest. | 1961-1962 |

Consultancies

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| EM/3/208 | Not used. | |
| EM/3/209 | West Hampshire Water Co.

Downton, Breamore, Wood Green and other boreholes; new source works, Avon valley.

Notes, pumping test data, correspondence, plans, and Morton's reports, etc, 1953-1954; letter <i>re</i> payment and site development update, 1960. | 1953-1960 |
| EM/3/210 | West Kesteven Rural District Council

Northern Regional Water Scheme; Long Bennington, Old Somerby and other boreholes

Correspondence, Morton's reports, plans, and notes. | 1939-1954 |
| EM/3/211 | West Somerset Water Board

2 folders.

River Exe Augmentation Scheme (North Devon, East Devon, and West Somerset WBs and the Devon River Authority): site investigations for proposed storage reservoirs at Hartford (Haddeo), Kemps, Landacre and Wimbleball (the latter site being the most favourable).

Contract specification document, correspondence, plans, notes, etc.

Additional material: 'Exe Augmentation'(folder A).

See also Severn Trent WA (Wimbleball) EM/3/164. | 1968-1970 |
| EM/3/212 | West Wiltshire Water Board

10 folders.

Proposed water abstraction; Public Inquiry and objections <i>re</i> Burton Field PS, Mere, and Brixton Deverill Abstraction Scheme; Westbury Cement Co. Inquiry <i>re</i> Maiden Bradley water source, 1970; Upper Wylde Valley survey and investigation including Wessex WO Inquiry, 1971

Plans, maps, Inquiry documents, correspondence, test data, | 1955-1973 |

Consultancies

notes, Morton and other reports, notebook, publicity booklets, article 'A Chalk Stream in Danger' from *Country Life* (1970), Progress Reports, etc. Including Avon and Dorset RA material.

See also Trowbridge Melksham and DWB EM/3/192.

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| EM/3/213 | Westhoughton Urban District Council | 1956-1957 |
| | Augmentation of water supply. | |
| | Notes, correspondence and Morton's report. | |
| EM/3/214 | Wey Valley Water Co. | 1953-1985 |
| | 4 folders. | |
| | Augmentation of water supply: proposed service reservoir, Stoner Hill, near Petersfield; borehole licence applications: New Barn Farm, Ropley, Courage and Barclay's Brewery, Alton, Opax Farm, Headley, and Mid-Wessex Water Co. (the latter including WO); Hawkley PS and spring source: revival of watercress beds belonging to Mr Vernon Smith; proposed tipping into the abandoned Stocks Farm quarry, 1965, and relevance to Mid-Southern Water Co. proposals, 1985; various PS and boreholes: Darvilles Lane, Ellstead, Britty Hill, Greatham, Oak Hanger, and Headley (the latter including proposed new source works); Tilford PS: protection of gathering grounds; etc | |
| | Morton's reports, correspondence, plans, maps, notes, water sample analysis, test data including pumping and stream gauging, copy material dating back to 1945, etc. | |
| EM/3/215 | Whaley Bridge Urban District Council | 1938-1941 |
| | Proposed borehole, and abandoned mine in the vicinity | |
| | Plans including Shallcross Hall Colliery and Jodrell Estate, notes, Morton's reports, and correspondence with Colonel Jodrell and others. | |
| EM/3/216 | Whitchurch Urban District Council | 1945-1954 |
| | Additional sources of water supply: Overton Scar, Malpas; Overton PS. | |

Consultancies

Correspondence, Morton's reports, notes, plans, etc.

EM/3/217 Whitehaven Corporation 1946-1947

Ennerdale Lake and Reservoir Scheme: Whitehaven in opposition, 1946-1947

Correspondence, photographs, notes including for Counsel, press cuttings, Objections, etc.

See also Friends of the Lake District, Ulverston, Lancashire EM/3/67.

EM/3/218 Widnes Corporation Waterworks 1945-1967

3 folders.

Widnes Corporation WW and Widnes BC

Siting of new PS, proposed boreholes and WO (1948); legal dispute *re* Bold Heath and Pex Hill boreholes on the Bold Estate: Peter Spence and Sons Ltd, claimants, vs Widnes BC, respondents (1966-1967).

Correspondence, arbitration documents, notebook, maps, plans, notes, report, rainfall figures, test data, calculations, etc.

Including two letters referring to enclosed material not found with the letters, February 1945, and Mersey and Weaver RA licence grants (water abstraction).

EM/3/219 Wigan Corporation Waterworks 1947-1957

Wigan Corporation WW and County Borough of Wigan

Augmentation of water supply: potential of Lawns PS and associated works at Tontine, Up Holland; question of reduction of the compensation water being discharged by the Corporation; Pemberton Reservoir matters; etc

Plans, notebook, Morton's and other reports including published, notes, correspondence, maps, etc.

EM/3/220 Winchester Rural District Council 1956

Private boreholes at Old Alresford, Hampshire.

Consultancies

Plans, maps, correspondence, notes, Morton's report, etc.

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| EM/3/221 | Not used. | |
| EM/3/222 | Wolverhampton Corporation Water Undertaking

3 folders.

Augmentation of water supply: trial boreholes at Copley and Neachley; development of Tom Hill PS, 1965; private water supply, Merinden House, Chesterton; proposed Bridgenorth Reservoir at Hermitage Hill; Roughton borehole and proposed new source works; pollution at Stableford boreholes and PS, etc.

Notebook, plans, maps, test data, Morton's report, notes, correspondence, contract document, etc. | 1956-1972 |
| EM/3/223 | Worcester County Council

City of Birmingham River Severn WO 1963 including draft; application and Inquiry <i>re</i> Arley Storage Reservoir proposal (Eymore Farm), and Appeal and opposition to same.

Plans, maps, notes, Inquiry documents, report, correspondence, etc. | 1961-1963 |
| EM/3/224 | Yorkshire Ouse and Hull River Authority

47 folders.

Yorkshire Ouse and Hull RA, Yorkshire WA North Central and South Western Divisions (formerly Huddersfield Corporation Waterworks) and Mid-Calder WB

Derwent Development Scheme including proposed Farndale Reservoir (references in the documents to 'Barndale' Reservoir are in error) and Water Bill; Bentham boreholes (Craven WB) including Stoop Quarry; River Ouse Abstraction Scheme (Leeds Corporation WW), 1973-1975, including Bilton-in-Ainsty Storage Reservoir (not built), Winscar Reservoir near Dunsford Bridge (Mid Calder WB) including site investigation, grouting, etc, and Baildon Bank Reservoir, near Shipley; Digley Reservoir, Holmfirth, West Yorkshire (constructed) (Huddersfield Corporation WW); etc.

Test and technical data, correspondence, reports including | 1968-1998 |

Consultancies

Rowe, Bill and House of Commons Minutes of Evidence (Derwent Water), plans, maps, notes, photographs and negatives (Bilton, Digley, Winscar), earlier documents dated 1936-1937 (mostly *re* Digley Valley Scheme), contract documents, drilling records, borehole logs, instrumentation readings, published material, reservoir surveillance including survey results, etc, 1968-1985.

Includes additional material (folders A-J) for Winscar Reservoir, including enquiry from Ian Carter of Montgomery Wilson, 1998.

EM/3/225

Miscellaneous

N.d.

North Riding County Council, North Allerton, Yorkshire - Proposed military training ground, Fylingdales Moor, between Whitby and Scarborough: alleged danger to the public water supplies in the area, and suggested alternative sites.

Morton's geological report