

# ATRUM COAL RECOMMENCES DRILLING AT 1.57BT GROUNDHOG ANTHRACITE PROJECT

# **HIGHLIGHTS**

- Atrum has commenced a four-week drilling program at its flagship Groundhog Anthracite Project that will target infill drilling of the bulk sample location area prior to trial mining in H2 2014
- Complementary ground based seismic program progressing well with the main seismic lines through the bulk sample area now completed and data interpretation continuing
- Pre-feasibility Study on track for release in April with most chapters complete
- Bulk sample permit application lodgement expected to take place in the coming days
- Kuro Coal Limited spin-out documentation close to finalisation

Atrum Coal NL ("**Atrum**" or the "**Company**") (**ASX: ATU**) is pleased to announce the commencement of a limited field exploration program at the Company's flagship Groundhog Anthracite Project ("**Groundhog**"), located in British Columbia, Canada.

Managing Director, Dr Eric Lilford commented:

"We have a busy few months ahead of us at Groundhog as we look to achieve first 'coal on ship' before the end of the year. Our PFS is nearing completion and will be released at the end of this month. We have a world-class project at Groundhog and look forward to delivering on this truly once-in-a-lifetime opportunity"



#### **Key Projects**

## RECOMMENCEMENT OF DRILLING AT GROUNDHOG

Drilling recommenced at the Groundhog Anthracite Project (**Groundhog**) following the mobilisation of equipment and crew to site. The program will continue during the next four weeks and will take place along section lines perpendicular to the strike of the main structure of the key seam #70. The Company continues to map the extent of the sub-crop and further enhances confidence around the portal and bulk sample locations where it plans to extract up to 100,000t of anthracite.

Following completion of this concentrated drilling program, the Company plans to ramp up the full summer drilling program in June.

The current drilling program consists of a combination of open rotary holes and cored holes with approximately one in every four holes being targeted for coring.

Each drill hole will be positioned to:

- Confirm the depth and thickness of the #70 seam and increase the confidence in the geology / structural model to progress with bulk sample mine construction;
- Categorise the material above the target coal #70 seam including other coal seams, consolidated material and unconsolidated surficial material;
- Run an extensive suite of geophysical logs including density, neutron, gamma, dipmeter, sonic, and possibly televiewer assessments; and
- Categorize the stratigraphy.

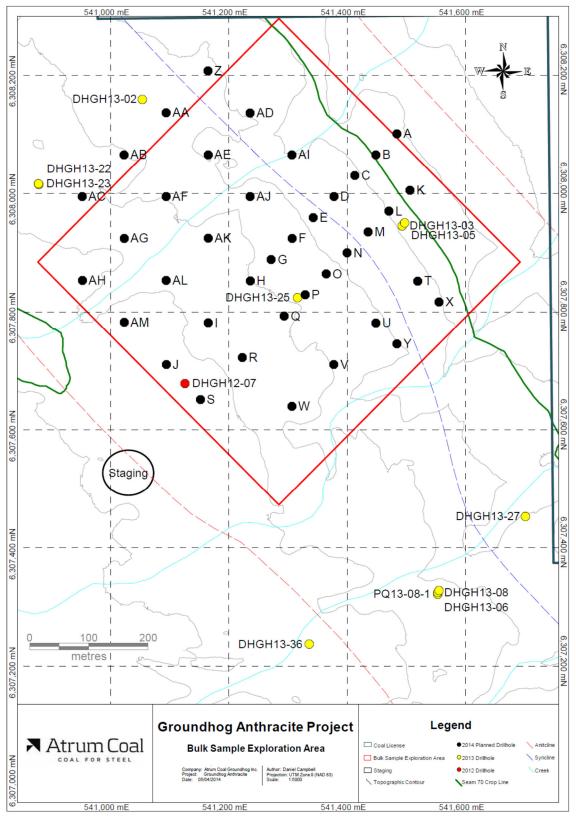
The cored holes will be selected to ensure that:

- They are fully described, photographed and sampled as required;
- At least three coal seam intersections are sampled for coal quality analysis, to deliver at least -5kg samples of quality anthracite from the target #70 seam to assist ongoing coal marketing and offtake discussions; and
- A representative selection of cored holes will be forwarded for additional geotechnical and geochemical testing.

In late February 2014, the Company commenced a ground based seismic program designed to model the different coal seams above and below the key #70 seam based on the different densities and conductivity attributes of each seam. This data will be used in conjunction with the geophysical logs of the current drilling program to confirm geological interpretation.



The following map identifies the locations of the proposed drill holes within the planned bulk sample location in the north-west zone at Groundhog:



Current drilling program

#### GROUNDHOG PRE-FEASIBILITY STUDY

The pre-feasibility study (**PFS**) for the Groundhog project is on track for release by the end of April 2014. The Company is finalising a number of the study chapters with the various independent consultants. Early indications are that the project can deliver significant economic upside beyond the 2013 Scoping Study results that modelled a conceptual 1.8Mtpa run-of-mine production profile.

The PFS models the production of 5Mtpa (steady state) run-of-mine production of high grade anthracite across a number of sizing fractions and is focused on a 'cut and cover' room-and-pillar mining method of the single key #70 seam in the north-west zone at Groundhog.

Upon completion of the pre-feasibility study and the economic modelling this month, an announcement will be made to shareholders detailing the findings.

### **GROUNDHOG BULK SAMPLE**

The bulk sample permit application at Groundhog is nearing finalisation with lodgement expected to take place in the coming days. The Company has a meeting with the Mineral Development Resource Committee (MDRC) for 16 May 2014 and it is expected that an announcement to be made to shareholders in the coming weeks setting out the plans for the bulk sample and the detailed method of extraction.

## KURO COAL LIMITED SPIN-OUT

The Company is finalising documentation for its Kuro Coal Limited (**Kuro**) spin-out which plans to list by Initial Public Offering on the ASX under ticker code 'KCO'.

Kuro provides Atrum shareholders with an opportunity to freely participate in the development of Atrum's non-Groundhog metallurgical coal assets in a separate dedicated vehicle. Under the terms of the spin-out, Atrum shareholders will receive one free Kuro share for every four Atrum shares held at the Record Date (date to be advised).



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#### Competent Person Statement

The information in this document that relates to Exploration Results is based on information compiled by Brad Van Den Bussche B.Sc P.Geo, who is a Member of a Recognised Overseas Professional Organisation (ROPO) included in a list promulgated by the ASX from time to time, being the Canadian Institute of Mining and Metallurgy. Mr Van Den Bussche 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 Van Den Bussche is a Competent Person as defined by the JORC Code, 2012 Edition, having five years' experience that is relevant to the style of mineralisation and type of deposit described in this document, and to the activity for which I am accepting responsibility.

Mr Van Den Bussche is Chief Technical Officer of Atrum Coal NL and has sufficient experience which is relevant to the style of mineralisation and type of deposit and mineralisation under consideration and to the activity which they are undertaking. Mr Van Den Bussche consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

In accordance with the Australian Securities Exchange requirements, the technical information contained in this announcement in relation to the JORC Compliant Coal Resource for the Groundhog Anthracite Project in Canada has been reviewed by Mr Ian de Klerk of Xstract Mining Consultants Ptu Ltd.

The Coal Resources documented in this release are stated in accordance with the guidelines set out in the JORC Code, 2004.

They are based on information compiled and reviewed by Mr. Ian de Klerk who is a Member of the Australasian Institute of Mining and Metallurgy (Member #301019) and is a full time employee of Xstract Mining Consultants Pty Ltd. He has more than 20 years' experience in the evaluation of coal deposits and the estimation of coal resources. Mr. de Klerk 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, 2004. Neither Mr. de Klerk nor Xstract have any material interest or entitlement, direct or indirect, in the securities of Atrum Coal NL or any companies associated with Atrum Coal NL. Fees for work undertaken are on a time and materials basis. Mr. de Klerk consents to the inclusion of the Coal Resource based on his information in the form and context in which it appears.

#### 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.



# **TABLE 1 - SAMPLING TECHNIQUES AND DATA**

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (eg 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul> <li>For the Atrum Coal 2013 exploration program 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.</li> <li>The immediate roof and floor samples were submitted for geotechnical testing.</li> <li>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.</li> <li>Coal Quality samples from the Atrum Coal Drilling program were sent to Loring Laboratories and ALS Laboratories in Calgary and Vancouver, respectively.</li> <li>All coal quality samples were prepared and analysed using Canadian and International Standard testing methodologies.</li> </ul>
Drilling techniques  Drill sample recovery	<ul> <li>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).</li> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</li> </ul>	<ul> <li>All coal quality holes were cored (partially or fully) using a HQ size core barrel producing a 63.3 mm core diameter.</li> <li>Large diameter drill holes for bulk material extraction were cored using a PQ size core barrel producing an 83.1 mm core diameter.</li> <li>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.</li> <li>Volumetric analysis of samples was conducted on the Atrum Coal exploration program</li> <li>The analysis was based on sample mass received versus expected sample mass derived from sample length by core diameter by apparent Relative Density</li> </ul>

Criteria	JORC Code explanation	Commentary
		<ul> <li>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.</li> </ul>
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>All core was geologically logged, marked and photographed before sampling. Geological and geotechnical features were identified and logged.</li> <li>All drill holes have been geophysical logged with a minimum density, calliper, gamma and verticality unless operational difficulties prevented full or partial logging of the drill hole.</li> <li>The calibration of the geophysical tools was conducted by the geophysical logging company. Century Wireline Services</li> </ul>
Sub-sampling techniques and sample preparation	<ul> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul> <li>All core samples were double bagged on site and transported to the Laboratory for testing.</li> <li>Loring Laboratories and ALS Laboratories comply with Canadian and International Standards for sample preparation and sub sampling.</li> <li>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.</li> <li>Raw analysis procedure keeps ½ of the sample as reserve.</li> </ul>
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> </ul>	<ul> <li>Loring Laboratories and ALS Laboratories comply with the Canadian and International Standards for coal quality testing and are certified.</li> <li>Geophysical tools were calibrated by the logging company Century Wireline Services.</li> <li>The density measurement is calibrated to precise standards and where possible validated in a calibration hole.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<ul> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>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.</li> <li>Coal Quality results were verified by Xstract Mining Consultants Pty Ltd before inclusion into the geological model and resource estimate.</li> <li>No adjustments have been made to the Coal quality data.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>Professional Survey of the coal quality boreholes for the Atrum Coal exploration program was completed by DMT Geosciences.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Data spacing sufficient to establish the degree of geological and grade continuity for inclusion as Inferred, Indicated and Measured Resource estimation procedures were employed.</li> <li>Multiple samples were obtained for some seams within the Groundhog Project area. As such, where appropriate, sample compositing has been completed. Samples were weighted against sample thickness and in situ RD.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	A combination of vertical and inclined drill holes were completed 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.	<ul> <li>Sample Security was ensured under a chain of custody between Atrum Coal personnel on site and Loring and ALS laboratories.</li> </ul>



Criteria	JORC Code explanation	Commentary
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>Sampling was undertaken by Atrum Coal personnel. Loring and ALS undertook internal audits and checks in line with the Canadian and International standards</li> </ul>

# **TABLE 2 - REPORTING OF EXPLORATION RESULTS**

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	granted coal licences and 8 coal licence applications
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>Exploration drilling within and in close proximity to the Groundhog project has been reviewed and evaluated for data purposes</li> </ul>
Geology	Deposit type, geological setting and style of mineralisation.	<ul> <li>The Groundhog Project lies within the Bowser Basin.</li> <li>The Bowser Basin, which is the largest contiguous basin in the Canadian Cordillera, developed as a result of tectonic compression and uplift of the Coast Mountains during the Upper Jurassic.</li> <li>The dominant structural feature is the northwest-southeast trending Biernes Synclinorium. It resulted from northeast-southwest compression during the first phase of deformation ("F1"). Thrusting related to the F1 deformation is more intense in the southern part of the Groundhog Coalfield than in the northern part.</li> <li>The second, less intense, phase of deformation ("F2") resulted from northwest-southeast compression. The F2 deformation is superimposed on the broad, open type of F1 folding. The F2 imprint is visible in a series of plunge changes in the F1 folds in the order of up to 5°.</li> </ul>

Criteria	JORC Code explanation	Commentary
		F2 thrusts are generally flat lying and related to the hanging wall of drag folds. Displacement tends to be along bedding surfaces. The F2 fold structures superimposed on the major F1 synclinorium vary in wave length from 100 m to 700 m and vary in amplitude up to 100 m.
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	All drill holes have been modelled from vertical, although hole deviation (from vertical) has been recorded for all drill holes.
Data aggregation methods	<ul> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	All seams where multiple coal quality samples were taken were given a composite coal quality value. This composite value was generated within the Minescape software and was weighted on thickness and in situ RD. In situ RD was only weighted against thickness.
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul> <li>The inclusion of boreholes from neighbouring areas has given the model a reasonable amount of lateral continuity in all directions.</li> <li>Point of observation spacing has been extrapolated in a maximum of a 2,000 m radius from the drill hole.</li> <li>Seam thicknesses have been corrected to geophysics to ensure accuracy</li> </ul>



Criteria	JORC Code explanation	Commentary
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul> <li>All appropriate diagrams are contained within the main body of the report</li> </ul>
Balanced reporting	<ul> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</li> </ul>	<ul> <li>All available exploration data for the Groundhog Project area have been collated and reported.</li> </ul>
Other substantive exploration data	<ul> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul>	No further exploration data were gathered and or utilised.
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	Further work consisting of additional drilling and seismic activity is being evaluated.