

#### **INSTITUTIONAL & ANALYST ELAN SITE VISIT PRESENTATION**

Atrum Coal Limited releases the attached investor presentation to be provided to institutional investors and analysts at a scheduled Elan Hard Coking Coal Project site visit commencing on 5 September 2019.

Justyn Stedwell Company Secretary







### Important information

#### **Forward Looking Statements**

This presentation includes various forward looking statements which are identified by the use of forward looking words such as "may", "could", "will", "expect", "believes", "intend", "plan", "estimate", "anticipate", "continue", and "guidance", or other similar words and may include, without limitation statements regarding plans, strategies and objectives of management, anticipated production or construction commencement dates and expected costs or production outputs. Statements other than statements of historical fact may be forward looking statements. Atrum believe that it has reasonable grounds for making all statements relating to future matters attributed to it in this presentation.

Forward looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause the Company's actual results, performance and achievements to differ materially from any future results, performance or achievements. Relevant factors may include, but are not limited to, changes in commodity prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development, including the risks of obtaining necessary licences and permits and diminishing quantities or grades of resources or reserves, political and social risks, changes to the regulatory framework within which the Company operates or may in the future operate, environmental conditions including extreme weather conditions, recruitment and retention of personnel, industrial relations issues and litigation. Investors should note that any reference to past performance is not intended to be, nor should it be, relied upon as a guide to any future performance.

Forward looking statements are based on the Company and its management's good faith assumptions relating to the financial, market, regulatory and other relevant environments that will exist and affect the Company's business and operations in the future. The Company does not give any assurance that the assumptions on which forward looking statements are based will prove to be correct, or that the Company's business or operations will not be affected in any material manner by these or other factors not foreseen or foreseeable by the Company or management or beyond the Company's control.

Although the Company attempts to identify factors that would cause actual actions, events or results to differ materially from those disclosed in forward looking statements, there may be other factors that could cause actual results, performance, achievements or events not to be anticipated, estimated or intended, and many events are beyond the reasonable control of the Company. Accordingly, readers are cautioned not to place undue reliance on forward looking statements. Actual results, values, performance or achievements may differ materially from results, values, performance or achievements expressed or implied in any forward looking statement. None of Atrum, its officers or any of its advisors make any representation or warranty (express or implied) as to the accuracy or likelihood of fulfilment of any forward looking statement, or any results, values, performance or achievements expressed or implied in any forward looking statement except to the extent required by law.

Forward looking statements in this release are given as at the date of issue only. Subject to any continuing obligations under applicable law or any relevant stock exchange listing rules, in providing this information the Company does not undertake any obligation to publicly update or revise any of the forward looking statements or to advise of any change in events, conditions or circumstances on which any such statement is based.

#### **Competent Person Statement**

#### **Exploration Results and Coal Resources**

The information in this document that relates to Exploration Results and Coal Resources is based on, and fairly represents, information and supporting documentation prepared by Mr. Brad Willis, who is a Member of the Australasian Institute of Mining and Metallurgy (#205328) and is a full-time employee of Palaris Australia Pty Ltd (Palaris).

Mr. Willis has read and understands the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012 Edition). Mr. Willis is a Competent Person as defined by the JORC Code, 2012 Edition, having twenty years' experience that is relevant to the style of mineralisation and type of deposit described in this document.

Neither Mr. Willis nor Palaris have a direct or indirect financial interest in, or association with Atrum Coal, the properties and tenements reviewed in this report, apart from standard contractual arrangements for independent consulting work. In preparing this information, Palaris has been paid a fee for time expended. The present and past arrangements for services rendered to Atrum Coal do not in any way compromise the independence of Palaris with respect to this estimate. Mr. Willis has visited the Elan project area in September 2018 during the 2018 Elan South drilling program, and in July 2019 during the 2019 drilling program.

The Company confirms that it is not aware of any new information or data that materially affects the Previous Announcements and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the Prior Announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the Prior Announcements

Mr. Willis consents to the inclusion in the report of the matters based on the information, in the form and context in which it appears.





## Atrum corporate snapshot

Capital structure	
ASX ticker	ATU
Share price (3 September 2019)	A\$0.335
Shares on issue	475.4 M
Options and performance rights	146.7 M
Market capitalisation (undiluted)	A\$159 M
Cash (31 July 2019)	A\$19.2 M
Debt	A\$0.0 M

Major shareholders	
Regal Funds Management	13.5%
Nero Resource Fund	4.5%

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0.00

<b>Board of Directors</b>	
Non-Executive Chairman	Charles (Chuck) Blixt
Managing Director and CEO	Max Wang
Non-Executive Director	Richard Barker
Non-Executive Director	George Edwards
Non-Executive Director	Charles Fear







## Atrum Team: Highly experienced board and management

Charles (Chuck) Blixt Non-Executive Chairman	<ul> <li>40+ years' experience in private legal practice and legal counsel roles, including at Fiat-Allis, Caterpillar and RJ Reynolds</li> <li>Principal in C&amp;D Ventures, which invests in entrepreneurial start-ups and other businesses</li> <li>Currently Non-Executive Director of Lamb Weston Holdings Inc. (NYSE: LW, market cap US\$10.2B) and Swedish Match AB (SS: SWMA, market cap US\$7.0B)</li> <li>Previously Non-Executive Director of Krispy Kreme Doughnuts Inc. (NYSE: KKD) and Targacept Inc.</li> </ul>
Max Wang  Managing Director and CEO	<ul> <li>A Professional Engineer with 25+ years' experience in mining, oil &amp; gas, and other resource industry and infrastructure projects</li> <li>Previously President and CEO of Alberta-based coking coal producer, Grand Cache Coal, under Marubeni and Winsway ownership</li> <li>Earlier roles include Engineering Manager for Oil Sands at Petro-Canada and Director of Engineering (Major Projects) at Suncor Energy</li> <li>Past Chair and current Vice-Chair of the Coal Association of Canada</li> <li>Previously Director of Winsway Enterprises Holdings Ltd, which is a HKSE listed met coal trading and logistics management company</li> </ul>
Richard Barker  Non-Executive Director	<ul> <li>30+ years' experience in metals and mining industry financing, investment banking and M&amp;A advisory</li> <li>Managing Director of Mosaic Capital Pty Ltd, a corporate financial advisory business</li> <li>Previous roles include Managing Director of RBC Capital Markets, Executive Director of NM Rothschild and Sons (Australia), and CEO of ASX-listed Betcorp Ltd</li> <li>Currently Non-Executive Director of Batchfire Resources Pty Ltd (owns and operates a 12Mtpa thermal coal mine in Qld), Australian Future Energy Pty Ltd (clean coal technology) and Cape River Resources Pty Ltd (owns a thermal coal project in Qld)</li> </ul>
George Edwards  Non-Executive Director	<ul> <li>Metallurgist with 40+ years' experience in the global coal sector, including establishing, operating and selling export coal mines as well as trading coal globally</li> <li>Previously CEO in Australia for coal producer, CONSOL Energy Inc (NYSE: CEIX)</li> <li>Earlier roles at BHP, Coal &amp; Allied and the Joint Coal Board</li> <li>Previously Chairman of SAI Global Ltd (ASX: SAI), the Energy Council of Australia and the AusIMM</li> </ul>
Charles Fear Non-Executive Director	<ul> <li>40+ years' experience in corporate financial advice and insolvency practice</li> <li>Co-founder (in 2002) and former Chairman and current Non-Executive Director of natural resources focused corporate financial advisory and stockbroking firm, Argonaut Ltd</li> <li>Previous roles include Managing Director of CIBC World Markets, Director of Hartley Poynton and Senior Insolvency Partner at KPMG</li> </ul>





## Highly experienced Board and management - cont'd

4 years board member Mining Association of BC

Jayram Hosanee Chief Financial Officer	<ul> <li>30 years' experience as a finance professional across a wide range of industries in Europe, Africa and North America, including investment banking and logistics.</li> <li>Served as director and CFO on a number of mining companies in Canada.</li> <li>Chartered Professional Accountant (CPA. CGA) and a Fellow of the Chartered Certified Accountants (FCCA).</li> <li>Masters degree from University College, London.</li> </ul>
Tayfun (Ty) Zehir VP, Marketing & Business Development	<ul> <li>More than 30 years of global marketing experience for especially Western Canadian hard coking coal, PCI coal and anthracites,</li> <li>VP Marketing for Walter Energy and for Smoky River Coal, as well as General Manager of Technical Marketing for Teck Coal and VP North America for Jinhui Metcoke China Ltd</li> <li>A registered professional mining engineer in Canada, and early in his career worked in senior mining design and operation roles in Canada as well as Europe</li> </ul>
Tony Mauro Senior Director Regulatory & Stakeholders	<ul> <li>Over 25 years of experience in resource project permitting, stakeholder engagement, regulatory affairs and business development.</li> <li>Led the permitting of a greenfield metallurgical coal mine and several large energy and power projects in Alberta.</li> <li>Was the Vice President of Corporate Development at Maxim Power Ltd, and subsequently Inter Pipeline Ltd, both located in Alberta, Canada</li> <li>BSc in Geophysics and Masters in Business Administration</li> </ul>
Daniel Campbell  Chief Geologist & Exploration  Manager	<ul> <li>Seasoned in geology and exploration management in Western Canada, including 7 years in metallurgical coal</li> <li>Extensive experience in field mapping, exploration planning, drilling supervision and logging as well as coal quality testing</li> <li>Has supervised the exploration programs of Elan Coal since 2014</li> <li>Lives in the Crowsnest Pass and is closely engaged with the local communities</li> </ul>
Darren Cowan Environmental Manager	<ul> <li>Over 15 years of experience in environmental management, including operating coal mines in BC, Canada</li> <li>Past Environment Manager of Canadian Operations for Walter Energy (major open cut met coal operations) and Environment, Health and Safety Director for Hillsborough Resources (underground coal mine), both in BC Canada,</li> <li>Also, a consulting environmental portfolio manager for permitting and environmental studies for various clients</li> <li>Earlier experiences including forestry and fish habitat technician</li> </ul>
Judy Matkaluk  Stakeholder Relations Manager	<ul> <li>A registered Professional Geoscientist in BC and AB, Canada, with 30 years of experience in exploration, permitting, first nations and government relations management</li> <li>15 years experience with aboriginal engagement and negotiation for coal and other energy projects including one year working out of the BC Premier's office</li> <li>10 years experience with coal exploration in BC with permitting, environmental assessments (Provincial and Federal) and aboriginal and stakeholder engagement</li> <li>10 years experience as an exploration geologist</li> <li>5 years board member on the Canadian Association of Drilling Engineers</li> </ul>





## Elan presents a rare opportunity

Large-scale tenement holdings (230 km<sup>2</sup>) in a major HCC basin

Tier 1 hard coking coal quality established

298Mt resources and growing; shallow, thick seams

Located in a proven low cost mining region; open pit focus

Proximate rail access to key West Coast ports (surplus capacity)

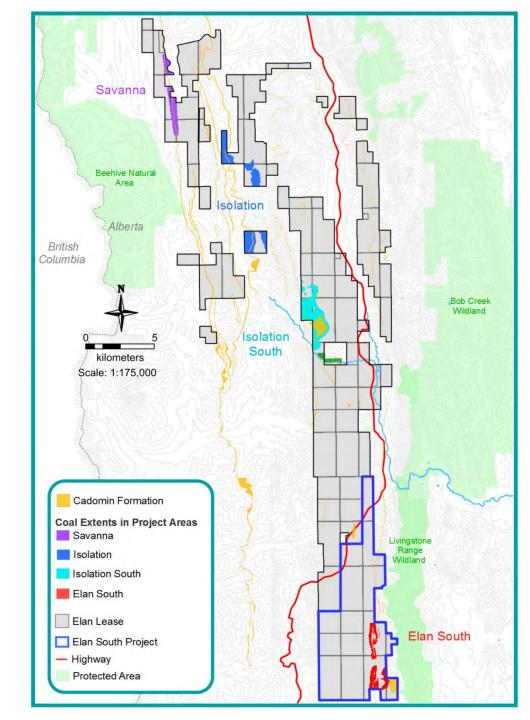
Clear potential for multiple, large Tier 1 HCC developments

#### Elan Hard Coking Coal Project Resources<sup>1</sup>

Project area	Indicated	Inferred	Total
Elan South	31 Mt	66 Mt	97 Mt
Elan North	39 Mt	162 Mt	201 Mt
TOTAL	70 Mt	228 Mt	298 Mt



For full Elan Project JORC Resource details see Atrum ASX releases dated 8 January 2019 (Elan South Hard Coking Coal Resource increased by 170% to 97Mt) and 22 January 2019 (Additional 201Mt JORC Resources defined for Elan Project)





## Accelerated project development strategy

Early 2018 Completed Elan

Completed Elan acquisition and received exploration permits from Alberta Government

#### Mid 2018

Resource drilling at Elan South (32 holes) and Environmental Baseline Study started

#### **Late 2018**

Large diameter coring at Elan South (5 holes) and detailed coal quality testwork

#### **Early 2019**

Updated Elan Project Resources and test work results confirm Tier 1 HCC

#### 1Q 2019

2019 Elan Project exploration and field program scheduled

#### 2Q - 4Q 2019

Define multiple OP zones at Elan South and advance Isolation South, via 20,000m drill program 4Q 2019

Updated Elan resource estimates, coal quality work and Elan South Scoping Study

#### Dual area strategy to rapidly advance multiple, large Tier 1 HCC developments across the Elan tenements

#### **Elan South**

- Increase scale of current 97Mt resource base
- Upgrade JORC classification (further M&I resources)
- Extensive coal quality testing for HCC product spec development
- Full-scope environmental baseline study for EIA preparation
- Target Scoping Study completion in 4Q 2019

#### **Isolation South**

- Increase scale of current 120Mt resource base
- Upgrade JORC classification (further M&I resources)
- Detailed coal quality testwork
- Preliminary development analysis



Elan South Scoping Study targeted for 4Q 2019 and PFS targeted in 2H 2020



## Primary focus: Elan South

#### Flagship area targeted for accelerated development

Successful 37-hole drill program in 2018

97Mt resources (and growing)

Thick, shallow, large-tonnage coal seams

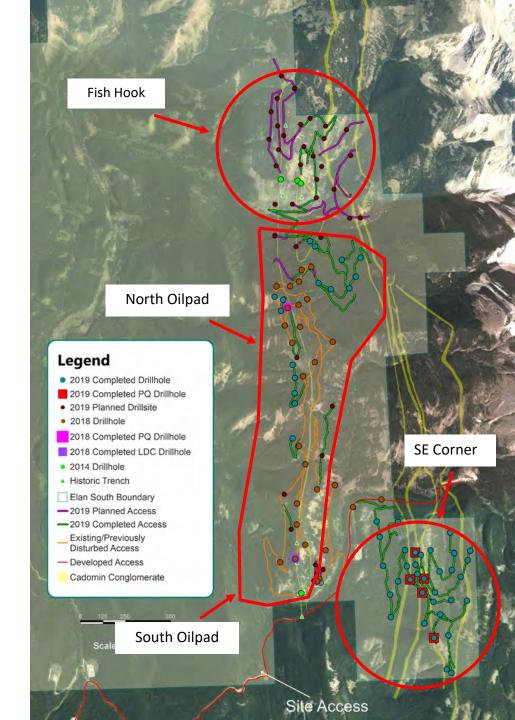
Tier 1 HCC quality (CSR 71 from 2018 LD core samples)

2019 extensional and infill drilling program in progress; 63 holes completed including new shallow SE Corner discovery

Scoping Study and full-scope Environmental Baseline Study work underway

LD coring commenced for further detailed coal quality testwork







## South East Corner discovery

Connected to south-east end of current Oil Pad resource

Thick coal seams exposed in road cuttings and trenches

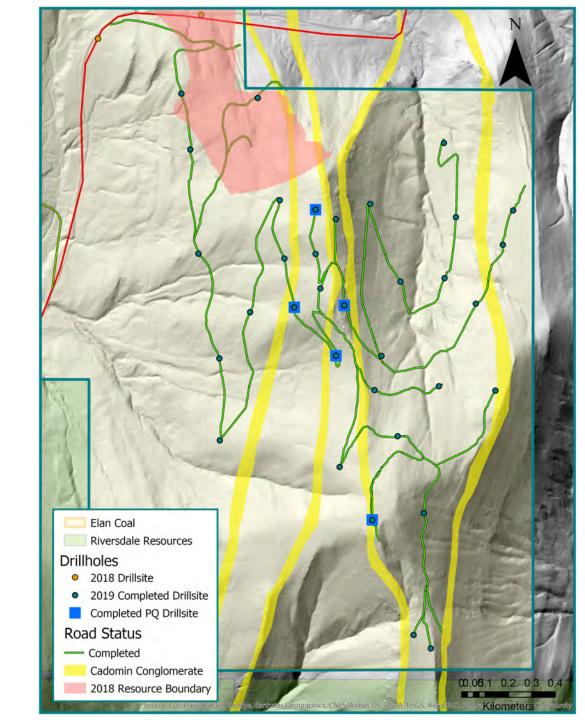
Significant intercepts in all 46 holes recently drilled<sup>1</sup>

Total apparent thickness up to 44m, with average 16.4m

Deposition starting from surface (or near) in many holes

#### Shallow, low-strip mining potential







## Dual area approach: Isolation South

Strategy to advance multiple, large Tier 1 HCC developments

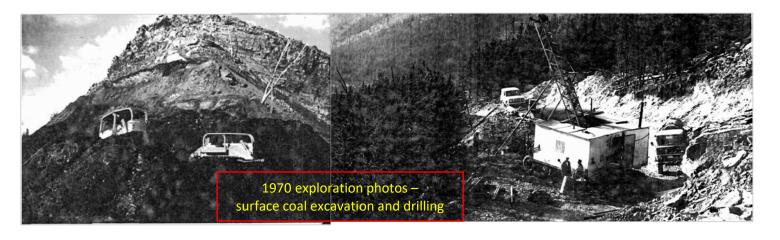
Isolation South (part of Elan North): 120Mt resources and growing; located approx. 25km from the northern boundary of Elan South

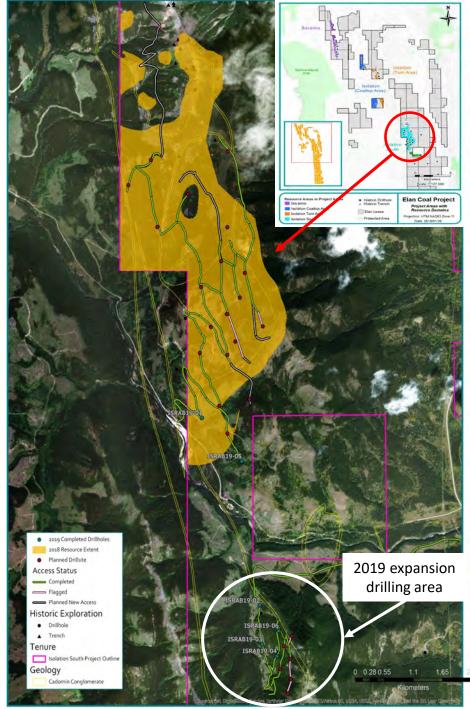
Geologically and geometrically attractive deposition; premium HCC

#### Relative ease of access and integrated development focus

Extensive historical exploration and coal quality testwork

35-hole extensional and infill drilling program commenced







## Strategic locale, infrastructure rich

150km south of Calgary and 13km north of Coleman

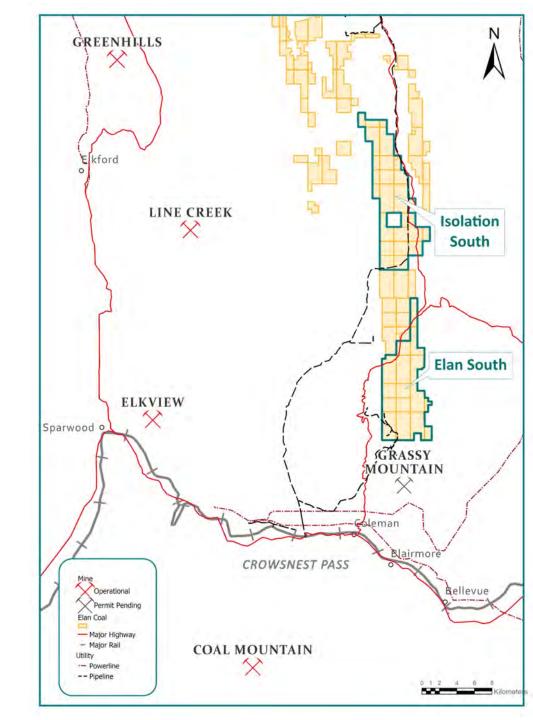
Highway transects the property

Railhead 13km south providing access to key West Coast export terminals (with surplus capacity)

138kV powerline nearby

Pending 4.5Mtpa Grassy Mountain HCC development (Riversdale), immediately south of Elan South

Traditional mining region, deep expertise and labour pool







## Site infrastructure and Scoping Study workstreams

#### **CHPP:** Sedgman

- Preliminary process flowsheet
- Schematic CHPP design, and,
- CHPP related infrastructure

#### Water: WaterSmart

- Water licenses review for entire watershed
- Possible ground water sources and stormwater use
- Discussions with government for water licenses transfer to industrial use
- Water use optimisation

#### Rail load-out: Hatch

- Evaluate Grassy Mountain rail load-out options
- Examine additional possibilities
- Assess previous studies on rail spurs into the Elan North valley

#### **Scoping Study:** Palaris Australia

- Overarching Scoping Study management and finalisation
- Geology and resource estimates
- Preliminary mining plan
- High-level overall project economics





## Rail route and port options

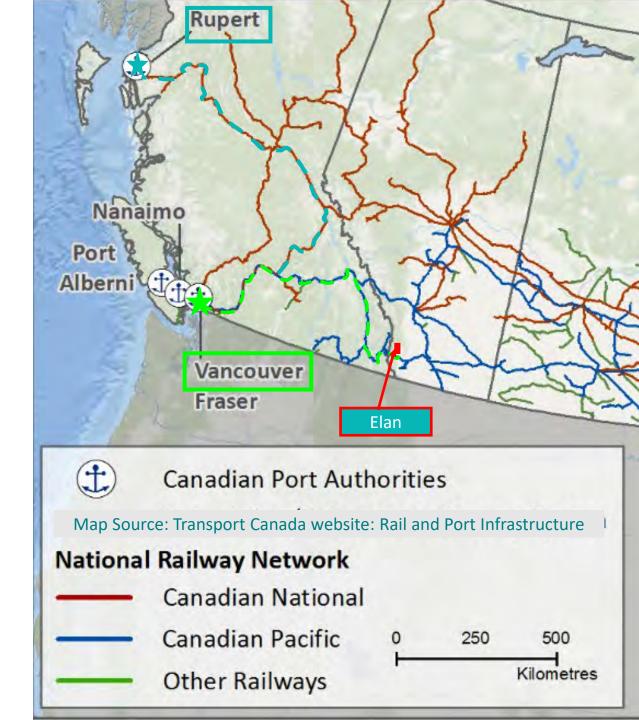
#### Rail

- CP main line, 13km to Elan South, leading to Vancouver ports, approx. 1,100km
- CN main line, leading to Prince Rupert ports, approx. 2,100km
- Ample main line capacity
- Approx. two years of advanced planning for offtake

#### **Ports on Western Canadian Coast**

- Ridley, Prince Rupert: 19Mtpa\* (and expandable)
- Neptune, Vancouver (controlled by Teck): 18Mtpa\*
- Westshore, Vancouver (Elan's target port): 33Mtpa
- TOTAL: 70Mtpa (\* by year 2021)
- Current total volume from Canada: ~40Mt/year (not including Grassy Mountain)







## Preliminary infrastructure options – to be studied in PFS

#### **Infrastructure Study Teams**

#### Rail: Hatch (worked on Grassy Mountain)

- Study Grassy Mountain rail load out options
- Examine additional rail possibilities
- In 1970's, CP Rail studied options to take a rail spur into the Elan North valley

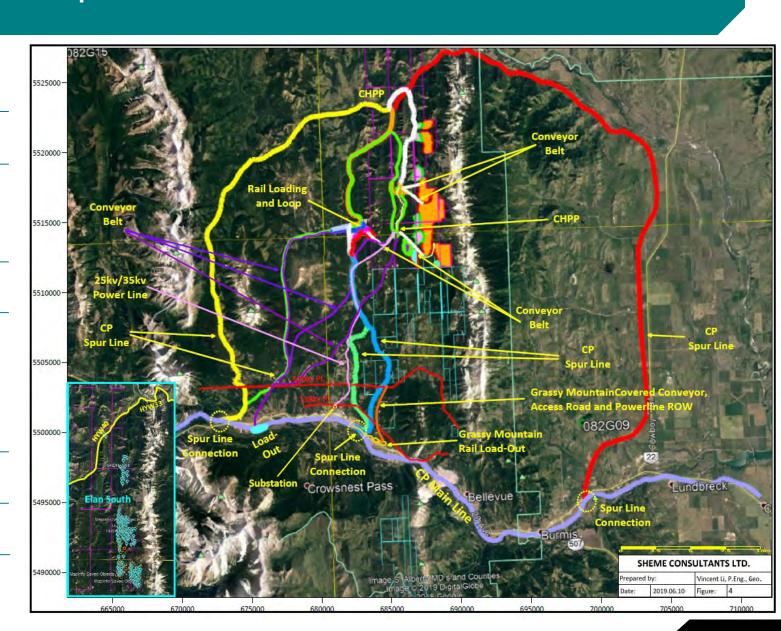
#### Water: WaterSmart (uniquely qualified)

- Review the complete list of water licenses for the entire watershed
- Water use optimization
- Possible ground water sources and stormwater catching
- Discussions with government for water licenses transfer to industrial use

CHPP: Sedgman (worked on GM project)

Overall: Palaris Australia







## Preliminary infrastructure options

#### **Infrastructure Study Teams**

#### Rail: Hatch (worked on Grassy Mountain)

- Study Grassy Mountain rail load out options
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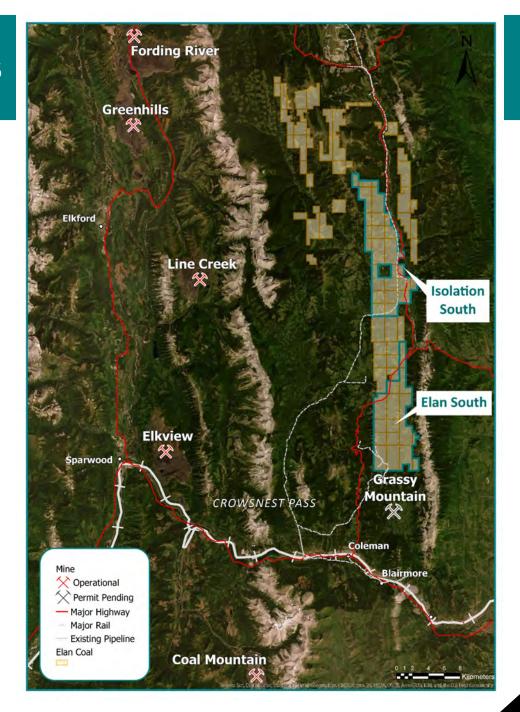
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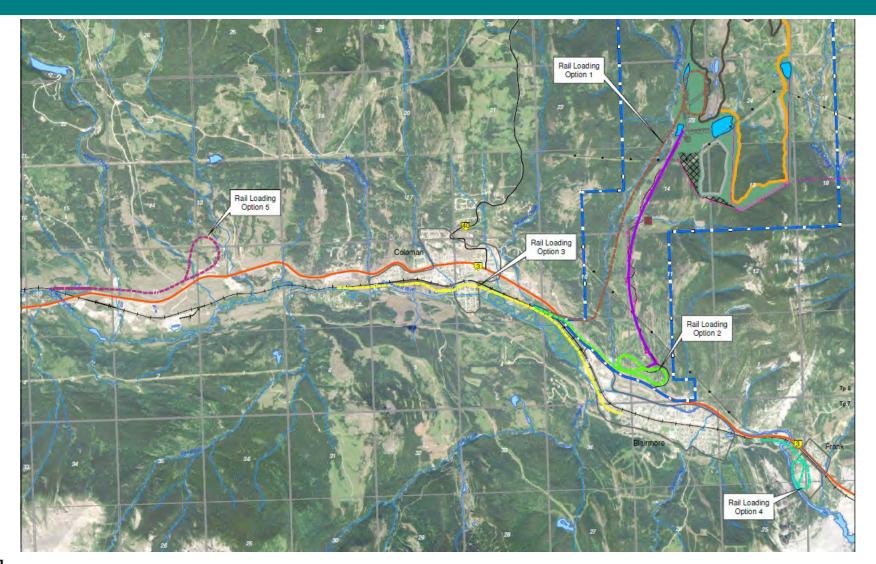
Overall: Palaris Australia







## Grassy Mountain original rail load out options







## Strong government support

#### Fully permitted, large-scale exploration programs

- Elan South: more than 300 drill holes permitted
- Isolation South: more than 400 drill holes permitted
- Cat Mountain: exploration permit application in progress
- Necessary permits for environmental baseline studies at Elan South

#### Alberta regulators are engaged and supportive

- Alberta Energy Regulator (AER): approved numerous field amendments for exploration activities,
   multiple update meetings on Elan Project progress
- Alberta Consultation Office (ACO): numerous work meetings and conference calls, responsive and timely decisions on FN consultation
- Other engagement with: Federal CEAA, Alberta Energy, Alberta Environment, Town of Crowsnest Pass, Alberta Legislature, Alberta Infrastructure, etc





## Elan - the Elk Valley comparative

Elan is located 30km east of Teck's Elk Valley HCC complex, with a comparable land stretch – **multi-mine potential** 

Elk Valley: +25Mpta multi-mine producer of premium mid-vol HCC

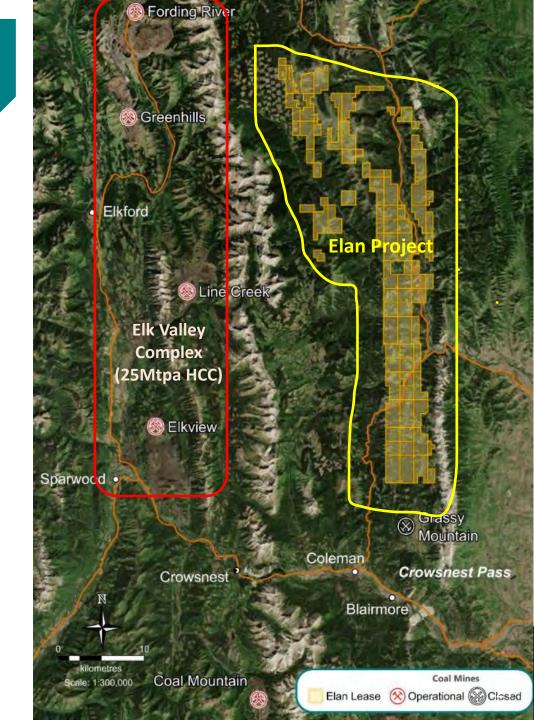
Elan in the same coal basin and closely correlated with Elk Valley coal seams and settings

Elan South coal quality results strong comparable with Teck Preimum products (Elan South CSR of 71)

Teck's long-term public operation data at the Elk Valley provide a very transparent indication of operating conditions and costs

Teck's Elk Valley operation is a reference and benchmark for Elan's development and operation. Grassy Mountain project is another validation.









## Project exploration overview

Elan South is the primary focus with significant drilling completed (15,000m drilling planned for 2019)

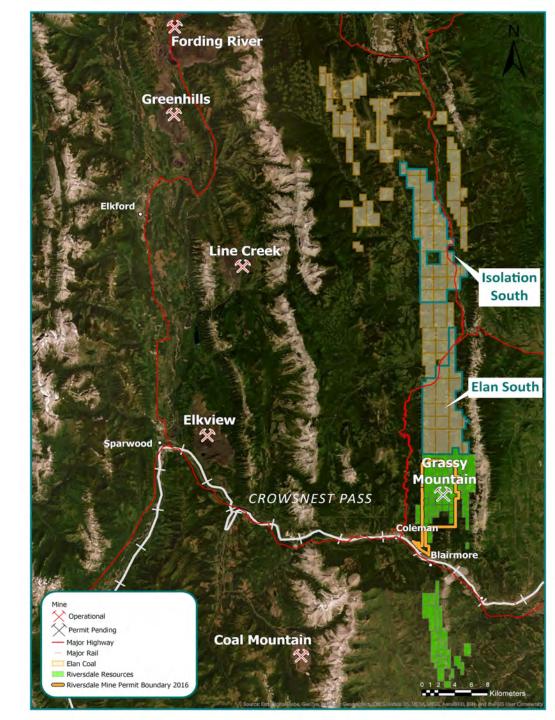
Isolation South is being drilled concurrently (7,000m drilling planned for 2019); extensive historical drilling and fieldwork

Well defined regional and local geology – easily identifiable surface coal exposures, enhanced by historical data

Efficient and low cost exploration to maximise return on capital, resource growth and accelerate project progression

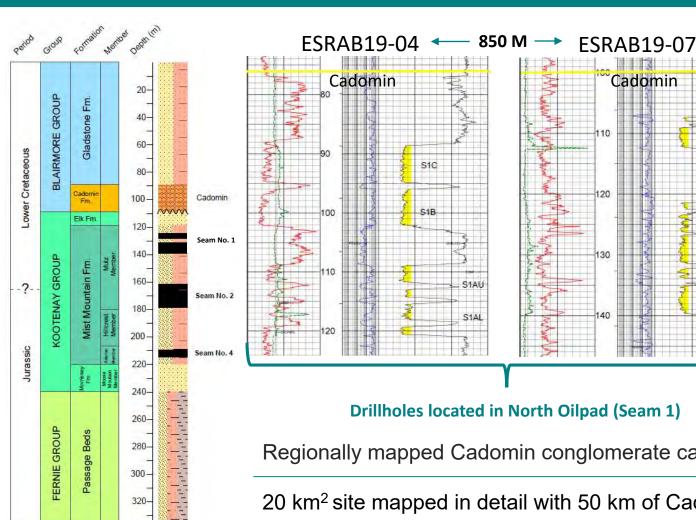
Project area	Indicated	Inferred	Total
Elan South	31 Mt	66 Mt	97 Mt
Isolation South (part of Elan North)	39 Mt	81 Mt	120 Mt
Other Elan North areas		81 Mt	81 Mt
TOTAL	39 Mt	162 Mt	298 Mt







## Elan geological setting





Regionally mapped Cadomin conglomerate cap rock

20 km<sup>2</sup> site mapped in detail with 50 km of Cadomin strike mapped

Highly predictable geology due to Cadomin at surface; many thick coal seams exposed

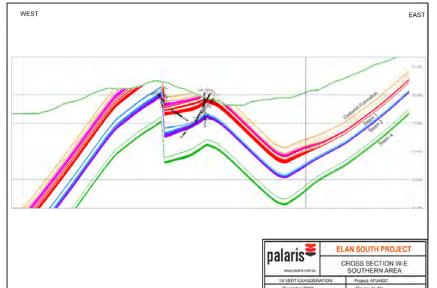
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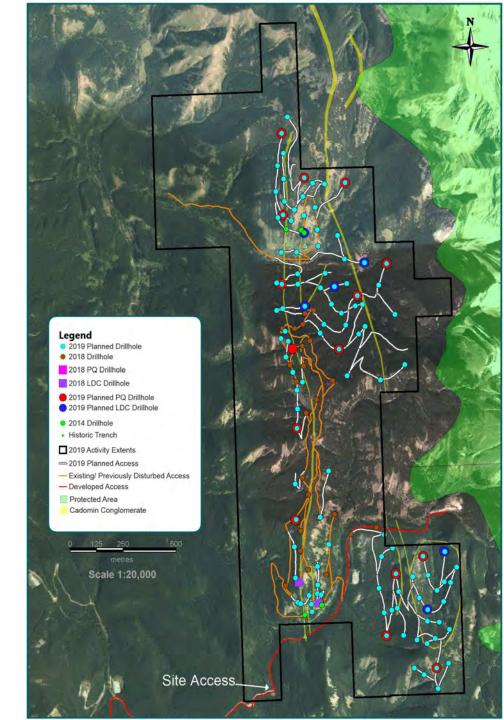


## Primary focus: Elan South











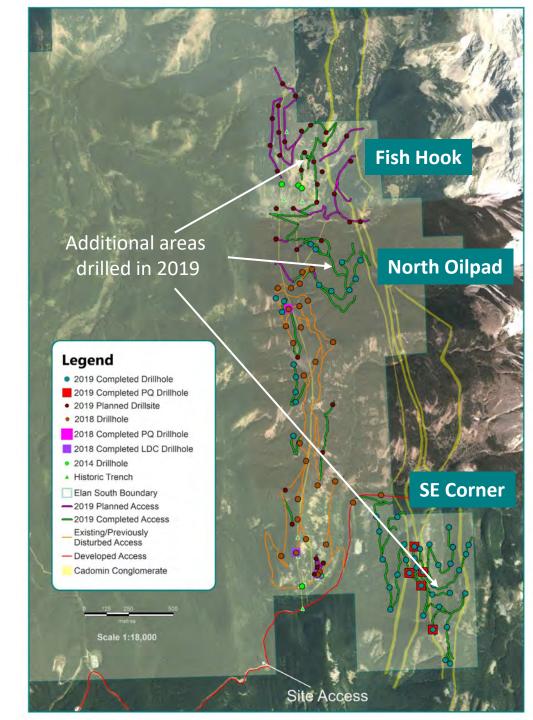
## Elan South: 2018 and 2019 drilling

#### 2018 Elan South Resources By Seam<sup>1</sup>

Seam	Sub-Seam	Indicated	Inferred	TOTAL	
	S1C	6.1	9	15.0	
	S1CL	0.5	2	2.3	
Seam 1	S1B	1.1	3	4.3	
	S1AU	4.6	4	8.4	
	S1AL	8.2	7	14.9	
	S2BU	-	5	4.6	
Seam 2	S2B	1.1	9	9.9	
	S2BL	-	2	1.7	
	S2AU	4.4	10	14.8	
	S2AL	5.3	12	16.8	
	S4A	-	1	1	
Seam 4	S4B	-	3	3.2	
	S4C	-	1	1	
TOTAL		31.3	66	97	

<sup>1.</sup> For full Elan South area JORC Resource details see Atrum ASX release dated 8 January 2019 (Elan South Hard Coking Coal Resource increased by 170% to 97Mt)

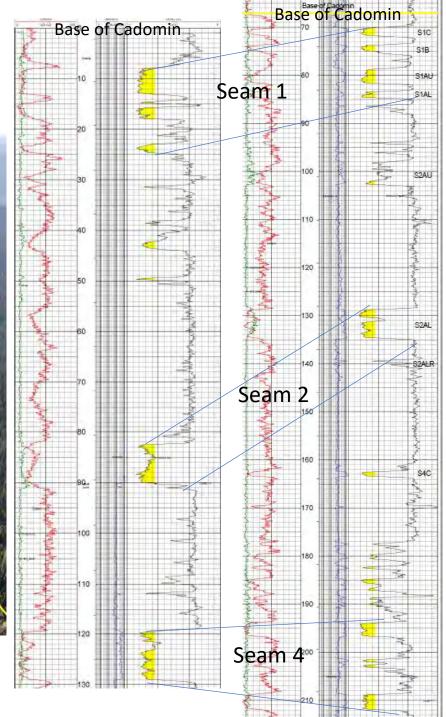






## Elan South: South East Corner

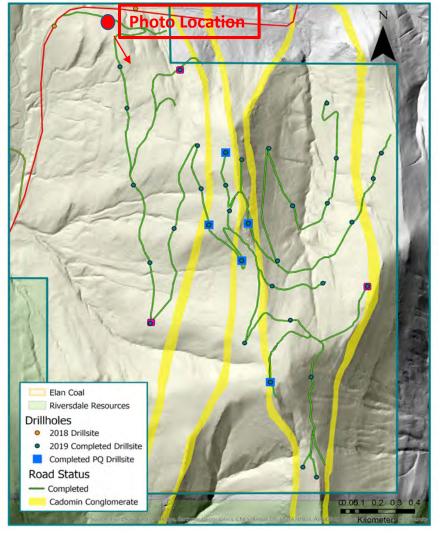




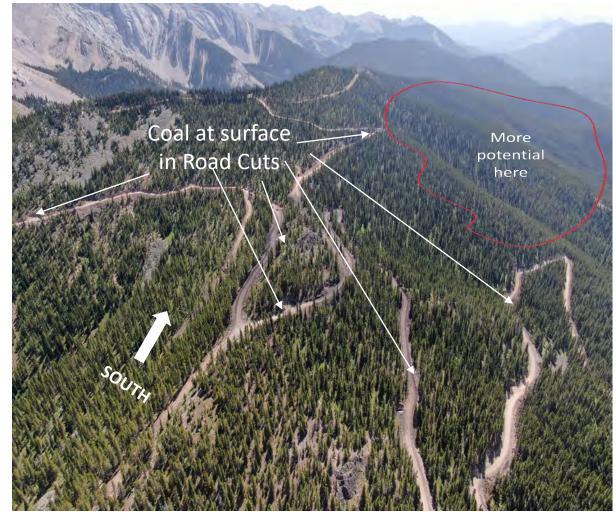




## Elan South: SE Corner







New 2019 discovery area, outstanding results

Connected to the south-east end of existing Oilpad resource

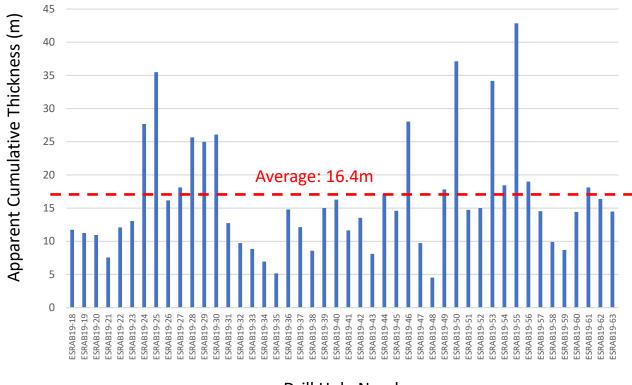
46 drill holes completed in SE Corner totalling 7,100m

Potential Seam 4 blending benefits



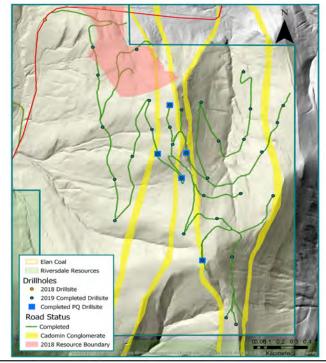
## Elan South: South East Corner

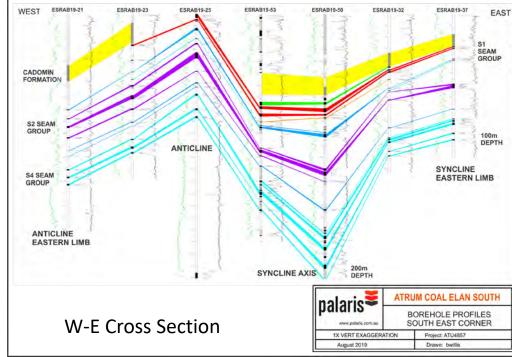
#### **Total Coal Intersection at every SE Corner Drillhole**



**Drill Hole Number** 

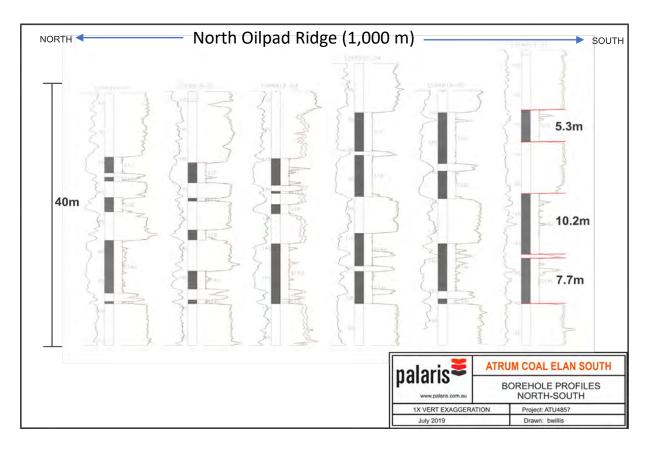


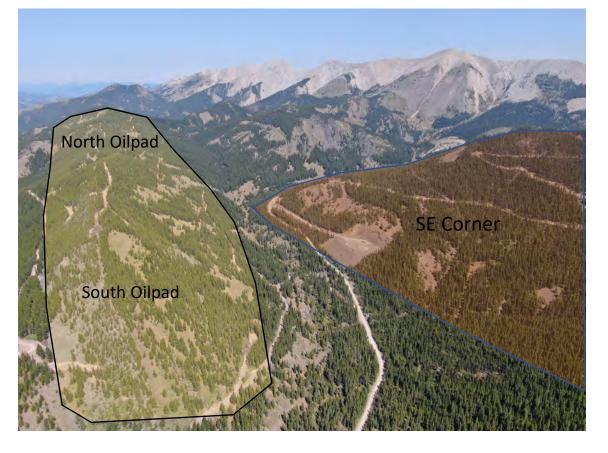






## Elan South: Oilpad





Continuation of 2018 drilling focus

Significant drill intersections in 2019 (see chart to left)

More drilling planned for North Oilpad in 2019

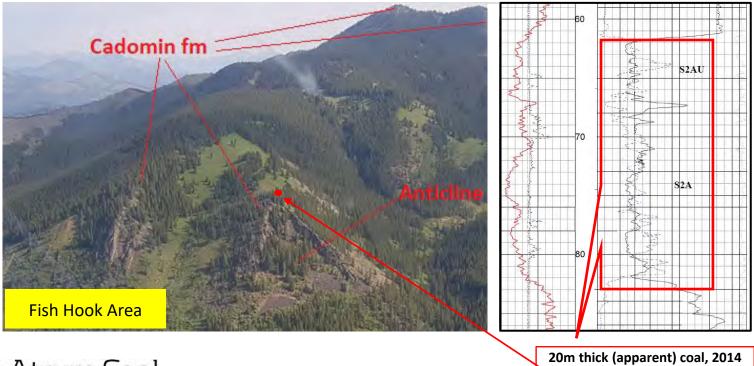




## Elan South: Fish Hook

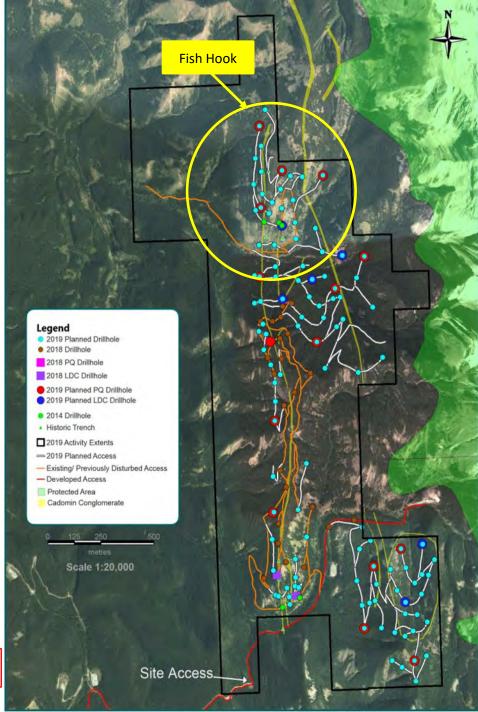
Field survey and 2014 drilling (3 holes) indicate high potential

Up to 20m apparent coal thickness in one seam





drillhole, less than 85m depth



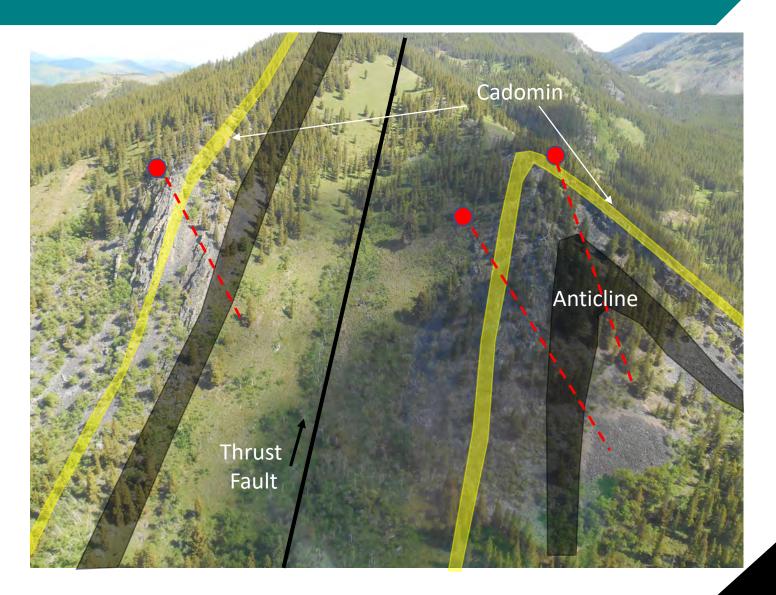


## Elan South: Fish Hook

Continuation of Oilpad North trend

Multiple stacked coal packages

Main focus area for remaining drilling at Elan South in 2019; 30 holes planned







# Dual focus: Isolation South (part of Elan North tenements)

Extensive stretch of northern Elan tenements (~30km)

Substantial historical exploration, sampling and test data

201Mt resources & growing; focussed on OC opportunities

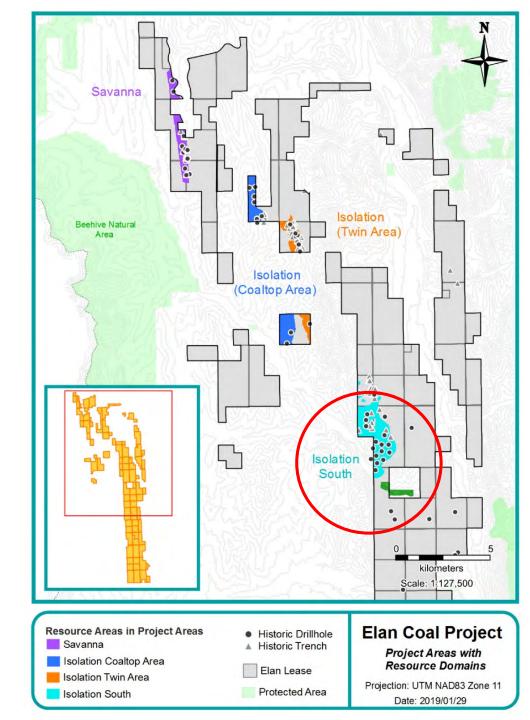
Similar high-quality HCC as Elan South

Delivers clear scalability, life and multi-mine potential

#### **Elan North Resources**

Project area	Indicated	Inferred	Total
Savanna		30 Mt	30 Mt
Isolation South	39 Mt	81 Mt	120 Mt
Isolation – Ridge, Twin & Coaltop		51 Mt	51 Mt
TOTAL	39 Mt	162 Mt	201 Mt



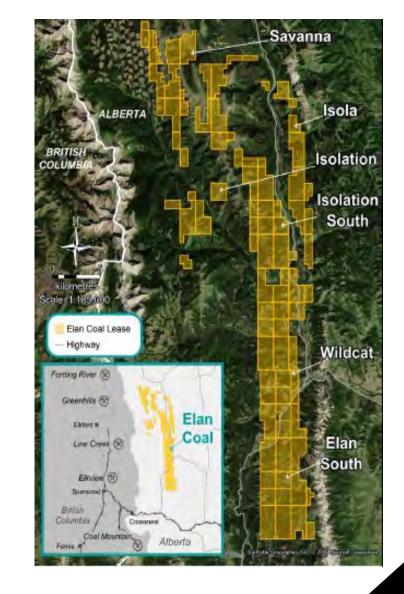




## Significant historical exploration and sampling at Elan North

#### **Summary of Elan Coal historical exploration data (Dahrouge 2013)**

Area	Operator	Campaign	Core holes	Bore holes/ Wells	Adits	Trenches	Mapping	Access Trails (km)
OMR (Isolation South)	Scurry	1970	19	-	3	24	-	22.5
Savanna	Bralorne	1969-72	8	57	5	15	1:4,800 ft	-
Savanna	CIGOL	1971	2	-	-	-	-	-
Isolation	CanPac	1969-71	76	5	6	76	1:12,000 / 1:2,400	~117.5
Isolation	Granby	1974	18	9		45	1:2,400	
Regional-OMR	W.C.C	1949-55	_	-		33	1:12000	Extensive
Regional-Isola	CCL	1971	3	-	-	15	-	-
Regional-OMR	Consol	1976	-	-	-	-	1:12,000	-
Regional	CHE & Devon	1989	-	1	=	-	-	_
Regional	NEC	2001-02	-	20	-		-	-
Total		•	126	92	14	208		







## Isolation South: 2019 program

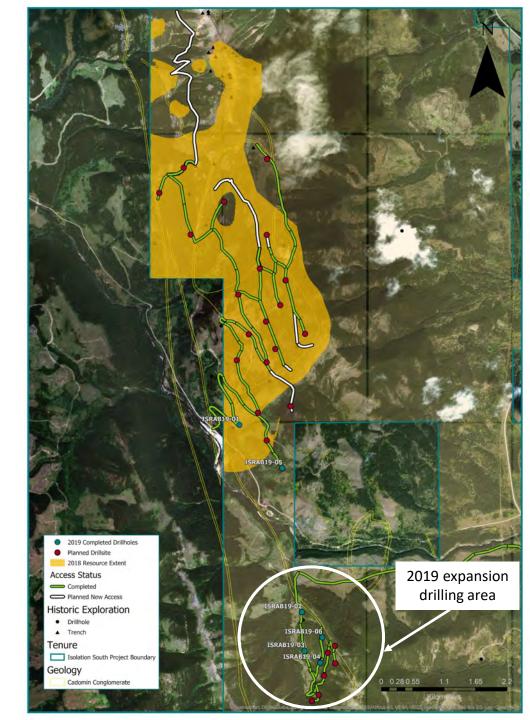
120Mt current resource estimate

Historical exploration and coal quality test work delivers confidence in HCC quality and further resource potential

2019 extensional and infill drilling program to increase resource scale, upgrade classification and validate coal quality

Drilling underway; 35 drill holes (7,000m) planned plus additional core holes for coal quality testwork

Significant extensional drilling planned in the southern zone







## Isolation South: Attractive geology

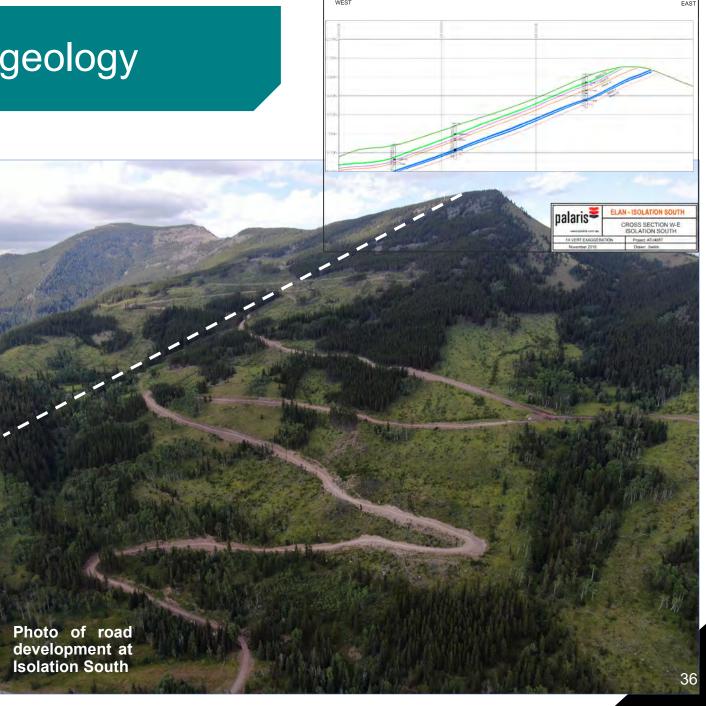
Geologically & geometrically attractive deposition

Efficient, low cost exploration; ease of access

Simple dip-slope geological setting – minimises mining complexities and simplifies operations









# The broader opportunity: Elan delivers clear scalability

Large landholding (approx. 230km²) proximate to Teck's Elk Valley

Over 40km of delineated coal strike extent

Large undrilled or underdrilled areas

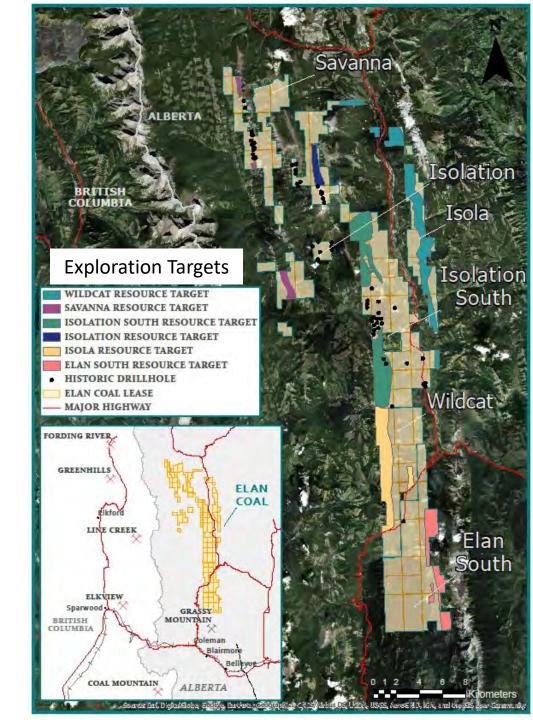
Combined Exploration Target Range for Elan of 210Mt to 900Mt<sup>1</sup>

Clear drilling & resource opportunities at Cat Mountain and Wildcat

#### Potential for further, large Tier 1 HCC developments

The Exploration Target potential quantities and grades are conceptual in nature and there has been insufficient exploration to date to define a mineral resource. It is not certain that further exploration will result in the determination of a Mineral Resource under the "Australian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves, the JORC Code" (JORC 2012). The Exploration Target is not being reported as part of any Mineral Resource or Ore Reserve. Elan South ETR is 70 – 320Mt and Elan North ETR is 140 – 580Mt.

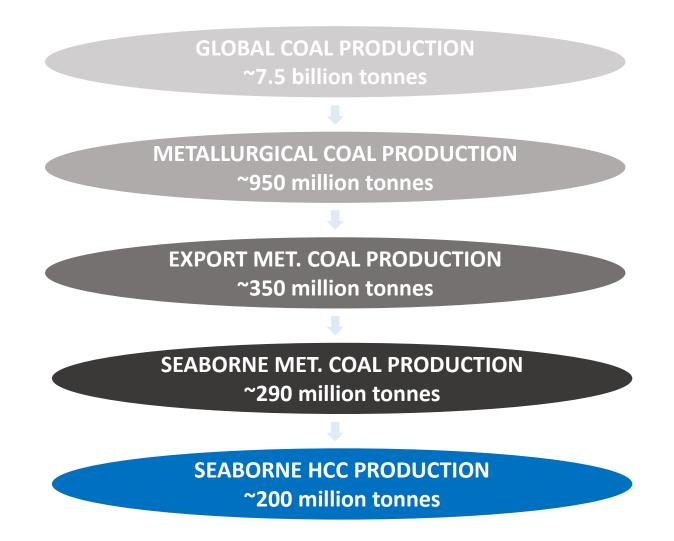








## Elan's product and market: Hard coking coal

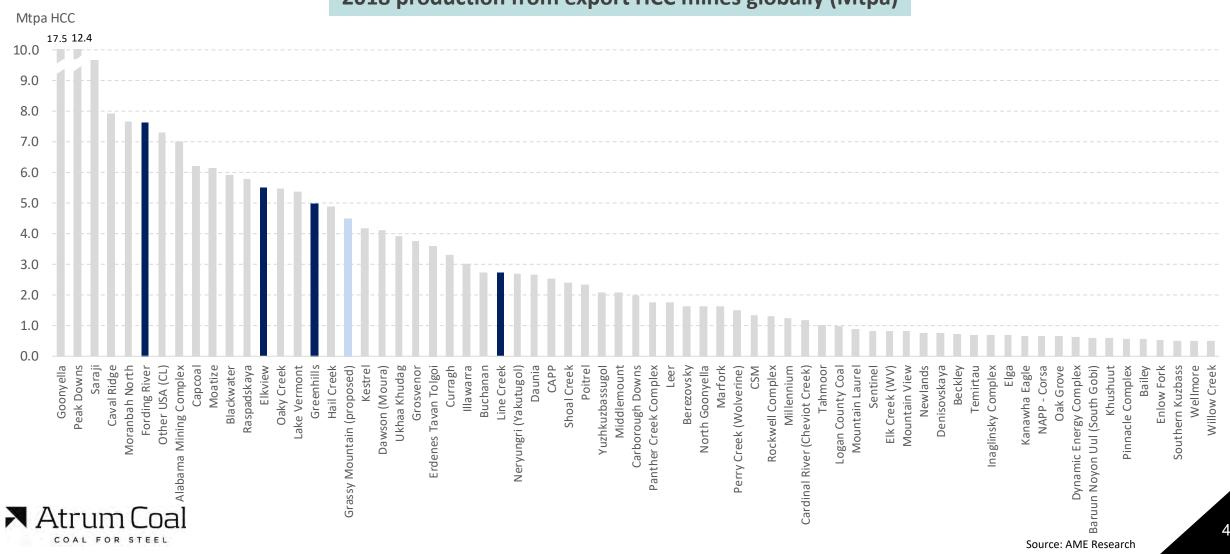






## Global significance of Elk Valley

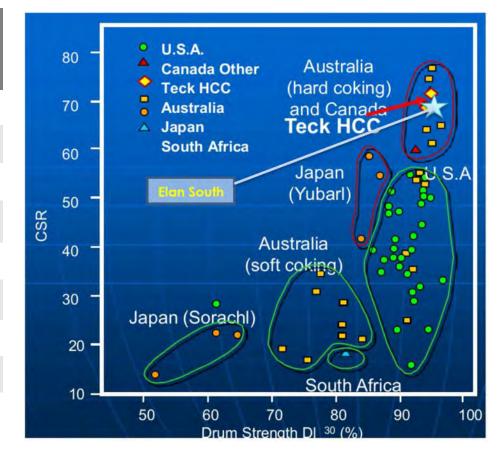






## Tier 1 hard coking coal quality – 2018 testing results

	Elan South <sup>1</sup> (Atrum)	Elk Valley (Teck Premium) <sup>4</sup>	Grassy Mount. (Riversdale)	Platts Aust. HCC 64	IHS Aust. Prime HCC
CSR	71 <sup>2</sup>	(EST 65 – 70)	65	64	71
Coal Rank RoMax (%)	1.13	1.07 – 1.17	1.2	-	1.15 – 1.55
Yield (%)	> 65		55	-	-
Volatile Matter (%)	24-26	24.5 – 26.5	23.5	25 – 26	26 max
Total Moisture (%)	< 10	< 10	10	9 – 10	10 max
Sulfur (%)	0.65	0.65 – 0.70	0.5	0.5 – 0.7	0.7 max
Phosphorus (%)	0.05 <sup>3</sup>	0.075	0.04	0.05	0.05
Fluidity (ddpm)	160	200 – 500	150	1,500 – 1,700	100 min



Elan South coal is a high quality mid-vol hard coking coal rightly classified in the top tier of the export HCC market

#### 1. Elan South data based on test work programs conducted in 2014 & 2018

#### Seaborne coking coal product parameters

Source: Teck Resources, January 2019



<sup>2.</sup> Results from 2018 carbonisation test work (see recent Atrum ASX release)

<sup>3.</sup> South area (2018 samples) shows 0.060 – 0.085% while North area (2014 samples) shows 0.010 – 0.020%

Properties other than CSR are from NI 43-101 Technical Report on Coal Resources and Reserves of the Fording River Operations (2011)



## Atrum premium LV-MV HCC: Quality highlights

- True LV-MV coking coal by Rank (1.13-1.20%)
- Moderate Ash content (7.0 9.0%) that fits well with all coke makers
- Excellent (low) Sulphur (0.60-0.70); mostly
   Organic, hence lower BF loading
- VM content is moderate (24-26%) and compares well to most Australian LV-MV coals
- Moderate fluidity and Dilatation for a coal of this rank (100-200 ddpm, 30-40 Dilatation)
- Good **FSI** (FSI: 7)
- High Ash Fusion Temperatures (+2700F)

- Excellent SHO Contraction (-16%)
- Strong Coke Cold Strength Indices (JIS 30/15 = 94 95%, JIS 150/15 = 83)
- Highly Acidic Ash Chemistry (85%), Low Basic Ash Components (9%) and Alkali
- Very Low Phos in coal (0.05%)
- Very low **Reactivity** (CRI: 20-22%), hence high **CSR** (CSR: 70+%)
- Low Carbonization Pressures (Wall Pressure <1.0 psi)</li>





## Coking coal quality directly impacts on BF economics

- The coke quality and its impact on BF efficiency is directly impacted by the quality of the coking coals used to make it
- An increase in coke strength and/or reduction in coke impurities:
  - Increases BF productivity (iron output per day)
  - Decreases total coke requirements
  - Allows higher PCI usage (lower coke cost)
- Due to its premium coking properties, <u>hard coking coal is not</u> <u>substitutable in any baseload sense</u>
- HCC is the majority foundation of any coke blend and, therefore, every blast furnace operation

Hard coking coal

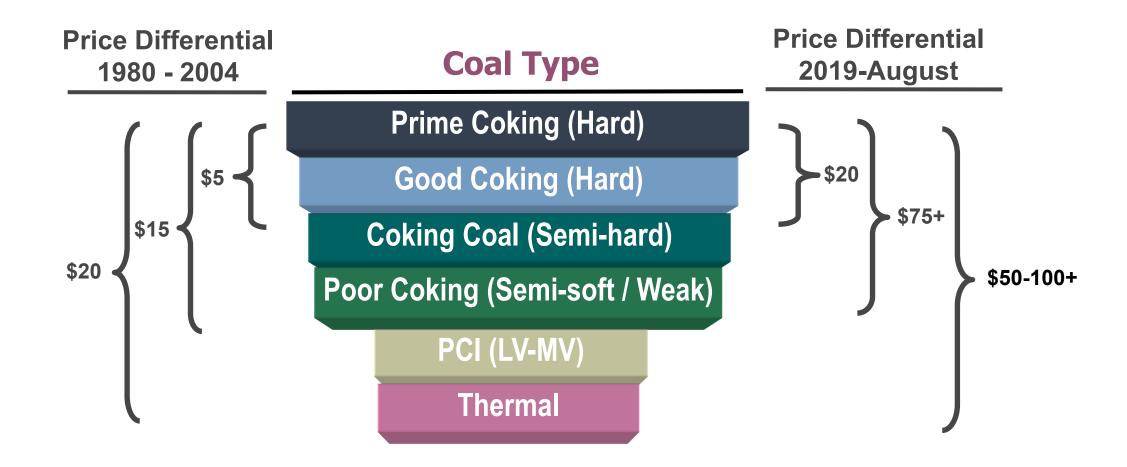
Semi-hard coking coal

Semi-soft coking coal





## Impact of coke quality on coal price







## 2019 coal quality program

Extract both PQ and large diameter cores across the drilled areas for quality testing

Full spectrum raw and clean coal quality testing, coking testing and Coke Strength after Reaction (CSR)

Leading specialty labs in Canada, US, Spain and Germany

Designed to broaden Elan South testing in order to develop indicative HCC product specifications

Includes initial testing of new SE Corner discovery

Target validation of Isolation South historical Tier 1 results









## Atrum committed to industry best practices



#### **Environmental excellence**

A core value; ownership of environmental knowledge and commitments

Accelerated environmental program to establish early understanding and reduce approval times

Comprehensive baseline data collection and thorough assessment of potential impacts

#### Stakeholder engagement excellence

Ownership of all critical stakeholder relationships

Comprehensive stakeholder identification and engagement

Early engagement with First Nations, government, communities and other directly impacted stakeholders

#### Regulatory excellence

Ownership of all regulatory applications, supported by industry leading experts

Experienced internal team working alongside toptier, discipline-specific contractors

Proactively engaging federal and provincial regulators early; complete work first time

**Enhanced by learnings from the Grassy Mountain Project** 





## Regulatory framework

# <u>Federal:</u> Impact Assessment Act (new, formerly known as Bill C-69), Fisheries Act, Species at Risk Act, Migratory Birds Convention Act, others

- "Environmental Impact Assessment" replaced by "Impact Assessment"
- More cohesive on impacts around health, social, economic and indigenous peoples
- Enhanced role for "Traditional Knowledge"
- Broader public interest test with a focus on the "acceptability of adverse effects"

# <u>Provincial:</u> Coal Conservation Act (CCA), Environmental Protection and Enhancement Act (EPEA), Water Act, Public Lands Act, others

- Environmental Impact Assessment
- EPEA (Environmental Protection and Enhancement Act) Operating Approvals
- Water Act Approvals
- Mine Permit (development, operation and reclamation including coal processing)





## New impact assessment regime and Atrum's approach

#### The Same Core Contents – Impact Assessment and Stakeholder Consultation

- Early engagement of First Nations, and early Traditional Land Use and Knowledge Studies
- Early engagement of government regulators to ensure alignment on objectives, scopes and terms of references
- High quality "Project Description" and review with regulators before submission
- Thorough baseline study and impact assessment, continuous consultation with regulators
- Incorporating the best practices of the coal mining industry, eg selenium mitigation

## **Decision Making – by the Federal Minister of Environment**

- Clear articulation of project in the public interest (benefits vs acceptability of effects)
- Obtaining First Nation's support before submission

## Alberta Government's "Red-Tape Reduction" drive





## Key permitting considerations

## **Indigenous Consultation (Treaty 7 Nations)**

Engagement, Relationships, Impact Assessment and Impact Benefit Agreement

#### **Category 2 Land for Open Cut Coal Mining**

- Intensive government engagement to the minister level over the past 3 months very strong tracking and government attention/support
- The Ram River Aries Project precedent in 2016 under the former NDP government

## Selenium Issue and Endangered Fish Protection (West Slope Cutthroat Trout)

- Case studies on selenium mitigation designs by Grassy Mountain and Teck Resources
- Fish habitat protection and enhancement

#### Water Source and Rail Access

- Examine the options studied by Grassy Mountain
- Engaging the leading experts to look at other solutions to be reported by end of 2019





## Stakeholder engagement

#### **Key Stakeholder Groups**

- Treaty 7 First Nations (obligation of the Crown is delegated to project proponent)
  - Blood, Piikani, Siksika, Tsuut'ina and Stoney Nakoda (Wesley, Bearspaw and Chiniki)
- Local, Provincial and Federal Governments
  - Crowsnest Pass, MD of Ranchland 66
- Oil & gas, forestry, ranchers (grazing leases), trappers, etc.

#### **Additional Stakeholders**

- Non Treaty 7 First Nations, Metis Nation (Alberta, British Columbia)
- Other Interested Parties (area residents and special interest groups)

## Crown (Public) Land – Shared Use/Access by Different Stakeholders

- No veto rights shared access and use of land
- Thorough documentation of engagement activities for government assessment of "adequacy"



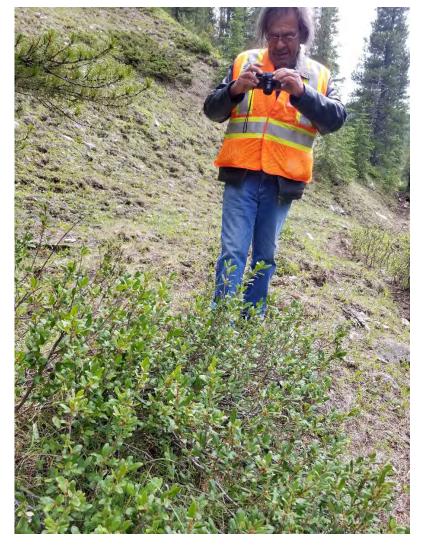


## Stakeholder engagement



Atrum is committed to building strong relationships with all of our stakeholders, seeking their input and addressing their concerns







## Oil & Gas, forestry stakeholders around Elan South







## Elan South: The accelerated environmental/permit journey

#### 2018 – Initial environmental data collection

- Wildlife monitoring (5 cameras)
- Stream flow monitoring (3 stations)
- Surface water quality sampling

#### 2019 – Full scope baseline study

- Wildlife
- Soils, vegetation and wetlands
- Surface water quality
- Fisheries and aquatic life
- Hydrology and hydrogeology
- Geochemistry and geotechnical
- Air quality
- First Nations Traditional Land Use study

#### 2020 - Impact assessment

- Continue baseline data collection
- Impact Assessment
- Project Description
- Impact Assessment (IA) term of references
- Application submission (target year end)





## Life-cycle environmental management principles

#### **Water Conservation and Stewardship**

- Optimize the water management design to maximize non-contact water conservation
- Minimize project footprint on regionally significant water resources
- Protect/enhance sensitive ecosystems and critical habitat for aquatic lives
- Employ the latest innovations in water treatment (e.g. saturated rock fill for effective selenium removal)

#### **Biodiversity and Reclamation**

- Integrate biodiversity principles into each project phase; exploration, construction, operations & closure
- Work towards achieving a net positive impact on biodiversity across the project footprint
- Develop progressive reclamation strategy utilising a diverse mix of native species and soil amendment techniques

#### **Energy and Climate Change**

- Incorporate energy use reduction and efficiencies throughout the project life cycle
- Explore opportunities for alternative energy sources
- Minimise footprint with integration of financially viable low-carbon technologies





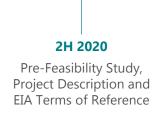
## High-level target development and permitting schedule



## 2Q/3Q 2019 eld exploration

Field exploration, early engagement activities and baseline environmental studies

# 4Q 2019 Updated resource estimates and Elan South Scoping Study





#### **Exploration program**

- Drilling at Elan South targeted to increase scale and confidence of current 97Mt resource
- Extensive coal quality testing for HCC product development
- Advance Elan North (Isolation South) via extensional and infill drilling to increase scale and confidence of current 120Mt resource

#### **Engagement program**

- Stakeholder identification
- Early consultation with local municipalities, ranchers, trappers, First Nations and governments
- Traditional land use studies by Treat 7 Nations

#### **Environmental program**

- Full-scope environmental baseline study
  - Air quality, wildlife, soils, vegetation, surface water, hydrology, hydrogeology and aquatic life, etc
  - In-fill of data collection once infrastructure options have been finalized
- Discipline-specific impact assessments



## Summary: Elan presents a rare opportunity

- 1 Large-scale deposition with multi-mine development potential
- 2 Shallow and thick seams
- Tier 1 hard coking coal quality
- 4 Proximate to critical export rail infrastructure with surplus capacity
- 5 Located in a low-cost mining region
- 6 New Alberta Government engaged and supportive
- 7 Grassy Mountain established permitting pathway and learnings
- 8 Experienced Board and management team
- A GLOBALLY SCARCE ASSET

