



# The Heritage Silver Trail

## Trail Guide

for the self-guided tour of the mining heritage  
on a National Historic Site.



The Cobalt Historical Society  
invites you to discover the trails, the history,  
the unique places in Cobalt and  
Coleman Township.



# Heritage Silver Trail

## Introduction

Cobalt's Heritage Silver Trail was first organized in 1985 with the support of the Ontario Ministry of Northern Development and Mines. It has been expanded year by year since that time with the help of government and private funding and many hours of volunteer service by members of the Cobalt Historical Society. Now it is three times its original size.

In 2002 the Federal Government designated the Cobalt Camp as a National Historic Site of Canada.

The trail provides access to important sites where you can learn about the exciting history of the silver rush in Cobalt more than one hundred years ago. Each site is enhanced by signs and illustrations.

This trail booklet is designed to provide the visitor with a background of historical and technical data to enable an understanding of the history of the Cobalt Camp and the significance of the various sites along the trail.

**Please note that only the officially numbered sites have been approved for public access.** We are in the process of redesigning the trail. You will find that there are gaps in the numbering of the trail sites in the text and on the map.

The Cobalt Historical Society is grateful for the ongoing generous support of Agnico Eagle. They understand the importance of mining heritage and grant us permission to enter on their property. It is important that you refrain from stepping off the paths or breaching the fence barriers. Please take out what you bring in with you, or use the trash bins where available.

## A Brief History Of The Cobalt Camp

The first people to discover silver in the Cobalt area were First Nations people at least 1,800 years ago. On the north shore of Rice Lake, southeast of Peterborough, Ontario, there lived a people archaeologists have designated as the Point Peninsula people. About 1,800 years ago, these people built large burial mounds at the site that has been called the Serpent Mounds due to the snakelike formations. In his 1972 book *Ontario Prehistory*, J. V. Wright relates that “Items made from Ohio pipe-stone, Ontario silver (from Cobalt, Ontario), and a distinctive Labrador quartzite appear in the graves.” From an excavation of the Serpent Mounds conducted by the Royal Ontario Museum in 1968 and 1969, it was found that the area was the scene of annual religious gatherings for several hundred years. These events probably attracted many visitors from other areas of Ontario and beyond. It is also apparent from the diverse contents of these mounds that these people had trading relationships with people throughout North America.

In his 1908 book *The Real Cobalt*, Anson Gard writes:

“Long years ago the Indians used to tell how they found their silver trinkets beneath the water. They would never say where the water lay. They had a superstition that misfortune would follow should they give its hiding place. From the casual description given by wandering bands, many think that Cobalt’s location was known to them, and doubtless from this lake’s borders came many of the trinkets.”

The Europeans who first came to this area had no knowledge of the silver here. In 1903 the Ontario Government financed the Temiskaming and Northern Ontario Railway in order to access the rich farm land of the Little Claybelt just north of New Liskeard. When it got to



*One example of wire silver*

Mileage 103, silver and cobalt veins were discovered in the rock and what followed was the greatest silver rush the world has ever seen.



*James H. McKinley*



*Ernest Darragh*

On August 7, 1903 two tie cutters, James McKinley and Ernest Darragh were looking for suitable timber to supply the T. & N. O. Railway. They found “glittering rocks” on the south shore of Long Lake (re-named Cobalt Lake). Both came from the farming community of Plantagenet, Ontario and had acquired some prospecting knowledge during a previous sojourn to the gold fields of California. They had learned to test nuggets by biting them with their teeth. When they tested the “glittering rocks” they knew they had found native silver. A search of nearby outcrops disclosed the vein from which the silver came.

After staking their claim they gathered up several bags of samples and proceeded by train to Ottawa and arranged for tests at a local laboratory. The results were not encouraging - only small amounts of bismuth were found in the samples. Still determined, the men took their samples and headed for Montreal and searched out Dr. Milton Hersey at McGill University. The assay laboratory at McGill was known for its expertise in evaluating ores of precious metals. It was a wise move; the samples assayed at 4,000 ounces of silver per ton.

McKinley and Darragh returned to Cobalt and filed their claim on August 14, 1903. In their haste they neglected to attach a map showing the location of the claim. This error caused a delay of several weeks and the claim was not officially recorded until October 6, 1903. This was almost three weeks after the Larose 'copper' find was registered. Later the same month another silver find would be recorded and this started a great silver rush.

Legend has it that Fred Larose, the railway blacksmith made the discovery in 1903 thanks to a pesky fox who was bothering him. He threw his hammer at the fox, missed, but struck a nearby rock outcrop. While retrieving his hammer he noticed fragments of a shiny coppery brown metallic mineral that was partially coated by greenish substance. Fred thought he had found copper ore. He subsequently showed the fragments to his boss, Duncan McMartin, and they each decided to stake a claim. They recorded their copper find on September 15, 1903. Later that month their claim was carefully examined by the provincial government geologist, Dr. Willet Green Miller, who immediately recognized the copper minerals as being nickeline and annabergite and also noticed abundant native silver that had been tarnished black.

A staking rush soon followed.



*Prospectors at the Cobalt train station preparing to go in the bush*

Tom Hebert, a young lumberjack from Hull, Quebec, was working for the J. R. Booth Lumber Company in the nearby Montreal River area. He learned of new job openings with the T. & N. O. Railway and decided to walk to Long Lake (Cobalt Lake) and inquire. While hiking along a high rocky ridge on the east side of the Lake he stumbled on some loose rock fragments. The pink and green colouring on the rocks attracted his attention. He placed several specimens in his packsack and proceeded northward to Haileybury and the Matabanick Hotel. He showed the rocks to hotel owner Arthur Ferland who called in some friends known for their prospecting expertise. The group immediately suspected cobalt and nickel minerals and along with Hebert formed a syndicate to stake claims. In all they staked claims totaling 846 acres. Thrilled at this overnight success, Tom Hebert accepted a lump sum for his share in the syndicate and returned to his home in Hull. Shortly thereafter the syndicate sold the claims to the Nipissing Mining Company of New York for \$250,000 in cash. The Nipissing would soon become the largest producer in the Cobalt Camp.

By 1905 the rush was in full bloom. People from around the world were heading here intending to reap their share of the riches. A few became fabulously wealthy. The town of Cobalt was officially incorporated in 1906 and by 1911 had a resident population of 12,000 people. Cobalt grew from a disorganized collection of tents on the side of a lake to a community with a great interest in sports and entertainment. Most mines had both hockey and baseball teams. The Cobalt Silver Kings were among the first members of the National Hockey Association, the forerunner to the NHL. Cobalt also had many theaters including the Lyric, the Bijoux, the Orpheum, the Grand, the Idle Hour and the Classic.

But the boom has been tempered by misfortunes. In 1906 a dynamite cache exploded and destroyed a large section of the town. A fire in 1909 left 3,000 residents homeless. In the spring of 1977 fire destroyed part of the north end of town known locally as "Frenchtown."

On April 6, 1907 during an outbreak of smallpox, Dr. William Henry Drummond died of a stroke. In addition to being a doctor, he was Vice President of the Drummond Mine, and during the early twentieth century, he was the most widely-read poet in the English-speaking world.

In early 1909 severe sanitation problems led to an epidemic of typhoid fever. Ten percent of the town was infected and 67 people died. In 1918 an outbreak of influenza took many more lives including soldiers returning from the Great War.

1904 was the start of serious production of silver and 206,875 troy ounces were produced. Silver production peaked in 1911 when 31,507,791 ounces were produced. By 1922 a total of 333,402,683 ounces of silver had been shipped. After 1922, the camp gradually declined, but during the Second World War a demand for cobalt, used to strengthen steel for weapons and munitions caused a resurrection of the camp and many mines and mills reopened to recover this formerly low value product. By 1961 silver prices rose once again and this caused a reexamination of some of the dormant properties. The last company to extract silver in any significant quantity from the mining properties of Cobalt was Agnico Eagle who ceased all major operations in the area in the late 1980s.

The discovery of silver in Cobalt remains the largest native silver find in North America and one of the richest silver discoveries in the world.



*Silver ore bagged for shipment in 1907 from the Nipissing Mine, Cobalt.*

*Just a sample of the wealth that came from the Cobalt mines.*

## Ontario's First Provincial Geologist

The success of the early silver finds and the resulting growth of the Cobalt Camp can be attributed to the knowledge and effort of Dr. Willet Green Miller, Ontario's first Provincial Geologist. Besides giving the community its name, Dr. Miller identified the important ore minerals and the structural geology of the area which exposed the great potential for finding additional ore zones. A bronze plaque on display in the downtown area (at Site 14) honours his great contribution.



*Dr. Willet Green Miller (1908)*

## Mining Methods In The Cobalt Camp

At the very beginning of the camp, prospectors found so much rich silver ore on the surface that all that was needed to start a mine were some hand tools and dynamite. A bit of blasting and then hand sorting the rich silver into bags was all that was necessary before shipping the ore out for refining. The income from these initial shipments allowed the mine owners to invest in essential equipment that was needed to develop the mine. As digging went deeper into the ground, there was a great need for power to run drills and help pull the enormous weight of rock that was being removed.

Initially, the mines supplied their own sources of power. This was extremely expensive and tended to slow the progress



of the mines. But by 1910 there were two major companies supplying the camp with electric power from generating stations on the Montreal and Matabitchuan Rivers.

In addition, the Cobalt Hydraulic Company built its famous Ragged Chutes compressed air plant, one of the largest of its kind in the world. This plant supplied compressed air to all the mines in Cobalt which greatly accelerated the development of the mines.

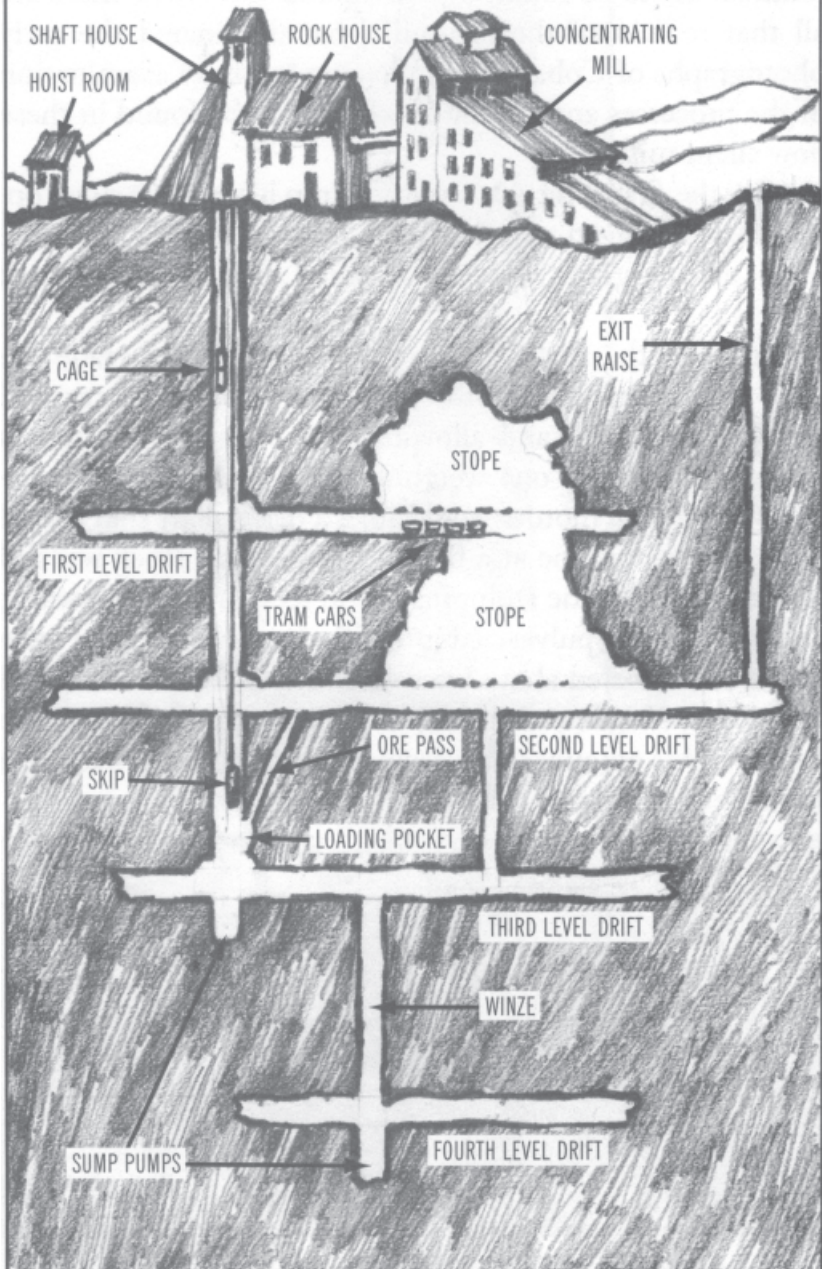
Miles of underground tunnels and caverns exist beneath the streets of Cobalt and the surrounding area. In the early days, the location of a shaft at any particular mine was based on what could be seen on the surface. The shaft was usually sunk on a vein and was followed underground by blasting horizontal openings called drifts. To search for other parallel veins, openings called cross-cuts were blasted out at right angles to the drifts.

Deeper down, sometimes a new shaft would be started. This opening was called a winze since it did not come to surface. Vertical passages were also blasted to access the silver, or, when taken to surface, to provide ventilation or an escape way.

All the large mines in Cobalt made use of narrow-gauge railway ore-cars to move the ore from underground to the shaft to be hoisted to surface. Some were pushed by hand and some were powered by compressed air or rechargeable batteries. Initially all ore was loaded by hand using shovels. Later, mines made use of mucking machines which were designed to mechanically load the ore into the cars.



## A TYPICAL SILVER MINE IN THE COBALT CAMP



## Milling Processes In The Cobalt Camp

A visitor to Cobalt will notice many enormous concrete foundations in and around the town. These are the ruins of the big mills that dominated the early scenery of Cobalt. By 1910 the area had 14 mills in operation and shipped high grade silver and mill concentrates to 9 different smelters, most of which were in Ontario. The following is a brief examination of the milling processes and the related machinery that was used in these now-silent mills.

For the first three years of the camp, high grade silver ore was simply sorted by hand, bagged and sent to an outside smelter for refining. Any low-grade material was discarded onto enormous rock dumps. In 1907, the first mills to process this lower grade ore were built. The first stage involved crushing the ore and then feeding that into stamp mills to pulverize it. A stamp mill consisted of a series of stamps made of iron, each weighing 1,300 pounds. Crushed ore was mixed with water and fed under the stamps which were raised and lowered about once every second. Some mills had as many as 80 stamps banging away. Engines or electric motors turned a drive shaft that raised the stamps, one at a time, in a long line. They made an incredible amount of noise and only on Sunday was there any relief from their incessant banging.

Next, the pulverized ore and water mixture was fed to a gravity concentrator such as jigs or shaking tables. These produced a silver concentrate which was shipped to a smelter to produce silver bars.

The tailings or waste from the stamp mills was dumped into a nearby lake or pond. Unfortunately, some very small particles of silver were dumped into the lake. These fragments were known as slimes, ore that was pulverized too finely to be recovered by using gravity. In later years, some of these slimes were reprocessed using more efficient methods to recover the lost silver.

Later on stamp mills were replaced by ball mills which consisted of large rotating metal cylindrical containers partly filled with steel balls. The balls pulverized the ore more efficiently than stamps.

To address the problem of silver lost in the slimes, cyanidation was first introduced successfully in 1909 by the O'Brien Mining Company. The waste from the gravity circuit was treated with a sodium cyanide solution that dissolved the silver. The silver was recovered from the solution as pure silver precipitate by adding zinc dust, or in later years, aluminum dust to the solution.

In 1911 the Nipissing Mill introduced a mercury treatment method in order to eliminate the need for shipping concentrate to a smelter. Mercury was introduced into a tube mill loaded with chert pebbles, some cyanide, and silver concentrate. The mercury amalgamated with about 97% the silver and the rest of the silver was dissolved by the cyanide. The mercury was drained off and heated to separate the silver from the mercury. The mercury was recovered and reused, and the silver was melted and poured into bars. The cyanide solution was treated as described earlier. However, because of the high cost of mercury and other reasons, this method was discontinued in 1915. About that time a completely different approach was perfected by mills in general—a method that didn't require cyanide or mercury.

Ground up ore from a ball mill was mixed with chemicals such as tar creosote, coal oil or pine oil and placed with water in floatation tanks. Air was pumped into the bottom of the tanks (cells) to make bubbles. Silver particles and other metallic mineral particles would stick to the bubbles and float to the top, and were then skimmed off by paddles. This floatation concentrate was then dried and sent to a smelter to be processed into silver bars. It is said that this method was discovered by a miner's wife when she noticed that silver dust from her husband's work clothes tended to stick to the froth at the top of her washing machine.

## Geology Of The Cobalt Camp

Just like the early prospector, visitors to the Cobalt area today are confronted with a bewildering array of rocks and rock formations. Cobalt has long been a destination for geologists and geology students due to the incredible variety of rock examples to be found in the area. The following description of area geology is purposely simplified and does not completely describe the actual complexities you will encounter in the field. It does explain the large, basic features of the Camp and what the miners would have encountered underground as they tunneled forward in search of silver.

The Cobalt Camp is located on the Canadian Shield, a wide area of Precambrian rock that is among the oldest rock formations in the world. The base of this rock is igneous meaning that it was formed by the cooling and crystallization of molten rock. On top of this is a layer of sedimentary rock called the Cobalt group and it is between 2.2 and 2.8 billion years old. About two billion years ago a surge of



*Loading silver bars for shipping.*

molten material from below forced its way into these rocks and formed a layer called the Nipissing Diabase. Diabase means that this layer of rock is dark-coloured and igneous.

This layer, or diabase sill as it is called, is about one thousand feet thick. When this Nipissing Diabase cooled off and crystallized, spaces were formed between it and the host rock. Heated liquid from below periodically flowed through these spaces and various minerals dissolved in this heated solution were gradually deposited to form the fabulous veins of silver of the Cobalt Camp.

To complicate matters, the ground was cracked or faulted periodically and the layers were displaced or sometimes folded. Erosion from the glaciers of the various ice ages also carved up the terrain bringing the lower levels of diabase and igneous rock to the surface in places.

In the early days of the Camp there was much speculation concerning the origin of the deposits of silver and the possible existence of a mother lode. The mother lode theory didn't pan out as there was found to be no silver at great depth in the camp. There is still uncertainty concerning the origin of the silver; some saying it came up with the diabase sill, others believing it originated in the Keewatin interflow sediments of the igneous base layer.



*Silver Bullion shipped by Nipissing Mining Co. Ltd., Cobalt, Ontario  
25th of February, 1914; 381 bars containing 453,213 oz. Troy,  
Value \$260,681.16 then, approx. 9 million Canadian dollars in 2019.*

# The Heritage Silver Trail

## Site 1: Townsite Mine #1 Shaft House

This property was originally owned by the Temiskaming and Northern Ontario Railway. In 1906 it was leased to the Cobalt Townsite Mining Company. Their Chief Engineer, W. S. Mitchell, designed this building as a “rockhouse”, a shaft house which includes crushing and sorting facilities.

This type of structure was common to the tin mining area of Cornwall, England and the copper mines of Northern Michigan. Several structures of this type were once landmarks in the Cobalt area.

In 1914 this property was acquired by Mining Corporation of Canada Limited. By 1922 it had produced 13,000,000 troy ounces of silver. At the front of this head frame, facing the road, you will see that the ground has subsided to form a large hole. This hole leads down to the underground workings and once extended back across the highway and required extensive repairs during the early 1990s. This subsidence was caused by early underground miners who removed too much of the ore under the overburden. When the remaining ore collapsed, the overburden sank into the underground workings forming a sinkhole.



*Townsite mine circa 1985*

## Site 2: The Glory Hole

“The Glory Hole” is an open pit connected to underground workings. Ore was mined from the sides of the pit and passed downward to a level below where it was loaded into cars and trammed to the nearby Townsite shaft for hoisting to the surface. Along the walls of the Glory Hole one gets a rare glimpse of a cross section of mine workings.

*An aerial view showing the Townsite headframe (2014) and the Glory Hole on the left. Aerial Photo (2014) by Dan Larocque, North Country Aerial Ltd.*





## Site 3: The Mckinley-Darragh Mill Site

This is an important site as this is where silver was first discovered. The mill was named for James McKinley and Ernest Darragh who found silver on this claim in August of 1903. It was the first mill to operate in the summer of 1907. Its capacity was only 15 tons per day but was gradually enlarged to 225 tons per day by the year 1913.

It was a typical “gravity mill” built on a hillside so that crushed ore would flow downward by gravity as it passed through the plant. Crushed first by a line of pounding stamps, the pulverized ore then went to jigs, ball mills, and gravity tables.

The ore came from eight shafts on the property and from the Savage Claim at Cart Lake (Site #5) by means of an aerial tramway. The mill ceased operations in 1927 having recovered more than 13,000,000 ounces of silver.

The Nipissing Central Railway, a streetcar service between Cobalt, Haileybury, and New Liskeard passed right beside the mill. This privately owned railway provided economical and comfortable service in the area until it closed in the 1930s.



## Site 4: The Little Silver Vein

This vein was discovered by a young lumberjack turned prospector in the autumn of 1903. Tom Hebert was a member of a prospecting syndicate formed by Arthur Ferland of Haileybury, and this vein was his third discovery. A few weeks later, the Ontario Provincial Geologist, Dr. Willet Green Miller examined this showing and described it as “a vein such as one reads of in textbooks, but which is rarely seen, being so clearly defined and so rich in contents.” The vein averaged eight inches in width with vugs and branches in the wall rock and with native silver lying on the rock ledges.

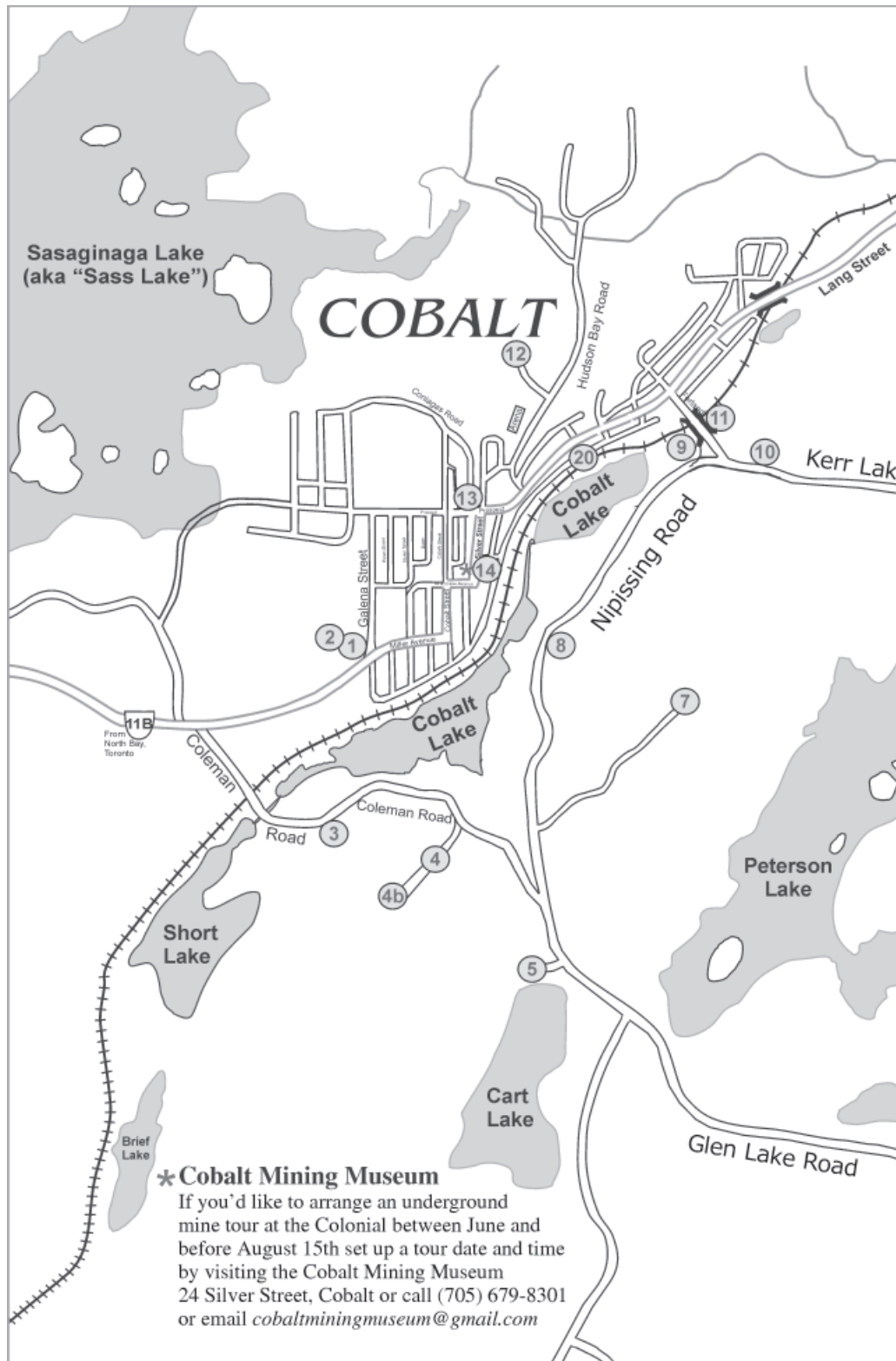
The Ferland Syndicate sold this claim and several adjoining claims to the Nipissing Mining Company of New York. The Little Silver Vein produced 700,000 ounces of silver. All of Nipissing Mining operations in the area ceased in 1932.

To the west of the Little Silver Vein is a trail that leads to the Nipissing 96 adit about 250 metres away. This adit was driven to facilitate mining of the 96 vein which outcropped on top of the cliff above the adit. Ice and snow that accumulates in the 96 vein open-cut during the winter produces a cool draft from the adit all summer long. Part way to the adit on the left is a short side trail that illustrates



the start of an adit. Also along this trail is an old growth white pine which is thought to be the largest in the Cobalt area.

*Little Silver Vein 1912*



Sasaginaga Lake  
(aka "Sass Lake")

# COBALT

★ **Cobalt Mining Museum**

If you'd like to arrange an underground mine tour at the Colonial between June and before August 15th set up a tour date and time by visiting the Cobalt Mining Museum 24 Silver Street, Cobalt or call (705) 679-8301 or email [cobaltminingmuseum@gmail.com](mailto:cobaltminingmuseum@gmail.com)



## Site 5: Cart Lake Tailings Lookout

This lookout provides a view of a tailings pond that was once Cart Lake. The tailings are mostly from the Silverfields Mill and the Summit Mine which used to be on the Silverfields Road, across the lake. This mill and shaft were operated by Teck Corporation from 1968 to 1983. The Summit shaft was originally part of the Savage claim and owned by the McKinley Darragh Savage Company. Ore from this shaft was shipped to the McKinley Darragh Mill (Site #3) via aerial tramway from 1907 to 1928.

Looking to the southwest you will see a rusty head frame on the south shore of Cart Lake. This property is the Provincial #2 shaft and was originally owned and operated by the Ontario government from 1906 to 1909. At this point the government recognized its limited expertise in mining and sold the property to the Cobalt Provincial Mining Company, and reaped the benefits of royalties on production that continued to 1924. The Provincial #2 Shaft reached a depth of 350 feet and produced 287,000 ounces of silver, 54,000 pounds of cobalt and 2,800 pounds of nickel.



*Across Cart Lake, Provincial head frame fenced off for safety reasons.*

## Site 6: Removed From Trail

## Site 7: Nipissing Hill Lookout

The lookout rests on the foundations of the Nipissing Company's low-grade mill. Built in 1921 at a cost of \$375,000, it was the largest mill in the camp. This mill was a classic gravity-type mill starting with stamps and passing downward to ball mills, jigs and tables. Much of the ore processed here came by aerial tramway from the Meyer shaft (Site #12), the top of which can be seen as you look west towards the train station.

Nipissing Hill, once covered with soil and trees, was swept-clean in 1914 by high pressure hydraulic hoses in order to expose silver bearing veins.

Between 1904 and 1932 the Nipissing Mining Company produced 93,000,000 ounces of silver and paid out 24.5 million dollars in dividends.



## Site 8: Vein 81 And The Cobalt Hill Vein

To the right of the sign you will see the remains of vein 81. This vein butts up against the Cobalt Hill Vein, which is marked by the large open cut to the left, and extended south-west under the road to the shore of Cobalt Lake. The vein between the road and Cobalt Lake is no longer visible as it has been filled in with mine waste rock. Vein 81 was a continuation of the Cobalt Lake Mining Company's No. 3 vein which was under Cobalt Lake.

Shaft 81 was sunk on Vein 81 just west of and close to Nipissing Road in order to access the vein deeper down. The exact location of this shaft is no longer visible. The amount of silver produced by Vein 81 is not known.

The Cobalt Hill Vein to the left of the sign was the first vein discovered on the Nipissing property and one of only 4 veins found in 1903 when prospecting began in the area. However unlike the other three veins, this one contained no silver but was rich in cobalt. Samples from this vein were found to contain as much as 22% cobalt. As a result of the discovery of this vein the Nipissing Mining Company was formed to mine cobalt. It was only later with the discovery of rich silver veins did it become a silver mining company and the largest producer in the area of both silver and cobalt.



## Site 9: Right Of Way Mine

This property was originally owned by the Temiskaming and Northern Ontario Railway as their mandate reserved the mineral rights for 50 feet on both sides of their track. On September 12th, 1906 an Ottawa consortium leased this strip of ground from Mileage 101 to 105 for the sum of \$50,000 and an annual royalty of 25%. This was the Right of Way Mining Company and eventually over 3,000,000 ounces of silver were produced.

The building housing the head frame and adjoining facilities is a classic “rockhouse” similar to the Townsite at Site #1. The ore sorted at this facility was sent to a custom mill near the south end of Cobalt Lake.



*Right-of-Way in 1910s and below as it stands today.*





## Site 10: Agnico Eagle Refinery And Office

Originally this was the site of the LaRose Mine plant where ore was sorted before going to a concentrator. From 1952 to 1958 Silver Miller Mines used the facility to process 300 tons of ore per day. The Silver Miller mines were run by Harry Miller who believed that the silver had not been completely mined out in Cobalt and proved his hunch by profitably reopening the LaRose, Brady Lake, and Lawson properties. A great demand for cobalt during the cold war made these ventures very profitable.

Between 1958 and 1998 the plant was operated intermittently by various companies. The refinery was demolished in 1998 and the office and assay labs remain but are now vacant.



*Larose Agnico era 1988*

## Site 11: The Larose Blacksmith Shop

This building was originally located at a lower elevation beside the railway. It was vulnerable to floods and tailings spills, so it was moved to this site.

The legend of Fred Larose, his hammer and the fox, persists to this day. Regardless of the circumstances of how the railroad company blacksmith discovered silver, Fred was happy to sell his interest to the Timmins brothers for the tidy sum of \$30,000 and he subsequently returned to Hull, Quebec. The Larose property eventually produced 17,500,000 ounces of silver and 200,000 pounds of cobalt.



## Site 12: Nipissing 73 And The Meyer Shaft

This shaft operated from 1907 to 1932 as part of the Nipissing Mining Company operations. Most of the ore mined here was considered in the low-grade category and was transported to Nipissing's low-grade mill (Site #7) by way of an aerial tramway.

Approximately 13,000,000 ounces of silver was recovered from this property.



## Site 13: The Coniagas #4 Shaft House

The Coniagas #4 shaft was sunk in 1914 to a depth of 350 feet and operated until 1924. During its operating years 1904 to 1924 the Coniagas Mine produced 32,500,000 ounces of silver. Shortly after its closing, the shaft house was purchased the Giachino family and was converted to a grocery and meat market. The cool updraft from the shaft served as an excellent meat cooler for the butcher shop. In the intervening years the building has housed a wide variety of retail enterprises, some also making use of the shaft as their main cooling unit. The shaft has been filled in by Agnico Eagle in

November 2015 for safety reasons.



*Coniagas Shaft house #4 as it appears today. Note the stairs up the hill connecting Prospect Avenue replacing the roadway that used to climb up that same hill.*



*Coniagas Shaft house #4 in full operation while the Prince of Wales tours Cobalt 1919.*

## Site 14: The Pan Silver Head Frame Monument

This is a monument and not a working mine site. The head frame was originally mounted on the Harrison-Hibbert shaft in North Cobalt and was functional until 1978. The owner, Pan Silver, donated the structure to the Heritage Silver Trail Committee and in 1998 it was dismantled and re-located to this site, and reconstructed as a visitor attraction.

Inside is the office of the Cobalt Historical Society. Around the building is a display of mining artifacts with accompanying signs explaining how the various items were used. This is well worth a look as much of the significance of the sites on the Heritage Silver Trail become clearer when there is an understanding of the tools and methods of mining.



**Site 15:****The Northern Customs Concentrator**

Built in 1912 and known locally as “The 104 Mill” because of its location at Mileage 104 on the T. & N. O. Railway, this mill processed ores from several area mines on a fee-basis. It operated until 1956 when it was destroyed by fire. It had a long line of stamps that could be heard for miles, and was the last mill to use stamps.



*104 Mill in the early years.*



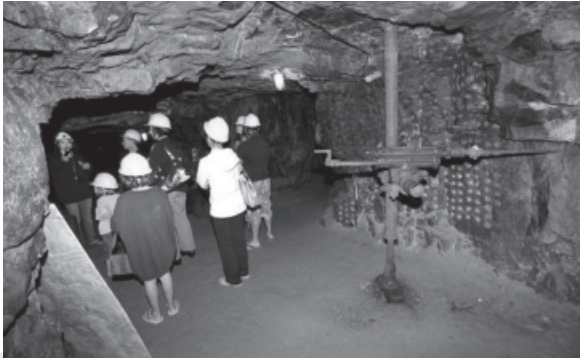
*104 Mill after the 1956 fire revealing the remains of the stamps.*

## Site 16: The Colonial Mine Site

Discovered in 1904 by local prospectors Murdy McLeod and George Glendenning, this was the first sign of silver outside the immediate Cobalt area. The claim was sold to two capitalists from North Bay who in turn sold it to the Colonial Mining Company Limited from the State of Maine.

The site was developed by several horizontal adits, a 967-foot vertical shaft and a mill. One of the adits is currently used for guided underground tours, available at the Cobalt Mining Museum. (Contact them between June and before August 15th at 24 Silver Street or call 705-679-8301 or email [cobaltminingmuseum@gmail.com](mailto:cobaltminingmuseum@gmail.com)) These tours are extremely valuable as they provide an opportunity to experience working conditions as they were in a Cobalt mine over one hundred years ago.

*Part of  
the Tour*



Sites 17, 18 & 19 have been removed from the trail.

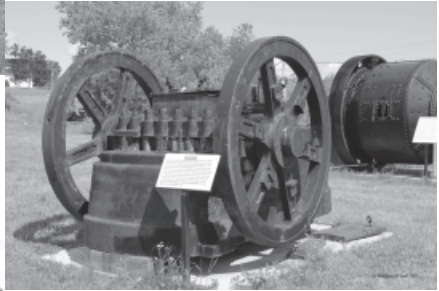
## Site 20: The Jack Koza Park

This Park is named for Jack Koza who operated a used-metal facility on this site for many years. He was also instrumental in starting up the Cobalt Mining Museum in the early 1960s.

The site contains an extensive display of mining and milling equipment with excellent and comprehensive signage that explains exactly how tools and machinery were used.



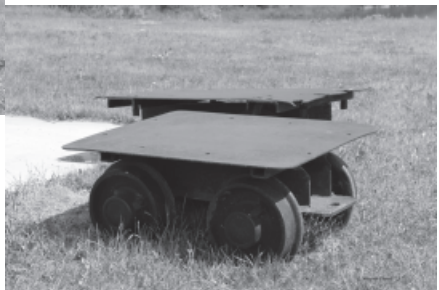
*Expansion Joint from the Ragged Chutes Air Plant system*



*Jaw crusher*



*Drill steel car*



*Flat car*



## Glossary Of Commonly Used Mining Terms

**Adit:** A passage driven horizontally into the side of a hill or cliff.

**Assay:** A chemical/metallurgical test to determine the amount of valuable metal in an ore sample.

**Back:** The roof or ceiling of an underground passage.

**Ball Mill:** A tube-type mill in which grinding is done by tumbling steel balls.

**Banjo:** A short-handled, round mouth shovel used by a miner to shovel blasted rock (muck).

**Base Metal:** Any non-precious and non-ferrous metal.

**Bucket:** A barrel-shaped vessel used for hoisting ore waste or water.

**Cage:** A conveyance somewhat like an elevator used to transport workers and equipment in a mine shaft.

**Chute:** A timbered opening with a gate from which broken ore is drawn.

**Claim:** A portion of land or lake staked by a prospector or mining company. In the Province of Ontario, the common size is 40 acres (1320' x 1320') or 16 hectares (400 m x 400 m).

**Country Rock:** The mass of rock surrounding a vein or ore body; also called host rock.

**Crosscut:** A horizontal underground passage that intersects a vein or ore body.

**Cyanide:** A toxic chemical compound used to dissolve gold or silver.

**Deck:** The surface area around a shaft from which workers and materials are loaded in the cage.

**Drift:** An underground passage that follows a vein or ore zone.

**Dry:** A building or room where miners change their work clothes.

**Dump:** A pile of broken ore or waste rock on surface.

**Fault:** A fracture in the earth's crust along which movement or displacement has occurred.

**Gangue:** Non-metallic minerals found with ore-bearing minerals that have no value.

**Glory Hole:** An open pit connected to underground workings.

**Gossan:** A rusty rock formed by the weathering of iron bearing minerals in the rock.

**Headframe:** A framed structure erected over a shaft to carry the sheaves (pulleys) on which the hoisting cables run.

**High Grade:** Rich ore as opposed to low grade ore.

**Jig:** A device used to concentrate ground up ore by pulsing water.

**Lode:** An ore body or mineral deposit in solid rock as opposed to a placer.

**Muck:** Ore or waste rock that has been broken by blasting.

**Mucker:** The miner that loads the broken rock into cars or buckets.

**Mucking Machine:** A mechanical loader to handle broken rock.

**Open Stope:** Mine workings (stopes) that have reached through to surface.

**Ore:** Rock containing valuable minerals which may be mined and recovered at a profit.

**Ore Body:** A body of ore minerals.

**Overburden:** The layer of material that lies over the bedrock

**Placer:** An alluvial deposit of sand and gravel containing valuable metals such as gold.

**Portal:** The entrance to a tunnel or adit.

**Ramp:** An downward sloping passageway.

**Salting:** The act of adding metals or minerals to samples or showings to enhance their value.

**Scaling:** The removal loose rocks from overhead or walls of a mine opening.

**Shaft:** An excavation (vertical or inclined) to find and mine ore. It is used to transport workers and materials and to ventilate underground workings.

**Shaft House:** A building over a shaft formed by enclosing the head frame. The shaft house included facilities to receive the ore from the mine. When crushing and sorting facilities are included, the building is called a Rock House.

**Shaking Table:** A device used to concentrate ground up ore by utilizing a shaking motion.

**Slimes:** A local term for tailings.

**Smelting:** The process of reducing metals from their ores by fusion, usually in large furnaces.

**Spider:** An iron spoke with a loop to hold a candle; miners wore them on their hats or stuck them into nearby timbers in the workplace.

**Stamp Mill:** An apparatus used in a mill to crush rock by descending pestles (stamps).

**Stope:** An underground excavation from which ore is extracted either above or below a level in a series of steps.

**Tailings:** Finely ground up rock left over after the minerals of interest have been removed. It has the consistency of sand or mud.

**Tram:** To haul or push cars containing ore or waste rock.  
A crack or fissure filled with minerals.

**Vug:** A cavity in rock, often lined with mineral crystals.

**Wall Rock:** Rock on either side of a vein or ore body.

## Some Of The Minerals Commonly Found With Silver In The Cobalt Area

**Acanthite:** Silver sulphide. Lead grey in colour with a black streak, soft and easily cut by a knife

**Annabergite:** (nickel bloom): Hydrous nickel arsenate found as earthy apple-green coatings or masses on nickel bearing rocks as a result of the weathering of nickel bearing minerals.

**Argentite:** Silver sulphide. This is an old term for what is now called acanthite.

**Arsenopyrite:** Iron arsenic sulphide. A grey silvery metallic mineral commonly found as small shiny crystals with cobalt arsenides.

**Bismuth:** Tin white metallic luster. Tarnishes pink to yellow and breaks easily into shiny flat surfaces.

**Calcite:** Calcium carbonate. A white, clear or grayish gangue mineral found in veins with silver and cobalt minerals. Often confused with dolomite.

**Chalcopyrite:** Copper iron sulphide. Brass yellow, metallic luster. Sometimes called “fools gold”. It is always tarnished bright blue when found in contact with native silver.

**Cobaltite:** Cobalt arsenic sulphide. Steel grey metallic luster. Intimately mixed with other silver-coloured minerals, rarely found by itself.

**Dolomite:** Calcium magnesium carbonate. Pale pinkish-coloured gangue mineral commonly found with silver. Often confused with calcite.

**Erythrite** (cobalt bloom): Hydrous cobalt arsenate. Pink earthy coatings on cobalt-bearing rocks resulting from the weathering of cobalt minerals.

**Nickeline:** Nickel arsenide, copper red with a brownish tint and metallic luster.

**Nickelite:** Nickel arsenide, an old term for what is now called nickeline.

**Pyragyrite:** Proustite (ruby silver). Silver antimony sulphide and silver arsenic sulphide. Grey black to red, metallic luster with a ruby red streak.

**Pyrite:** Iron disulphide. Brass yellow with a metallic luster similar to chalcopyrite but unlike chalcopyrite cannot be scratched by a knife.

**Pyrrhotite:** Iron sulphide. Grey metallic mineral to which a magnet will stick; quickly rusts on exposure to weather.

**Quartz:** Silicon dioxide. Clear to milky white, hard.

**Rammelsbergite:** Nickel diarsenide. The most common silver grey metallic nickel mineral found in the area. Easily confused with cobalt arsenides.

**Safflorite:** Cobalt diarsenide. Tin white, metallic luster. Safflorite together with skutterudite (smaltite) and cobaltite make up the bulk of the silver-coloured minerals found with silver.

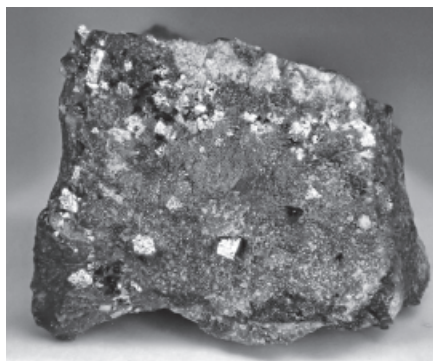
**Skutterudite:** Cobalt triarsenide. Tin-white to lead grey, metallic lustre. Commonly observed as tiny cubes less than 2mm in rock surrounding silver and/or cobalt veins. It is also commonly mixed with other arsenides in the ore veins.

**Smaltite:** An obsolete term for Skutterudite.

We invite you to join the Cobalt Historical Society and continue your interest in the history of the Cobalt Mining Camp. We have members from many regions in Canada, sharing only the desire to continue to uncover the unique place in history that Cobalt occupies. We value your support.

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*Skutterudite crystals in meta-conglomerate rock from near the Nipissing 81 Vein.*

## The Cobalt Song

You may talk about your cities and all the towns you know  
With trolley cars and pavements hard and theatres where you go,  
You can have your little auto and carriages so fine—  
But it's hobnail boots and a flannel shirt in Cobalt town for mine.

### *Chorus:*

For we'll sing a little song of Cobalt, if you don't live there it's your fault  
Oh you Cobalt, where the big gin rickies flow,  
Where all the silver comes from, and you'll live a life and then some  
Oh you Cobalt, you're the best old town I know.

Old Porcupine is a muskeg, Elk Lake a fire trap,  
New Liskeard's just a country town and Haileybury's just come back.  
You can buy the whole of Latchford for a nickel or a dime—  
But it's hobnail boots and a flannel shirt in Cobalt town for mine.

Elk Lake was only a bubble, Gowganda had a few,  
Old Larder Lake was just a fake, Lorraine was a whisper too,  
Swastika is a rockpile, hot air is Porcupine—  
But it's hobnail boots and a flannel shirt in Cobalt town for mine.

We've got the only Lang Street; there's blind pigs everywhere  
Old Cobalt Lake's a dirty place, there's mud all over the Square.  
We've got the darndest railroad, that never runs on time—  
But it's hobnail boots and a flannel shirt in Cobalt town for mine.

We've bet our dough on hockey and swore till the air was blue,  
The Cobalt stocks have emptied our socks with the dividends cut in two.,  
They don't get any of our money in darned old Porcupine—  
But it's hobnail boots and a flannel shirt in Cobalt town for mine.

*Written in 1910 by L. F. Steenman, to an arrangement of Toronto Town by R. L. MacAdam. ©Kiwanis Club of Cobalt. Reproduced with the kind permission of the Kiwanis Club of Cobalt.*

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