Atrum Coal
COAL FOR STEEL

ANTHRACITE MARKET CONTINUES TO OUTPERFORM

HIGHLIGHTS

- Supply constraints reduce global anthracite supply by 27%
- High-grade anthracite currently priced between $150/t-$175/t, a 100% premium to hard coking coal
- Scoping study at Groundhog North Mining Complex identifies new mines
- Financing efforts continue to advance
- Bulk sample permit on track for H2, 2015.

Atrum Coal NL ("**Atrum**" or the "**Company**") (ASX: ATU) is pleased to report progress at the Company's flagship Groundhog Anthracite Project, located in British Columbia, Canada ("**Groundhog**").

Over the course of 2015, the Company has undertaken numerous in-house and external studies across the Groundhog North Mining Complex ("**Complex**"). These studies have identified multiple potential new mines for which the Company is completing Scoping Studies. These studies will complement the existing planned PFS underground mine at Groundhog North.

Atrum is anticipating a strong response from the market for the Groundhog premium, low-ash, low-volatile anthracite, as global supply continues to slump. The Company has received strong responses in Brazil and North America from potential consumers of high-grade anthracite.

VP Business Development and Marketing, Peter Doyle, commented:

"Up until recently our pre-production marketing has focussed on the premium markets in Japan and Korea and interest from steel mills and traders is strong. As anthracite markets continue to be undersupplied, we have also investigated the readily accessible markets in Brazil, USA and Europe and received strong interest from existing anthracite users there. Anthracite prices are high, and recent discussions in Brazil and North America have yielded further encouraging results, with steel producers eager to see new participants to supply anthracite to their mills and iron pellet plants."

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Concurrently, the Company has been progressing the equipment finance package with China Coal Technology and Engineering Group ("CCTEG") to minimise up-front development capital. Atrum is pleased to announce that it has formalised the binding MOU previously signed with CCTEG by entering into a general contract with CCTEG for the supply of equipment for Groundhog.

Anthracite Market Update

Unlike many current resource development projects, the expected margins at Groundhog are robust in the current market. Whilst hard coking coal prices remain subdued, high-grade anthracite is selling for between $150/t-$175/t in Japan and Europe, and demand for anthracite remains strong (refer to Figure 1 and Figure 2).

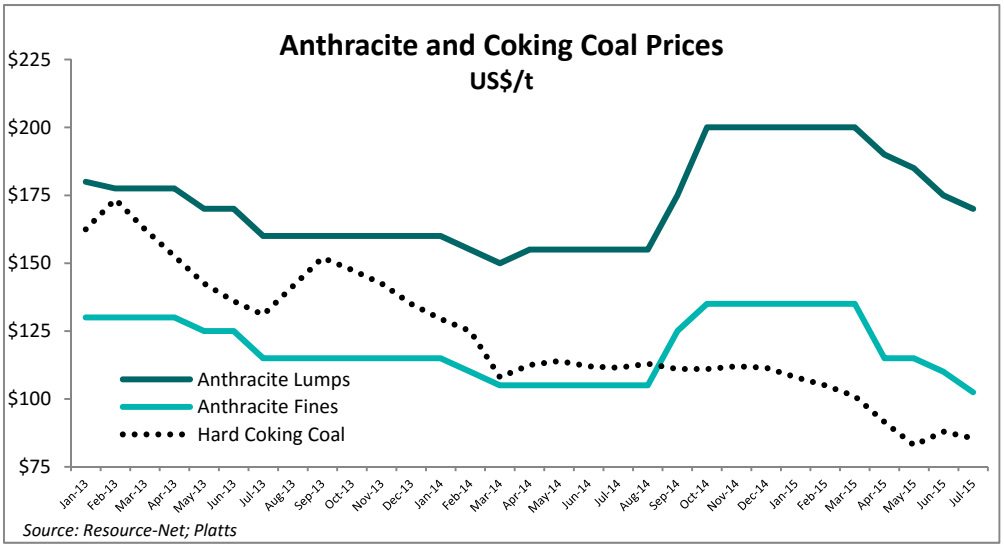


Figure 1: Current Anthracite and Hard Coking Coal Price

Anthracite production for export continues to decrease and whilst hard coking coal markets are in over supply, anthracite markets are undersupplied. Vietnam and Ukraine, once the largest exporters of high grade anthracite are quickly receding from the market with their combined exports anticipated to be only 2.7Mt in 2015, against supply of 20.8Mt in 2012, and 11.7Mt last year (refer Figure 2). The rapid decrease in anthracite exports appears unable to be supplied from other major exporters in Russia and South Africa, resulting in a tight supply and demand dynamic, creating a strong price environment. There appears to be little new supply available to fill the void.

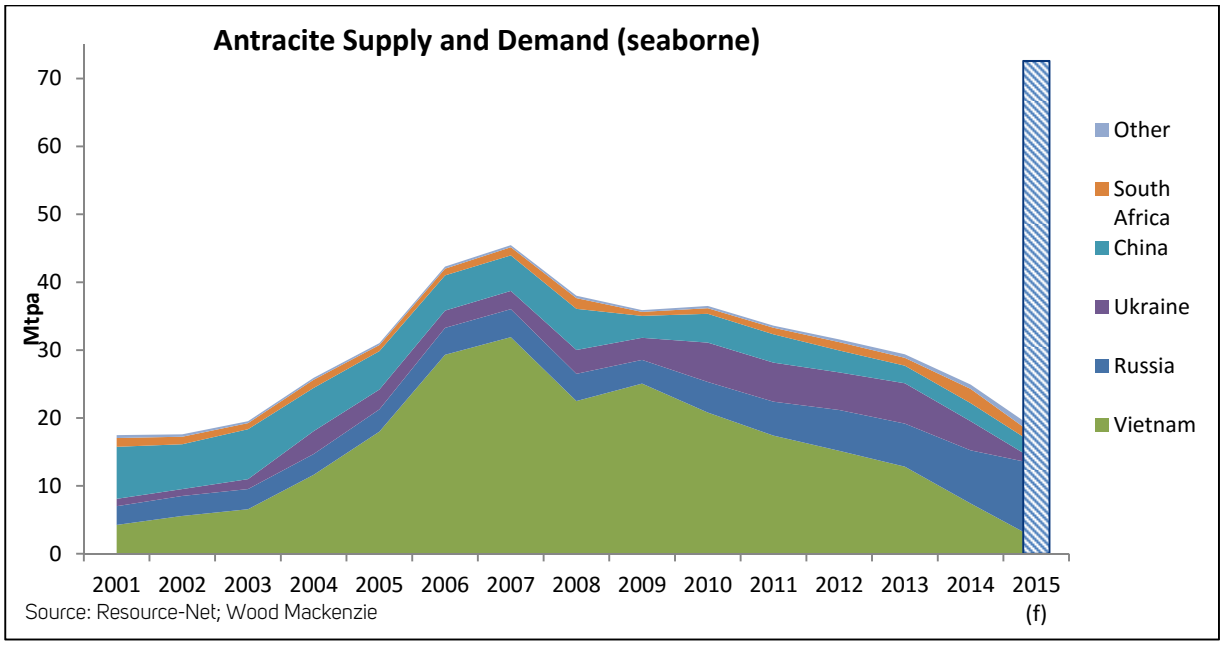


Figure 2: Supply and Forecast Demand of Anthracite

Anthracite utilisation and Groundhog quality

Initial laboratory tests indicate that anthracite from Groundhog North is able to be developed into multiple anthracite products of varying qualities. The Groundhog North anthracite quality, and product specification has been developed from the results of testing of both trench and bore core samples (over 140 cored bores) over three years of exploration (2012-2014), as well as historical information and detailed analysis by coal quality specialists A&B Mylec Pty Ltd. Quality results are summarised in Table 1.

Property	Raw Coal	10% Ash	Specialty (95% FC)
Inherent Moisture (air dried)	< 1%	1.5	1.5%
Volatile Matter (air dried)	2 - 7%	5%	2%
Fixed Carbon (air dried)	85 - 96%	84%	94%
Ash (air dried)	2 - 15%	10%	3%
Sulphur (air dried)	0.4 - 0.7%	0.6	0.4 - 0.7%
HGI	45 - 70	55	55
Calorific Value (kcal/kg) (gad)	7,200 - 8,000	7,300	7500 - 7800

Table 1: Groundhog North Coal Quality

Anthracites are categorised into three broad groups: Standard Grade (SG), High Grade (HG) and Ultra High Grade (UHG). Each of these grades has different chemical characteristics, with the highest ash and volatile matter applicable to SG and the lowest to UHG. Typically, SG anthracite is used in power generation, and HG and UHG are used in metallurgical applications.

The terms high grade anthracite and ultra-high grade anthracite are marketing terms which are applied to anthracite with volatile matter less than 7% (dmmf). The American Society for Testing

and Materials (ASTM) classification for anthracite is volatile matter >2% <8% (dmmf) and fixed carbon >92% <98% (dmmf).

Both on a raw and beneficiated (product) basis, Groundhog anthracite fits the standard classification for anthracite, and due to its low ash (10% adb) is considered a premium product, and therefore accordingly termed "high grade" and "ultra-high grade". Atrum adopted utilisation of these marketing terms in 2012 (first used in ASX releases in October 2013), and has continued to use these terms to denote its products in the market.

Laboratory analysis shows Groundhog anthracite is positioned as a High to Ultra High Grade (HG to UHG) anthracite, with specifications in the ranges outlined in Table 2 below.

Property (basis)	Groundhog North (indicative specification)	High Grade (HG)	Ultra High Grade (UHG)	Chinese BF Coke
Total moisture (ar)	8% (est)	15% max	13% max	12% max
Volatile Matter (ad)	5%	10% max	5% max	2% max
Fixed carbon (ad)	83.5%	75% min	80% min	86% min
Ash (ad)	10%	15% max	12% max	12% max
Sulphur (ad)	0.6%	1% max	0.6% max	0.6% max
Classification	Metallurgical	Metallurgical	Metallurgical	BF Coke
Industry use	Highest grade of anthracite used in steelmaking, non-ferrous metallurgy and other industrial applications	Primarily for metallurgical purposes such as sintering of iron ore fines	Highest grade of anthracite used in steelmaking, non-ferrous metallurgy and other industrial applications	Used in blast furnaces for the production of pig iron

Source: Atrum Coal, Wood Mackenzie

Table 2: Classification of Groundhog North Anthracite

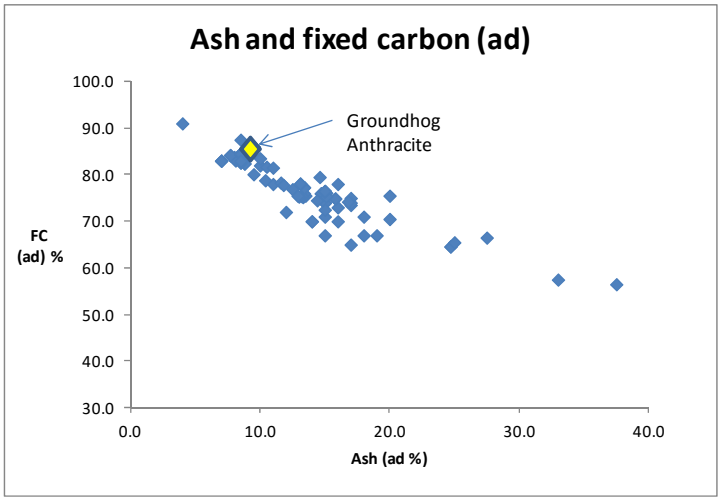
Of all coal types, UHG anthracite has the closest chemical properties to metallurgical coke, as a result of it undergoing transformation through intense heat and pressure deep in the earth's crust. Compression of the coal drives off the volatile matter, resulting in a speciality coal with inherently high fixed carbon, low volatile matter and low moisture – similar to metallurgical coke. UHG anthracite also has lower ash than typical metallurgical coke, where the mineral matter (ash) content is concentrated during the coking process. As such, HG and UHG anthracite is well suited for metallurgical markets as an unprocessed substitute for blast furnace coke.

Potential customers include steel mills and traders and various industrial users of anthracite that require different types of anthracitic products, from SG fines through to UHG lumps. HG and UHG anthracite is also used in the manufacture of specialty steels and alloys, in electric arc furnaces, for ore sintering, as a reductant and cathode paste, for water filtration, urea manufacture, plastics and industrial chemicals production and as an economic alternative to graphite.

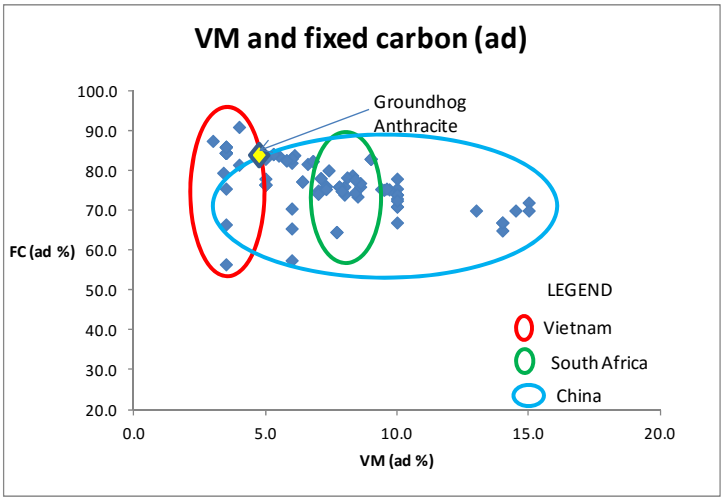
Benchmarking Groundhog North Product

The charts in Figure 3 below compare Groundhog anthracite against a broad range of comparative anthracite and semi-anthracite products in the global market. Vietnamese anthracite is typically characterised by very low volatile matter (generally less than 4% ad) and occupies a distinct group

in the VM and FC chart. South African anthracite brands tend to fall within a narrow VM band between 6% and 8% while Chinese and Russian brands cover a wide range of volatile matter contents. Groundhog anthracite is positioned at the lower end of the VM curve, slightly higher than the Vietnamese brands surveyed, and lower than the majority of all other brands.



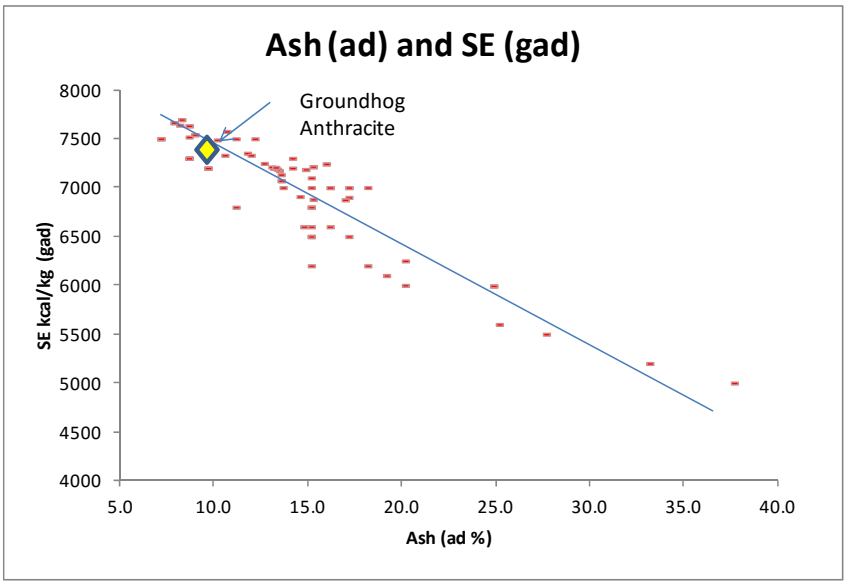
Source: Atrum Coal



Source: Atrum Coal

Figure 3: Coalification Scale Comparison of Groundhog North anthracite with traded brands

Groundhog anthracite is positioned at the lower end of the ash curve and as Figure 4 shows, correspondingly at the top end of the ash-specific energy curve. (NB: the majority of brands surveyed have ash contents higher than 10%).



Source: Atrum Coal

Figure 4: Coalification Scale Ash v Energy

Groundhog North Mining Complex

During 2014, the Company completed additional drilling in Groundhog North to identify other potential mining domains that complement the proposed Groundhog North Underground Mine. Since then, the Company has completed a JORC Coal Resource Estimate for one new area (refer to ASX announcement 14 August 2015, "Resource Increase at Groundhog North").

Following the 2014 drilling program, a mine propensity study was also undertaken to ascertain the scale of potential mines at Groundhog North. The propensity study identified multiple possible mining opportunities across the Complex (refer Figure 5).

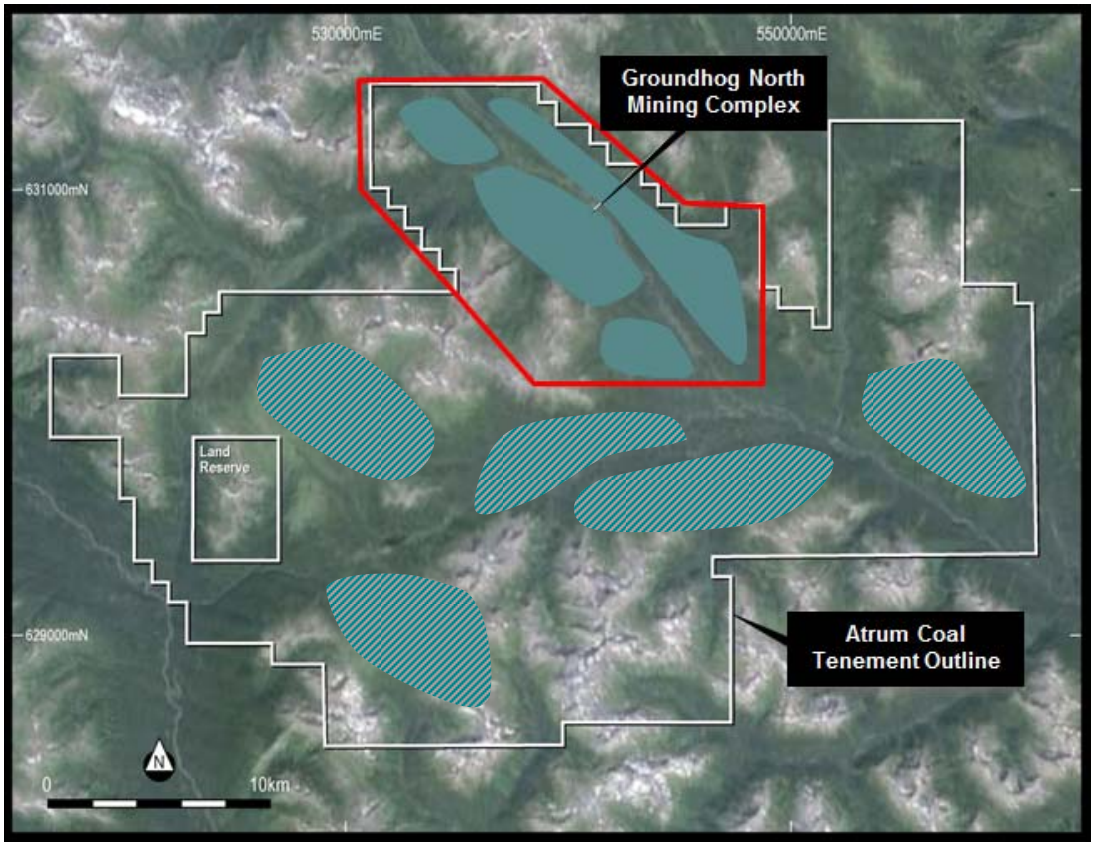


Figure 5. Proposed Area for Groundhog North Mining Complex

The geological setting of Groundhog North is a broad south-easterly plunging syncline, with parasitic folding on the synclinal limbs. Shallow dips are evident in the centre of the syncline, and generally dips steepen away from the syncline apex where some complex folding and overturned limbs can occur. Such folded areas have a linear trend which can be traced over large distances. The structural folding at the edge of the basin often results in thickened seams and brings the seams to surface.

Regional Drilling

In late 2014 the Company undertook broad exploration at Groundhog as announced in Q4 2014 (refer ASX announcement 16 October 2014 "Regional Drilling Success Supports Atrum Multi-Mine Strategy). Since the completion of this exploration, the new data procured has been included in the Company's geological models. Gordon Geotechniques Pty Ltd has recently completed a JORC Code 2012 compliant Coal Resource Statement for the area termed East of Skeena at Groundhog North.

Exploration at Groundhog has been continually conducted by Atrum since 2012, with the focus on:

- Surface mapping of outcrops
- Fully cored drilling using HQ and PQ sized holes to depths of 500m
- Bulk sampling via trenches of 20 tonnes of anthracite

More than 27,000m of drilling in 154 boreholes has now been carried out at Groundhog North by Atrum. The majority of these holes have been fully-cored.

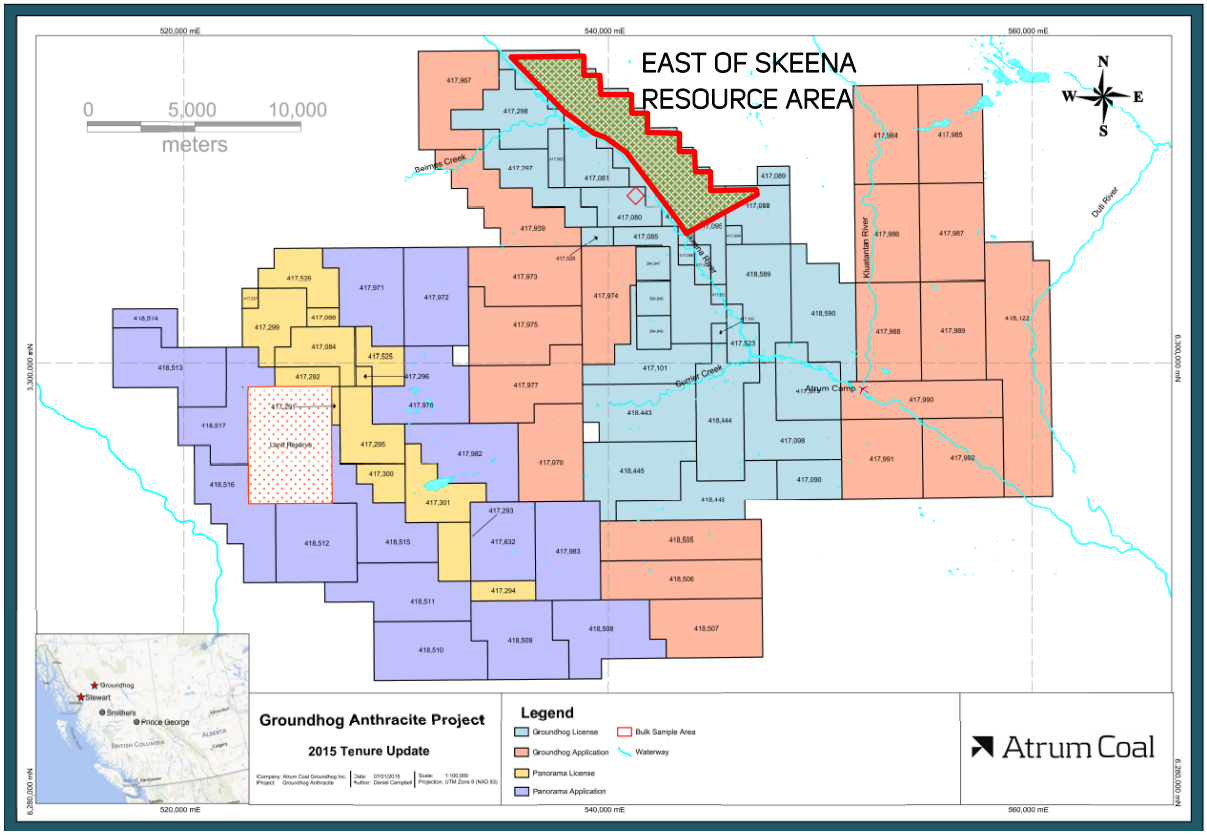


Figure 6. Location of the East of Skeena Resource Area.

Coal Resource Upgrade

Coal Resources identified during the 2014 exploration programme have been included in the broader Groundhog Anthracite Project geological models. Gordon Geotechniques completed a new JORC 2012 compliant Coal Resource Statement in August 2015 for the new mining domain within the Groundhog North Mining Complex.

The following considerations and parameters have been used in the JORC Coal Resource estimation:

- 200m offset from the Skeena River
- For surface mining at depths <100m, a 0.4m minimum mining thickness
- For underground mining at depths >100m, a minimum mining thickness of 1m
- For both surface and underground mining, a maximum 0.3m stone parting
- Measured resource extrapolated 500m from points of observation
- Indicated resource extrapolated 1,000m from points of observation
- Inferred resource extrapolated 2,000m from points of observation

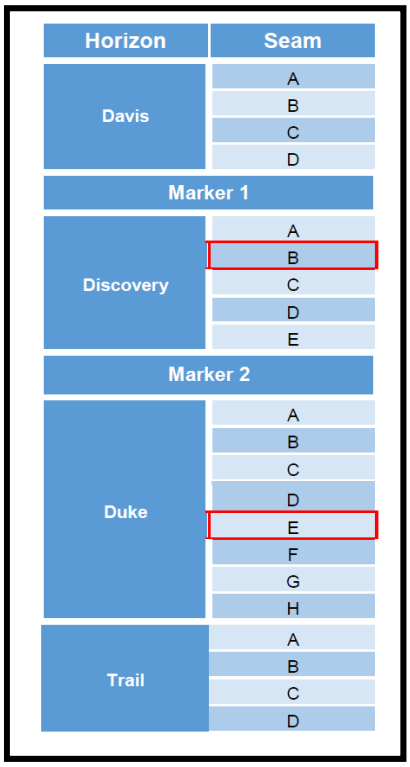


Figure 7: Stratigraphic Sequence Coal Seams and Marker Horizons (Atrum Coal, 2015)

Although there are up to 21 seams identified at Groundhog North, the Company has focussed on two key target seams – the Discovery B seam and the Duke E seam, due to their thickness (Discovery B seam typically 1.8m thick, while the underlying Duke E seam is typically 2.2m thick), relatively consistent structure, depth of cover, and overall quality.

The Discovery B and Duke E seams generally have raw ash of between 22% - 28%. Product yields derived from washplant simulations for the Discovery B and Duke E seams typically range between 50% - 60% when targeting a low-ash (10% ad) product. Sulphur for washed products typically range from 0.4% - 0.7%.

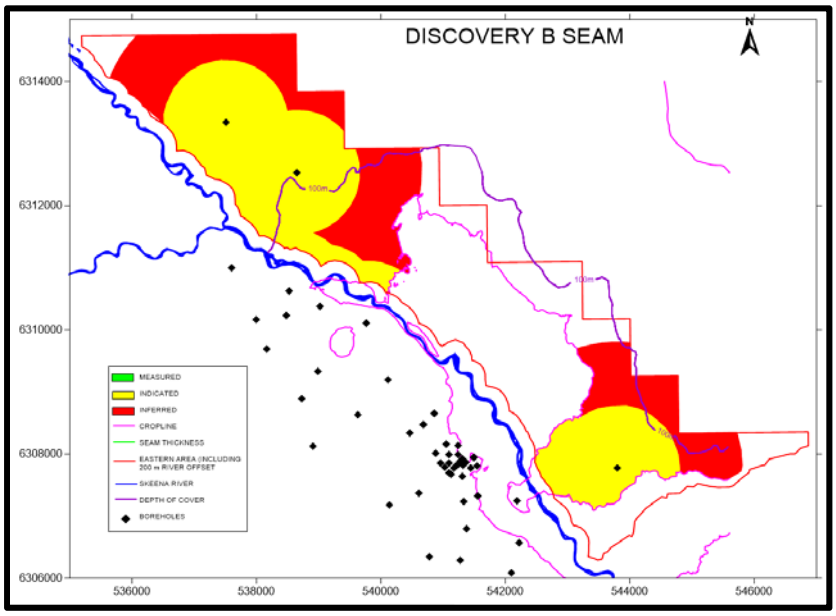


Figure 8: Resource Polygon for Discovery B Seam

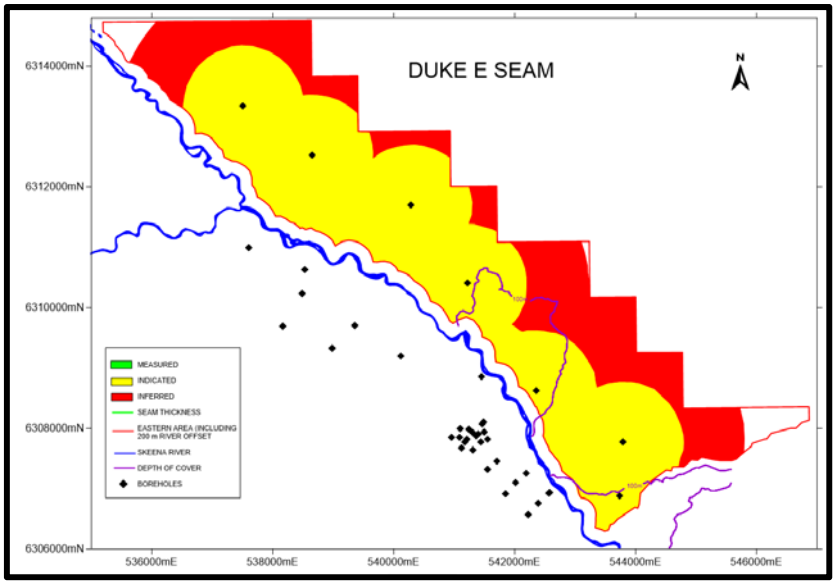


Figure 9: Resource Polygons for Duke E Seam

It should be highlighted that preliminary indications from the 2014 drilling are that the area East of the Skeena may be structurally less deformed than the surrounding area (refer Figure 10).

Figure 10: Borehole DDH14-35 (Regional Drilling 2014) Example of core showing flat lying bedding immediately above and below the Duke E Seam

The seam correlation in the Groundhog North area has been completely reviewed using the services of both the Atrum geological team and a number of JORC accredited geologists from both Canada and overseas. This review of the seam correlation has allowed greater confidence in the distribution and nomenclature of the coal seams across the Groundhog North area. The correlation has focussed on not only the coal seams but also marker horizons in the interburden between the seams which have characteristic lithologies and geophysical log responses.

Anthracite quality testing from the regional drilling in 2014 has shown similar trends to anthracite quality areas from Groundhog North. All holes have been geophysically logged. Geostatistics has been carried out to determine broad coal quality (ash/RD regression analysis). Regional trends underpinned by the significant amount of testing west of the Skeena are considered sufficient to allow the classification of indicated and inferred resources (refer ASX announcement dated 14 August 2015, "Resource Increase at Groundhog North"). Further drilling and coal quality testing may be required to bring the resource up to measured status.

Exploration and Development Activities

The production plan to extract anthracite from mines designed in the Groundhog North Mining Complex is based on initial saleable product limited to 250ktpa, under a small-scale mining permit. Production would be increased to approximately 1.0Mtpa once the Environmental Assessment process is successfully completed, which at this stage is anticipated to be in late 2017. Increased production of 3.5Mtpa and beyond thereafter is planned. Ongoing environmental studies and monitoring are required for the various permits and approvals and continue at Groundhog. These will support the preparation of an Environmental Assessment in 2016.

Upon receipt of the Bulk Sample Permit the Company plans to increase site activities. The Company has acquired suitable long term site accommodation, offices and workshops for up to 100 personnel to be utilised for the extraction of the bulk sample.

Adjacent and approximately 15km to the west of Groundhog, is the Panorama deposit, covering an area of approximately 450km^2. Exploration activities in this area have been limited to date. During the 1980's however, a major oil company released two separate NI 43-101 resource statements for several identified deposits at Panorama. The Company has undertaken significant desktop analysis of regional geology, field mapping and historical reports, and has designed an exploration and development program for Panorama. The Company has also been approached by two significant coal exploration, development and operations companies looking to form a joint venture for exploration activities at Panorama. Discussions are on-going with both parties with the Company analysing the potential for farm-in type investments at discreet projects, nominally Panorama North and Panorama South.

Engagement with First Nation Groups

The Complex is located within the asserted traditional territories of the Gitxsan House (Geel) and of the Tahltan Nation. Since the commencement of exploration activities, the Company has been communicating with these First Nation groups, as well as other First Nation groups that may benefit from the proposed activities at the Complex. The Company intends to continue engaging in respectful and transparent communication with all relevant First Nation groups as development of the Complex and associated potential access routes continues. It is planned that operations at Groundhog will employ local First Nations and community-based personnel.

Infrastructure

Located approximately 200km from Groundhog, Stewart World Port (see Figure 11 below) has completed construction of the deep water wharf. With draft capability in excess of 25m, Cape size vessels will be able to berth at Stewart Port. This is an important step in the logistics chain for Groundhog, and significantly increases loading capacity at Stewart Port. Atrum has an MOU to export up to 5Mtpa of anthracite through Stewart World Port (Refer ASX Announcement 29 July 2013, "Port Capacity Secured").

Figure 11: Deepwater wharf at Stewart World Port

Bulk Sample Permit

As noted in the recent Quarterly Activities Statement (refer to ASX Announcement 31 July 2015 "Quarterly Activities Report for the period ending 30 June 2015"), the Bulk Sample Permit is now expected to be awarded in H2 2015. A series of meetings with regulatory authorities in relation to the Bulk Sample Permit are currently in progress in Canada.

Award of the Bulk Sample Permit will enable the Company to meet its delivery timetable for trial samples to Japanese, Korean, North and South American steel makers. It remains the Company's intention to have first shipments assembled for sale to customers in 2016.

Financing

Atrum is pleased to announce that it has formalised the binding MOU previously signed with CCTEG by entering into a general contract with CCTEG for the supply of equipment for the Groundhog Project.

With the various studies completed to date highlighting the potential of the Complex, the Company is allowing pre-qualified participants access to relevant reports in order to make investment decisions. Steel mills and trading conglomerates are anticipated to provide indicative financing proposals in H2 2015 for potential equity investment at project level into the Complex.

Correction

The Company's press release of 14 August 2015 "Resource Increase at Groundhog North" noted in Table 1 that Xstract Mining Consultants had undertaken anthracite quality work for the Company. This was an error. A & B Mylec Pty Ltd conducted the anthracite quality work. All other information in respect to Table 1 has been confirmed by Mr N Gordon of Gordon Geotechniques Pty Ltd. The Company apologises for the administration error which has now been corrected and appended to this release.

Competent Person Statement

The information in this announcement that relates to Coal Resources were estimated in accordance with the guidelines set out in the JORC Code 2012 and are based on and fairly represents information and supporting documentation compiled and reviewed by Mr N Gordon, a Competent Person who is a full-time employee of Gordon Geotechniques Pty Ltd, a Member of the Australasian Institute of Mining and Metallurgy (CP Geotechnical: AusIMM Membership No. 229724) and a Registered Professional Engineer in Queensland (RPEQ No. 9855).

With more than 29 years of experience in open cut and underground coal mining, Mr Gordon has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration to qualify him as a Competent Person as defined in the JORC Code 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves."

Neither Mr Gordon nor Gordon Geotechniques Pty Ltd has any material interest or entitlement, direct or indirect, in the securities of Atrum or any companies associated with Atrum. Fees for the preparation of this report are on a time and materials basis.

Mr Gordon first visited the Groundhog project area in March 2014 whilst exploration personnel were preparing for the next drilling program. Two days were also spent with Atrum geological personnel in Victoria, British Columbia evaluating the geological, coal quality and geotechnical information relevant to the Groundhog project area. Follow up visits to British Columbia and site to witness exploration and drilling activities were carried out in September and November 2014.

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

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Forward Looking Statements

This release includes forward looking statements. Often, but not always, forward looking statements can generally be identified by the use of forward looking words such as "may", "will", "expect", "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. Forward looking statements in this release include, but are not limited to, the capital and operating cost estimates and economic analyses from the Study.

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.

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.

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.

JORC TABLE 1 –
SECTION 1 - SAMPLING TECHNIQUES AND DATA

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	• For the Atrum Coal 2013 and 2014 exploration programs, all coal seams intersected were sampled. Coal plies were sampled discretely on the basis of lithological characteristics and quality. All non-coal material and partings were included with the lower coal ply and noted in the lithological description. Non-coal interburden was sampled separately. • The immediate roof and floor samples were submitted for geotechnical testing. • All coal and roof and floor dilution samples were double bagged at site and marked with sample number, date, hole and project. These were retained on site until geophysical corrections confirmed representative core recovery of the seam and samples. The qualified samples were then transported to the laboratory via courier. • Coal quality samples from the Atrum Coal drilling programs were sent to Loring Laboratories and ALS Laboratories in Calgary and Vancouver, respectively. • All coal quality samples were prepared and analysed using Canadian and International Standard testing methodologies
Drilling techniques	• *Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	• The majority of holes are vertical but some inclined holes were drilled in 2013 and 2014. • All coal quality holes were cored (partially or fully) using a HQ size core barrel producing a 63.3 mm core diameter. • Large diameter drill holes for bulk material extraction were cored in 2013 using a PQ size core barrel producing an 83.1 mm core diameter.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and quality and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• An assessment of core recovery was completed by comparing the recovered thickness measured during geological logging and by the driller, to geophysical picked thicknesses from the geophysical logs. • Core recoveries were typically greater than 90% in both the HQ and PQ holes. Only recoveries >80% were used for resource estimation. • Volumetric analysis of samples was conducted on the Atrum Coal exploration programs. • The analysis was based on sample mass received versus expected sample mass derived from sample length by core diameter by apparent Relative Density.

Criteria	JORC Code explanation	Commentary
		• If sample mass was below 95% a separate exercise interrogating the linear recovery via photos and logs was undertaken to decide whether the sample could be included and not bias the results.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Coal Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	• All core was geologically logged, marked and photographed before sampling. Geological and geotechnical features were identified and logged. • All 2012, 2013 and 2014 drill holes have been geophysically logged with a minimum density, calliper, gamma and verticality unless operational difficulties prevented full or partial logging of the drill hole. • The calibration of the geophysical tools was conducted by the geophysical logging company. Century Wireline Services. • Acoustic scanner logging to detect joints, cleats and borehole breakout has also been run, supplemented with sonic velocity for strength estimation.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• All core samples were double bagged on site and transported to the laboratory for testing. • Loring Laboratories and ALS Laboratories comply with Canadian and International Standards for sample preparation and sub sampling. • Large wash samples were pre-treated and dry sized and various sizes before sample splitting and analysis. Proximate analysis was completed on a portion of the original sample. • Raw analysis procedure keeps ½ of the sample as reserve. • The in-situ relative density for resource estimation was estimated using the methods of Preston and Sanders (1993) and Fletcher and Sanders (2003). • Slake durability and UCS/Modulus/Poisson Ratio geotechnical tests were carried out at Golders laboratory in Burnaby, British Columbia on samples from the 2013 program.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*	• Loring Laboratories and ALS Laboratories comply with the Canadian and International Standards for coal quality testing and as such conduct the verifications for coal quality analysis outlined in the standards. • Coal quality results were verified before inclusion into the geological model and resource estimate. • No adjustments have been made to the coal quality data.

Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	• Loring Laboratories and ALS Laboratories comply with the Canadian and International Standards for coal quality testing and as such conduct the verifications for coal quality analysis outlined in the standards. • Coal Quality results were verified by A & B Mylec Pty Ltd before inclusion into the geological model and resource estimate. • No adjustments have been made to the Coal quality data.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Coal Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Professional Survey of the coal quality boreholes for the Atrum Coal exploration program was completed by DMT Geosciences. • The 2013 and 2014 drill holes were surveyed using GPS to <60 cm accuracy. • The collar levels were also audited against the high quality LIDAR generated topographic surface contours.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and quality continuity appropriate for the Coal Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	• Data spacing sufficient to establish the degree of geological and quality continuity for inclusion as Indicated and Inferred Resource estimation procedures were employed. • Multiple samples were obtained for some seams within the Groundhog North Mining Complex. As such, where appropriate, sample compositing has been completed. Samples were weighted against sample thickness and in situ RD.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• A combination of vertical and inclined drill holes was completed during 2013 and 2014 from the same drill pad to ensure that a suitable understanding of the geological structure and orientation of the geology was captured.
Sample security	• *The measures taken to ensure sample security.*	• Sample security was ensured under a chain of custody between Atrum Coal personnel on site and Loring and ALS laboratories. •
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Sampling was undertaken by Atrum Coal personnel. Loring and ALS undertook internal audits and checks in line with the Canadian and International standards. • The geological and coal quality database has been reviewed by Gordon Geotechniques Pty Ltd.