

# MARATHON PALLADIUM

PALLADIUM.PLATINUM.GOLD.COPPER PROJECT

Corporate Presentation, September, 2019

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## PUREPLAY PGM DEVELOPER IN TIER ONE JURISDICTION



Acquired a 51% interest in the largest undeveloped Palladium property in North America. Has an option to increase interest to 80%.



Recent independent resource calculation estimates 7.1 million ounces of Palladium Equivalent in the Marathon Deposit.



Property located near excellent infrastructure, including highway, rail, power, and near the mining town of Marathon, ON.



Palladium prices have hit all time high of \$1,600 per ounce due to increased demand combined with flat production profile.



Gen Mining plans Preliminary Economic Assessment in Q4 2019 to evaluate economics of Marathon Project.

## **MARATHON DEPOSIT RESOURCES\***

### **GENERATIONMINING**



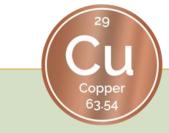
**3,238,000** oz PALLADIUM



1,064,000 oz PLATINUM

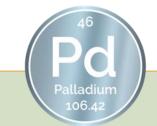


390,000 oz GOLD

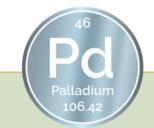


796,000,000

Ibs COPPER



7,130,000 oz PD EQ



**1.24** g/t PD EQ GRADE

<sup>\*</sup> Open pit Measured and Indicated Resources as estimated by P&E Mining Consultants, Sept 9, 2019. Further detail on page 14. Does not include the Geordie or the Sally deposits.

## JAMIE LEVY President, CEO & Director

25 years in financing and management of Cdn mining companies. Was CEO of Pine Point Mining which was acquired by Osisko Metals. Formerly VP of Pinetree Capital.

## ROD THOMAS, P.Geo. VP, Exploration & Director

Geologist with 40 years experience in Canada and abroad. Former Exploration Manager BHP Minerals Eastern NA and General Manager of VM Canada (subsidiary of NEXA Res.)

## HALINA MCGREGOR Chief Financial Officer

Chartered Accountant with extensive experience, including former Chief Financial Officer of Sherritt International, Goldcorp Inc. and Pine Point Mining.

## JOHN MCBRIDE Senior Exploration Geologist

Worked on the Company's Marathon Project periodically since 2007, and continuously as project geologist since 2013. He obtained an MSc. in geology from Lakehead in 2010.

#### KERRY KNOLL Exec. Chairman & Director

Co-founded several successful mining companies over 35 years including Wheaton River, Thompson Creek and Glencairn Gold. Former editor of The Northern Miner Magazine.

### PATRICIA MANNARD Vice-President, Finance

Managed administrative and financial aspects of exploration companies for 30 years, including Pine Point Mining from 1993-2018.

## TABATHA LABLANC Manager of Sustainability

25 years of environmental & community relations, including TransCanada Pipelines, North American Palladium, Bowater-Abitib & oversaw the environmental assessment at the Marathon Project for Stillwater Canada Inc. in 2012-14.

## JAMIE LEVY President, CEO & Director

25 years in financing and management of Cdn mining companies. Was CEO of Pine Point Mining which was acquired by Osisko Metals. Formerly VP of Pinetree Capital.

## ROD THOMAS, P.Geo. VP, Exploration & Director

Geologist with 40 years experience in Canada and abroad. Former Exploration Manager BHP Minerals Eastern NA and General Manager of VM Canada (subsidiary of NEXA Res.)

### STEPHEN REFORD Director

Geophysicist and professional engineer for 35 years, President of Paterson, Grant & Watson Limited, an international geophysical consulting company.

### PAUL MURPHY Director

Chairman of Alamos Gold, was Chief Financial Officer of Guyana Goldfields, former partner and head of mining group for PricewaterhouseCoopers

### KERRY KNOLL Exec. Chairman & Director

Co-founded several successful mining companies over 35 years including Wheaton River, Thompson Creek and Glencairn Gold. Former editor of The Northern Miner Magazine.

### **BRIAN JENNINGS Director**

Chartered Accountant with extensive experience in financial management of resource companies, and formerly Vice-President Corporate Restructuring at Ernst and Young.

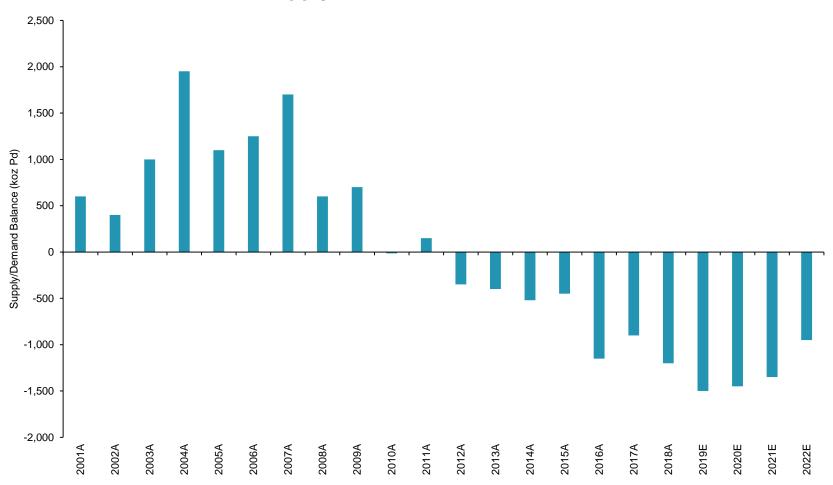
## PHILLIP C. WALFORD Director

Geologist, President and CEO of Marathon Gold since 2009. Was President and CEO and a founder of Marathon PGM Corp. which sold Marathon palladium project to Stillwater in 2010.

- Price has increased 340% since 2016
- 85% used for autocatalysts
- A typical automobile uses 3-7 grams palladium
- Pd loads per vehicle increasing globally by regulation to reduce emissions\*
- 6.88 million oz mined worldwide in 2018\*
- Further 3.21 million oz recovered from recycling\*
- Total non-investment demand of 10.2 million oz
- 800,000 oz deficit in 2018 according to Johnson Matthey, others indicate even higher
- Redemptions from ETFs supplied 555,000 oz
- Producer divestment (mainly NorNickel) supplied most of balance



## Palladium Market Supply and Demand Balance Historic & Forecast



## "1 million oz deficit in 2019" – Johnson Matthey

- Market deficit to widen as demand climbs by 9% in 2019 due to surge in auto demand (May 13, 2019)
- Supply increases only 2%, mainly from recycling; mine supply flat
- Stricter emission regulations in Europe, and China are increasing palladium loadings in autocatalysts to 5 gm/vehicle
- Changes phased in until 2022
- "Further, sizable deficits to come" –
   Metals Focus

- ETF holdings show rapid decline
- No large immediate increases in mine production are expected in next few years
- Recycling continues to increase by double digits but cannot make up the entire deficit
- Substitution to platinum a possibility, however global platinum production lower than palladium and autocatalysts use less Pd than Pt

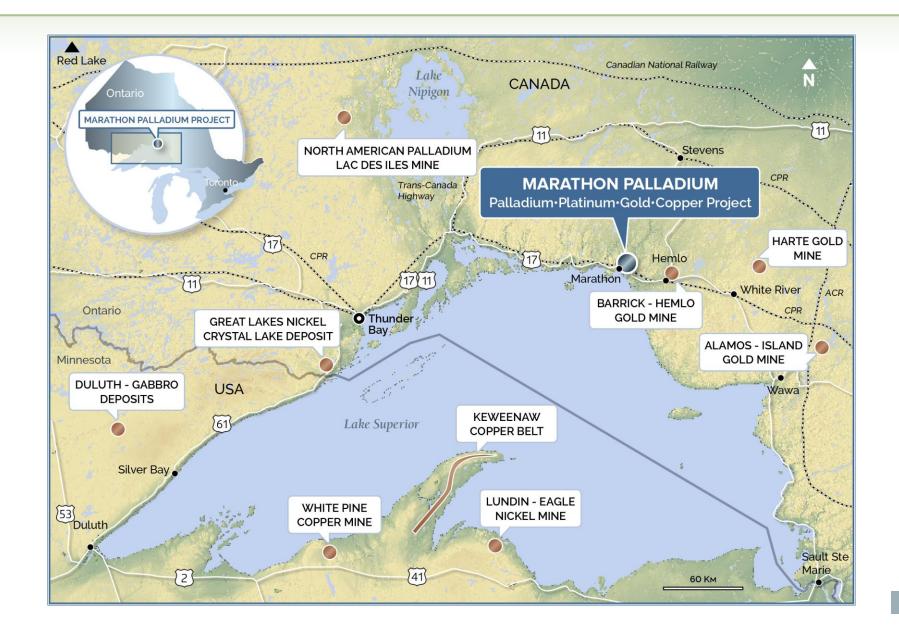
- Demand Inelasticity: Demand is increasing as automakers & governments continue to focus on reducing emissions
- Both palladium and platinum are now in deficit
- New Chinese regs will result in "step change" auto consumption - JM
- Low substitution risk: Palladium is a more effective converter than platinum
- "We expect to see double-digit growth in palladium consumption over the 2019 – 2020 period" – JM



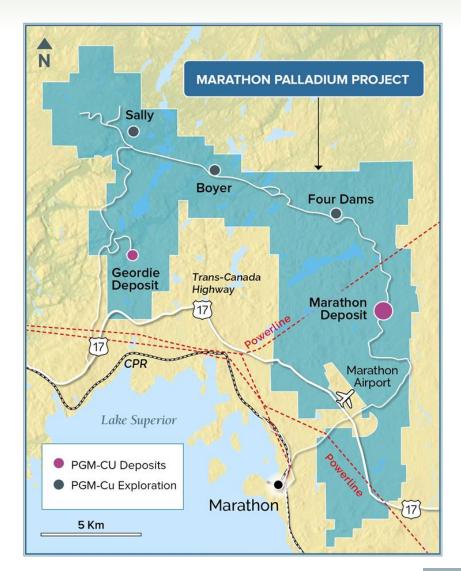
## Near-term production increases

- Norilsk +/- 500,000 oz by 2025
- Platreef: 200,000 oz by 2021
- Waterberg 470,000 oz by 2024

## **LOCATION**



- Located on Trans-Canada Highway, served by CPR main rail line
- Property next to Marathon airport
- <10 km from town of Marathon (had population of 5,000, now 3,200) and 30 km from Hemlo gold camp
  - Hemlo has new 10-year mine plan
  - However, workforce far below historic highs
  - Hemlo has solid working relationship with local native groups
- Harte Gold's Sugar Zone Mine located ~100 km from the Property permitted and commissioned in 2018
- New \$1B high-capacity power line from Wawa to Thunder Bay will cross property



## **MARATHON HISTORY** & OWNERSHIP

- Developed from 1985 to 2010 by various companies, eventually owned by Marathon PGM Corporation
- Over 203,000 metres of drilling in 1,094 holes
- Stillwater took over Marathon in 2010 for US\$118 million (Pd was trading at US\$530/oz)
- Sold 25% to Mitsubishi for US\$81.25 million in 2012, deal later unwound
- Sibanye Gold acquired Stillwater Mining in 2016 to become Sibanye
- No outstanding royalties on Main Marathon Deposit\*

## **MARATHON OPEN PIT RESOURCES**

#### **GENERATIONMINING**

	Tonnes (k)	Pd (g/t)	Pt (g/t)	Cu (%)	Au (g/t)	Ag (g/t)	PdEq (g/t)	Pd (koz)	Pt (koz)	Cu (Mlb)	Au (koz)	Ag (koz)	PdEq (koz)
PIT CONST	PIT CONSTRAINED MINERAL RESOURCE ESTIMATE at C\$13/tonne NSR Cut-Off (1-7)												
Measured	103,337	0.64	0.21	0.20	0.07	1.5	1.34	2,123	688	463	239	4,964	4,445
Indicated	75,911	0.46	0.15	0.20	0.06	1.8	1.10	1,115	376	333	151	4,371	2,685
M&I	179,248	0.56	0.18	0.20	0.07	1.6	1.24	3,238	1,064	796	390	9,335	7,130
Inferred	668	0.37	0.12	0.19	0.05	1.4	0.95	8	3	3	1	31	21
PIT CONST	TRAINED N	IINERA	L RESO	URCE E	STIMAT	E SENS	SITIVITY	at C\$25	5/tonne	NSR Cu	ıt-Off		
Measured	70,792	0.82	0.25	0.25	0.09	1.5	1.67	1,864	578	387	194	3,510	3,794
Indicated	45,279	0.60	0.19	0.25	0.07	1.9	1.40	871	272	252	106	2,817	2,032
M&I	116,071	0.73	0.23	0.25	0.08	1.7	1.56	2,735	850	639	300	6,326	5,826
Inferred	144	0.62	0.16	0.28	0.05	0.9	1.41	3	1	1	0	4	7

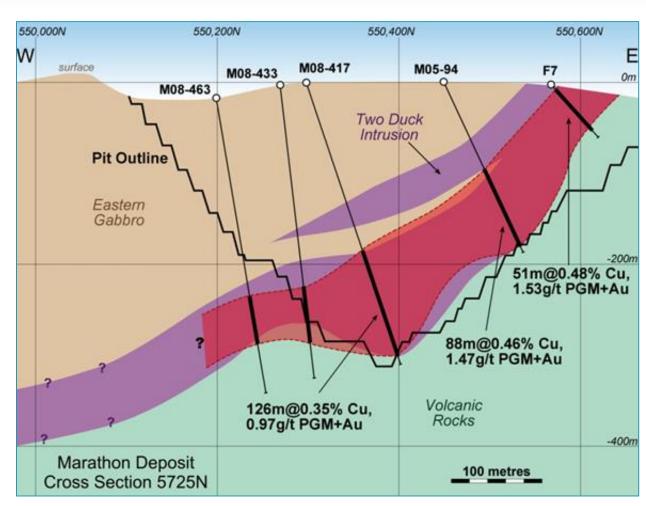
### OTHER HISTORIC RESOURCES - GEORDIE LAKE

	Tonnes millions	Pd g/t	Pt g/t	Au g/t	Cu %		Pd/oz '000	Pt/oz '000	Au/oz '000	Cu/lbs million
TOTAL RESOURCES – Main and Hangingwall Zones										
M + I	32.4	0.61	0.04	0.05	0.37		641	39.5	49.7	263
Inferred	7.96	0.59	0.03	0.04	0.36		151	8.6	10.4	62

- 1. Mineral Resources which are not Mineral Reserves do not have demonstrated economic viability.
- 2. The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.
- 3. The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
- 4. The Mineral Resources in this report were estimated using the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standards on Reserve Definitions and adopted by the CIM Council.
- 5. The Mineral Resource Estimate was based on US\$ metal prices of \$1,100/oz Pd, \$900/oz Pt, \$3/lb Cu, \$1,300/oz Au and \$16/oz Ag. The US\$:CDN\$ exchange rate used was 0.77.
- 6. The NSR estimates use flotation recoveries of 93% for Cu, 82% for Pd, 80% for Au, 75% for Ag and smelter payables of 96% for Cu, 93% for Pd, 88% for Pd, 80% for Au, 90% for Au, 75% for Ag and smelter payables of 96% for Cu, 93% for Pd, 88% for Pd, 80% for Au, 90% for Au, 75% for Ag and smelter payables of 96% for Cu, 93% for Pd, 80% for Pd, 80% for Au, 90% for Au, 75% for Ag and smelter payables of 96% for Cu, 93% for Pd, 80% for Pd, 80% for Pd, 80% for Au, 75% for Ag and smelter payables of 96% for Cu, 93% for Pd, 80% for Pd, 80% for Au, 90% for Au, 75% for Ag and smelter payables of 96% for Cu, 93% for Pd, 80% for Pd, 80% for Pd, 80% for Au, 75% for Ag and smelter payables of 96% for Cu, 93% for Pd, 80% for Au, 90% for Au,
- 7. The pit optimization used a mining cost of C\$2 per tonne, combined processing, G&A and off-site concentrate costs of C\$13/tonne and pit slopes of 50°.

# MARATHON MAIN DEPOSIT CROSS SECTION

- Deposit dips moderately west providing optimal open pit mining scenario
- Mineralization has a true thickness ranging from 4m to 183 m, averaging 35m
- Deposit is open at depth with potential for UG expansion from bottom of pit



Source: Miller, J.D., Smyk, M.C. and Hollings, P.N., eds. 2010. Cu-Ni-PGE deposits in mafic intrusions of the Lake Superior region: A field trip for the 11th International Platinum Symposium; Ontario Geological Survey, Open File Report 6254, 166p.

## **METALLURGY** FROM 2010 DFS

- Extensive metallurgical testing done at several labs during 1990s-2010
- Testing indicates a quality copper/PGM concentrate, possibly saleable in Canada
- Stillwater improved recoveries above 80% for Pd; work being reviewed
- Gen Mining to resume testing once adequate samples are extracted

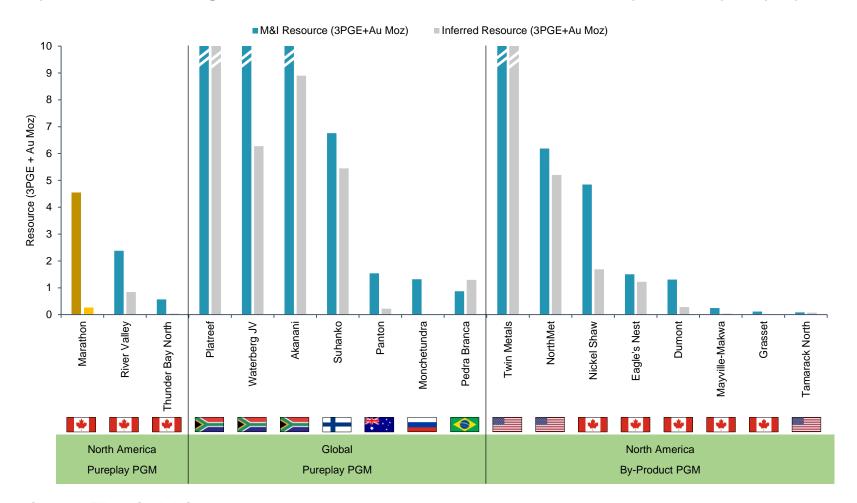
## SGS-L ESTIMATE OF METAL RECOVERIES (2008)

Metal	Unit	Feed Grade	Concentrate Grade	Recovery (%)
Copper	%	0.28	22.00	91.0
Gold	g/t	0.11	6.53	73.0
Platinum	g/t	0.23	13.00	63.0
Palladium	g/t	0.87	57.00	77.0

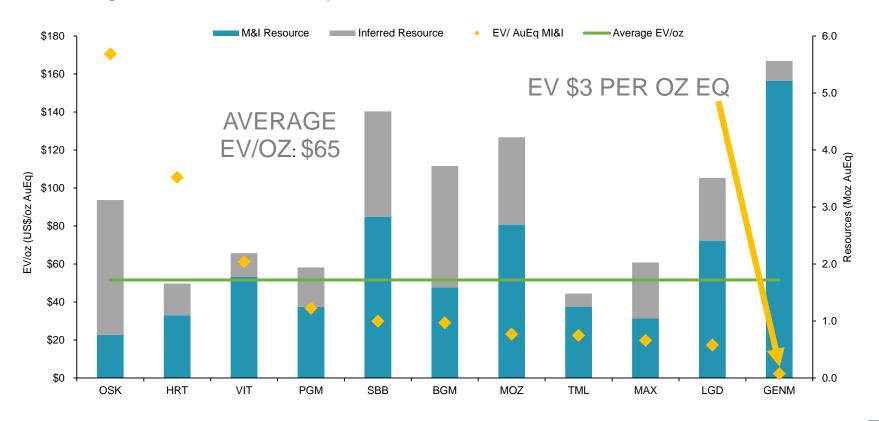
Work to be completed this year to further optimize recoveries

# COMPARABLE PGM DEVELOPMENT PROJECTS\*

• Marathon is the largest pureplay PGM project located in a stable, mining friendly jurisdiction, with great access to infrastructure, and a clear path to open pit production



- North American precious metals developers with great access to infrastructure and capital trade at an average valuation of ~US\$50/oz
- Generation Mining trades at a fraction of its peers' valuation despite holding the largest Historic MI&I AuEq resource



## GENERATION MINING TIMELINE

## **Key Steps for 2019**

PURCHASE MARATHON PROJECT BUILD TECHNICAL TEAM 2019
DRILLING &
EXPLORATION
CAMPAIGN

PRELIMINARY ECONOMIC ASSESSMENT

EVALUATE POTENTIAL PRODUCTION SCENARIOS

## TIMELINE (ESTIMATED)

	Q2 2019	Q3 2019	Q4 2019	2020
Asset Acquisition	<b>⊘</b>			
Build Technical Team	<b>⊘</b>	<b>⊘</b>		
Update Historic Resource		<b>⊘</b>		
New Listing				
Exploration				
PEA Study				<b>)</b>
Permitting				<b>)</b>
Feasibility Study				<b>)</b>

# **CORPORATE** STRUCTURE

Capital Structu	ire	Key Shareholders					
Shares Outstanding	91.1M	Sibanye Stillwater	~12%				
Warrants (Weighted average exercise price: C\$0.324)	28.9M	Zebra Holdings	~12%				
Options (Weighted average exercise price: C\$0.208)	7M	Osisko Mining	~10%				
Fully Diluted Shares Outstanding	127.2M	Management/Directors	~9%				
Basic Market Capitalization (Share price: C\$0.30)	C\$27M	Renvest Mercantile	~3%				



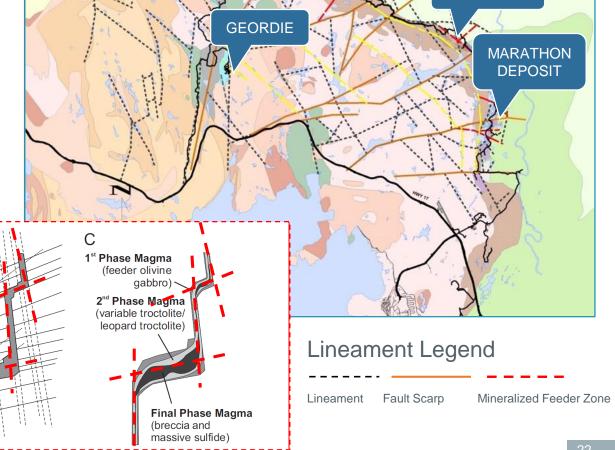
## **COLDWELL** COMPLEX FAULTS

#### **GENERATIONMINING**

**FOUR DAMS** 

Lineaments are topographic features that represent feeder conduits (faults). Lineaments are utilized to prioritize initial exploration targets throughout the complex as a conduit for magma flow.

Mineralization commonly occurs along lineament features (red lines).

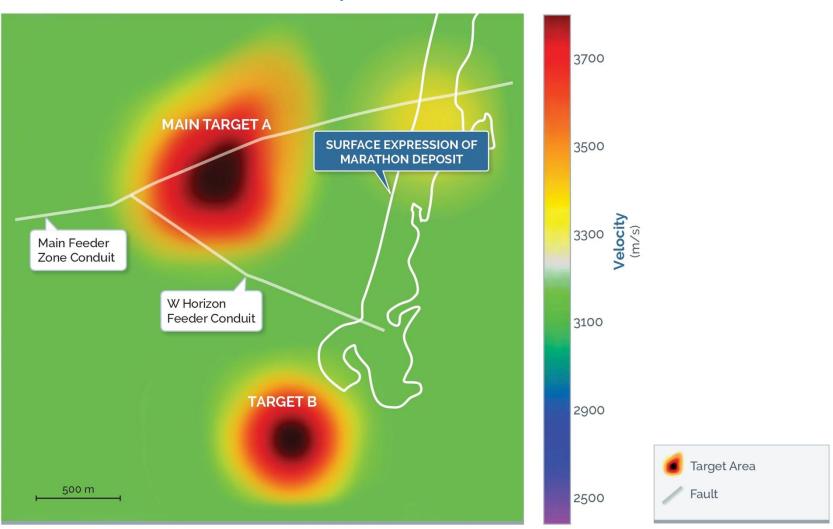


SALLY

**BOYER** 

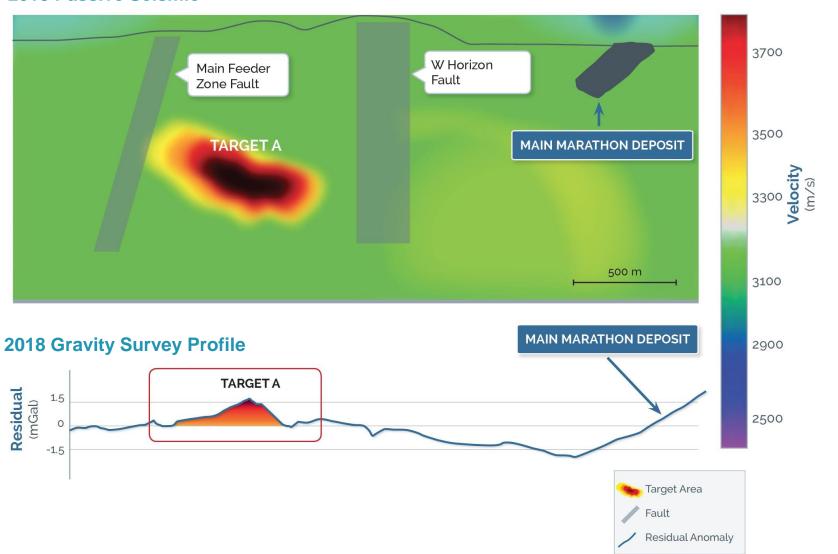
# MARATHON PROJECT 2018 SEISMIC TARGETS

## Passive Seismic Slice at 650 metre-depth



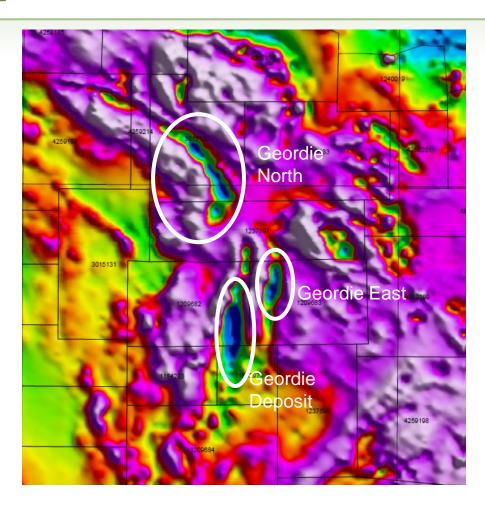
# MARATHON PROJECT COINCIDENT SEISMIC GRAVITY ANOMALY

### 2018 Passive Seismic



# POTENTIAL TO INCREASE GEORDIE RESOURCE

- The Geordie Offset to the northeast has a significant magnetic signature, showing a strike length of over 1.5 km
- The one drill hole GL-02-02 into Geordie Offset intersected Geordie gabbro with 7.6 m @ 0.24 g/t TPGM, 0.18% Cu
- Additional drilling is required to identity thickness, dip and strike length of the offset mineralization
- Geordie North has the same magnetic signature as the Geordie Deposit



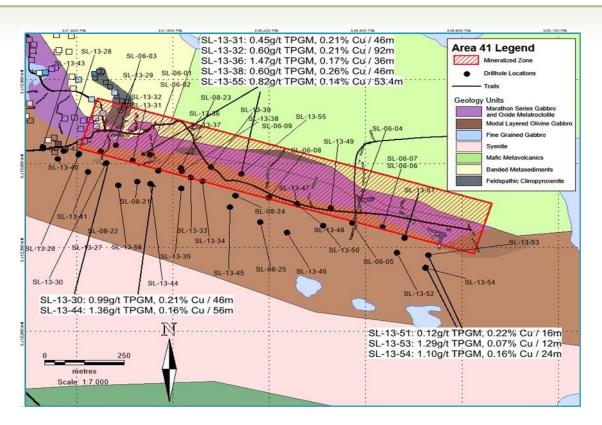
# **SALLY AREA** WITH DRILL HOLE COLLARS & BEST INTERSECTIONS

#### GENERATIONMINING

The Area 41 occurrence is located within the Sally Lake area at the northern margin of the Eastern Gabbro.

The deposit strikes east-southeast, dips at 45-50 degrees south and extends for over 1.2 km along strike. The deposit is open to the east and west. 56 holes have been drilled in the Sally Lake area, of which 45 were drilled into Area 41.

The drilling at Area 41 is considered to be sufficient to define the thickness and continuity of the mineralized envelope, but closer spaced drilling is required to define and characterize zones of higher grade material.



### **Four Mineralized Zones**

**Zone 1:** The uppermost mineralized zone contains Cu and trace amounts of Pd and is < 10 m thick.

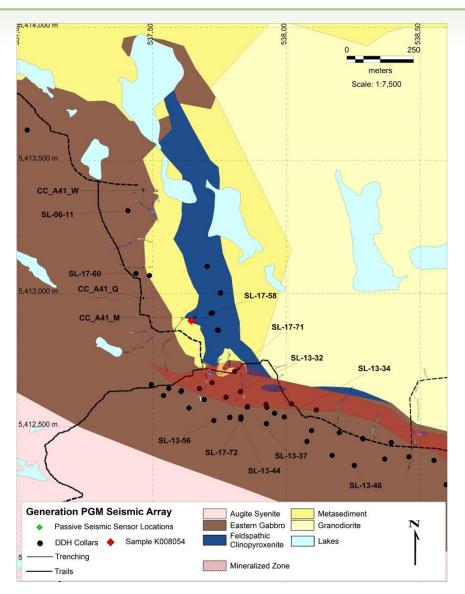
**Zone 2:** The second mineralized zone is typically 40 to 50 m thick and contains some of the highest Pd grades in the deposit.

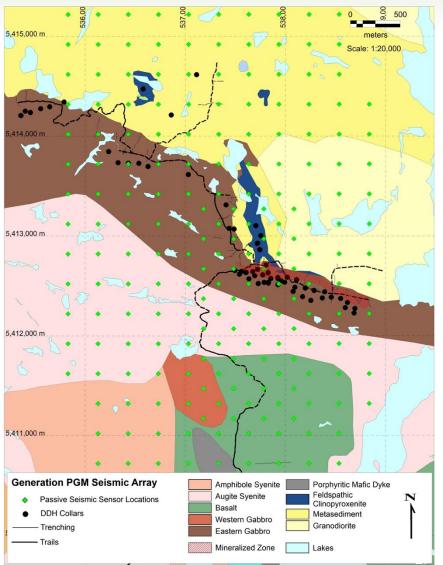
**Zone 3:** Referred to as the Main zone because it is normally over 40 m thick and is the most continuous over the strike length of the deposit.

**Zone 4:** Occurs below the main mineralized zone and contains Cu and Pd values that are similar to the main zone, but has increased pyrrhotite content, and thus is considered to be lower tenor.

# **SALLY SEISMIC PROGRAM** EXTENDING STRIKE & EXPLORING FOR MASSIVE SULPHIDES

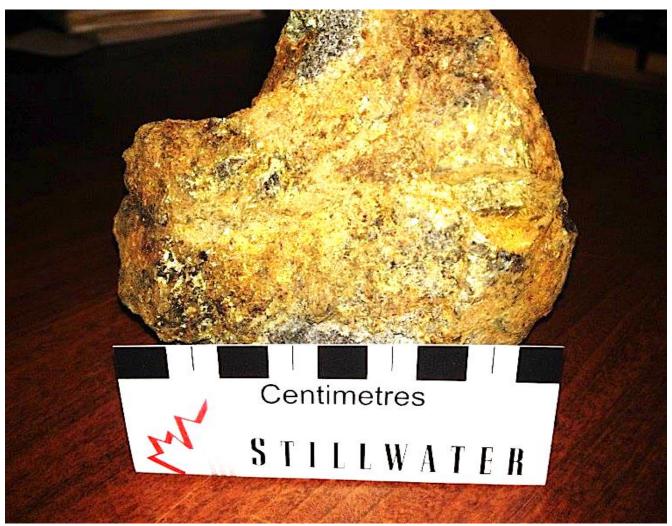
#### **GENERATIONMINING**





## HIGH GRADE SAMPLE FROM SALLY

Sample K008054, 188.28g/t TPGM, 9.11% Cu, 0.60% Ni, 6.4% S



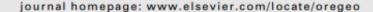
# INVESTIGATION INTO HIGH GRADE SOURCE

## Ore Geology Reviews 90 (2017) 723-747



Contents lists available at ScienceDirect

## Ore Geology Reviews





Insights into the extreme PGE enrichment of the W Horizon, Marathon Cu-Pd deposit, Coldwell Alkaline Complex, Canada: Platinum-group mineralogy, compositions and genetic implications



D.E. Ames a,\*, I.M. Kjarsgaard b, A.M. McDonald c, D.J. Good d

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#### ARTICLE INFO

Article history:

Received 1 December 2016 Accepted 20 March 2017 Available online 29 March 2017

Keywords: Marathon deposit W Horizon Platinum-group mineral Rh sulfides Marathonite Coldwellite

#### ABSTRACT

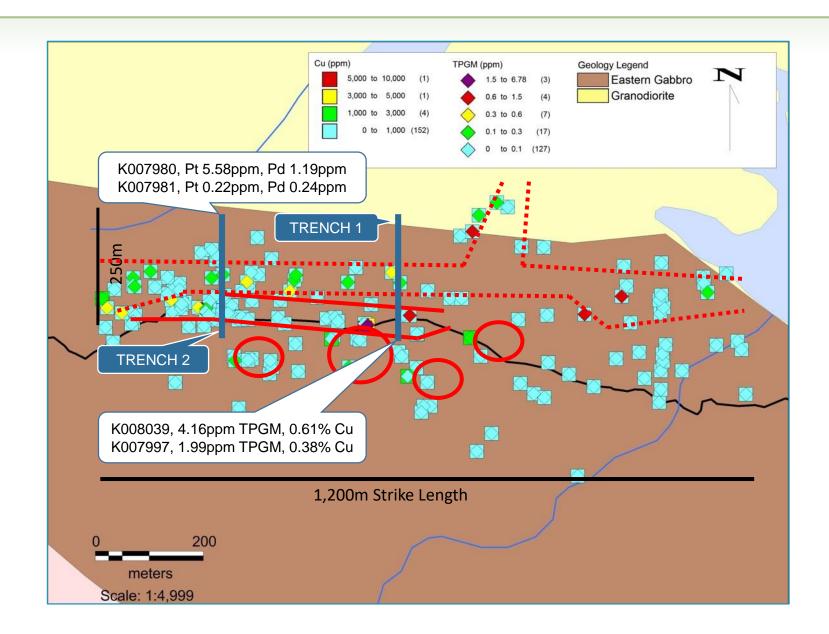
The W Horizon, Marathon Cu-Pd deposit in the Mesoproterozoic Midcontinent rift is one of the highest grade PGE repositories in magmatic ore deposits world-wide. The textural relationships and compositions of diverse platinum-group mineral (PGM) and sulfide assemblages in the extremely enriched ores (>100 ppm Pd-Pt-Au over 2 m) of the W Horizon have been investigated in mineral concentrates with ~10,000 PGM grains and in situ using scanning electron microprobe and microprobe analyses.

Here we show, from ore samples with concentrations up to 23.1 Pd ppm, 8.9 Pt ppm, 1.4 Au ppm and 0.73 Rh ppm, the diversity of minerals (n = 52) including several significant unknown minerals and three new mineral species marathonite (Pd<sub>25</sub>Ge<sub>5</sub>; McDonald et al., 2016), palladogermanide (Pd<sub>2</sub>Ge; IMA 2016-086, McDonald et al., 2017), kravtsovite (PdAg<sub>2</sub>S, IMA No 2016-092, Vymazalová et al., 2017). The PGM are distributed as PG-, sulfides (52 vol%), -arsenides (34 vol%), -intermetallics of Au-Ag-Pd-Cu and Pd-Ge (10 vol%) and -bismuthides and tellurides (4 vol%). The discovery of abundant (>330 grains) large

# INVESTIGATION INTO HIGH GRADE SOURCE (2)

## Conclusion

"An important aspect of this study ...
of the Marathon deposit, is that conduit-style
environments are capable of producing such extreme
PGE-enriched orebodies similar to that of Noril'sk
disseminated ores and late - stage reef deposits in
the shallow parts of large layered intrusions (e.g.
Skaergaard, Bushveld) ... The formation of these
enriched ores likely resulted from early sulfide
segregation ... in a deep reservoir."



# SELECTED GRAB SAMPLES AND TRENCHING RESULTS

Sample (grab)	Au (ppm)	Pt (ppm)	Pd (ppm)	TPGM (ppm)	Cu (%)
K007980	0.006	5.58	1.19	6.78	0.003
K008039	0.342	0.723	3.09	4.16	0.605
K008216	0.048	0.808	1.08	1.94	0.009

Trench	Length (m)	Au (ppm)	Pt (ppm)	Pd (ppm)	TPGM (ppm)	Cu (%)
CC_BOY_A	2.48	0.165	0.270	0.520	0.955	0.227
CC_BOY_A	12.13	0.023	0.263	0.362	0.648	0.020
CC_BOY_B	2.02	0.010	1.946	1.146	3.102	0.007
CC_BOY_C	21.78	0.100	0.325	0.400	0.823	0.070
Including	6.64	0.105	0.462	0.545	1.111	0.074
CC_BOY_D	7.69	0.006	0.541	0.565	1.113	0.006
Including	1.38	0.013	1.528	1.473	3.013	0.005



# **COMPARABLE PGM**DEVELOPMENT PROJECTS\*

	Project	Owner	Owner Market Cap	Primary Asset	Mine Type	Location	Stage	Primary Metal	3PGE+Au M&I Resource	3PGE+Au Inferred Resource	3PGE+Au M&I Grade	3PGE+Au Inferred Grade
			(C\$M)	(Y/N)					(PdEq Moz)	(PdEq Moz)	(PdEq g/t)	(PdEq g/t)
erica oGM	Marathon	Generation Mining	\$11	Y	Open Pit	Ontario	PEA-FS	Pd	4.6	0.3	0.96	0.55
North America Pureplay PGM	River Valley	New Age Metals	\$6	Υ	Open Pit	Ontario	PEA	Pd	2.4	0.8	0.74	0.50
Nort	Thunder Bay North	Panoramic Resources	\$192	N	Open Pit	Ontario	Exploration	Pt + Pd	0.6	0.0	1.80	2.10
	Platreef	Ivanhoe Mines	\$3,105	N	Underground	South Africa	Construction	3PGE + Au	35.7	45.0	3.21	2.77
_	Akanani	Lonmin	\$361	N	Underground	South Africa	Development	3PGE + Au	20.4	8.9	4.18	3.41
Global Pureplay PGM	Suhanko	Suhanko Artic Platinum	n/a	Υ	Open Pit	Finland	Scoping	PGE + Au	6.8	5.4	1.80	1.85
Gle	Panton	Panoramic Resources	\$192	N	OP + UG	Australia	FS	Pt + Pd	1.5	0.2	3.93	3.22
₾.	Monchetundra	Eurasia Mining	\$24	Υ	Open Pit	Russia	Construction	Pd	1.3	-	1.47	-
	Pedra Branca	Jangada Mines	\$8	Υ	Open Pit	Brazil	FS	Pd	0.9	1.3	0.93	0.88
	Twin Metals	Antofagasta	\$17,617	N	Underground	USA	Development	Ni-Cu-PGM	23.7	14.5	0.57	0.37
	NorthMet	PolyMet	\$213	Υ	Open Pit	USA	FS	Ni-Cu-PGM	6.2	5.2	0.30	0.32
ă ∑ M	Nickel Shaw	Nickel Creek	\$12	Υ	Open Pit	Yukon	PEA	Ni	4.8	1.7	0.47	0.49
North America By-Product PGM	Eagle's Nest	Noront Resources	\$98	Υ	Underground	Ontario	FS	Ni-Cu-PGM	1.5	1.2	4.26	4.25
orth A Produ	Dumont	RNC Minerals	\$233	N	Open Pit	Quebec	FS	Ni	1.3	0.3	0.02	0.02
B. Z	Mayville- Makwa	Grid Metals	\$5	Υ	Open Pit	Manitoba	PEA	Ni-Cu-PGM	0.2	0.0	0.23	0.19
	Grasset	Balmoral Resources	\$17	Υ	Underground	Quebec	Resource	Ni-Cu-PGM	0.1	0.0	1.06	0.61
	Tamarack North	Talon Metals	\$51	Υ	Underground	USA	PEA	Ni-Cu-PGM	0.1	0.1	0.79	0.53

# **ONTARIO**, A WORLD MINING HOTSPOT

## Ontario has 28 operating mines, with 10 more advancing towards production

Mine	Owner	Commodity	Status
Century	Goldcorp	Gold	PFS/Permitting (2023)
Borden	Goldcorp	Gold	Construction (Q1 2019)
Cochenour	Goldcorp	Gold	Construction (n/a)
Sugar	Harte Gold	Gold	DFS/Production (Q3 2018)
Goliath	Treasury	Gold	PEA (2019)
Hardrock	Premier/Centerra	Gold	DFS/Construction (2020)
Magino	Argonaut	Gold	DFS/Permitting (2020)
Madsen	Pure Gold	Gold	DFS (Q4 2019)
Springpole	First Mining	Gold	PEA (Q4 2022)
PAK	Frontier Lithium	Lithium	PFS (n/a)

