



SUBMITTED PHOTO

Deposits of cyanide are found on a beach above a farming valley near the Furtei mine site in Sardinia, Italy.

Speculation gone bad

Augusta directors had Sardinian mine pollution experience

EDITOR'S NOTE: Wick Communications was provided background information on the Sargold Resource-SGM Furtei Mine, located on the Italian island and autonomous region of Sardinia, in late 2011 by opponents to the controversial proposed Rosemont copper mine in the Santa Rita Mountains of southeastern Arizona. Wick Environmental reporter Richard Kamp led an investigation into the Furtei mine history to understand what relationship it might have to Rosemont.

Journalist Monica Caboi worked at the press office of the Regional Council of Sardinia until October 2011 and is now working from Bologna, Italy. Caboi contacted officials and others to examine the mine and its environmental impacts from a Sardinian perspective.

Kamp has examined environmental problems inherited by Sargold and how they were addressed. Kamp and Caboi together looked at what the inhabitants of the site and the Sardinian government have faced since December 2008.

Introduction

Augusta Resource has never operated a mine. Its proposed Rosemont copper mine southeast of Tucson is a speculative venture. It will succeed or fail based on the resources put into it, the economics of the industry, whether the project can comply with U.S. environmental and other laws, and the outcome of impending elections.

However, six out of seven AR board members were speculating on another mine in Sardinia, Italy at the time that the Rosemont property was purchased. The company that they directed was called Sargold Resource, owners of 90 percent of the Sardinian Furtei SGM mine.

The Furtei mine is a cautionary tale of speculation gone bad that covers the period 2003-2008 and is still impacting many lives. Sargold Resource investors bought 90 percent of a closed and polluting mine; with the remaining 10 percent owned by the Region of Sardinia. The public-private company was called "SGM".

Sargold news releases described prospective riches at Furtei, but the mine never made a profit.

Sargold merged with a company called Buffalo Gold in late 2007. Buffalo Gold permanently abandoned the mine — overnight — just 14 months later, leaving a toxic mess behind and the challenge of maintenance left to unpaid ex-miners and residents of southern Sardinia.

What does this record do with the Rosemont mine, proposed thousands of miles away in the mountains of Southeast Arizona?

Sargold's history is a window into the experience of a majority of Augusta corporate directors at the time they began the Rosemont project. For reasons they do not discuss, these directors were unable to take adequate precautions to protect the environment, and their neighbors in Sardinia, when they tried to make a go of mining an already polluted site. The Furtei mine provides a de-

COMMENTARY

AN ANALYSIS BY DICK KAMP, WICK ENVIRONMENTAL, WITH MONICA CABOI

pressing vision of what can happen to the community left behind when speculation on an uncertain investment with inadequate resources fails, and investors abandon the project.

The mine site was left without financial assurance to prevent or remediate pollution. The regional government did not have immediate capacity to assume the cost of the abandoned mine or restore all the impact of its development. At this writing, it is uncertain what the long range plan will be to clean up the site.

People in the valley below the Furtei mine, a lush landscape that generates an economy from agriculture for its residents, are frightened of losing their livelihood and quality of life from toxic mine discharges. Journalist Monica Caboi was given documents dated in 2011 from Sandro Tarrozi of Italian government's Regional Industry Department, stating that "... as a result of the negative experience with SGM / Buffalo Gold, the Sardinian Region has assumed an attitude of mistrust and is closed toward other international companies that have expressed interest in the mineral potential of the region."

Vancouver

Several speculative mining companies today known as the Augusta Group operate from the same office as Augusta Resource at 837 West Hastings St., Suite 400, Vancouver, British Columbia. These companies have some common directors; and all of the companies are chaired by Richard Warke.

These companies include Wildcat Silver, currently exploring for silver in the Patagonia Mountains of Southeast Arizona; Riva Gold had exploratory holdings in Guayana; Ventana Gold was a past Colombian exploration venture that worried local residents, but made shareholders money when it sold in 2011.

From 2003 to 2007, another resident at 837 West was Sargold Resources.

In April, 2005, the Augusta board of directors approved signing an agreement to purchase the Rosemont Ranch, and named Gil Clausen as the chief executive officer. Augusta formally proposed the Rosemont mine in 2006.

During this time, six of the seven board members were attempting to reopen the polluted Furtei minesite in the autonomous region and island of Sardinia, Italy, which had been shutdown in 2002. Clausen joined Sargold's board in July, 2005.

Augusta Resource, is and has always been, legally separate from Sargold, despite shared board members and a common board chairman, Warke.

Public bulletins and Toronto Stock Exchange reports from Sargold provide a limited basis for understanding investor motivations.

TIMELINE: SARDINIA'S FURTEI MINE AND THE SARGOLD RESOURCE INVESTMENT

1997 Australian company Gemco, in partnership with the Sardinian government, opens the SGM Furtei open pit mine gold-copper mine. The government owned 10 percent of the mine while it operated until 2002 and until bankruptcy was declared in 2009.

2002 Gemco pulls out of Furtei and SGM closes. There is no reclamation or cleanup of mine site in spite of vague agreement.

2002-4 Canadian investor Medoro picks up Gemco's 90 percent share of SGM concession. Medoro sells their interest in Furtei to Vancouver's Sargold Resource in 2003-4 along with interests in two other concessions. Sargold purchases on condition of cleanup, but no bond required.

2004-7 Sargold attempts to get Furtei operational as a mine with new ore; processes old ore in 2007 and fails to get any exploration or mining going at other concessions.

2005-7 Augusta Resource, with six out of seven board of directors in common with Sargold, purchases Rosemont property and announces initial mine plan.

Oct. 2007 Sargold board merges Sargold with Buffalo Gold in exchange for one quarter interest and Sargold board resigns. Properties include the SGM Furtei mine and two Sardinian concessions.

Dec. 2008 Buffalo Gold walks away from Furtei mine without notice.

2009-12 State of emergency declared after spring 2009 floods and pollution fears, and Sardinian government maintains site, beginning remediation of heavy metals and cyanide at an initial cost of \$25 million by 2012.



Finding the why

This analysis sought to get the "why" behind decision-making from the board members involved in Rosemont and other projects.

"With respect, as you noted, Augusta has never had any involvement with Sargold Resource Corp. In October 2007 Sargold was acquired by Buffalo Gold Ltd. Therefore, the members of Augusta management and board will not be engaging with you in any discussion regarding Sargold," said Augusta Resource VP Letitia Cornacchia.

Augusta CEO Clausen said, "Augusta was never an investor in Sargold. The Companies were distinct and separate. Sargold was acquired by Buffalo Gold, in 2007. The 2008 financial crisis hit many companies in a devastating way. I surmise that Buffalo Gold was one of those. Buffalo Gold acquired Sargold in mid 2007, the Sargold board was disbanded immediately and I resigned and have not followed their situation since."

Furtei

The southern Italian Region of Sardinia is an island, closer to Africa than Italy, surrounded by the Mediterranean to the west and Tyrrhenian sea to the east.

Sardinia has about 1.7 million inhabitants today. The little town/"commune" of Furtei (pop. 1,760) is in the south-central province (akin to a county) of Medio Campidano, surrounded by rolling hills and farmland.

About 100,000 inhabitants live downstream of and below Furtei, largely on land irrigated in part from the Sa Forada dam adjacent to Furtei pits and tailings ponds. Irrigation is critical to farming in the area since historical annual rainfall averages only 20 inches per year, generally falling from October to May.

Chemical and pesticide residues are a greater concern in Italy than in the United States. Farmers are concerned about potential mine pollution of surface waters and the Sa Forada dam. During actual mining, farmers and authorities were also concerned with impacts

from blasting on the dam and a hydroelectric plant located there.

However, many residents cannot make a living as farmers, so a 1993 announcement of a new mine at Furtei was cautiously regarded as good news. An Australian firm, Gemco, announced it would be the majority investor in the Sardinia Gold Mines (SGM) joint venture with Progemisa, an arm of the Sardinia regional government. During Furtei mine operations from 1997-2002, Gemco owned 90 percent; Sardinia 10 percent. That ownership ratio continued after the mine closed.

Furtei had been a small-scale non-metal mining town in the 1930s when kaolin was extracted for aluminum production. Some residents voiced concerns about the impact of mining on the environment, but the promise of local jobs was preeminent, says Furtei mayor Luciano Cau.

The Mine

Rosa Cidu, geochemist at the University of Cagliari in Cagliari, Italy, had been analyzing geology and sampling water and soil for the region at Furtei since the late 1980s. In 1995, Cidu and colleagues wrote, "... acid drainage of metals (aluminum, iron, manganese, zinc, copper and arsenic) in solution were observed in waters leaching the mineral deposit. An environmental impact study is urgently called for since the waste material ... is expected to enhance acidification and metal-releasing processes."

Cidu was ignored, although she continued to monitor

water quality at the Furtei mine for SGM. Prior to the 1997 mine opening, Gemco/SGM jointly signed a Furtei closure "restoration" agreement that has been called "non-enforceable" by Sardinian officials and the mayor of Furtei.

Between 1997-2002, Gemco/SGM cyanide-leached oxide ore from four pits to produce 4.1 metric tons of gold and 6.19 metric tons of silver. This made it a small to moderate scale mine. As the pits were exhausted, Furtei also produced 1,650 metric tons of copper from concentrate mined from a sulfide ore body laden with contaminants.

2002 closure

Gemco sold its 90 percent interest to Medoro in 2002 following mine closure.

The 2002 closure left an unreclaimed cyanide tailings pond, four open pits that were filling with acidic water and waste rock leaching acidic metal pollution to the surrounding environment, according to documents from IGEA, an environmental arm of the regional government.

In a post-closure November 2003, document that accompanied the offer to sell the Furtei mine to Sargold, Medoro reported "the copper-gold concentrate ... contained high values of arsenic, mercury, antimony, bismuth and tellurium ... very few smelters would accept such a concentrate."

The report discussed possible extremely small amounts of underground sulphide

MINE:

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ores “lying beneath the exhausted surface pits (that are) marginally economic and dependent upon potential local government grants.” There could be no expansion of pit mining because they were adjacent to the Sa Forada Dam.

The Medoro report omitted mention of any specific environmental problems even though, shortly after operations began, the tailings dam had cracked along the side leaking cyanide and metal contaminated untreated waters into a shallow basin below the impoundment. To avoid discharging pollution into the valley below or into groundwater, a recirculating pump sent polluted water back into the tailings dam. The pump continued running for more than 10 years, until Buffalo Gold walked away in December, 2008, leaving no funds to maintain the pump.

Sargold takes over

Sargold Resource Corporation formed in 2003 out of two older companies headed, with Sargold, by current Augusta Chairman Warke.

In June 2003, Sargold purchased half of Medoro's Furtei-SGM ownership and in 2004 the remaining half.

Sargold was now 90 percent owner of SGM with the Regional Sardinia government still holding 10 percent. Additionally, Sargold had an option to invest in two Sardinian mine concessions. Sargold press releases had touted dramatic gold resources at the mine, as well as at the concessions, for a year.

Sargold saw the two concessions as its main potential mining resource although both were locally controversial. The Osilo site was part of the 2004 purchase and is located in the north of Sardinia, in the wealthy province of Sassari.

In 2006 Sargold picked up full ownership of the second Monte Ollasteddu concession from Medoro when it renegotiated the purchase price down to a balance of a million euros.

Sardinian authorities had informed Sargold during initial negotiations that cleanup of Furtei was top priority before other concessions could be mined — if the company could overcome opposition to mining at the two sites. In June, 2005, the newspaper La Nuova Sardegna quoted Sardinian President Renato Soru as telling Sargold and GSM that he wanted to see the Furtei mine “completely cleaned up” before any other concessions could be granted to the company.

Sargold began the process of Furtei cleanup with backhoe labor; entirely filling in one and partially filling in a second of the four pits at the Furtei mine, then it halted efforts.

Mine opposition never ceased at the other concessions. At Osilo, one-third of the concession was prohibited from exploration because a bottled water mineral springs concession claimed that mining exploration had impacted production. The Sassari provincial government then banned trial underground mining. By February 2007, the local “commune” or town had prohibited drilling to explore at the site.

Unlike in the United States, Italian law allows local and provincial governments to prohibit mining to preserve cultural or environmental resources.

Meanwhile, the Monte Ollasteddu mining site was denied a drilling permit by the forestry department and an air force base refused entry to the company.

Medoro told its shareholders, on selling the Monte Ollasteddu concession to Sargold in 2006, that it “was a promising property; ultimately the difficulty in operating in Sardinia was too great to promise any significant return to the company.”

Sargold, ever confident in press releases and official management reports that “community engagement” would succeed, had failed to get anywhere with the two concessions by the time it merged with Buffalo Gold



PROVINCE OF MEDIO CAMPODONICO

Irrigation canal from the Sa Forada dam that is located against the mining pits.

in October 2007.

Furtei struggles to mine

By late 2006, Sargold/SGM determined it was practical to cyanide leach old ore that was still sitting on the pad. This material was to provide the only ore “mined” after three years of restoring existing equipment, filling in pits, and exploration drilling for more gold, silver and copper.

From March through September 2007, while still issuing encouraging reports of exploration for deposits at Furtei, Sargold and SGM produced 1,300 ounces of gold, providing income for the first time.

By early 2007, unsettling 2006 annual financial reports were issued by Sargold. Sargold had failed to pay taxes related to Furtei, its concessions, and a 2003 purchase of a mine owned by Warke's family. It also faced litigation for not paying local and regional contractors for over six months. The company had borrowed over \$900,000 from the Sardinian government and had neither repaid the loan nor used it for the mining development purposes for which it was issued.

A company audit resulted in payment of the back taxes, and left the company in greater debt. The Furtei mine was also being sued by unpaid Sardinian contractors, according to SGM liquidator Franco Manca.

There was no clear plan in Sargold public documents that explained where mining could expand, although the limitations of surface mining indicated that new shafts would need to be drilled underground.

Sargold-Buffalo Merger and Abandonment

In October, 2007, Sargold and another Vancouver speculator, Buffalo Gold, merged. Sargold board members gained 25 percent of the stock ownership of Buffalo Gold, but no longer retained board positions, and Sargold closed shop at 837 W Hastings Street, Suite 400 (where Augusta resides today).

Buffalo Gold owned the Furtei mine and the two locally-opposed and undeveloped mining concessions.

During 2008, Buffalo Gold scraped a small amount of gold-copper ore from the bottom of pits and sold the concentrate. Like Sargold, it failed economically at Furtei and made no progress with other concessions.

On Dec. 8, 2008, Buffalo Gold walked away from the Furtei mine without official notice to workers, residents or their Sardinian partner, according to Sandro Tarozzi of the Sardinian Regional Industrial Authority. The same scenario was presented in several articles between 2008 and 2010 in the Sardinian newspaper, Nuova Sardegna.

From that date to the present, Furtei ceased being a polluted minesite with an uncertain future and became a

source of fear to farmers in the valley below it.

Speculation Ends; Fear Begins

After Buffalo left, the necessity of pumping cyanide runoff from the tailings dam and the lack of maintenance left only local volunteer labor to protect neighbors from pollution. In early February and March 2009 heavy rains left the cyanide catchment basin rising as the pump failed.

The newspaper Nuovo Sardegna described an April 2009, scene in which rains were threatening to overflow the Is Concas pit and the only defense, the ancient Well 25 pump, broke.

Former workers were staging a demonstration in torrential rains 40 miles south of the mine in the regional capital of Cagliari demanding to be employed in environmental reclamation and restoration projects at Furtei.

According to the article, hearing of the pump failure, some of the former maintenance employees left the demonstration in a panic. They managed to repair the pump, avoiding a potential disaster of a toxic discharge entering the Campidano River below that would irrigate fields and carry metals and cyanide discharges south toward the city of Cagliari.

On April 29, 2009, a public report by SGM's bankruptcy trustee “Report of an emergency situation” said, “due to the abundant rainfall in recent days the water level in the yard of ‘Is Concas pit’ is at the limit...” Ex-SGM mine Supervisor Sandro Broi, then maintaining the mine site with other ex-workers, stated, “Please note that within the area-plant there's a significant amount of toxic gas, such as sodium cyanide, which needs to be monitored and closed to contact.”

A Regional state of emergency was declared in July, 2009 and over a million euros were allocated for maintenance, securing the mine site and to develop site characterization. The rains and potential toxic floods continued into mid-2010 according to environmental documents from the Regional Society for Environmental Intervention (IGEA).

Environmental decontamination at the Furtei site was to be coordinated by IGEA, an arm of the regional authority that addresses mining and pollution problems in Sardinia. In 2010, 4.5 million euros were allocated to be used by 2012.

IGEA characterization of the site was approved in 2011, and 15 million euros for four years was allocated for: “design and construction of a water treatment plant from the tailings basin to end the perennial threat of continually recirculating the poisonous water from the F-25 pump that IGEA has since replaced...and to fill in three pits formerly mined; to reclaim the same areas, line

Rosa Cidu: Furtei had ‘high potential for disaster’

Geochemist Rosa Cidu directs the Department of Earth Sciences at Sardinia's University of Cagliari. She analyzed rocks and water in the Furtei area for the regional government prior to the establishment of SGM and unsuccessfully lobbied for a formal environmental impact assessment.

At the request of SGM, she coordinated “independent” water quality monitoring throughout the life of the mine, with no government monitoring present. On her own nickel Cidu carried out a little more sampling in 2011. Last Fall she issued a new report on pollution dangers.

“I was not interested in who owned the mine. From the beginning, I was concerned with the impact of the mine over many years. We never monitored it regularly enough, two or three times a year and mostly for cyanide in surface and groundwater,” said Cidu.

Cidu is worried that the “many years” are only beginning if continuous funds are not found to contain mine discharges.

“Soon after the mine began operating we found seeps in the tailings impoundment leaking cyanide contaminated water and they were collected in a big

well and pumped back to the unlined tailings impoundment.

“After 2008 we had no access, nor requests for monitoring. I visited the site in May 2011 and IGEA was just trying to keep it under control, no remediation (cleanup). I took two more water samples just to better understand what is happening.

“Cyanide levels in mine waters are slowly declining, however, the mix of mineralized rocks in open pits, tailings impoundments, waste rock from the mine; all are increasingly acidic and leaching out metals. The two pit lakes have a pH of 2!

“That's extremely acidic, meaning great potential to release extreme concentrations of contaminants including arsenic, aluminum, nickel, copper, iron, etc. A heavy rain could have disastrous results.” said Cidu.

As of the end of 2011, public report summaries released by IGEA left uncertainty as to whether any mining pollution has entered Casa Fiume, the reservoir below the mine.

Contaminants such as mercury that could have come from mining drainages were entering the Flumini Mannu River below Casa Fiume.

or seal the bottom, walls and reconstruct the angle of repose of overburden rocks and tailings.”

IGEA director, Engineer Sergio Bariosco said, “Environmental healing at Furtei started at the beginning of December 2011,” when remediation projects for the mine began and the environmentally trained former mine workers constituted the sole workforce.

Vague Promises; No Money

Buffalo Gold dissolved the company, leaving no permanent address in Italy and no property to be seized by the Sardinian government; SGM was placed in the hands of a bankruptcy trustee.

The Sardinian government continues in 2012 to pursue litigation against potential creditors but the only one left holding the bag is the Sardinian government, 10 percent owners of the SGM Furtei mine.

No actual environmental bond or other cash existed, according to the Sardinian official in charge of liquidation of SGM and Progemisa, Franco Manca.

Manca says mining rights at Furtei were granted on the basis of a 1927 royal decree (that formed the basis of the 1930s kaolin mining). It allowed the extraction of metals from pits and mines. Pollution cleanup under old laws was not mandatory, but the company was obliged to “secure” the site before leaving. SGM (and Buffalo Gold) declared bankruptcy without securing the area. According to Manca, the regional authority didn't ask for a debt guarantee for decontamination because, according to the law in force in 1993 when the mine contract was signed, it called for “pits” but not for “mines.”

Furtei Mayor Cau has a copy of the original reclamation agreement Manca referred to and said that it was “vague and generic.” Cau suggested in late 2011, that there might be \$100,000 worth of rusty appearing machinery left on site “worth more as tools to decontaminate the mine than as an asset.”

In a 2010 newspaper article on mining investors interested in reopening the Furtei mine, Cau said “The Comune of Furtei will not support another mine. Restoration is needed of the terrible mess that we have.”

Furtei and Rosemont

Could anything like Furtei happen at Rosemont?

The simple answer is that the Furtei and the proposed Rosemont mine are completely different types of mines, different stages of development, very different regulations, different companies in different countries. It can't happen here in the same way it happened there.

Furtei's legacy repeats a historical question: recognizing that conditions differ, how can regulators halt speculators from walk-

ing away from a potential environmental mess that can come from mining and processing ore? Sargold Resource did not disclose how financially troubled it was and failed to address grievous problems such as leaky tailing dams present when it purchased the mine. Sargold then merged with another company.

Can Rosemont leave problems lasting potentially centuries?

EPA has identified concerns at Rosemont: a sulfide ore body with contaminants that could impact surface and groundwater. The agency says that more information is needed in order to avoid a legacy of contamination from Rosemont. This is the case though Rosemont is planned with far more potential environmental protection than Furtei.

The existence of rocks and water that could cause acidic pollution has something in common with Furtei, although Augusta has said it welcomes EPA scrutiny in order to strengthen environmental protection.

Buffalo Gold left an unmaintained polluted mine and not a penny barely a year after merging with Sargold. This can always happen so bonds are required. So far the Region of Sardinia has spent about \$25 million simply to characterize and prevent pollution, not to clean up. Closure bonds of hundreds of millions of dollars have been required to prevent pollution upon mine closure in the southwestern U.S. Augusta and the state of Arizona say that the \$12 million Rosemont bond is plenty.

The Sargold directorship was a real-mine experience for Augusta directors Gil Clausen, Richard Warke, Donald Clarke, Christopher Jennings and Robert Wares. Sargold's investment in an environmental mess produced no profit and little metal and failed to halt pollution. The Sargold-Buffalo merger brought pain to local residents. These Augusta directors should know, along with EPA, Rosa Cidu, and the region of Sardinia, why they must remain deeply concerned with the potential geochemical pollution risks of mining at Rosemont.

Buffalo Wanders On

Buffalo Gold appears to still exist in some form or another. In mid-June, 2012, it was traded on the Frankfurt Stock Exchanges at three-tenths a eurocent per share. Bloomberg Investment links to their “corporate summary” which states that in addition to lucrative gold, silver, uranium properties in Africa, Australia, New Guinea, etc, Buffalo “owns a 90 percent interest in the Furtei Mine project, which includes potential open pit and underground mines, a processing plant (capable of processing up to 1,000 tonnes per day), multiple exploration targets, and a fully permitted mining concession including future tailings disposal.”