

The Source of the Iron Ore for the Lansdowne Iron Works

By Ken W. Watson, 2021 (updated January 2022)

A full page map showing the geography and location of sandstone in the area, as well as some of the mentioned locations of iron deposits, can be found at the end of this article. This article is intended to accompany the article, "Delta and Lyndhurst, Forged Together" by Art Shaw and Ken Watson, which you can find on the history page of the Delta Mill Society website – www.deltamill.org.

The first iron works in Upper Canada was located at Lyndhurst, Ontario. The location, then known as Furnace Falls (renamed Lyndhurst in 1851), operated, intermittently, under the control of Wallis Sunderlin, from 1801 until the complex burned down in 1811. It was designated the Lansdowne Iron Works National Historic Site in 1932. The actual sources of the iron ore remain somewhat a mystery. We do know that, contrary to popular belief, the iron deposits presently known near Lower Beverley Lake were not initially used and may in fact have never been used, remaining undiscovered prior to the destruction of the iron works in 1811. So, where did the ore come from?

There are two types of iron deposits in our area, hematite associated with sandstone, and limonite, known as bog iron, found in wetland areas. It is believed that most of the iron ore used at Lyndhurst was hematite. There are no historic references that indicate the mining of bog iron, although that possibility cannot be completely discounted since bog iron does exist in the region. The known deposits of hematite near Lower Beverley Lake are described as "The ore is either a hard, massive, red hematite variety or a sandstone impregnated with hematite. The ore-bodies take the form of small veins and replacements along jointed or fractured zones in the sandstone" (GSC Summary Report 1920). This is typical of the hematite in this area and shows the problem that Wallis Sunderlin, the operator of the Lyndhurst Iron Works had, with no single large iron orebody to supply his furnace.

The best direct reference to the first location of iron ore that was used at Lyndhurst is a statement by Wallis Sunderlin in February 1807 that "the ore adjoining the Works did not turn out as expected." So, where might "ore adjoining the works" be located? Local geology provides a clue. There is an exposure of sandstone, a potential hematite host, only 700 m northeast of the falls at Lyndhurst (see Map 3). The Lyndhurst Road (County Rd. 33) in this area, a road dating to 1798, runs right through it. There is also sandstone only 800m (as



Hematite in Sandstone

This exposure of sandstone on County Road 42, just south of Hicock Road, is iron bearing, the red colour due to hematite in the rock. Early prospectors didn't have the luxury of a road cut exposure to identify where iron ore might be, they had to look for natural exposures and dig test pits to determine if the hematite was of sufficient grade and quantity to be considered ore (economic). Note that the white rectangle is a business card size (9 cm) scale card. Photo by Ken Watson

the crow flies) south of Lyndhurst. Jonas Street coming out of Lyndhurst runs through part of that and it's bounded on the west by County Road 3. Neither of those locations has been investigated for potential hematite showings or any evidence of previous mining (which would be very difficult to spot). Either of those areas could be interpreted as "adjacent" in the context of Sunderlin's statement.

Mathew Wing, who petitioned for the site and started to set up a bloomery there in 1800, provides another clue. In February 1800 he petitioned to get "*the privilege of one half of the Iron ore found on Lot No. 10 in the 11th Concession ... the other half of the Ore being granted as it is said to William Caswell with the Lot.*" (Lockwood, pg. 60). The northern part of that lot is underlain by sandstone. The distance is 3.7 km as the crow flies or 4.3 km by road. Lower Oak Leaf Road runs right through that area. It's difficult to interpret this as Sunderlin's "adjacent" – but it's a direct pre-iron works reference to an iron ore location. What is unclear is whether Wing was looking at this as his source of ore, or whether he was looking at it as an additional source to an already "adjacent" deposit which would have been part of his granted rights to Lyndhurst itself. It is presently assumed that the latter is most likely the case.

The original discovery of iron in the area perhaps provides another clue. That likely happened in 1783 during the first survey of the region by Lt. Gershom French. French was a loyalist (British side), the last unit he served with was the Corps of Loyal Rangers, also known as Jessup's Corps after its commander, Major Edward Jessup. In 1783, French was tasked with surveying the Rideau Route, a water connection between the Ottawa River and the St. Lawrence River/Lake Ontario. He wasn't looking for a navigation route, he was looking at the character of the land for possible loyalist settlement.

He did this survey in the fall of 1783, following the main indigenous canoe route that connected the Ottawa River at today's Ottawa with the St. Lawrence River at today's Gananoque (there was no direct water connection to Kingston at that time). His survey started at the mouth of the Rideau River. He went up the Rideau River to Rideau Lake and then over the watershed divide at Newboro, through the original lower Rideau lakes to Jones Falls and then down the White Fish River to Lower Beverley Lake and then down the Gananoque River to where it ended at the St. Lawrence River (today's Gananoque). He then paddled up the St. Lawrence River to Kingston before returning to Montreal.

During the survey, his party would stop once or twice a day and explore for 3 to 6 km inland on either side of the waterway to assess the character of the land. On October 12, 1783, they travelled through the Lyndhurst area. Was iron found during one of their inland surveys? The reason to suspect this happened is because French's former commander, Major Edward Jessup, in 1784, applied for the rights to mine iron in the Lyndhurst region stating "*we are told there is an Iron Ore bed and a good place to build Iron works between the Settlement of Oswatia and Catraque*" (Russell, pg. 421). Who told Jessup about iron ore in that location?

Curiously, south of Jones Falls, French's map has no details, it's basically a straight line with no portages noted (see map on next page). The actual route is far from a straight line, it's a convoluted route and there are a number of portages. North of the area, French notes the portages at Newboro, Chaffeys and Jones Falls, but then does not note the portages at White Fish Falls (Morton), the Great Falls (Lyndhurst) or any south of that. His survey notes are silent about rapids/waterfalls in that area. These are significant in terms of being potential mill sites for settlers, and French does note several of these in the northern part of his survey.

French's map, drawn 10 years after the actual survey, is too vague to make any firm conclusions, but together with his survey notes, they provides a possible clue. On the evening of October 11, 1793 he appears to have camped at the head of Lower Beverley Lake (where the White Fish River joined the lake). The next day he wrote:

[October] 12th. – Steered South 12 Degrees, E. about 4 miles where the Gananoncui received a River from the East. We continued in the same direction 8 miles further in Dead Water with large Marshes on each side, and Ledges of Rocks behind, from whence I sent out a Party on the East and went myself on the West, but did not Discover any good Lands. From there we continued about Ten Miles in the same course nearly meeting with nothing but Swamps, Rocks and Stagnated Water. (Watson, pg. 77).



MAP 1 – French's 1783 Survey

This is a section of the map of Lt. Gershom French's 1783 survey goes from an area south of Long Island (upper right) to Gananoque (bottom centre). The looping creek on the right side is interpreted to be Kemptville Creek at the top and then Plum Hollow Creek where it meets the Gananoque River (even though it was likely thought to be Wiltse Creek). French didn't explore those creeks, he simply noted the mouth of the creek on the Rideau River and then the mouth of a creek on the Gananoque River and connected the two as a known indigenous travel route. His written description and the positioning on the map places the lower creek as Plum Hollow Creek (Delta).

The "Mill Place" on the Rideau River is Burritts Rapids, the Carrying Place is the falls at Merrickville and the 8 Falls notation is Smiths Falls.

The central area shows Rideau Lake with the first "Carrying Place" the portage across the Isthmus (Newboro). The second carrying place is Chaffeys and the third is Jones Falls. South of that no portages or water falls are shown, even though there are several. The looping route through this area is shown as a featureless straight line. Why this is so is the mystery of French's map, perhaps related to the Great Falls at Lyndhurst and the nearby iron deposit.

Map section from: "Communication with the St. Lawrence & Ottawa Rivers, by the Rivers Petite Nation and Rideau" copied from sketches by Lt. Gershom French 1783, by William Chewitt, August

The “River from the East” would be Plum Hollow Creek, on which present day Delta is located. The “Dead Water” is Lower Beverley Lake, which, in 1783 was about 4 feet lower than it is today. The land survey he did 8 miles further would be at Lyndhurst, meaning that French or a member of his party could have discovered an iron showing on land near the Great Falls. Neither iron ore or the falls are mentioned or mapped. Of note, distances and directions in his survey notes and map are far from exact, he was just making visual estimates. If he took a direct route, the paddling distance from Delta to Lyndhurst would be 4.5 miles, which in the context of his survey is close enough. But he would have had to stop and do a long portage at Lyndhurst (just as paddlers still have to do today), a good time to do some exploring while other members of the party (total of 10 in the group, plus French) were portaging the two birch bark canoes.

All we really know is that an iron deposit was known in 1784 and that it doesn’t appear to have been public knowledge. We can now jump ahead to 1794 when we have Abel Stevens entering the picture. Abel arrived in February 1794, with several families, including his own, settling on the upper reaches of Plum Hollow Creek (good farmland). Stevens then set about petitioning the government for more land and initially, the water rights for the rapids at Delta. It is in a third petition, dated September 2, 1794, that iron ore is mentioned.

That third petition was from William Patterson Jr., Samuel Sheldon, Elihu Stevens, and Uriah Stevens, the latter two being Abel Stevens’ sons. The petition was likely presented to the government by Abel Stevens. The petition stated:

"That your Petitioners having settled on Ganonoqua River in the County of Leeds, in February last, in further exploring that County discovered a Bed or Vein of Iron Ore, and being desirous of Erecting a Bloomery prays a Grant of One Thousand Acres of Land at the Falls on a Creek which empties itself into the largest lake below the New Settlement on the said Ganonoqua River as set forth in a Sketch of that River &c.

Your Petitioners flatter themselves that your Excellency will countenance their undertaking so far as to Grant them the Site on said Creek, and privilege to Open said Vein of Ore for the purpose of Manufacturing Iron, or such relief in the Premises as thro' your Wisdom may seem meet." (Cruikshank, pg. 59)

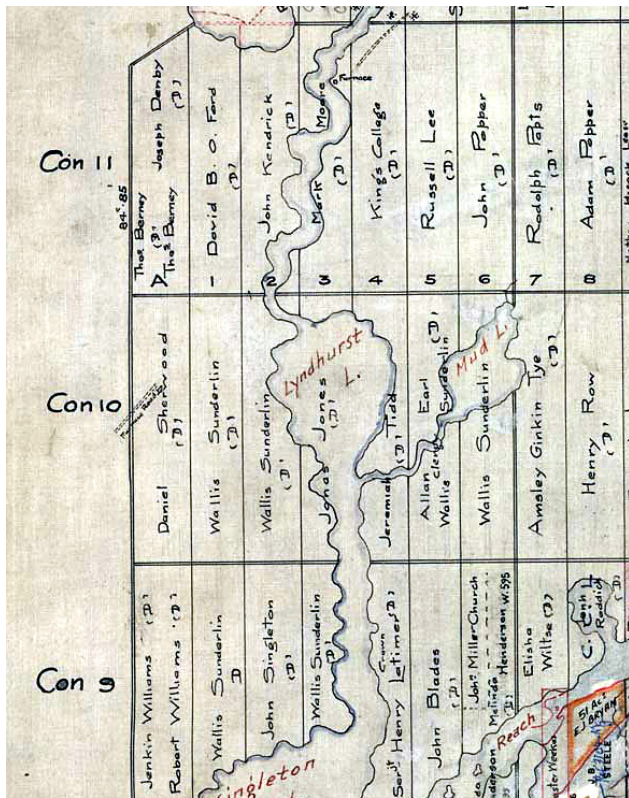
While Stevens wasn’t the first discoverer of iron, he may have been the first re-discoverer and now the iron deposits start to become public knowledge. This also marks the point where Stevens start to focus his energies on getting the mining and water rights to Lyndhurst. But, right off the bat, Stevens ran into a fundamental problem, in 1794 the province (Upper Canada) couldn’t award any mining rights, those were reserved to the Crown, the King of England. That changed in 1798 when the Crown, while reserving gold and silver, allowed the province to award mining rights, including for iron. That story is told in the article “Delta and Lyndhurst – Forged Together” (Shaw & Watson, 2021).

In 1799, in a petition to the government, Stevens ask for *“Leave to uncap (dig up or mine) the bed of ore which lies within a lot of land already granted by the Crown, the Proprietor of which has already consented to that measure.”* (Cruikshank, pg. 70). Unfortunately Stevens does not specify the location.

In 1800, Mathew Wing also stated in a request to the government *“Proposal for working the Iron ore in the Township of Lansdown in the District of New Johnstown.”* (Cruikshank, pg. 74). As with Stevens, no exact location other than it is in Lansdowne Township.

We are now back to where we started, in the early 1800s with Wallis Sunderlin busy trying to find new sources of iron ore since his original “adjacent” source had clearly run out, in his words “the ore adjoining the Works did not turn out as expected.” He was clearly out of ore by 1803 when he resorted to stealing it.

“In February 1803, Justice of the Peace Thomas Smith, for whom Smiths Falls was later named, took a deposition by John Covell, accusing Wallis Sunderlin, Peleg Sunderlin, Steven Washburn, William Stevens, William Patterson, Abel Stevens Jr and Adam Shook of stealing 8 sleigh loads of iron ore from his property in the 2nd Concession of Montague Township, between Merrickville and Smiths Falls. The circumstances suggest that the ore was probably mined by prearrangement for that purpose, but Sunderlin’s need for the immediate delivery of the ore, at some point overcame all other considerations, including his ability to pay. The extreme effort of taking eight teams of horses or oxen with drivers, 40 miles north through the wilderness in winter, and returning across frozen rivers and lakes with eight sleighs loaded with ore, is a testament to his desperation.” (Shaw, 2018).



MAP 2 – Lansdowne Township Survey Map

This is the first survey map of the township (red writing are later additions). Several of Wallis Sunderlin’s granted lots are shown. These maps are inaccurate, the lot boundaries idealized versions. Present day, re-surveyed lot and concession maps show the irregularities. The “Furnace Road” is marked in error on this map, offset about 300 m west from its actual location. Lansdowne Township, Archives of Ontario, RG 1-100-0-1219

At this point we have two references to local ore, a source “adjacent” to Lyndhurst and a source on Lot 10 in the 11th Concession in Lansdowne (Wing’s 1800 reference).

In Sunderlin’s 1807 petition he states: “iron ore having lately been found on Lots No 11, 12 & 13 in the 13th Concession of Lansdowne, which lots are leased by William Caswell, reserving however the said ore for the disposal of the Crown. Your Petitioner therefore Prays your Excellency that he may be permitted to work said ore as it will in some measure remunerate him for the expenses he has already been at, as well as be an advantage to the Province” (Shaw, 2018). A portion of those three lots are sandstone (see Map 3) and a nearby outcrop on County Road 42 is iron bearing (see photo on page 1), so there could well be iron deposits in that location.

Your author has not come across any other specific location references from that period (1801-1811). No specific reference to the Lower Beverley Lake deposits has been found. So where does that leave the story that the currently known iron deposits on Lower Beverley Lake were the source of iron for the Lansdowne Iron Works?

For these we jump ahead to 1815 when William

Jones is supporting Ira Schofield, his partner in the Old Stone Mill, with a proposal to re-open the Iron Works at Lyndhurst. In a letter to the governor of Upper Canada, Lt. General Gordon Drummond, to which he attached Schofield's proposal, Jones wrote "*The Memorial of Capt. Ira Schofield of Bastard Humbly Represents that he has been to the expense of procuring every implement necessary to carry the Iron Manufactory into effect—and likewise to a considerable expence for the Discovery of in all probability a valuable Mine of Iron Ore, situate on a Water Communication to the falls on the Gananoqui River, the noted situation where Iron Works have been erected and Consumed* (Cruikshank, pg.81). The clue here is "on a water communication" which is a perfect description for the Lower Beverley Lake Deposits which are situated only 300 m away from the shoreline of Lower Beverley Lake which is part of the "water communication" to Lyndhurst. There are no other iron deposits known to be near a water route to Lyndhurst.

Another piece of evidence is that the Lower Beverley Lake deposits are just that, in-situ deposits. If they were known to Sunderlin, one would have expected them to have seen extensive mining, which is not the case prior to much later mining (20th century). Schofield's "considerable expence" related to the discovery refers to the exploration technique in that era which was to dig pits to try to expose the extent of the ore. This was a labour intensive process, expensive if you hired labourers to do it.

That the Lower Beverley Lake deposits were never used for the Lyndhurst ironworks is a conclusion also reached by Lieutenant Frederick Henry Badderley, a Royal Engineer and geologist, who examined the main Lower Beverley Lake deposit in 1831:

"This ore [red oxide of iron] has been noticed in two or three places in Canada, but most abundantly in the neighbourhood of Henderson's Lake [Lower Beverley Lake], on the Gannanoqui, where it forms apparently an extensive bed in a ferruginous sandstone.

At the Furnace Falls about three miles below this deposit there was formerly a smelting establishment, where some few articles were manufactured, not however from the ore above alluded to, as that was discovered long after these works were deserted, and none of it appears to have been smelted for any other purpose than experiment, which is said to have been favorable." (Badderley, pg. 336)

Badderley also states "An inhabitant of Beverley desirous of ascertaining whether it was in abundance or not, opened a portion of the ground about ten feet every way, and found a considerable quantity." (Badderley, pg. 383). Badderley's description fits the exploration work done by Ira Schoefield.

Our next reference to the Lower Beverley Lake deposits is the 1851 Geological Survey of Canada documentation of those deposits. In that write-up by geologist Alex Murray he states "*About forty years since an attempt was made to mine the ore for the supply of a furnace erected at Furnace Falls [Lyndhurst], but the quantity in the locality worked was not sufficient to give a profitable result.*" A present day conclusion is that Murray confused Schofield's 1815 exploration work with actual mining of these deposits for the 1801 to 1811 iron works. It's a perfectly understandable error since those deposits had been known since at least 1815 and the other deposits in the area, which clearly existed, were not known by Murray. Murray investigated what was known and concluded that these must have been the source of iron for Lyndhurst. Every subsequent reference places the Lower Beverley Lake deposits as the source of iron for Lyndhurst.

It is now very clear that the Lower Beverley Lake deposits were not known or used prior to 1807 (Sunderlin's petitions). Schofield's 1815 reference to a discovery of iron ore on a water communication to Lyndhurst points to him being the discoverer of these deposits. Badderley's 1831 examination of those deposits shows that just exploration work was done. There is no known mining evident of the scale required for the Lyndhurst Iron Works at that site.

Schofield never got permission to open up the Iron Works at Lyndhurst – the ownership of the land at the time was still in dispute (Sunderlin's heirs and Jones' heirs) and Schofield moved away from the area in 1818. The next activity at Lyndhurst was the erection of mills in 1828 (see Shaw 2018 for details).

In 1920, there was a detailed write-up about by the Geological Survey of Canada about the Lower Beverley Lake deposits. In the History section of that report it was stated *"The early settlers, in 1810, operated a primitive smelter, the ore being ground out by a water-wheel. Since that date the local farmers or prospectors from time to time sunk pits, but little ore was obtained."* He then describes recent mining that was done: *"From October 1918 Draine Brothers of Toronto worked these deposits, except in winter, until November 1919. In August 1919 the Consolidated Iron and Steel Corporation took over the property. Three small shafts and some prospect pits were sunk and four carloads of ore were shipped, which according to the smelter records, averaged 68 per cent iron. About one carload of ore was left on the dumps."*

Again we see simply a supposition that the Lower Beverley Lake deposit was used for the Lyndhurst Iron Works – a logical, but most certainly erroneous, conclusion since the authors of those reports were unaware of any other iron mining in the region.

Recently (2022), geologist Chris Brett has done some extensive new literature research into possible locations of the iron. Chris has revealed several new accounts including the 1831 Badderley account previously related in this article. In addition, Chris unearthed an article by W. Henderson, written in 1870, describing a trip he took in 1804. Henderson stopped in Gananoque on that trip and recounted that "in the Township of Bastard, I am told that there is a valuable iron-mine, where iron-works have been constructed and iron manufactured a few years ago; but for some unexplained cause it is now abandoned. The ironstone, in lumps of all sizes, constituted a moderate-sized hill, some half a mile long and eighty to one hundred feet high-something in the shape of an oval dish-cover -situated on a level plain isolated from all other elevations, consisting wholly of this ironstone, which, from the specimen shown to me, from color and weight and magnetic power, had the appearance of pure iron."

A couple of the big red flags on this tale is that it is a second hand story, the "I am told" part, and it was written 66 years after the fact. The "Township of Bastard" is most likely incorrect in relation to the early ore that was mined. The description of a large outcrop area of "ironstone", standing proud from a surrounding flatter landscape may hold some truth, but that could apply to several spots in the region. The "magnetic power" and "had the appearance of pure iron" doesn't fit a hematite in sandstone deposit, it's a better description of magnetite, which does occur in the region (i.e. Newboro Iron Mines).

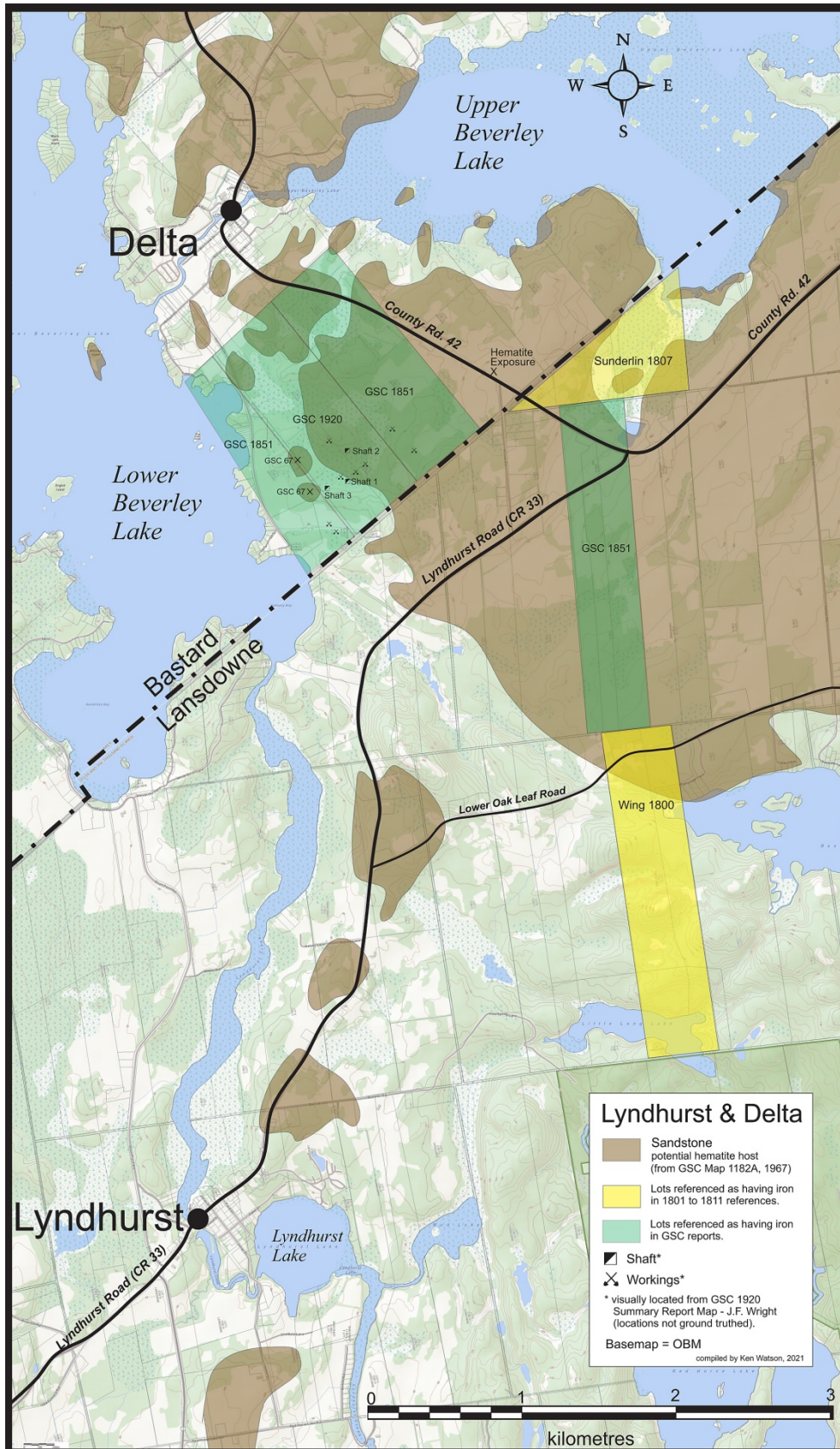
Another reference Chris has uncovered is a report by Joseph Bawden written in 1893. Bawden had a background in mining engineering and was quite familiar with mining in the region. He wrote ""The first furnace and forge built in Ontario at the beginning of this century, were supplied with ore from Lot 11, 12th Con. Rear of Lansdowne. That is a previously unmentioned location. However, as Chris notes, if he incorrectly used the 12th concession rather than the 13th, then it would match one of spots Sunderlin mentioned in 1807.

In the end, what we are left with today is the knowledge of several potential sources of iron in the vicinity of Lyndhurst with a likelihood that the Lower Beverley Lake iron deposits were not known and were not used to supply the furnaces at Lyndhurst.

- *Ken W. Watson, 2021*
- *(updated January 2022)*

To see the most up to date information on Chris Brett's exhaustive and detailed research into this topic, now a bit of a treasure hunt, check out his blog at:

fossilslanark.blogspot.com/2022/01/an-iron-ore-deposit-in-potsdam.html



MAP 3

Lyndhurst Area Sandstone

Locations of mapped sandstone units in the vicinity of Delta and Lyndhurst showing some of the iron deposit areas noted in period reports. Mapping is based on the detailed GSC geology map by Wynne-Edwards (GSC map 1182A).

Possible locations of iron mining and/or iron deposits have not been ground truthed.

Note that the base map shows the correct locations of the lot and concessions, unlike the early survey maps (i.e. Map 2 in this article).

Map compiled by Ken W. Watson.

Base Map = Ontario Base Mapping.

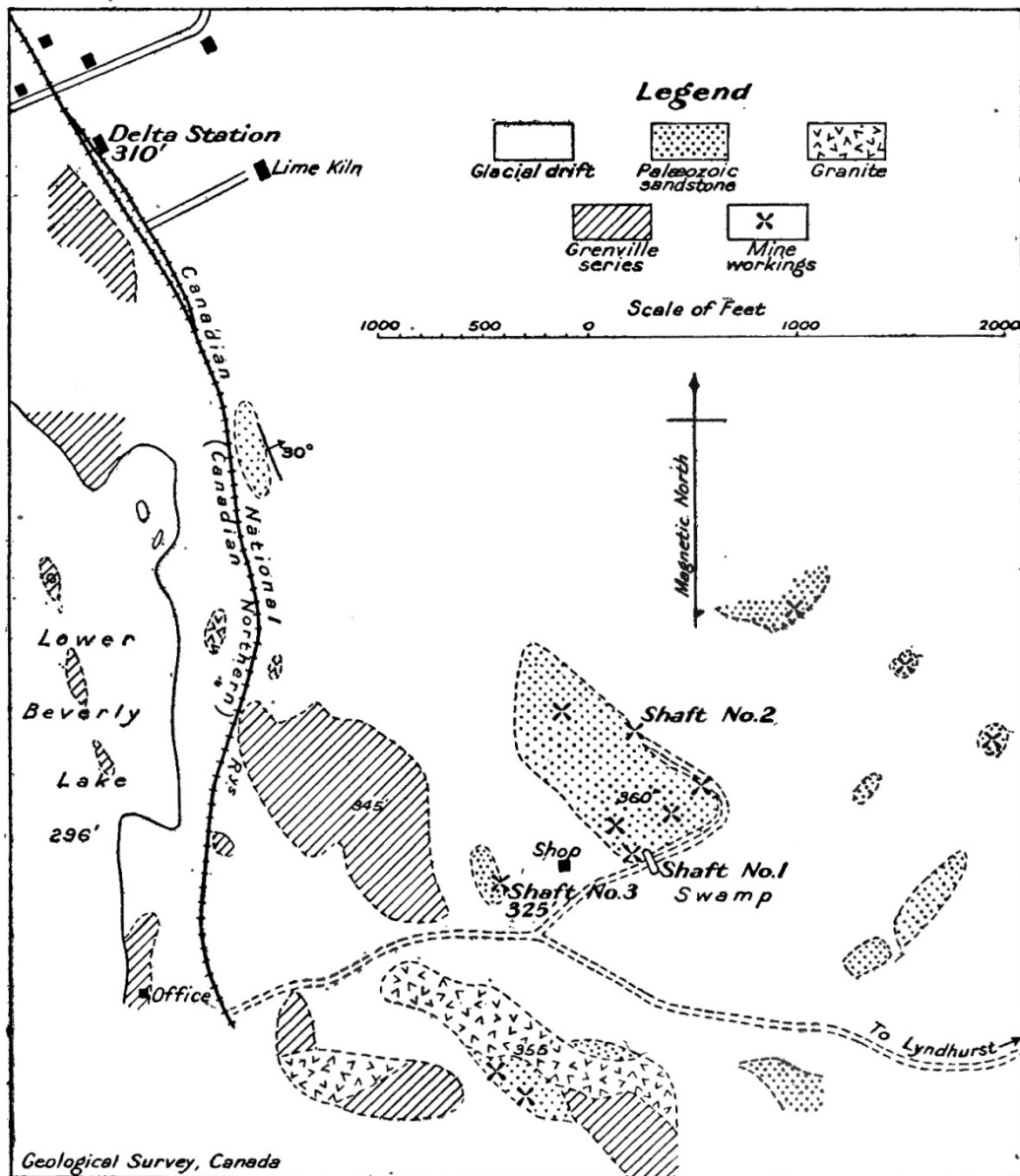


Figure 14. Diagram showing Delta hematite deposits, Leeds co., Ont.

MAP 4 - 1920 Map of the Lower Beverly Lake Iron Deposits

These deposits just south of Delta may have been discovered by Ira Schofield after the Lansdowne Iron Works burned down in 1811. Schofield, in 1815, claimed the "Discovery of (in all probability) a valuable mine of Iron Ore, situate on a water Communication to the falls on the Gananoque River. These deposits fit that description. In 1851, GSC geologist Alex Murray made the logical, but likely incorrect assumption that these were the deposits used to supply iron ore to the iron works at Lyndhurst. The deposits were worked in 1918 and the shafts were sunk in 1919 with a small amount of tonnage of ore, grading 68% iron, was extracted.

Map from "Brockville-Mallorytown map-area, Ontario," Geological Survey of Canada, Summary Report 1920 by J.F. Wright.

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