

# Peter Clausi of Silver Bullet Mines on discovering palladium and gold at its Buckeye Silver Mine

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In this InvestorIntel interview, host Tracy Weslosky talks to [Silver Bullet Mines Corp.](#)'s (TSXV: SBMI | OTCQB: SBMCF) VP Capital Markets and Director Peter Clausi about the surprise discovery of significant quantities of [palladium and gold](#) in the mineralized material from its Buckeye Silver Mine in Arizona.

"We found gold, palladium, and rhodium in our silver vein as we're processing the silver," Peter tells Tracy. "What happened was we were trying to pour doré bars" he continues. "We could not get the silver to smelt correctly from this new part of the vein. The field team thought it was because there was a metal included that needed to be smelted at a higher temperature, and it turns out they were right – that's the palladium." That is what caused the silver doré bars "to be so ugly," he says.

Peter points out that there's only one palladium mine in the U.S., and palladium is currently at about \$2,200 US/oz. "This is a wonderful win for the shareholders... If the silver was economic for us at \$16 an ounce, imagine what it looks like with gold, rhodium and palladium."

To access the full InvestorIntel interview, [click here](#).

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**About Silver Bullet Mines Corp.**

Silver Bullet Mines Corp. is a silver and copper exploration and development company with projects in the western USA. Their flagship project is the Black Diamond, close to 5,000 acres in the Miami-Globe copper camp and centered on the Richmond Basin. The basin is the site of the original 1870s native silver discoveries that brought prospectors to the now significant Globe copper camp. The story goes that a scouting party was fired upon by Apache Indians using bullets made of hammered native silver. Thus inspiring the company name – Silver Bullet Mines. The Richmond Basin is the location of several historic high grade silver-copper mines including: McMorris, La Plata, Helena, Silver Sevens, Buckeye and numerous associated prospects. Little work or extraction came from this area since the early 20th century as the camp focused on big copper mines. But these mine anchor this section of what is called the Arizona Silver Belt that extends from the famous Silver King near Superior, AZ and parallels the trend of the major copper deposits including the Magma mine. They believe the high grade silver is still there waiting for discovery.

To know more about Silver Bullet Mines Corp., [click here](#)

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If you have any questions surrounding the content of this interview, please contact us at +1 416 792 8228 and/or email us direct at [info@investorintel.com](mailto:info@investorintel.com).

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**Someone steal your catalytic  
converter? Call Canadian**

# Palladium.

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Have you heard in the news about a rash of thefts of catalytic converters from vehicles, either in your neighbourhood or all over the country? The reason for that is simple, the value of the components inside these exhaust emission control devices. Catalytic converters contain Platinum, Palladium and Rhodium, amongst other materials, and these minerals are now some of the most expensive materials on the planet. Palladium is trading at over US\$2,600/oz while Rhodium trades at an eye-popping [US\\$26,000/oz](#).

Seems like there might be more demand than supply for something to be trading at these kinds of prices! That's what makes the East Bull Palladium deposit of [Canadian Palladium Resources Inc.](#) (CSE: BULL | OTCQB: DCNNF) so exciting. On Tuesday, the company announced the [latest drilling results](#) from the East Bull property, located 90 km West of Sudbury, Ontario. Those results are summarized in the table below:



Notably, the company is still awaiting the Rhodium results and with the above pricing, Rhodium becomes the second most important contributor to Palladium equivalent (PdEq) at East Bull after Palladium itself. For context, generally speaking, palladium grades from 1.5 g/t to 5 g/t are considered medium grade and anything above 5 g/t is considered high grade (23.5 grams = 1 ounce).

An [NI 43-101](#) compliant technical report from early 2019 shows a resource estimate of 11.1 M tonnes of ore at a grade of 1.46 g/t PdEq for a total of 523,000 ounces of Palladium at East Bull. Since then the company has reported 13 additional sets of

drilling results extending the Valhalla zone from 1.5 kms to almost 3 kms today. Needless to say, an updated NI 43-101 would likely show a lot bigger number.

Additionally, the East Bull property benefits from close proximity to the city of Sudbury and is accessible by an all-weather road extending north from Highway 17 at Massey, Ontario. Sudbury is home to the fully integrated base and precious metal mining, processing, smelting and refining complexes of Vale Canada Limited and Glencore PLC. The availability of this infrastructure not too far away means Canadian Palladium could achieve initial production with lower initial CapEx, as they would only have to mine and crush rock on-site before shipping to Sudbury for processing.

As with most junior exploration companies, Canadian Palladium is in the raise cash/drill cycle meaning an investor has to be patient and watch the shares outstanding continue to drift higher. However, with the results the company is achieving and the steady increase in the underlying commodity prices, someone is likely to take notice of the East Bull Palladium development and validate management's and shareholder's belief that this could be a significant deposit.

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**Making a \$BULL.C run on critical materials, Canadian**

# Palladium has platinum and rhodium too...

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With the current palladium price at [US\\$2,338/oz](#) finding palladium is even more valuable than finding gold (at [US\\$1,804](#)). More valuable than almost anything else on the planet is rhodium, at [US\\$16,100/oz](#). It therefore makes sense to look for junior miners in good locations that are having exploration success for these highly valuable metals.

One such junior is [Canadian Palladium Resources Inc.](#) (CSE: BULL | OTCQB: DCNNF | FRANKFURT: DCR1). Canadian Palladium is focused on growing a resource at their 100% optioned East Bull Palladium (PGM's) Property. The Property covers 992 hectares and is in the Sudbury Mining Division in Ontario, Canada. Past exploration has resulted in a 43-101 compliant resource estimate of 11.1 million tonnes of ore at a grade of 1.46g/t palladium equivalent (Pd Eq) for a total of 523,000 ounces Pd Eq. Canadian Palladium are now working diligently to grow the resource and to identify the higher grade sections.

**Canadian Palladium's East Bull Project 43-101 Resource estimate summary from 2018**



**Canadian Palladium's East Bull PGM Project location and key highlights**



[Source](#)

During 2020 Canadian Palladium have repeatedly announced solid

drill results and extended their mineralized zone at East Bull. Here is the recent news summarized:

- [Nov. 23, 2020](#) – Canadian Palladium intersects **2.97 Pd Eq over 12.0 metres** expanding East Bull mineralization west and down-dip.
- [Oct. 28, 2020](#) – Canadian Palladium continues to extend mineralization.
- [Oct. 21, 2020](#) – Canadian Palladium drilling continues to extend near surface deposit to **over 1.6km of strike length**.
- [Oct. 26, 2020](#) – Canadian Palladium reports preliminary assay results for additional drill holes at East Bull Palladium Project, Sudbury Area, Ontario: Wide intersections of palladium mineralization including **22.0 metres at 2.24 g/t Pd-equivalent**.
- [Aug. 18, 2020](#) – Canadian Palladium reports complete assay results for first ten drill holes at East Bull Palladium Project, Sudbury Area, Ontario: Intersects **high-grade palladium including 4.0 metres with 8.15 g/t Palladium Equivalent**.
- [June 24, 2020](#) – East Bull Property – **Palladium results show 2.68 g/t over 3 .0 metres and 2.28 g/t over 3.0 metres** within a broader interval of **1.32 g/t over 20 metres**.
- [March 2, 2020](#) – Canadian Palladium Hole EB-20-01 intersects: **3.32 g/t palladium over 7.0 metres, 2.50 g/t palladium over 10 metres, 3.77 g/t combined palladium + platinum + gold over 10 metres**.

Note that palladium grades from 1.5 g/t to 5 g/t are considered medium grade and anything above 5 g/t is considered high grade. Most of the results in 2020 so far have been in the medium grade with some occasional high grade results. Also it should be noted the highly valuable by-products have the effect of increasing

the palladium equivalent grade.

What does this all mean you may ask? Essentially it means that Canadian Palladium is steadily working towards growing a potentially larger resource at the East Bull PGM Project. In the latest news release from Nov. 23, 2020 Canadian palladium summarize by [stating](#):

*“The Company’s 10,000 m drill program continues to extend the Valhalla Zone resource down dip and towards the west. The drilling in this section of the Valhalla Zone has produced consistent results for over a kilometre strike length to vertical depths of 150 metres. The mineralization widths within this area varies from 6 to 71 metres core width...”*

Building a resource takes time and money. During this stage investors need to wait for drill results and ultimately a resource upgrade. Canadian Palladium [state](#) that *“the independent analysis of the updated 43-101 also highlighted the potential significant upside potential of the resource estimate along 3.6km strike length.”* 2020 drilling is slowly working to confirming this.

What is key is that the East Bull Project contains several highly valuable metals such as palladium, rhodium, platinum, gold, copper, nickel and cobalt.



### [Source](#)

Looking further ahead, a valuable advantage of the East Bull Property is its proximity to the mining town of Sudbury. Extraction of mineralized material could be [crushed on site and shipped by truck to Sudbury](#) (90 km) for processing. The footprint would be minimal with only rock crushing on site



allowing for a less complicated permitting process. It should also mean a lower initial CapEx. We will know a lot more down the track once we get to the PEA/PFS stage.

### **Closing remarks**

Canadian Palladium is still in the early stages of potentially growing their resource at their East Bull Project. So far in 2020 drill results have extended the known mineralization and found medium grade palladium (and palladium equivalent) with occasional high grade.

Should the success continue and the resource grow further, then the next steps should get easier due to the fact that palladium and the other by-products are highly valuable and there is a relatively simple option towards production (open pit, crush, and ship 90 kms for processing).

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# **Jack Lifton on how the Tesla effect is driving platinum, palladium, and rhodium around the bend**

written by Jack Lifton | September 27, 2022

“Those of you who want to ‘speculate’ or invest in platinum and palladium can, besides physical ownership of coins and bars, buy futures in London, New York, and other markets. The futures markets have the advantage of being very liquid.” – Jack Lifton

**The principal Platinum Group Metals (pPGMs), the platinum, palladium, and rhodium are among the most critical of the critical metals that support our health and well-being.** This is for two reasons: First of all, the electronic properties of the pPGMs cannot be duplicated by any other known less expensive or more effective substitution, and second, the pPGMs are very rare. The total annual production of all three combined does not exceed 500 tons. The overwhelming use for these PGMs is as the active agents (catalysts) in automotive exhaust emission catalytic converters, in which they catalyze the complete combustion of hydrocarbon fuels (gasoline, kerosine [diesel fuel]), and the reduction of acid forming nitrous oxides to inert nitrogen. Catalytic converters cannot function economically or efficiently without PGMs, so that the rarity of the PGMs ensures that they are among the most recycled industrial metals, since the total annual new production of platinum and palladium is insufficient to meet demand.

It should be noted that the current annual production for the US OEM automotive industry alone uses 200 mta of PGMs for catalytic converters. **Yet the US industry produces only 20% of global automobiles and trucks. Both China and Europe produce more cars annually than the US, and until recently the use of pPGMs in Europe by the OEM automotive industry there used a large enough amount of platinum to severely skew its price relationship to that of palladium creating a palladium shortage that has driven up palladium's price to more than double that of platinum, a historically unusual situation.**

In general, the very large demand for pPGMs by the US OEM automotive industry arises from the very large proportion of large internal combustion engines (ICEs) used in North America for personal trucks, SUVs, and freight carriage. These ICEs require substantial exhaust emission catalytic converters to comply with increasingly stringent air pollution control

regulations.

Until recently the even more stringent European Union air pollution control regulations were thought to be being met by the use of diesel engines rather than gasoline powered ones. Diesels, the large ones used on freight vehicles in particular, require a relatively large amount of platinum to manage their exhaust emissions. In the last two years however, it has been discovered that diesel engines exhaust measurements were manipulated by manufacturers to give the appearance of exhaust emission compliance. Diesel sales in Europe, by far their largest market, have plummeted releasing enough platinum into the market to drop its price even though it takes more palladium than platinum on a weight basis to manage the hydrocarbon exhaust of an ICE.

**I think this demand skew is temporary and the price rises and price differentials among the pPGMs also an artifact of the sudden interest by investors in “doing a Tesla” with the pPGMs.** The pricing of the pPGMs, palladium and rhodium in particular, is increasingly divorced from their industrial value, and ironically by increasing the cost of exhaust emission catalyst they help to hasten the conversion of vehicular transport from dependence on ICEs to batteries. This, the lowering of the principal demand for pPGMs, will of course lower the price of the pPGMs. The bright spot in the future may be the use of platinum and palladium in fuel cells, which look to be the electric generators of choice for heavy freight carrying trucks that will utilize hydrogen to power the fuel cells, which will themselves need platinum and/or palladium to produce electricity by catalysis of hydrogen “fuel.”

The most absurd of the latest “investment vehicles” for pPGMs are the one and five-ounce “certified” bars of rhodium, the very rarest of the pPGMs, being offered to “investors.” There is no

agreed standard for rhodium purity and, even if there were, there is no other market for such bars other than the offerors "guarantee" to buy it back in the future for some price calculated by them as a "market" price. Rhodium bars have no industrial use other than as a feedstock to make the rhodium chemicals used in the application of the pPGMs to the wash coats of automotive exhaust emission converters; the high temperature apparatus involved in the manufacture of high purity glasses and fibers; and the industrial production of nitric acid. Manufacturers using rhodium for the above do NOT buy individual bars of "investment grade" rhodium from private parties. Nor do they inventory rhodium in such a form.

Platinum has been used for jewelry and even coins almost since its discovery in native (placer) form in South America in the late eighteenth century. Palladium jewelry and coins have been tried but have never caught on with the public. Massive rhodium is not suitable for jewelry manufacturing, but a thin coating of it on silver has been used to prevent tarnish. This source of "value" is what drives the nonindustrial market for these metals. There is no liquid market for trading small quantities of these metals. Like gold, pPGMs must be analyzed before any industrial use and this analysis is too costly for small lots. National coins can be traded using posted prices on the London Platinum and Palladium Market, but this is purest reasoning by false analogy. Coins have no use as industrial feedstocks.

Those of you who want to "speculate" or invest in platinum and palladium can, besides physical ownership of coins and bars, buy futures in London, New York, and other markets. The futures markets have the advantage of being very liquid.

Let's look at the supply of pPGMs, also, of course, an investment, if realized through the purchase of shares of publicly traded miners, juniors, and fabricators on major high-

volume exchanges.

The majority of the world's platinum comes from Southern Africa. The Republic of South Africa and Zimbabwe are fairly recent as independent states ruled by their indigenous peoples, but pPGM mining and refining were introduced nearly a century ago by Europeans for whom costs such as labor, safety, and health held little interest when measured against the profits obtainable by ignoring them. The transfer of majority ownership of the mines and smelters to the "native" populations has added costs of improving health and safety as well as of empowering labor to seek wage increases. These factors have increased the costs of producing pPGMs and have reduced the output of the mines and smelters. These factors have naturally increased the market prices of the pPGMs as their already small supply and regular delivery has been further reduced or impaired.

The world's other two relatively large sources of pPGMs, Russia and North America, produce primarily just palladium. The only producing American mine and smelter, at Stillwater, Wyoming, is owned by Russia's Norilsk Nickel, Russia's main producer of palladium as a companion metal to its nickel production, and, in fact, Stillwater produces more pPGMs from automotive exhaust emission catalyst scrap than from its ore body. In Canada, Vale, Sudbury, produces palladium also only as a companion metal to its nickel production. Thus, for non African produced pPGMs the amount produced depends on the nickel market.

If and as now looks likely when the production of ICE powered vehicles declines the demand for new pPGMs will also decline, but it is likely also that the demand for pPGMs used in catalytic converters may be replaced by a demand for them (other than rhodium) for use in fuel cells, which look like the best candidates for generating electricity onboard for freight carriage by wheeled transportation and even by tracked

transportation. A typical fuel cell today uses an ounce of pPGMs as the catalytic materials that transform hydrogen gas into water and generate electricity (at room temperature) by doing so. Thus, if new production of pPGMs today were to be used entirely for fuel cell manufacturing some 13 million fuel cell powered (hydrogen powered) vehicles per year could be manufactured globally. In the USA, which scraps 15 million vehicles per year, the recovered recycled pPGMs could be used to produce up to 4 million fuel cell powered cars per year until the supply of scrap ICEs were exhausted in 20 years.

It looks likely now that Class 8 freight hauling trucks will be converted to fuel cell operation rather than battery operation as a weight and resource saving measure. In the long term this use for pPGMs will become dominant.