## Atrum: A Tier 1 hard coking coal developer AGM Shareholders Update, 31 May 2019



only

## 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.

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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 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.

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

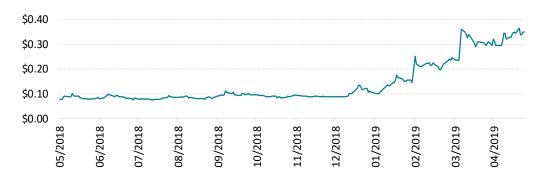
Atrum Coal

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Capital structure	
ASX ticker	ATU
Share price (30 May 2019)	A\$0.35
Shares on issue	475.4 M
Options and performance rights	120.4 M
Market capitalisation (undiluted)	A\$166 M
Cash (30 April 2019)	A\$21.2 M
Debt	A\$0.0 M

Major shareholders	
Regal Funds Management	10.4%
Lenark PL	9.0%
Nero Resource Fund	4.7%

#### Share price (1 year basis)



#### **Board and management**

Non-Executive Chairman	Charles (Chuck) Blixt
Managing Director and CEO	Max Wang
Non-Executive Director	Richard Barker
Non-Executive Director	James Chisholm
Non-Executive Director	George Edwards
Non-Executive Director	Charles Fear
CFO	Jayram (Jay) Hosanee
VP Marketing and BD	Tayfun (Ty) Zehir
Chief Geologist	Daniel Campbell

## Highly experienced Board and executives

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\$9.1b) and Swedish Match AB (SS: SWMA, market cap US\$8.2b)</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>Engineer with 25+ years' experience in mining, Oil &amp; Gas, and other resource 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 <b>Non-Executive Director</b>	<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>
James Chisholm Non-Executive Director	<ul> <li>Engineer who has worked across a range of roles in the engineering and mining sectors since 1985</li> <li>Co-founded The Chairmen1 Pty Ltd (which was the largest shareholder of Guildford Coal Ltd, now Terracom (ASX: TER)), Ebony Iron Pty Ltd (now part of Strategic Minerals plc (AIM: SML), Fertoz Ltd (ASX: FTZ) and Ebony Energy Ltd</li> <li>Currently Non-Executive Director of Fertoz Ltd (ASX: FTZ) and Ebony Coal Ltd</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 negotiating coal prices and trading coal shipments</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 and current Chairman of natural resources focused corporate financial advisory and stockbroking firm, Argonaut Ltd (started in 2002)</li> <li>Previous roles include Managing Director of CIBC World Markets, Director of Hartley Poynton and Senior Insolvency Partner at KPMG</li> </ul>

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## 2018 review

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## 2018: Atrum executed a solid strategy & achieved results

### Elan Coal Acquisition and Exploration

Groundhog and Panorama JV Exploration New Board New Strategy, with Operational Discipline

2018 – Set the foundation 2019 – Accelerate the value growth



## 2018 high level review – the results

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#### **Elan Coal Project**

- ✓ Raised \$10M to fund
  - Elan Coal Ltd acquisition,
  - 2018 Elan South exploration
  - Debt retirement
- ✓ Completing acquisition of Elan Coal Ltd (100%)
- ✓ Exploration of Elan South with 37 drill holes total
- Coring and coal quality testing, to confirm Tier 1 Hard Coking Coal (HCC) quality
- ✓ JORC Resource update for Elan South to 97Mt (31Mt of Indicated and 66Mt of Inferred)
- ✓ Review of extensive historical exploration data to
  - define 201 Mt of JORC Resources (I&I HCC)
  - identify Isolation South (120Mt) a major potential
- Environmental data collection in 2018

#### Panorama/Groundhog

- Maintained Panorama North (PN) JV with 2018 JOGMEC
- ✓ Successful 3rd year \$1.9M PN JV exploration
- Defined 174Mt of Inferred high grade anthracite resources (in Q1 2019) at PN
- Entered into exclusive JV exploration negotiation with JOGMEC for Panorama South

#### **Operation Improvement**

- Strategically focused, operationally disciplined and financially efficient
- ✓ Major reductions in administrative costs
- ✓ Achieved industry leading exploration efficiency



# Elan Hard Coking Coal Project (100%)

A premium flagship asset

Large, Tier 1 quality hard coking coal deposits

Located in a premier coal production and infrastructure hub; 13km from export rail

Open-pit focus with multi-mine development scale potential

## Strategic locale, infrastructure rich

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150km south of Calgary and 13km north of Coleman

Highway going through the property

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

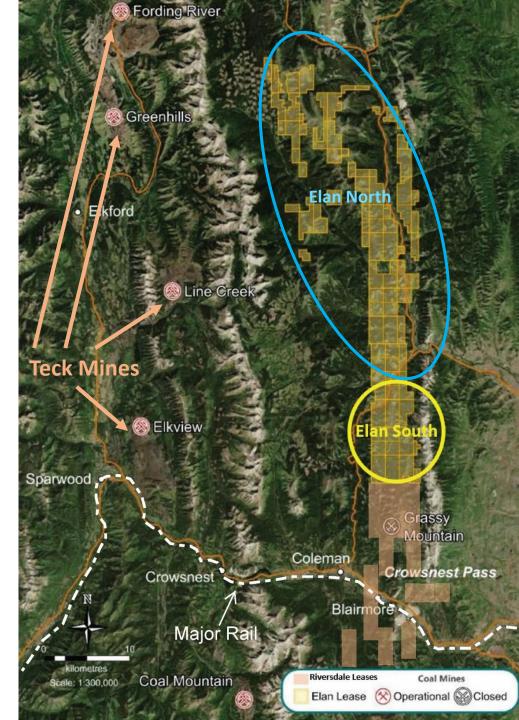
138kV powerline nearby

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

4 Teck Resources mines producing approx. 25Mt HCC per year

A total 22,951ha (230km<sup>2</sup>) of highly endowed tenements located in an established and prolific Tier 1 hard coking coal mining province





## The Elk Valley comparative

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Elan is approx 30km east of the Teck Elk Valley HCC complex

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

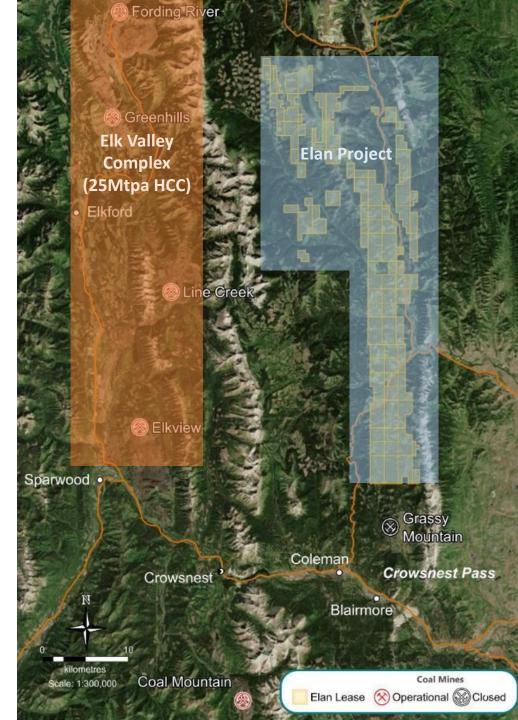
The same coal basin – coal seams and settings are closely correlated

Elan South coal quality (CSR of 71) shows close proximity to Teck's Premium Product

Strong global market demand for HCC products from this region

Elan has the tenement scale and potential of a multi-mine premium HCC operation





## Elan presents a rare opportunity

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Large scale tenement holdings

Located in a major HCC production and development basin

298Mt total JORC Resources delineated; open-pit focus

Tier 1 hard coking coal quality established

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

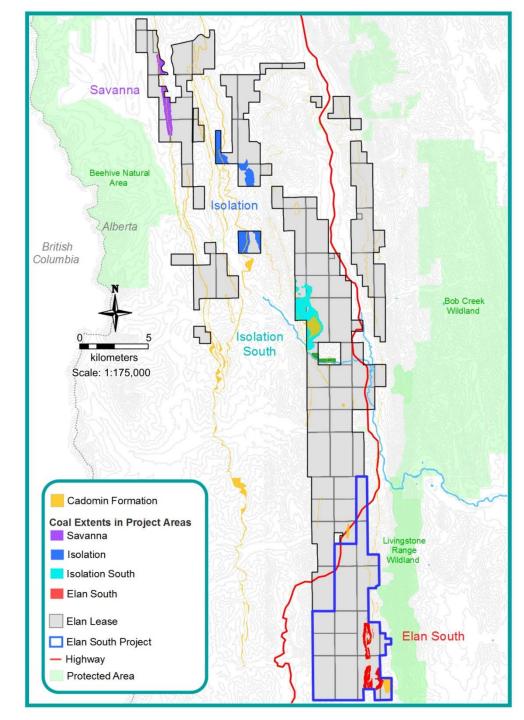
Clear potential for multiple, large Tier 1 HCC developments

#### Elan Hard Coking Coal Project JORC 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*)



## Tier 1 hard coking coal quality

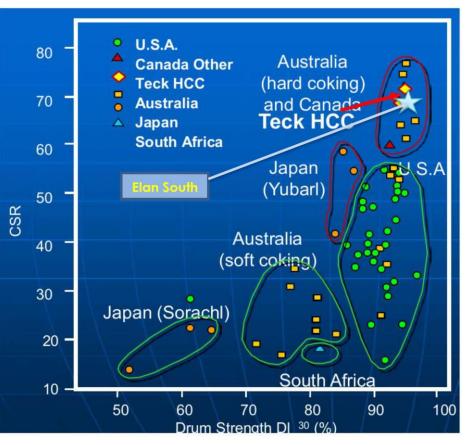
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	Elan South <sup>1</sup> (Atrum)	Elk Valley (Teck Premium)4	Grassy Mount. (Riversdale)	Platts Aust. HCC 64	IHS Aust. Prime HCC
CSR	71 <sup>2</sup>	(EST 65 – 70)	65	64	71
Coal Rank RoMax (%)	1.13	1.07 – 1.17	1.2	-	1.15 – 1.55
Yield (%)	> 65		55	-	-
Volatile Matter (%)	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
- 2. Results from 2018 carbonisation test work (see recent Atrum ASX release)
- 3. South area (2018 samples) shows 0.060 0.085% while North area (2014 samples) shows 0.010 0.020%
- 4. Properties other than CSR are from NI 43-101 Technical Report on Coal Resources and Reserves of the Fording River Operations (2011)



#### Seaborne coking coal product parameters

Source: Teck Resources, January 2019

## Immediate focus: Elan South

#### Flagship area targeted for rapid development

Highly successful 37-hole drill program in 2018

## 97Mt JORC Resources with significant potential for expansion through exploration

Thick, shallow, large tonnage coal seams

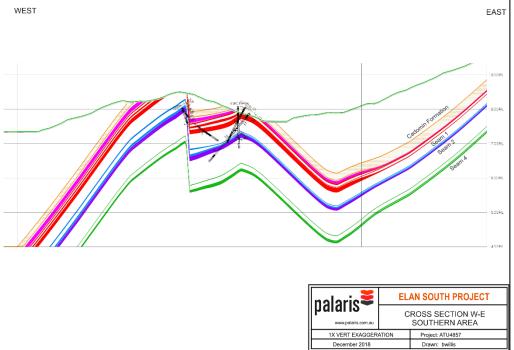
Detailed quality testwork evidences Tier 1 HCC (CSR 71)

Substantial extensional and infill drilling program in 2019

Scoping Study and full-scope EBS work to start in 2019

A large tonnage of shallow, open cut mineable, Tier 1 hard coking coal only 13km from export rail in a leading HCC export province







## The further leg: Elan North

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All northern Elan tenements (north of Elan South)

#### Substantial historical exploration, sampling and test data

201Mt JORC Resources with significant potential for expansion through exploration; focussed on OP opportunities

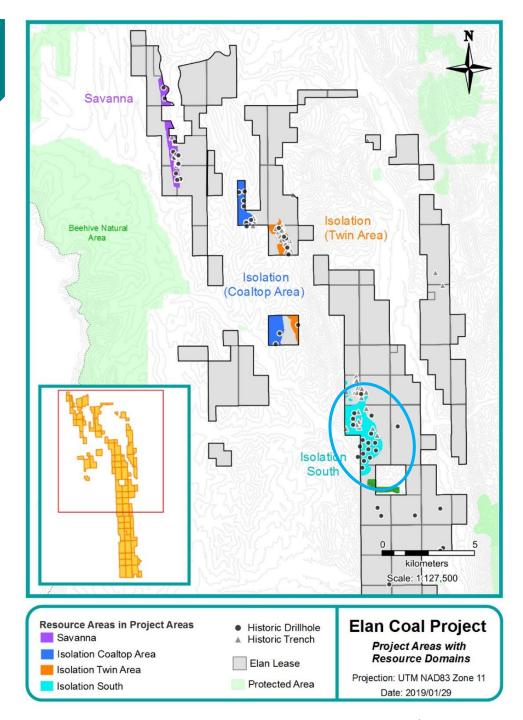
Similar high-quality HCC seam parameters as Elan South

Delivers clear scalability, life and multi-mine potential

#### **Elan North JORC 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





## Dual progression strategy: Isolation South

Dual area approach reflects strategy to rapidly advance multiple, large Tier 1 HCC developments at Elan

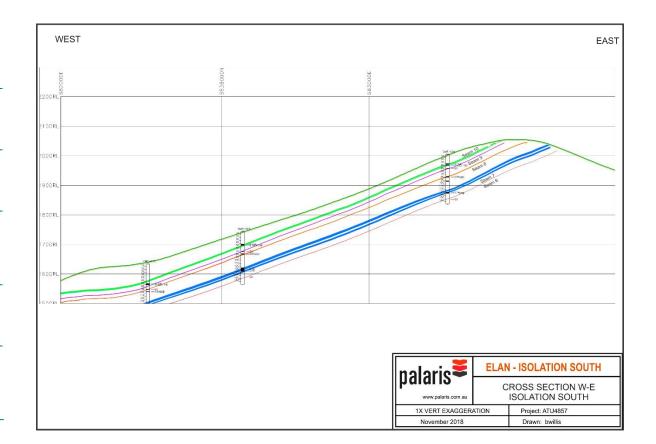
Isolation South (in Elan North): 120Mt JORC Resources

#### Geologically and geometrically attractive deposition

Extensive historical coal quality test work provides confidence in HCC quality

Coal rank increasing to RoMax 1.21-1.53 in northern tenements

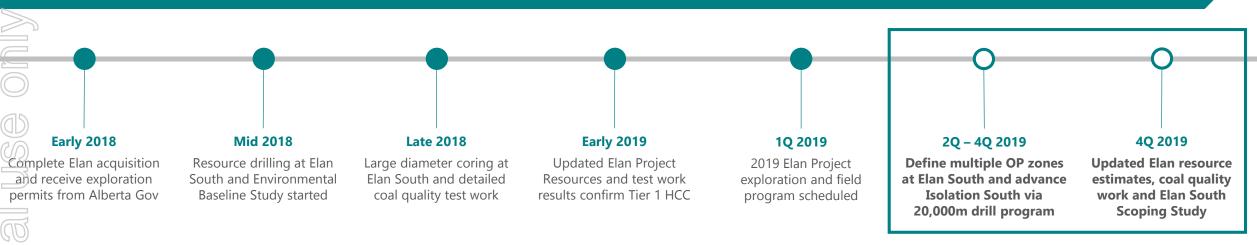
Extensional and infill drilling in 2019 to increase resource scale and upgrade classification



Atrum's strategy is to rapidly advance Isolation South alongside the flagship Elan South HCC development



## Accelerated 2019 field program: 20,000m drilling



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

#### **Elan South**

- Increase scale of current 97Mt resource base
- Upgrade JORC classification (further M&I resources)
- Extensive coal quality testing for HCC product development
- Full-scope environmental analysis 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

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## The fundamentals of Elan attraction

## The basic coal split - the Elan product market

## MET/COKING COAL



Every year, about one billion tonnes of coking coal is used for steel production world wide

## THERMAL COAL

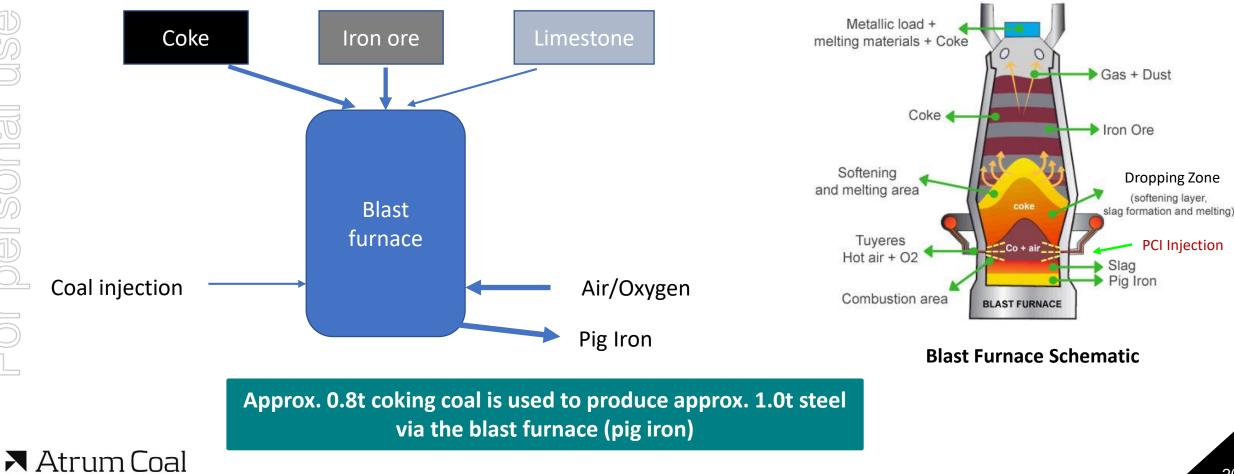


The Elan product market



## Coal for Steel: blast furnace production route (75% world steel production)

#### *Iron ore* + <u>coke</u> + *limestone* + *coal injection* + *air* = *pig iron*



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## Not all coals are created equal – the Elan Coal differentiators

## **Inside Coal**

#### 23 May 2019

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COAL FOR STEEL

#### South32 to focus on met coal

**By Gomati Jagadeesan**, gomati.jagadeesan@ihsmarkit.com With listed miner South32 on the homestretch for the proposed sale of its South African Energy Coal (SAEC) business, its focus is now shifting to its Australian metallurgical coal operation.

#### Elan, Tier 1 HCC, in a low cost mining & logistics area:

Teck's Elk Valley ~US\$80/t FOB, Riversdale est. ~US\$68/t FOB Elan high yield: Initial Elan South clean coal wash yield is high

#### **MINING**.com in 2019 - Fitch report

"In its latest industry trend analysis, Fitch Solutions sets the coking coal price forecast for 2019 at \$195/tonne. The analysts predict prices will remain elevated, with strong demand from China's steel sector as US-China relations deteriorate and the probability of further economic support from the government to the slowing Chinese economy rises." MINING.com 2019.5.23

#### IHS Markit coking coal prices

Coking coal daily	Basis	23-May
Low-vol PHCC ex Australia (MCC 1)	FOB	213.30
Mid-vol PHCC ex Australia (MCC 2)	FOB	210.15
Second Tier HCC ex Australia (MCC 3)	FOB	182.15
Low-vol PHCC Delivery China (MCC 4)	CFR	212.25
Mid-vol PHCC Delivery China (MCC 5)	CFR	209.10
Second Tier HCC Delivery China (MCC 6)	CFR	198.00
Coking coal weekly	Basis	17-May
US low-vol	FOB	190.50
US high-vol 'B'	FOB	163.50
LV PCI	FOB	125.00
Semi-soft coking	FOB	105.00
Coke weekly	Basis	17-May
Coke Rizhao	FOB	308.00
ARA coke	CIF	304.00
Steam coal weekly	Basis	17-May
NEX	FOB	84.64
Source: IHS Markit		© 2019

## Further options: Elan delivers clear potential for a multi-mine project

Large landholding (approx. 230km<sup>2</sup>) proximate to Teck's Elk Valley

Over 40km of delineated coal strike extent

Large undrilled or under explored areas

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

#### **Clear 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 South 2019 drilling plan

2019 Planned Drillhole

2018 Drillhole
 2018 PQ Drillhole
 2018 LDC Drillhole
 2019 Planned PQ Drillhole
 2019 Planned LDC Drillhole

2014 Drillhole
 Historic Trench
 2019 Activity Extents
 2019 Planned Access

Developed Access
 Protected Area
 Cadomin Conglomerate

Existing/ Previously Disturbed Access

Scale 1:20.000

Site Access

## Elan presents a truly rare opportunity

- Large-scale deposition with multi-mine development scale potential
- Shallow and thick seams
- + Tier 1 quality HCC Tier 1 product price
- + Proximate to critical export rail infrastructure with surplus capacity
  - Located in a low cost mining region and first-class mining jurisdiction
  - Growing global interest in Elan
  - Opportunity to learn from the Grassy Mountain Project in permitting and development

#### A globally scarce asset with huge value growth potential



Dersonal

## Elan permitting journey – environmental excellence

Elan has Category 2 land status

Special approval required for surface mining

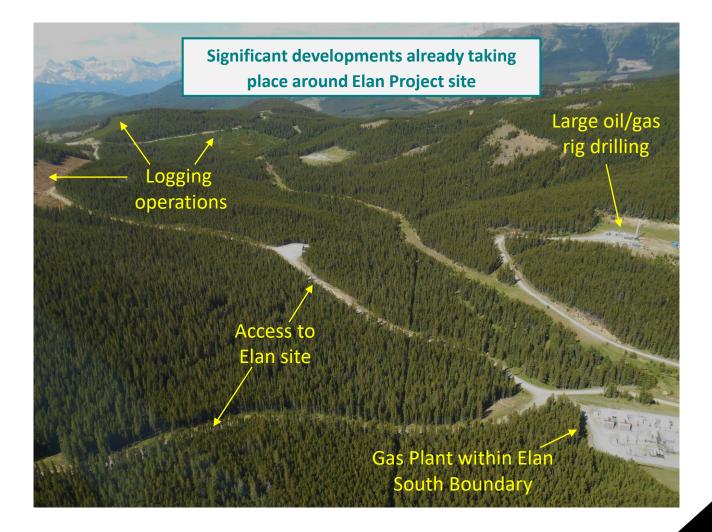
Ram River Aries Project precedent (July 2016)

Elan site is mostly Zone 5 (multiple use) where O&G/forestry development has already occurred

Significant local & regional economic impact

Available existing infrastructure – another key positive driver

Full-scope EBS underway





## Seeking to build a global best-practice mining project



#### Water sourcing options

Surface water permit required for industrial use

Ground water source discovered in 2018

Water sharing with other industrial users

High efficiency water use design & technologies

**Excellent social dynamics** 

Pro-coal development community

Highly positive socio-economic impact

Infrastructure sharing with other resource developers, eg forestry and oil & gas

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## 2019 exploration has commenced in the field

- First Nations consultation started in March, with site visits in May
- Re-established the Elan South exploration roads for environmental data collection in April
  - Field geology survey started in May (see new trench)
- Road building equipment and crews on site to start first week of June and drilling to stare late June as planned
- ✓ 2019 exploration permit in place for Elan South drilling
- First group of environmental baseline study consultants appointed & mobilized
- Started engaging provincial and Federal regulators

#### A new 2019 coal trench at Elan South



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## 2019 exploration has commenced in the field – cont'd



Atrum commits to building a strong relationship with the First Nations and other stakeholders in advancing the Elan Projects





Groundhog (100%) and Panorama Anthracite Projects

Huge undeveloped high-grade anthracite deposit

Panorama North JV with JOGMEC (35%)

Multiple further large-scale JV opportunities

## Large scale Groundhog and Panorama Projects

Massive Groundhog (100%) field with +1Bt resources

High grade anthracite (+ low ash, high yield)

Multi-decade historical exploration work

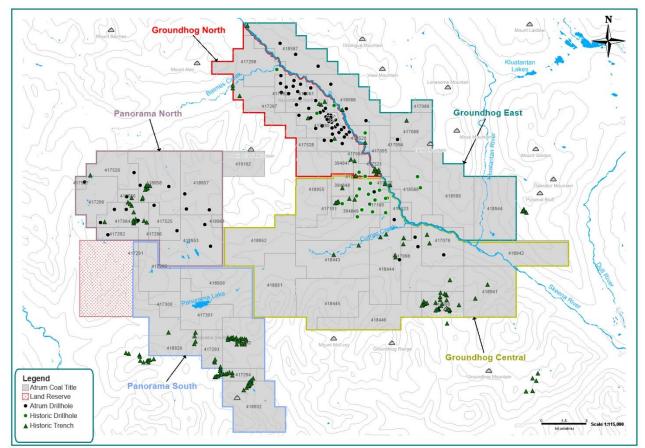
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Several large project areas suitable for multiple JV and partnership development opportunities

#### JORC Resources for Groundhog North & East areas only

Area	Measured	Indicated	Inferred	Total
Western Domain	156	193	260	609
Eastern Domain	-	260	147	407
Total	156	453	407	1,016





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## Panorama North: JOGMEC partnership

Japan Oil, Gas and Metals National Corporation (JOGMEC) has earned 35% in Panorama North by investing C\$5M over the last 3 years

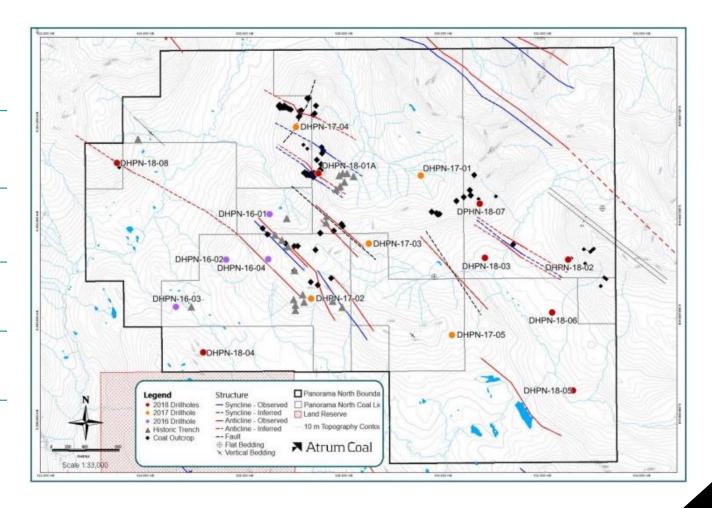
Recent maiden Inferred JORC Resource of 174Mt

Approx. 50% of resource estimate at < 100m depth

Coal quality testwork evidences characteristics of a high-grade anthracite

High-level Scoping Study to be completed in 2019

Exclusivity with JOGMEC until 2021 to negotiate JV exploration for Panorama South & beyond





## Atrum Coal

## Contact

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#### **Michael Vaughan**

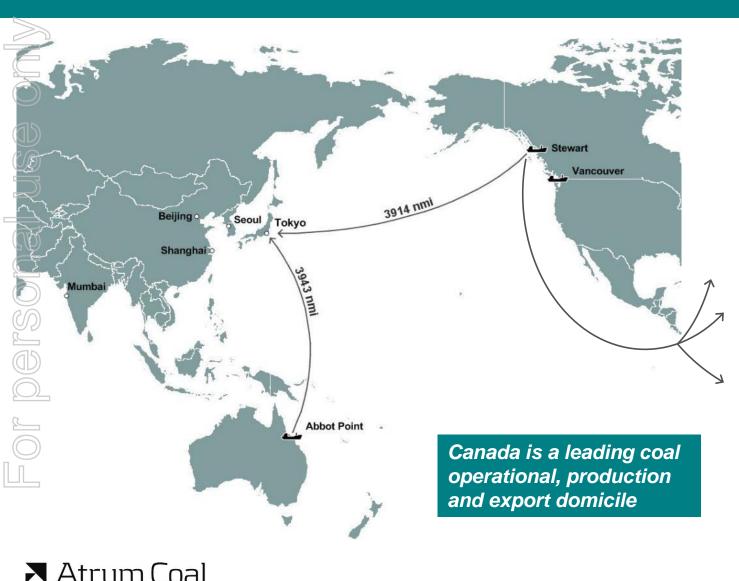
Media Contact +61 422 602 720 michael.vaughan@fivemark.com.au

## Atrum Coal

## **Appendix: Further Details**

## The Canadian advantage

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#### Low sovereign risk

#### Government and regulatory environment encourages mine development

- Mine exploration rebate program in BC (33%)
- CAPEX amortization incentives and low coal royalty

#### Extensive and regulated infrastructure

- Direct rail access to ample port capacities
- Low electricity and natural gas costs

#### Comparable Asian shipping distance as Australia

Australia-to-Japan and BC-to-Japan are equidistant

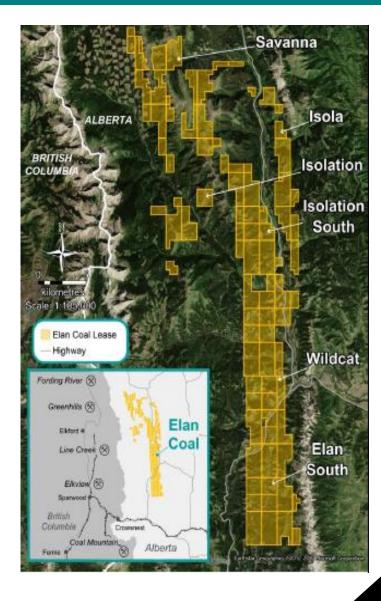
#### Less major weather disruption

## Recent global significant investment activity in southwest Alberta HCC projects

## Significant historical exploration and sampling at Elan

#### 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	
		1010					1 10000	
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		





## 2018 Elan South exploration and field program



Significant coal intersections in most drill holes and exposed in road cuttings, with apparent cumulative intersections of up to 42.8m (hole ESRAB18-14)



## Large diameter coring completed at Elan South in 2018





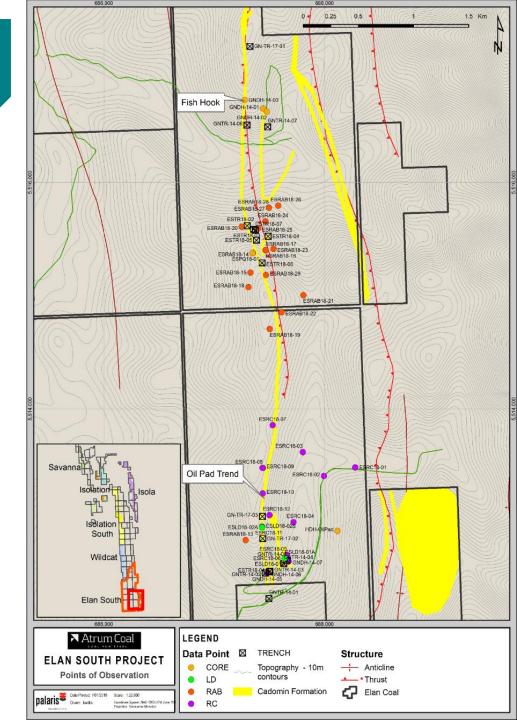
# Elan South: Drilling locations and JORC Resource estimates

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#### Elan South JORC 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
S2B Seam 2 S2BL	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

1. 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*)



Atrum Coal

## Raw coal test results for Elan South LD cores

BORE ID	LAB #	From m	To m	IM %	ASH %	VM %	TS %	CV kcal/kg	FSI
ESLD18-01A	COMP-01	21.95	23.11	0.6	11.8	22.2	0.63	7,449	4
ESLD18-01A	COMP-02	23.11	29.19	0.5	7.5	23.3	0.60	7,901	3
ESLD18-01A	COMP-03	29.19	34.21	0.5	8.0	24.3	0.67	7,877	6
ESLD18-01B	COMP-04	19.46	22.52	0.7	22.3	20.6	0.60	6,468	4
ESLD18-01B	COMP-05	22.52	26.73	0.7	5.6	25.6	0.73	8,151	6
ESLD18-01B	COMP-06	26.83	32.84	0.8	10.8	24.0	0.71	7,573	5
ESLD18-02A	COMP-08	28.0	32.0	0.7	13.6	25.0	0.71	7,242	7.5
ESLD18-02A	COMP-09	32.0	38.0	0.7	9.5	25.9	0.69	7,698	7.5
ESLD18-02A	COMP-10	38.0	43.73	0.8	10.9	24.9	0.96	7,480	6.5
ESLD18-02A	COMP-11	43.88	48.9	0.7	11.8	24.6	0.87	7,457	6
ESLD18-02A	COMP-12	48.9	52.56	0.8	19.6	23.4	1.08	6,664	5.5
ESLD18-02B	COMP-15	28.35	32.35	1.0	11.7	24.8	0.76	7,437	6.5
ESLD18-02B	COMP-16	32.35	38.34	1.2	16.7	24.0	0.71	6,905	5.5
ESLD18-02B	COMP-17	38.46	42.25	1.3	16.8	24.0	0.54	6,863	5.5
ESLD18-02B	COMP-18	42.35	46.5	1.2	18.6	23.8	0.78	6,740	4.5
ESLD18-02B	COMP-19	46.5	53.7	1.4	12.2	23.8	0.73	7,315	5.5
ESLD18-02B	COMP-20	53.7	60.18	1.5	15.6	23.7	0.66	6,924	4.5
ESLD18-02B	COMP-21	60.2	61.8	0.9	25.1	20.1	0.65	6,096	1.5



From Birtley Labs of Calgary

## Preliminary/partial individual clean coal results for Elan South<sup>1</sup>

Hole ID	Composite ID	Lab Yield %	Moist (IM) %	Ash %	Vol %	F.C. %	TS%	FSI
ESLD18-01A	COMP-01	82.1	0.5	7.6	23.4	68.6	0.65	5.0
ESLD18-01A	COMP-02	93.4	0.6	5.9	23.8	69.8	0.63	5.5
ESLD18-01A	COMP-03	92.7	0.5	5.4	24.9	69.1	0.70	7.0
ESLD18-01B	COMP-04	54.2	0.6	9.4	24.5	65.5	0.70	5.5
ESLD18-01B	COMP-05	96.4	0.6	5.0	26.3	68.2	0.73	7.5
ESLD18-01B	COMP-06	85.4	0.6	6.2	25.1	68.1	0.71	7.0
ESLD18-02A	COMP-08	80.3	0.6	6.4	25.9	67.1	0.68	8.5
ESLD18-02A	COMP-09	88.0	0.7	5.1	26.6	67.6	0.65	8.0

Notes: Clean coal was washed at CF1.45



1. For full details on coal quality results, see Atrum ASX releases dated 5 April 2019, Coke Strength Tests Confirm Tier 1 Hard Coking Coal at Elan, 25 February 2019, Additional Clean Coal Quality Results at Elan South, and 4 February 2019, Coal Quality Results Confirm Premium Hard Coking Coal.