# Macmillan Pass Exploring for New Potential

January 2020

**TSX:V FWZ** 

# FIREWEEDZINC

#### The following statements are required by Canadian securities legislation:

#### **PEA Cautionary Note:**

Readers are cautioned that the PEA is preliminary in nature, it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA results will be realized. Mineral resources that are not mineral reserves do not have demonstrated economic viability. Additional work is needed to upgrade these mineral resources to mineral reserves.

#### **Forward-Looking Statements**

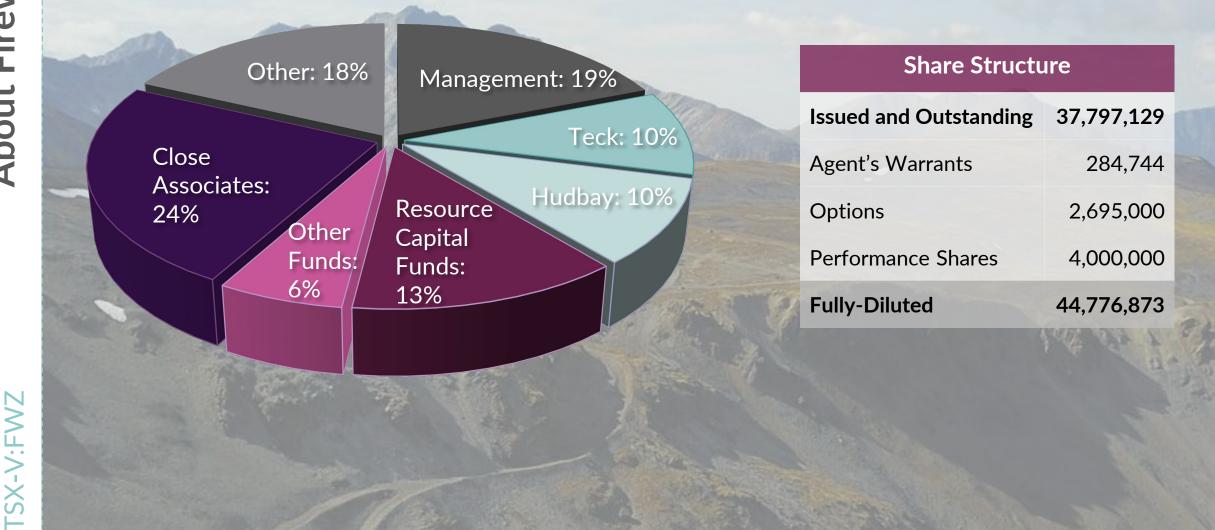
This news release contains "forward-looking" statements and information relating to the Company and the Macmillan Pass Project that are based on the beliefs of Company management, as well as assumptions made by and information currently available to Company management. Such statements reflect the current risks, uncertainties and assumptions related to certain factors including but not limited to, without limitations, exploration and development risks, expenditure and financing requirements, general economic conditions, changes in financial markets, the ability to properly and efficiently staff the Company's operations, the sufficiency of working capital and funding for continued operations, title matters, First Nations relations, operating hazards, political and economic factors, competitive factors, metal prices, relationships with vendors and strategic partners, governmental regulations and oversight, permitting, seasonality and weather, technological change, industry practices, and one-time events. Additional risks are set out in the Company's prospectus dated May 9, 2017 and filed under the Company's profile on SEDAR at www.sedar.com. Should any one or more risks or uncertainties materialize or change, or should any underlying assumptions prove incorrect, actual results and forward-looking statements may vary materially from those described herein. The Company does not undertake to update forward-looking statements or forward-looking information, except as required by law.

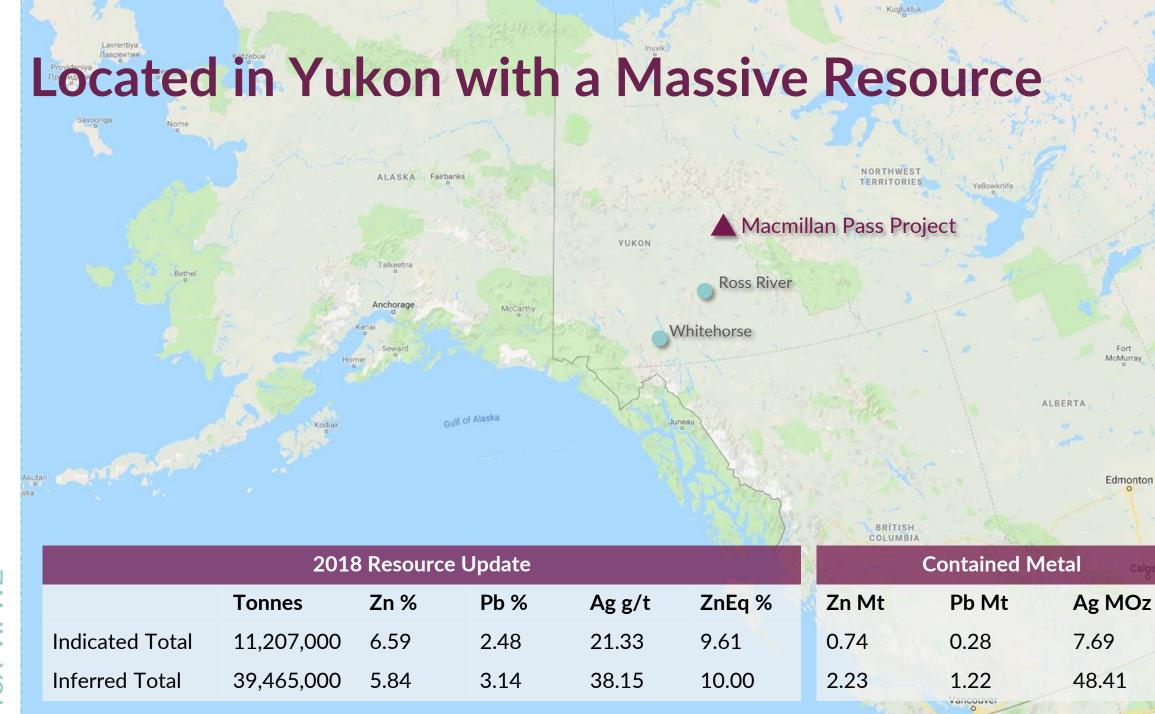
#### NI43-101 Qualified Person:

Brandon Macdonald P.Geo ,CEO and Director of Fireweed Zinc, and a Qualified Person under the meaning of Canadian National Instrument 43-101, is responsible for the technical information in this presentation. Leon McGarry, P.Geo., Senior Resource Geologist for CSA Global Canada Geosciences Ltd. is independent of Fireweed Zinc Ltd. and a 'Qualified Person' as defined under Canadian National Instrument 43-101. Mr. McGarry is responsible for the Mineral Resource Estimate and directly related information in this presentation. Michael Makarenko, P.Eng., Project Manager for JDS Energy and Mining, Inc., is independent of Fireweed Zinc Ltd. and a 'Qualified Person' as defined under Canadian National Instrument 43-101. Mr. Makarenko is responsible for the PEA results and directly related information in this presentation in this presentation.



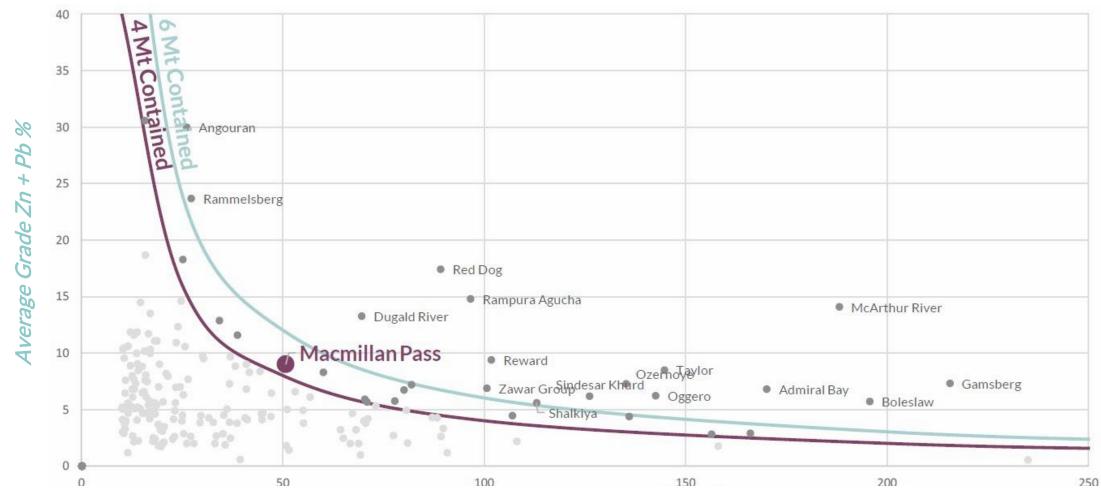
#### **Purpose-Built with Strong Backers**







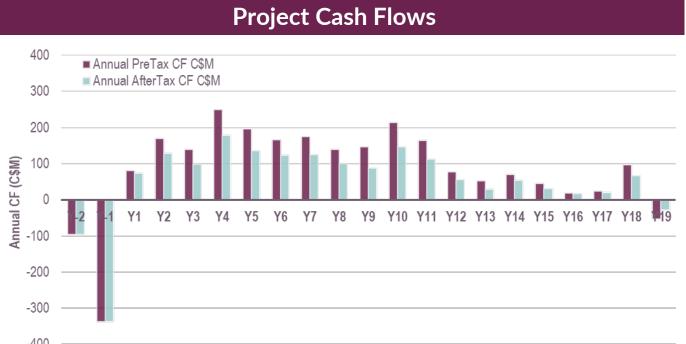
#### Among the Biggest with >4mt Metal



Resource Size (Mt)

# Maiden PEA Shows Attractive Economics

Key Inputs	Unit	Base Case
Zinc Price	US\$/lb	\$1.21
Lead Price	US\$/lb	\$0.98
Silver Price	US\$/oz	\$16.80
Exchange Rate	CAD/USD	0.77
Key Outputs		
Initial CAPEX		C\$404M
Mine Life	18 years	
Life-of-Mine Tonnage		32.7 Mt



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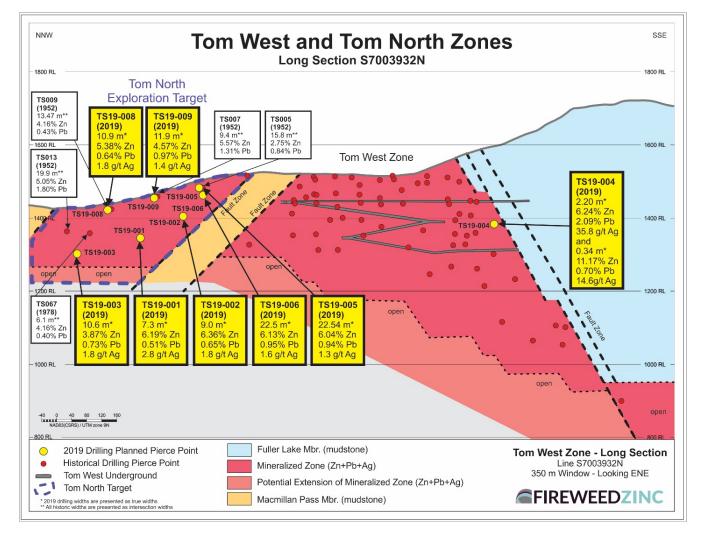
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		Pre-Tax	Post-Tax
	Unit	Base Case	Base Case
Cash Flows (Undiscounted)	C\$M	\$1,735	\$1,119
NPV at 8%	C\$M	\$779	\$448
IRR	%	32%	24%
Payback Period	years	3.2	4.0

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# **Tom North Step-Out Target**

- No drilling since 1978 (one hole); most holes in 1951 and 1952
  - Tom North was not included in 2018 resource update
- Intersections of up to 22.5 m at 6.1% Zn, 1.0%
  Pb in short holes
  - Shallow intersections suggest potential amenability to open-pit
- 2019 Drilling successfully hit on 7 holes
  - Inferred resource now possible
  - May add >1 year to open pit mine life



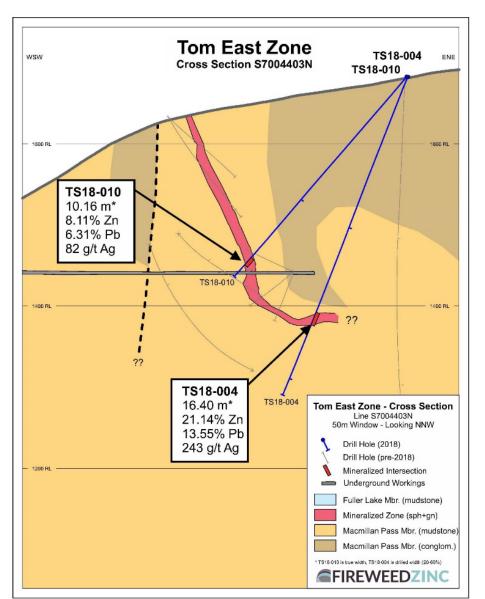
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# Tom East Surprises with More High-Grade

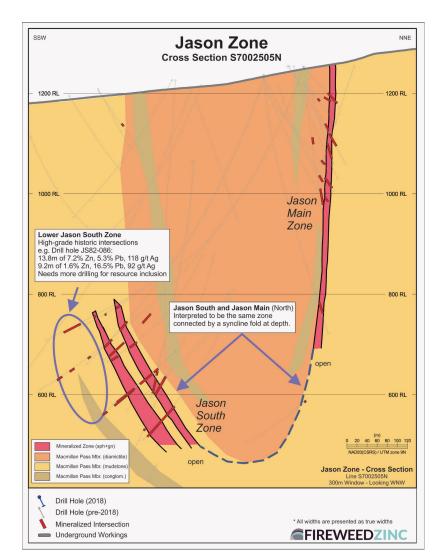
2018 TOM EAST ZONE DRILL RESULTS					
Hole No.	Interval (m)	Zinc (%)	Lead (%)	Silver (g/t)	
TS18-004	16.41	21.14	13.55	242.8	
Including	8.70	23.88	19.42	332.9	
Including	3.00	35.66	18.49	312.7	
Including	1.55	15.57	35.65	542.1	

- Tom East Zone may be folded
  - Structural thickening or higher grades in hinge-zones of folds?
- Tom East remains open at depth
  - Previously was thought to terminate at depth
  - Is there further upside potential in this high-grade zone?



### Low Hanging Fruit for Expanding Jason

- Syncline remains untested at depth
  - Connecting two sides of Jason may yield a significant amount of additional resource tonnage
  - Possible structural thickening at hinge and enrichment
- Lower Jason South Zone is now understood to be a fault offset of Jason South
  - No follow-up on high-grade intersections in offset zone, eg:
    - 13.8 m of 7.2% Zn, 5.3% Pb, 118 g/t Ag
    - 9.2 m of 1.6% Zn, 16.5% Pb, 92 g/t Ag
  - These intersections sit outside the 2018 Resource Statement
  - Additional drilling here should add high-grade tonnes



### Over 540 sq km Open for Discovery

2018 Resource and PEA included only the Tom and Jason deposits, and naturally does not integrate the results from the 2018 and 2019 drilling there and at other zones.

Satellite zones represent immediate exploration upside:



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2018 drilling at **End Zone** intersected high grade zones including 4.78% Zinc, 10.17% Lead, 87g/t Silver over 11.08 m



The Nidd Property (acquired 2018) hosts established zinc mineralization in the **Boundary Zone** where recent drilling included intersections of 100 m of 7.94% Zn from surface within 230 m of 4.14% Zn



Macmillan Pass Airport (MATA: XMP, TC LID: CFC4) Whitehorse : 1.5 Hours



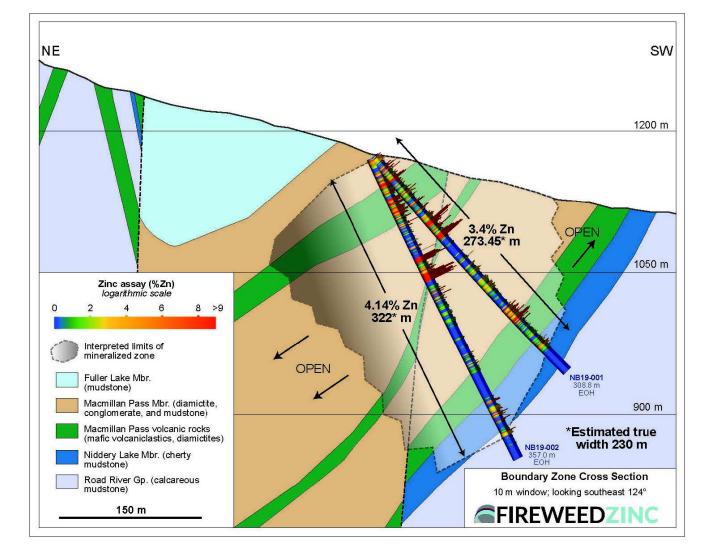
Ross River: 5 Hours Whitehorse : 11 Hours



Zn-Pb Potential

### **Boundary Zone – Grade Potential**

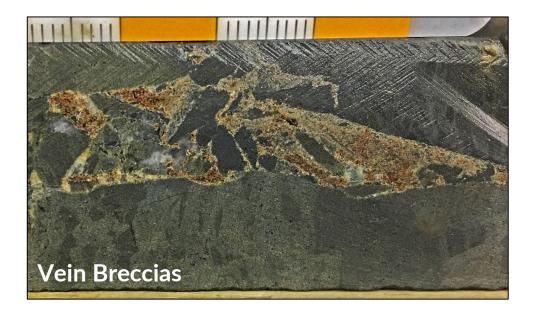
- 2019 Drilling
  - NB19-002:
    - 230 m of 4.14% Zn from surface
    - Including 100 m of 7.95% Zn
      - With 6.4m of 42.5% Zn
  - NB19-001:
    - 230 m of 3.44% Zn from surface
    - Including 97 m of 5.63% Zn

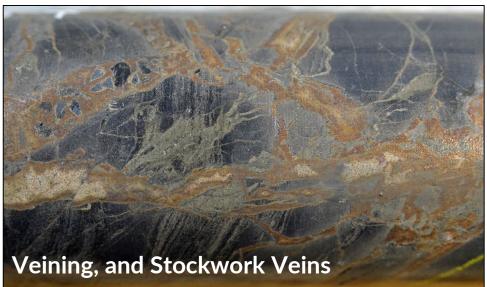




### **Boundary Zone – Mineralization styles**



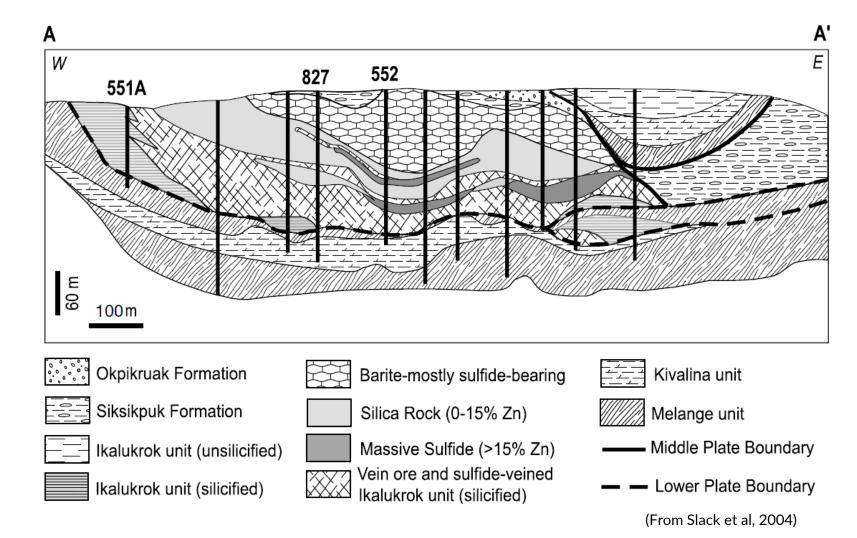




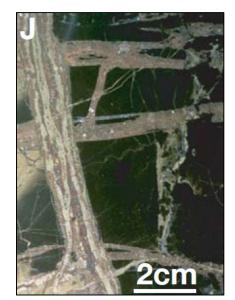


# **Boundary Zone – Geological Analogues**

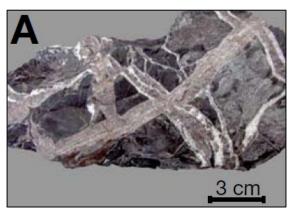
• **Red Dog** is an analogue and a model for exploration going forward



Red Dog vein ore

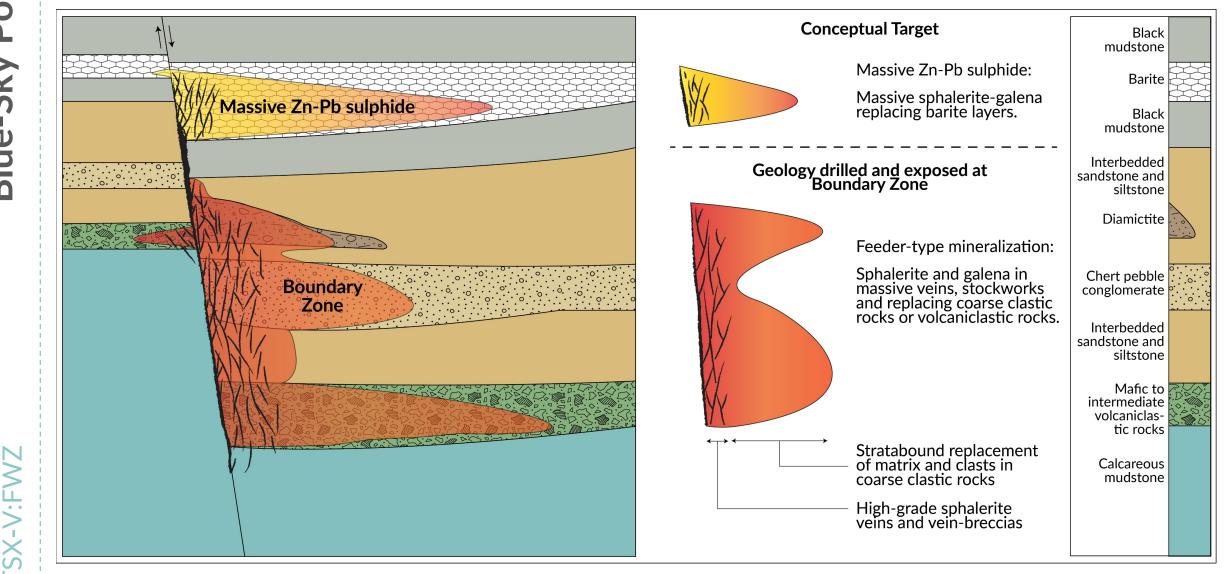


<sup>(</sup>From Kelley et al, 2004)



(From Leach et al, 2004)

# **Boundary Zone – Conceptual Geology**

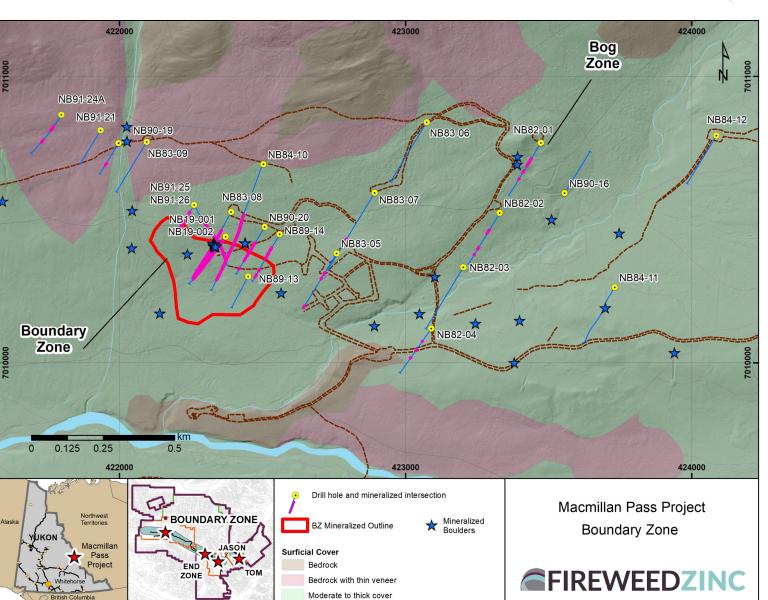


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### **Boundary Zone Area**

- Clearly defined central zone
  - Numerous holes >200 m of 2.5% Zn
  - Central Area is at minimum
     400 m x 300 m with a
     thickness of >200 m
- Broader zone stretches ~ 1.5 km
  - Far West: NB-91-24A 29m of 3.2% Zn
  - Far East: NB82-01
    - 4 intersections >8 m and 3.5% Zn

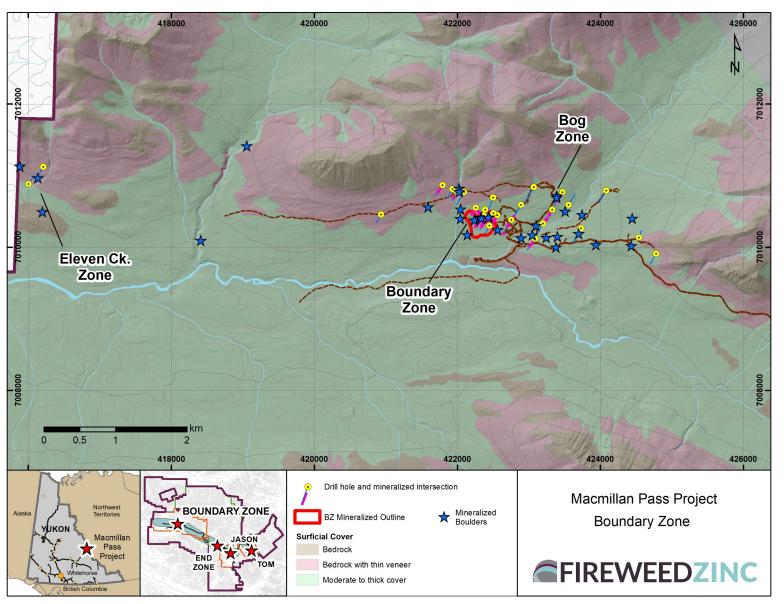


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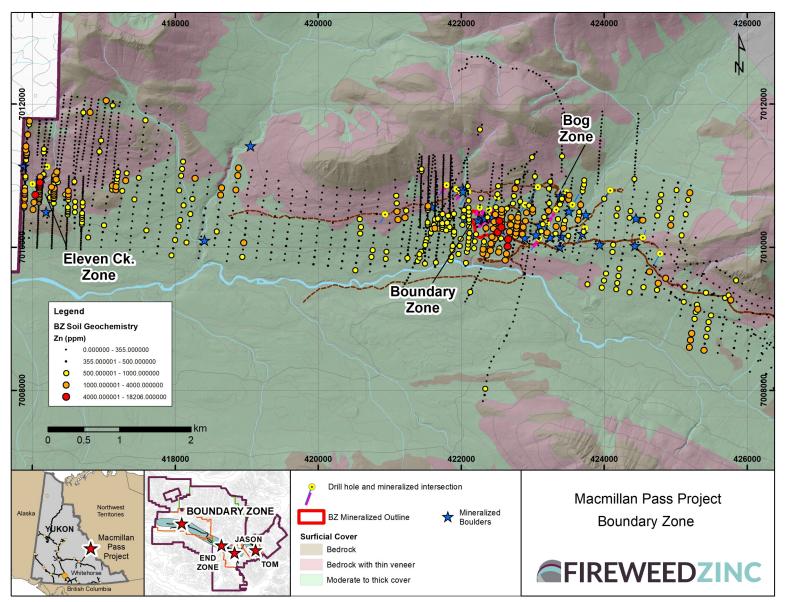
### **Broader Nidd Area**

- Mineralized trend is mostly under cover
- Mineralized boulders, likely
- glacially transported, are evidence
  of multiple undiscovered systems
  Eleven Creek Zone drilling ended
  in mineralization, never drilled
  again



## **Broader Nidd Area – Zn Anomalies**

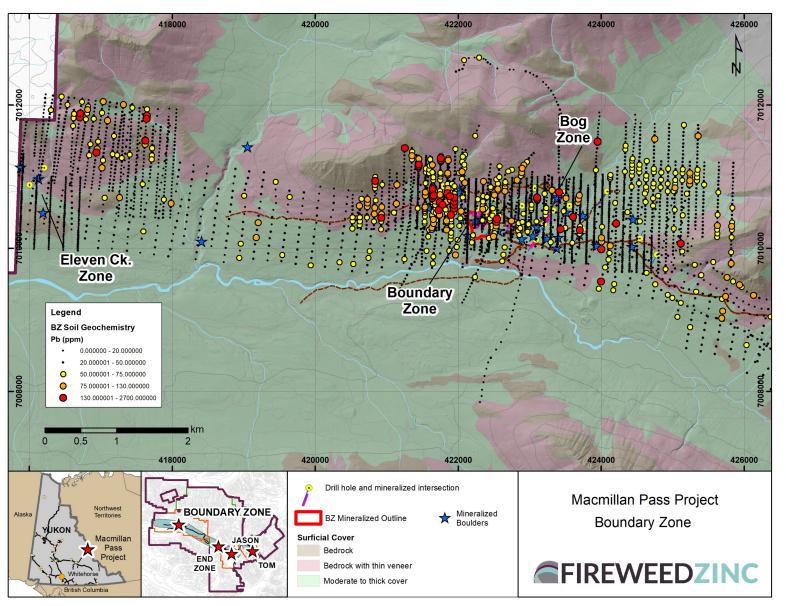
- Strong anomalies around BZ area and Eleven Creek Zone
- Scattered anomalies elsewhere
- Acidic waters can dissolve Zn not always the best indicator (False positives and false negatives)



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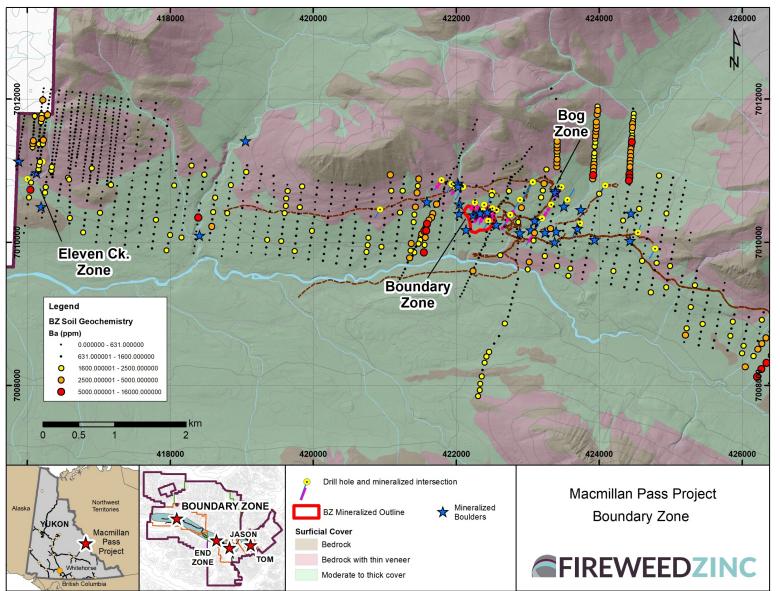
# **Broader Nidd Area – Pb Anomalies**

- Strong anomalies around BZ area and north of Eleven Creek
- Perhaps closer to source?
- Not all deposits in the area have significant Pb



#### **Broader Nidd Area – Ba Anomalies**

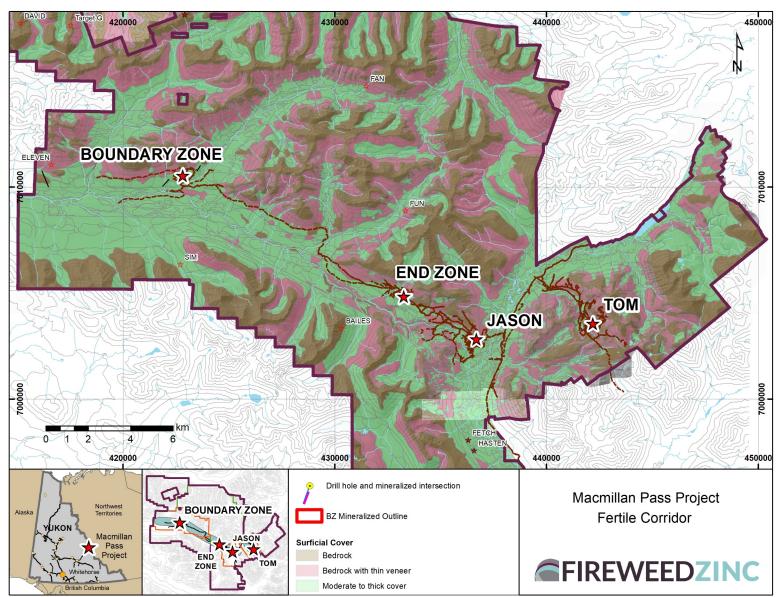
- Bog Zone and Eleven Creek show anomalous Ba, potential for stratiform Zn-Pb-Ag-Ba deposits?
  Area to west of Boundary Zone is both geologically appropriate, and shows Ba anomalies
  - Could this be the Barite cap to the vein system?



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# **Exploration Under Cover**

- Much of the property is under moderate to thick cover
- Tom & Jason are not, and thus discovery was relatively "easy" comparatively
- Geophysics and some
- geochemistry may help in areas of cover
- Nidd / BZ area shows promise for discovery of new systems and expansion of existing ones
- What else?



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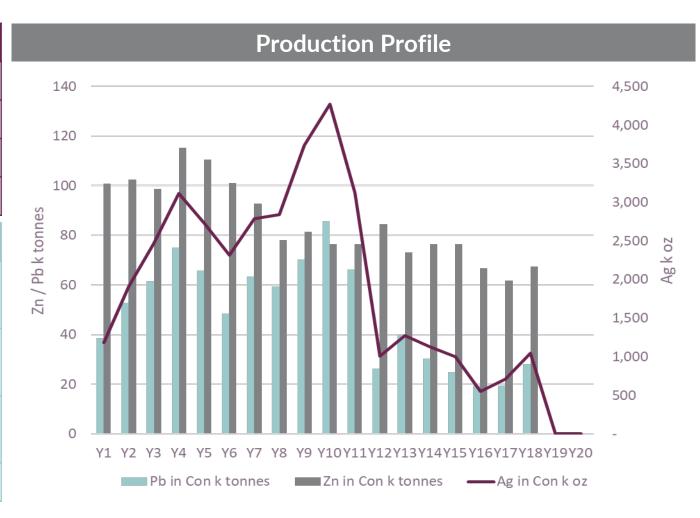
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# Starter Pits Reduce CAPEX, Frontload CFs

#### **Open Pit Mineralized Tonnes** 4,229kt 20,934kt Waste Tonnes Strip Ratio 5.0 **Production Life** 3 years Underground 28,427kt Mineralized Tonnes Lateral 100km Development 5.8km Vertical Development **Production Life** 16 years



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# **Standard Processing and Attractive Con.**

- Standard comminution and flotation flow sheet including:
  - 2 crusher, 1 SAG mill, 1 ball mill
  - Stirred mills for regrind
  - Selective two and three-stage flotation to produce Zn and Pb concentrates
- Primary Grind to 50um, Secondary to:
  - 15um for Pb
  - 25um for Zn

- Low Energy Consumption for Grinding
  - SCSE of 7.82 and 9.2 kWh/t
  - BWi from 8.8 to 14.0 kWh/t
- Attractive Concentrate
  - High Grade
  - Low iron in concentrates: 1.5% Fe in zinc concentrate
  - Potential modest penalties on Hg (155pm) and SiO2 (4%) in Zn Con

Product	Assay Grade			Recovery %		
	Zn %	Pb %	Ag g/t	Zn	Pb	Ag
Flotation Feed	7.29	3.22	44	100	100	100
Zinc Concentrate	58.4	2.2	88	88.9	7.5	22
Lead Concentrate	8.9	61.5	688	4.8	75.4	59

norating Cost

#### **Competitive with Easy Access to Asia**

Operating Costs			
<b>OP</b> Mining	C\$/t	mined	\$4.45
UG Mining	C\$/t	mined	\$52.02
Processing	C\$/t		\$22.92
G&A	C\$/t		\$10.37
All-In OPEX	C\$/t		\$82.00
Costs per Payable lb Zn		Net of By-	Co-
		Product	Product
Cash Cost (inc Offsite Cost	sts)		

Units	Zinc Con	Lead Con
C\$/wmt conc.	\$211.85	\$211.85
US\$/dmt conc.	\$190.00	\$170.00
US\$/oz	\$1.50	\$1.50
US\$/dmt conc.	\$0.96	NA
US\$/dmt conc.	\$2.00	NA
	C\$/wmt conc. US\$/dmt conc. US\$/oz US\$/dmt conc.	C\$/wmt conc.\$211.85US\$/dmt conc.\$190.00US\$/oz\$1.50US\$/dmt conc.\$0.96