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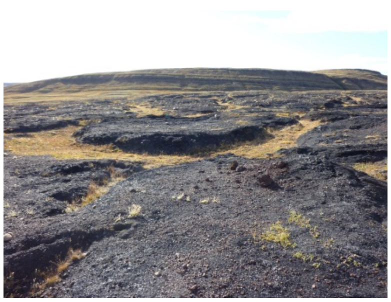

The Nunavut Coal Project- Ellesmere Island and Axel Heiberg Island, Nunavut, Canada.

Prepared for

CANADA COAL INC.

Prepared by:

Keith McCandlish, P.Geol., P.Geo.
Susan O'Donnell, P. Geol.

Associated Geosciences Ltd.
Calgary, Alberta, Canada

Effective Date | September 30th, 2011

DMT

1.0 SUMMARY

Associated Geosciences Ltd. has been retained by Canada Coal Inc. to provide an independent technical report compliant with the Canadian Securities Administrators National Instrument 43-101 (Standards of Disclosure for Mineral Projects) as well as the Geological Survey of Canada Paper 88-21 (A Standardized Coal Resource/Reserve Reporting System for Canada) . The technical report summarizes available technical material and scientific information relating to Canada Coal Inc's coal exploration licenses in the high Arctic Archipelago of Canada.

Sources of information for the technical report include historic reports produced in the 1980s by Gulf Canada Resources Inc., Utah Mines Ltd., Petro-Canada Exploration Inc., and the Canadian Exploration and Geological Services Unit as well as two recent independent technical reports commissioned by West Hawk Development Corporation and by Weststar Resources Corporation. Associated Geosciences Ltd. conducted a current personal site inspection in August 2011 to verify historic exploration accounts.

Canada Coal Inc.'s project is located on Ellesmere and Axel Heiberg Islands, Nunavut Territory, Canada. The project consists of 75 active coal exploration licenses geographically distributed as nine discrete exploration areas occupying a total of area of 988,918 ha. Coal licenses are held by the Corporation's two wholly-owned subsidiaries: 5200 Nunavut Ltd. and Canadian Sovereign Coal Corp. The exploration areas consist of: Fosheim Peninsula, Sor Fiord/Stenkul Fiord, Strathcona Fiord, Vesle Fiord/South Fosheim, May Point, Bache Peninsula, Li Fiord, Good Friday Bay, and Mokka Fiord. Associated Geosciences Ltd. refers to the collective property position as the Nunavut Coal Project.

Accessibility to the project is *via* chartered fixed wing aircraft or helicopter. The closest settlement in the project vicinity is Eureka, a government run weather facility with a permanent runway reportedly capable of handling Hercules Transport aircraft. At the time of Associated Geosciences Ltd.'s site assessment the Eureka runway was in need of repairs, however, it was still accessible by Twin Otter, DC-3, or similar tundra tired aircraft.

Ellesmere and Axel Heiberg Islands are typically divided into three major geological units: 1) Precambrian basement rocks, 2) the Franklin sedimentary succession, and 3) the Sverdrup Basin sedimentary succession. The rocks generally young to the northwest, and are separated from each other by major regional unconformities.

The coal measures of the Nunavut Coal Project occur within the Sverdrup Basin, an elongate pericratonic depression overlying older strata. The principal coal bearing unit comprises the late Cretaceous and Tertiary Eureka Sound Formation which consists of rhythmically interbedded dark grey shale, mudstone and siltstone, buff to light grey quartzose sandstone, minor conglomerate and coal. Coal seams of varying degrees of thicknesses, aerial extent, quality, and structural deformation are reported to occur throughout the project. The seams are typically between 0.5 and 1.0 m thick, but in some locations attain thicknesses of several metres.

Fosheim Peninsula is the most widely explored area within the Nunavut Coal Project, and remains a priority target for further work. At Fosheim Peninsula, the Eureka Sound Formation is

3,200 metres thick and is coal bearing throughout. Multiple seams up to fifteen metres in thickness reportedly exist in the area, although the maximum thickness encountered during the AGL site assessment was 4.2 metres. Coal seams at Fosheim Peninsula range in rank from high volatile bituminous 'C' to lignite. The coal seams are laterally persistent and can be traced up to twenty-five kilometres along strike.

The majority of exploration on the Nunavut Coal Project occurred during 1981 to 1983 and was conducted by Gulf, Petro-Canada, and Utah.

Petro-Canada's 1981 reconnaissance program on the Fosheim Peninsula and Vesle Fiord/South Fosheim exploration areas concluded that significant resources of lignite, sub-bituminous and high-volatile bituminous coal existed within the Eureka Sound Formation on Axel Heiberg and Ellesmere Islands. Petro-Canada's 1982 and 1983 reconnaissance programs determined the approximate areal extent, thickness tonnage, and quality of coal seams within the Fosheim Peninsula, Vesle Fiord, Strathcona Fiord, and Sor Fiord/Stenkul Fiord areas. Utah's 1981 reconnaissance mapping and sampling program on the Strathcona Fiord and May Point areas concluded that further mapping was required as a precursor to drilling. Gulf's 1981 exploration program examined four exploration areas including Fosheim Peninsula and May Point and speculated that lignitic to sub-bituminous A coal was present within the Fosheim Peninsula area in sufficient abundance to have potential for economic exploitation.

Recent exploration activity on the Nunavut Coal Project has been limited to AGL's current personal site inspection and a similar site assessment conducted by APEX in 2005. West Hawk commissioned a NI 43-101 compliant technical report in 2007 on their Fosheim Peninsula and May Point coal exploration licenses; however, no site assessment or follow-up field work resulted from West Hawk's NI 43-101 to the best of the author's knowledge.

Sample results from the recent AGL and APEX site inspections confirm historic reports that the coals in the Nunavut Coal Project vicinity range in rank from high volatile bituminous 'C' to lignite. Coals are generally low in ash (5-10%) and sulphur (<0.5%), although occasionally exhibit moderate ash values. Coals are considered to be suitable for use as a high quality thermal coal. Fosheim Peninsula remains the most prospective area for identifying a higher quality coal resource as coal rank at Fosheim Peninsula has been shown to increase with depth.

Numerous historical inferred and in-situ coal resource estimates have been reported for the Nunavut Coal Project. The historic coal resources estimates comply with the speculative coal resource category in GSC 88-21 which no longer conforms with best practices in coal resource estimation, further mapping, trenching/sampling and drilling will be required to develop an appropriate resource estimate. AGL is treating the historic coal resource estimates as a potential target size which has been confirmed by the recent personal inspection.

The potential quantity and grade of coal is conceptual in nature. There has been insufficient exploration to define a coal resource and it is uncertain if further exploration will result in the targets being delineated as a coal resource.

Historical Inferred and In-Situ Coal Resource Estimates - Non-Compliant with NI 43-101			
Author	**Area**	**Coal Resources (M tonnes)**	**Rank**
Bustin[1]	Fosheim Peninsula	21,000	High volatile bituminous[5] to lignite
Bustin[1]	East Axel Heiberg	9,000	High volatile bituminous[5] to lignite
Gulf[2]	Fosheim Peninsula	5,616	High volatile bituminous[5] to lignite
Petro-Canada[1]	Fosheim Peninsula	21,900	High volatile bituminous[5] to lignite
Petro-Canada[3]	Vesle Fiord	4,000	Sub-bituminous 'A' to lignite
Petro-Canada[3]	Strathcona Fiord	10,100	Sub-bituminous 'A' to lignite
Petro-Canada[1]	Stenkul Fiord	750,000	Lignite
Kalkreuth[4]	Bache Peninsula	100	Lignite

1 Coal seams > 1 m thick used for estimation over outcrop area to a depth of 200 m
2 Coal seams > 1 m thick used for estimation over outcrop area to a depth of 500 m
3 Coal seams >1 m thick used for estimation over outcrop area to a total depth of section
4 Coal seams > 1 m thick used for estimation over outcrop area to a depth of 300 m
5 High volatile bituminous covers a broad range of coal quality- recent sampling would suggest that the Fosheim Peninsula coal is a high volatile bituminous ‘C’

Associated Geosciences Ltd. recommends a two phase work program on the order of $16.2 million including contingency for the Nunavut Coal Project. Phase 1 will consist of reconnaissance including mapping and sampling, and Phase 2 will primarily be focused on drilling and resource delineation. The aim of the work program will be to prioritize target areas and identify a NI 43-101 compliant resource estimate within the project area if possible. Appropriate archaeological studies, palaeontolgical studies, cultural studies, community consultation, and program permitting will need to be conducted prior to commencement of the exploration program.

Although the appropriate project authorizations for Phase 1 exploration have not yet been approved, the planned exploration will have a relatively small impact on the environment and could provide considerable socio-economic benefit to the community. Although AGL cannot speak for the various Authorizing Agencies reviewing the project applications, it is the author’s opinion that Canada Coal stands a reasonable chance of getting Phase 1 approvals provided that they: 1) do not intend to conduct exploration anywhere on Axel Heiberg Island, 2) do not intend to conduct exploration at Sor Fiord/Stenkul Fiord without further community consultation due to the sensitivity of the area, 3) maintain rigorous environmental monitoring protocols for all exploration areas particularly the Fosheim Peninsula, 4) set aside and preserve the fossilized forest within the Mokka Fiord area, 5) and continue with extensive community consultation throughout the project’s lifecycle.

The logistics of shipping a bulk commodity such as coal from the Canadian Arctic Archipelago remain challenging; however, the enormous potential target size of the coal resource within the Nunavut Coal Project warrants further exploration.

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PERMIT TO PRACTICE
ASSOCIATED GEOSCIENCES LTD.
Signature [signature]
Date JAN 1 6 2012
PERMIT NUMBER: P 9454
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

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2.0 INTRODUCTION

Associated Geosciences Ltd. ("AGL") has been retained by Canada Coal Inc. ("Canada Coal" or "the Corporation"), a Canadian corporation formed under the laws of the Province of Ontario which holds various coal licenses on Ellesmere Island and Axel Heiberg Island of Nunavut Canada, for consultancy services. Canada Coal was formerly known as the entity Pacific Coal Corp. ("Pacific Coal").

The purpose of the report is to provide an independent technical report compliant with the Canadian Securities Administrator's National Instrument 43-101 ("NI 43-101) Form 43-101 F1 *Standards of Disclosure for Mineral Projects* as well as the Geological Survey of Canada paper 88-21 ("GSC 88-21"), *A Standardized Coal Resource/Reserve Reporting System for Canada*. The technical report summarizes available technical material and scientific information relating to Canada Coal's prospects in the high Arctic.

AGL has not prepared an estimate of coal resources or coal reserves at this time as we deem there is currently insufficient geological and technical information relating to the coal prospects to conduct mineral resource estimation. Nevertheless, we have reported historical coal resource estimates herein as an indication of the potential target size for future proposed exploration. We caution that the reported historical coal resource estimates are non-compliant with current NI 43-101 standards and should not be relied upon other than as speculative exploration targets.

Under the guidelines of NI 43-101, the technical report must be prepared by or under the supervision of one or more qualified persons. The qualified persons for this report are Keith McCandlish, P.Geol., P.Geo., and Susan O'Donnell, P.Geol., both of whom are full-time employees of AGL and are employed as Managing Director and Project Geologist, respectively.

2.1 Sources of Information and Data

This report has been prepared by AGL for Canada Coal. The information contained herein is reliant upon historical reports as well as two more recent independent technical reports commissioned by West Hawk Development Corporation ("West Hawk") and by Weststar Resources Corporation ("Weststar").

AGL is reliant on the following historical reports prepared by Gulf Canada Resources Inc. ("Gulf"), Utah Mines Ltd. ("Utah"), Petro-Canada Exploration Inc. ("Petro-Canada"), as well as the Canadian Exploration and Geological Services Unit ("Canadian Geological Services Unit"):

- Cain, T.W. "Coal in the Arctic Archipelago," Exploration and Geological Services Unit, Oil and Mineral Division, Indian Affairs and Northern Development, Canada, 1973.
- Panchy, E.G., and Moorhouse, J.M. "Ellesmere Island Coal Project- 1982 Exploration Report," Petro-Canada Exploration Inc., Coal Department, 1983.
- Santiago, S.P. "Ellesmere Island Coal Project- 1983 Exploration Report," Petro-Canada Exploration Inc., Coal Department, 1984.
- Unknown. "Arctic Coal Exploration Geological Report," Gulf Canada Resources Inc., 1982.

AGL is also reliant upon two more recent independent technical reports prepared by APEX Geosciences Ltd. ("APEX") and Weir International, Inc. ("Weir") for Weststar and West Hawk, respectively, as follows:

- Besserer, D., P.Geol. "Technical Report for the Ellesmere Island Coal Project, Nunavut, Canada," APEX Geosciences Ltd., Edmonton, Alberta, July 2009.
- Tveten, T., CPG. "Technical Report, Nunavut Coal Prospect," Weir International, Inc., Illinois, U.S.A., March 2007.

AGL has been able to confirm the presence of widespread coal occurrences within the Canada Coal property as a result of the August 2011 personal site inspection (detailed in Section 2.2). The site assessment and data verification program was conducted in accordance with NI 43-101 guidelines and current industry best practices. AGL has not seen any evidence to indicate that historical work should not be relied upon.

AGL is reliant upon Loring Laboratories (Alberta) Ltd. ("Loring Laboratories") and JP Petrographics, both of Calgary Alberta, for laboratory analyses relating to the AGL site assessment samples.

Coal license ownership information has been provided to AGL by Canada Coal. AGL has not researched property title or coal rights and expresses no opinion as to the ownership status of the licenses which are the subject of this report. The coal licenses are listed on the Department of Indian and Northern Development- Northwest Territories Region's Spatially Integrated Dataset Viewer Online ("SID Viewer") as being in good standing (active).

2.2 Status of Current Personal Site Inspection

As mandated by NI 43-101, AGL is required to complete a current personal inspection of property that forms the subject of the technical report detailed herein. The site assessment was completed between August 9, 2011 and August 27, 2011 by Keith McCandlish, P.Geol., P.Geo., and Susan O'Donnell, P.Geol., both full-time employees of AGL.

The objectives of the site assessment included:

1. To confirm the existence of widespread coal deposits on Ellesmere and Axel Heiberg Islands as described in historic exploration accounts, and to get a preliminary indication as to the potential target size of coal resources in the license areas.
2. To assess current high Arctic logistics as well as available local resources to assist planning of any future exploration programs.
3. To gain an idea of the scale and scope of work necessary to delineate exploration targets.

AGL compiled a list of historic coal occurrences, and prioritized these targets in terms of significance and proximity to Canada Coal's license areas. AGL then prepared a list of planned fly-over routes and ground assessment of targets, to be accompanied by additional groundwork as warranted. Helicopter support was required due to the size of the property position, site accessibility conditions, as well as time constraints.

Intended site visit targets on Ellesmere Island included the following areas: Fosheim Peninsula (West of the Sawtooth Range), Stenkul Fiord, Sor Fiord, Vendom Fiord, Strathcona Fiord, Vessle Fiord, and the Bache Peninsula. Intended site visit targets on Axel Heiberg Island included May Point, Mokka Fiord, Stor Island, Good Friday Bay, and Li Fiord.

Due to adverse weather conditions and time constraints, AGL was only able to assess the following areas: Fosheim Peninsula, Stenkul Fiord, Sor Fiord, Vessle Fiord, and Mokka Fiord. AGL considers that Fosheim Peninsula and Stenkul are, at this stage, the primary targets on the Canada Coal licenses and are therefore satisfied that the site assessment meets the criteria as described by NI 43-101.

AGL notes that originally the site assessment had been scheduled for June 2011; however it was postponed until August 2011 as a result of a fuel shortage in the high Arctic.

2.3 Units

All measurement units in this report conform to metric usage within the context of the International System of Units (SI) except where stated otherwise. Currencies are expressed in the Canadian Dollar (C$) unless otherwise stated.

All geographical coordinates listed in this report correspond to the World Geodetic System 1984 ("WGS 84") except where stated otherwise.

The term "coal resource" and/or "coal reserve" conform to the usage defined in GSC 88-21 and the *CIM Definition Standards on Mineral Resources and Reserves*, whose usages are incorporated by reference in NI 43-101.

2.4 Effective Date

The effective date of this report is September 30th, 2011. The preparation date of the report is January 13th, 2012.

3.0 RELIANCE ON OTHER EXPERTS

As mentioned previously in Section 2.1 (Sources of Information and Data), AGL is reliant upon various historical and more recent reports relating to Arctic coal for the purposes of preparing this technical report. The most recent APEX and Weir reports have been prepared by 'qualified persons' as defined by NI 43-101.

Some of the authors of the historic Gulf, Utah, Petro-Canada, and Canadian Geological Services Unit reports are known by Keith McCandlish and would be termed 'Qualified Persons' as defined by NI 43-101. All available evidence suggests that the historic reports were prepared by competent professionals and can therefore be relied upon for information relating to prospective coal targets.

Various coal experts have contributed to recent coal analyses including Loring Laboratories (Alberta) Ltd. ("Loring Laboratories") and JP Petrographics, both of Calgary Alberta. AGL has reported the sample results herein as represented by the various analytical experts.

Also as previously mentioned in Section 2.1 (Sources of Information and Data), AGL is reliant upon Canada Coal for coal license ownership information. AGL has reviewed the coal exploration licenses that form the subject of this report using SID Viewer and can report that the licenses are listed as being in good standing (active). AGL has reviewed various purchase agreements by which Canada Coal (or Pacific Coal under its previous name) acquired some of the coal licenses that form the subject of this report, and have also reviewed the Canadian Territorial Coal Regulations regarding exploration licenses. AGL has not researched property title or coal rights and expresses no opinion as to the legal ownership status of the licenses as the AGL is not qualified to do so.

4.0 PROPERTY DESCRIPTION AND LOCATION

Canada Coal's Nunavut Coal Project consists of 75 coal exploration licenses geographically distributed into nine separate land areas. Altogether, the coal exploration licenses occupy a total of 988,918 ha (2,442,627 acres). Coal licenses are held by the Corporation's two wholly-owned subsidiaries: 5200 Nunavut Ltd., and Canadian Sovereign Coal Corp.

4.1 General Location

The land areas are primarily situated in Nunavut Territory, Ellesmere Island (Figure 4.1). Some of the project land area is also situated in Nunavut Territory's Axel Heiberg Island. Ellesmere and Axel Heiberg Islands are located in the Canadian Arctic Archipelago, and form part of the Queen Elizabeth Islands. Politically, the prospects fall within the Qikiqtaaluk administrative region of Nunavut, also occasionally referred to as the Baffin region.

Ellesmere Island is the most northerly island in the Canadian Arctic Archipelago, and its northernmost tip (Cape Columbia) forms the most northerly point in Canada. Ellesmere Island's approximate position is between 76-84 degrees north latitude and 62-97 degrees west longitude, encompassing a land mass of roughly 200,000 square kilometres. It is home to three settlements: Grise Fiord, Eureka, and Alert.

Grise Fiord, located at 76° 25'34" north latitude and 82° 54'34" west longitude, is known as Canada's northernmost civilian settlement and hosts a population of 141 residents according to the Canada 2006 Census. Grise Fiord is located 410 kilometres (or 220 nautical miles) south-southeast of Eureka, a government run research station and military base.

Eureka, located at 79° 59' north latitude and 85° 49' west longitude on the northwest coast of Ellesmere Island (Slidre Fiord), is the closest year-round settlement to the bulk of coal exploration licenses. Eureka does not have any permanent residents; however, it is staffed year-round by shift personnel.

The Canadian Forces maintain a permanent station at Alert, located on the northernmost point of Ellesmere Island. According to the Canada 2006 Census, the population of Alert is 5 although many temporary personnel are stationed there. Geographical coordinates for Alert are 82° 28' north latitude and 62° 30' west longitude. It is located 480 kilometres (260 nautical miles) northeast of Eureka.

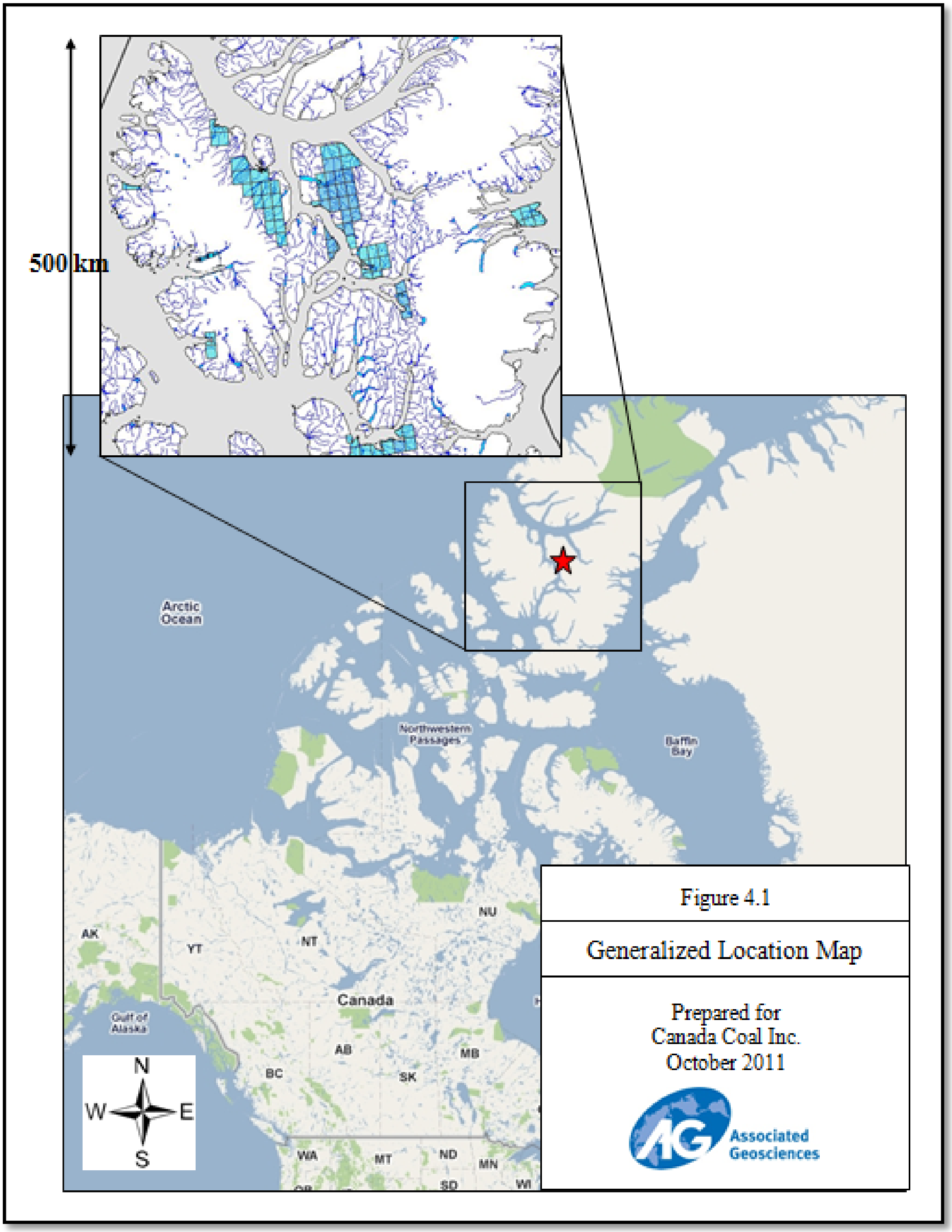
500 km
Arctic Ocean
Northwestern Passages
Baffin Bay
AK
YT
NT
NU
Canada
Gulf of Alaska
AB
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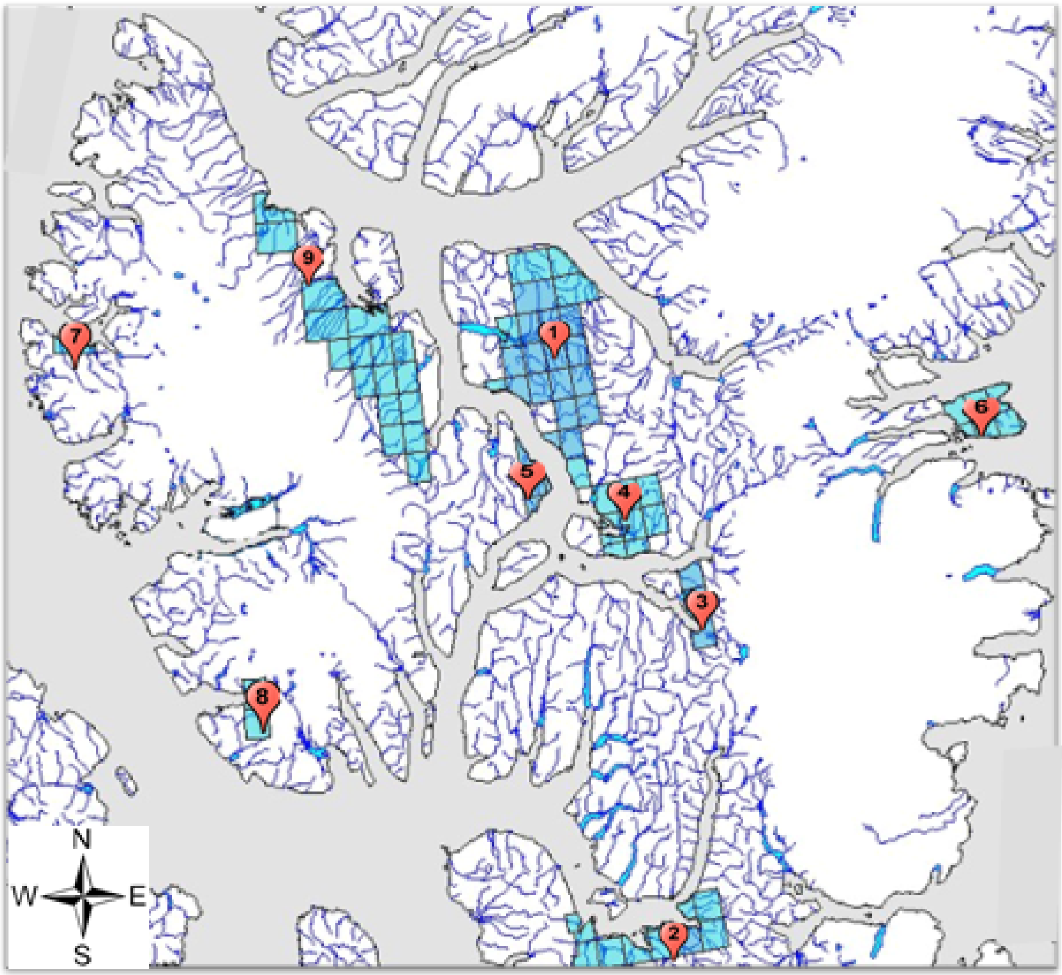
Figure 4.1
Generalized Location Map
Prepared for
Canada Coal Inc.
October 2011
Associated Geosciences



Area Legend

1. Fosheim Peninsula
2. Sor Fiord / Stenkul Fiord
3. Strathcona Fiord
4. Vesle Fiord / South Fosheim
5. May Point
6. Bache Peninsula
7. Li Fiord
8. Good Friday Bay
9. Mokka Fiord

Figure 4.2

Coal Exploration Licenses Area Map

Prepared for
Canada Coal Inc.
October 2011

Associated Geosciences

4.2 Exploration Areas

Canada Coal's exploration licenses are parceled into nine separate geographical areas including: (Figure 4.2). The approximate geographical centers of each area are summarized in Table 4.1.

Table 4.1 Approximate Geographic Centers of Exploration Areas

Area Number	Area Name	Approximate Geographic Center	
		Latitude	Longitude
1	Fosheim Peninsula	79° 48' N	84° 15' W
2	Sor Fiord/Stenkul Fiord	77° 17' N	84° 17' W
3	Strathcona Fiord	78° 38' N	82° 08' W
4	Vesle Fiord/South Fosheim	79° 05' N	83° 04' W
5	May Point	79° 18' N	85° 17' W
6	Bache Peninsula	79° 07' N	75° 12' W
7	Li Fiord	80° 02' N	95° 32' W
8	Good Friday Bay	78° 30' N	91° 42' W
9	Mokka Fiord	80° 00' N	88° 14' W

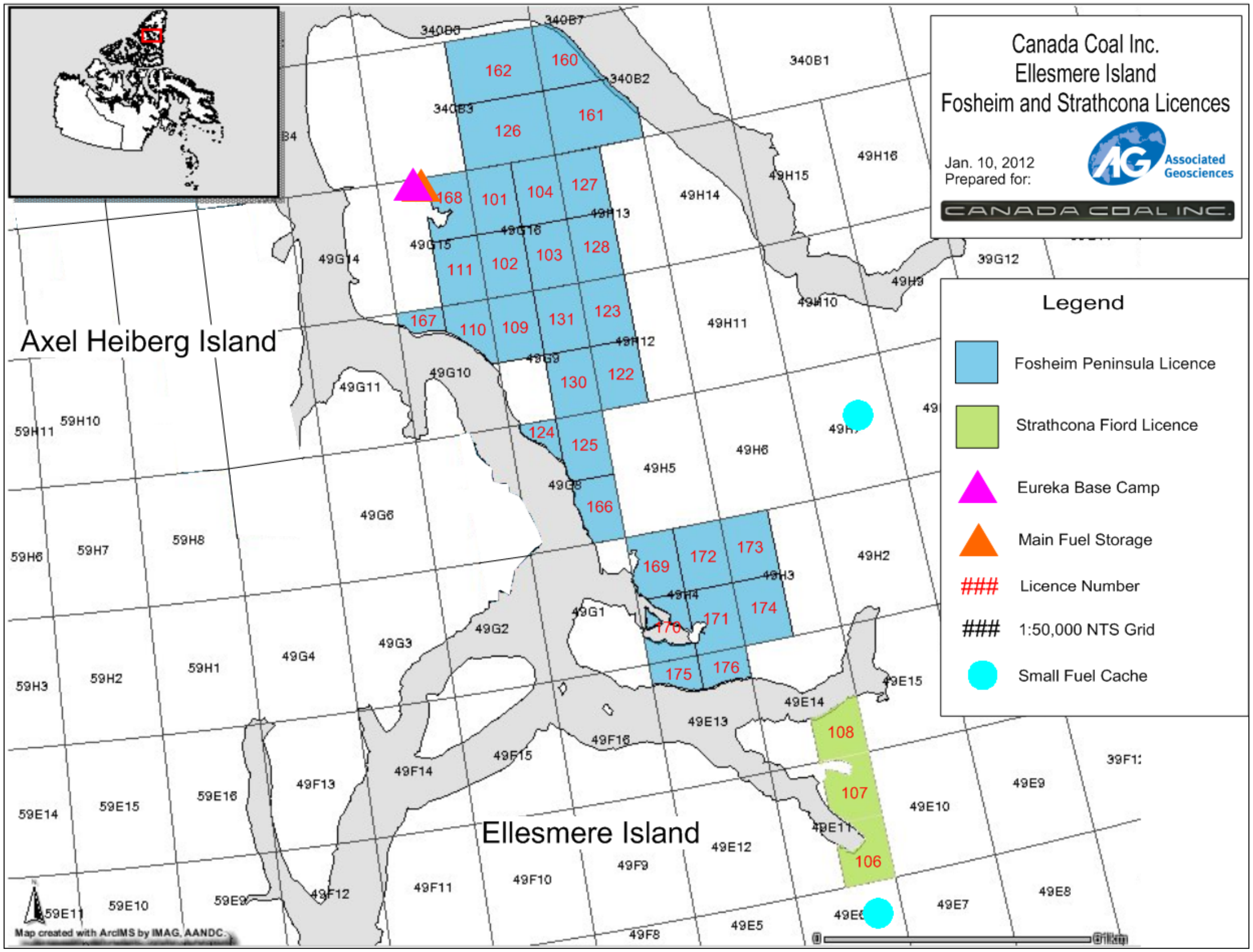
Fosheim Peninsula (Figure 4.3), located in the vicinity of the Eureka weather station, is the focal point of Canada Coal's license areas. Fosheim Peninsula's contiguous coal exploration licenses include numbers: 101 through 104, 109 through 111, 122 through 128, 130, 131, 134, 160 through 162, and 166 through 168.

The southernmost exploration area is Sor Fiord/Stenkul Fiord. It includes coal exploration license numbers 105, 154, 155, 157 through 159, and 163 through 165.

Strathcona Fiord (Figure 4.3) includes contiguous coal exploration license numbers 106 through 108. The center of the area lies approximately 50 kilometres southeast of the Fiord/South Fosheim area.

Vesle Fiord/South Fosheim begins at the southernmost region of the Fosheim Peninsula exploration area. Vesle Fiord/South Fosheim contiguous coal exploration licenses include license numbers 169 through 175.

Figure 4.3


Canada Coal Inc.
Ellesmere Island
Fosheim and Strathcona Licences
Jan. 10, 2012
Prepared for:
Associated Geosciences
CANADA COAL INC.
Legend
Fosheim Peninsula Licence
Strathcona Fiord Licence
Eureka Base Camp
Main Fuel Storage
Licence Number
1:50,000 NTS Grid
Small Fuel Cache
Axel Heiberg Island
Ellesmere Island
Map created with ArcIMS by IMAG, AANDC

May Point is located on Axel Heiberg Island's eastern shore. It includes contiguous coal exploration license numbers 112 through 115.

The easternmost exploration area is known as the Bache Peninsula. It includes coal exploration license numbers 146 through 153.

The Li Fiord exploration area consists of a single license (number 179) located on the northwestern shore of Axel Heiberg Island.

Good Friday Bay consists of two coal exploration licenses, numbers 177 and 178, located at the southwestern margin of Axel Heiberg Island.

Mokka Fiord consists of two separate land parcels which have been grouped together for the purposes of the report detailed herein. Mokka Fiord is located at the eastern edge of Axel Heiberg Island, north of the May Point exploration area. Mokka Fiord's coal licenses include numbers 180 through 196.

4.3 Coal Tenure

Canada Coal's land tenure consists of 75 active coal exploration licenses which are detailed in Table 4.2. Canada Coal does not currently have any coal leases or coal permits.

Coal exploration licenses, coal leases, and coal permits in Nunavut are granted by the Mining Recorder's Office in Iqaluit ("the Recorder") who is responsible for subsurface rights administration of Crown land and for administering the Territorial Coal Regulations of the Territorial Lands Act ("Territorial Coal Regulations").

The following information pertaining to coal exploration license, lease, and permit regulation and administration has been summarized from the Aboriginal Affairs and Northern Development Canada ("AANDC", formerly known as the Department of Indian Affairs and Northern Development or DIAND) official government website as well as from the Territorial Coal Regulations.

4.3.1. Territorial Coal Regulations

Anyone who is over the age of 18 may explore for coal in Nunavut. There are no initial prospector's licenses required, but it is recommended that companies doing business in Nunavut be registered and in good standing with the Government of Nunavut's Department of Justice, Legal Registry.

Coal staking is not allowed in the following areas:

- land used as a cemetery;
- land within the limits of a municipal district, a municipality or a local improvement district;
- land reserved for an Indian Reserve, a national park or game sanctuary or for military or other public purpose;
- land reserved under the Dominion Water Power Act;
- land lawfully occupied for mining purposes.

If the surface lands to be staked are occupied: 1) consent from the surface holder is required, or 2) a security deposit is required in an amount that is determined by the Recorder to be sufficient to cover any loss or damage that may result from staking on such lands.

The coal permit or lease shall be staked as nearly as possible in the form of a rectangle, which the length shall not exceed four times the width. The total area shall not exceed 640 acres for a lease application and no more than one acre for a permit application.

The locations must be marked on the ground by a post at each of the four corners of the claim.

4.3.2. Coal Exploration Licenses

To apply for an Exploration License the applicant must submit to the Recorder an application form, a description of the land, a fee of $10/area applied for and a deposit equal to the expenditures required in the first year the license is in force. License applications consist of ¼ areas of mineral claim staking sheets (1:50,000 NTS map sheets).

Applications are sent for consultation to various associations, boards, and institutions, during which time the status of an applied license is pending. Once awarded, the status of a license is active.

A license is valid for a term of three years beginning on the day of application unless the license is terminated earlier. The work requirements are 5 cents per acre in the first year, 10 cents per acre in the second year, and 20 cents per acre in the third year.

The deposits must be paid by the date of issuance of the license, and may be replaced by an equivalent amount of exploration work done to the license area.

Exploration work that is to be applied to the license shall be submitted within 90 days after the end of each year that the license is in force and shall include:

- a statement of expenditures;
- a report on all exploration;
- geological, geochemical or geophysical reports;
- maps and assay reports.

Any deposits made may be refunded to the licensee if the required amount of exploration work was done and approved.

At the end of any year during the term of a license, not later than 90 days after the expiration of a license the licensee may apply for a lease or permit within the license area. No person other than the licensee may obtain a permit or a lease within the license area.

Table 4.2 - Coal Exploration Licences							
Source: SID Viewer Online, as at Jan. 13 2012							
LIC_NUM	**NTS**	**QUARTER**	**OWNER**	**EFF_DATE**	**STATUS**	**ACRE**	**HECTARE**
101	049G16	NW	Canadian Sovereign Coal Corp	05/06/2008	Active	33610.42	13607.46
102	049G16	SW	Canadian Sovereign Coal Corp	05/06/2008	Active	34023.23	13774.59
103	049G16	SE	Canadian Sovereign Coal Corp	05/06/2008	Active	34024.04	13774.92
104	049G16	NE	Canadian Sovereign Coal Corp	05/06/2008	Active	33611.2	13607.77
105	049D05	SW	Canadian Sovereign Coal Corp	05/06/2008	Active	39395.39	15949.55
106	049E11	SE	Canadian Sovereign Coal Corp	05/06/2008	Active	31021.56	12559.34
107	049E11	NE	Canadian Sovereign Coal Corp	05/06/2008	Active	32356.27	13099.71
108	049E14	SE	Canadian Sovereign Coal Corp	05/06/2008	Active	29580.11	11975.75
109	049G09	NW	5200 Nunavut Limited	06/06/2008	Active	34435.89	13941.66
110	049G10	NE	5200 Nunavut Limited	06/06/2008	Active	24074.64	9746.82
111	049G15	SE	5200 Nunavut Limited	06/06/2008	Active	34022.45	13774.27
112	049G08	SW	5200 Nunavut Limited	06/06/2008	Active	4212.24	1705.36
113	049G07	SE	5200 Nunavut Limited	06/06/2008	Active	35107.95	14213.74
114	049G07	NE	5200 Nunavut Limited	06/06/2008	Active	14004.16	5669.70
115	049G02	NE	5200 Nunavut Limited	06/06/2008	Active	11898.06	4817.03
122	049H12	SW	Canadian Sovereign Coal Corp	16/03/2009	Active	34849.25	14109.01
123	049H12	NW	Canadian Sovereign Coal Corp	16/03/2009	Active	34436.73	13942.00
124	049G08	NW	Canadian Sovereign Coal Corp	16/03/2009	Active	10440.3	4226.84
125	049G08	NE	Canadian Sovereign Coal Corp	16/03/2009	Active	34732.03	14061.55
126	340B03	SE	Canadian Sovereign Coal Corp	16/03/2009	Active	66393.13	26879.81
127	049H13	NW	Canadian Sovereign Coal Corp	16/03/2009	Active	33611.19	13607.77
128	049H13	SW	Canadian Sovereign Coal Corp	16/03/2009	Active	34024.04	13774.92
130	049G09	SE	Canadian Sovereign Coal Corp	16/03/2009	Active	34849.25	14109.01
131	049G09	NE	Canadian Sovereign Coal Corp	16/03/2009	Active	34436.73	13942.00
146	039H03	NW	5200 Nunavut Limited	17/05/2011	Active	25040.55	10137.87
147	039H03	SW	5200 Nunavut Limited	17/05/2011	Active	29844.6	12082.83
148	039H03	SE	5200 Nunavut Limited	17/05/2011	Active	2488.05	1007.31
149	039H03	NE	5200 Nunavut Limited	17/05/2011	Active	700.61	283.65
150	039H04	NW	5200 Nunavut Limited	17/05/2011	Active	27142.87	10989.02
151	039H04	SW	5200 Nunavut Limited	17/05/2011	Active	10066.76	4075.61
152	039H04	SE	5200 Nunavut Limited	17/05/2011	Active	23961.02	9700.82
153	039H04	NE	5200 Nunavut Limited	17/05/2011	Active	33456.87	13545.29
154	049D05	NW	5200 Nunavut Limited	17/05/2011	Active	16080.63	6510.38
155	049D05	SE	5200 Nunavut Limited	17/05/2011	Active	41720	16890.69
156	049D05	NE	5200 Nunavut Limited	17/05/2011	Active	41717.42	16889.65
157	049C07	NW	5200 Nunavut Limited	17/05/2011	Active	29667.97	12011.33
158	049C07	SW	5200 Nunavut Limited	17/05/2011	Active	37872.26	15332.90
159	049C07	SE	5200 Nunavut Limited	17/05/2011	Active	42239.55	17101.03

LIC_NUM	NTS	QUARTER	OWNER	EFF_DATE	STATUS	ACRE	HECTARE
160	340B02	NW	5200 Nunavut Limited	17/05/2011	Active	32353.88	13098.74
161	340B02	SW	5200 Nunavut Limited	17/05/2011	Active	60885.45	24649.98
162	340B03	NE	5200 Nunavut Limited	17/05/2011	Active	65566.79	26545.26
163	049C08	SW	5200 Nunavut Limited	17/05/2011	Active	29884.28	12098.90
164	049C08	SE	5200 Nunavut Limited	17/05/2011	Active	41641.18	16858.78
165	049C08	NE	5200 Nunavut Limited	17/05/2011	Active	6124.39	2479.51
166	049G08	SE	5200 Nunavut Limited	17/05/2011	Active	29712.38	12029.30
167	049G10	NW	5200 Nunavut Limited	01/06/2011	Active	10947.01	4431.99
168	049G15	NE	5200 Nunavut Limited	01/06/2011	Active	29856.22	12087.54
169	049H04	NW	5200 Nunavut Limited	01/06/2011	Active	33772.73	13673.17
170	049H04	SW	5200 Nunavut Limited	01/06/2011	Active	22583.4	9143.08
171	049H04	SE	5200 Nunavut Limited	01/06/2011	Active	34571.19	13996.43
172	049H04	NE	5200 Nunavut Limited	01/06/2011	Active	36084.76	14609.22
173	049H03	NW	5200 Nunavut Limited	01/06/2011	Active	36083.99	14608.90
174	049H03	SW	5200 Nunavut Limited	01/06/2011	Active	36495.73	14775.60
175	049E13	NW	5200 Nunavut Limited	01/06/2011	Active	15614.38	6321.61
176	049E13	NE	5200 Nunavut Limited	01/06/2011	Active	18310.02	7412.97
177	059E12	SW	5200 Nunavut Limited	23/06/2011	Active	31055.28	12572.99
178	059E05	NW	5200 Nunavut Limited	23/06/2011	Active	38550.87	15607.64
179	560A04	SW	5200 Nunavut Limited	23/06/2011	Active	24471.46	9907.48
180	049G05	NW	5200 Nunavut Limited	23/06/2011	Active	35259.06	14274.92
181	049G12	NW	5200 Nunavut Limited	23/06/2011	Active	34434.38	13941.05
182	049G12	SW	5200 Nunavut Limited	23/06/2011	Active	34846.81	14108.02
183	059H09	SE	5200 Nunavut Limited	23/06/2011	Active	34847.16	14108.16
184	059H09	NE	5200 Nunavut Limited	23/06/2011	Active	34434.72	13941.18
185	049G13	NW	5200 Nunavut Limited	23/06/2011	Active	33609	13606.88
186	049G13	SW	5200 Nunavut Limited	23/06/2011	Active	34021.78	13774.00
187	059H16	NW	5200 Nunavut Limited	23/06/2011	Active	33609.78	13607.20
188	059H16	SW	5200 Nunavut Limited	23/06/2011	Active	34022.59	13774.33
189	059H16	SE	5200 Nunavut Limited	23/06/2011	Active	34022.1	13774.13
190	059H16	NE	5200 Nunavut Limited	23/06/2011	Active	33609.31	13607.01
191	059H15	NE	5200 Nunavut Limited	23/06/2011	Active	33610.4	13607.45
192	560A01	NW	5200 Nunavut Limited	23/06/2011	Active	62604.83	25346.08
193	560A01	SW	5200 Nunavut Limited	23/06/2011	Active	66492.86	26920.19
194	560A01	SE	5200 Nunavut Limited	23/06/2011	Active	61364.99	24844.13
195	560A07	NE	5200 Nunavut Limited	23/06/2011	Active	63913.11	25875.75
196	560A10	SE	5200 Nunavut Limited	23/06/2011	Active	38209.22	15469.32

4.3.3. Coal Leases

A person may apply for a lease by filing the following with the Recorder: an application form, a fee of $5, a sketch of the location, and the amount of the rental for the first year of the lease. Upon receipt of an application for a license, the Recorder may cause the location to be inspected and if satisfied that the application is in order shall forward such application to the Chief.

If approved, the lease will be issued for a term of 21 years at an annual rental of $1 per acre payable yearly in advance. A lease is renewable for a further term of 21 years where the lessee furnishes evidence satisfactory to the Minister to show that during the term of the lease he has complied with the conditions of such lease, and may be renewed for additional periods of 21 years subject to the regulations at that time in force.

In addition to the annual rental, a lessee shall pay annually a royalty at the rate of $0.10 per ton on merchantable coal mined on lands acquired by lease under these Regulations.

A lessee is entitled to the coal upon or in the land included in such lease, and has the right to enter upon, use and occupy the surface of such location or such portion thereof, and to such extent as the Minister considers necessary for efficient coal mining operations but for no other purpose.

A lessee shall commence active operations on his leasehold within one year following the day he is notified by the Minister to commence operations and shall produce from such operations the quantity of coal specified in the said notification. In no case shall the maximum quantity required to be mined exceed 10 tons per annum for each acre leased.

4.3.4. Coal Permits

A person may apply for a permit by filing with the Recorder an application form, a fee of $1, a payment of estimated royalty on the quantity of coal to be mined under the permit, and a sketch of the location.

Where the Recorder is satisfied that an applicant for a permit has complied with the regulations respecting staking of the location and that the permit should be issued, they shall issue a permit to the applicant.

A permittee is entitled

(*a*) to enter upon the surface of the location covered by his permit, or such portion thereof and to such extent as the Minister may consider necessary for efficient coal mining and for no other purpose; and

(*b*) to mine the quantity of coal set out in his permit subject to payment of a royalty on the merchantable output of the mine of $0.25 per ton of 2,000 pounds or such other royalty as may be fixed from time to time by the Minister with the approval of the Governor in Council.

A permit expires upon March 31st next following the date of issue. Where a permittee wishes to obtain a further permit covering the same location for the ensuing year, they may at any time prior to expiry of the current permit, apply to the Recorder for a further permit, and where satisfied that the permittee has complied with all applicable provisions of these Regulations and of the current permit, the Recorder may, upon receipt of the required fee and estimated royalty, if any, issue a further permit without requiring such permittee to restake such location.

No person shall apply for, or hold, at one time, more than one location under permit.

4.4 Property Acquisition Terms and Agreements

Canada Coal, formerly named Pacific Coal Corp., is a Canadian corporation formed under the laws of the Province of Ontario. Coal licenses are held by the Corporation’s two wholly-owned subsidiaries: 5200 Nunavut Ltd. (a Nunavut company), and Canadian Sovereign Coal Corp. (a British Columbia company).

4.4.1. 5200 Nunavut Ltd. Acquisition Terms

Canada Coal's wholly-owned subsidiary 5200 Nunavut Ltd. was acquired through means of a share purchase agreement dated April 12 2011. Terms of the purchase included a onetime payment of $15,700 and the issuance of 1,000,000 fully paid and non-assessable common shares.

The licenses covered under the 5200 Nunavut Ltd. share purchase agreement are listed in Table 4.3.

Table 4.3 - Coal exploration licenses held by 5200 Nunavut Ltd.

License #	NTS Grid	NTS Grid Quadrant	Area (hectares)
License 109	49G09	NW	13,942
License 110	49G10	NE	9,747
License 111	49G15	SE	13,774
License 112	49G08	SW	1,705
License 113	49G07	SE	14,214
License 114	49G107	NE	5,670
License 115	49G02	NE	4,817

4.4.2. Canada Sovereign Coal Corp. Acquisition Terms

Canada Coal's wholly-owned subsidiary Canada Sovereign Coal Corp. ("CSCC") was acquired through means of a share purchase agreement dated on or around December 22 2010 between Weststar and Pacific Coal and a letter of intent between Hunter Exploration Group ("Hunter"), Weststar, and Pacific Coal dated September 20, 2010.

Under the terms of the agreement, Canada Coal's purchase price for the capital of CSCC was the issuance of fully paid and non-assessable common shares in the amount of 500,000 to Weststar and 1,000,000 to Hunter. Additionally, Hunter retains a 2% gross royalty on sales of coal originating from the property, and will receive annual advance royalty payments of $50,000 commencing December 1, 2013. The Corporation has the right to purchase 1% of Hunter's gross royalty at any time for a $1,000,000 cash payment.

The licenses covered under the CSCC share purchase agreement are listed in Table 4.4.

Table 4.4 - Coal exploration licenses held by CSCC			
License #	**NTS Grid**	**NTS Grid Quadrant**	**Area (hectares)**
101	049G16	NW	13,607
102	049G16	SW	13,775
103	049G16	SE	13,775
104	049G16	NE	13,608
105	049D05	SW	15,950
106	049E11	SE	12,559
107	049E11	NE	13,100
108	049E15	SE	11,976
122	049H12	SW	14,109
123	049H12	NW	13,942
124	049G08	NW	4,227
125	049G08	NE	14,062
126	340B03	SE	26,880
127	049H13	NW	13,608
128	049H13	SW	13,775
130	049G09	SE	14,109
131	049G09	NE	13,942

4.5 Project Authorizations

AGL has knowledge that Canada Coal is currently in the process of submitting applications to secure the necessary authorizations required to conduct an exploration program on the Nunavut Coal Project, and that Canada Coal has initiated the first stages of a community consultation process.

4.5.1. Authorizations Overview

The following general information pertaining to project authorizations has been summarized from the Nunavut Impact Review Board's ("NIRB") Guide 3, *Guide to Filing Project Proposals and the Screening Process*, updated August 2007.

Exploration programs in Nunavut are approved by submitting a project proposal to various Authorizing Agencies ("AAs") responsible for issuing authorizations (letter, permit, license, lease, certificate, or other written or verbal communication that authorizes a project or a component of a project to proceed). The project proposal should also be submitted to the NIRB who will screen the project proposal in its entirety.

A project proposal may require more than one authorization based on land and water (marine or freshwater) jurisdictional responsibilities. Mineral exploration project proposal may require the following authorizations:

- A land use authorization from a Designated Inuit Organization and/or Indian and Northern Affairs Canada depending on whether the project proposal is located on Inuit Owned Land or Crown Land. If the project proposal is located within a municipal boundary a land use authorization may be required from the Government of Nunavut department of Community Government Services.
- A water license from the Nunavut Water Board depending on water requirements for drilling and/or camp use.
- A Right-Of-Way authorization if a road or trail is included in the project proposal.
- A quarry permit if source material is required to build a road or other infrastructure.
- An archaeological permit from the Government of Nunavut department of Culture, Language, Elders and Youth if the Proponent is conducting archaeological or palaeontological research.
- Other authorizations depending on the scope of activities included in the project proposal.

Project proposals submitted to the NIRB for screening must contain the following general information:

a) Proponent information;

b) Project proposal description including purpose, scope, timing, authorizations and alternatives;

c) Description of the existing environment (biophysical and socio-economic);

d) Description of public participation (informing, consulting, participation);

e) Identification of potential environmental and socio-economic effects;

f) Identification of potential cumulative effects;

g) Identification of mitigation measures and potential residual impacts;

h) Non-technical project summary in English and Inuktitut and/or Inuinnaqtun depending on the region and dialect. This should be 300-500 non-technical words for ease of translation summarizing the information outlined in the above sections (a) to (g);

i) Map of the project (local and regional scale) in electronic format. GIS files in decimal degrees are preferred.

In screening a project proposal and making a decision, NIRB uses both traditional Inuit knowledge and recognized scientific methods. Accordingly, the Proponent must state whether information was gathered through Inuit knowledge or by recognized scientific methods.

4.5.2. Community Consultation

Canada Coal representatives have initiated community consultation in regards to the Canada Coal project. As at the preparation date of the report detailed herein, the Corporation has visited Nunavut for the purposes of community consultation on three separate occasions and has expended approximately $100,000 in the process.

The initial community consultation meetings were conducted in Iqaluit June 20-24, 2011 by Denise Lockett, a consultant representing Canada Coal. Denise Lockett met with regulators from various Authorizing Agencies including the Department of Aboriginal Affairs and Northern Development Canada, the Government of Nunavut, the Qikiqtani Inuit Association, the Qikiqtaaluk Corporation, and the Chamber of Mines.

A second series of meetings was conducted in Iqaluit September 26-30, 2011 by Canada Coal representatives Denise Lockett and Bruce Rawson. Meetings were arranged with regulators and community representatives including: Department of Aboriginal Affairs and Northern Development Canada, various departments within the Government of Nunavut (Culture/Language/Elders and Youth, Environment, Economic Development and Transportation), Qikiqtani Inuit Association Lands Director, MLA Ron Elliott, and Community Economic Development Officers for the Hamlets of Arctic Bay and Resolute Bay.

The third round of community consultation occurred Oct 25-30, 2011 and included Canada Coal representatives Braam Jonker, Denise Lockett, Bruce Rawson. The scope of the October community consultation was more extensive and involved visits to Iqaluit, Resolute Bay, Grise Fiord, and Arctic Bay. Details of the October meetings are as follows:

- October 25th 2011 - Iqaluit: Government of Nunavut Department of Economic Development and Transportation, Department of Aboriginal Affairs and Northern Development Canada, Qikiqtani Inuit Association Lands Department.
- October 26th 2011 - Resolute Bay: community meeting, Hunters and Trappers Association.
- October 27th 2011 – Grise Fiord: community meeting, Hunters and Trappers Association.
- October 28th 2011 - Arctic Bay: community meeting, Hunters and Trappers Association.
- October 29th 2011 – Iqaluit: meeting with Qikiqtani Inuit Association Land Administrator, MLA Ron Elliott, Government of Nunavut Department of Economic Development and Transportation, Department of Aboriginal Affairs and Northern Development Canada.

Based on the results of the community consultation conducted thus far, Canada Coal has disclosed the following information to AGL:

- Overall, Canada Coal representatives have been well received by the Nunavut communities and the various Authorizing Agencies. The Corporation acknowledges that community consultation will be ongoing and that it will remain critical throughout the project’s lifecycle.
- The southernmost project area, Sor Fiord/Stenkul Fiord, is a sensitive area as it is important to the community of Grise Fiord as it is an accessible hunting area to the local caribou population. As such, the Corporation has stated that it will not conduct any further exploration in the Sor Fiord/Stenkul area without additional community consultation.

- Fosheim Peninsula is one of the few locations in the high Arctic where vegetation grows, and as such any exploration in the Fosheim Peninsula area will need to involve rigorous monitoring of wildlife and vegetation by locals who are familiar with the area.
- A world-renowned fossilized forest resides within the Mokka Fiord area, and the Corporation has stated that it intends to preserve the area and does not intend to conduct exploration in the Mokka Fiord area.

4.5.3. Phase One Exploration Authorizations

AGL has knowledge that Canada Coal is in the process of submitting a project proposal for Phase 1 of the exploration program described herein (see Section 18, Recommendations). The first phase of exploration will focus on mapping and sampling activities, and will not involve drilling or permanent camp facilities. Phase 1 will have a relatively small impact on the environment but could provide considerable socio-economic benefit to the community, and although AGL cannot speak for the various Authorizing Agencies reviewing the project proposal, in AGL's opinion, Canada Coal stands a reasonable chance of getting Phase 1 approvals.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

The Nunavut Coal Project is accessible by air via helicopter. Some areas of the project are also accessible via fixed wing using natural gravel bars as runways including May Point and Stenkul Fiord. Eureka, located just outside to the northwest of the Fosheim area (see Figure 4.2) is the closet airstrip and it has until recently been capable of handling a Hercules transport aircraft. AGL notes that the Eureka runway is currently in need of repairs due to melting permafrost conditions, and that runway repairs are expected to occur in 2012. Marine access to the property is possible via the Eureka Sound and Slidre Fiord during the ice-free summer months.

Aircraft charters may be obtained from Resolute Bay located some 630 kilometres south-southwest of Eureka on the southern side of Cornwallis Island, or other northern communities such as Pond Inlet or Arctic Bay. Resolute Bay, Arctic Bay and Pond Inlet may be accessed via commercial flights from a variety of centers including Iqaluit, Nunavut Territory and Yellowknife, Northwest Territories. Aircraft fuel is not always available on Ellesmere and Axel Heiberg Islands and therefore fuel caching may be necessary to visit the project.

5.2 Climate

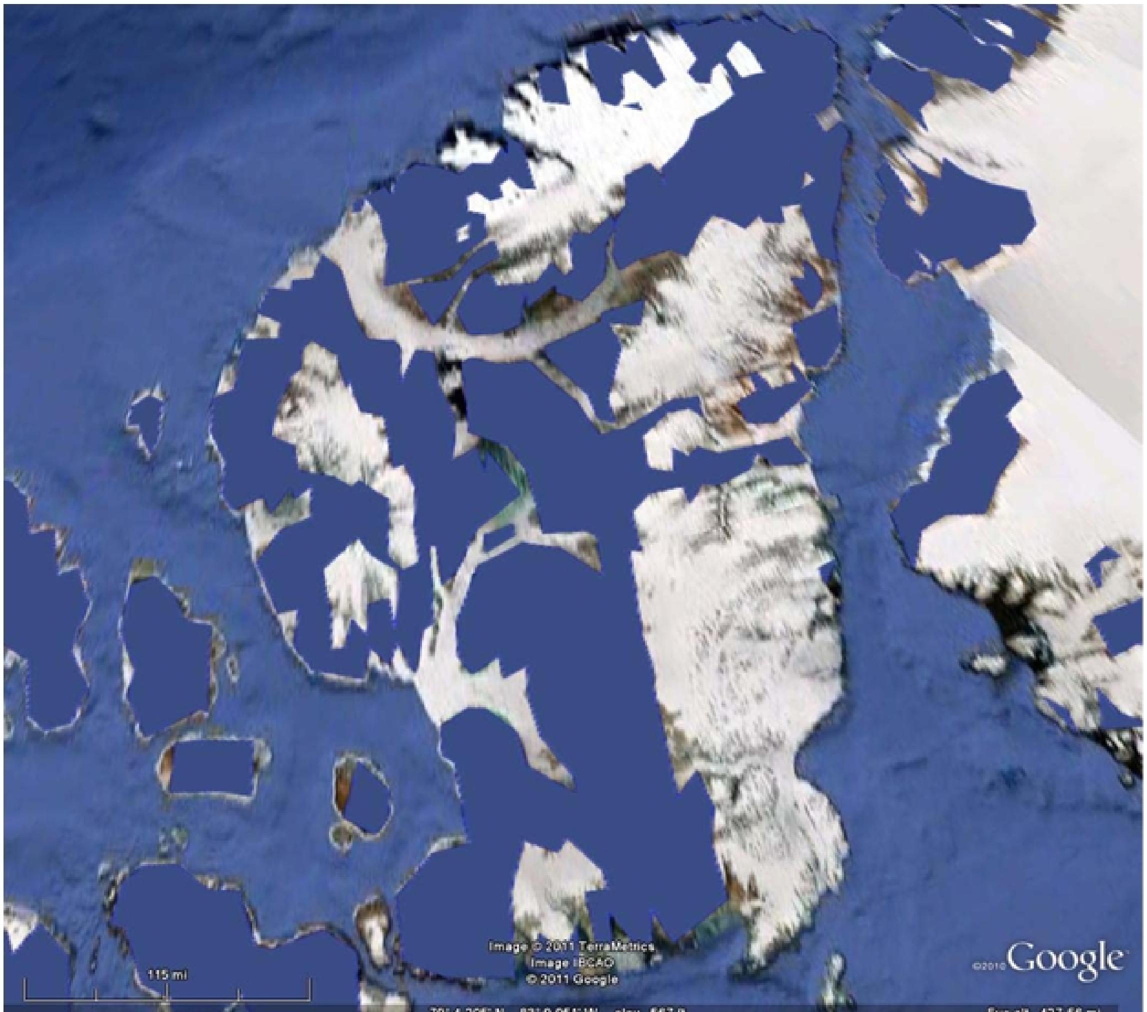
Climate data for the project areas are based on Environment Canada data collected at the Eureka weather station. Average temperatures at Eureka range from about -37 degrees Celsius ((°C) in the winter and about +10 (°C) in the summer. Record high and low temperatures are about -55 degrees Celsius (°C) and +21 degrees Celsius (°C), respectively.

Eureka is described as a polar desert with semi-arid conditions. The average annual precipitation rate is 75.5 mm, of which the bulk majority falls as snow. The sun is above the horizon from early March to mid-October and absent from mid-October to the end of February.

The project areas are subject to continuous permafrost and reportedly the ground is frozen up to a depth of 400 metres year round with only the top few inches thawing in the summer. The frozen ground, in addition to poor soil drainage and scant vegetation, results in a water saturated ground over extended areas during the thawing season.

5.3 Operating Season

No details relating to potential length of project operating season are available at this time, as the project remains at an early exploration stage. AGL recommends the commissioning of a preliminary logistics study to assess the project operating season as well as coal shipping opportunities.



Legend	Figure 5.1
Continuous Permafrost	Permafrost Map
	Prepared for Canada Coal Inc. July 2011

5.4 Local Resources

Ellesmere Island is home to three settlements: Eureka, Grise Fiord, and Alert.

Food and lodging is available at Eureka provided that a visitor permit application is submitted to the government. Major services are available at Grise Fiord including a hotel (capacity 25 people), post office, RCMP office, health centre, grocery store, and small airstrip. Alert is primarily a military base.

Axel Heiberg Island is uninhabited save for a seasonal research station operated by McGill University.

AGL anticipates that future exploration programs will require onsite diesel-powered generators, and that waste will need to be transported to appropriate waste facilities via aircraft. There is a fuel drum crushing plant located at Eureka where fuel drums may be disposed of at a minimal fee.

5.5 Infrastructure

No permanent access roads are known to occur within the project areas. Eureka, Grise Fiord, and Alert have local roads.

Access to Eureka is via gravel airstrip. The runway at Eureka is 1,464 metres (4,802 feet) long. During the site assessment, the Eureka runway was observed to be in need of repair as a result of slumping and solifluction. Twin otter aircraft are still capable of landing on the runway, as are some larger aircraft such as the DC-3. Eureka is currently in the process of securing the funds required to repair the runway.

5.6 Physiography

The Nunavut Coal Project is defined by high relief, greater than 750 metre (m), mountains, glaciers, fiords, and valleys.

In the Fosheim Peninsula Property, the plains are characterized as gently undulating and tundra covered, with soil polygons commonly up to 50 metres in diameter. Most streams in the area flow mainly in a north-south pattern and are tributaries of the Slidre River. On Axel Heiberg Island, the plains of the May Point Property are typically grass covered, with occasional soil polygons. Streams are scarce but those which are present drain northeast and southeast into Eureka Sound.

5.7 Flora and Fauna

Wildlife in the area of the Nunavut Coal Prospect is comprised of small herds of musk oxen and caribou. In addition, Arctic wolves, Arctic foxes, Arctic hares, lemmings and ptarmigan can be observed. There are summer nesting grounds for geese, ducks, owls, loons, ravens, gulls and many other smaller birds that raise their young in the Arctic region, returning south in August.

Vegetation is sparse over most of the Property, although lush near Eureka, and includes grasses, mosses, and low-lying shrubs (rare).

Both Ellesmere and Axel Heiberg islands contain areas of fossil forests. Tree stumps were found one to two metres in diameter that existed during Paleocene-Eocene times. These tree stumps indicate that the area was once warm enough to produce redwood swamps, deciduous flood-plains and boreal forest uplands. Many of the fossil trees are preserved as mummifications in an environment where little or no mineralization occurred. Tree specimens are perfectly preserved and almost indistinguishable from wood that can be found on the floor of forest areas.

6.0 HISTORY

The majority of historic work on the Nunavut Coal Project occurred in 1981 to 1983 and was conducted by Gulf, Petro-Canada, and Utah. Each of these three major exploration programs is discussed in further detail in Section 10 (Exploration). Historic reports are not considered current in terms of NI 43-101, and could not be updated without drilling, mapping, and sampling the property areas relevant to the specific report.

The first recorded expedition to reach the vicinity of Axel Heiberg and Ellesmere Island was the Otto Sverdrup Expedition in 1898-1902. Shortly thereafter, various geological explorers reported on the area including Schei (1903, 1904), Holtedahl (1913, 1917), Weeks (1927), Benthan (1936, 1941), Wordie (1938), and Troelsen (1950).

The Geological Survey of Canada initiated mapping of the Arctic Islands in the late 1950's, and in 1955 conducted a comprehensive investigation titled Operation Franklin of potential mineral fuel resources in the Arctic Islands. Details of the investigation, which reportedly consisted of air photo interpretation and ground traverses, are summarized by Cowley (1982) as follows:

> *"The investigation reported coal seams on Axel Heiberg Island up to 9 metres thick and coal seams on Western Ellesmere Island up to six metres thick, all within the Eureka Sound Formation."*

Highlights of Petro-Canada's 1981 reconnaissance program on the Fosheim Peninsula and Vesle Fiord/South Fosheim areas are described by Bustin (1981):

> *"Significant resources of lignite, sub-bituminous and high-volatile bituminous coal occur within the Eureka Sound Formation on Banks, Axel Heiberg and Ellesmere Island. The coal is low in sulphur (less than 0.5%) with few exceptions and has calorific values ranging from 7000 to 14,000 British thermal units per pound (Btu/lb) (16,280 kilojoules per kilogram (KJ/Kg) to 32,541 KJ/Kg). The seams are highly variable in thickness; seams up to 24 m thick occur and numerous seams are in the range of 2 to 10 metres thick. Seams between 0.5 and 2 metres thick occur at most localities. On central Ellesmere Island numerous seams of coal up to 6.7 metres thick occur in the Fosheim Peninsula area. The coal varies in rank from high-volatile C to lignite and has calorific values up to 10,000 Btu/lb (23,244 KJ/kg)."*

Highlights from Petro-Canada's 1982 reconnaissance program, described by Panchy and Moorehouse, 1983, are as follows:

- An exploration program to determine the areal extent, thickness and tonnage of coal seams within the Eureka Sound Formation on Petro-Canada's licenses was completed.
- Coal samples were collected for laboratory analysis to determine the chemical properties of individual seams.
- Licenses were acquired around the Stenkul Fiord where thick seams were discovered in the later part of the 1982 field season.

Petro-Canada completed coal resource estimation (not compliant with NI 43-101 standards) on the Fosheim Peninsula coal licenses, albeit at a reconnaissance level of detail with numerous assumptions in lieu of drill data, and concluded that seams are more or less evenly distributed through the formation and that they thin towards the east. Following the 1983 exploration season, Petro-Canada also completed coal resource estimation (not compliant with NI 43-101 standards) on the Stenkul Fiord coal licenses at a similar reconnaissance level of detail.

In 1981, Utah conducted 16 days of field work comprising preliminary, reconnaissance mapping and sampling program on their Strathcona Fiord and May Point licenses. Program recommendations included further mapping at a scale of 1:50,000 as a precursor to drilling and seeking some sort of partnership with Gulf and Petro-Canada to reduce costs.

Gulf conducted an exploration program in 1981 over four project areas, two of which (Fosheim Peninsula and May Point) occur within the Nunavut Coal Project. Gulf completed coal resource estimation (not compliant with NI 43-101 standards) in a similar fashion to Petro-Canada. Conclusions from the Gulf report (1981) are summarized as follows:

- Lignitic to sub-bituminous A coal was speculated to be present within the Fosheim Peninsula area in sufficient abundance to have potential for economic exploitation.
- May Point was considered to have insufficient in-situ resource potential for economic exploitation.
- Drilling and mapping was required for a more accurate appraisal of the Eureka Sound Formation coal measures.

6.1 Project Timeline

A simplified timeline is presented in Table 6.1 detailing historic coal exploration in the project vicinity as well as coal license ownership 2006 - onwards. Note that project locations have in some cases been amended to reflect the current project area naming convention (although the majority of current project areas have been named according to the historic literature). The timeline has been summarized from Panchy and Moorehouse (1983) with additions for more recent events.

Table 6.1 - Nunavut Coal Project Historic Timeline	
Year	**Description of Event**
1870s - 1880s	Recognition of Upper Cretaceous - Palaegene strata by explorers Greely and Heer.
1950	Designated strata to Eureka Sound Group, Troelson - G.S.C.
1957	Regional mapping by Thorsteinsson and Tozer of Eureka Sound Group - G.S.C.
1963	Areal geology by Tozer, Fortier et al., assigned Eureka Sound Group formation status.
1974	West, Dawson, Hutchinson and Ramaekers established paleontologic evidence of marine sediments in the Eureka Sound Formation of Ellesmere Island.
1975	R.M. Bustin, H.R. Balkwill and W.J. Hopkins, Jr. carried out stratigraphic and structural studies on central Ellesmere Island and Axel Heiberg Island.
1977	R.M. Bustin established the detailed stratigraphy of the Eureka Sound Formation on Axel Heiberg and Ellesmere Island.
1981	Utah conducted 16 days of field work on their Strathcona Fiord and May Point licenses.
1981	Gulf prepared an evaluation report of the Arctic Islands early in 1981 and made field examinations of the Fosheim Peninsula, Vesle/South Fosheim, and Strathcona Fiord for a period of three weeks.
1981	R.M. Bustin carried out a preliminary study of the coal potential of the Eureka Sound Formation on Ellesmere, Banks, and Axel Heiberg Island.
1982	A.D. Miall published a study on the depositional history of the Eureka Sound Formation and established the depositional environments for the formation throughout the Canadian Arctic.
1982	R.M. West et al divided the Eureka Sound Formation into informal members in the Strathcona Fiord region.
1982	Petro-Canada conducted regional mapping of Eureka Sound Formation on west-central Ellesmere Island.
1983	Petro-Canada conducted an exploration program to evaluate Stenkul Fiord and also continue regional mapping.
1993	Kalkreuth submits a paper to the International Journal of Coal Geology on Strathcona Fiord and Bache Peninsula.
2005	Hunter acquires 15 coal licenses in the Fosheim Peninsula and Strathcona Fiord areas. APEX completed visits to a total of 22 sites and collected four coal seam samples.
2006	West Hawk obtained seven coal exploration licenses located in Fosheim Peninsula and May Point areas and initiated historical reviews of available exploration data.
2007	Weir prepared an independent technical report on West Hawk's Fosheim Peninsula and May Point licenses.
2008	West Hawk's three year coal licenses expired. West Hawk reapplied for the licenses with the Recorder, but to the best of AGL's knowledge the application was unsuccessful.
2008	5200 Nunavut Ltd. acquires seven coal licenses (May Point and Fosheim Peninsula).
2009	Weststar acquired 80% of the Hunter's coal licenses (Fosheim Peninsula and Strathcona Fiord).
2009	APEX prepared an independent technical report on Weststar's Fosheim Peninsula and Strathcona Fiord project areas.
2010	Canada Coal acquires the Weststar and Hunter coal licenses (Fosheim Peninsula and Strathcona Fiord.
2011	Canada Coal applies for additional coal licenses in all project areas and acquires coal licenses from 5200 Nunavut Ltd.

6.2 Historical Mineral Resource and Mineral Reserve Estimates

Various authors prepared historical resource estimates (not compliant with NI 43-101 standards and not verified by AGL) on certain project areas within the Nunavut Coal Project. AGL cautions that the historical resources estimates are non-compliant, and at best would correlate to the "Speculative" coal resource category described in GSC 88-21 due to the lack of direct supporting evidence in the form of drill holes, trenches, and so forth.

"Speculative" coal resources would not normally be reported by industrial users as it the resource category was originally intended to provide a basis for Government assessment of a country's national coal resources. Nevertheless, the non-compliant historical resource estimates are presented here as an indication of the relative size of the Nunavut Coal Project target resource.

The below-quoted figures are reported as an exploration target, based on reasonable assumptions made from compiled data. These figures should not be construed to reflect a calculated resource (inferred, indicated or measured) under standards of NI 43-101. The potential quantities and grades reported above are conceptual in nature and there has been insufficient work to date to define a NI 43-101 compliant resource. Furthermore, it is uncertain if additional exploration will result in discovery of an economic mineral resource on the property.

Table 6.2 - Historical Inferred Resources - Not NI 43-101 Compliant

Author	Year	Area	Inferred Resource (M tonnes)	Rank
Bustin[1]	1980	Fosheim Peninsula	21,000	High volatile bituminous[5] to lignite
Bustin[1]	1980	East Axel Heiberg	9,000	High volatile bituminous[5] to lignite
Gulf[2]	1982	Fosheim Peninsula	5,616	High volatile bituminous[5] to lignite
Petro-Canada[1]	1982	Fosheim Peninsula	21,900	High volatile bituminous[5] to lignite
Petro-Canada[3]	1982	Vesle Fiord	4,000	Sub-bituminous 'A' to lignite
Petro-Canada[3]	1982	Strathcona Fiord	10,100	Sub-bituminous 'A' to lignite
Petro-Canada[1]	1983	Stenkul Fiord	750,000	Lignite
Kalkreuth[4]	1993	Bache Peninsula	100	Lignite

1 Coal seams > 1 m thick used for estimation over outcrop area to a depth of 200 m

2 Coal seams > 1 m thick used for estimation over outcrop area to a depth of 500 m

3 Coal seams >1 m thick used for estimation over outcrop area to a total depth of section

4 Coal seams > 1 m thick used for estimation over outcrop area to a depth of 300 m

5 High volatile bituminous covers a broad range of coal quality- recent sampling would suggest that the Fosheim Peninsula coal is a high volatile bituminous 'C'

6.2.1. Bustin– 1980 Historic Resource Estimate (Non-Compliant)

Inferred coal resources in the order of 30,000 million tonnes were estimated by R.M. Bustin of the University of British Columbia (Bustin, 1980) over a portion of known coal measures within the Fosheim Peninsula and the Eastern Axel Heiberg areas. Coal rank for the resource estimate varied: 4,000 million tonnes was ascribed to high volatile bituminous coal, 11,000 million tonnes was ascribed to sub-bituminous coal, and 15,000 million tonnes was ascribed to lignte. Details of the 1980 Bustin resource estimate are as follows:

As part of a stratigraphic and sedimentological study on Axel Heiberg and Ellesmere Islands, Bustin examined coal of the Eureka Sound Formation at numerous localities and determined the rank of coal using the reflectance method. The purpose of the study was to document some of the major coal occurrences including the rank and character of the coal, and to provide some preliminary estimates of the coal resources within the study area.

The study area included both Fosheim Peninsula and Eastern Axel Heiberg (May Point and Mokka Fiord areas). At Fosheim Peninsula the coal measures outcropped over an area of about 2500 km^2, and a section 3300 m thick was measured along Remus Creek on the west flank of a broad northerly-trending synclinorium. At Eastern Axel Heiberg, the coal measures outcropped over an area of about 1500 km^2, and the coal measures were highly variable in thickness ranging from a maximum measured thickness of 1500 metres to thin erosional outliers.

Coal seams within the Fosheim Peninsula study area occurred throughout the section at Remus Creek although they were more abundant in the basal 1,500 m of the section. In the better exposed intervals of the measured section (45% of the total section) 86 coal seams were measured of which 48 seams were less than one metre thick and 28 seams were greater than one metre thick. The thickest measured seam was 10 metres. The coal rank ranged systematically from the base to the top of the section at Remus Creek. The range in coal rank was from high volatile bituminous coal (0-600 metres) to sub-bituminous coal (600-1625 metres) to lignite (1625 to 3300 metres).

The thickest succession of coal measures at Eastern Axel Heiberg was exposed adjacent to Mokka Fiord. A total of 40 seams were measured through a 1,500 metre interval with about 70% exposure. Of the 40 seams, 22 were less than one metre thick and 18 were greater than one metre thick. The thickest measured seam was six metres thick, but contained a high percentage of argillaceous material. Coal rank varied on eastern Axel Heiberg from lignite and sub-bituminous B coal at Mokka Fiord and Flat Sound to sub-bituminous C coal in the May Point area and finally to high volatile bituminous C coal adjacent to Whitsunday Bay. Variations in coal rank on eastern Axel Heiberg did not form a consistent trend with estimated depths of burial or age of the strata and therefore a prediction of the lateral continuity of the coal seams was not possible with the exception of one location in the May Point area.

Coal resources were obtained by considering those seams which were equal or greater than one metre thick and extrapolating their thickness over the area of outcrop to a depth of 200 metres. The author of the study noted that coal resource calculations must only be considered approximate within orders of magnitude.

Coal resources in the Fosheim Peninsula area were estimated to be in the order of 21,000 million tonnes. Of the total resource estimate, 4,000 million tonnes were considered to be high volatile bituminous coal, 7,000 million tonnes were considered to be sub-bituminous coal, and 10,000 million tonnes were considered to be lignite.

Coal resources in the eastern Axel Heiberg area are estimated to be in the order of 9,000 tonnes. Of these resources 4,000 million tonnes are sub-bituminous coal, 5,000 million tonnes are lignite, and 300 million tonnes are high volatile bituminous coal.

6.2.2. Gulf - 1982 Historic Resource Estimate (Non-Compliant)

Gulf prepared a historical resource estimate in 1982 covering 138,191 hectares of land in the Fosheim Peninsula area (largely contained within license number 101). In-situ potential coal resource figures of 5,616 million tonnes and 2,097 million tonnes were ascribed to coal seams greater than or equal to 1.0 metre in thickness and coal seams greater than or equal to 2.0 metres in thickness, respectively. Reflectance studies indicated that coal rank varied from lignite (Ro max 0.15%) to high volatile bituminous (Ro max 0.57%). Average coal quality analyses over the resource calculation area are summarized in Table 6.3.

Table 6.3 - Historical Fosheim Peninsula Average Analyses (Gulf estimate of in-situ resource potential)	
Moisture % (a.d.)	13.0
Ash (%)	19.6
Fixed Carbon (%)	32.3
Volatile Matter (%)	35.0
Sulphur (%)	0.50
Calorific Value (MJ/kg)	18.15
Calorific Value (cal/gm)	4,337
MMMF	5,423
Ro max	0.35

Estimation methodology is described as follows in the Gulf (1981) report:

"Seven cross-sections were drawn through the property and were used in conjunction with the composite stratigraphic column in estimating in-situ resource potentials. By determining which portions of the 1800 metres of known coal-bearing section lay within 500 metres of the surface it was possible to estimate the aggregate coal value to be assigned to that cross-section.

The zone of influence of each section is equal to one half the distance between sections (2.5 km) except for the areas… where the zone of influence extends to the property boundary.

Specific gravity values were not determined for any samples on the property. Consequently, in calculating resource figures a conservative specific gravity of 1.30 g.cc was used.

Calculations were done… using the following formula:

Surface trace of strata X depth trace along dip angle to a 500 metre vertical depth X aggregate coal thickness over specified interval X a specific gravity of 1.30."

6.2.3. Petro-Canada - 1982 Historic Resource Estimates (Non-Compliant)

Petro-Canada delineated three areas of inferred coal resource potential in their 1982 exploration report (Panchy and Moorhouse, 1983): Fosheim Peninsula-West, Vesle Fiord, and Strathcona Fiord. Inferred coal resources in the order of 21,900 million tonnes, 4,000 million tonnes, and 10,100 million tonnes were estimated, respectively. Rank of the resources ranged from high volatile bituminous C to lignite. Petro-Canada also evaluated the Fosheim Peninsula-East area, located east of the Sawtooth Mountains, and identified no significant coal resources.

Fosheim Peninsula-West

Petro-Canada prepared a historical resource estimate covering 170,412 hectares of land in the Fosheim Peninsula-West area (now referred to as simply as Fosheim Peninsula). The inferred resource estimate was compared with a previous estimate (Bustin, 1982) in the same area. Inferred resources on the order of 21,000 million tonnes (Bustin) and 21,900 million tonnes (Petro-Canada) described by the two estimates were similar. Inferred resources were estimated to be within 200 metres of surface.

Rank of the seams used in the Fosheim Peninsula-West resource estimate ranged from high volatile 'C' bituminous at the base of the section to lignite at the top.

Evaluation methodology and resource calculation assumptions are as follows, as stated in the 1983 Petro-Canada exploration report:

a) *The thickness of the Eureka Sound Formation ranged from 800 to 3,000 metres along the length of a central east-west cross-section. It was assumed that formation averaged 1,350 metres in thickness.*

b) *Seams were assumed to be laterally continuous and to maintain the same thickness over the area.*

c) *Seams are evenly distributed throughout the formation.*

d) *Weighted specific gravity applied to all coal seams was 1.54 for this area.*

e) *Composite coal thickness in seams greater than one metre was 48 metres.*

f) *Composite coal thickness in seams greater than 2.5 meters equals 15 metres.*

Fosheim Peninsula-West is separated from the rest of the property by formational contacts with the Kanguk Formation on its east and west sides. To the south it is bounded by Eureka Sound and to the north by Greely Fiord. This area was planimetered giving a total area of 2,000 square kilometres…."

Calculations were performed using the following Petro-Canada's formula:

Area (metres-squared) *X* Composite coal thickness *X* Weighted specific gravity =

Total inferred magatonnes for the entire formation

Total inferred megatonnes *X* (200m/1350 m) =

Inferred megatonnes within 200 m of surface.

Vesle Fiord

Although Petro-Canada ascribed 4,000 million tonnes of inferred coal resources to the Vesle Fiord area as a result of the 1982 exploration program, the area was not considered prospective for resource exploitation. The Vesle Fiord area is structurally deformed and the majority of coal resources are below 200 metres of surface- therefore, the area was characterized as lacking in significant resource potential. Estimation methodology for the coal resource estimate was similar to that described for Fosheim Peninsula-West, except for the final stage of the calculation owning to the fact that minimal coal was ascribed within 200 metres of surface.

Strathcona Fiord

Similar to the Vesle Fiord area, the Strathcona Fiord can locally be divided into four members, two of which are coal bearing. Coal seams up to 24 metres in thickness are present and range from sub-bituminous 'A' to lignite in rank. The area is gently folded and transected by few faults. The area contains the thickest coal seams in the Canadian Arctic Archipelago and was ascribed inferred resources in the order of 10.1 billion tonnes (on Petro-Canada's licenses). Estimation methodology for the coal resource estimate was similar to that described for Fosheim Peninsula-West, except for the final stage of the calculation (total inferred resources for the entire formation given).

6.2.4. Petro-Canada – 1983 Historic Resource Estimate (Non-Compliant)

As a result of its 1983 exploration program, Petro-Canada estimated that the Stenkul Fiord property was underlain by seven hundred fifty million tonnes of low quality (lignitic) thermal coal. The inferred resource estimate extended to a maximum depth of 200 metres from surface.

Petro-Canada further concluded that geologic structure over most of the property was simple and that gentle bedding dips suggested surface mining potential with low average in-situ strip ratios. Furthermore, the specific energy values and low ash and sulphur values of the coal indicated its suitability for thermal power generation.

The following parameters were utilized in the estimation:

a) *Coal zone thicknesses were averaged from the sections of each exploration block.*

b) *Specific gravity used for each coal zone were from the analysis of samples in the control section ESS-8312 in Block 4.*

c) *Coal areas drawn for Blocks 6,1,2,3,4, and 5 in Map No. 2 were planimetered while for Blocks 7 and 8 an arbitrary 1 sq. km area was assigned for each.*

d) *The area was reduced for a given coal zone that was not continuous throughout the block.*

Calculations were produced using the following Petro-Canada formula:

Area (square kilometres) X Average zone thickness X Specific gravity of coal zone =

Geologic resource of coal zone in megatonnes

6.2.5. Kalkreuth – 1992 Rough Estimate of Coal Resources (Non-Compliant)

No detailed resource estimate studies have been undertaken at Bache Peninsula; however, in 1992 Kalkreuth reported a rough estimate of coal resources on the order of 100 million tonnes for the Bache Peninsula as part of a paper in the *International Journal of Coal Geology* entitled, 'The geology, petrography and palynology of Tertiary coals from the Eureka Sound Group at Strathcona Fiord and Bache Peninsula, Ellesmere Island, Arctic Canada.'

Kalkreuth's rough coal resources estimate was calculated based on a total areal extent of at least eight square kilometres underlain by total coal thicknesses ranging from 3.23 m to 19.93 m. The rough coal estimate was calculated for coal resources less than 300 metres depth from surface. AGL cautions that Kalkreuth's method was intended as a 'Speculative' target size at best, and that the methodology is non-compliant with NI 43-101 standards.

7.0 GEOLOGICAL SETTING AND MINERALIZATION

7.1 Regional Geology

Ellesmere and Axel Heiberg Islands are typically divided into three major geological units: 1) Precambrian basement rocks, 2) the Franklin sedimentary succession, and 3) the Sverdrup Basin sedimentary succession. The rocks generally young to the northwest, and are separated from each other by major regional unconformities. Figure 7.1 displays the bedrock geology of the region. Early Carboniferous to Early Tertiary units comprise the Sverdrup Basin sedimentary succession, Cambrian to Late Devonian units comprise the Franklin sedimentary succession, and Archean or Proterozoic units comprise the Precambrian basement rocks.

The rocks of southeastern Ellesmere Island are defined mostly by granulitegrade metamorphic rocks (including granite, gneiss, amphibolite, marble, and quartzite) of the Precambrian Canadian Shield, but also include unmetamorphosed sedimentary and igneous rocks of the late Precambrian Thule Group (Frisch, 1983). These Thule Group rocks correlate with similar units in Greenland, while the Shield rocks of Ellesmere Island form part of the Churchill geological province and represent the northern extent of the Canadian Shield (Frisch, 1983). Massive ice sheets cover most of the Shield rocks except along the coast. According to Freeman (1994), structural features in the Shield rocks trend northerly with foliations dipping steeply to the east and west.

Overlying the Precambrian Shield rocks of Ellesmere Island is the Franklinian sedimentary succession. The Franklinian sedimentary succession (Cambrian to Late Devonian) nonconformably overlies the Precambrian basement rocks and consists mainly of shelf carbonates, evaporites, basinal deep-water rocks, and fluvial and deltaic deposits (Mayr *et al.*, 1994). Tozer & Thorsteinsson (1970) also list quartzose sandstone and volcanics as major lithological constituents of this succession. During the Ellesmerian Orogeny (Late Devonian to Early Carboniferous, i.e. Fammenian to Viséan), the Franklinian succession was folded to form the Hazen and Central Ellesmere fold belts, of which the Hazen is more intensely folded (Mayr *et al.*, 1994). The southern and eastern regions of the Franklinian sedimentary succession were left relatively undeformed to form what is known today as the Arctic Platform (Mayr *et al.*, 1994).

Overlying the Franklinian sedimentary succession is the Sverdrup Basin sedimentary succession. The Sverdrup Basin sedimentary succession (Early Carboniferous to Early Tertiary) unconformably (angular unconformity) overlies rocks of the Franklinian succession, and consists mainly of shelf carbonates, non-marine clastics, turbidites, evaporites, deltaic deposits, and deep-water basinal rocks (Mayr *et al.*, 1994). According to Thorsteinsson & Tozer (1970), upper Paleozoic and Cretaceous basalts are also present, and thick gabbroic sills intrude parts of the succession. During the Eurekan Orogeny (mid-Tertiary) the Sverdrup Basin succession was folded, faulted, and experienced evaporite diapirism (Drummond, 1973) to form the Eurekan Fold and Thrust Belt. At the same time, older Ellesmerian structures were reactivated and faulting took place on the Arctic Platform (Mayr *et al.*, 1994).

7.1.1. Structural Setting - The Innuitian Orogen Geologic Province of Canada

The Nunavut Coal Project lies within the Innuitian Orogen geological province of Canada (Figure 7.2). The Innuitian Orogen began with earliest Paleozoic rifting of northern ancestral North America, followed by early Paleozoic deposition of shelf and off-shelf sediments, the latter in a deep trough bounded on the north by foreign continental fragments. A younger, overlapping clastic wedge was deformed in the mid-Paleozoic and, finally, the orogen was partly superimposed by a mainly Mesozoic clastic basin, which was itself deformed in latest Mesozoic and early Tertiary time.

The Arctic Platform merges northward into a Cambrian-Lower Devonian southern shelf assemblage of 5 km of carbonate, shale and evaporite. It is adjoined by Hazen Trough, containing Lower Cambrian rift clastics overlain by deep-water shale and 3 km of turbidites. Hazen Trough is bounded on the north by the Northern Belt which comprises continental fragments (largely volcanics and granites). Northerly derived turbidites indicate that the Northern Belt was uplifted, following the collision (along a zone marked by oceanic ultramafic rocks) of Proterozoic and Middle Ordovician fragments in mid-Ordovician time.

This collision ended arc volcanism in the Northern Belt. It was followed by pulses of folding and uplift in Silurian and Devonian times and by granitic intrusion in the Devonian. Uplifts in northeastern and eastern parts of the orogen shed detritus to a southeastward-advancing Middle and Upper Devonian clastic wedge. It was compressively folded during the Ellesmerian Orogeny (about 345 million years ago) which migrated from the Northern Belt to the Southern Shelf.

Subsequently, stretching and subsidence led to the deposition of 12 km of sediments in Sverdrup Basin, mainly of Mesozoic rift clastics and basaltic lava and intrusion, and some Upper Paleozoic evaporites that were locally squeezed upward into overlying sediments. The latest Cretaceous uplift in the eastern Sverdrup Basin shed a clastic wedge across the basin to the continental margin. This was succeeded by the Eurekan Orogeny (about 65 million years ago) which created broad folds and thrust faults directed south and east. At the same time, more than 3 km of clastics accumulated in local basins on land and in narrow, marine fault-troughs. Late Cenozoic vertical faulting produced the present topography.

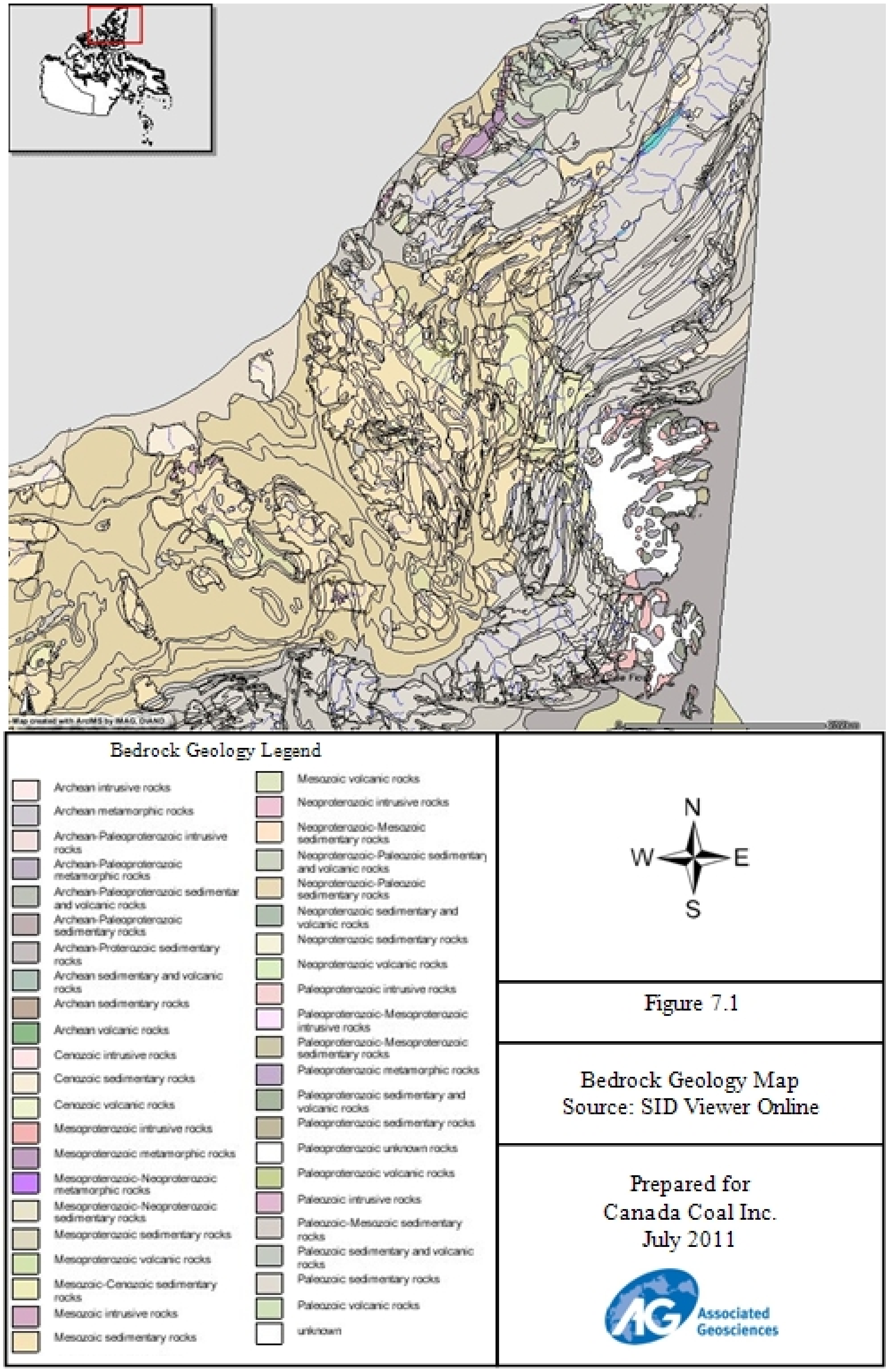


Figure 7.1

Bedrock Geology Map
Source: SID Viewer Online

Prepared for
Canada Coal Inc.
July 2011

7.1.2. Stratigraphic Setting - The Sverdrup Basin

The Sverdrup Basin is an elongate pericratonic depression overlying older strata of the Franklinian mio-and-eugeosynclines. Sediments of the Sverdrup Basin thin toward the margins and in places younger beds successively overstep older beds. A generalized stratigraphic column is shown in Figure 7.3.

Carboniferous to lowermost Cretaceous sediments include evaporates, carbonates, marine and non-marine clastics, whereas the Lower Cretaceous to Tertiary sediments consist only of marine and non-marine clastics. The central part of the basin, on Amund Ringness and Axel Heiberg Islands, has a total sediment thickness in the order of 12,000 metres. In the axial region of the basin the succession is essentially concordant but towards the basin margins angular unconformities exist which reflect tectonic pulses.

Diabase and gabbroic sills and dikes occur throughout the eastern part of the Sverdrup Basin. On the property dikes and sills intrude strata of Triassic age. Volcanic rocks are also exposed on western Axel Heiberg Island which include the Strand Fiord Volcanics Formation and several flows within the Isachsen Formation.

7.1.3. The Eureka Sound Formation

The Late Cretaceous and Tertiary Eureka Sound Formation is the principal coal bearing unit in the Canadian Arctic Archipelago. Troelsen (1950) proposed the name Eureka Sound Group for deposits of Tertiary sandstone, shale and coal cropping out on Ellesmere Island. Tozer (1963) redefined the Eureka Sound Group as a formation and Souther *(in* Fortier *et al.*, 1963) proposed as the type section 2700 m of interbedded sandstone, shale, mudstone and coal which conformably overlies Upper Cretaceous shales on western Axel Heiberg Island.

The Eureka Sound Formation as *so* defined is a complex deposit ranging in age from Maastrichtian (latest Cretaceous) to Middle Eocene (c.f. Hills and Wallace, 1969). Although in part a syntectonic deposit, it is older than the last major phase of orogenesis in the eastern Arctic Archielago (Tozer, 1970; Balkwill *et al.*, 1975). As originally deposited, the Eureka Sound Formation probably enveloped most of the Canadian Arctic Archipelago. It presently occurs as erosional outliers on Banks, Devon, Somerset, Bathurst, Melville, Ellef Ringnes, Lougheed, Cornwall, Axel Heiberg and Ellesmere Islands. It also occurs in the subsurface of Banks, Ellef Ringnes and Meighen Islands and is also likely present in the interisland seaways and off the northern margin of the Archipelago. The formation is highly variable in thickness ranging from a maximum of 3300 m at Fosheim Peninsula, Ellesmere Island to thin erosional edges at many localities. In the central and southern parts of the Archipelago it conformably overlies Upper Cretaceous shales of the Kanguk Formation, whereas on the northern margin it rests unconformably on older Mesozoic strata and on the eastern margin lies unconformably on Misozoic, Paleozoic or Proterozoic rocks. The Eureka Sound Formation is unconformably overlain by Quaternary deposits or locally by the Miocene-Pliocene Beaufort Formation.

The lithologies of the Eureka Sound Formation are remarkably uniform throughout the Canadian Arctic Archipelago. The formation consists of rhythmically interbedded dark grey shale, mudstone and siltstone, buff to light grey quartzose sandstone, minor conglomerate and coal. Coal seams have been reported from almost all known localities. The seams are commonly between 0.5 and 1.0 m thick, but in some locations attain thicknesses of several metres.

Two schemes with different formation units, which reintroduced and redefined the Eureka Sound Group, were discussed by Miall (1986) and Ricketts (1986). Miall and Ricketts have different lithostratigraphic approaches involving different basinal interpretations although at this stage AGL does not have sufficent local knowledge to evaluate the relative merits of the two stratigraphic schemes.

7.1.4. Geological Survey of Canada Map of the Arctic

A map of the circumpolar Arctic, the 1:5 million scale *Geological Map of the Arctic*, and its related database was published in November 2008. The Nunavut Coal Project area has been presented in Figure 7.4 and its accompanying geological legend is included as an Appendix to this report.

The map's features include: individual geology units coded for composition, age, environment of formation and plate tectonic domain; geological contacts, faults and oceanic spreading ridges; and volcanoes, meteor impact structures, salt and gypsum extrusions and selected point data.

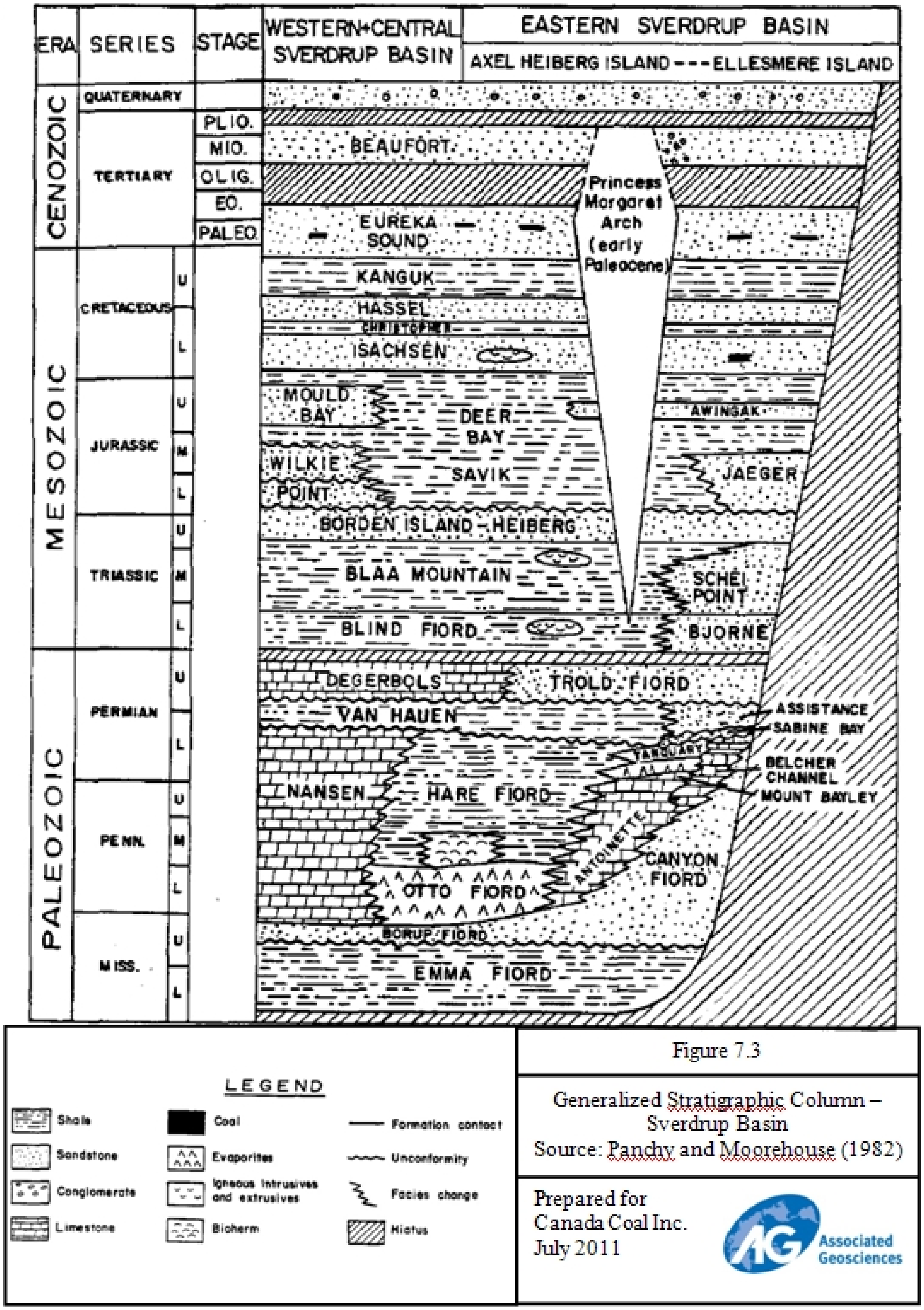


Figure 7.3

Generalized Stratigraphic Column – Sverdrup Basin
Source: Panchy and Moorehouse (1982)

Prepared for
Canada Coal Inc.
July 2011

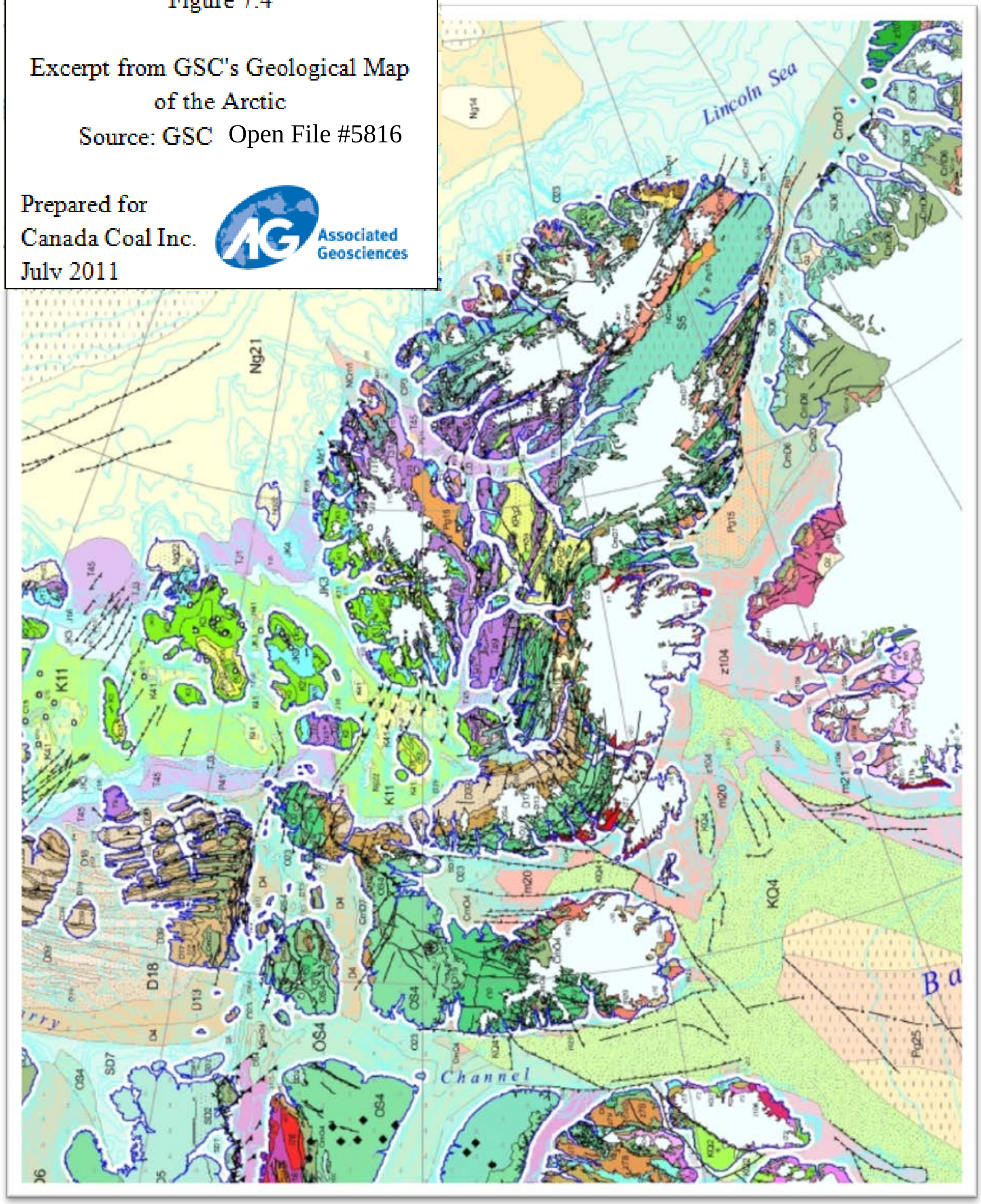
Figure 7.4

Excerpt from GSC's Geological Map of the Arctic

Source: GSC Open File #5816

Prepared for Canada Coal Inc.
July 2011

Associated Geosciences



7.2 Local Geology

Fosheim Peninsula

At Fosheim Peninsula, the Eureka Sound Formation is 3,200 metres thick and is coal bearing throughout. Multiple seams up to fifteen metres in thickness reportedly exist in the area, although the maximum thickness encountered during the AGL site assessment was 4.2 metres. The rank of the seams ranges from high volatile bituminous 'C' to lignite. The coal seams are laterally persistent and can be traced up to twenty-five kilometres along strike.

The structure at Fosheim Peninsula is dominated by an asymmetrical synclinorium trending southerly to southwesterly through the area. The resulting structural Tertiary basin covers a surface area with a minimum width of 15 kilometres whose length extends through the entire area.

The synclinorum structure is cut by the northwest to southeast trending Black Top Fault. The fault is near vertical and is believed to have undergone differential movement. The hinge line for this movement is presumed to be in the northern portion of the property near Romulus Lake. Vertical displacements of 150 metres, in the southeast portion of the property, and in excess of 1,000 metres northwest of the property, across the Black Top Ridge have been estimated.

The rotational nature of the fault has altered the attitude of the fold from north to south. North of the Black Top Fault the eastern fold limb dips at approximately 20 degrees to the west and the western limb has an average dip of 50 degrees east. South of the fault the eastern limb dips approximately 50 degrees west while the western limb dips an average of 18 degrees east.

Additional folding and faulting occurs on the property but is minor in comparison and does not greatly alter the structural style or subsequent tonnage estimates. Thrust faults are not known to occur on the property.

Vesle Fiord

At Vesle Fiord, the Eureka Sound Formation is in the order of 2700 metres thick and is only partly coal bearing. The formation contains at least one major marine unit. Coal seams locally exceed four metres but usually occur in areas which are structurally complex. The coal ranges from sub-bituminous 'B' to lignite 'A' in rank.

Strathcona Fiord

At Strathcona Fiord, the Eureka Sound Formation can locally be divided into four members having a collective thickness of 2,500 metres. Much of the strata is exposed in a broad syncline. At least one of the members is marine in origin and only the upper member contains multiple seams up to 24 metres in thickness. The coal ranges from sub-bituminous 'C' to lignite 'A' in rank.

Sor Fiord/Stenkul Fiord

At Sor Fiord/Stenkul Fiord, the Eureka Sound is preserved in several graben structures. Coal seams over 15 metres in thickness were identified. The rank of the coal seams ranges between sub-bituminous 'C' to lignite 'A'.

In the Stenkul Fiord area, the Eureka Sound formation is comprised of fault-bounded blocks surrounding the fiord. The formation is at least 165 metres thick and overlies the Devonian Okse Bay Formation. The contact is unconformable and is marked by a minor angularity. The bulk of the coal in the Stenkul Fiord area is described as lignite.

May Point

In the area of the May Point Property, the Eureka Sound Formation can be divided into three units. Each unit has its own distinct color, reflecting a different depositional environment. The lower unit appears dark brown by virtue of a predominant shale-sand-rare coal sequence. The middle unit is a pale yellow-brown sand sequence, and the shale and coal rich upper unit displays a medium brown color.

The lower unit predominantly consists of mudstone, with minor interbeds of siltstone and sandstone and some rare coals. The soft mudstone is dark to medium brown and carbonaceous in places. The interbeds of white quartzose, and fine to medium grained semi-consolidated sandstone, may reach six metres in thickness and appear to be associated with thin platey interbeds of hard ferruginous siltstone containing well preserved plant impressions. Coal seams are rare and usually less than one metre in thickness; however one attained a thickness of six metres. This unit is estimated to be 500 metres in thickness throughout the area.

The middle unit consists almost exclusively of clean, white to light brown, fine to medium grained, semi-consolidated sandstone. The clean sandstones contain ripple marks, pelecypods and trace fossils. The unit seems barren of coal seams and other carbonaceous material. Thin mudstone and siltstone interbeds are rare. The environment of deposition is interpreted to be near shore or of a beach origin. This unit has a minimum thickness of 900 metres in the area.

The upper unit consists of alternating sandstones, siltstones, mudstones and coals. The sandstones are thin to thick bedded, light grey, fine to medium grained and poorly indurated. The plately siltstones are well indurated, medium grey to dark red. Thin to thick bedded mudstones are dark grey, carbonaceous and silty in places. Coal seams are abundant and range up to 38 metres in thickness. Thicker coal seams typically have abundant mudstone splits. The coals are the most resistant rock units within the Eureka Sound Formation, hence, are prominent on the landscape. The unit has a minimum thickness of 500 metres.

The Eureka Sound Formation occupies the entire peninsula of the May Point Property. Near the northwest boundary of the property, the Eureka Sound Formation is bounded by a north-northeast trending, east dipping normal fault. Along the majority of the western margin of the property, Eureka Sound strata lie conformably on Upper Cretaceous Kangul strata. The lower unit in the Eureka Sound Formation is exposed over much of the property and found to contain several coal seams many of which were trenched. The middle pale sand unit is exposed in the easternmost part of May Point. Due to the flat to rolling topography, outcrops are sparse and can be found in a few creek beds. Bedding is flat to gently dipping, up to 10 degrees to the east over the majority of the property. There may be gentle north trending folds across the property but slumping is common rendering many attitudes unreliable.

Bache Peninsula

Eureka Sound sediments on Bache Peninsula have been described by Christie (1967). Christie did not measure any sections but described a 214 metre thick sequence of light-brown or yellowish white-weathering quartz-carbonate sandstone and green-grey and grey-brown shaley sandstone preserved in a graben.

7.2.1. Coal Occurrences

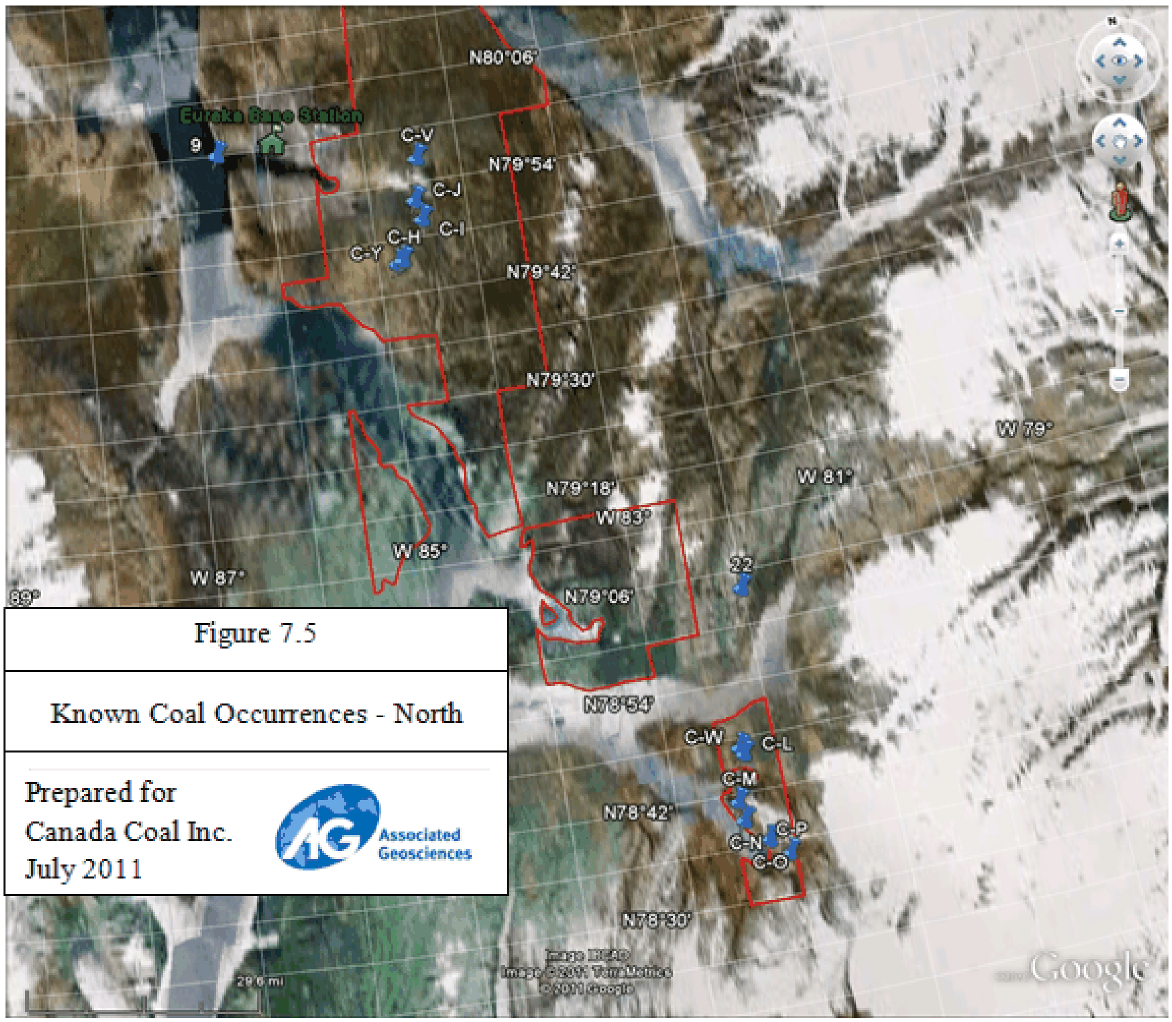


Figure 7.5

Known Coal Occurrences - North

Prepared for Canada Coal Inc. July 2011

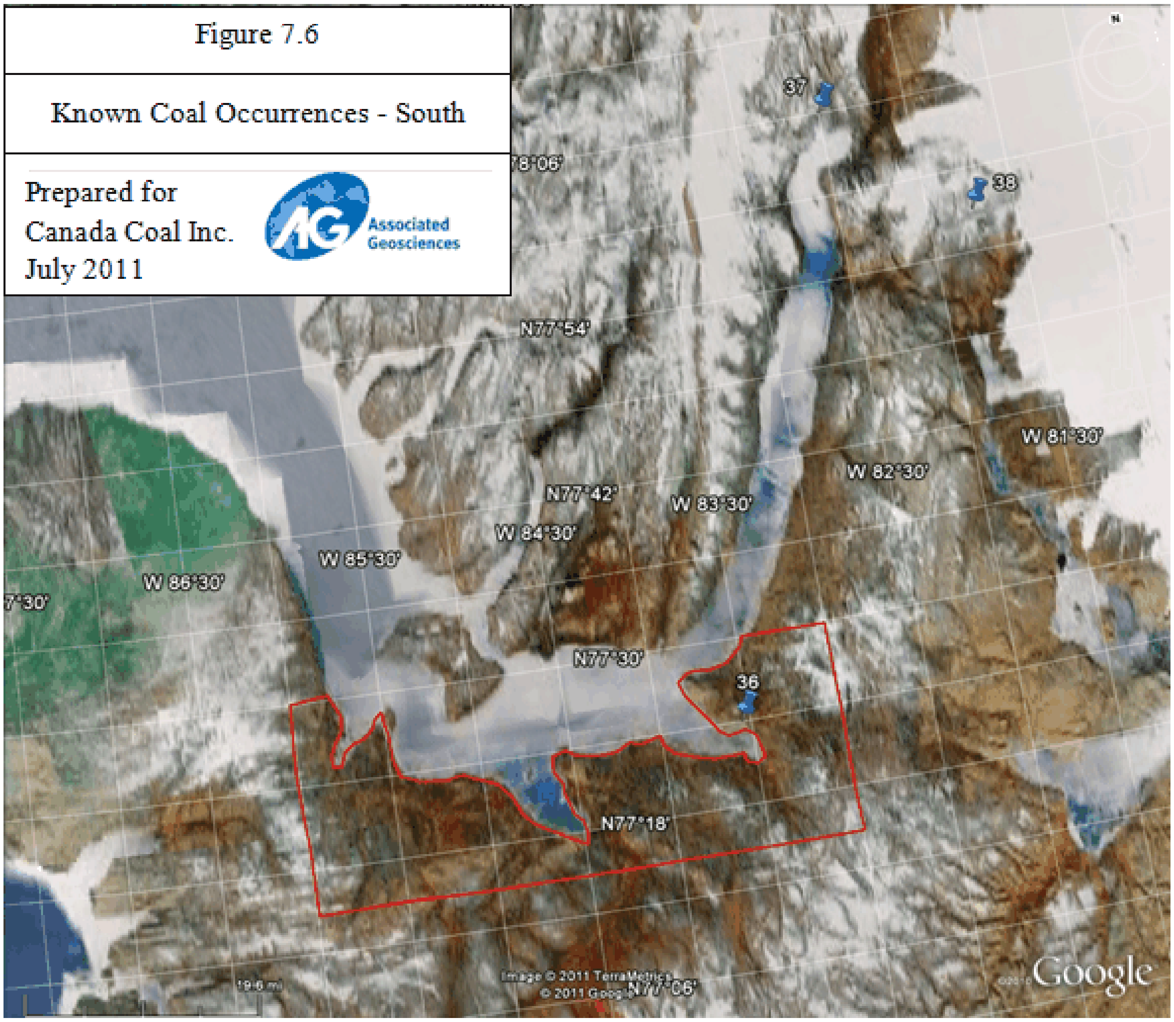


Figure 7.6

Known Coal Occurrences - South

Prepared for Canada Coal Inc. July 2011

AGL prepared a list of historic known coal occurrences in the vicinity of the Nunavut Coal Project and mapped them where possible. Known coal occurrences are depicted in Figures 7.5, 7.6, and are detailed in Table 7.1. Coal occurrences and sample locations documented by the APEX 2005 site assessment are detailed in Table 7.2.

Table 7.1 - Historic Coal Occurrences in the Arctic Archipelago Documented by Caine, 1973					
Way-point	**Latitude**	**Longitude**	**Name**	**Island**	**Description**
1	82° 00'N	63° 00'W	Lincoln Bay	Ellesmere	Seam of sub-bituminous Tertiary coal
2	81° 40'N	64° 00'W	St. Patrick Bay	Ellesmere	Float of sub-bituminous Tertiary coal
3	81° 50'N	64° 30'W	Cape Murchison	Ellesmere	Seam in valley at least 20 feet thick, high volatile bituminous Tertiary coal
4	81° 44.3'N	64° 24'W	Watercourse Valley	Ellesmere	Seam in valley at least 20 feet thick, high volatile bituminous Tertiary coal
5	81° 45'N	71° 45'W	Lake Hazen Area	Ellesmere	Multiple seams, >8 ft thick exposed along lake shore west of Gilman river
6	81° 20'N	92° 00'W	North End Nansen Sound	Axel Heiberg	Float of bituminous rank coal, Carboniferous
7	80° 02'N	95° 12'W	Li Fiord	Axel Heiberg	Small (3") seams in shale column
8	80° 03'N	86° 30'W	Slidre Fiord	Ellesmere	Brown lignite, 12" to 20' thick, Tertiary Eureka Sound Fm
9	80° 00'N	86° 30'W	Blaamenden	Ellesmere	Thin seams of lignitic coal, Tertiary
10	79° 30'N	88° 00'W	Mokka Fiord	Axel Heiberg	Lignitic coal of Tertiary age
11	79° 12'N	87° 40'W	Buchanan Lake	Axel Heiberg	Multiple thin seams, max reported 6', L.Jurassic and L.Cretaceous
12	79° 21'N	89° 21'W	Strand Fiord Pass	Axel Heiberg	Two thin seams thought to be of bituminous rank
13	79° 20'N	90° 11'W	NE of Head of Strand Fiord	Axel Heiberg	Two thin seams in black shales
14	79° 16'N	91° 10'W	Middle Kanguk Peninsula	Axel Heiberg	16 coal seams up to 30' thick
15	79° 17'N	92° 45'W	Westernmost Kanguk Peninsula	Axel Heiberg	20 coal seams up to 8' thick
16	79° 09'N	93° 16'W	Western flank of syncline	Axel Heiberg	Two thin coal seams
17	79° 08'N	92° 48'W	South side of piercement structure	Axel Heiberg	One seam 1' thick Heiberg Fm
18	79° 15'N	92° 33'W	Western Kanguk Peninsula	Axel Heiberg	One coal seam unstated thickness or description
19	79° 17'N	90° 30'W	Head of Strand Fiord	Axel Heiberg	Two thin coal seams in L.Cretaceous Isachsen Fm
21	79° 03'N	85° 50'W	Northeastern Stor Island	Stor	One coal seam in talus
22	79° 04'N	82° 00'W	Bay Fiord	Ellesmere	Several seams on shore, up to 7' thickness, lignite
23	78° 33'N	91° 44'W	Head of Good Friday Bay	Axel Heiberg	Several thin (2") seams, semi-anthracite rank
24	78° 34'N	96° 29'W	Geologist Bay	Amund Ringnes	8 coal seams, thin to 3 feet thick, Isachsen Fm L.Cretaceous lignite
25	78° 40'N	97° 00'W	Piercement Dome	Amund Ringnes	4 thin coal seams, Isachsen Fm., L.Cretaceous
26	78° 33'N	97° 30'W	West flank of Amund Ringnes Island	Amund Ringnes	Several thin seams of soft lignite
27	78° 24'N	95° 14'W	Structural River	Amund Ringnes	Several thin seams with large interburden intervals
28	78° 45'N	101° 29'W	Dumbells Dome	Ellef Rignes	One small thin sample with woody fragments, Isachsen Fm, L.Cretaceous
29	78° 12'N	99° 56'W	Meteorologist Peninsula	Ellef Rignes	8 thin coal seams of sub-bituminous rank
30	77° 25'N	105° 20'W	Central part of Lougheed Island	Lougheed	Seam and float, medium volatile bituminous rank, Carboniferous
31	77° 10'N	104° 34'W	Southern part of Lougheed Island	Lougheed	Small (") seams of lignitic rank
32	77° 08'N	104° 05'W	Edmund Walker Island	Edmund Walker	Bituminous float of Carboniferous age

Way-point	Latitude	Longitude	Name	Island	Description
33	77° 39'N	94° 16'W	Jaeger River	Cornwall Island	Multiple (>20) thin (") coal seams with sandstone
34	77° 40'N	91° 00'W	Graham Island	Graham	Bituminous float of Carboniferous age
35	77° 28'N	87° 30'W	Great Bear Cape	Ellesmere	Lignite float of Tertiary age
36	77° 25'N	83° 30'W	Stenkul Fiord	Ellesmere	A 40" seam of lignite, Tertiary
37	78° 07'N	82° 27'W	North end of Vendom Fiord	Ellesmere	Multiple seams up to 8' thick, mostly lignitic
38	77° 58'N	81° 42'W	Meadow River	Ellesmere	Multiple thin seams, up to 4' thickness, carbonized peat to lignite
39	77° 10'N	87° 00'W	Bird Fiord and Schei Syncline	Ellesmere	8 areas of thin coal seams, generally underlain by sandstone and covered with shale
40	76° 40'N	94° 00'W	Tucker Point, Grinnell Peninsula	Devon	Coal talus and several thin seams thought to be of bituminous rank
41	76° 45'N	99° 40'W	Sherard Osborn Island	Sherard Osborn	Float of medium volatile bituminous rank, Carboniferous age
42	76° 45'N	101° 00'W	Helena Island	Helena	Float of medium volatile bituminous rank, Carboniferous age
43	76° 23'N	99° 10'W	Near mouth of Cut Through Creek, Stuart River Valley	Bathurst	Coalified wood in white sand and 3 layers of peat, Pleistocene or recent
44	76° 10'N	97° 40'W	Sargent Point	Bathurst	Float of high volatile bituminous rank, Carboniferous age
45	75° 20'N	95° 21'W	Rookery Creek	Cornwallis	Sub-bituminous, thin (<2") seams in Intrepid Bay Fm
46	75° 03'N	96° 08'W	Interpid Bay	Cornwallis	12 sub-bituminous coal seams, few inches to max 5'
47	73° 43.5'N	79° 59'W	Cape Bay	Bylot	Seam of sub-bituminous Tertiary coal
48	73° 15'N	80° 50'W	Canada Point	Bylot	Seam of sub-bituminous Tertiary coal
49	72° 38'N	78° 05'W	Salmon River (Tulukan)	Baffin	Several coal seams, historic coal mining here
50	76° 22'N	103° 38'W	Cameron Island south	Cameron	Thin coal seams in the Okse Bay Fm, parts lignitic
51	75° 48'N	100° 50'W	South Erskine Inlet	Bathurst	Several thin beds of impure coal, thought to be sub-bituminous
52	75° 33'N	102° 45'W	Schomberg Point	Bathurst	Float of medium volatile bituminous rank, Carboniferous age
53	75° 36'N	101° 30'W	Scoresby Bay	Bathurst	Float of medium volatile bituminous rank, Carboniferous age
54	75° 35'N	100° 30'W	Graham Moore Bay	Bathurst	Float of medium volatile bituminous rank, Carboniferous age
55	75° 15'N	100° 15'W	De La Bechea Bay	Bathurst	Float of medium volatile bituminous rank, Carboniferous age
56	75° 10'N	104° 15'W	Byam Martin Island	Byam Martin	Float of medium volatile bituminous rank, Carboniferous age
57	75° 04'N	107° 40'W	Skene Bay	Melville	Float of medium volatile bituminous rank, Carboniferous age
58	75° 05'N	109° 15'W	Bridport Inlet	Melville	Float of medium volatile bituminous rank, Carboniferous age
59	74° 50'N	110° 30'W	Winter Harbour	Melville	Float of medium volatile bituminous rank, Carboniferous age
60	74° 28'N	112° 30'W	Cape Clarendon	Melville	Float of medium volatile bituminous rank, Carboniferous age
61	74° 35'N	114° 10'W	Cape Dundas	Melville	Float of medium volatile bituminous rank, Carboniferous age
62	75° 10'N	111° 30'W	Chevalier Bay	Melville	Float of medium volatile bituminous rank, Carboniferous age
63	75° 12'N	111° 30'W	Bushman Cove	Melville	Float of medium volatile bituminous rank, Carboniferous age
64	76° 10'N	113° 10'W	Cape Grassy	Melville	Seam of bituminous coal (unstated thickness)
65	75° 40'N	117° 10'W	Stevens Head	Melville	High volatile bituminous rank, Griper Bay Fm
66	76° 01'N	117° 40'W	Eglinton Island	Eglinton	Sub-bituminous, 3' thick seam

Way-point	Latitude	Longitude	Name	Island	Description
67	76° 46'N	117° 50'W	Intrepid Inlet	Prince Patrick	Float of sub-bituminous to medium volatile bituminous, Tertiary
68	76° 34'N	118° 33'W	Salmon Point	Prince Patrick	Sub-bituminous 3' thick coal seam of face of prominent bluff
69	76° 19'N	119° 15'W	Mould Bay	Prince Patrick	Sub-bituminous Isachsen Fm 5' thick coal seam 6 miles NNW of weather station
70	74° 25'N	121° 30'W	Cape Crozier	Banks	Float of bituminous to anthracitic rank, Carboniferous
71	74° 00'N	118° 15'W	Mercy Bay	Banks	Seam of medium volatile bituminous coal, Carboniferous
72	74° 15'N	117° 58'W	3.5 Miles E of Cape Hamilton	Banks	3' seam of sub-bituminous to medium volatile bituminous coal
73	74° 05'N	117° 30'W	Rodd Head	Banks	Seam of medium volatile bituminous coal, Carboniferous
74	72° 45'N	123° 00'W	80 miles NE of Kellett Cape	Banks	Seams of lignite in Tertiary strata
75	79° 10'N	74° 55'W	Bartlett Bay, bache Peninsula	Ellesmere	Several seams, several feet thick, soft flaky, sub-bituminous?
76	75° 57'N	91° 15'W	Viks Fiord	Devon	Various seams of bituminous appearance in a downfaulted trough
77	78° 14'N	101° 17'W	Malloch Dome	Ellef Rignes	Coal seams, few inches thick at most, exposed in northern rim of dome
78	76° 10'N	97° 40'W	Green River	Bathurst	Float of medium volatile bituminous rank, Carboniferous age
79	76° 35'N	104° 35'W	N part of Cameron Island	Cameron	A 3' thick seam in the Heiberg Fm
80	72° 53'N	78° 10'W	S shore of Bylot Island	Bylot	Area of sub-bituminous coal, likely Tertiary age
81	67° 05'N	62° 07'W	NE shore of Durban Island	Baffin	Coals and friable black shales
82	67° 12'N	62° 30'W	N coast of Padloping Island	Baffin	Interbedded coal and black shale in unconsolidated white sands
*Coordinates for all waypoints assumed to be recorded in NAD 27					

Table 7.2 – 2005 APEX Coal Occurrences and Sample Locations

Prospect	Date	NAD	Z16_ Easting	Z16_ Northing	Z17_ Easting	Z17_ Northing	Coal_ License #	Comments	Sample Taken
C-H	26-Aug-05	27	545029	8855824	426036	8857316	NU_Coal # 102	coal seam	no
C-I	26-Aug-05	27	549822	8863726	431617	8664683	NU_Coal # 103	coal seam (on gypsum?)	no
C-J	26-Aug-05	27	548833	8867694	431042	8868732	NU_Coal # 102	coal seam 5-6 m thick, thin fissile chips of coal, thin layer of petrified tree material within, old drums and plastic core tube here (old drill site)	yes - 05dbp602
C-L	26-Aug-05	27	602496	8748184	472142	8744347	NU_Coal # 108	shallow dipping and somewhat flat-laying coal seams, interbedded with sandstone, some petrified tree materials as well	no
C-M	26-Aug-05	27	600277	8738563	468949	8735005	NU_Coal # 013	set of coal seams, think (~1 m think), with thicker units of interbedded sandstone	no
C-N	26-Aug-05	27	601129	8734713	469402	8731089	NU_Coal # 107	fairly thick (~8 m) horizontal coal seam (on north side of Strathcona Fiord), laterally extensive for km's, fissile somewhat soft with amber throughout, looks like three material in places, also ashy here (grey), amber and ash within coal unconsolidated clean sand unit above	yes - 05DBP604
C-O	26-Aug-05	27	605675	8730235	473464	8726169	NU_Coal # 106	thin coal seam (~1 m thick)	no
C-P	26-Aug-05	27	609591	8727167	477045	8722716	NU_Coal # 106	thin coal seam (~1 m thick)	no
C-V	26-Aug-05	27	549977	8876197	433055	8877073	NU_Coal # 104	thin coal seams, horizontal	no
C-W	26-Aug-05	27	601724	8749582	471516	8745797	NU_Coal # 108	coal unit 5-6 m thick, compact, blocky, hard to break, shiny luster, also a number of other seams here	yes - 05DBP603
C-Y	26-Aug-05	27	5433844	8855218	424795	8856835	NU_Coal # 102	small coal seams	no

7.2.2. Coal Mineralization/Coal Seam Development

Coal is found in five formations on the Nunavut Coal property; The Eureka Sound, Okse Bay, Heiberg, Isachsen and Hassel Formations. The following description has been modified from Panchy and Moorhouse (1983).

The Upper Cretaceous to Tertiary Eureka Sound formation was deposited prior to and during the early phases of the Eurekan Orogeny. It is the main coal-bearing formation in the Arctic Islands. It is comprised of roughly 3,300 m of clastic and minor marine sediments in the region of the Fosheim Peninsula and thins to approximately 2,500 m in the vicinity of the Strathcona Fiord. Lithologically the formation consists of mainly sandstone, claystone, minor siltstone and thick lignite seams. The majority of the coal seams explored on the property are found as part of an Alluvial Plain Facies. The lignitic coal seams here range from a few cm to over 8 m in thickness and are commonly blocky. They weather platy to papery and are quite woody as evident by the petrified tree branches and silicified stumps still in an upright growth position.

The Okse Bay formation is the oldest coal-bearing formation on the property, aging from the Devonian, and has an estimated thickness of 3,000 m. It was deposited under deltaic conditions and consists of a thick series of commonly cross-bedded nonmarine sandstones, shales, carbonaceous debris and thin coal stringers which do not exceed 30 cm.

The Heiberg formation dates from the Early Triassic to late Jurassic and is comprised of reddish-weathering sandstones and siltstones along with carbonaceous shales and coal seams. The formation is over 750 m thick on the Fosheim Peninsula and is as thick as 1,400 m on Axel Heiberg Island. Coal seams within the Heiberg Formation do not exceed one metre thick.

The Isachsen formation formed in the Early Cretaceous and is used as a marker horizon for the area due to its lithological uniformity over the entire region. It is composed of reddish- to-brownish sandstones, conglomerate, minor siltstone and shales, with thin coal beds in the basal layers. No coal seams over 50 cm were observed within the Isachsen formation. Marine fossils occur in the basal beds, but the overlying beds are clearly non-marine suggesting a deltaic origin.

The Hassel formation is Early to Late Cretaceous in age. It consists of pale coloured, poorly consolidated medium to fine-grained quartzose sandstones with minor siltstones, shales and lignite seams. The Hassel formation is thought to have formed in a shoreline environment. The formation is roughly 50 to 75 m thick along the flanks of the Fosheim syncline and anticline. Coal seams up to 40 cm thick occur within the Hassel formation.

Strathcona Fiord

Calorific values and huminite reflectances place seams at Strathcona Fiord into lignite to subbituminous rank (Kalkreuth, 1993). Petrographic analyses showed that the coals are characterized by the predominance of wood-derived macerals of the humotelinite group. Detailed analyses of seam sub-sections show that there is little in-seam variation. Based on petrographic characteristics and pollen spore assemblages in the coals and sedimentological features of associated strata a peat accumulation in forested swamps which formed on a broad coastal plain is indicated. The pollen assemblages suggest a temperate climate with modern rainfall during the lifetime of the mires.

Bache Peninsula

Calorific values and huminite reflectance levels at Bache Peninsula are that of lignite (Kalkreuth, 1993). Petrographic analyses showed the predominance of macerals of the humodetrinite group, frequently associated with mineral matter in the form quartz and clay minerals. Inertinite is common mainly in the form of inertodetrinite and fusinite. Petrographic characteristics of the coal-bearing succession at Bache Peninsula such as the dominance of degraded organic components, the relative low diversity in the pollen and spore assemblage and the occurrence of numerous pteridophyte spores suggest formation of the peat in a slightly forested swamp/reed marsh, in which abundant ferns and sphagnum mats were common. The climate during peat accumulation was most likely temperate with moderate precipitation.

Stenkul Fiord

Petrographic analyses show that wood-derived macerals of the humotelinite group characterize the coals (Kalkreuth, 1996). Geochemical analyses show that diterpanes are predominant and suggest that the wood macerals are primarily gymnospermous. Palynological assemblages are usually dominated by Taxodiaceae pollen. Geological interpretation, petrographic characteristics and palynological determination suggest that peat accumulated in forested swamps on an alluvial coastal plain. The pollen assemblages suggest the climate during growth of the mires was temperate with moderate rainfall. Coals are determined to have developed at the same time as the Strathcona Fiord coals and in a similar environment.

8.0 DEPOSIT TYPES

8.1 Coal Deposit Types According to GSC 88-21

The definition of deposit type for coal properties is different from that applied to other types of mineral deposits. In Canada coal deposits are classified according to GSC 88-21, a guidance reference for coal deposits as specified under the CIM Definition Standards, whereby coals are classified according to the degree of geological complexity ("geology type") and the probable extraction type for a deposit ("deposit type").

The amount of geological complexity, or geology type, is usually imposed by the structural complexity of the area, and the classification of a coal deposit by geology type determines the approach to be used for the resource/reserve estimation procedures and the limits to be applied to key estimation criteria. The identification of a particular geology type for a coal property defines the confidence that can be placed in the extrapolation of data values away from a particular point of reference such as a drill hole.

The classification scheme of GSC 88-21 is similar to many other international coal classification systems but it has one significant difference. This system is designed to accommodate differences in the degree of tectonic deformation of different coal deposits in Canada. The four classes of geological complexity, from lowest to highest, are:

- Low - relatively unaffected by tectonic deformation, coal seams are flat lying to very gently dipping and are generally unfaulted;
- Moderate - deposits have been affected to some extent by tectonic deformation, characterized by homoclines or broad open folds with bedding inclinations of generally less than 30 degrees, faults may be present but are relatively uncommon and have displacements of less than 10 metres;
- Complex - deposits have been subjected to relatively high levels of tectonic deformation, tight folds may be present and offsets by faults are common, ;
- Severe - deposits have been subjected to extreme levels of tectonic deformation.

The Nunavut Coal Project currently encompasses nine license blocks, and geology type across the entire project area is highly variable. Further exploration such as drilling will be necessary to confirm the geology type of the coals, however, preliminary indications suggest that the geology type would be “low” to “moderate” with local areas following into the “complex” category.

Deposit type as defined in GSC 88-21 refers to the extraction method most suited to the coal deposit. There are four categories: surface, underground, non-conventional, and sterilized. Surface mining is currently being contemplated for the Nunavut Coal Project.

8.2 Coal Depositional Setting

Commercially significant coal resources occur only in Europe, Asia, Australia and North America. These deposits occur in sedimentary rock basins, typically sandwiched as layers called beds or seams between layers of sandstone and shale. Many coal deposits in Europe and North

America date from the Devonian to the Triassic periods when these areas were covered with forests dominated by large ferns and scale trees.

Most coals that are mined for energy production are humic coals which are derived from peat. These coals are examples of organic sedimentary rocks and are composed of substances or aggregates called macerals (analogous to the minerals that form rocks). The formation of humic coals begins when plant debris accumulates in a swamp where the stagnate waters prevents oxidation and total decomposition of the organic matter. These swamps are called peat swamps with an estimated 10% of the plant matter being converted to peat through a process known as peatification.

It appears that many coal deposits formed when peat deposits in near-coastal basins subsided allowing the sea to flood the area covering the peat with sand and mud. Much of Europe and North America was located closer to the equator during the Devonian and Carboniferous and these waters were warm allowing lime muds to accumulate on top of the peat deposits. Over time these areas experienced cyclical periods of subsidence and re-emergence. As a result many coal deposits are composed of layers of coal separated layers of sandstone, shale or limestone. The coal layers range in thickness from a few centimetres to 20 m or more.

9.0 EXPLORATION

Recent exploration activity on the Nunavut Coal Project has been limited to AGL's current personal site inspection and a similar site assessment conducted by APEX in 2005. West Hawk commissioned a NI 43-101 compliant technical report in 2007 on their Fosheim Peninsula and May Point coal exploration licenses, however no site assessment or follow-up field work resulted from West Hawk's NI 43-101 to the best of the author's knowledge.

9.1 AGL 2011 Site Assessment

AGL completed a site assessment of the Nunavut Coal Project from August 9th through August 27th, 2011. Due to time constraints and adverse weather conditions, AGL was only able to assess the following areas: Fosheim Peninsula, Stenkul Fiord, Sor Fiord, Vesle Fiord, and Mokka Fiord. AGL considers that Fosheim Peninsula is, at this stage, the primary target on the Canada Coal licenses and are therefore satisfied that the site assessment meets the criteria as described by NI 43-101.

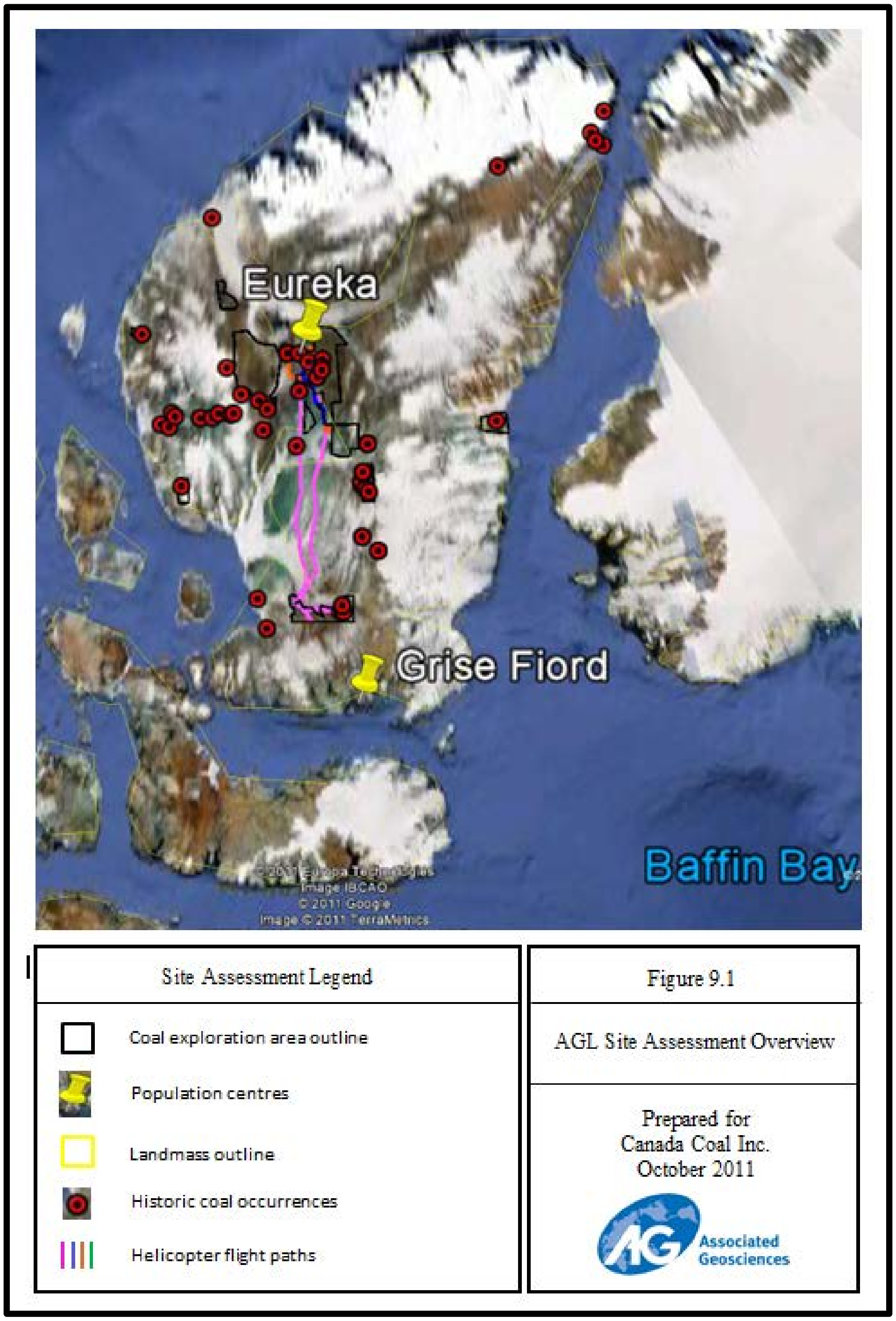
Table 9.1 describes the sampling highlights of the site assessment. AGL did not endeavor to undertake a detailed sampling program; the intention of sampling was merely to verify the rank of historic coal occurrences for a due diligence standpoint.

In some locations, samples were not taken as the coal was deemed inappropriate for sampling (weathered or burnt). AGL cautions that data accrued from sampling may not be accurate due to potential surface slumping, solifluction and oxidation of the seams- however, AGL attempted to sample fresh surfaces as much as possible.

Table 9.1 - 2011 AGL Site Assessment Coal Sample Descriptions
Survey System NAD 83 Zone 16

License Area	Northing	Easting	Sample Name	Description	Sample Taken
Fosheim/ Vesle	79.621840°	85.036053°	AGL-VE-002	multiple thin coal seams observed, extension of AGL-FN 004 coal zone	no
Vesle Fiord	79.423093°	84.465684°	AGL-VE-003	multiple coal seams (at least 7), several seams ~1m thick, interburden ranging from few ms to a few dm, striking NE, dipping ~45°W; sample taken along shallow creek-cut coal exposure, coal somewhat blocky but poorly exposed within a narrow slump block, possible sample contamination from roof block	yes
Fosheim Peninsula	79.861411°	84.529520°	AGL-FN 004	thick coal seam (4.2 m) exposed along ~6m deep creek-cut, strike NNE, gently dipping to NW, dull banded with ashy zones, gypsum on exposed surface, 4 cm grey uncosolidated clay (seat earth) at base of coal; sample taken from upper section (1.7 m)	yes
Fosheim Peninsula	79.861411°	84.529520°	AGL-FN 004 MID	same seam as AGL-FN 004; sample taken from middle 1.6 m section	yes
Fosheim Peninsula	79.861411°	84.529520°	AGL-FN 004 BTM	same seam as AGL-FN 004; sample taken from bottom 1 m section	yes
Fosheim Peninsula	79.867643°	84.531446°	AGL-FN 005	close proximity to AGL-FN 004, different seam, APEX's sample location C-J, 5-6 m (although thickness estimate includes thinly interbedded material), relatively flat-lying coal seam, clinker noted to the northeast across the creek-cut; random sample taken from a recent slumped area near top of the seam	yes
Stenkul Fiord	77.353663°	83.591521°	AGL-STK-006	multiple coal seams observed at outcropping on elevated platform as weathered soil polygons and along margins of graben (thicknesses difficult to determine due to weathering); coal burnt and not appropriate for sampling; abundant relict tree stumps preserved within vicinity of coal seams; abandoned runway and old camp remains found near point of the fiord	no

Figure 9.1 details some of the historic coal occurrences within the Nunavut Coal Project vicinity (red targets) as well as the paths flown by AGL during the site assessment.



9.1.1. Fosheim Peninsula

The site assessment primarily focused on Fosheim Peninsula for the following reasons: 1) Fosheim Peninsula is considered the primary exploration target based on historic coal rank, level of previous exploration, and proximity to the Eureka weather station, and 2) weather conditions were adverse and many of the outlying exploration areas could not be accessed.

AGL was able to confirm the existence of a laterally continuous coal zone within Fosheim Peninsula. The coal zone strikes NNE and dips gently to the NW in most areas. The coal zone is comprised of many seams including at least two 4-6 m thick seams and several metre-scale seams observed by AGL. Previous authors described the zone as extending 15 kilometres along strike, and AGL was able to further extend the zone to 25 kilometres along strike. AGL flew along the strike of the coal zone and notes that a few major structural breaks exist toward the southwest end of the coal zone but that for the most part the zone is continuous.

AGL sampled from three locations at Fosheim Peninsula to verify historical reports and get a preliminary indication of coal rank in the region. Samples are described in Table 9.1 and their locations are depicted in Figure 9.2. Sample AGL-FN 004 was particularly well exposed as the creek-cut bank had recently slumped. The coal seam was estimated to be 4.3 metres thick in total and appeared somewhat blocky and dull banded. AGL divided the seam into upper, middle, and lower zones for sampling purposes, in order to ascertain if there was any significant coal quality variation within the seam.

The author considers that the Fosheim Peninsula coal zone represents a viable drilling target for the second stage of a planned exploration program, and that the generally flat-lying character of the area could prove amenable to exploration activities such as drilling. More detailed mapping and additional surface sampling is also recommended along the strike length of the zone in advance of the drilling activities.

An old runway was observed alongside the Fosheim Peninsula coal zone in the vicinity of sample location AGL-FN 004.

9.1.2. Vesle Fiord

Vesle Fiord was examined by aerial overview and also via ground inspection at two sampling locales. From the aerial viewpoint, AGL observed that although numerous coal seams are present their degree of structural complexity is highly variable and that the topography itself is quite rugged.

At the ground level, coal measures were observed as abundant thin seams (0.5 to 2 metres in thickness) with varying degrees of interburden (metres to decimetres). Strikes and dips varied widely, often within short distances (hundreds of metres). In some instances, seams were nearly vertically dipping. One sample was taken from a 1 metre seam in the Vessle Fiord area so that AGL could compare coal quality at Vesle Fiord with coal quality at Fosheim Peninsula; however, sample exposure in this location as fresh as the Fosheim Peninsula samples. The Vesle Fiord sample is described in Table 9.1 and its location demarked in Figure 9.2.

Based on the site assessment, coal measures at Vesle Fiord are not as prospective as the relatively flat-lying, gently dipping coal measures at Fosheim Peninsula.

9.1.3. Sor Fiord/Stenkul Fiord

AGL committed one day of the site inspection to assessing the Sor Fiord/Stenkul Fiord area. The Sor Fiord/Stenkul area is located a considerable distance from the Eureka base station, and therefore AGL had previously cached fuel near the Sor Fiord area. There is a known fuel cache location situated at 77° 26' N and 85° 48' W alongside with a well-maintained runway suitable for twin otter aircraft equipped with tundra tires.

Numerous thin coal seams were observed to occur within the Sor Fiord/Stenkul Fiord coal exploration licenses. Coal outcropped on several higher topographic blocks and weathered into soil polygons and could was also observed along block margins. Coal thicknesses were difficult to determine due to the degree of weathering and the presence of a dark carbonaceous shale unit in the sedimentary package. The seams were burnt across considerable distances and were therefore not appropriate for sampling. Abundant relict tree stumps were preserved within the vicinity of the coal seams.

AGL noted an abandoned runway and old camp remains in proximity to southern Stenkul Fiord and sample observation point AGL-STK-006.

The topography and structural setting of the area is considerably more complex than that of Fosheim Peninsula. AGL has not been able to verify the coal quality of the area, and is of the opinion that considerable mapping and sampling would be required prior to the identification of drill targets at Sor Fiord/Stenkul Fiord.

9.1.4. May Point

AGL was unable to land at May Point due to time constraints and adverse weather conditions; however, AGL did fly over the area while en route to Sor Fiord/Stenkul Fiord. The authors aerially observed several dark, thin, coal-like units outcropping at seemingly shallow dips within the May Point area, but cannot directly attest to the nature of character of the dark units.

9.1.5. Mokka Fiord

AGL attempted to locate several historic coal occurrences in the vicinity of Mokka Fiord during the site assessment, but did not encounter any seams of significance. The author notes that the Mokka Fiord site assessment was brief (half a day) due to time constraints and adverse weather conditions, and that some of the historically reported coal occurrence locations were quite vague (coordinate systems were often inferred and sample locations often 'eyeballed' using historic maps).

While coal may well occur within the Mokka Fiord license area, further reconnaissance work will be required to ascertain its extent, structural setting, and character.

The coal licenses on eastern Axel Heiberg Island are situated in the vicinity of the world-renown Geodetic Hills Fossil Forrest. As such, AGL does not recommend further coal exploration within the Mokka Fiord region in order to preserve the integrity of the fossil forest.

9.1.6. Remaining License Areas

AGL was unable to directly assess the following license areas due to time constraints and adverse weather conditions: Li Fiord, Good Friday Bay, Strathcona Fiord, and Bache Peninsula. The aforementioned license areas remain of interest to the Nunavut Coal Project, however they are not considered critical targets at this time.

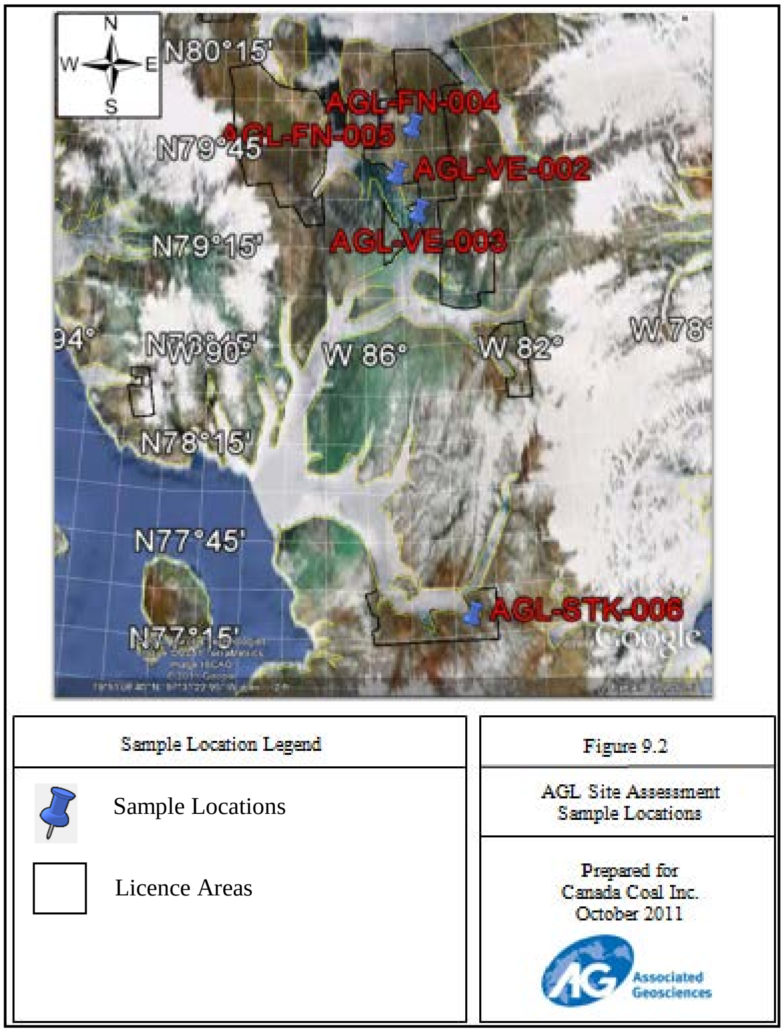


Figure 9.2
AGL Site Assessment Sample Locations

9.2 2005 APEX Site Assessment

In 2005, Hunter commissioned APEX to compile a complete fieldwork on 15 coal exploration licenses at Fosheim Peninsula and Strathcona Fiord. APEX subsequently compiled a NI 43-101 report based on their 2005 findings for Weststar in 2009.

APEX completed prospecting and coal seam sampling during 3 days of field work in late August 2005. The field work was helicopter supported and based out of Grise Fiord and Eureka Weather Station.

APEX completed visits to a total of 22 sites within the licenses that resulted in the discovery of 16 coal occurrences and the collection of 4 coal seam samples that were submitted for proximate analysis. Of the 16 coal occurrences discovered at total of 5 occurrences were located within Weststar's Fosheim Peninsula area and a total of 6 occurrences were located within the Strathcona Fjord area. Of the 4 coal seam samples collected by APEX; one was collected from within the Fosheim Peninsula licenses and 2 were collected from within the Strathcona Fiord licenses. Details of the APEX samples are provided in Table 7.2 in the Geology Section.

Conclusions of the APEX site assessment were as follows:

> *Weststar's Arctic coal prospects are considered to be early exploration stage projects. The historic exploration conducted by Petro-Canada, Utah Mines, Gulf, and Hunter including seam mapping and sampling were preliminary and reconnaissance in nature. These programs outlined coal bearing strata of the Eureka Sound Group and provided a basis to design future exploration programs. The work performed by Petro- Canada, Gulf, and Utah Mines established that the quality of the coal ranges from lignite to high-volatile bituminous C with low sulphur and low to moderate ash content. The structural setting is that of broad, open synclinal folds and normal faulting on both the Fosheim Peninsula and Strathcona Fiord areas. In order to advance the Property further additional exploration and data is required to gain increased confidence in the geological interpretations and seam thicknesses as identified in this Report.*

9.3 Drilling

As far as AGL can determine, there has been no documented drilling on the Nunavut Coal Project. Hunter, a former holder of coal licenses within the Nunavut Coal Project area, noted old drums and plastic core tubes at their sample site 05DBP602 although no historic drilling results have been reported. AGL notes that the plastic core tubes might have been used for ice coring rather than exploration drilling.

9.4 Digital Elevation Model

Canada Coal acquired a digital elevation model (DEM) for the Fosheim Peninsula and Sor Fiord/Stenkul Fiord areas in September 2011. Digital elevation models were acquired from PhotoSat of Vancouver, Canada. Elevation grids (2.5 m prisms) and contours (5/25/50/100m) were produced from high-resolution stereo satellite photos. Canada Coal purchased the satellite imagery and digital elevation models for approximately $129,000.

AGL anticipates that the digital elevation mapping will assist with project planning for the budgeted exploration program. AGL notes that not all of the outlying license areas are covered by the existing digital elevation mapping, and that further mapping may be purchased as required.

10.0 SAMPLE PREPARATION, ANALYSES, AND SECURITY

AGL is reliant upon other experts for sample preparation, analyses, and security including Loring Laboratories and JP PetroGraphics of Calgary Alberta, and are also reliant on historic reports. Historic reports have been verified in part by recent independent site assessments conducted by ourselves as well as APEX in 2009 on behalf of Weststar.

10.1 Historic Coal Sampling

Historic coal sampling has been conducted within the Nunavut Coal Project at a reconnaissance scale. A summary of the known historical sample preparation, analyses, and security has been provided in the 2009 APEX report as follows:

> *All historic reconnaissance sampling by Petro-Canada, Gulf, Utah Mines was restricted by permafrost. Descriptions of the effects of permafrost on the sampling are as follows: permafrost less than 0.5 m below surface led to difficulties in sampling fresh, unweathered coal seams in Petro-Canada's sampling; this led to shallow trench penetration and obscured coal zone lithological changes in Gulf's sampling; and Utah Mines sampling was limited to the rind of loose material and trenching was difficult beyond 7 to 15 cm (Panchy and Moorehouse, 1983, Swansbergson, 1982, and Cowley, 1982). Oxidation of coal near surface can affect the coal quality by increasing the moisture content, increasing the volatile content, and decreasing the calorific values.*
>
> *Gulf and Utah Mines also noted that ice lensing could falsely enhance true seam thicknesses while solufluxion created major slump blocks, repeated sections, and distort true bed thickness.*
>
> *During their 1981 exploration Gulf shipped all samples to Cyclone in Edmonton, Alberta for raw proximate analyses, calorific values and reported the values on an air dried basis. Reflectance analysis was conducted by Cascade Coal Petrography of Calgary. Reflectance values were reported for one of the two samples taken by Gulf on Weststar's Fosheim Peninsula area.*
>
> *Utah Mines did not provide a description of sample preparation in their report and their samples were submitted to Utah International Inc. Minerals Laboratory in Sunnyvale, California. Utah Mines reported raw proximate analysis and calorific values on an air dried basis. Utah International Inc. Minerals Laboratory also conducted the reflectance analysis.*
>
> *Petro Canada did not provide details of sample preparation during their 1982 exploration other than that splits greater than 25 cm were removed and sampled separately from coal seam samples. Petro-Canada shipped all samples to Loring Laboratories of Calgary, Alberta ("Loring") for raw proximate analyses, calorific values, and specific gravity analyses and reported the values on an as received, air dried, and dry basis. After Loring completed their analysis, Petro Canada sent*

twenty one of the samples to Cascade coal Petrography of Calgary for reflectance and maceral analysis...

Petro-Canada noted that the petrographer was concerned for the validity of the results of the analyses. Because the samples were not cleaned, the high amount of mineral matter made some of the minerals difficult to spot and identify. Petro-Canada further noted that rank determined by vitrinite reflectance becomes questionable below 0.3 Ro.

10.2 Recent Sampling

Sampling during 2005 was conducted by Dean Besserer (P.Geol.) of APEX Geoscience Ltd, Edmonton, Alberta. APEX flew their double bagged and sealed samples by helicopter to Grise Fiord where they were placed in a wooden crate, loaded on a barge and shipped to Montreal, Quebec, and then shipped by truck to Loring in Calgary, Alberta. Loring reported nothing unusual with respect to the shipments, once received.

Sampling during 2011 was conducted by the authors (of AGL, Calgary, Alberta). AGL flew double bagged samples sealed in duct-taped coolers by fixed wing to Arctic Bay, and then via commercial air to Calgary, Alberta. AGL reported nothing unusual with the samples once they arrived at the Calgary office. Petrographic analysis for vitrinite reflectance was conducted by JP PetroGraphics of Calgary Alberta.

Loring conducted raw proximate analysis on AGL and APEX's samples and reported the values on an as received, air dried, and dry basis. Loring is an International Organization for Standardization (ISO/IEC) 9001 accredited laboratory. The author has no reason to believe analyses completed by Loring were not conducted in accordance with industry standards and best practices.

Raw coals submitted for proximate analysis to Loring are first subjected to a wet crush. The samples are then dried at 38°C for 72 hours and weighed. Sub-samples are then subjected to moisture content, ash content, volatile content, total sulphur content and calorific value analysis. Moisture content analysis involves weighing 1 gram (g) of the sample in a crucible. The crucible is then dried in an oven at 110°C for 1 hour. To determine ash content a 1 g sample is weighed into a crucible and cooked in a furnace at 750°C for 4 hours. Volatile content is determined by weighing 1 g of sample into a crucible and cooking in a furnace at 950°C for 7 minutes. Samples for moisture, ash and volatile content are allowed to cool after heating and are then reweighed. Total sulphur content is determined by placing a sample of known weight into a Leco Sulphur analyzer for 140 seconds at which point the total sulphur value is displayed. Calorific value is determined by placing 1 g of sample into an adiabatic bomb calorimeter, the temperature of the water vessel is recorded (T1). The sample is then combusted in a pure oxygen environment and the resultant change in temperature of the water vessel is recorded (T2). The total amount of energy released during the combustion of a sample can be determined by multiplying the change in temperature of the calorimeter system by the heat capacity of the calorimeter system and dividing by the number of grams of sample used.

10.3 Sample Analyses

10.3.1. Analytical Methods

Analytical coal testing methods can be subdivided into chemical, rheological, and petrographic tests. Chemical test methods include: moisture, volatile matter, ash yield, sulfur, forms of sulfur, ultimate analysis, chlorine, ash composition, ash fusion temperatures, trace elements, and calorific value. Rheological and physical test methods include: Gieseler fluidity, hardgrove grindability index, dilation tests, and free-swelling indices. Petrographic test methods include: maceral analysis and vitrinite reflectance. Some additional physical coal testing methods include: X-ray radiography, macroscopic analyses, apparent relative density, rock mechanics, and gas-emission testing.

10.3.2. Analytical Results

Sample results from the recent AGL and APEX site inspections confirm historic reports that the coals in the Nunavut Coal Project vicinity range in rank from high volatile bituminous 'C' to lignite. Coals are generally low in ash (5-10%) and sulphur (<0.5%), although occasionally exhibit moderate ash values. Coals are considered to be suitable for use as a high quality thermal coal.

Based on recent and historic sample analyses, Fosheim Peninsula remains the most prospective area for identifying a higher quality coal resource as coal rank at Fosheim Peninsula has been shown to increase with depth through the measured section.

AGL petrographic sample results are detailed in Table 10.1. Loring laboratory analyses are detailed in Table 10.2.

Table 10.1 - AGL Petrographic Analyses

Jp PetroGraphics

Contact: Judith Potter
Vitrinite Reflectance : AGL
Contact: David Marchioni/Susan O'Donnell, AGL
Vitrinite and/or bitumen reflectance, %Ro random measured
Date: Sept 26. 2011

Vitrinite/Bitumen reflectance	% Ro m		% Ro m		% Ro m		% Ro m	
Sample # & Depth (m)	**Ro-1; AGL-VE-003**		**Ro-2; AGL-FN-004 BTM**		**Ro-3; AGL-FN-004 MID**		**Ro-4; AGL-FN-005 (C-J)**	
Organic species	**Vitrinite**		**Vitrinite**		**Vitrinite**		**Vitrinite**	
organic type	**Telovitrinite**	**Detro-vt**	**Telovitrinite**	**Detro-vt**	**Telovitrinite**	**Detro-vt**	**Telovitrinite**	**Detro-vt**
1	0.56	0.45	0.61	0.51	0.56	0.49	0.47	0.38
2	0.54	0.40	0.59	0.51	0.55	0.50	0.46	0.39
3	0.60	0.46	0.54	0.47	0.55	0.51	0.46	0.43
4	0.60	0.47	0.59		0.58	0.52	0.51	
5	0.57		0.55		0.55	0.52	0.48	
6	0.58		0.60		0.56	0.52	0.48	
7	0.56		0.59		0.60		0.44	
8	0.48		0.58		0.57		0.44	
9	0.48		0.57		0.56		0.51	
10	0.57		0.58		0.57		0.44	
11	0.52		0.55		0.56		0.45	
12	0.48		0.56		0.63		0.48	
13			0.54		0.61		0.49	
14			0.54		0.57		0.49	
15			0.58		0.58		0.46	
16			0.58		0.58		0.48	
17			0.60		0.59		0.50	
18			0.59		0.57		0.49	
19			0.60		0.57		0.46	
20			0.57		0.58		0.45	
21			0.58		0.60		0.46	
22			0.60		0.57		0.46	
23			0.62		0.54		**0.45**	
24			0.60		0.56		0.46	
25			0.60		0.60		0.47	
% R_o random **vitrinite**	0.55	0.44	0.58	0.50	0.57	0.51	0.47	0.40
std dev	0.05	0.03	0.02	0.02	0.02	0.01	0.02	0.03
n	5	3	3	4	11	1	3	1
Coal type	Humic" vitrinite, liptinite & inertinite macerals present abt suberinite, cutinite and corpogelinite		Humic" vitrinite, liptinite & inertinite maceralspresent exsudatinite in mesopores and\ microfractures		Liptinite-rich humic coal suberinite, cutinite abundant		Liptinite-rich humic coal alginite, liptodetrinite, cutinite exsudaintie	
Fluorescence of liptinite macerals (qualitative)	light yellow, mod. Intensity				Med-gold yellow sporinite		alginite : lemon yellow, high. Intensity perhydrous detrovitrinite	
Coal Rank*	**High volatile bituminous C**		**High volatile bituminous C**		**High volatile bituminous C**		**Subbituminous A- High volatile bituminous C**	
Ro Data quality	Limited telovitrinite on which to measure Vro Data set limited to 12 pts		Low standard deviation from mean Ro random		Low standard deviation from mean Ro random		Low standard deviation from mean Ro random	

** Weighted average, based on measured vitrinite reflectance or vitrinite reflectance equivalent calculated from measured bitumen reflectance*

L O R I N G L A B O R A T O R I E S (ALBERTA) L T D.
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ISO 9001:2008 Certified

TO : ASSOCIATED GEOSCIENCES
ATTN : SUSAN O'DONNELL
PROJECT : COAL

LLL FILE # : 5 4 6 2 9
DATE : 22-Sep-11
REPORT BY : David Ko

SAMPLE TYPE : COAL SAMPLE

Sample ID	Lab ID	**Wt.** Wt (ts,ar) g	**Wt.** Wt (ts,ad) g	**ADL** Air-Dry Loss %	**H2O** H2O (ar) %	**H2O** H2O (ad) %	**ASH** ASH (ar) %	**ASH** ASH (ad) %	**ASH** ASH (d) %	**VOL MAT** VOL (ar) %	**VOL MAT** VOL (ad) %	**VOL MAT** VOL (d) %	**FIXED C** FC (ar) %	**FIXED C** FC (ad) %	**FIXED C** FC (d) %	**S** S (ar) %	**S** S (ad) %	**S** S (d) %	**CV** KJ/Kg (ar) KJ/Kg	**CV** KJ/Kg (ad) KJ/Kg	**CV** KJ/Kg (d) KJ/Kg	**SG** SG	**FSI** FSI
AGL-VE-003	A11-0691-1	10451	9654	7.63	19.60	12.96	3.77	4.08	4.69	38.25	41.41	47.58	38.38	41.55	47.74	0.86	0.93	1.07	21043	22780	26172	--	0.0
AGL-FN-005(CJ)	A11-0691-2	10429	9651	7.46	14.96	8.11	22.37	24.17	26.30	31.93	34.50	37.54	30.74	33.22	36.15	0.42	0.45	0.49	18472	19961	21723	--	0.0
AGL-FN-004 (TOP)	A11-0691-3	22693	21211	6.53	19.48	13.85	7.56	8.09	9.39	28.20	30.17	35.02	44.76	47.89	55.59	0.32	0.34	0.39	21299	22787	26450	1.38	0.0
AGL-FN-004 (MID)	A11-0691-4	18071	16948	6.21	18.13	12.70	3.84	4.09	4.68	31.72	33.82	38.74	46.32	49.39	56.58	0.26	0.28	0.32	23282	24825	28436	1.31	0.0
AGL-FN-004 (BTM)	A11-0691-5	12410	11917	3.97	18.39	15.01	3.94	4.10	4.82	30.87	32.15	37.83	46.80	48.74	57.35	0.21	0.22	0.26	22578	23512	27664	1.29	0.0
Composite* Top-BTM					--	13.42	--	5.25	6.06	--	32.31	37.32	--	49.02	56.62	--	0.29	0.33	--	24075	27807		0.0

*Composite was prepared using SG multiplied by footage to obtain a ratio.

LORING LABORATORIES (ALBERTA) LTD.
629 Beaverdam Road N.E. Calgary, Alberta T2K 4W7
Tel : (403) 274-2777 Fax : (403) 275-0541

ISO 9001:2008 Certified

TO : ASSOCIATED GEOSCIENCES
ATTN : SUSAN O'DONNELL
PROJECT : COAL

LLL FILE # : 5 4 6 2 9
DATE : 22-Sep-11
REPORT BY : DAVID KO

SAMPLE TYPE : COAL ASH SAMPLE

-- In Coal Ash --

Sample ID	**Ba** ppm	**Be** ppm	**Cd** ppm	**Co** ppm	**Cr** ppm	**Cu** ppm	**Li** ppm	**Mn** ppm	**Mo** ppm	**Ni** ppm	**Pb** ppm	**Sb** ppm	**Sr** ppm	**U** ppm	**V** ppm	**Zn** ppm
AGL-VE-003	146	12	1	66	92	601	342	131	76	146	54	12	919	<1	757	82
AGL-FN-005(CJ)	1315	5	<1	25	141	68	174	94	8	47	43	5	2634	<1	235	130
AGL-FN-004 (TOP)	1252	4	<1	22	135	70	270	180	9	48	55	6	3175	<1	194	45
AGL-FN-004 (MID)	730	4	<1	42	37	132	384	246	17	43	45	7	3189	<1	127	49
AGL-FN-004 (BTM)	1330	4	<1	25	139	65	171	94	8	48	52	4	2692	<1	236	139
Composite Top-BTM	1172	4	<1	34	119	97	348	241	12	39	45	9	3573	<1	148	69

-- In Coal --

SAMPLE ID	**As** ppm	**B** ppm	**Se** ppm	**Hg** ppb	**Cl** %	**F** %
AGL-VE-003	1.18	164.70	2.50	38	0.100	0.007
AGL-FN-005(CJ)	0.84	105.00	1.25	36	0.008	0.012
AGL-FN-004 (TOP)	0.13	162.10	0.99	23	0.011	0.005
AGL-FN-004 (MID)	0.15	171.00	0.59	36	0.064	0.006
AGL-FN-004 (BTM)	0.13	206.80	0.42	16	0.052	0.006
Composite Top-BTM	0.16	202.20	0.94	33	0.060	0.005

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Tel : (403) 274-2777 Fax : (403) 275-0541

ISO 9001:2008 Certified

TO : ASSOCIATED GEOSCIENCES
ATTN : SUSAN O'DONNELL
PROJECT : COAL

LLL FILE # : 5 4 6 2 9
DATE : 22-Sep-11
REPORT BY : David Ko

SAMPLE TYPE : COAL ASH SAMPLE

-------------------- % In Ash --------------------

SAMPLE ID	SiO2	Al2O3	TiO2	Fe2O3	CaO	MgO	Na2O	K2O	P2O5	SO3	Undet.
AGL-VE-003	22.21	13.12	0.72	11.17	13.26	5.06	7.37	0.94	0.11	26.01	0.04
AGL-FN-005(CJ)	47.72	33.64	1.25	3.01	3.83	1.74	1.56	1.62	0.81	2.73	2.09
AGL-FN-004 (TOP)	33.95	27.20	0.96	7.06	7.58	3.36	9.06	1.74	1.41	6.55	1.13
AGL-FN-004 (MID)	23.07	17.15	0.32	11.82	14.01	4.70	12.34	1.43	1.70	11.94	1.52
AGL-FN-004 (BTM)	24.16	21.57	1.02	11.15	11.74	4.25	12.45	1.26	1.00	9.68	1.71
Composite Top-BTM	25.34	19.14	0.48	9.31	13.92	4.48	12.78	1.03	1.51	9.88	2.15

11.0 DATA VERIFICATION

AGL is extensively reliant on historic reports verified in part by AGL's independent site assessment and additional data verification conducted by APEX in 2009 on behalf of Weststar.

AGL is unable to ascertain whether the all historic authors could be termed 'qualified persons' as defined by NI 43-101. Nevertheless, all available evidence suggests that the historic reports were prepared by competent professionals and can therefore be relied upon for information relating to prospective coal targets.

11.1 AGL Data Verification

AGL has relied upon Loring Laboratories and JP PetroGraphics' standard analytical protocols for sample analysis. The proposed work program will adhere to a more extensive data verification component.

11.2 APEX Data Verification

The following subsection is an excerpt from the 2009 APEX report.

> *Loring preformed standard quality assurance/quality control (QA/QC) procedures with respect to the rock samples that were sent for analysis. Specifically, Loring conducts daily check analysis using in-house standard, blank and duplicate samples. The in-house standards are then validated against certified reference standards. Scales used to determine moisture, volatile and ash content are calibrated yearly and checked daily against certified weights to verify they are within tolerance limits. The data for all of these standard analyses were found to be within acceptable limits.*
>
> *Specific to this report Mr. D. Besserer collected all the APEX samples personally and without the help of others. As well, to the best of... (Mr. D. Besserer's) ability the samples were kept under the control of Mr. D. Besserer. Therefore... (Mr. D. Besserer) believes this data to be of acceptable quality and that the data was collected using current industry practices.*
>
> *(Mr. D. Besserer) has relied extensively on information pertaining to previous exploratory programs as contained in a number of proprietary and publicly available technical reports which have been listed in the references section.*
>
> *(Mr. D. Besserer) has performed no direct verification of previous sampling programs or analysis. There is, however, no reason to believe that prior results are not representative and/or unreliable. The previous work appears to have been conducted to industry standards at the time of the investigations and analysis. The writer is of the opinion that all of the technical reports reviewed for purposes of this current report were prepared by competent, qualified persons.*

AGL is satisfied that the 2009 APEX data verification program was conducted in accordance with NI 43-101 standards.

12.0 MINERAL PROCESSING AND METALLURGICAL TESTING

As far as AGL can determine, no mineral processing or metallurgical testing has been completed on the Nunavut Coal Project.

13.0 COAL RESOURCE ESTIMATES

No coal resources are currently ascribed to the Nunavut Coal Project due to a lack of direct empirical data (such as drill hole, adit, trenching, or similar) aside from reported coal occurrences that have not been verified by AGL. Historically reported coal resources (not compliant with NI 43-101 standards) are reported under Section 6.2 (Historical Coal Resources).

Coal resources are typically classified into the measured, indicated, and inferred categories in accordance with GSC 88-21 as well as the Canadian Institute of Mining Metallurgy and Petroleum ("CIM") guidelines which are incorporated by reference in NI 43-101. In order to be classified as a resource, coal resources must exist in such form and quantity that there are reasonable prospects for eventual economic extraction.

Coal resources are not to be confused with 'coal *in situ*' quantities, which includes any occurrence of coal in the earth's crust that can be estimated and reported, irrespective of thickness, depth, quality, mineability, or economic potential. Nor should coal resources be confused with coal reserves, which include the economically mineable part of the measured and indicated coal resource and which need to be supported by appropriate assessments such as feasibility studies.

Numerous historical inferred and in-situ coal resource estimates have been reported for the Nunavut Coal Project. The historic coal resources estimates comply with the speculative coal resource category in GSC 88-21 which no longer conforms with best practices in coal resource estimation, further mapping, trenching/sampling and drilling will be required to develop an appropriate resource estimate. AGL is treating the historic coal resource estimates as a potential target size which has been confirmed by the recent personal inspection.

The potential quantity and grade of coal is conceptual in nature. There has been insufficient exploration to define a coal resource and it is uncertain if further exploration will result in the targets being delineated as a coal resource.

14.0 COAL RESERVE ESTIMATES

No coal reserves are currently ascribed to the Nunavut Coal Project due to a lack of direct empirical data (such as drill hole, adit, trenching, or similar) aside from reported coal occurrences that have not been verified by AGL, and insufficient information on mining, processing, economic, permitting, and other factors required to prepare a preliminary feasibility study.

15.0 ADJACENT PROPERTIES

To the best of the author's knowledge, there are no adjacent properties to the Nunavut Coal Project. There are some coal exploration licenses owned by another party located on western Axel Heiberg Island, however as far as the author is aware, no recent coal exploration activity has taken place on those licenses.

16.0 OTHER RELEVANT DATA AND INFORMATION

The project is in the preliminary stages of exploration. To the best of the author's knowledge, no coal production or development has ever occurred within the project area.

16.1 Project Expenditures

Project expenditures to date total approximately $540,000 plus coal exploration license acquisition and application fees. To the best of AGL's knowledge, all project expenditures have been incurred over the 2011 calendar year and no prior expenditures were incurred on behalf of Canada Coal.

The project expenditures to date include the following estimated amounts:

- $310,000 relating to the preparation of the technical report detailed herein, including a site assessment and follow-up project work;
- $100,000 relating to community consultation;
- $130,000 relating to the acquisition of satellite imagery over various project areas to be used as a basis for exploration program planning.

17.0 INTERPRETATION AND CONCLUSIONS

AGL has been able to confirm the widespread existence of coal within the Nunavut Coal Project. Recent site assessments and historic reports indicate that the coals range in rank from high volatile bituminous 'C' to lignite. Coals are generally low in ash (5-10%) and sulphur (<0.5%), although occasionally exhibit moderate ash values. Coals are considered to be suitable for use as a high quality thermal coal. Fosheim Peninsula remains the most prospective target based on the level of historic exploration, the region's potential for higher ranked coal occurrences, and the area's suitable geography for open-pit mining.

At this stage the project is considered to be an early stage exploration project. Additional exploration will be required to further the historic understandings and geological interpretations, and also to advance the project to a stage where coal resources may be estimated in accordance with NI 43-101.

The appropriate project authorizations for Phase 1 exploration have not yet been approved, however the planned exploration will have a relatively small impact on the environment and could provide considerable socio-economic benefit to the community. Although AGL cannot speak for the various Authorizing Agencies reviewing the project proposal, it is the author's opinion that Canada Coal stands a reasonable chance of getting Phase 1 approvals provided that they: 1) do not intend to conduct any exploration activities on Axel Heiberg Island, 2) do not intend to conduct exploration at Sor Fiord/Stenkul Fiord without further community consultation due to the sensitivity of the area, 3) maintain rigorous environmental monitoring protocols for all exploration areas particularly the Fosheim Peninsula, 4) set aside and preserve the fossilized forest within the Mokka Fiord area, 5) and continue with extensive community consultation throughout the project's lifecycle.

Project expenditures to date total approximately $540,000 plus coal exploration license acquisition and application fees. Of the total, approximately $130,000 has been spent to acquire digital elevation mapping to assist with planning future exploration programs.

The logistics of shipping a bulk commodity such as coal from the Canadian Arctic Archipelago remain challenging; however, the enormous potential target size of the coal within the Nunavut Coal Project warrants further exploration.

18.0 RECOMMENDATIONS

- Coal is present within the Nunavut Coal Project in sufficient quantity and quality to merit further evaluation through an aggressive work program.
- Fosheim Peninsula should be a priority target for the proposed work program based on the level of historic exploration, the region's potential for higher ranked coal occurrences, and the area's suitable geography for open-pit mining.
- The Strathcona Fiord and Bache Peninsula regions should be explored for their potential during the proposed exploration program, as these licence areas regions could not be evaluated during the AGL 2011 site assessment.
- Data compilation of historic reports and government assessments should be on-going to evaluate the potential of additional exploration areas in the Nunavut Coal Project.
- Recently acquired digital elevation mapping should be integrated with existing geological, mapping, and sampling information.
- Coal exploration licenses on Axel Heiberg Island should be either relinquished or set aside for archaeological studies as they occur in vicinity to the world-renown Geodetic Hills Fossil Forest.
- Various studies, such as a preliminary shipping logistics study to determine viability of a coal mining operation in the High Arctic and an archaeological desktop constraints study to identify potentially sensitive project areas, should be commissioned by Canada Coal in conjunction with the proposed exploration program.
- The community consultation process should remain ongoing throughout the project's lifecycle.

18.1 Work Program

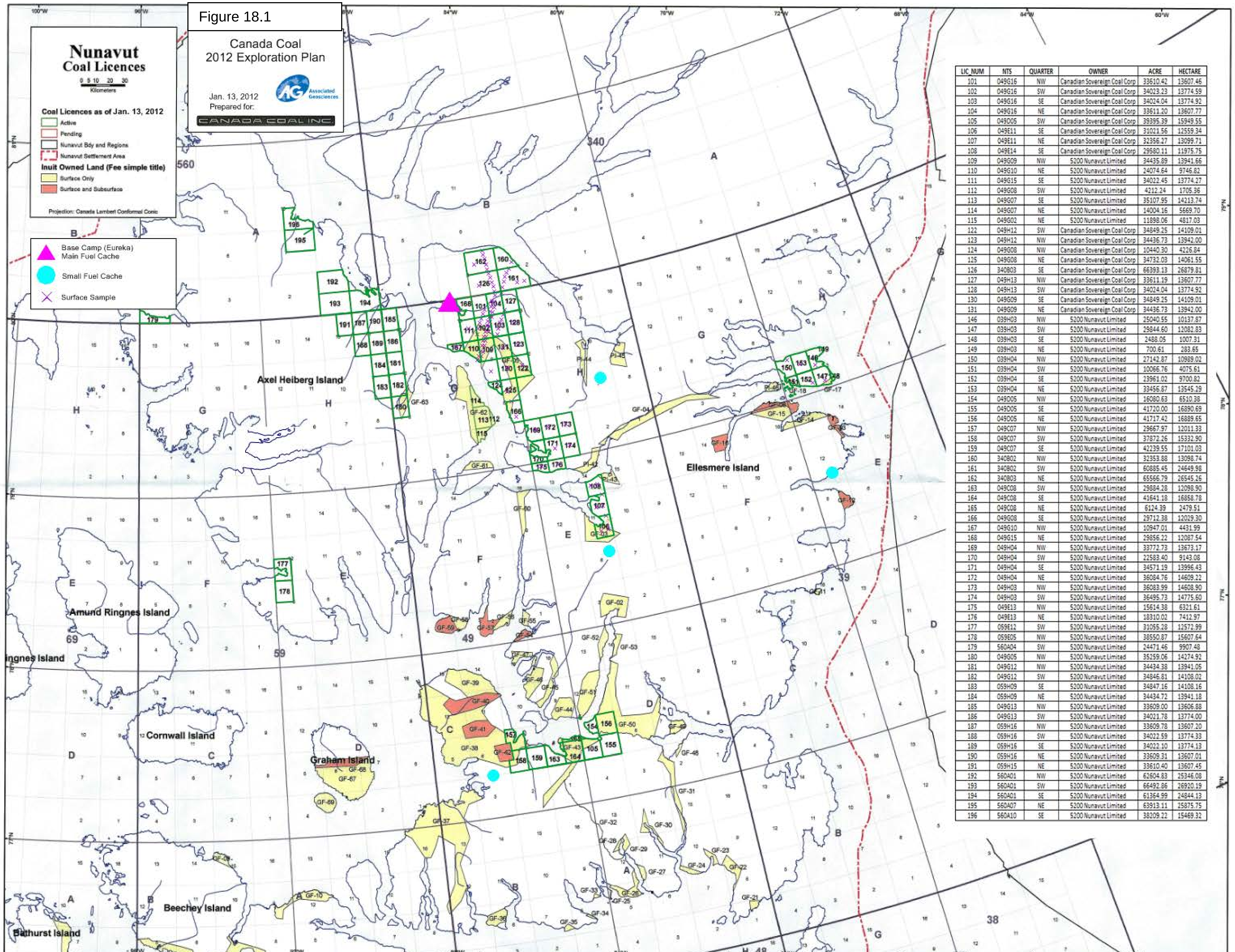
AGL recommends two phased exploration program for the Nunavut Coal Project. Phase 1 (Figure 18.1) will primarily be focused on reconnaissance including mapping and sampling to delineate and prioritize targets. Phase 2 is contingent on the results of Phase 1 and will consist of a drilling program to move the project forward to defining NI 43-101 compliant coal resources if possible.

The proposed work budget includes a substantial contingency of 25%. This contingency was developed as a result of the recent personal inspection of the property by the authors. Significant transportation issues arose as a result of local shortages of jet fuel, weather and runway/landing strip conditions. Exploration in the high arctic presents many challenges and the contingency reflects the potential for additional aircraft requirements.

AGL has been successful in extending the known strike length of many of the known coal measures. Additional sampling and structural mapping will be required to identify the most suitable areas for drilling. As well, the acquisition of a modern digital elevation model will substantially enhance the locations of known and newly identified outcrops.

Table 18.1-Work Program Budget

2011-2012 Costs	
Project Permitting/Community Consultation	$100,000
2012 Project Planning	$100,000
Preliminary Shipping Logistics Study	$50,000
Desktop Archaeology Constraints Study	$20,000
Phase 1 Costs	
Pre-disturbance Studies	$200,000
Helicopter	$600,000
Fixed Wing Charter (incl. fuel mob)	$400,000
Accommodation	$200,000
Fuel	$200,000
Local Hires/Community Consultation	$50,000
Reporting	$100,000
Permafrost Geophysics	$200,000
Fosheim Peninsula Mapping/Sampling	$350,000
Strathcona Fiord Mapping/Sampling	$250,000
Bache Peninsula Mapping/Sampling	$200,000
Sub-total	$3,020,000
Contingency (25%)	$755,000
Sub-total	**$3,775,000**
Phase 2 Costs	
Pre-disturbance Studies	$350,000
Helicopter	$2,000,000
Fixed Wing Charter (incl. fuel mob)	$1,750,000
Camp	$1,000,000
Fuel	$800,000
Local Hires/Community Consultation	$250,000
Reporting	$200,000
Drill Mobilization	$100,000
Permafrost Geophysics	$100,000
Airstrip Construction	$100,000
Fosheim Peninsula Mapping/Sampling	$250,000
Fosheim Peninsula Drilling (5,000 m)	$1,250,000
Fosheim Peninsula Borehole Geophysics	$500,000
Fosheim Peninsula Sample Analysis	$500,000
Secondary Target Drilling (1,000 m)	$250,000
Secondary Target Borehole Geophysics	$135,000
Secondary Target Sample Analysis	$135,000
May Point Funded Archaeology Study	$250,000
Sub-total	$9,920,000
Contingency (25%)	$2,480,000
Sub-total	**$12,400,000**



LIC_NUM	NTS	QUARTER	OWNER	ACRE	HECTARE
101	049G16	NW	Canadian Sovereign Coal Corp	33610.42	13607.46
102	049G16	SW	Canadian Sovereign Coal Corp	34023.23	13774.59
103	049G16	SE	Canadian Sovereign Coal Corp	34024.04	13774.92
104	049G16	NE	Canadian Sovereign Coal Corp	33611.20	13607.77
105	049D05	SW	Canadian Sovereign Coal Corp	39395.39	15949.55
106	049E11	SE	Canadian Sovereign Coal Corp	31021.56	12559.34
107	049E11	NE	Canadian Sovereign Coal Corp	32356.27	13099.71
108	049E14	SE	Canadian Sovereign Coal Corp	29580.11	11975.75
109	049G09	NW	5200 Nunavut Limited	34435.89	13941.66
110	049G10	NE	5200 Nunavut Limited	24074.64	9746.82
111	049G15	SE	5200 Nunavut Limited	34022.45	13774.27
112	049G08	SW	5200 Nunavut Limited	4212.24	1705.36
113	049G07	SE	5200 Nunavut Limited	35107.95	14213.74
114	049G07	NE	5200 Nunavut Limited	14004.16	5669.70
115	049G02	NE	5200 Nunavut Limited	11898.06	4817.03
122	049H12	SW	Canadian Sovereign Coal Corp	34849.25	14109.01
123	049H12	NW	Canadian Sovereign Coal Corp	34436.73	13942.00
124	049G08	NW	Canadian Sovereign Coal Corp	10440.30	4226.84
125	049G08	NE	Canadian Sovereign Coal Corp	34732.03	14061.55
126	340B03	SE	Canadian Sovereign Coal Corp	66393.13	26879.81
127	049H13	NW	Canadian Sovereign Coal Corp	33611.19	13607.77
128	049H13	SW	Canadian Sovereign Coal Corp	34024.04	13774.92
130	049G09	SE	Canadian Sovereign Coal Corp	34849.25	14109.01
131	049G09	NE	Canadian Sovereign Coal Corp	34436.73	13942.00
146	039H03	NW	5200 Nunavut Limited	25040.55	10137.87
147	039H03	SW	5200 Nunavut Limited	29844.60	12082.83
148	039H03	SE	5200 Nunavut Limited	2488.05	1007.31
149	039H03	NE	5200 Nunavut Limited	700.61	283.65
150	039H04	NW	5200 Nunavut Limited	27142.87	10989.02
151	039H04	SW	5200 Nunavut Limited	10066.76	4075.61
152	039H04	SE	5200 Nunavut Limited	23961.02	9700.82
153	039H04	NE	5200 Nunavut Limited	33456.87	13545.29
154	049D05	NW	5200 Nunavut Limited	16080.63	6510.38
155	049D05	SE	5200 Nunavut Limited	41720.00	16890.69
156	049D05	NE	5200 Nunavut Limited	41717.42	16889.65
157	049C07	NW	5200 Nunavut Limited	29667.97	12011.33
158	049C07	SW	5200 Nunavut Limited	37872.26	15332.90
159	049C07	SE	5200 Nunavut Limited	42239.55	17101.03
160	340B02	NW	5200 Nunavut Limited	32353.88	13098.74
161	340B02	SW	5200 Nunavut Limited	60885.45	24649.98
162	340B03	NE	5200 Nunavut Limited	65566.79	26545.26
163	049C08	SW	5200 Nunavut Limited	29884.28	12098.90
164	049C08	SE	5200 Nunavut Limited	41641.18	16858.78
165	049C08	NE	5200 Nunavut Limited	6124.39	2479.51
166	049G08	SE	5200 Nunavut Limited	29712.38	12029.30
167	049G10	NW	5200 Nunavut Limited	10947.01	4431.99
168	049G15	NE	5200 Nunavut Limited	29856.22	12087.54
169	049H04	NW	5200 Nunavut Limited	33772.73	13673.17
170	049H04	SW	5200 Nunavut Limited	22583.40	9143.08
171	049H04	SE	5200 Nunavut Limited	34571.19	13996.43
172	049H04	NE	5200 Nunavut Limited	36084.76	14609.22
173	049H03	NW	5200 Nunavut Limited	36083.99	14608.90
174	049H03	SW	5200 Nunavut Limited	36495.73	14775.60
175	049E13	NW	5200 Nunavut Limited	15614.38	6321.61
176	049E13	NE	5200 Nunavut Limited	18310.02	7412.97
177	059E12	SW	5200 Nunavut Limited	31055.28	12572.99
178	059E05	NW	5200 Nunavut Limited	38550.87	15607.64
179	560A04	SW	5200 Nunavut Limited	24471.46	9907.48
180	049G05	NW	5200 Nunavut Limited	35259.06	14274.92
181	049G12	NW	5200 Nunavut Limited	34434.38	13941.05
182	049G12	SW	5200 Nunavut Limited	34846.81	14108.02
183	059H09	SE	5200 Nunavut Limited	34847.16	14108.16
184	059H09	NE	5200 Nunavut Limited	34434.72	13941.18
185	049G13	NW	5200 Nunavut Limited	33609.00	13606.88
186	049G13	SW	5200 Nunavut Limited	34021.78	13774.00
187	059H16	NW	5200 Nunavut Limited	33609.78	13607.20
188	059H16	SW	5200 Nunavut Limited	34022.59	13774.33
189	059H16	SE	5200 Nunavut Limited	34022.10	13774.13
190	059H16	NE	5200 Nunavut Limited	33609.31	13607.01
191	059H15	NE	5200 Nunavut Limited	33610.40	13607.45
192	560A01	NW	5200 Nunavut Limited	62604.83	25346.08
193	560A01	SW	5200 Nunavut Limited	66492.86	26920.19
194	560A01	SE	5200 Nunavut Limited	61364.99	24844.13
195	560A07	NE	5200 Nunavut Limited	63913.11	25875.75
196	560A10	SE	5200 Nunavut Limited	38209.22	15469.32

19.0 SELECTED REFERENCES

Besserer, D., 2009. Technical Report for the Ellesmere Island Coal Project, Nunavut, Canada, Weststar Resources Corporation Property, District of Qikiqtani, Nunavut, prepared by APEX Geosciences Ltd.

Besserer, D. and Kidston, J. 2006. Assessment Report for Coal Exploration Licenses NU-COAL #011-025, Hunter Coal Property, District of Qikiqtani, Nunavut, NUMIN assessment report #061235, prepared by APEX Geoscience Ltd.

Bustin, R. M. 1980. Tertiary Coal Resources, Eastern Arctic Archipelago. Arctic, 33.

Bustin, R. M. 1981. Reconnaissance Evaluation of Tertiary Coal Resources, Canadian Arctic Archipelago, NUMIN assessment report #061235, prepared by Petro- Canada.

Caine, T.W. 1973. Coal in the Arctic Archipelago. Exploration and Geological Services Unit, Indian Affairs and Northern Development.

Cowley, P. S. 1982. 1981 Report of Exploration Activities on the Strathcona Fiord and May Point Properties. NUMIN assessment report #062131, prepared by Utah Mines Ltd.

Kalkreuth, W.D., McIntyre, D.J., and Richardson, R.J.H., 1993. The geology, petrography and palynology of Tertiary coals from the Eureka Sound Group at Strathcona Fiord and Bache Peninsula, Ellesmere Island, Arctic Canada.

Kalkreuth, W.D., Riediger, C.L., McIntyre, D.J., Richardson, R.J.H., Fowler, M.G., Marchioni, D., 1996. Petrological, palynological and geochemical characteristics of Eureka Sound Group coals (Stenkul Fiord, southern Ellesmer Island, Arctic Canada). International Journal of Coal Geology 30.

Mayr, U., Packard, J. J., Goodbody, Q. H., Okulitch, A. V., Rice, R. J., Goodarzi, F., and Stewart, K. R. 1994. The Phanerozoic Geology of Southern Ellesmere and North Kent Islands, Canadian Arctic Archipelago. Geological Survey of Canada, Bulletin 470.

Panchy, E. G. and Moorehouse, J. M. 1983. Ellesmere Island Coal Project: 1982 Exploration Report. NUMIN assessment report #062157, prepared by Petro- Canada.

Santiago, S. P. 1984. Ellesmere Island Coal Project: 1983 Exploration Report. NUMIN assessment report#062187, prepared by Petro-Canada.

Swansbergen, E. 1982. Arctic Coal Exploration Geological Report. NUMIN assessment report #062139, prepared by Gulf Canada Resources Inc..

Tveten, T., 2007. Technical Report, Nunavut Coal Prospect. West Hawk Development Corporation Property, District of Qikiqtani, Nunavut, prepared by Weir International, Inc.

Various, 1997. Geological Map of Canada - Map D1860A [CD-ROM]. Geological Survey of Canada, Natural Resources Canada.

Various, 2008. Geological Map of the Arctic. Geological Survey of Canada Open File #5816, Natural Resources Canada.

20.0 GLOSSARY OF TERMS

AA	Authorizing Agencies responsible for issuing authorizations (letter, permit, license, lease, certificate, or other written or verbal communication) that authorize a project or a component of a project to proceed.
AANDC	Department of Aboriginal Affairs and Northern Development Canada (formerly known as the Department of Indian Affairs and Northern Development or DIAND).
AGL	Associated Geosciences Ltd., authors of the independent technical report contained herein.
APEX	APEX Geosciences Ltd., an independent consulting group responsible for the preparation of the 2009 NI 43-101 technical report for Weststar. APEX conducted an independent site assessment as part of the NI 43-101 report which including some verification of the historic data.
Ash	Inorganic residue remaining after ignition of combustible substances, determined by definite prescribed methods.
As-Received Basis	Analytical data calculated to the moisture condition of the sample as it arrived at the laboratory and before any processing or conditioning.
ASTM	ASTM International, known until 2001 as American Society for Testing and Materials, an international standards organization who publishes technical standards for a wide range of materials, products, systems, and services.
Bache Peninsula	Contiguous coal exploration licenses numbers: 146 through 153 currently with active statuses controlled by Canada Coal through wholly owned subsidiary.
Canada Coal	Canadian Coal Inc., a Canadian corporation formed under the laws of the Province of Ontario which holds various coal licenses on Ellesmere Island and Axel Heiberg Island of Nunavut Canada forming the subject matter of the technical report contained herein. Formerly known as Pacific Coal Corp.
DIAND	Department of Indian Affairs and Northern Development (now known as the Department of Aboriginal Affairs and Northern Development Canada or AANDC).
Fosheim Peninsula	Contiguous coal exploration licenses numbers: 101 through 104, 109 through 111, 122 through 128, 130, 131, 134, 160 through

	162, and 166 through 168; currently with active statuses controlled by Canada Coal.
Good Friday Bay	Contiguous coal exploration licenses numbers 177 and 178, currently with active statuses controlled by Canada Coal.
GSC 88-21	Geological Survey of Canada paper 88-21 ("GSC 88-21"), titled '*A Standardized Coal Resource/Reserve Reporting System for Canada'*, used in conjunction with NI 43-101 for reporting of coal resources and coal reserves in Canada.
Gulf	Gulf Canada Resources Inc., a company granted coal licenses in four exploration blocks within the Canadian Arctic Archipelago during 1981.
Hunter	Hunter Exploration Group, a company granted coal licenses in the Fosheim Peninsula and Strathcona Fiord areas in 2008 and 2009. Weststar acquired 80% of Hunter's licenses in 2009 and Canada Coal has subsequently acquired the rights to all of the Weststar and Hunter's coal exploration licenses.
Li Fiord	Contiguous coal exploration license number 179 located on the northwestern shore of Axel Heiberg Island, current status is active, controlled by Canada Coal.
Maceral	A microscopically distinguishable organic component of coal, but including any mineral metter not discernable under the optical microscope.
May Point	Contiguous coal exploration license numbers 112 through 115 with active statuses controlled by Canada Coal.
Mining Recorder	The Mining Recorder's Office in Iqaluit, responsible for subsurface rights administration of Crown land. Point of contact for information on subsurface rights on Crown land administered under the Northwest Territories and Nunavut Mining Regulations (with the exception of royalties' provisions); also responsible for administering the Territorial Coal Regulations.
Moisture	In coal- That moisture determined as the loss in weight under rigidly controlled conditions of temperature, time, and air flow as established in the ASTM Test Method D 3302.
Mokka Fiord	Contiguous coal exploration licenses numbers 180 through 196 located on the northeastern shore of Axel Heiberg Island, currently with active statuses, controlled by Canada Coal.
NI 43-101	The Canadian Securities Administrators National Instrument 43-101 ("NI 43-101) *Standards of Disclosure for Mineral Projects*, a

	regulations scheme used for the public disclosure of information relating to mineral properties in Canada.
NIRB	Nunavut Impact Review Board, an institution of public government created by the Nunavut Land Claims Agreement to assess the potential impacts of proposed development in the Nunavut Settlement Area prior to approval of the required project authorizations.
Nunavut Coal Project	Term for Canada Coal's 55 coal exploration licenses located on Ellesmere and Axel Heiberg Islands, Nunavut. The project is further divided into the following contiguous license areas: Fosheim Peninsula, May Point, Vesle Fiord/South Fosheim, Strathcona Fiord, Stenkul Fiord, and Bach Peninsula.
Pacific Coal	Pacific Coal Corp., former name for the Canadian corporation known as Canada Coal.
Petro-Canada	Petro-Canada Exploration Inc., a company granted coal exploration licenses throughout the Arctic Archipelago between the period 1981 through 1984.
Petrographic Composition	The general makeup of coal in terms of microscopic constituents, specifically macerals and minerals.
Proximate Analysis	In the case of coal and coke- The determination, by prescribed methods of moisture, volatile, matter, fixed carbon (by difference), and ash.
Qualified Person	Qualified person, or QP, as defined by NI 43-101, an accredited professional in the area relating to the property being reported on with at least five years technical experience and at least five years relevant experience to the subject matter of the mineral project and technical report. The QP must be in good standing with an accepted professional association.
Rank	Of coal, a classification designation that indicates the degree of metamorphism or progressive alteration from lignite to anthracite in accordance with ASTM Classification D 388 (Classification of Coals by Rank).
SI	International System of Units, system of measurement, modern form of the metric system.
SID Viewer	Department of Indian and Northern Development- Northwest Territories Region’s Spatially Integrated Dataset Viewer Online, contains spatial, digital data that is maintained by DIAND as well as several datasets prepared by others that are useful to DIAND users.

Stenkul Fiord	Contiguous coal exploration license numbers 105, 154, 155, 157 through 159, and 163 through 165, with active statuses controlled by Canada Coal.
Strathcona Fiord	Contiguous coal exploration license numbers 106 through 108 with active statuses controlled by Canada Coal.
Territorial Coal Regulations	Territorial Coal Regulations of the Territorial Lands Act, a set of regulations for coal tenure and mining rights relevant to the Nunavut Coal Project.
Utah	Utah Mines Ltd., a company granted coal exploration licenses on the Strathcona Fiord and May Point properties during 1981.
Vesle Fiord/South Fosheim	Contiguous coal exploration license numbers 169 through 175 with active statuses controlled by Canada Coal.
Vitrain	Shiny black bands, thicker than 0.5 mm, of sub-bituminous and higher rank banded coal.
Vitrinite Reflectance	The percent of incident radiation that is reflected from the polished surface of vitrinite as measured using a reflected light microscope in accordance with ASTM Standard Method D 2796 (Definition of Terms Relating to Megascopic Description of Coal and Coal Seams and Microscopical Description and Analysis of Coal).
Volatile matter	Those products, exclusive of moisture, given off by a material, such as gas or vapor, determined by definite prescribed methods which may vary according to the nature of the material.
Weir	Weir International, Inc., an independent consulting group responsible for the preparation of the 2007 NI 43-101 technical report for West Hawk and Hunter.
West Hawk	West Hawk Development Corporation, a company granted coal licenses in the May Point and Fosheim Peninsula areas in 2005. To the best of the author's knowledge, West Hawk's licenses expired in 2008 according to the three year term and although West Hawk applied to renew the licenses they were not renewed. Weir prepared a NI 43-101 technical report on the West Hawk licenses dated March 2007.
Weststar	Weststar Resources Corporation, a company who obtained coal licenses in the Fosheim Peninsula and Strathcona Fiord areas in 2009 after acquiring 80% of Hunter. Canada Coal has subsequently acquired the rights to all of the Weststar and Hunter's coal exploration licenses.

21.0 CERTIFICATES OF QUALIFIED PERSONS

21.1 Keith McCandlish

Keith McCandlish, P.Geol., P.Geo.

(a) I, Keith McCandlish, P.Geol., P.Geo., am the Managing Director of Associated Geosciences Ltd. (AGL) of Suite #415, 708-11th Avenue S.W., Calgary, Alberta, CANADA, T2R 0E4.

(b) I am a registered Professional Geologist (P.Geol.) with the Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA-member number 45717) and am Licensed as a Professional Geoscientist (P.Geo.) by the Association of Professional Engineers and Geoscientists of British Columbia (APEGBC-member No.: 31222).

(c) I have thirty years of geological and engineering experience in minerals, oil sands/heavy oil, precious stones, coal and industrial minerals. I have worked on the exploration, development and assessment of coal projects across the world with relevant experience in Botswana, Canada (Alberta, British Columbia, Nova Scotia, New Brunswick, Nunavut and Saskatchewan), China, Colombia, Indonesia, Iran, South Africa, United Kingdom and the United States. My experience encompasses both thermal and metallurgical coals and operational experience in both open-pit and underground mines. I am a "Qualified Person" for the purposes of National Instrument 43-101.

(d) My most recent personal inspection of the property which is the subject of this report occurred from August 9th, 2011 to August 27th, 2011.

(e) I am the Project Technical Director and co-author of the technical report entitled:

Independent Technical Report-Nunavut Coal Project

with an effective date of September 30th, 2011 and an issue date of January 13th, 2012, prepared for:

Canada Coal Inc.,

BCE Place, Suite 1800

Box 754, 181 Bay Street

Toronto, Ontario

CANADA, M5J 2T9

I am responsible for all aspects of the technical report.

(f) I am independent of the issuer as described in Section 1.5 of National Instrument 43-101.

(g) I have previously visited the project site as part of a regional geological assessment.

(h) I have read National Instrument 43-101 and the technical report has been prepared in compliance with this instrument.

(i) At the effective date of the report, September 30th, 2011, to the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Keith McCandlish, P.Geol., P.Geo.

Dated this 16th day of January, 2012 at Calgary Alberta, Canada.

21.2 Susan O'Donnell

(a) I, Susan O'Donnell, do hereby certify that: (1) I am a professional geologist certified by the Association of Professional Engineers, Geologists, and Geophysicists of Alberta and, (2) I am a practising project geologist currently employed by Associated Geosciences Ltd. at #415, 708 - 11th Avenue S.W., Calgary Alberta.

(b) I am the co-author of this technical report entitled: "Independent Technical Report - The Nunavut Coal Project" effectively dated September 30th, 2011, and am responsible for the initial preparation and the compilation of the report which was subsequently reviewed by my direct supervisor and my company's Managing Director, Keith McCandlish, in its entirety.

(c) I am a graduate of the University of Saskatchewan, Saskatoon, Saskatchewan, with a B.Sc. major in geology (2005). I have practised my profession continuously since graduation and also seasonally prior to graduation. I have been employed with Associated Geosciences Ltd. full-time since 2006 and have worked as a geologist-in-training (2006-2010) and as a project geologist (2010-present). I have participated in a variety of due diligence evaluations for coal projects ranging in scope, scale, and stage for projects located in various countries including: Canada, Colombia, Indonesia, the United States of America, South Africa, Cameroon, and the Democratic Republic of the Congo. I have prepared NI 43-101 compliant resource estimates (including the preparation of geological seam models) for various coal properties including: (1) Cerro Tasajero Project, owned by Compania Minera Cerro Tasajero, a Bogota based and Colombian owned company which holds an operating underground coking coal mine and a significant land position on the Cerro Tasajero, and (2) Perry Creek Mine, owned by Western Canadian Coal Corporation, a metallurgical coal mine located in the Peace River Coalfield region of northeastern British Columbia, Canada. I am familiar with the NI 43-101 *Standards of Disclosure for Mineral Projects* as well as the Geological Survey of Canada paper 88-21 ("GSC 88-21"), *A Standardized Coal Resource/Reserve Reporting System for Canada*.

(d) I have completed a personal site inspection for the Nunavut Coal Project. Both qualified authors for this completed the site inspection August 9th through August 27th, 2011.

(e) I am responsible for the preparation of the entire report with the exception of the following limitations: AGL is reliant upon experts at Loring Laboratories and JP Petrographics, both of Calgary Alberta, for lab analyses relating to the AGL coal samples, and AGL is reliant upon historical exploration accounts for any historic resources estimates (these have not been verified by AGL and are non-compliant with NI 43-101 standards).

(f) I am considered independent of Canada Coal Inc. I have not received, nor do I expect to receive, any interest, directly or indirectly, in Canada Coal Inc.

(g) I have had no prior involvement with Canada Coal Inc. or the coal exploration licenses that form the subject of this report.

(h) I have read and understand National Instrument 43-101 and Form 43-101 F1 and the Report has been prepared in compliance with the instrument.

(i) To the best of my knowledge, information and belief, the technical report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

(j) I consent to the filing of this report with any stock exchange and other regulatory authority and any publication by them, including electronic publication in the public company files on their websites accessible by the public, of this report.

PROFESSIONAL GEOLOGIST ALBERTA
SUSAN O'DONNELL

Susan O'Donnell, P.Geol.

Dated this 16th day of January, 2012 at Calgary Alberta, Canada.

APPENDIX A

Letters of Consent

Associated Geosciences

Associated Geosciences Ltd.
Suite 415, 708 – 11th Avenue S.W.
Calgary, Alberta, Canada T2R 0E4

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FAX: +1.403.263.7641
www.associatedgeosciences.ca

EMAIL: keith.mccandlish@associatedgeosciences.ca

File: 2011CMAA.024

January 13th, 2011

Canada Coal Inc.
BCE Place, suite 1800
Box 754, 181 Bay Street
Toronto ON M5J 2T9

Attn: Board of Directors

Dears Sirs:

Re: Consent of Qualified Person

I, Keith McCandlish, P.Geol. (Alberta), P.Geo. (British Columbia), consent to the public filing of the independent technical report entitled:

Independent Technical Report-Nunavut Coal Project

and effectively dated September 13th, 2011 with a preparation date of January 13th, 2012 (the "Technical Report") by Canadian Coal Inc.

Sincerely,

Associated Geosciences Ltd.

Keith McCandlish, P.Geol., P.Geo.,
Managing Director

Associated Geosciences

Associated Geosciences Ltd.
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EMAIL: susan.odonnell@associatedgeosciences.ca

File: 2011CMAA.024
January 13th, 2012

Canada Coal Inc.
BCE Place, suite 1800
Box 754, 181 Bay Street
Toronto ON M5J 2T9

Attn: Board of Directors

Dears Sirs:

Re: Consent of Qualified Person

I, Susan O'Donnell, P.Geol. (Alberta), consent to the public filing of the independent technical report entitled:

Independent Technical Report - Nunavut Coal Project

effectively dated September 30th, 2011 and with a preparation date of January 13th, 2012 (the "Technical Report") by Canadian Coal Inc.

Sincerely,

Associated Geosciences Ltd.

Susan O'Donnell, P.Geol.,
Project Geologist