



ASX Announcement: 17 November 2014

# MAIDEN JORC COMPLIANT RESOURCE ESTIMATE AT HINTON NORTH

ASX: SAT

## Capital structure:

Ordinary shares  
321.7m

Options (Unlisted)  
18.7m 6c (30/11/15)  
19.7m 2c (30/11/15)

## Shareholders:

Institutional 13%  
Board/ Mgt 19%  
Retail 68%

Top 20: 56%

- **Maiden JORC Compliant Resource Estimate:** Stratos Resources Ltd (ASX:SAT) is pleased to release a Maiden JORC Compliant resource estimate for the Hinton North Coal Project in Alberta, Canada.
- **High Proportion of Measured and Indicated Resources:** 92% of JORC Compliant Bituminous Coal resource is in the Measured and Indicated categories.
- **Strong Infrastructure Characteristics:** Coal project is ideally located close to key infrastructure being 10kms from open access rail with access to domestic and export markets. West Coast Canada ports provide access to the key Asian markets of Japan, South Korea and China.
- **Attractive Jurisdiction:** Alberta is one of the most attractive mining jurisdictions globally. In 2013 Alberta was rated No.1 in Canada and No.3 globally of 112 jurisdictions in the Fraser Institute's annual survey.
- **Pre-Development Stage Project:** The project is a Pre-Development Stage project with over 7,000m of drilling already completed and a granted mining lease in place over 2,756Ha. The lease is located in Alberta Coal Development Category 4. While Categories 1, 2 and 3 impose special environmental constraints on development, Category 4 does not. Category 4 is the most desirable for potential mining operations and development.

Stratos Resources Ltd (ASX: SAT) is pleased to announce a maiden JORC Compliant resource estimate has been reported for the Hinton North coal project (under option) in Alberta, Canada. The JORC Compliant resource estimate was prepared by Norwest Corporation of Calgary, Alberta.

**TABLE 1**  
**HINTON NORTH COAL PROPERTY**  
**STRATOS RESOURCES LTD.**  
**COAL RESOURCE SUMMARY**  
**(EFFECTIVE DATE NOVEMBER 5, 2014)**

ASTM Group	In-Place Coal Resources*		
	(Ktonnes)**		
	Measured	Indicated	Inferred
HV C Bituminous	80,371	26,395	8720
<b>Total</b>	<b>106,766</b>		<b>8,720</b>

\*Resources tabulated are those suitable for surface mining

\*\*Estimated from Surface Down to 20:1 Strip Ratio Limit

See JORC Code 2012 Edition – Table 1 at Appendix 1 for further details.

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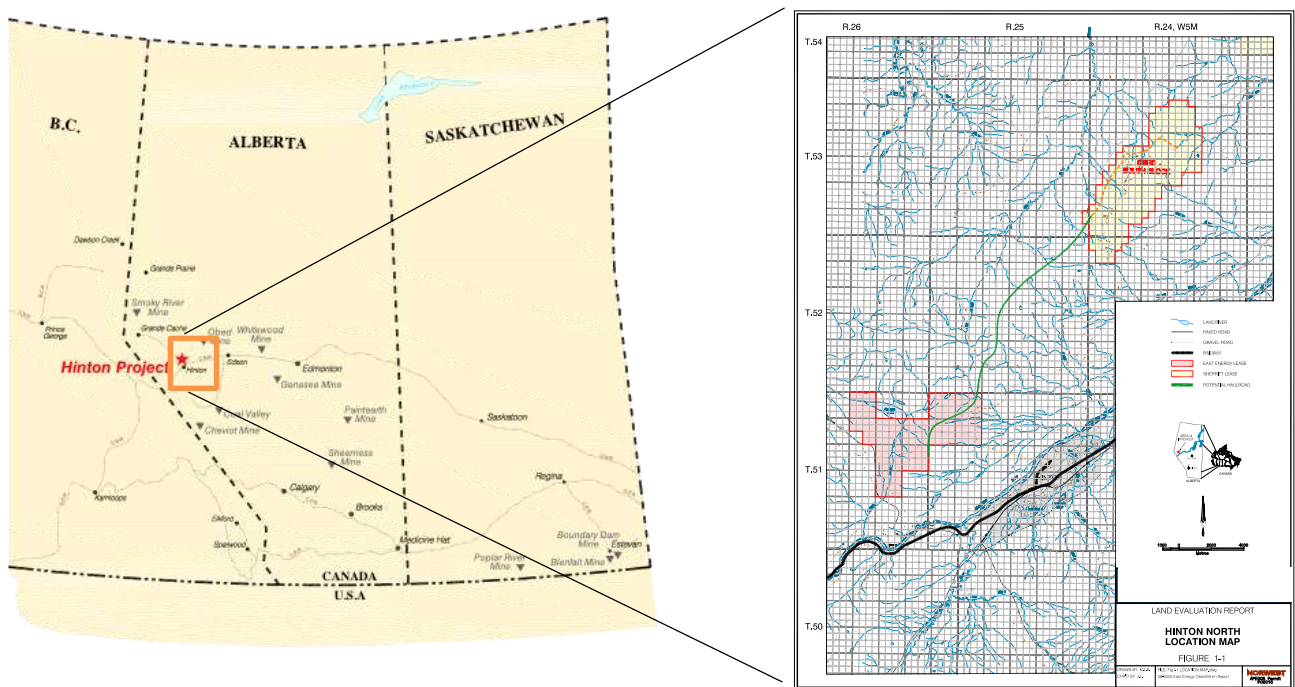
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## Hinton North Project

The project is located in west central Alberta, 7 km north and across the Athabasca River from the town of Hinton, approximately 300 km west of Edmonton, Alberta (see Figure 1). There are numerous operating mines in the area (the nearest mine is 25kms to the north east) and the major east-west rail line is 10 km south of the project which links to the domestic market and the West Coast Canadian ports for export (see Figure 2).

The market for coal in the area includes domestic coal consumption with potential for export via rail transport to the West Coast (British Columbia) ports of Vancouver and Prince Rupert to the key coal consumers in Japan, South Korea and China. The company believes there may be an opportunity to rework some of the historical mining studies undertaken on the project with a view to applying new and improved mining technology.

**Figure 1: Location of Hinton North Project and Other Operating Mines in the Area**



**Figure 2: Location of Hinton North Project (shaded**

**red) showing proximity to nearest Town (7km),**

**rail line (10km) and mine (25km)**

## Resource Area

A map of the lease area is shown at Figure 3 below and the sections A, B and C (showing the multiple seams on the mining lease) are shown at Figures 4,5 and 6 respectively.

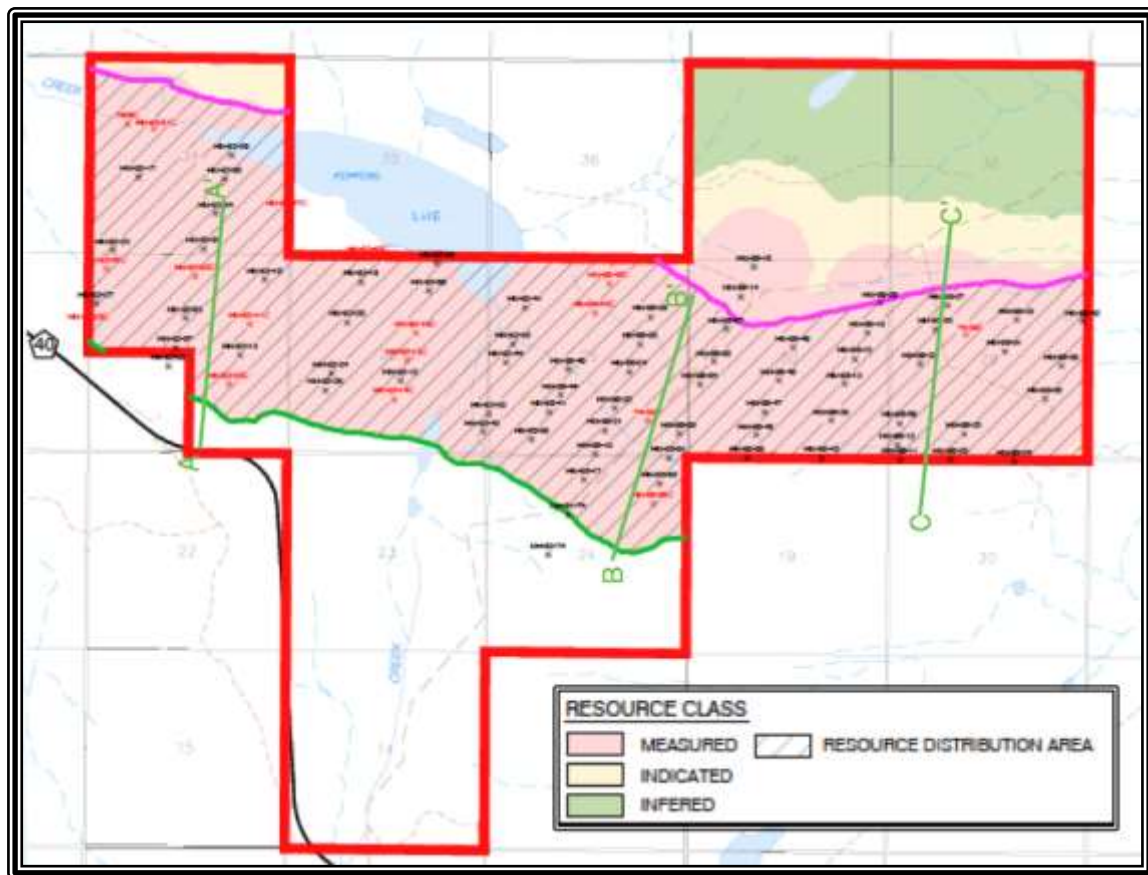


Figure 3: Mining lease map with drillhole locations, measured, indicated and inferred zones plus section lines

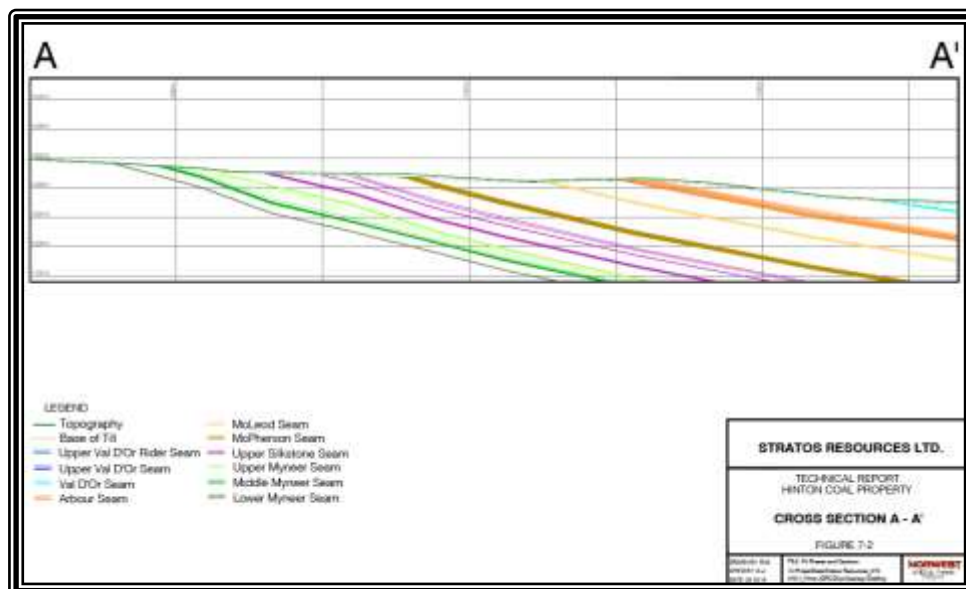


Figure 4: Section A.

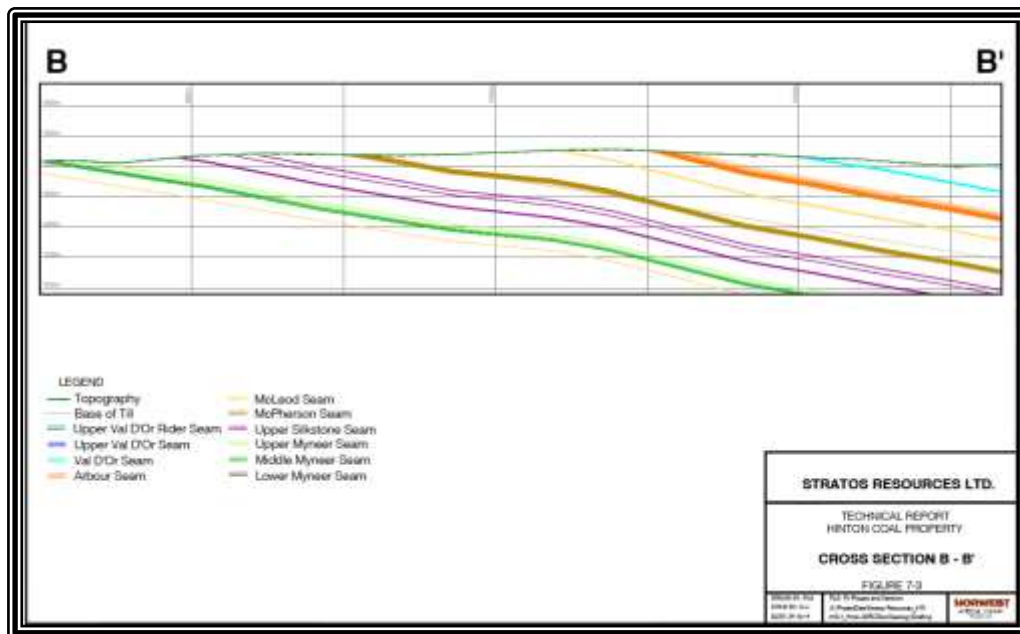


Figure 5: Section B.

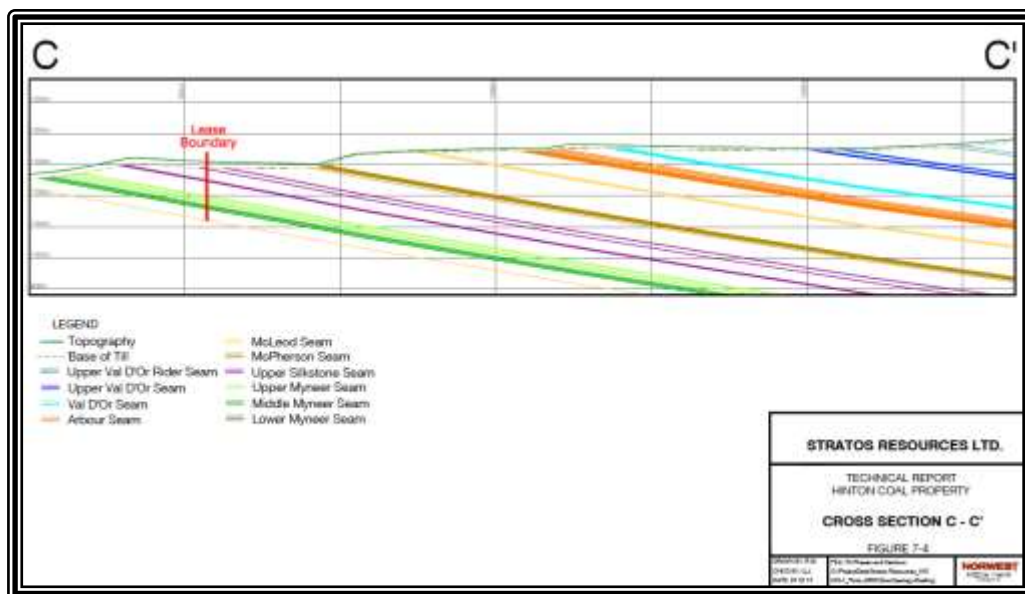


Figure 6: Section C

## Coal Quality

The coal is ranked as High Volatile C Bituminous. This coal is a medium rank, consolidated, black coal that produces between 22,000 and 25,000 kilojoules per kilogram (kJ/kg) on an as-received basis when burned. The coal has moderate moisture content and is bright to dull in lustre, medium hard and often has a blocky texture.

The company is targeting the similar quality as other mining projects close to the proximity of Hinton as they are reportedly the same seam sequence and rank. The target will be a product specific energy of as received calorific value between 5,500 to 5,800 Kcal/kg and low sulphur at less than 0.4% total sulphur.

There are 9 seams with the following key quality characteristics (Figure 7) based on coal quality analyses from 17 of the drill holes.

**HINTON COAL PROPERTY  
STRATOS RESOURCES LTD.  
SUMMARY IN-PLACE COAL QUALITY**

Seam Zone	Seam/Ply	Moist % (ARB)	Ash % (ARB)	Calorific Value kJ/kg (ARB)
Upper Val D'Or	UV4	10.51	15.58	23,925
	UV6	10.23	28.65	
Val D'Or	V2	9.33	19.32	
	V3	10.23	24.48	
	V4	16.24	25.13	
Arbour	A4	8.89	32.84	
	A5	11.18	19.73	
	A6	13.17	44.80	
	A7	12.17	27.23	
	A8	9.90	25.08	
	A9	10.28	20.48	
McLeod	Mc3		15.97	23,982
	Mc4		16.77	22,972
McPherson	Mp1	10.31	14.60	24,245
	Mp2	10.24	21.94	21,779
	Mp3		39.14	
	Mp4	8.59	24.91	
	Mp 3+4		30.07	
	Mp5	10.09	26.78	
	Mp6	12.78	20.65	21,390
Upper Silkstone	US2		14.92	23,924
	US3 & US4		12.10	25,040
Silkstone	S1	16.90	41.18	
	S4	10.82	26.47	
Upper Mynheer	UM2		17.55	23,097
	UM3	9.54	31.91	
Middle Mynheer	MMR	9.65	15.96	
	MM1	10.42	20.37	
	MM2	11.27	19.43	
	MM3	11.16	29.21	

**Figure 7: Coal Quality**

### Transaction Structure

The Hinton North Project acquisition is structured as an exclusive option to acquire 100% of the project. The terms of the option are a non-refundable deposit of C\$20,000 (which has been paid). Future payments, at the option of the buyer, to keep the option on foot are C\$200,000 by 6 January 2015 ("2015

Payment”), C\$400,000 by 6 January 2016 (“2016 Payment”) and a final payment of C\$400,000 by 6 January 2017 (“2017 Payment”) at which time title to 100% of the project will pass to Stratos.

The Hinton North Project has a pre-existing 5% net profit royalty which is intended to be cancelled should the 2017 Payment be made, from proceeds of the 2017 Payment. Following the 2017 Payment and title transferring, the vendor will be entitled to a royalty of C\$0.15/ tonne for the first 20m tonnes of coal produced from the project. This royalty can be purchased at any time for C\$1m.

Based on the agreed option terms, if exercised (NB: 80% of the consideration is not payable until 2016 and 2017) the acquisition price equates to an attractive price of less than 1c/ tonne based on the JORC Compliant resource.

The Company looks forward to providing further updates on the status of its projects shortly.

Board of Directors  
Stratos Resources Ltd

ENDS

### **Competent Person Statement**

The information in this ASX Announcement that relates to the geology, coal quality and the coal resource estimate in Table 1 is based on information compiled for a new Technical Report by Mr. Geoff Jordan P.Geol., who is a Member of a Recognized Overseas Professional Organization (ROPO) included in a list promulgated by the ASX from time to time, being the Association of Professional Engineers and Geoscientists of Alberta. Mr. Jordan is an employee of Norwest Corporation and has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the ‘Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’. Mr. Jordan consents to the inclusion in the document of the matters based on his information in the form and context in which it appears.

### **Forward Looking Statement**

This announcement may contain some references to forecasts, estimates, assumptions and other forward-looking statements. Although the company believes that its expectations, estimates and forecast outcomes are based on reasonable assumptions, it can give no assurance that they will be achieved. They may be affected by a variety of variables and changes in underlying assumptions that are subject to risk factors associated with the nature of the business, which could cause actual results to differ materially from those expressed herein. All references to dollars (\$) and cents in this presentation are to Australian currency, unless otherwise stated.

Investors should make and rely upon their own enquires and assessments before deciding to acquire or deal in the Company’s securities.

## APPENDIX 1

### JORC Code 2012 Edition – Table 1

#### Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>The records of drilling on the project are those maintained in the Provincial Government archive. In 1990 the drilling was done using top-head drive rotary rigs and these were used to initially drill all holes open in order to produce wireline logs. Subsequently a selection of the holes was "twinned" and the original logs were used to select intervals for coring. The cores were collected from holes drilled using 5" or 6" bits so the core diameter was either 2.5" or 3.0". The core samples were collected by the Manalta Coal Ltd staff geologists. Table 13.2 in Section 13 shows the records of sampling and testing of the core as maintained in the Provincial archive. There are coal quality testing records available for 17 core holes but there is information to show that a total of 24 holes were cored; the sampling and testing records for the remaining 7 holes are not in the Provincial archive data files.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <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> </ul>	<ul style="list-style-type: none"> <li>The types of drilling methods used in the 1990 and 1992 programs are previously described. Those programs were completed using top-head drive truck mounted rotary rigs. Such rigs are modified to provide for wireline coring and, sometimes, angle hole drilling. At Hinton North all holes commenced at the collar as vertical holes. The bit sizes were normally 5" and 6" which resulted in either 2.5 " or 3.0 " cores. The method of drilling for the 1974 program is not known.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Core recovery records are reported on the written core description sheets for each core hole. However, the written core description sheets are not in the public archive and, since there is no legal obligation to provide that information to the government, were most likely never submitted.</li> <li>There are no records in the public archive to show what the core recovery estimates were.</li> </ul>
Logging	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>A suite of geophysical logs, including density, gamma, caliper, resistivity and hole orientation was run in the 1990 programs and density, gamma, neutron, caliper and hole orientation were run in 1974. Logging in the 1990 program was completed under contract to Century Geophysical Corp. and those of the 1974 program by Roke Oil Enterprises.</li> <li>All core holes were also geologically and the recorded depths corrected to the geophysical log depths as is industry standard. However the original geological core descriptions are</li> </ul>



Criteria	JORC Code explanation	Commentary
		<p>not in the public archive files.</p> <ul style="list-style-type: none"> <li>It is industry standard in the coal industry in Canada for all core to be logged. Records of the core recoveries are also routinely made but those records are not in the public archive.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Sub-sampling (core splitting) is not normally practiced in the Canadian coal Industry. Whole core material of each seam or ply, either as single samples or a series of samples by depth increments are sent to the laboratory for analysis. All core coal samples were bagged on site before being transported to Loring Laboratories in Calgary for coal quality test work.</li> <li>The available results for core sampling and analysis are shown on Table 13.2 of Section 13 of the report.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <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> <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>	<ul style="list-style-type: none"> <li>With respect to the programs of 1990 and 1992, Loring Labs is ISO 9001 certified, adheres to ASTM preparation and testing specifications and has Quality Control processes in place.</li> <li>Loring adopts standard quality control procedures and has participated in the International Canadian Coal Laboratories Round Robin Series (CANSPEX).</li> <li>For the 1990s programs, geophysical tools were calibrated by the logging company, Century Geophysical, using their internal calibration procedures.</li> <li>The 1974 program of Union Oil used the Commercial Testing and Engineering Company laboratory in Vancouver. That laboratory was an independent and certified laboratory at that time but the company no longer operates there.</li> <li>The 1974 geophysical log calibration procedures of Roke Oil Enterprises were the most rigorous in the coal industry at that time and exceeded the standards of those of its significant competitors, Century and BPB (now Weatherford). They included the use of synthetic material blocks for calibration.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>One objective of the 1990s program of Manalta Coal was to validate the results of the 1974 program of Union Oil. This was accomplished and Manalta subsequently acquired the property.</li> <li>There are no records of the verification of sample analyse as performed on behalf of Manalta.</li> <li>Norwest staff did not participate in those programs and cannot provide any further verification of the sampling and analysis programs. Norwest has not independently drilled this property nor had any samples tested for coal quality.</li> </ul>



Criteria	JORC Code explanation	Commentary
Location of data points	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole 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 style="list-style-type: none"> <li>A table of the hole survey information is included in Section 10.</li> <li>The survey crews of Manalta Coal Ltd were responsible for establishing the exploration grid and the planned hole locations; "proposed hole location maps were supplied to drillers, loggers (geophysical logging crews) and survey crews. The survey crews established ground elevation and hole coordinates after hole completion. Holes were surveyed by using stadia (theodolite) technique."</li> <li>All data is now plotted from the survey records of the Alberta Provincial archive and in the UTM NAD 83 Zone 11 system. However the primary orthogonal grid shown on maps is that of the ATS Township and Range grid (a local land survey system used in Alberta, Saskatchewan and part of British Columbia) and the UTM grid is rotated accordingly on the map presentation.</li> <li>Digital topographic data at 1:20,000 scale, produced under contract for the Provincial Government, is available for purchase for this area and this was acquired for this study area. This topographic data is adequate for the present purpose.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>This aspect is discussed in Section 14.</li> <li>The average maximum distance to the nearest drill hole is about 300 m along strike and 150 m down dip. This is much more closely spaced than the recommended minimum spacing as presented in GSC Paper 88-21. GSC Paper 88-21 recommends a maximum distance of 450 m to the nearest data point for measured category and this threshold is readily met in all cases.</li> <li>The data spacing is considered sufficient to give accurate control to the resource model and give the required confidence to the resource areas.</li> <li>Coal quality data is more widely spaced but sufficient for this kind of deposit at this level of investigation.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>The Outer Foothills regional structure that hosts the Hinton Coal Property is a well-known and mapped syncline named the Entrance Syncline. The property occupies part of one of the limbs of that structure and, in the area studied, consists of a simple dipping sequence of coal measures strata. The orientation and spacing of the drilling grid is deemed to be suitable to detect geological structures and to show coal seam continuity within the resource area.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>In coal exploration in Canada, additional special security methods for the shipping and storage of samples are not commonly employed, as coal is a relatively low value bulk commodity.</li> <li>The exploration on this property was conducted by the exploration staff of the property owner at that time, Manalta Coal Ltd. Their procedures are consistent with what was needed for that company to successfully</li> </ul>

Criteria	JORC Code explanation	Commentary
		develop and operate many coal mines in Alberta, several of which are still in production.
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>These aspects are discussed in Sections 11 and 13 of the report. All of the exploration on this property in the 1990s was conducted by the exploration staff of Manalta Coal Ltd.; Norwest staff did not participate in those programs and is not aware of any audits of the sampling techniques that may have been conducted in the field.</li> <li>Loring Labs adheres to ASTM procedures for sample preparation. This laboratory is ISO 9001 certified and participates in the International Canadian Coal Laboratories Round Robin Program (CANSPEX). All drill hole and analytical data that is available is stored and retained in a database maintained by the Provincial Government of Alberta.</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>These issues, to the extent known by the report author, are discussed in detail in Sections 4 of the report. According to the Provincial Government records, Canada Rare Earth Corp holds a Provincial Crown Coal lease over the area (Agreement No. 013 1306080739) that is in good standing until 2021/08/04. This lease area is subject to the provisions of the Coal Development Policy for Alberta – Category 4.</li> <li>The lands are subject to annual lease rental fees and to the payment to the Province of coal royalties on production. It is not known if any other private royalties of payments apply.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>In 1974 a program of drilling was conducted by the coal department of Union Oil Company of Canada Ltd. This program included 8 holes but not all of them were successfully completed. At least one of them failed to drill through the till sequence at surface and was abandoned. Of the total program there are core and sample records for three holes that are in the Provincial archive.</li> <li>In 1990 and 1992 Manalta Coal conducted a program of drilling which included the twinning of many of the sites that were originally open hole rotary drilled. Manalta drilled a total of 84 sites in these programs and cored a total of 24 of them. Of these holes there are records for a total of 14 core holes and 70 holes where only the open hole drilling records remain.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The deposit type for the Hinton Coal Property is described in detail in Section 8 of the report and the geological setting and style of mineralization is discussed in Section 7.</li> <li>The deposit type for this property is described as “Moderate” in accordance with the criteria of GSC Paper 88-21. The mineralization is</li> </ul>

Criteria	JORC Code explanation	Commentary
		coal seams for this property that is located in the Outer Foothills of the Rocky Mountains. The coal measures are of Upper Cretaceous-to-Tertiary age and are found in the Coalspur Formation of the Saunders Group. There are 11 coal zones, all of which are well known and named, containing as many as 55 individual seams and plies. The average combined coal thickness is 45 m in a stratigraphic section that has an average thickness of 314 m.
Drill hole Information	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>On the Hinton Coal Property a total of 92 holes have been drilled on the site. Eight of the holes, including core holes, were drilled by Union Oil Company of Canada in 1974. 84 sites were drilled by Manalta Coal Ltd in 1990 and 1992. Of these, 24 sites were also twinned and cored.</li> <li>A full list of the drill holes used in the resource estimates including easting, northing, elevation, dip and azimuth, total depth and total net coal zone combined thickness presented in Section 10 of the report; all holes were drilled vertically at the collar.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>For the Hinton North Coal Property a minimum coal thickness of 0.6 m and a maximum non-separable parting thickness of 0.15 m were used for coal and waste discrimination. Other than this, no quality or geological aggregation has been applied to the coal ply intervals.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>All holes were drilled vertically. In addition the dip of the sequence is shallow at an average of about 11°. Furthermore the drill holes had a natural tendency to deviate from vertical to perpendicularity to the bedding dip. Thus the difference between the true thickness and the intercept thickness in this case is judged to be insignificant. All intercept thicknesses are regarded as being true thickness values.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>All illustrations are provided as Section 28 of the report. Illustrations include diagrams of the stratigraphy and coal sections and a regional location plat. Example cross-sections are provided along with a drill hole and lease base map. A resource distribution and classification map is also included.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>All of the coal quality test results that are available from the Provincial archive are as shown of Table 13.2 of Section 13. That table also shows the depth and thickness intervals for all of the core samples.</li> <li>Table 7.3 In the report shows the average,</li> </ul>

Criteria	JORC Code explanation	Commentary
		maximum and minimum thicknesses for the combined coal in each of the named seam zones
Other substantive exploration data	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>There is little outcrop in this lease area and the surface is heavily vegetated and till covered. Consequently, other than regional mapping by the Alberta Geological Survey, the only form of exploration for coal that has taken place is by drilling.</li> </ul>
Further work	<ul style="list-style-type: none"> <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>	<ul style="list-style-type: none"> <li>Further exploration will be required to advance this project to a Pre-Feasibility study and beyond. However there is sufficient data available at present to complete a conceptual level engineering study. New exploration data will be needed to validate the geological and coal quality data as stored in the Provincial archive and to allow reserves to be defined. It will also be necessary to collect samples of the various sequences to address potential concerns related to mine waste management and storage, ground and surface water monitoring and environmental protection issues.</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>This aspect is discussed in Section 12 of the report. The geophysical logs for all 87 holes used in this study were used as the basis for the determination of depth and thickness of each lithological unit. Upon tabulation of data for each drill hole the total thickness of all lithological units was compared with the total depth for the same combined interval on the geophysical logs.</li> </ul>
Site visits	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>This aspect is discussed in Section 2 of the report. There are no current exploration and development activities for coal ongoing at this site but oil and gas exploration continues and is fairly intensive. The sites of exploration work conducted by Manalta during the 1990's were visited but no evidence of coal at these sites was seen. The local physiographic condition and transportation infrastructure were inspected.</li> </ul>
Geological interpretation	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of ) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>This aspect is discussed in Section 7 of the report. This coal deposit is located in the Outer Foothills structural environment; folds are large scale and faults are infrequent. The Upper Cretaceous coal sequence in Southern Alberta is known to normally display, when compared with many other coal sequences, only gradual sedimentologic and depositional changes from one location to the next. Given the hole density in the subject area, the geological interpretations of structure and seam stratigraphy are considered to be known</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>to a high degree of confidence.</p> <ul style="list-style-type: none"> <li>The only geological assumptions that have been made are for the continuity of the seams as identified from one drill hole to the adjacent ones. Mining of adjacent coal properties shows that this assumption is usually valid. There are assumptions that have been made regarding resource estimation and these are separately discussed.</li> <li>The geological interpretation method is deterministic, which is the normal industry-wide approach to coal deposits in this region. Drill hole data is the basis for the geologic interpretations. The sequence is shallow dipping, unfaulted in the area studied and the seam sequence is one that is well known. There are no valid reasons for introducing an alternative interpretation without also introducing geological complexity that has not been shown to exist in this well-explored region.</li> <li>The mineral resource estimation is entirely based on the geological interpretation. The deterministic geological interpretation was imported into a computer system that was used to produce a gridded seam model of the layered sequence.</li> <li>Geologic continuity can be affected by faults but none are known to be present in the area studied. "Pinches", "swells" and "splitting" can cause some modification of the seam continuity but these are infrequent in this area; however there are some such occurrences in the area as occurs for individual seam plies but not for the larger Seam Zones. Mining adjacent to this deposit shows that any geologic changes of this type can normally be accommodated in the mine's long and short range plans. The analytical data for the core holes show that changes of quality are relatively minor. On the basis of coal quality alone a suitable export coal that satisfies the requirements of the export coal market can normally be produced.</li> </ul>
Dimensions	<ul style="list-style-type: none"> <li>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</li> </ul>	<ul style="list-style-type: none"> <li>This aspect is discussed in Sections 7 and 14 of this report. The only significant aspect of variability is the dip of the structure which causes the seams to be at greater depth in the north as opposed to the south of the area studied. That dip is not severe being about 11° for the resource block studied. The strike length of the resource model area is about 8,000 m and the dip extent is in the range of 2,000 m to 2,500 m. The sequence containing the seams is about 314 m thick.</li> </ul>
Estimation and modelling techniques	<ul style="list-style-type: none"> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> </ul>	<ul style="list-style-type: none"> <li>This aspect is discussed in Sections 12 and 14 of the report.</li> <li>The resource model for the Hinton Coal Property was developed using Mintec's geological modelling and mine planning software, Minesight®.</li> <li>This system is widely used throughout the mining industry for digital resource model development.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<ul style="list-style-type: none"> <li>The selected grid cell size was based on the density of the drill hole dataset, in this case being 50 m x 50 m. Since the model is a Gridded Seam type no vertical cell height applies.</li> <li>The Geological Type is classified as "Moderate".</li> <li>Thickness models were prepared for the 55 coal plies in 11 coal zones</li> <li>The depth limit for the potential surface mineable resource was based on a cut-off ratio limit of 20:1 m<sup>3</sup>/tonne, at the discretion of the Qualified Person.</li> <li>Seam specific coal densities were used for the conversion of in-place volumes to in-place tonnes (see below).</li> <li>The resource areas include a provision at the topography to allow for a layer of glacial till that masks most of the bedrock in this area. The till thickness ranges from about 1.5 m to about 12.0 m.</li> <li>Coal thicknesses were determined from drill hole intersections on the property, as shown in the geophysical logs for each hole.</li> <li>Mining options are not addressed in this report and the selection of such equipment determines the minimum thickness of potential mining units; the potential for selective mining of this deposit will not be known until such a mining and economic study is complete.</li> <li>Since this is a coal deposit, grade capping and grade cutting are not applicable.</li> </ul>
Moisture	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>This aspect is discussed in Section 13 of the report. The tonnages are reported on an As Received Basis with natural moisture included. The moisture content is determined from the results of Proximate Analysis laboratory testing.</li> </ul>
Cut-off parameters	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied.</li> </ul>	<ul style="list-style-type: none"> <li>This aspect is described in Section 14 of the report. The following are the assumptions incorporated in the resource estimate.</li> <li>Geological Type is Moderate for resources suitable for surface mining; <ul style="list-style-type: none"> <li>minimum seam thickness of 0.6 m;</li> <li>Cut-off ratio does not exceed 20:1 m<sup>3</sup>/tonne;</li> <li>maximum included parting thickness of 0.15 m;</li> <li>maximum raw ash of 35%; and</li> <li>data spacing is consistent with GSC Paper 88-21 requirements.</li> </ul> </li> </ul>
Mining factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>The targeted coal seams on the Hinton Coal Property are suitable for open-cut operations using the truck/shovel mining method. It is expected that the mining conditions for the Hinton Coal Property will be very similar to those at the nearby mines which also use the truck/shovel method.</li> </ul>

Criteria	JORC Code explanation	Commentary
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <li>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>This aspect is addressed in Section 13. All of the mines in this area that address the Coalspur Formation coal sequence for the production of coal to be sold in the export market, use a wash plant to be able to produce a product that meets the export specifications. The same coal from the Upper Cretaceous sequence at Hinton will be subject to this provision as well. This is accounted for in estimates of the Clean Coal Reserve, produced from the Coal Reserve (ROM coal), but those quantities are not estimated in the present report as a mine plan, based on current economic and market conditions, has not yet been produced.</li> <li>The economic potential of the mines and coal properties in the area, including the Hinton Coal Property, change depending on market demand and on coal prices; they do not significantly vary for the kind of coal at Hinton based on changes in the demand for different quality specifications.</li> <li>According to the CIM definitions which are the same those of JORC, "eventual economic extractions" for coal deposits may be as long as 50 years or more. It is most likely that the Hinton Coal Property will be a producing deposit within that time frame. All the coal quality and processing assumptions that apply to the Hinton Coal Property are reasonable.</li> </ul>
Environmental factors or assumptions	<ul style="list-style-type: none"> <li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>This aspect is addressed in Section 18 of the report. The Hinton Coal Property is located in an area classified as Alberta Provincial Coal Land Category 4. In this Category coal exploration and mine development, including that for surface mines, is permitted, subject to the normal requirements of environment evaluation, testing and permitting. In all cases of coal mine permitting and development in Western Canada, including Alberta, there is a specific requirement for the evaluation of waste-rock weathering, contamination for Acid Rock Drainage and Selenium contamination. These aspects will have to be addressed in future exploration and mine design and in the EIA that has to be prepared as part of the mine permitting activity.</li> </ul>
Bulk density	<ul style="list-style-type: none"> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>Seam specific coal densities were used for the conversion of in-place volumes to in-place tonnes. The basis for this is Table 1 of GSC Paper 88-21 and the geophysical log variation from hole-to-hole and from one seam ply to the next.</li> </ul>
Classification	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie relative confidence in</li> </ul>	<ul style="list-style-type: none"> <li>The Resource Estimate has been prepared in accordance with the requirements of the Canadian National Instrument (NI) 43-101 and the CIM Definition Standards. NI 43-101 is the</li> </ul>



Criteria	JORC Code explanation	Commentary
	<p>tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</p> <ul style="list-style-type: none"> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<p>Canadian equivalent of the JORC Standard.</p> <ul style="list-style-type: none"> <li>The mineral resources are classified as to the assurance of their existence into one of three categories JORC equivalent categories Measured, Indicated and Inferred. The category to which a resource is assigned depends on the level of confidence in the geological information available (CIM Definition Standards –GSC Paper 88-21).</li> <li>The results for classification and estimation of resources for the Hinton Coal Property are as expected and reflect the Competent Person/Qualified Person's view of the deposit.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	<ul style="list-style-type: none"> <li>Norwest conducts a review of all of its projects and reports before they are released. In this case no discrepancies other than minor text errors were identified.</li> </ul>
Discussion of relative accuracy/ confidence	<ul style="list-style-type: none"> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul style="list-style-type: none"> <li>The resource quantity estimates were considered acceptable by the Qualified Person during the classification of the resources. They are consistent with similar estimates for other coal deposits and mines in this sequence in the surrounding area, per unit of land area.</li> <li>The accuracy of resource estimates is, in part, a function of the quality and quantity of available data and of engineering and geological interpretation and judgment by the Qualified Person.</li> <li>Based on the historical drill hole data, the resource estimate is considered reasonable.</li> <li>There is no guarantee that all or any part of the estimated resources will be recoverable</li> </ul>

#### Section 4 Estimation and Reporting of Ore Reserves

This section is not addressed as no Coal Reserves have been determined at this stage of investigations.

#### Section 5 Estimation of Diamonds and Gems

This section is not addressed as no diamonds or other gemstones are reported for this EPC.