

Part IV: Bibliographic References Overview

A. Introduction

Fortunately, there is a large quantity of both primary historic documents as well as secondary source literature pertaining to the QSW. The existence of these materials provides a wealth of specific historic information that furthers the uniqueness of the QSW as an historic resource. Several different types of documentary materials were consulted for the preparation of this report and to provide an overview of what is available on the QSW. The major distinction of the material is whether it is a primary or secondary source; primary sources are those created by people who were actually there at the time, such as the case with letters, records, account books, diaries, photographs, maps, and interviews. Secondary sources are created by people who are usually compiling information based on primary sources, such as histories and technical texts.

Historic research of industrial operations is often limited by a paucity of primary documents, but in the case of the QMC which operated for about 135 years, an extraordinary number of documents have been saved. Furthermore, these documents are organized and deposited in MTU Copper Country Archives so that they are accessible to researchers and safeguarded for the future.

The QSW was constructed at a time when industrial literature publication was an industry in itself. The trend toward scientific management, large scale industrial operations, and open market investment called for documentation of technologies, processes, plant design, and the status of current companies. This has left a large body of contemporary secondary source literature in the form of texts, treaties, journals, and technical reports on copper smelting, the QMC, and on the Keweenaw mining district. With the decline of copper mining in the district came an interest in recording the history of the area, the industry, and of the QMC, which offers another rich collection of historic literature by current historians and students.

What follows is a brief overview of these sources and the kind of information related to the QSW that they can offer. A formal bibliography can be found in Appendix A.

B. Document collections overview

1. The Quincy Mining Company collection, MTU Copper Country Archives

a) Record Series 1: Corporate Records, 1848-1970 and Annual Reports

Record Series 1 does not contain smelter related information in terms of the QMC annual reports because these are cataloged separately under call number TN 443.Z6 Q6 in the archives. The annual reports provide a small amount of information about improvements and operations at the smelter on an annual basis, and this information is always found at the end of the mine superintendent's report. They are a good source for overview and quick referencing.

b) Record Series 2: Correspondence, 1872–1986

Record Series 2.8 Smelter Correspondence Files includes correspondence between the smelter superintendent and the QMC president in the New York office on all subjects including: technological development, operational details, site development, labor, production, quality control, maintenance, shipping, and so on. These records are highly detailed, very specific, and hold the most primary source information about all aspects of the smelter's construction, development, and operation. Of special note are the Monday Letters series, a report prepared by the superintendent for the New York office on a weekly basis beginning in 1913 through the smelter's first closing in 1931. Decision making on improvements and operations as well as the corporate relationships and the conduct of daily smelter business can be easily traced here. There is also a huge amount of information contained here on the technical aspects of the smelting operation, production figures, cost analysis, and labor relationships. These files were historically well organized with the series of letters exchanged over a certain issue pinned together for easy reference.

c) Record Series 3: Financial Records, 1852–1988

This series is organized so that it holds smelter account records under various headings, and this makes this series difficult to search for smelter related documents in most cases. However, it is a valuable record series for artifact documentation and technological change through its equipment, site, and insurance inventories, purchase orders, and invoices. Of course it is also valuable for economic analysis. This series contains: 3.2.2, Michigan Office

Records holds the smelter journal between 1903–1921; 3.4.2 Cash Records, holds the smelter cash book between 1898–1922; 3.5, Cost Sheets and other Cost Data, hold smelter cost sheets between 1910–1971; 3.6.3, Legal Documents, Agreements, Contracts, holds some smelter purchase orders and equipment contracts, but they are organized by the name of the contracted company; 3.7 holds supply records and inventories, some listed specifically under smelter while others are not; 3.9, Orders and Invoices, holds specific invoices for smelter hand tools and some machinery between 1908–1918 and for various later dates.

d) Record Series 4: Operational Records, 1861–1971

Record Series 4.6 Smelter Records contains primarily log books appropriate for technical research on mineral shipments, furnace charges and copper produced, shipments made, and copper books. Such information can be used for technological analysis and evaluation of the efficiency of the smelting process to the quantities of production.

e) Record Series 6: Employment and Medical Records, 1851–1988

Record Series 6.1.10 Smelter contains a small collection of employee records between 1898–1906. Other employee data such as the number of men at work, their positions, and wages can be found in the smelter correspondence series 2.8, but it is not organized specifically. It is usually given at the request of the New York office.

C. Maps, drawings & photographs collections overview

1. Quincy Drawings Collection, MTU Copper Country Archives

The Quincy Drawings Collection contains many smelter maps and architectural drawings that are extremely helpful in evaluating landscape change, structural components of the site, and technological layout. These drawings are all oversized and many are technical blue prints that provide construction notes and dimensions of structures, furnaces, and the layout of machinery such as the briquetting plant or the automatic casting machine. The collection is loosely organized by “Class” (subject) heading, however while “smelter” is a class, not all of the smelter drawings in the collection are under this heading. Others fall under “Construction” and “Maps” for example. A select group of these drawings were

photographed by HAER in 1978 and can be downloaded from the HAER online collection at the Library of Congress website.

2. *Quincy Smelter Vertical File: Historic Photographs, MTU Copper Country Archives*

There are less than twenty-five historic photographs of the QSW in this file. Most of them were copied by HAER in 1978 for inclusion with their report and can be downloaded from the HAER online collection at the Library of Congress website. These photographs provide valuable early and later views of the smelter from its north and south sides in context with the rest of the shoreline and landscape. Some of these are included in the photo section of this report.

3. *Historic American Engineering Record (HAER) QMC Documentation Project, 1978, MTU Copper Country Archives & Library of Congress*

The 1978 HAER project on the QMC is an excellent resource. It contains in depth economic, social, and technological histories of the QMC prepared by noted historians Larry Lankton and Charles Hyde. Details about the establishment of the QSW and its operations are contained in Hyde's report. There are two other components of the project that are equally valuable: measured drawings, site maps, and large format photography by Jet Lowe (HAER photographer and MTU graduate). The drawings and maps show the smelter's site development as compiled from historic maps in the Quincy Drawing Collection, and the photographs show the condition of the smelter as of 1978. The MTU archives has a complete copy of the report, including the large scale drawings and copies of all the photographs, both those done by Lowe and the historic ones that were copied from the vertical file described above. These are also available online for download from the HAER collection posted on the Library of Congress website. Appendix D of this report contains the HAER maps of the smelter for reference, and photocopies of all the HAER images are provided in the project box.

4. *The Quincy Mine Hoist Collection, MTU Copper Country Archives*

This is a small collection accumulated by the Quincy Mine Hoist Association that primarily consists of historic photographs related to the QMC. There was little to be offered on the

QSW except for a few photographs, most of which can be found in the archive's vertical file. There are several unique smelter photographs, however.

5. *QMC Maps & Maps Collection, MTU Copper Country Archives*

The QMC historic maps of property and site plans are loosely organized within the Quincy Drawing Collection. They are found primarily under the class (subject) "Surface." The "Description" often begins with the words "Map of." Smelter site maps are also organized as such, or under the class "Smelter." The Sanborn Fire Insurance map collection from various years beginning in the 1870s through 1928 are also on file at the MTU archives, and show details of the smelter and of the shoreline previous to its construction. Other maps of interest include coastal and shoreline maps of the Portage Lake and Keweenaw shipping lanes located within the archive's map collection. Another source for shoreline and vicinity maps are U.S. Government Documents collection in the J.R. Van Pelt Library (MTU). These include: the Corps of Engineers, the War Department, Government Land Office (GLO) maps, and U.S. Geological Survey (USGS) maps. Two such maps are included in this report.

6. *The Quincy Smelting Works Photographic Documentation Project 2001, Keweenaw National Historic Park (KEWE) archives*

This is a HAER style photo documentation of the QSW prepared by photographer / industrial archaeologist Gianfranco Archimede for KEWE that consists of both large and small format photographs of the smelter as it appears currently. The photographs are indexed and explained, providing specific information about the structures, artifacts, and smelting process associated with each view. It provides a valuable resource for specific current and historic information on the smelter. This collection is held in the KEWE archives in Calumet, MI.

D. *Secondary sources overview*

1. *Contemporary texts, treaties, and reports on copper smelting and its technology*

The J.R. Van Pelt library at MTU has a large collection of turn of the century technical texts and treaties on copper smelting, reverberatory furnaces, and boilers covering the technologies and processes of the time. These are useful for familiarization with historic copper smelting practice, and are well illustrated. Other historic periodical sources at the library are the

Mining Journal and Mining World for general information on the copper mining industry of the time. There are also a few sources that give specific information on the Lake Superior smelters and mining companies, some including the QSW: *The Copper Mines of Lake Superior*, T.A. Rickard (1905), “Copper Smelting in Michigan,” H.D. Conant (1911), “Historic Development of Smelting and Refining Native Copper,” H.D. Conant (1931), *The Copper Handbook*, H.J. Stevens (1900, 1903, 1905, 1912, 1913), *Historical Review of the Lake Superior Copper Mining Industry*, Stevens (1899). Excerpts of these sources are included in the project box.

2. *Later histories and student papers*

There are a large number of books and articles published in more recent times on the Keweenaw copper district, the QMC, copper smelting, and on the QSW itself. These are helpful for both contextual information on the development of the district’s mines and social history, the QMC, smelting, and the mining technology and processes of the district. A complete list is provided in Appendix A, but to name a few here: all of Larry Lankton’s books, especially *Old Reliable* and *Beyond Boundaries, Michigan Copper and Boston Dollars: An Economic History of the Michigan Copper Industry*, W.B. Gates (1951), “Keweenaw Copper: Mines, Mills, Smelters and Communities,” L. Lankton (1997), *Calumet Copper and People*, A.W. Thurner (1974). Another set of valuable but unknown sources are student papers on the QSW based on primary documents compiled by students studying under Larry Lankton and Charles Hyde, including “Keweenaw Smelters and the Location of the Quincy Smelting Works in 1898,” C. Silvertein (1978), “The Quincy Smelting Works 1898–1907: Construction 1898; Process 1898; and History 1898–1907,” K.E. Johnson (1978), and “The QSW as Artifact: A Brief Overview of the QSW in Ripley,” G. Archimede (2000). These papers have recently been submitted to the MTU archives, and a copy of each is provided in the project box. They provide specific information about the QSW not found in other sources.

3. *Houghton County Deed Records Office, Houghton County Municipal Building, Houghton*

The QSW remained as the property of the QMC until 1986 when it was transferred to the Quincy Development Corporation. It was transferred again in 1999 to Franklin Township. The deed records for these transactions and a property tax card are held in the Houghton County Deeds Office. There is a detailed property map of the smelter attached to the tax card showing the location and dimensions of standing structures c. 1972.

End Notes

¹ Charles Hyde, HAER historic report on the QMC, 175.

² Ibid.

³ Arthur Thurner, *Calumet Copper and People: History of a Michigan Mining Community 1864-1970*, 13.

⁴ William Gates Jr., *Michigan Copper and Boston Dollars: An Economic History of the Michigan Copper Mining Industry*, 28-29.

⁵ Hyde, 171.

⁶ Hyde, 173.

⁷ Hyde, 174.

⁸ Ibid.

⁹ Horace J. Stevens, *The Copper Handbook* (1906), 844. T.A. Rickard, *The Copper Mines of Lake Superior*, 142.

¹⁰ Cathy Silverstein, “Keweenaw Smelters and the Location of the Quincy Smelting Works in 1898,” 4. Based on primary source correspondence.

¹¹ Horace J. Stevens, *The Copper Handbook* (1900), 120.

¹² Ibid.

¹³ The specific function of these structures is detailed in the Archaeological Resources section of this report.

¹⁴ T.A. Rickard, *The Copper Mines of Lake Michigan*, 142.

¹⁵ Ibid, 143-145.

¹⁶ Ibid, 146.

¹⁷ QMC Correspondence (Letterpress) 1901-1903, S.B Harris to W.R Todd, 19 Mar 1902. as referenced in Johnson, 7.

¹⁸ QSW Cash Book 1903-1916, 15. As referenced in Johnson, 7.

¹⁹ Larry Lankton, *Old Reliable*, 101.

²⁰ QMC correspondence, A. Laist to W.R. Todd, 11 May 1914. This is a valuable document that gives an extensive, detailed account and the cost analysis for the modernization of the QSW that took place later in 1920.

²¹ Larry Lankton, *Old Reliable*, 103–106.

²² Ibid, 146.

²³ QMC Annual Report of 1968, 4.

²⁴ QMC Annual Report of 1971, 4. This report announces the closing of the smelter, but it takes care to note that “The Company has, nonetheless, been in the business of producing and smelting copper for more than one hundred years and when the occasion arises and when it becomes feasible, will resume mining and smelting at the earliest opportunity.”

²⁵ Quit Claim Deed, Houghton County Deeds Office, Book 91 pg. 419, 01 Dec. 1986.

²⁶ Quit Claim Deed, Houghton County Deeds Office, Book 149 pg. 861, 28 Dec. 1999. Commercial Real Estate Record Card #31-06-136-007-00, Houghton County Adjustment (Tax Record) Office, 1972.

²⁷ Clarence J. Monette, *The Mineral Range Railroad*, 35.

²⁸ Monette, *The Copper Range Railroad*, 34.

²⁹ Kevin E. Johnson, “The Quincy Smelting Works 1898–1907: Construction 1898; Process 1898; and History 1898–1907,” 9.

³⁰ QMC Annual Report of 1910, p. 13. QMC Annual Report of 1911, p. 15.

³¹ QMC Annual Report of 1905, p. 13.

³² Monday Letters, Nov. 1, 1920, Nov. 29, 1920, Dec. 6, 1920, Dec. 13, 1920.

³³ QMC Annual Report of 1905, p. 13.

³⁴ QMC Annual Report of 1908, p. 16. More than sixty acres of waterfront property was acquired from the Franklin Mining Company, including the land on the east side of the smelting works.

³⁵ Interview with Ed Ekdahl, Franklin Township Supervisor.

³⁶ QMC Annual Report of 1913, p. 23.

³⁷ QMC Cash book, 1892-1899, p. 200. as referenced in Johnson, p. 1.

³⁸ QMC Correspondence (Letterpress) of Mine Agent S.B. Harris, 1898-1901, p. 27. as referenced in Johnson, p. 1.

³⁹ QMC Journal, 1898-1901, p. 20. as referenced in Johnson, p. 4.

⁴⁰ QMC Correspondence (Letterpress) of Mine Agent S.B. Harris, 1898-1901, p. 27. as referenced in Johnson, p. 1.

⁴¹ QMC Annual Report of 1909, p. 19.

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- ⁴² QMC Correspondence (Letterpress), S.B. Harris to T.F. Mason, 1898-1901, p. 42, 46, 55, 63, 64, 77. as referenced in Johnson, p. 2.
- ⁴³ QMC Annual Report of 1904, p. 14. as referenced in Johnson, p. 8.
- ⁴⁴ In July 1904, for example, QMC went into a five-year contract with the Franklin Mining Company to smelt all of its mineral (letter from W.R. Todd to W.P. Smith, 26 July 1904.)
- ⁴⁵ QMC Annual Report of 1911, p. 15. Monday Letters, 28 July 1911, QMC 369/17.
- ⁴⁶ QMC Annual Report of 1904, p. 14.
- ⁴⁷ QMC Annual Report of 1919, p. 17.
- ⁴⁸ QMC Annual Report of 1968, p. 4.
- ⁴⁹ QSW Monday Letters, 25 Apr. 1921.
- ⁵⁰ QSW Monday Letters, 23 Jul. 1921 gives details on using the by-pass stack when it was necessary to perform boiler maintenance. In this sense, the boiler stack is not actually the “by-pass” stack, it is the main stack; the smaller stack is the by-pass stack.
- ⁵¹ Quincy drawing collection, QD 1937, 1938, 1939, 2060, 2070. See Appendix A.
- ⁵² QMC (Letterpress) Correspondence, S.B. Harris to W.R. Todd, 1898-1901, p. 63., as referenced in Johnson, p. 2.
- ⁵³ QMC Annual Report of 1909, p. 19. Monday Letters, 2 Aug. 1909. Also, smelter annual report for 1908, A. Laist to W.R Todd, 15 Feb. 1909, p. 5.
- ⁵⁴ QMC Annual Report of 1910, p. 13. A. Laist to W.R Todd, 20 Jan. 1910, smelter superintendent’s annual report for 1909, p. 11.
- ⁵⁵ QMC Annual Report of 1916, p. 17.
- ⁵⁶ QMC Journal 1898-1901, p.6. as referenced in Johnson, p. 3.
- ⁵⁷ QMC Annual Report of 1909, p. 19. QMC A. Laist to W.R. Todd, 15 Feb. 1909. Smelter superintendent’s annual report of 1908.
- ⁵⁸ QMC Annual Report of 1915, p. 16.
- ⁵⁹ Ibid.
- ⁶⁰ QMC Journal 1898-1901, p.6. as referenced in Johnson, p. 3.
- ⁶¹ QMC Correspondence (Letterpress), 1898-1901, p.77. S.B. Harris to T.F. Mason, 3 Sep. 1898. as referenced in Johnson, p. 2.

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- ⁶² QMC Journal 1898-1901, p. 20-34. as referenced in Johnson, p. 4.
- ⁶³ Ibid.
- ⁶⁴ QSW Correspondence (letterpress) 1903-1905, 20 July 1905.
- ⁶⁵ QMC Journal 1898-1901, p 82. as referenced in Johnson, p. 4.
- ⁶⁶ QMC Journal 1898-1901, p 20. as referenced in Johnson, p. 4.
- ⁶⁷ QMC Journal 1898-1901, p.82. as referenced in Johnson, p. 4.
- ⁶⁸ QMC Annual Report of 1902, p. 13 gives the dimensions of this building.
- ⁶⁹ QMC Annual Report of 1902, p. 13
- ⁷⁰ QMC Annual Report of 1904, p. 13. as referenced in Johnson, p. 9.
- ⁷¹ QMC Correspondence, J.R. Cooper to W.R. Todd, 31 Dec. 1902.
- ⁷² QMC Annual Report of 1902, p. 13.
- ⁷³ QMC Annual Report of 1905, p. 13.
- ⁷⁴ QMC Annual Report of 1906, p. 17. Also, A. Laist to W.R Todd, 15 Feb. 1909, smelter superintendent's annual report for 1908, p. 11.
- ⁷⁵ QMC Correspondence, A. Laist to W.R Todd, 15 Feb. 1909, smelter superintendent's annual report for 1908, p. 11.
- ⁷⁶ Sales contract with Chisholm, Boyd, and White, 30 April 1906.
- ⁷⁷ Ibid.
- ⁷⁸ QMC Correspondence, Alex Laist to W.R. Todd, 15 Feb. 1909, p. 11-12. as referenced in Johnson, p. 18.
- ⁷⁹ See Monday Letters of 2 June 1911 for a detailed explanation, QMC 369/15. Also, smelter annual report for 1908, A. Laist to W.R Todd, 15 Feb. 1909, p. 11.
- ⁸⁰ QMC Annual Report of 1916, p. 17 announces that the briquetting plant was again started up after five years of inactivity, for example. It was started up to increase productivity due to high demand for copper at the time.
- ⁸¹ "Crushing Plant General Arrangement," QMC Drawing Collection QD 2009, 19 Dec. 1919.
- ⁸² QSW Monday Letters, 4 Feb. 1923.
- ⁸³ QSW Monday Letters, 7 Aug. 1922, 2 Oct. 1922, 12 Mar. 1923, 15 Oct. 1923, 10 Dec. 1923 4 Feb. 1924.
- ⁸⁴ QMC Annual Report of 1906, p. 17.

⁸⁵ QMC Annual Report of 1909, p. 19. Monday Letters, 2 Aug. 1909, QMC 369/14. . Also, smelter annual report for 1908, A. Laist to W.R Todd, 15 Feb. 1909, p. 5.

⁸⁶ QMC Annual Report of 1906, p. 16.

⁸⁷ QMC Annual Report of 1907, p. 14.

⁸⁸ Information regarding the history of the locomotives was provided by an interview with Mr. Clint Jones of Trans Northern, Houghton, MI.

⁸⁹ QMC Journal 1895-1898, pg. 486.

⁹⁰ Dimensions taken from Quincy Mine Office Survey Notes dated October 14, 1898, as referenced by Johnson, p. 2.

⁹¹ QSW Monday Letters, 11 May 1914. Proposal by the smelter superintendent for the smelter modernization plan that took place in 1920.