ASSESSMENT REPORT

Carbon Creek Metallurgical Coal

Freehold

2010-2014

Compiled by:
Marian Myers
Keith Henderson

Cardero Coal Ltd.

Pages 27 to 35, 37 to 40, and Appendix 8 of this report remain confidential under the terms of the Coal Act Regulation, and have been removed from the public version.

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Title Page and Summary

TITLE OF REPORT: Carbon Creek Metallurgical Coal Freehold 2010-2014

TOTAL COST: 2010 – 2013 $28,507,869

AUTHOR(S): Marian Myers, Keith Henderson

SIGNATURE:

NOTICE OF WORK PERMIT NUMBER(S):
Mine Act Permit CX-0-046: 10-1640957-10016; 11-1640957-0812; 12-1640957-0718

YEARS OF WORK: 2010 - 2014

PROPERTY NAME: Carbon Creek

COMMODITIES: Metallurgical Coal

MINERAL INVENTORY NUMBERS:
Crown Granted District Lots: 319 - 328

MINING DIVISION: Liard

NTS/BCGS: 093O15, 094B02

LONGITUDE: -122° 39' 36"

LATITUDE: 55° 56' 45"

UTM COORDINATES: UTM Zone 10, NAD83; 521,053mE; 6,198,709mN

OWNER: Peace River Partnership, Suite 620, 5920 Macleod Trail SW, Calgary, AB, T2H 0K2

OPERATOR: Cardero Coal Ltd.; 2300-1177 West Hastings Street, Vancouver, BC, V6E 2K3

REPORT KEYWORDS: Cretaceous, Gething Formation, bituminous coal

REFERENCES TO PREVIOUS ASSESSMENT WORK AND REPORT NUMBERS:

Coal File Numbers: 492- 502 (1943-1976); 504-509 (1979-1982)

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1 Introduction

This Assessment reports the exploration work on the Crown Granted District Lots ("CGDL" or "Freehold"; numbers 319, 320, 321, 322, 323, 324, 325, 326, 327, 328) which form part of the Carbon Creek metallurgical coal deposit ("Carbon Creek"). Work described here was carried out from 2010 to 2014. Supporting data is included in the Appendices (*Section 11*) and submitted to the BC Ministry of Mines and Energy "BCMEM" in digital format where appropriate (*Section 12*).

Carbon Creek, located 40km west of Hudson's Hope in the Peace River Coalfield (*Figure 1*), consists of the Freehold, 4 coal licences (Nos. 418174, 418175, 418176 and 418177) ("Licences") and 12 applications for coal licences (("Applications") (*Figure 2*). From December 21, 2011to May 30, 2014, Cardero Coal Ltd. ("Cardero") held interest in the Freehold via a coal lease ("Lease") with the Peace River Partnership ("PRP"), an Alberta Partnership. Cardero withdrew from the Lease on May 30, 2014. Cardero holds a 75% interest in the remainder of Carbon Creek through a joint venture ("JV") agreement with the Carbon Creek Partnership ("CCP"). As of May 31, 2014, the properties subject to the JV comprise the Licences and the Applications.

Due to Cardero's withdrawal from the Lease, the coal on the Freehold is considered to be separate from that on the Licences. For this reason separate assessment reports have been submitted to BCMEM, one for the work carried out on the Freehold and one for the Licences. No work has been carried out on the Applications.

Historical exploration was carried out by Utah Mines Ltd. between 1971 and 1981. Modern exploration work began in 2010 and was conducted by Cardero (then known as Coalhunter Mining Corp.). An 8-hole drill core program on the Freehold validated the historical exploration dataset by twin drilling a select number of holes.

In June 2011 Cardero Resource Corp., a public company based in Vancouver, BC, completed the acquisition of Cardero. Following such acquisition Cardero continued to explore the Freehold with a program of field mapping, core drilling, rotary drilling, and large diameter core drilling to sample select seams.

In June 2012 Cardero was granted the Licences with 4 blocks adjacent to the Freehold and the 2012 exploration program covered both the Licences and the Freehold with core drilling, rotary drilling and additional large diameter core sampling of select seams.

Norwest Corporation was contracted from 2010 to 2013 to provide geological supervision and to complete several technical reports, including a Resource Estimate (2011), a Preliminary Economic Assessment (2011) and a Prefeasibility Study ("PFS") (2012) in respect of which NI 43-101 reports were filed. The PFS presented resources/reserves for the combined areas of the Freehold and the Licences. As Cardero has withdrawn from the Lease, the resources/reserves

presented in the PFS are no longer valid and there is no current NI 43-101 report for Carbon Creek.

Figure 1.Carbon Creek Property Index Map Location.

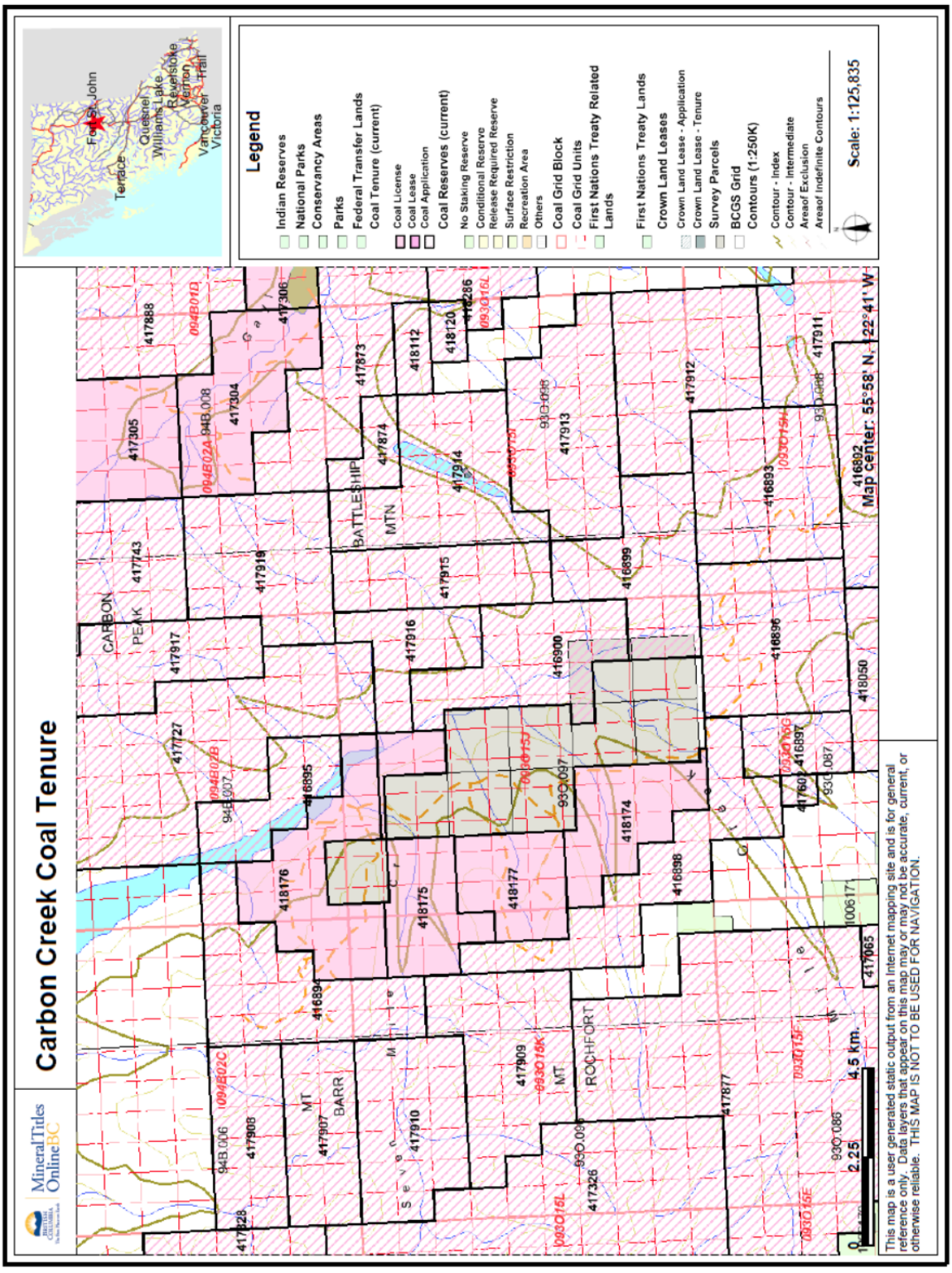
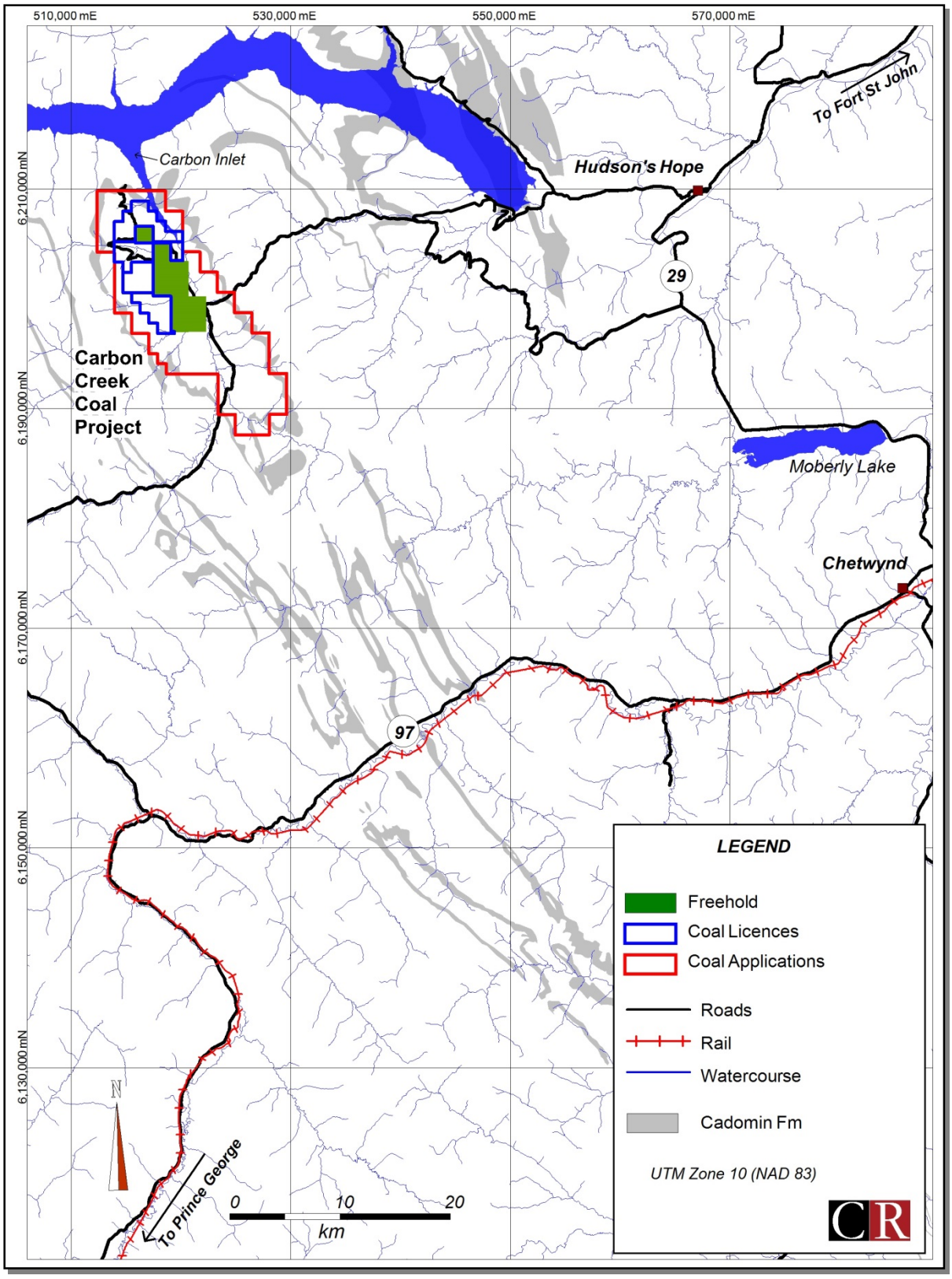


Figure 2. Carbon Creek Coal Property Location Map



2 Location and Ownership

2.1 Location

Carbon Creek is located 40km west of Hudson's Hope and 50km north-northeast of Highway 97 (*Figure 1 and 2*). The property is accessible by Forestry Service roads that connect to Highway 29 between the towns of Chetwynd and Hudson's Hope. The CN Rail line, connecting the cities of Fort St John and Tumbler Ridge with Prince George, passes 40km south of the property, providing direct access to ports in Vancouver and Ridley Terminals in Prince Rupert. The northern portion of the property is adjacent to the Carbon Inlet of Williston Lake.

The center of the property is in UTM Zone 10, NAD 83 at coordinates 521053mE, 6198709mN.

The property has a continental highland climate with short, warm summers and long cold winters. The average daily temperatures are around 15^{o}C in summer with 318mm of rain annually and -10^{o}C in winter with approximately 1.7m of snow annually. Mining operations exist in the region and the winter climate conditions do not preclude surface or underground mining operations.

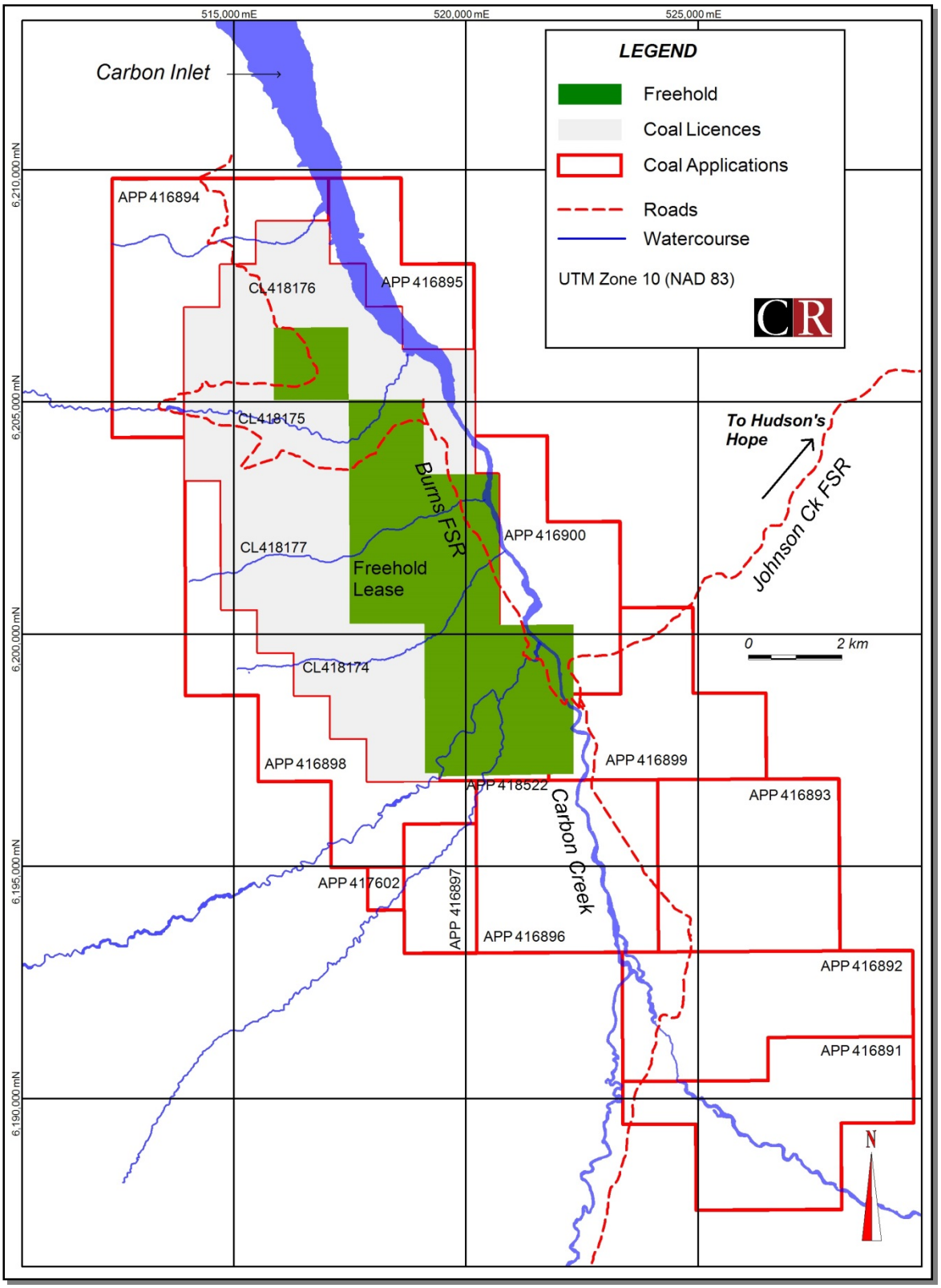
Carbon Creek is located in the inner foothills of the Canadian Rocky Mountains and displays characteristic hills and low mountains. The highest elevation on the Freehold is 1,200m above sea level and most of the property is below the treeline. Carbon Creek flows from south to north across the centre of the property, entering Williston Lake at Carbon Inlet. Carbon Creek is fed by west to east flowing creeks the most prominent being Seven Mile Creek, Nine Mile Creek, Ten Mile Creek and Eleven Mile Creek.

2.2 Freehold Ownership

The Freehold is owned by the PRP.

The Freehold covers 2,590 hectares. The location of the Freehold with respect to the contiguous Licences and Applications is shown in *Figure 3*.

Figure 3. Location of Freehold in relation to Coal Licences.



3 Project Overview

3.1 Goals and Parameters

The goal of exploration work on the Freehold was to verify historical exploration work, define NI 43-101 resources/reserves and undertake coal and rock analyses for feasibility-level mine planning and reserve estimation.

The specific goal of the 2010 exploration program was to validate drill data collected by Utah Mining from 1971 to 1981. The historical data was subsequently used in the estimation of the initial resource estimate for Carbon Creek in June 2011*.

The 2011 and 2012 drill programs were designed to improve resource confidence, define reserves, create a rock mechanics database for future mine planning and collect coal quality data through slimcore and large diameter core drilling.

The 2011 and 2012 exploration programs consisted of infill drilling on the Freehold. In addition to resource modeling, the drilling targeted areas where underground and surface production could commence based on mineability and prioritization of the highest quality seams. Targeted drilling focused on areas of resource expansion. Geotechnical, hydrogeological and CBM/gas desorption tests were performed concurrently with the drill program to provide detailed geotechnical data for feasibility-level engineering studies.

The results of the 2011 exploration program were incorporated into the Carbon Creek PFS, completed in October 2012 and available for review on www.sedar.com.

The 2012 exploration program was intended to bring Carbon Creek to a full bankable Feasibility Study. During 2013 the coal quality laboratory analysis was delivered and work focused on full analysis of the 2012 exploration work. A Feasibility Study was partly completed during 2013 but never completed and results have not been published to date.

3.2 Exploration History

Utah Mines Ltd. conducted most of the significant historical exploration of Carbon Creek. Between 1971 and 1981, Utah drilled approximately 107 drillholes and 10,529 metres (“m”) on the Freehold (core, rotary, large diameter). Most of these holes were geophysically logged. The location of the historical drill collars are shown in *Figure 4.*

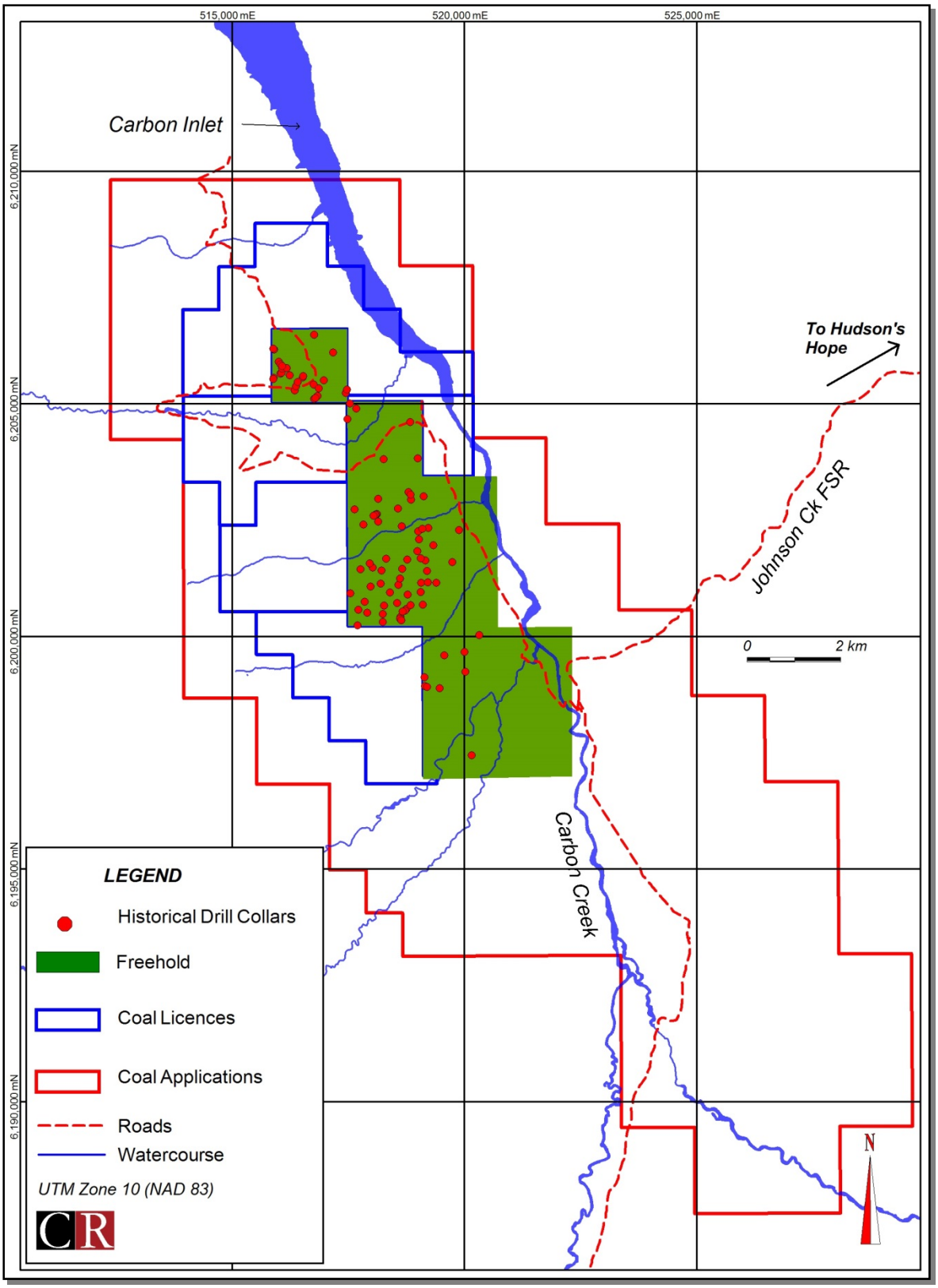
Table 1 summarizes the Utah Mining drill program on the Freehold. The drill collar locations are compiled in *Appendix 1*.

**All resource/reserve estimates released for Carbon Creek are no longer valid. These resource/reserves estimates combined data from the Freehold with data from the Licences.*

Table 1. Utah Mines Ltd. 1971-1981 Drill Program Summary for the Freehold.

Year	# Holes	Total Drill Length (m)	Mean Depth (m)	Drill Type	Diameter
1971	4	909	227	Core	HQ
1972	4	716	179	Core	HQ
1973	8	1197	150	Core	HQ
1975	11	2339	213	Core	HQ
1976	5	1531	306	Core	HQ
1976	50	1802	73	Rotary	HQ
1981	5	1243	249	Core	HQ
1981	20	792	44	Rotary	HQ
Total	107	10,529			

Figure 4. Utah Mining Drill Collar Locations on the Freehold.



3.3 Access and Accommodation

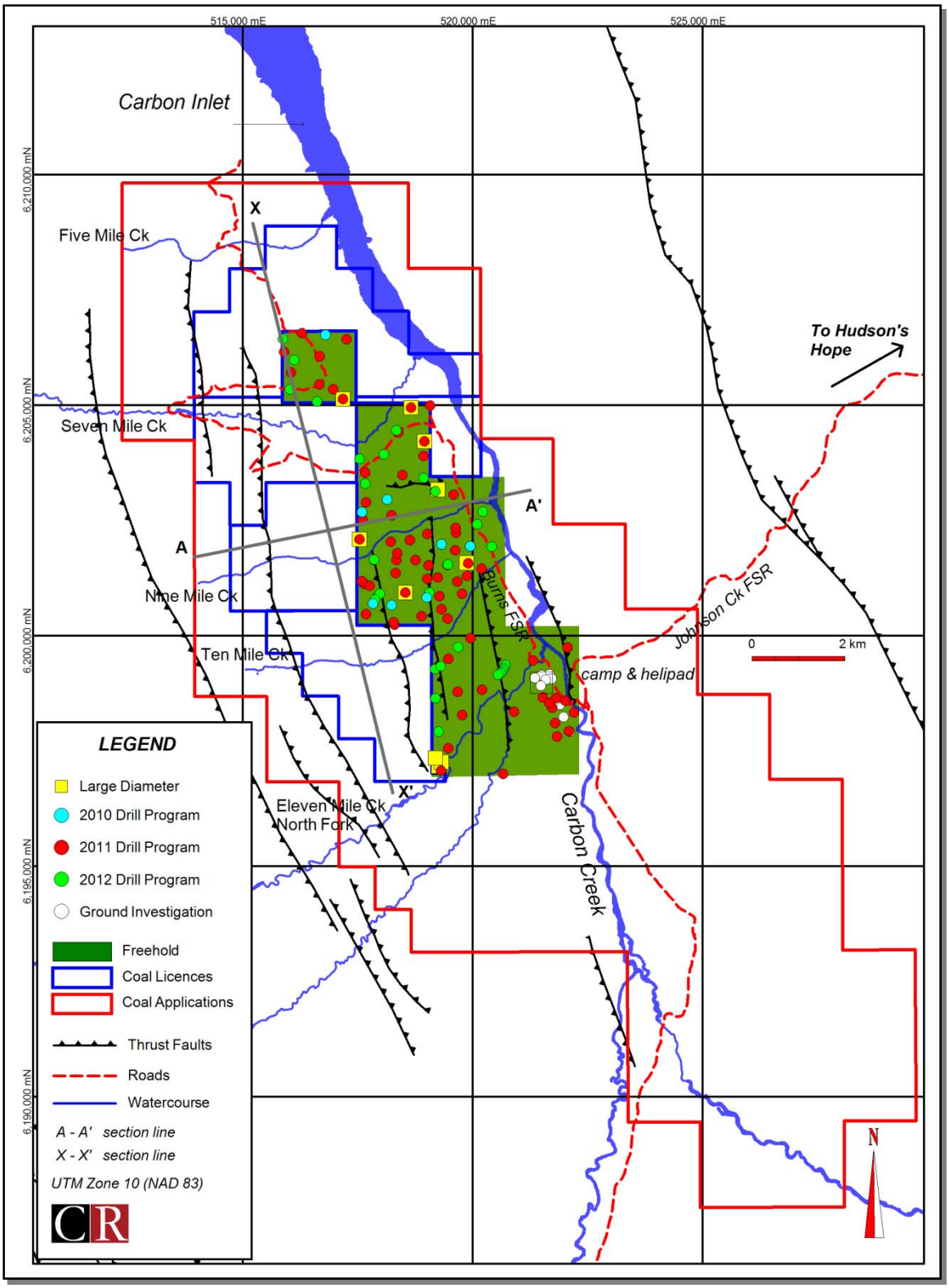
Carbon Creek is accessible by road. Improved Forestry Service roads connect the property with British Columbia Highway 29 between the towns of Chetwynd and Hudson's Hope (*Figure 1 and 2*). The Johnson Creek Forestry Service Road ("FSR") enters the property from the east and crosses Carbon Creek in the center of the property at the Burns FSR *(Figure 3*). These roads service active commercial logging operations in the area and can be negotiated with four-wheel drive vehicles in the summer and snowmobiles in the winter.

In addition to the Burns and Johnson Creek FSRs there is an extensive road network as a result of forestry and coal exploration activities conducted in the area over the past 40 years. Most of the drill trails for the 2010, 2011 and 2012 drill programs involved only upgrading of pre-existing exploration or forestry trails. The drill trails are single-lane, temporary use trails used by light vehicle traffic only (i.e., 4 x 4 pickup). The width of all trail beds is limited to the width of the dozer blade used (3m) with assumed maximum disturbance of approximately 5m.

During the 2010 drill program workers commuted from Hudson's Hope to the property. During the 2011 and 2012 programs Cardero established a temporary camp on site, alongside the Burns FSR in the vicinity of an existing helipad area (*Figure 5 and 6*). The exploration camp area was previously used as a logging load-out. The camp consisted of a 60 person sleeper unit with wash car (4 trailers), a dining room/kitchen (2 trailers), one office trailer, and a number of storage and logging units.

Figure 5. Carbon Creek Field Camp.

Figure 6. Collar Locations for the 2010-2012 Drill Programs on the Freehold.



3.4 Regional Stratigraphy and Structure

There are two main coal-bearing units in the Peace River Coalfield, the Lower-Cretaceous-age Gates Formation and Gething Formation. Coal seams from these two formations were subjected to varying depths of burial prior to the Laramide deformation and mountain-building episodes. The subsequent structural deformation resulted in increased pressure and heat flows that imparted metallurgical properties to the coal seams as evidenced from the vitrinite reflectance, swelling characteristics, and overall maturity of the coal seams.

A summary of the typical stratigraphy for the region is shown in *Table 2*.

The stratigraphic units occurring within or adjacent to the property range between the Moosebar Formation and Minnes Group, with the Gething Formation being the primary unit exposed at surface. The surface manifestion of the Cadomin Formation, the unit underlying the Gething Formation, is shown in *Figure 2*. Units penetrated by drilling within the property typically begin in the upper Gething Formation and terminate in the middle or lower Gething Formation. No record exists of the Moosebar Formation or its distinctive lower unit, the Blue Sky member, being intersected by drilling within the Freehold boundaries.

Table 2. Regional Stratigraphy

Upper Cretaceous		Dunvegan	Fine- to course-grained sandstone; conglomerate; carbonaceous shale; coal
Lower Cretaceous	Fort St. John Group	Cruiser	Dark grey marine shale with sideritic concretions; minor sandstone
		Goodrich	Fine-grained, cross-bedded sandstone; shale; mudstone
		Hasler	Silty dark grey marine shale with sideritic concretions; minor sandstone and pebble conglomerate; siltstone in lower part; basal pebble layer
		Boulder Creek	Fine-grained, well-sorted sandstone; carbonaceous sandstone; massive conglomerate; siltstone; marine and non-marine mudstone; minor coal
		Hulcross	Dark grey marine shale and siltstone, with sideritic concretions
		Gates	Fine-grained, well-sorted marine and non-marine sandstones; carbonaceous sandstone and mudstone; coal; shale; minor conglomerate
		Moosebar	Dark grey marine shale with sideritic concretions; siltstone; glauconitic sandstone; chert pebble conglomerate at base (Bluesky Member)
	Bullhead	Gething	Fine- to coarse-grained, brown, calcareous, carbonaceous sandstone; coal; carbonaceous shale and conglomerate; siltstone
		Cadomin	Massive conglomerate with chert and quartz pebbles; minor coarse-grained sandstone, carbonaceous shale, and coal
	Regional Erosional Unconformity		
Jurassic	Minnes		Quartzose sandstone; fine-grained sandstone; silty shale; mudstone; minor carbonaceous sediments

4 2010-2014 Exploration

4.1 Drilling

In 2010 Cardero conducted an 8-hole program with 1,999m of core and collected 289 samples on the Freehold to validate the 1971-1981 Utah Mining Ltd. exploration program (*Figure 5). Table 3* shows the variances in coal seam thickness on a per hole basis. Norwest was satisfied that the Utah Mines data was of sufficient accuracy to be used in resource estimations.

In 2011 Cardero continued to explore the Freehold with a program of field mapping, core and rotary drilling (67 holes, 15,663m, 1163 samples), and 6 large diameter core sampling sites (*Figure 6*).

In 2012 Cardero drilled 33 core and rotary holes on the Freehold (11,038m) with 3 additional large diameter core sampling sites.

Table 3. Aggregate Coal Seam Thickness Comparison: Coalhunter versus Utah Mining.

New Hole		Twin Hole			
Hole Number	**Aggregate Coal Thickness (m)**	**Drill Hole Number**	**Aggregate Coal Thickness (m)**	**Variance**	**Number of Major Coal Seams**
CC-10-01C	9.64	75-43C	9.77	-1%	3
CC-10-02C	9.23	73-30C	9.07	2%	9
CC-10-03AC	8.94	71-02C	9.09	-2%	11
CC-10-04C	5.52	76-71C	5.53	0%	5
CC-10-05C	12.82	81-88C	13.19	-3%	9
CC-10-07C	5.71	75-56C	5.98	-5%	4
CC-10-08AC	5.87	72-16C	5.60	5%	6
Total	**57.73**		**58.23**	**-1%**	**47**

Initially the holes drilled by Utah Mines were located from historical maps and coordinates. The drillhole collars have since been located more accurately using LiDAR imagery acquired in 2011 (1 pixel=2m). These updated coordinates are reported in *Appendix 1*. In addition to collar locations, the identified seam range intersected and the base of the lowest seam thickness (from geophysical logs) for each hole are also summarized in this appendix. *Figure 4* shows the location of the historical drillholes.

The drillhole collars for the 2010, 2011 and 2012 drill programs are summarized in *Appendix 2 and 3* and the locations shown in *Figure 6*. Hole azimuth, hole dip, drillers depth, identified seam range intersected (as per interpretation in February 2013 and subject to change) and the base of the lowest coal seam intersected (calculated from geophysical log where available) are listed.

The 2010 drilling was performed using two wireline rigs extracting continuous HQ core. Five of the sites were drilled by Silverado Drilling Ltd., and 3 sites by DJ Drilling. All holes were drilled in a vertical orientation and averaged 213m in depth, each intersecting numerous seams in the stratigraphic sequence (total range of seams was seam 63 down to seam 14). Core recovery was good and presented no impact to the accuracy or reliability of the results. Two of the initial holes were abandoned and re-drilled due to technical difficulties. The 2010 drillholes were cased at a depth ranging from 3 to 18m.

The 2011 drilling was performed by 4 drilling companies. DJ Drilling operated 3 wireline core rigs, extracting continuous HQ core; Geotech Drilling operated 2 Air Rotary rigs; Carbon Mountain operated the initial drill rig for large diameter core, but were replaced by Anderson Drilling in December 2011. Eleven of the core holes were angled for the purpose of collecting oriented core samples for detailed geotechnical logging and analysis. The large diameter bulk sample coring was completed within the projected depth interval of the target coal seam using wireline single core barrels extracting 6-inch diameter core samples. At each of six bulk sample sites 8 to 10 holes were completed to obtain sufficient sample mass for detailed coal analyses and washability testing.

Drilling continued through the northern British Columbia winter. Freezing pipes and slower drill rates were the only issues encountered with the winter drilling. Holes were cased to the depth of the overburden which ranged from 0 to 119m.

The 2012 drill program was performed by 4 drill companies. Orofino Drilling operated 2 wireline rigs extracting HQ core; Anderson Drilling operated 1 wireline rig (also HQ core); Major Drilling operated 1 sonic rig which turned out to be inadequate for rock conditions below 20m; Geotech Drilling supplied a wireline drill rig (HQ core) as well as 1 Air Rotary rig. In addition to the HQ exploration holes and large diameter coring, 13 fence holes averaging 70m in depth were drilled across areas of faulting to determine structural disturbance across fault zones.

Table 4 shows the total number of holes drilled. From 2010 to 2012 a total of 28,700m were drilled on the Freehold.

The large diameter drillhole collars (2011 and 2012) and the targeted seams for bulk coal seam sampling are listed in *Appendix 3*.

Table 4. Number of Holes Drilled on the Freehold (2010 – 2012).

Year	# Holes	Total Drill Length (m)	Avr Depth (m)	Drill Type
2010	10	1,999.07	199.91	Core
2011	35	10,820.63	309.16	Core
2011	32	4,842.37	161.41	Rotary
2012	19	8,558.06	450.42	Core
2012	14	2,480.34	190.80	Rotary
		28,700.47		

Most holes intersected the targeted seams and were geophysically logged upon completion. The exceptions were:

CC-10-03C – re-drilled as CC-10-3AC

CC-10-08C – re-drilled as CC-10-3AC

CC-10-09C – hole collapsed after drilling and was not logged

CC-11-33C – abandoned in overburden

CC-11-36R – abandoned

CC-11-54C – open hole blocked @ 102 m

CC-11-58R – abandoned in overburden

CC-12-103C – abandoned in overburden

CC-11-55R – hole abandoned and drilled following year as CC-12-55R

CC-12-70R – abandoned in overburden

The core holes were logged by geologists at the wellsite (refer to *Appendix 4* for scanned lithology logs). All drillcore was photographed before sampling.

4.2 Geotechnical Studies

Geotechnical data collection was supervised by SRK Consulting (Canada) Inc. ("SRK") in 2011 and 2012. A suite of geotechnical parameters, including core recovery, fracture density, and joint density, were collected from all core drillholes. In addition to the basic geotechnical data, SRK selected several core drillholes for detailed coal mine roof rating ("CMMR") analysis. For each signficant coal seam intersected, the strength, moisture sensitivity, cohesion, roughness, spacing and persistence were determined separately for the hangingwall, coal seam, footwall and partings. The tests were performed in order to develop a rock mechanics database which can be used to develop surface and underground mine design parameters. Basic geotechnical information and CMRR reports were submitted to BCMEM as digital files.

4.3 Site Investigation Holes

In 2011 17 site investigation holes were drilled at the location proposed for the construction of mine facilities close to the exploration camp *(Figure 6*). 8 of the holes (prefix "GBH") examined the ground underlying the proposed tailings area and 9 of the holes (prefix "PBH") examined the proposed plant foundations. The site investigated is not the site proposed in the 2012 PFS. A Notice of Work application was submitted in 2013 to conduct geotechnical testing over the new proposed area, which is outside of the Freehold.

The drilling contractor for the 2011 site investigation holes was Geotech Drilling. The geotechnical logs for this program are in *Appendix 5.*

4.4 Geophysical Logging

All drillholes (HQ, Rotary, and representative large diameter holes) were geophysically logged, with the exception of holes listed in *Section 4.1* (*see Appendix 6 for logs*).

The geophysical contractor for the 2010, 2011 and 2012 drill programs was Century Wireline Services ("Century"), who use industry standard quality control procedures in conjunction with calibrated and accurate measuring devices.

The drill holes were logged with a Gamma/Neutron tool and a Gamma/Caliper/Resistivity (Compensated Density). A dipmeter analysis tool was used for 5 fence holes drilled for structural control across fault zones and select holes were recorded with an Acoustic Televiewer (records bedding planes, fractures and other anomalies).

Century submitted the data as TIF and LAS format and the Acoustic Televiewer data as TXT files. The LAS files were used to generate lithology logs in excel which aided in the correlation of coal seams across the property (*digital LAS files and interpretations submitted digitally to BCMEM*).

Select 1971-1981 geophysical logs were also scanned, digitized and converted to LAS format by Century (*LAS files submitted digitally to BCMEM*).

4.5 Surveying

The holes were surveyed by Canyon Contracting Services based in Hudson's Hope. Surveyed collar coordinates are in *Appendix 2.*

4.6 Hydrogeology

SRK conducted a preliminary hydrological study on the Carbon Creek Property in order to characterize groundwater conditions (*Appendix 7*). The intent was that the data be sufficient to use in geotechnical and mining feasibility studies. In 2011 SRK conducted hydraulic testing on all coal seams and associated interburden. After the preliminary economic assessment the hydrological testing focused on Seams 14 and 15 and 27 to 31, seams to be mined as underground operations.

The scope of the work included:

- Reviewing existing information, including previous hydrological studies (2011);
- Developing a plan for drillholes to be used for hydraulic testing, installation of vibrating wire piezometers for pore pressure assessment and installation of monitoring wells for groundwater quality sampling (2011);
- A field program involving the recommended activities, hydraulic testing, vibe-view installation and monitoring well installation (2011, 2012);
- Initial data collection from the vibe-wire (2011); and
- Reduction and evaluation of data collected during the field program (2011, 2012)

The main conclusion reached by SRK is that there is no apparent correlation between hydraulic conductivity and logged lithologies. Piezometric testing suggests a downward hydraulic gradient and suggests the area may be a groundwater recharge zone.

The data is sufficient for the production of a feasibilty study, although additional drilling will be recommended prior to construction.

4.7 Deposit Structure

A surface mapping program was conducted in August and September 2011. The primary goals were to:

- confirm the degree of tectonic deformation in terms of GSC Paper 88-21, the standardized guidelines for reporting coal resources and reserves; and
- validate bedding planes data on the historical geological map of the area (Legun, 1988)

Geological traverses were conducted in Five Mile, Seven Mile, Ten Mile and Eleven Mile Creeks. 80 field observations were made on the Freehold and the structural readings validate the structural readings on the 1988 map by Legun (*digital field observations submitted to BCMEM).*

Carbon Creek is dominated by a broad, asymmetrical open syncline with dips averaging from 0^o - 15^o in the core of the syncline, increasing to up to 20^o - 25^o E on the western limb and 25^o - 30^o W on the eastern limb (*Figures 7 and 8; refer to Figure 6 for section locations*). Several north-south trending thrust faults have been identified through surface mapping and drilling (*Figure 6*). The syncline and thrust faults are a normal result of deformation during the Laramide Orogeny. Sections in *Figures 7 and 8* show the relatively uncomplicated structure of the project.

Faults on the property are characterized in outcrop by thrust-ramp anticlines (drag folding) and steep, variable dips (*Figure 9*). The faults follow the regional trend, striking north-northwest to south-southeast. In general, there appears to be little offset in the stratigraphy across these faults. The prominent faults have a 25 - 75m zone of deformation, with normally dipping beds on each side. Faulting appears to diminish in intensity towards the north. The thrust faults do not appear to extend for great distances laterally and the ramp anticlines, which generally show no actual

stratigraphic breaks, may indicate the thrusts are deep seated, and that Carbon Creek appears to be only affected by the diminishing tips of thrusts. This is consistent with the conclusion of McClay (1987) that thrust faults die out into anticline-syncline pairs. No other structural deformation or overturned limbs were observed on the property during the field mapping.

Figure 7. North-South Cross-section through Carbon Creek.

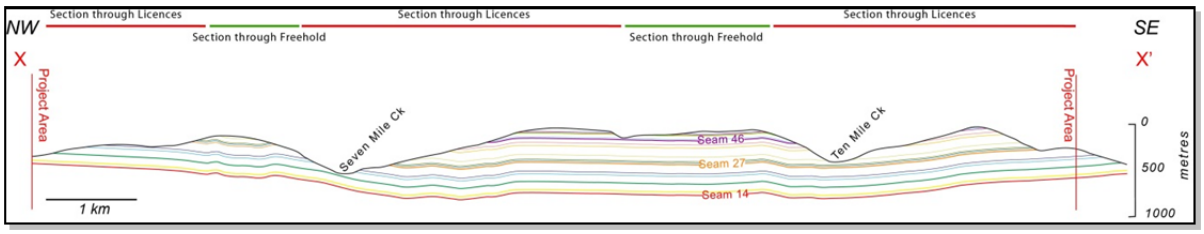


Figure 8. West-East Cross-section through Carbon Creek.

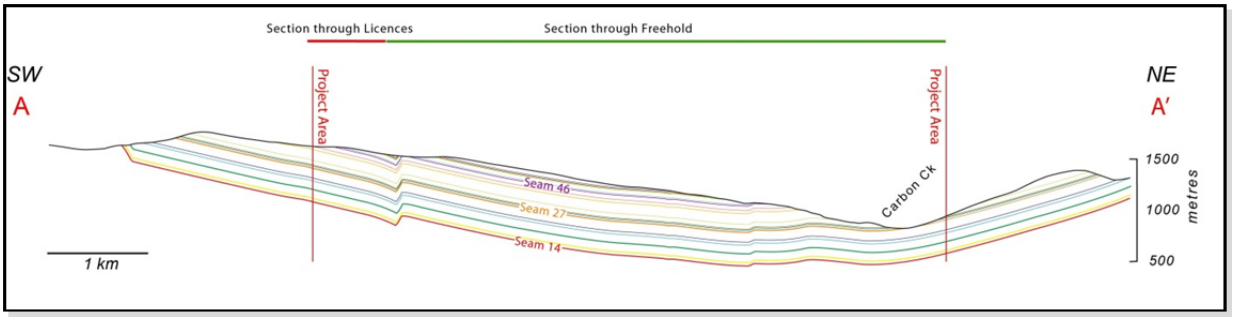


Figure 9. Thrust Ramp Anticline.

In summary, bedding on the Freehold is generally less than 30 º with most dips less than 15 º within the Carbon Creek resource area. Faults are uncommon with little or no displacement. The tectonic complexity of the deposit is classified as a “moderate” deposit type as defined by GSC Paper 88-21.

4.8 Property Stratigraphy

The exploration target for the 2010, 2011 and 2012 drill programs was the medium volatile bituminous coals of the non-marine Gething Formation, a sequence of dark grey mudstones, carbonaceous mudstone, coaly plant debris, black shale, siltstones and very-fine to coarse grained sandstones, minor conglomerates and abundant, thin coal seams. The Gething Formation is underlain by the Cadomin Formation, a sequence of massive conglomerates with minor sandstones and carbonaceous shale. The Cadomin Formation was not intersected in the 2010 to 2012 drill programs.

Figure 10 is a simplified type section for the Gething Formation at Carbon Creek with the important property-wide seams indicated.

Figure 11 is a stratigraphic cross-section from the PFS showing coal seam correlation across the central portion of Carbon Creek, excluding seams stratigraphically lower than seam 40. *Table 5* summarizes the 27 seams that were included in the PFS geological model, together with average, minimum and maximum thicknesses derived from the drill hole database and used for the PFS resource estimation.

At the conclusion of the 2012 drill program at Carbon Creek, 174 coal seams and sub-seams had been documented. 119 of these seams are greater than 0.60m in thickness. 27 coal seams are correlated across the property in the PFS model. The new geological model includes correlation of 47 coal seams that will be included in the 2014 resource estimate. Due to the complexity of the coal seam stratigraphy a nomenclature system was devised to identify and correlate the multitude of seams. *Figure 12* is a schematic sketch of the conventions used. The main seams are described with integers (14, 27, etc). Additional parts of the seam above are named Upper 1 (U1), Upper 2 (U2), etc. Additional parts of the seam below are named Lower 1 (L1), Lower 2 (L2), etc. In cases where the main seam has split into two discrete seams, the lower one will be assigned A, and the upper B.This nomenclature allowed for seam “sets” to be modeled individually. The main seam names (Seam 14, 15, etc) were retained for the new interpretations. The coal seam nomenclature is documented in digital lithology files submitted to BCMEM.

In addition to correlating coal seams, several large sandstones have been identified. In particular the Seam 52 Sandstone Marker, lying above Seam 52.

Figure 10. Carbon Creek Stratigraphic Column.

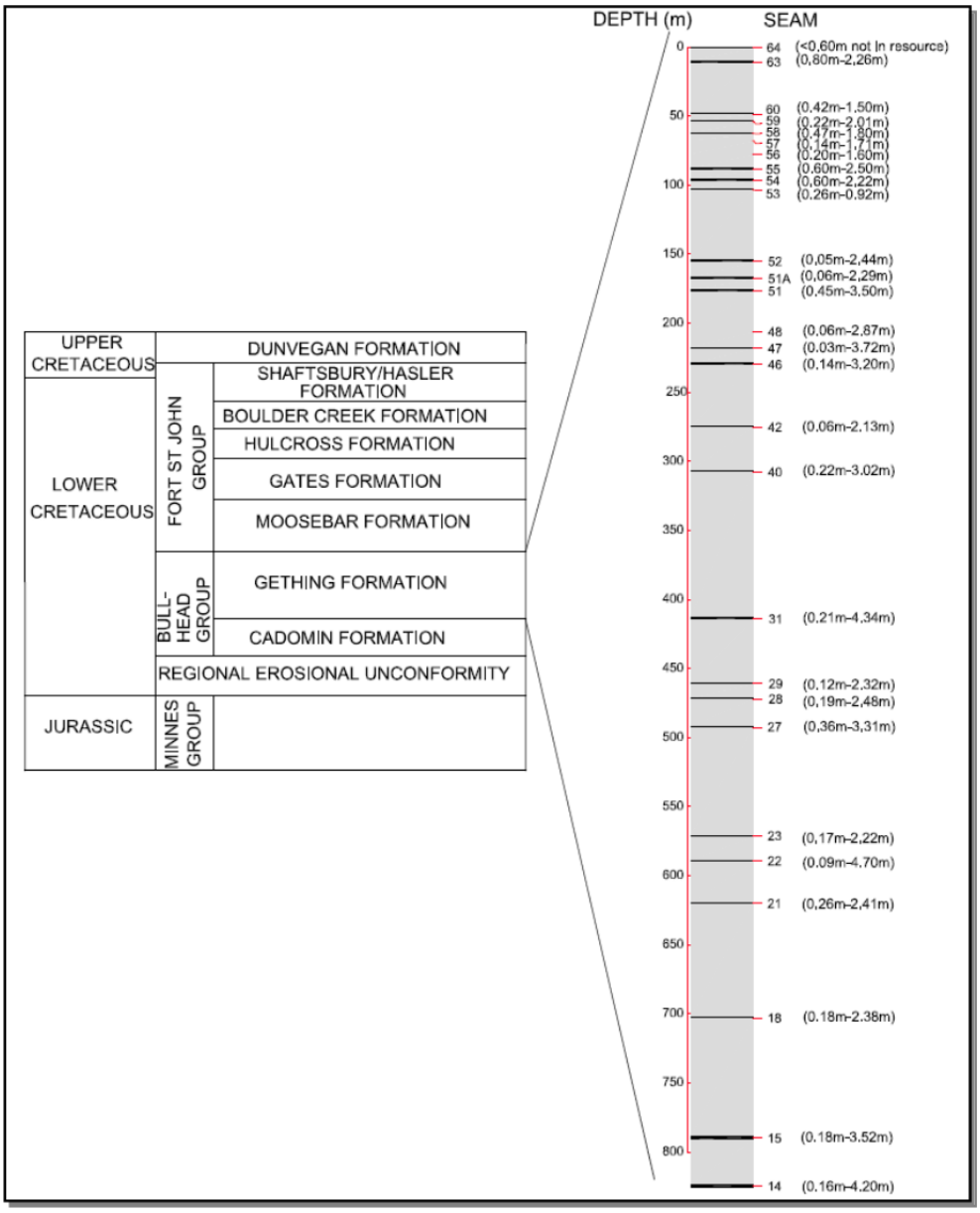


Figure 11. Northwest-Southeast Stratigraphic Cross-section (from 2012 PFS).

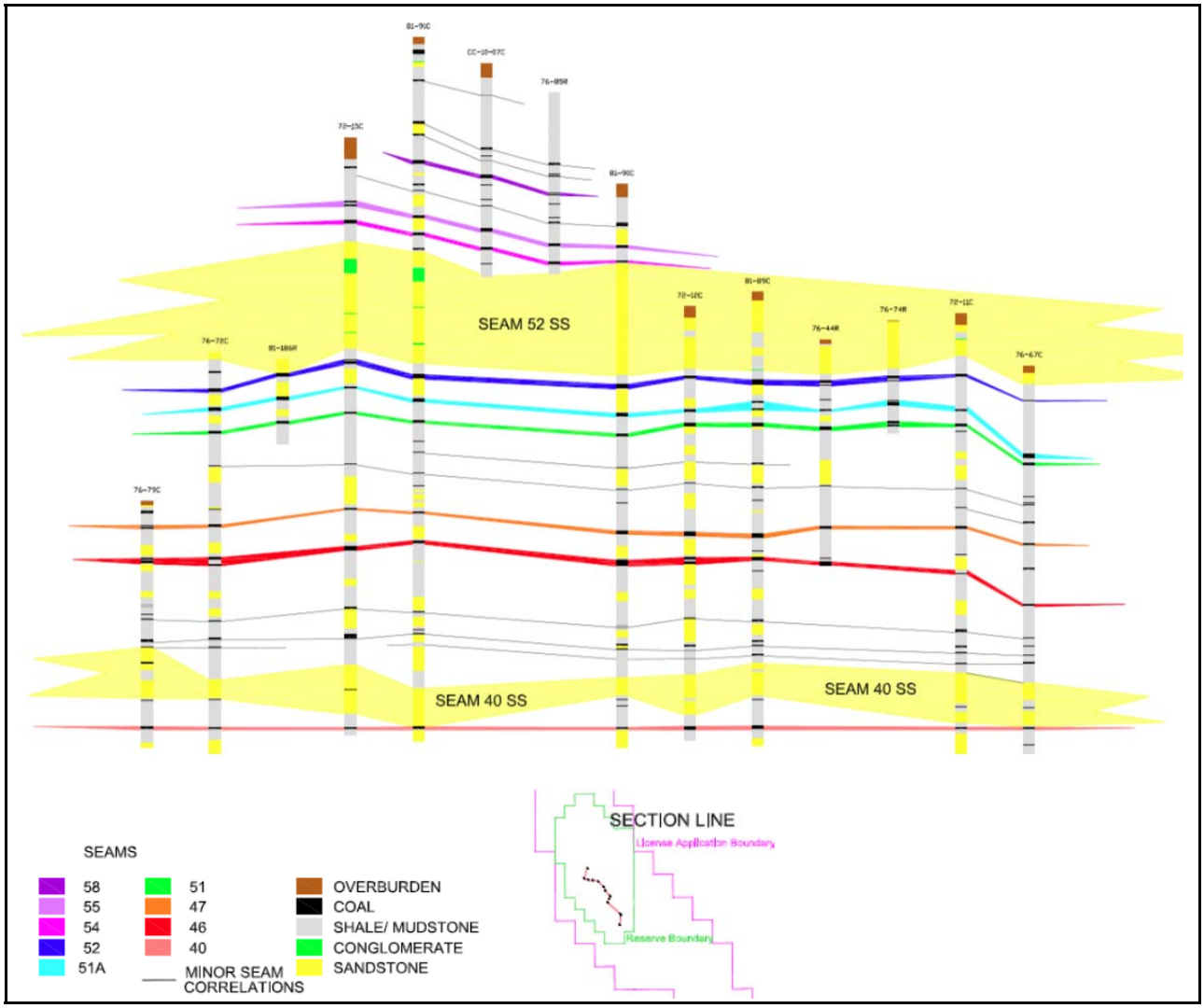
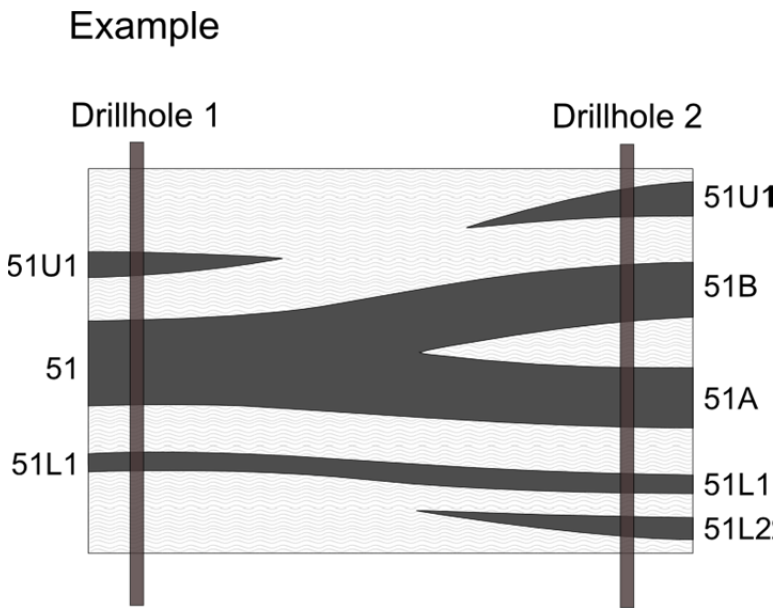


*Table 5. Average Apparent Seam Thicknesses **

Seam	Average Thickness (m)	Minimum Thickness (m)	Maximum Thickness (m)
63	1.72	0.80	2.26
60	0.92	0.42	1.50
59	0.88	0.22	2.01
58	1.01	0.47	1.80
57	0.53	0.14	1.71
56	0.70	0.20	1.60
55	1.55	0.60	2.50
54	1.39	0.60	2.22
53	0.71	0.26	0.92
52	1.39	0.05	2.44
51A	1.32	0.06	2.87
51	1.44	0.45	3.50
48	0.49	0.06	2.29
47	1.21	0.03	3.72
46	1.56	0.14	3.20
42	0.66	0.06	2.13
40	1.14	0.22	3.02
31	1.59	0.21	4.34
29	0.87	0.12	2.32
28	0.88	0.19	2.48
27	1.40	0.36	3.31
23	0.87	0.17	2.22
22	1.00	0.09	4.70
21	0.89	0.26	2.41
18	0.81	0.18	2.38
15	1.96	0.18	3.52
14	1.61	0.16	4.20
Avg	1.13	-	-

**Seams calculated from holes historical holes on the Freehold and Licences and 2010-2011 drill cores located on the Freehold.*

Figure 12. Coal Seam Nomenclature System.



4.9 2013 and 2014 Programs

Work during this time focused on receipt and analysis of coal quality data as it became available from various laboratories. In addition, a new geological model was completed based on a thorough reinterpretation of all previous coal seam correlations. A new NI 43-101 resource estimate will be published during 2014. Feasibility-level studies began in February 2013, but ceased in June 2013 due to prevailing metallurgical coal market conditions.

5 Coal Quality

Following discussions with the coal geologist at the Geological Survey Branch of the BCMEM, it was decided that the coal quality data collected from the Freehold and Licences will be presented and discussed together, since in-seam quality does not respect tenure boundaries and can be described for Carbon Creek. The data discussed in this section was collected from both the Freehold and Licences and also includes reinterpretation of historical data.

This section is confidential information under the terms of the Coal Act Reg, Section 2(1), and has been removed from the pubic version. This report, which includes coal quality data, will remain confidential as long as the coal tenure remains active.

Methodologies, parameters and results for the historical and recent coal quality data were verified by Norwest in the 2012 PFS, and was recently re-examined by Norwest prior to the compilation of a new geological model in 2013 (*Section 6*). The data verification process that was followed by Norwest is outlined in *Appendix 8.8*.

The g**o**al of the coal quality programs was to determine the continuity and quality of Carbon Creek coal resources and to determine a suite of possible coal products and suitable mining methods for extraction. Coal quality samples were collected from the core drill holes. HQ diameter core samples ("HQ") were collected and analyzed for a range of industry-standard parameters. Based on the HQ sampling several seams were targeted for bulk sampling. These samples were collected from clusters of large diameter 6" core holes ("LD"), which eliminated the need for bulk excavation. The following sections discuss sampling protocols, on-site sample preparation, analyses, results and proposed coal products based on the current understanding of the Carbon Creek deposit.

5.1 Methodology

Sample collection and analytical procedures were based on industry standards and the analytical laboratories used were all certified.

5.1.1 Analytical Procedures

Norwest and individual consultants developed analytical procedures for Carbon Creek based on industry acceptable protocols. All HQ samples, including non-coal partings and floor and roof samples were submitted for a raw head analysis, including a Proximate Analysis (Inherent Moisture, Ash, Volatile Matter), Equilibrium Moisture, Sulphur, FSI (Free Swelling Index), Specific Gravity and calorific value. Based on these results several HQ samples were selected for washability processing and a select number of simulated products compiled for clean coal composite analysis. *Figure 13* shows the detailed flow chart of the HQ sample analysis protocol. In addition to these analyses some HQ samples were submitted for petrographic analysis and gas desorption testing.

LD samples followed a similar analytical process (*Figure 14*) with all samples initially tested for raw coal quality followed by detailed washability analysis. From this data simulated seam products ("SSP") were assembled. These are small bulk clean coal products that are analysed for a range of industry recognised characteristics that will be used to market the coal products anticipated from the deposit.

Certified laboratories in the Canada were used for the various coal analyses. These included:

- Raw Coal Analyses: *ALS Canada Ltd., Richmond, BC*
- Raw Coal Quality (2010): *SGS Laboratories, Delta BC*
- Simulated product analyses, coal sizing: SSP creation: *Birtley Coal & Mineral Testing Division, GWIL Industries Inc., Calgary, AB*
- Coke & Carbonization studies: *CanmetENERGY Technology Centre, Natural Resource of Canada, Ottawa.*
- Coal Petrography: *Pearson's Coal Petrography Inc*
- Gas Desorption*: Loring Laboratory, Calgary*
- Adsorption Isotherm: *TerraTek, Calgary*

Figure 13. HQ Analytical Flowsheet

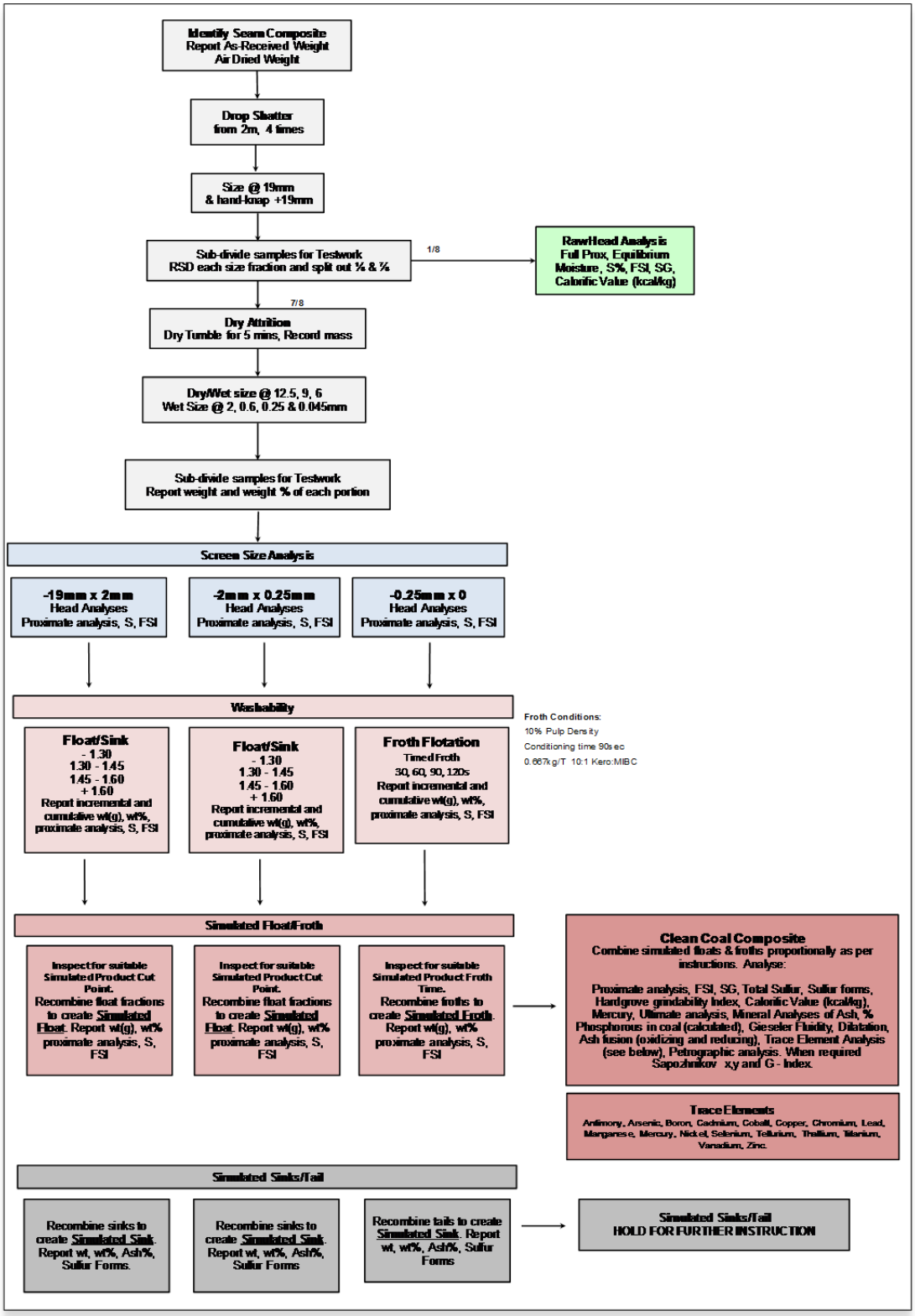
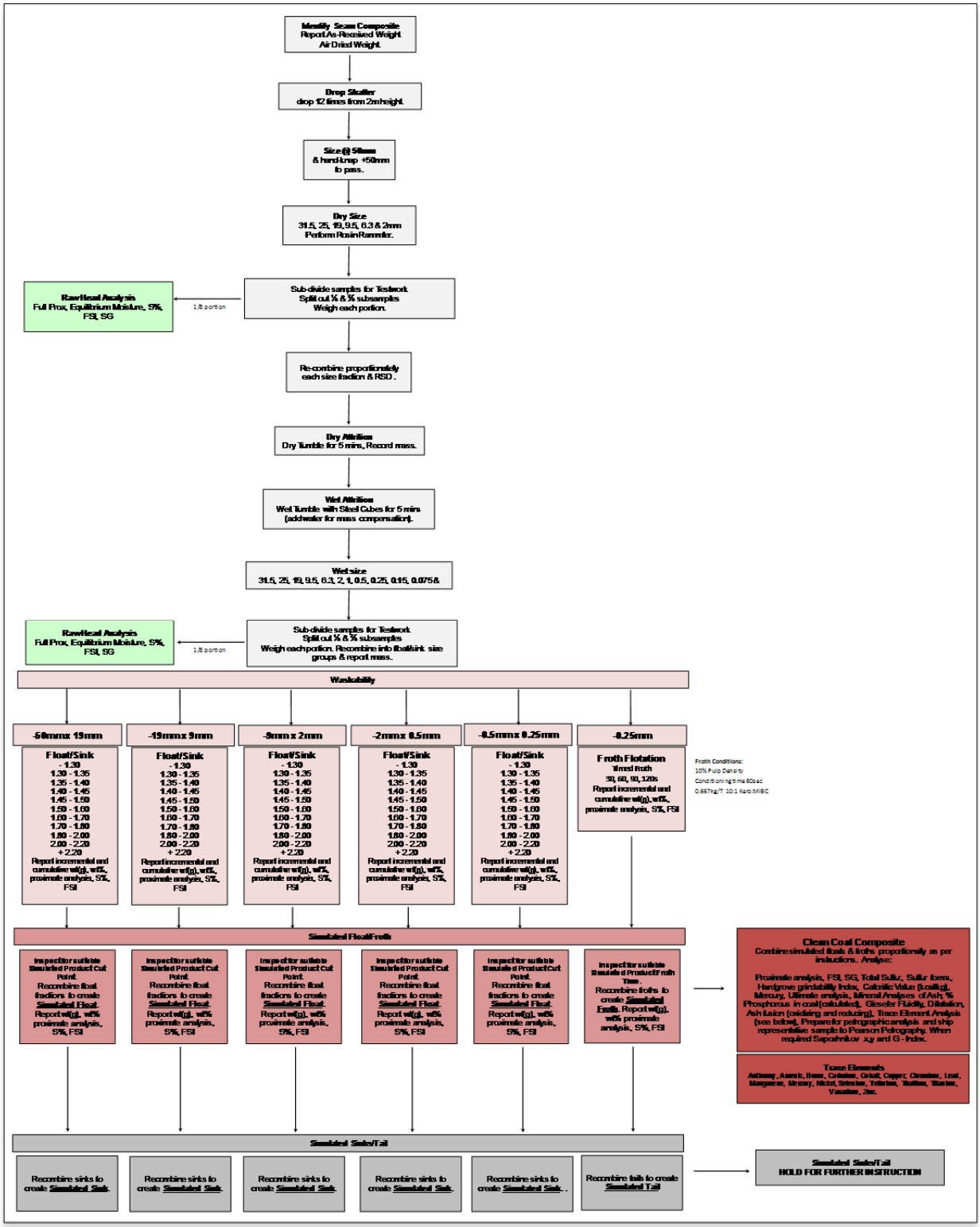


Figure 14. LD Analytical Flowsheet



5.1.2 Core Sampling Procedures

A standard operating procedure was developed for on-site core sampling, based on industry standards supervised by Norwest (*Appendix 8.1*). Due to the large volume of coal seams at Carbon Creek it was not possible to sample all seams. Guidelines were developed to ensure that the seams with a higher potential for inclusion in resource estimates were collected. All coals greater than 0.4m were sampled. Seams that were greater than 1m in thickness were sampled in 1m sections and as a result several seam analyses are sample composites. Partings less than 0.15m were included in the seam sample. If a parting exceeded 0.15m the parting was sampled separately or not at all depending on how carbonaceous the parting was. Roof and floor samples consisting of carbonaceous mudstone or containing coal stringers were also sampled.

The samples were labelled with waterproof tags, double-bagged in heavy duty plastic bags and sealed with electrical tape. LD samples were placed in plastic buckets. Samples were sent to the lab weekly, with no sample remaining in camp for longer than a week to avoid unnecessary sample degradation ahead of analysis.

5.2 Sample Database Compilation

The biggest issue in coal quality analysis is whether or not a representative sample was collected. Core loss and the friable nature of coal can cause seam thicknesses to be overestimated or underestimated during standard core logging procedures. Geophysical logs are invaluable, not only for seam correlations across the deposit, but to determine the actual thicknesses of sampled seams and core loss, which often occurs within coal seams or at their contacts. Cardero utilized geophysical logs as the final determination of seam intersections.

To understand the percentage of core loss associated with each sample collected, a sample summary was created for each drill hole, including historical holes with geophysical logs (*Appendix 8.2*). The summaries document sample depths and core loss corrected to the geophysical log depths, which more accurately indicate the thickness of a coal seam. If a core hole was not geophysically logged the field logged depths were used. The logs also show if any core loss included partings. The sample summaries indicated that a core loss recorded in the field using driller's and measured depths often did not exist.

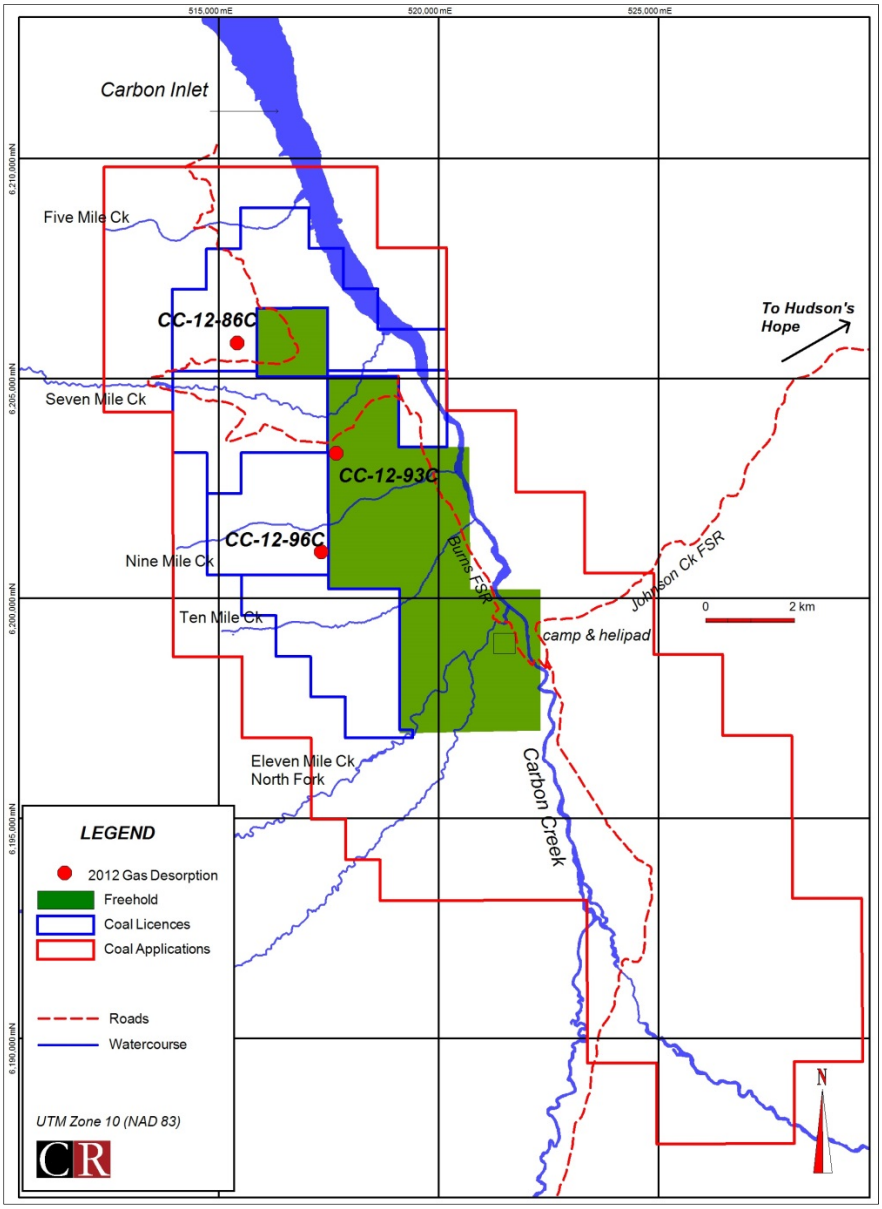
The sample summaries are the foundation of the database used for resource modelling. Every sample was reviewed and a decision made as to whether the sample analysis was representative of the interval sampled. Coal samples with low recovery, samples that included partings greater than 0.15m and samples with unverifiable lab data were not included in the database.

Table 6 is a summary of the database used in 2013 resource modelling showing coal seam nomenclature, average thickness across the deposit, average raw quality and the number of holes that intersected each seam. Seam Name A is the nomenclature used by Norwest for modelling purposes and Seam Name B is the seam nomenclature used by Cardero (*Figure 12*).

5.7 Gas Desorption Testing

A gas desorption study was undertaken by Norwest to characterize the gas content and compositions likely to be encountered underground and assist in the design of underground ventilation systems. Core samples were collected from 3 holes (CC-12-86C, CC-12-96C and CC-12-93C) (*Figure 15*). Samples included coal seams from the Lower Seam Package (Seams 31 through 14) which are included in underground mine extraction plans. Carbonaceous mudstone samples were also collected as gas may come from these units in an underground mine. Refer to Appendix 8.7. For the full report by Norwest.

Figure 15. Gas Desorption Sample Locations



8 Expenditures

Table 17. Statement of Costs 2010 – 2013 (inclusive of Freehold & Licences expenditure)

	2010		2011		2012	2013
	comments		*comments*		*comments*	
Personnel						
Geological Wages		$55,974.45		$731,363.34	$461,692.77	$245,894.47
Field wages		$0.00		$369,472.67	$814,244.82	$0.00
Geological Consulting		$0.00		$0.00	$154,312.30	$51,552.00
		$55,974.45		$1,100,836.01	$1,430,249.89	$297,446.47
Office Studies						
Report preparation		$226,505.14		$256,006.04	$1,176,639.17	$735,970.98
		$226,505.14		$256,006.04	$1,176,639.17	$735,970.98
Remote Sensing						
Other (LiDAR)		$0.00	85km^2	$43,500.00	$0.00	$0.00
		$0.00		$43,500.00	$0.00	$0.00
Ground geophysics						
Well logging	1,548m	$19,836.88	1,5059m	$231,093.24	21,491m $293,775.77	
Geophysical interpretation				$388,805.90	$52,188.76	
		$19,836.88		$619,899.14	$345,964.53	$0.00
Geochemical Surveying						
Drill (cuttings, core, etc.)	289 samples	$56,237.07	1163 HQ samples	$44,873.21	779 HQ samples $478,513.00	$202,148.00
		$56,237.07		$44,873.21	$478,513.00	$202,148.00
Drilling						
Diamond	10 holes, 1999m	$422,224.07	35 holes, 10821m	$2,702,377.79	31 holes, 14,806m $2,656,373.80	$0.00
Reverse circulation (RC)		$0.00	32 holes, 4842m	$838,154.58	31 holes, 7299m $1,246,507.47	$0.00
Large Diameter		$0.00	7 sites, 2965m (inc in diamond	$0.00	7 sites, 1325m $492,360.00	
Road Construction and Repairs		$448,690.99		$2,684,990.44	$3,346,597.32	$0.00
		$870,915.06		$6,225,522.81	$7,741,838.59	$0.00
Transportation						
Truck rental		$5,913.00		$72,380.75	$214,777.51	$26,446.48
		$5,913.00		$72,380.75	$214,777.51	$26,446.48
Accommodation & Food						
Camp		$0.00		$1,208,664.98	$1,812,379.38	$31,289.00
		$0.00		$1,208,664.98	$1,812,379.38	$31,289.00
Miscellaneous						
Miscellaneous Field Expenses		$26,844.75		$884,359.99	$1,849,108.68	$133,691.01
		$26,844.75		$884,359.99	$1,849,108.68	$133,691.01
Equipment Rentals						
Field Gear		$0.00		$0.00	$297,467.86	$15,669.00
		$0.00		$0.00	$297,467.86	$15,669.00
Year Subtotals		**$1,262,226.35**		**$10,456,042.93**	**$15,346,938.61**	**$1,442,660.94**
					2010 - 2013 Total Expenditure	**$28,507,868.83**

9 References

Henchel, L.D. 2011. *Technical Report* Carbon Creek Coal Property British Columbia Canada. A Technical report submitted to Cardero Resources Corporation, June 3, 2011.

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Messinger, L., Lewis, J and Henchel, L.D. 2012. *Prefeasibility Study* (PFS) of the Carbon Creek Coal Property British Columbia Canada. A Technical Report submitted to Cardero Resources Corporation, Sept 20, 2012.

Stubblefield, G.M. and Henchel, L.D. 2011. Technical Report Carbon Creek Coal Property British Columbia Canada. This is a *Preliminary Economic Assessment* (PEA). The Technical report was submitted to Cardero Resources Corporation, Oct 1, 2011.

10 Statement of Qualifications

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I received a Bachelor of Science degree in Geology from the University of the Witwatersrand, South Africa in 1985 and a Master of Science degree in Geology from the University of the Witwatersrand, South Africa in 1991. I have worked as a geologist since 1987.

I am a Senior Resource Geologist employed by Cardero Resource Corp. (Cardero Coal Ltd. is a wholly owned subsidiary of Cardero Resource Corp.) since June 2010. I have been involved with the Carbon Creek Metallurgical Coal project since June 2011. All the details of work performed are accurately described in this report, and I am not aware of any relevant omissions.

Marian Myers

10 JULY 2014
Date

Keith Henderson
Cardero Coal Ltd.
2300-1177 West Hastings Street
Vancouver, BC, V6E 2K3

I received a Bachelor of Science degree in Geology from Queens, University Belfast, United Kingdom, and Master of Science degree in Petroleum Geology from University College Dublin, Ireland. I have worked as a geologist since 1993 and have more than 20 years' experience.

I am President and CEO of Cardero Coal Ltd., a wholly owned subsidiary of Cardero Resource Corp. I have been involved with the Carbon Creek metallurgical coal deposit since June 2010, when Cardero Resource Corp. acquired its initial interest in the asset. All details of the work performed are accurately described in this report and I am not aware of any relevant ommissions.

Keith Henderson

10 JULY 2014
Date

11 Appendices

Appendix 1. Historical Drillhole Collars

Appendix 2. Drill Collars

Appendix 3. Large Diameter Drill Program

Appendix 4. Scanned Logs

Appendix 5. Ground Investigation

Appendix 6. Geophysical Logs

Appendix 7. Hydrogeology

Appendix 8. Coal Quality
- 8.1 Core Logging SOP
- 8.2 Sample Summaries
- 8.3 HQ Raw Ply Analyses
- 8.4 Clean Coal Quality
- 8.5 Petrography
- 8.6 Carbonization
- 8.7 Gas Desorption Testing
- 8.8 Data Verification

12 Digital Files

1. Drill Collars
2. Lithology
3. Geophysical Logs
4. Geotechnical Data
5. Ground Investigation Holes
6. Field Observations
7. Coal Quality