Coal Assessment Report

Teck Coal Limited
Mount Duke Project

For Coal Licence Numbers 394494, 394495, 394488, 394496, 394491, 394498, 394497, 394489 and 394492

Teck

Table of Contents

List of Figures

List of Tables

1. Signature and Date

Murray Chitwood
Land Tenure Specialist

Date Signed: July 2, 2014

2. Location and Property Description

The Mt. Duke property is located in northeast British Columbia on the eastern side of the Rocky Mountains. It is located in the Peace River Regional District approximately 60 kilometers (km) south of the town of Tumbler Ridge. Access is via regional highway 52 (Heritage Highway) from Tumbler Ridge or from Dawson Creek (100 km. northeast), then along a well maintained network of oil and gas service roads. Location of the rough centroid of the current known coal deposit on the property is at 54° 47' N, 120° 44' W.

Elevations on the property range from 925 metres (m) along Kinuseo Creek on the NW edge of the property to, 1791 m at the top of Mt. Anderson located in the south central part of the licence block.

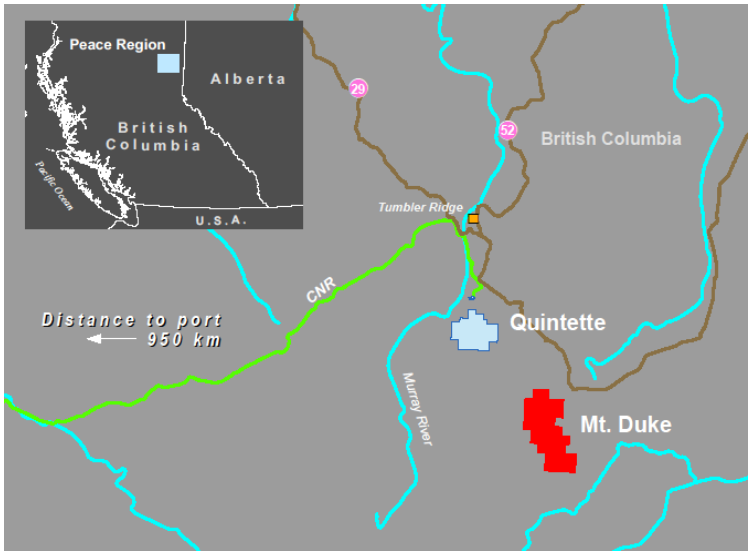

Figure 1: Property Location Map

Rail load-out facilities exist at the Teck owned Quintette Coal project site, approximately 40 road km from the Mt. Duke property. This facility is connected to the Canadian National Railway grid. From the Quintette load out, coal will travel approximately 617 rail miles (993 km) to Ridley Terminals, Inc. in Prince Rupert, BC or approximately 802 rail miles (1,291 km) to Westshore Terminals L.P. or Neptune Bulk Terminals Canada Ltd., both located near Vancouver, BC.
The climate at the property is characterized by cool to moderate summers and cold dry winters. Precipitation is variable due to the rain shadow effect of the mountains. The closest public weather station at Chetwynd, B.C. (55° N, 121° W) records an average of 450 millimeters (mm) of precipitation annually. The area is noted for its strong, persistent winds.

3. Ownership

The ownership of the Mount Duke (formerly Monkman) property is derived from a complex series of acquisitions and divestitures made by the various interested stakeholders since the original coal licences were acquired by McIntyre Porcupine Mines Ltd in 1970. In 1975, Canadian Superior Oil Ltd acquired a 66.6% interest in the property as a joint venture partner with McIntyre Mines Ltd (McIntyre). In 1976, Pacific Petroleums Ltd entered into an option agreement with McIntyre and Canadian Superior Oil Ltd as the operator and 50% project interest holder. In 1977, Pacific Petroleums Ltd was acquired by Petro-Canada. In 1983, Sumitomo Corporation entered as a farm-in partner under the Monkman Project Memorandum of Agreement (the Monkman agreement), pursuant to which the parties agreed to combine their collective rights to the property. Canadian Superior Oil Ltd held a 33.33% interest, McIntyre held a 16.67% interest and Petro-Canada held a 50% interest while Sumitomo Corporation had the right to earn a 5% participating interest by providing Cdn $10 million (M) of exploration expenditure capital. Later in 1983, Sumitomo Corporation assigned their interests in the project to Sumisho Coal Canada Ltd. Pursuant to the terms of the Monkman Agreement, Sumisho Coal Canada Ltd earned a 5% interest in the project, decreasing the participating interest of Canadian Superior Oil Ltd to 31.67% and Petro-Canada to 47.5%.

In 1987, Canadian Superior Oil Ltd was acquired by Mobil Oil Canada Properties. Also in 1987, Smoky River Coal Ltd took over all former operations of McIntyre. In 1994, Smoky River Coal Ltd acquired all of Petro-Canada's interest in the project pursuant to a right of first refusal provided in the Monkman Agreement. In 1998, Mobil Oil Canada Properties forfeited their interest in the project, without compensation or reimbursement, to Smoky River Coal Ltd and Sumisho Coal Canada Ltd in proportion to their respective relative interest. The forfeiture resulted in Smoky River Coal Ltd with a 92.683% interest and Sumisho Coal Canada Ltd with a 7.317% interest in the project. Concurrently, Smoky River Coal Ltd filed for bankruptcy and the receiver, Price Waterhouse Coopers LLP, undertook to dispose of all assets held by Smoky River Coal Ltd.

In 2000, Fording Coal Ltd acquired all of Smoky River Coal Ltd's participating interest in the project. Fording Coal Ltd was then eventually acquired by Teck Resources Ltd and rebranded as Teck Coal Ltd in 2008. The current ownership of the Mount Duke property reflects the aforementioned acquisition and divestitures as Teck Coal Ltd holds a 92.683% interest and Sumisho Coal Canada Ltd holds a 7.317% interest on thirty-one (31) licences on the property. The other nine (9) licences are held 100% by Teck Coal Ltd.

4. Land Tenure

The tenure associated with the Mount Duke property consists of 40 contiguous, coal licences encompassing 11,070 hectares.

Table 1: List of Coal Licences for the Mt. Duke Property

Coal Licence Number	Parties	Status	Grant Date	Expiry Date	Official Area Value (Ha)
327501	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	8/2/1986	12/6/2014	300
327514	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	8/2/1986	12/6/2014	300
327518	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	8/2/1986	12/6/2014	300
327521	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	8/2/1986	12/6/2014	299
327522	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	8/2/1986	12/6/2014	299
327527	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	300
327530	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327532	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327537	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	150
327540	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327541	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327544	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327565	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327657	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	8/2/1986	12/6/2014	299
327659	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	8/2/1986	12/6/2014	150
327661	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	8/2/1986	12/6/2014	299
327663	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	8/2/1986	12/6/2014	299
327670	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	8/20/1986	12/6/2014	150
327673	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	150
327675	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327678	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327681	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327683	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327684	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327686	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	150
327688	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327691	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	150
327692	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327694	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327695	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
327696	TECK COAL LIMITED (92.6800%), SUMISHO COAL CANADA LIMITED (7.3200%)	Active	10/7/1986	12/6/2014	299
394488	TECK COAL LIMITED (100.0000%)	Active	7/2/2002	7/2/2014	299
394489	TECK COAL LIMITED (100.0000%)	Active	7/2/2002	7/2/2014	299
394491	TECK COAL LIMITED (100.0000%)	Active	7/2/2002	7/2/2014	299
394492	TECK COAL LIMITED (100.0000%)	Active	7/2/2002	7/2/2014	299
394494	TECK COAL LIMITED (100.0000%)	Active	7/2/2002	7/2/2014	299
394495	TECK COAL LIMITED (100.0000%)	Active	7/2/2002	7/2/2014	299
394496	TECK COAL LIMITED (100.0000%)	Active	7/2/2002	7/2/2014	299
394497	TECK COAL LIMITED (100.0000%)	Active	7/2/2002	7/2/2014	299
394498	TECK COAL LIMITED (100.0000%)	Active	7/2/2002	7/2/2014	299

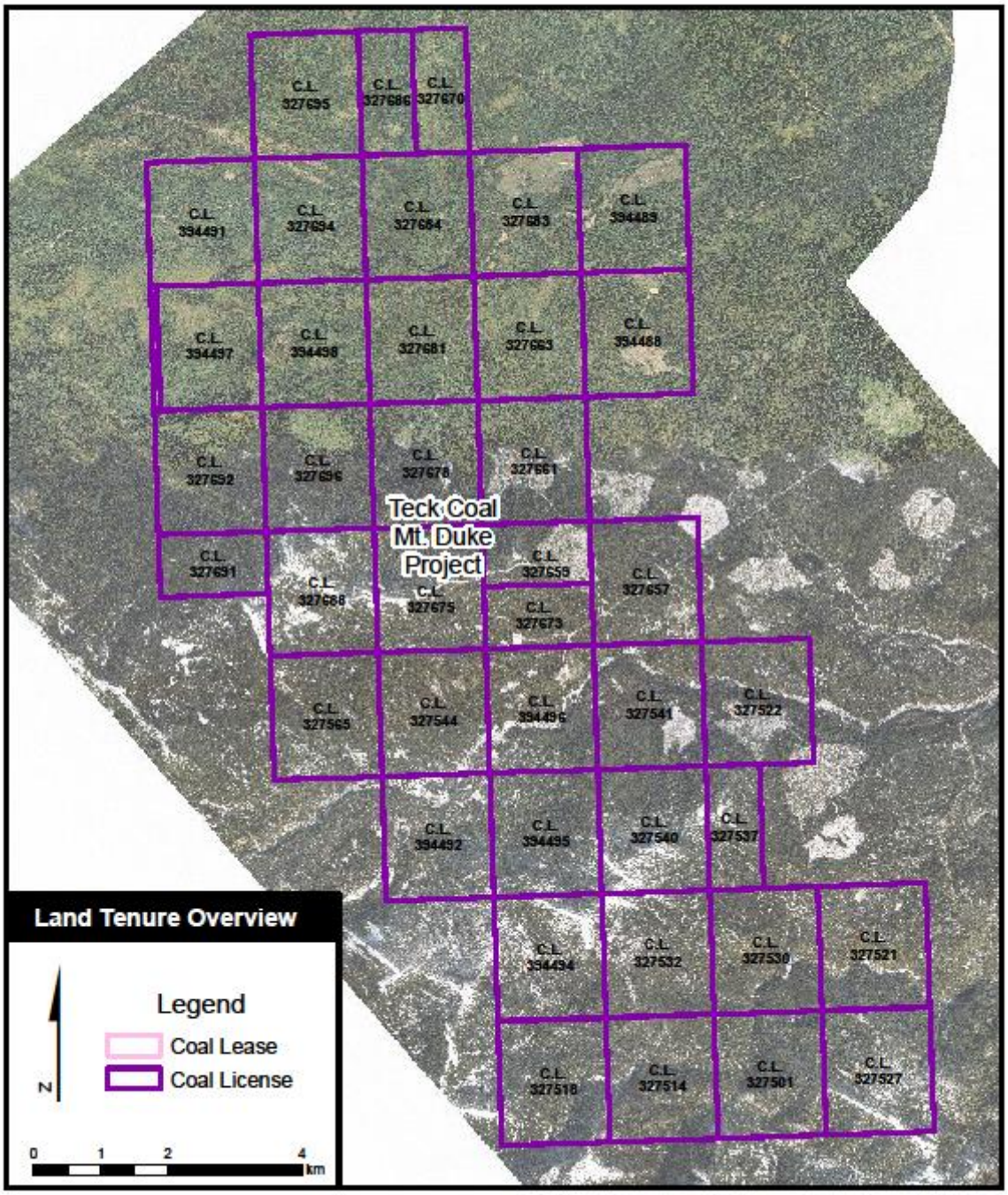

Figure 2: Map of coal licences at the Mt. Duke property

5. Geology

The Mt. Duke property is located in the Peace River Coal Field, a belt of coal-bearing strata extending across northeastern British Columbia in a northwest-southeast trend. The stratigraphic succession exposed at the Mt. Duke property ranges from Upper Jurassic to Lower Cretaceous and consists of interbedded shales and sandstones of both marine and continental origin as shown in Figure . Most of the coal-bearing strata were deposited in a deltaic environment. Formation names from oldest to youngest that are present in the Mt. Duke area include: Gates, Hulcross and Boulder Creek Formations.

The Gates Formation is the coal-bearing formation in the area. The Gates Formation consists of strong sandstones, minor pebble conglomerates, some mudstones or shales, and coal seams. The rock in the upper part of the formation tends to be finer bedded than the rock (especially the sandstones) in the lower part of the formation. The Gates Formation consists of three members: Upper Gates, Middle Gates and Lower Gates. The Lower Gates Member consists of massive, light-grey, medium-grained sandstones, with minor carbonaceous and conglomeratic horizons. The Middle Gates Member, which overlies the Lower Gates Member, contains several sequences of coal seams in a 100 m to 110 m thick stratigraphic section. These seams have been named B1 through B9, from oldest to youngest. These correspond to the K to D seams in Mt. Babcock to the NW. The Upper Gates Member, which overlies the Middle Gates Member, consists of several distinct units. One of these, the Babcock Member, directly overlies the economic coal zone and is comprised of sandstones and conglomerates. The remainder of the Upper Gates Member is predominantly shale with some sandstone and poorly developed coal seams. These thin, high ash coal seams have been named B10 through B12 seams and correspond to the A,B,C units in Mt. Babcock.

The Hulcross Formation overlies the Gates Formation and is exposed in the upper part of the mountain. This formation consists of shales with interbedded mudstones and siltstones. Several clay layers of both bentonite (illite and smectite) and tonsteins (kaolinite and chlorite) are present in this formation. The number of clay layers varies at different locations and their stratigraphic position varies.

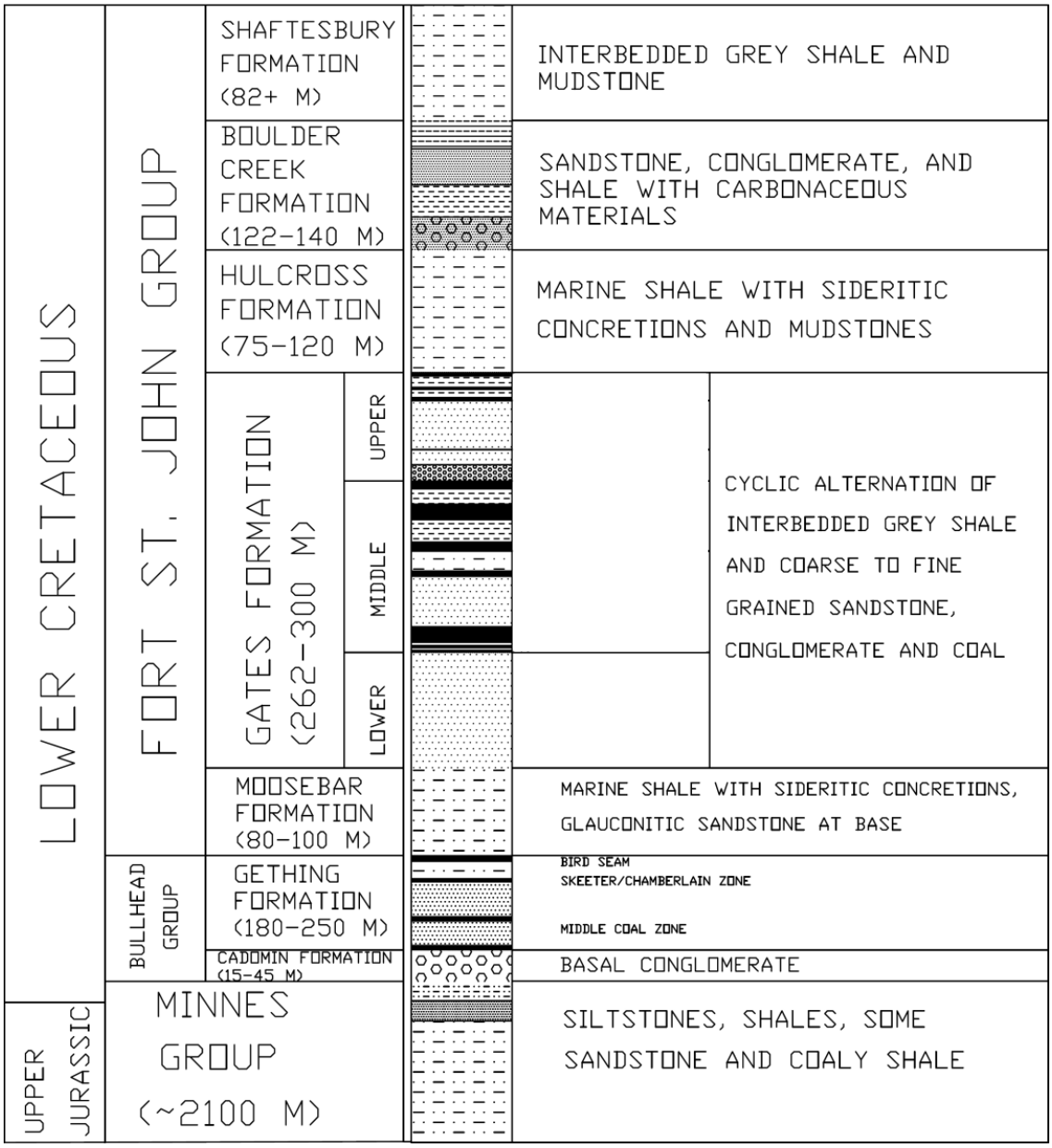

Figure 3: Schematic showing geological formations of the Mt. Duke Property (after 2013 year end Teck Coal – Quintette Operations)

The Boulder Creek Formation consists of the Walton and Cadotte Members. The Walton Member is the upper member of the Boulder Creek Formation. It includes sandstones, conglomerates and shales with some clay layers and some minor coal seams. The Cadotte Member underlies the Walton Member and includes various strong cliff forming sandstones and conglomerates that are prominently exposed in the area. There are minor siltstone units between the sandstone strata.

The main surficial material found in the Mt. Duke area is sandy silt till with a variable content of cobbles and boulders. Within the proposed Honeymoon pit area, appreciable depths of till (80 m or more) occur. The remainder of the area has thin deposits of colluvium and weathered rock.

The coal seams trend in a southeast to northwest direction in a moderate to severely faulted undulating anticline / syncline structure. Coal outcrops at the surface where topography has exposed the crests of these anticlines. Structure is dominated by a series of anticline/syncline pairs with dips ranging from 20° to 85°. Fold axes are generally flat to gently plunging to the southeast.

There are several fault systems in the area. These fault systems strike NW-SE and dip to the southwest at moderate to steep- angles. The faults have reverse displacement and repeat the seams and surrounding strata. In the Honeymoon area, where information is more detailed, strata offsets on the faults range from 15 to 80 metres. The area immediately on either side of the faults can be a zone of fractured rock and minor folding

6. Drilling and Sampling

Exploration drilling occurred at Mt. Duke over a number of campaigns running from 1975 to 1982. A total of 276 holes have been drilled on and around the property. Drill hole density is greatest in the north part of the property on the Honeymoon and Duke mining areas.

Current database statistics indicate the following:

Table 2: Historical drilling by type

Data Type	Number
Core holes	93
Reverse Circulation	159
Other	24
Total	276

In addition to the drill holes, eight (8) adits provided bulk coal samples for metallurgical testing.

Core hole samples and bulk samples were analyzed at Loring Laboratories and Birtley Coal and Mineral Testing both of Calgary, Alberta and, at Warnock Hersey Profession Services of Vancouver (now part of Intertek).

Table 3: Historical drilling information

Area	Area (hectare)	Number of Holes	Hole Spacing (metre)	Average Hole Spacing (metre)	Coal Analysis
DESIGNATED PIT AREAS					
Honeymoon	1,596	115	variable	373	Prox, S, P, rheol, CP, MAA
Duke	924	50	variable	430	Prox, S, P, rheol, CP, MAA
Duke Syncline	424	8	variable	728	Prox, S,
Duchess (Fearless)	419	16	variable	512	Prox, S
Boomerang	1,102	23	variable	692	Prox, S
Dokken	304	4	variable	872	Prox, S
Adjacent to Mt. Duke areas	n/a	43	variable	n/a	
On Licences formerly owned	n/a	17	variable	n/a	
TOTAL All Areas	4,769	**276**	**variable**	**533**(*)	

Prox -= Proximate Analysis; S=Sulfur; P=Phosphorous; rheol=rheology tests; CP=coal petrography; MAA=ash analysis
* - average hole spacing weighted by area (non weighted average is 470)

7. Quality Assurance

All quality data has been collected and analyzed by previous owners of the property. The majority of the data was collected by Petro Canada Ltd, a major Canadian oil and gas company. This gives some credence to the validity of the collection of the samples and the scrutiny of the analysis. Quality information will be validated once Teck collects its own samples and does comparisons with data collected at similar locations.

In the meantime, Teck Coal has catalogued and re-evaluated the information and has concluded the results are valid and useful for resource evaluation. Coal quality results are consistent with other Teck Coal properties in the area, specifically The Quintette Coal Operations ('QCO') on nearby Mt. Babcock.

8. Proposed Drilling and Work

Work done to Date

In November, 2012 Teck Coal contracted Silenus Resource Management to assist in preparing a notice of work ('NoW') for the proposed drilling and to perform an environmental gap assessment. The work conducted included a data search, a three day site visit and preparation of a 2013 work plan. Meetings with technical staff at QCO and Community Relations in Tumbler Ridge were held during the site visit. The work plan timeline was prepared independent of budgetary constraints (see case 2).

In December, 2012 the proposed exploration drillsite locations were finalized. The program consists of 138 reverse circulation (RC) holes for a total meterage of 34,000m. This will bring the known resource areas up to indicated resource status

Also in December, Silenus prepared an assessment report of the work required to submit a notice of work (NoW).

In 2013, Silenus spent one week in the field (Feb) doing reconnaissance of the planned roads and drillsites, checking against active and retired trails. In addition to date:

- Stakeholder engagement has been initiated. Teck has reached a global road use agreement with CNRL which maintains a portion of the road network to the Mt Duke property (in addition to Forestry)
- Working with Teck Community Relations which is establishing an Impact Benefit Agreement (IBA) with First Nations groups that addresses communications, capacity funding for referrals and overall engagement.
- Contracted an Archaeological Overview Assessment (AOA) of the Mt Duke property.

Work Outstanding

Prior to engaging in the full exploration program the primary items to complete are

1. Layout all roads, drill pads and laydown areas for drilling,
2. Complete the field components of archaeological work preliminary field assessment, Arch. Impact Assessment (AIA), and apply for a Heritage permit
3. First Nations engagement
4. Develop all components of the NoW, Mine Emergency Response Plans (MERP), Hydrocarbon Management Plan, CMMP
5. Develop the NoW, review and submit
6. Obtain necessary permits
7. Contractor sourcing – drilling, fuel, maintenance, road and pad building, facilities, materials.
8. Initiate a project charter for the exploration program including the stage gate steps, A/R for funding and subsequent approvals

Note that the Mt Duke exploration will access upland and lowland areas. The lowland drilling opportunities will occur during the winter months when frozen conditions prevail. The remaining lowland exploration roads and sites would then be laid out with archaeology surveys in the summer of 2015.

Work continues in our office with reconciling and validation of Mt Duke historic drillhole and mapping data. This is a necessary step albeit time consuming – it will give Teck the confidence in the Mt Duke dataset and enable better interpretation of seam footwalls, structure and build a more relevant model.

Proposed Hole Locations
Bare Earth Lidar

Legend

- 2014 Revised Hole Locations
- Existing Drillholes
- Existing Road
- Trail
- Creeks
- Teck Coal Tenure
- Wells
- Gas Pipeline

PROJECT:

Mt. Duke Exploration

Teck

1:20,000

0.5 0 0.5 1 1.5 2

Kilometers

Projection: Universal Transverse Mercator Zone 11N
Datum: NAD 83

Location:
Tumbler Ridge, B.C.

Date:
20-Dec-2012

Drawn By:
DJG

Contour Interval:

File:
MtDuke_Lidar.pdf

Proposed Hole Locations Base Map

Legend

- 2014 Revised Hole Locations
- Existing Drillholes
- Highway
- Existing Road
- Trail
- Creeks
- Teck Coal Tenure
- Wells
- Gas Pipeline

PROJECT:

Mt. Duke Exploration

Teck

1:20,000

0.5 0 0.5 1 1.5 2

Kilometers

Projection: Universal Transverse Mercator Zone 11N
Datum: NAD 83

Location:
Tumbler Ridge, B.C.

Date:
20-Dec-2012

Drawn By:
DJG

Contour Interval:
20 meters

File:
MtDuke_Base.pdf