COAL ASSESSMENT REPORT TITLE PAGE AND SUMMARY

TITLE OF REPORT: Coal assessment report for the Willow Creek coal lease --Volume 1: Willow South area

TOTAL COST: $5,595,649.52

AUTHOR(S): **C.G. Cathyl-Huhn, L.R. LeMay, and P. Singh**

SIGNATURE(S):

NOTICE OF WORK PERMIT NUMBER(S)/DATE(S):

YEAR OF WORK: **2008 to 2012**

PROPERTY NAME**: Willow Creek**

COAL LICENSE(S) AND/OR LEASES ON WHICH PHYSICAL WORK WAS DONE:
Coal Lease 389294

MINERAL INVENTORY MINFILE NUMBER(S), IF KNOWN: **93O.008**

MINING DIVISION: **Liard**

NTS / BCGS**: NTS 93O/9 / BCGS 93O.060 and 93O.070**

LATITUDE: **55° 35’ 00" North**; LONGITUDE: **122° 11’ 00" West** (at centre of work)

UTM Zone: **10N** EASTING: **550428** NORTHING: **6161843**

OWNER(S): **Pine Valley Coal Ltd.**

MAILING ADDRESS: **235 Front St. (P.O. Box 2140), Tumbler Ridge, BC, V0C 2W0**

OPERATOR(S) [who paid for the work]: **Willow Creek Coal Partnership**

MAILING ADDRESS: **235 Front St. (P.O. Box 2140), Tumbler Ridge, BC, V0C 2W0**

REPORT KEYWORDS (lithology, age, stratigraphy, structure, alteration, mineralisation, size and attitude). **coal, Minnes Group, Bickford Formation, Bullhead Group, Cadomin Formation, Gething Formation, Gaylard Member, Bluesky Formation, Moosebar Formation, Bullmoose Member, Chamberlain Member, Cowmoose Member, anticlines, synclines, thrust faults**

REFERENCES TO PREVIOUS ASSESSMENT WORK AND ASSESSMENT REPORT NUMBERS: **Coal Assessment Reports 584, 689, 690, 861; Petroleum Report 863**

SUMMARY OF TYPES OF WORK IN THIS REPORT		EXTENT OF WORK (in metric units)	ON WHICH TENURES
GEOLOGICAL (scale, area)			
	Ground, mapping	**nil**	
	Photo interpretation	**nil**	
GEOPHYSICAL (line-kilometres)			
	Ground (Specify types)	**nil**	
	Airborne	**nil**	
	(Specify types)		
	Borehole		
	Gamma-density	**19,255.66 metres**	**389294**
	Resistivity	**19,020.14 metres**	**389294**
	Caliper	**19,020.14 metres**	**389294**
	Deviation	**18,581.03 metres**	**389294**
	Dip	**nil**	
	Others **(gamma-neutron)**	**19,060.37 metres**	**389294**
	Core drilling of **8 boreholes**	**499.97 metres**	**389294**
	Non-core (rotary) drilling **148 boreholes**	**20,651.16 metres**	**389294**
SAMPLING AND ANALYSES			
Total number of samples		**78**	**389294**
	Proximate	**78**	**389294**
	Ultimate	**nil**	
	Petrographic	**nil**	
	Vitrinite reflectance	**nil**	
	Coking (**FSI determinations only**)	**78**	**389294**
	Wash tests **(from bulk-sample cores)**	**11**	**389294**
PROSPECTING (scale/area)		**nil**	
PREPARATORY/PHYSICAL			
Line/grid (km)		**nil**	
Trench (number, metres)		**nil**	
Bulk sample(s): **by large-diameter coring**		**7 sites**	**389294**

A portion of Section 6 and Appendix C remain confidential under the terms of the Coal Act Regulation, and have been removed from the public version.

http://www.bclaws.ca/civix/document/id/complete/statreg/251_2004

1 Table of contents

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2 Introduction

The Willow South block comprises the southeasterly portion of a larger coal lease (the Willow Creek coal lease, covered by Crown tenure 389294, with an overall area of 6151 hectares).

The Willow Creek coal lease, although held as one tenure, has been in recent years explored and developed as three distinct blocks, although these blocks do not have independent identities as mineral tenures in their own right:

- Willow South block, the subject of the present report;
- Willow West block, situated along the southwestern bank of Willow Creek, and thus lying to the west-northwest of Willow South; and
- Willow Creek block, situated along the northeastern bank of Willow Creek, and thus lying to the northwest of Willow South.

Each of these blocks will be reported as one of a three-volume series of coal-assessment reports, presenting a comprehensive discussion of geology, current exploratory activity, coal-quality investigations, and geophysical data, placed within the context of an updated geological map.

To reiterate, this report concerns the Willow South block. As such, current exploration comprises drilling, downhole geophysical surveys, and coal-quality studies conducted between 2008 and 2012. No disturbant work has subsequently been done at Willow South in years 2013, 2014, or to the date of writing in 2015. Records of pre-2008 exploration are presented in the previously-submitted Coal Assessment Report No.861, by James (1998).

Current work comprises drilling of 156 boreholes (eight of them cored, the remainder non-coring rotary-holes) and an ancillary programme of analytical work on borehole cores. Nearly all of the boreholes were logged with downhole geophysical tools (as documented in **Appendix A** of this report).Analytical work comprised proximate analysis of coal and associated rocks (partings and adjacent strata), followed by laboratory-scale washability tests of composite samples. Analytical results on 'raw' samples are presented in **Appendix B**, and results of washability tests are presented in confidential **Appendix C**.

Near-surface sedimentary rocks within and adjacent to the Willow South block are of Lower Cretaceous age, comprising (from youngest to oldest) all but the uppermost part of the Fort St. John Group, the entirety of the Bullhead Group, and the uppermost part of the Minnes Group. Coal has been extensively drilled within the Gaylard Member of the Gething Formation of the Bullhead Group (**Map 2-3; Table 3-1**). Younger rocks, of the uppermost part of the Fort St. John Group, the Dunvegan Formation, and the yet-younger Alberta Group, were almost certainly originally-present at Willow South, but these rocks have been stripped away by erosional processes.

Willow South's coals have not been worked by any historic, nor current, coal-mining operations. The closest mining operations, workshops and other support facilities are at Walter Energy's presently-idled Willow Creek Colliery, situated immediately northwest of the Willow South block. Any coal mined from Willow South would most conveniently be processed at the existing Willow Creek coal-washery, and loaded into railcars at the existing loading-facility near the washery.

Other than the coals which have been the focus of exploratory activities within the Willow South block, associated sedimentary rocks comprise conglomerates, sandstones, siltstones, mudstones, carbonaceous mudstones, concretionary ironstone, accompanied by thin but distinctive bands of igneous tuff. Marine mudstones and siltstones are known to be present within the Fort St. John Group (Wickenden and Shaw, 1943; Hughes, 1963). The local occurrence of bioturbated mudstones and siltstones within the basal half of the Gething Formation's Gaylard Member may point to the presence of marine-influenced sediments within this rock-unit. The facies of the majority of the Gaylard Member, and also of the underlying Cadomin and Bickford formations, are otherwise fluvial.

Bedrock within the Willow South block is moderately- to complexly-deformed, apparently moreso than is the case in the adjoining Willow Creek block (James, 1998; Jordan and Acott, 2005). Broad to compressed, northwest-striking, southwest and northeast-verging open folds predominate at Willow South. These folds are most commonly associated with southwest-verging thrust-faults, which themselves are likely to be folded owing to passive deformation above subsequent underlying thrusts. The southwest vergence of the faults, and many of the associated folds, is unusual as compared with the regional norm within the Foothills of northeastern British Columbia.

Within the Gaylard coal-measures, numerous coal zones have been found by historic and current drilling at Willow South. Coal zones are numbered in downward succession from No.1 (near the top of the coal-measures) through No.12, following a long-established schema (McKechnie, 1955). Most of the coal zones contain one or more major coal beds, often associated with laterally-branching splits, stringers and stringer plies (as summarised in **Table 5-1**). Individual coal beds and sub-beds range in thickness from a few decimetres to several metres.

At Willow South, as in several other areas within the Mink-Brazion coalfield, the Gaylard coal-measures may be conveniently subdivided into five informal divisions, numbered in upward succession from Division 1 at the base of the Gaylard, to Division 5 at the top of the Gaylard. Drilling has established that the thickest, and possibly more laterally-extensive, coals occur within the middle portion (Division 3) of the Gaylard Member.

Regional correlations of Gaylard coals are here proposed, although not examined in detail:

- No.4 zone at Willow South may be correlative with the Brenda Seam at Hasler Creek, F zone at Mink Creek, Seam C60 at Burnt River, and the Lower Gething B zone at Sukunka Colliery;
- No.6 zone at Willow South may be correlative with the Upper Seam at Burnt River; and
- No.7 zone at Willow South may be correlative with the Lower Seam at Burnt River.

Coal-resource studies have been commenced, as concerns the Willow South block, but no formal report has yet been issued.

2.1 Scope of report

This report has been compiled and submitted by Willow Creek Coal Partnership (WCCP) in keeping with the provisions of the *Coal Act* and the *Coal Act Regulation*, with respect of exploratory activities on Crown coal tenures within British Columbia.

This report documents exploratory work completed on the Willow South block of WCCP's Willow Creek coal lease, situated within the Mink-Brazion coalfield, in the northeastern part of British Columbia. WCCP's current exploratory work was conducted in years 2008 through 2012, with the drilling of 156 boreholes at Willow South. No subsequent physical work has been done at Willow South, other than passing examination of coal exposures and associated rock outcrops within road-cuts along roads.

2.2 Situation and objectives

The Willow Creek coal lease, and the Willow South block thereof, are located in the Peace River region of northeastern British Columbia (**Map 2-1**), an area which has seen considerable coal-exploration activity since the late 1960s.Walter Energy Inc., and predecessor and associated firms such as Willow Creek Coal Partnership, have for some years operated metallurgical-coal mines within this area.

From 1996 onward, the Willow South block has been drilled for coal. This majority of this work was done between 2008 and 2012, and hence is considered as 'current' and therefore reportable exploratory work, as documented in **Appendix A** of the present report. A modest amount of seismic-reflection surveying has been done within the Willow South block, by service-companies contracted to the oil and gas industry. Locations of known seismic lines are shown in orange on Map 2-2; results of these surveys are not at hand, although if desired they could be purchased as 'trade data' from seismic-data brokers. No oil and gas wells have yet been drilled within the Willow South block, although both 'conventional' exploratory wildcat wells and a coalbed gas well have been drilled nearby.

The Willow South block has now been sufficiently explored to allow for estimation of coal resources to current Canadian standards (*vide* Hughes *et al*, 1989), as briefly discussed further in **Section 7** of the present report.

Table 2-1: Tenure details of the Willow Creek coal lease

Tenure Number	Map	Block	Units	Date Acquired	Area (hectares)	Former coal lease number
389294 (84 units)	93O/9E	B	61, 62, 63, 64, 71, 72, 73, 74, 81, 82, 83, 84, 85, 86, 87, 88 91, 92, 93, 94, 95, 96, 97, 98	March 31, 1998	6151	Coal Lease 15
	93O/9W	F	1, 2, 11, 12, 21, 22, 31, 32 41, 42, 51, 52, 61, 62, 63, 64 71, 72, 73, 74, 83, 84, 93, 94			
	93O/9E	G	3, 4, 5, 6, 7, 8, 9, 10, 13, 14, 15, 16, 17, 18, 19, 20, 25, 26, 27, 28, 29, 30, 35, 36, 37, 38, 39, 40, 47, 48, 49, 50, 57, 58, 59, 60			
Totals:	1 tenure		84 units		6,151 hectares	

Note: Map sheets listed are within the National Topographic System. Blocks and Units refer to the British Columbia Coal Tenures Grid System, whose unit cells are based upon NAD 27 surveys, and translated into NAD 83 coordinates for purposes of mapping.

2.3 Property description

The Willow South block occupies the southeastern portion of the Willow Creek coal lease (Tenure 389294), within the Liard Mining District of northeastern British Columbia, situated within the eastern half of map-area 93O/9 of Canada's National Topographic System. The aggregate area of the Willow Creek coal lease is 6151 hectares. Tenure 389294 was granted by the Crown on March 31, 1998 (as listed in **Table 2-1**).

To reiterate, the Willow South block is an informal operational subdivision of the coal lease, with no formal stand-alone identity within the Crown mineral-tenure system of British Columbia. The outline of the Willow South block is depicted upon **Map 2-2** and **Map 2-3** of the present report. The following mineral tenure grid-units cover the extent of the Willow South block:

- Map-sheet 93O/9 Block B:
  Units 61, 62, 63, 64, 71, 72, 73, 74, 81, 82, 83, 84, 85, 86, 91, 92, 93, 94, 95, and 96
- Map-sheet 93O/9 Block G:
  Units 3, 4, 5, 13, and 14; and portions of Units 6, 15 and 16.

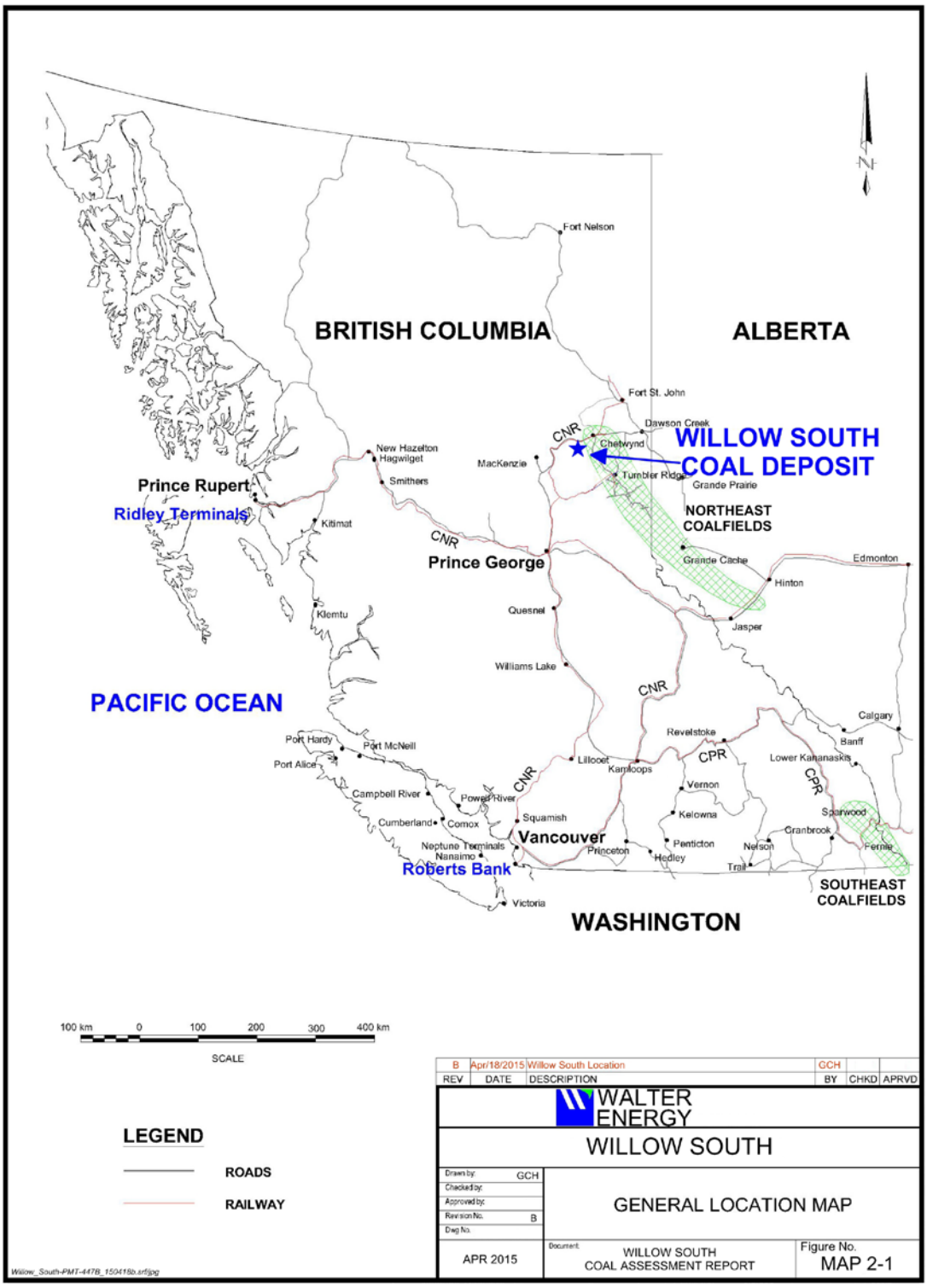
2.4 Location and access

Chetwynd town, located on Highway 97 and situated approximately 50 kilometres northeast of Willow South, is the closest incorporated settlement to Willow South (**Map 2-1**). Chetwynd's population was reported as 2,633 persons in the year-2006 census. In the context of more-distant communities within British Columbia, the Willow South coal property is located 130 kilometres south of Fort St John, 95 kilometres west of Dawson Creek, and 315 kilometres northeast of Prince George. Vancouver is situated 730 kilometres to the south-southwest of the property. Commercially-scheduled aircraft flights connect Vancouver to Fort St. John.

A coal-loading facility is situated on the southern bank of the Pine River, 5 kilometres to the northwest of Willow South. This loadout site, which serves to fill railway cars with coal produced from Brule Mine and from the existing Willow Creek coal washery, allows rail access to coal wharves along the Pacific Coast of Canada, and elsewhere within the North American railway network as may be desired. CN Rail are the operator of the former BC Rail line to which the loadout site is connected.

2.5 Climate

The nearest climate station to Willow South is the town of Chetwynd, whose climate is 'cool continental', with frigid winters and warm summers. Average annual rainfall and snowfall at Chetwynd are 306 millimetres and 169 centimetres respectively. The average frost free period ranges between 84 to 91 days, and about 30 days with some fog are expected per year. The mean daily temperature at Chetwynd is 15.4 C in July and -10.7 C in January. Winter temperatures below -40C are not uncommon, with the coldest weather occurring in January and February of most years.


BRITISH COLUMBIA
ALBERTA
WASHINGTON
PACIFIC OCEAN
WILLOW SOUTH
COAL DEPOSIT
NORTHEAST
COALFIELDS
SOUTHEAST
COALFIELDS
Fort Nelson
Fort St. John
Dawson Creek
Chetwynd
Tumbler Ridge
Grande Prairie
MacKenzie
New Hazelton
Hagwilget
Smithers
Prince Rupert
Ridley Terminals
Kitimat
Prince George
Grande Cache
Edmonton
Hinton
Jasper
Quesnel
Klemtu
Williams Lake
Revelstoke
Calgary
Banff
Lillooet
Kamloops
Lower Kananaskis
Vernon
Kelowna
Sparwood
Cranbrook
Fernie
Penticton
Nelson
Trail
Hedley
Princeton
Port Hardy
Port McNeill
Port Alice
Campbell River
Cumberland
Comox
Powell River
Squamish
Vancouver
Neptune Terminals
Nanaimo
Roberts Bank
Victoria
CNR
CPR
N
100 km 0 100 200 300 400 km
SCALE
LEGEND
ROADS
RAILWAY
B Apr/18/2015 Willow South Location GCH
REV DATE DESCRIPTION BY CHKD APRVD
WALTER ENERGY
WILLOW SOUTH
Drawn by: GCH
Checked by:
Approved by:
Revision No. B
Dwg No.
GENERAL LOCATION MAP
APR 2015
Document: WILLOW SOUTH COAL ASSESSMENT REPORT
Figure No. MAP 2-1
Willow_South-PMT-4478_150415b.srf/jpg

Access:

- Road (main)
- Road (other)
- Trail
- Seismic line

Drainage:

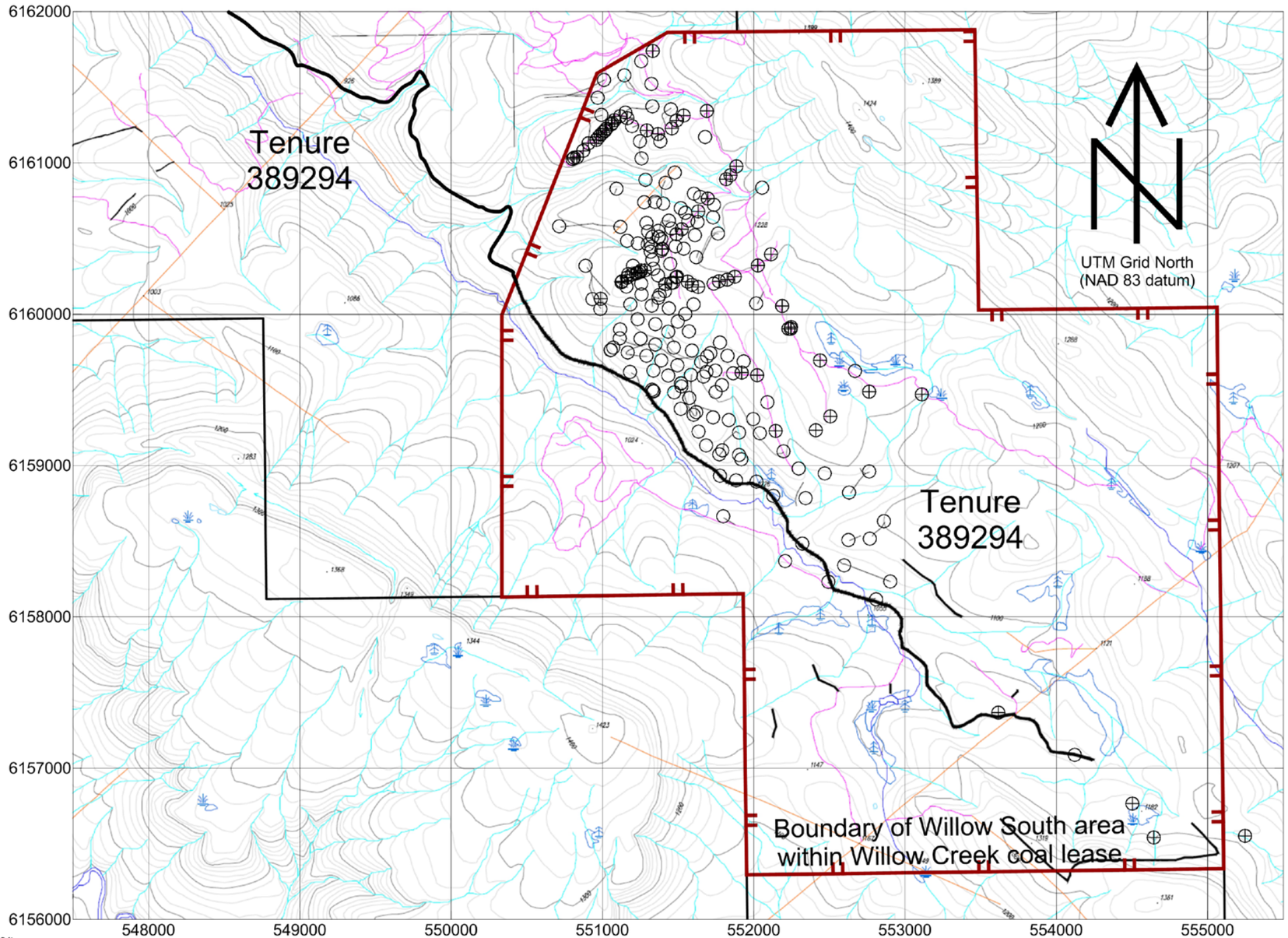
- River or creek
- Stream (perennial or intermittent flow)

- Outline of Willow South block within Willow Creek coal lease

Boreholes:

- ⊕ Historic (pre-2008)
- ○ Current (2008 to 2012)

Base mapping: British Columbia government TRIM-series maps sheets, at original scale of 1:20,000. Elevations are in metres above geodetic datum; contour interval is 20 metres.



Drawing: Willow_South-topography_150415f.srf/jpg
Drawn: C.G. Cathyl-Huhn, P.Geo.(BC) Lic.Geol.(WA) RMSME
Date: 18.April, 2015 Scale: as shown by bar scale
Grid: UTM Zone 10 to North American Datumn of 1983, in metres

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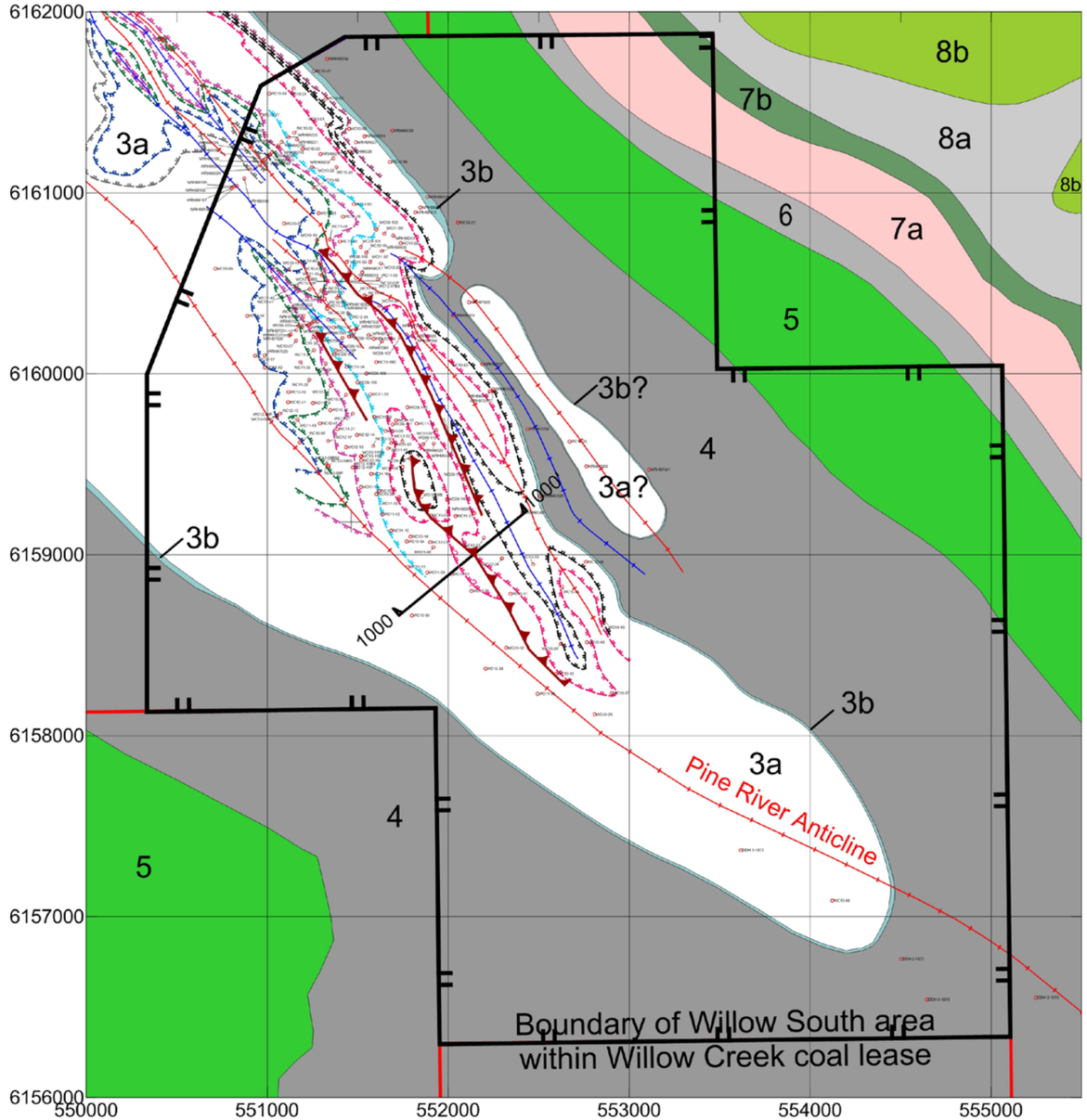
Map 2-2:
Coal Tenure and Topography



Drawing: Willow_South-local-geology-tracing-base-NAD83_150418g.srf/jpg
Drawn: C.G. Cathyl-Huhn, P.Geo.(BC) Lic.Geol.(WA) RMSME
Date: 18.April, 2015 Scale: as shown by bar scale
Grid: UTM Zone 10 to North American Datumn of 1983, in metres

STRATIGRAPHIC LEGEND:

QUATERNARY

not shown — Alluvium and colluvium -- fluvial and glaciolacustrine deposits; moraines; talus; possible landslide deposits

FORT ST JOHN GROUP (Albian)

8b — Goodrich Formation -- sandstone; minor siltstone and mudstone

8a — Hasler Formation -- siltstone and mudstone; minor sandstone; ironstone as bands of concretions

Boulder Creek Formation:

7b — Walton Creek Member -- sandstone and siltstone; conglomerate, coal

7a — Cadotte Member -- conglomerate and sandstone

6 — Hulcross Formation -- siltstone and mudstone; minor sandstone and tuff; ironstone; basal pebbly gritstone

Gates Formation:

not mapped separately at this scale
- Notikewin Member -- siltstone, sandstone and conglomerate; minor coal
- Falher Member -- sandstone, conglomerate and siltstone, minor coal
- Torrens Member -- sandstone; minor siltstone

4 — Moosebar Formation:

not mapped separately at this scale
- Spieker Member -- siltstone, sandstone; minor mudstone
- Cowmoose Member -- mudstone, minor tuff and ironstone; erosive-based basal glauconitic grit [Green Marker, Unit 4a, not mapped separately]
- Chamberlain Member -- sandstone and siltstone
- Bullmoose Member -- siltstone and sandstone; mudstone; minor tuff

3b — Bluesky Formation -- glauconitic sandstone and gritstone; siltstone and mudstone

BULLHEAD GROUP (Hauterivian to Early Albian)

Gething Formation:

3a — Gaylard Member -- siltstone, sandstone and coal; minor conglomerate, minor tuff

not mapped separately at this scale
- Division 5 -- siltstone, sandstone and mudstone; coal (zones 1, 2, 3 and 4)
- Division 4 -- siltstone, mudstone and sandstone; coal (zones A, M, 5 and 6)
- Division 3 -- sandstone and siltstone; minor mudstone; coal (zones 7 and 8)
- Division 2 -- siltstone and mudstone; minor sandstone and coal (zones 9 through 12?)

not exposed within map-area
- Division 1 -- sandstone; minor siltstone, mudstone, and conglomerate

Cadomin Formation -- sandstone; minor conglomerate

Coal Zones:

- No.1 zone
- No.2 zone
- No.3 zone
- No.4 zone
- A-zone
- No.5 zone
- No.6 zone
- No.7 zone
- No.8 zone

not shown owing to sparse control
- No.9 zone
- No.10 zone
- No.11 zone
- No.12 zone

Structure:

- Anticlinal trace
- Synclinal trace
- Thrust-fault (with barbs on over-thrust plate)
- Line of cross-section

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Map 2-3: Bedrock geology of Willow South block

2.6 Landforms and forest cover

The Willow South block lies within the Inner Foothills of the Rocky Mountains. Topography comprises deeply-dissected, steep-sided, rounded hills and mountains, with elevations ranging from 910 to 1424 metres above sea level. Topographic contours at 20-metre intervals, based upon provincial government mapping, are shown in **Map 2-2**.

The Willow South block lies within the Sub-Boreal Interior ecoprovince, within which are three biogeoclimatic ecosystem classification variants:

- Boreal White and Black Spruce moist warm Peace variant (BWBSmw1),
- Sub-boreal Spruce wet cool Finlay-Peace variant (SBSwk2), and
- Englemann Spruce Subalpine Fir moist very cold Bullmoose variant (ESSFmv2).

The Willow South block is heavily forested, chiefly with lodgepole pine, trembling aspen, balsam poplar, white and black spruce, and tamarack. The property lies within Tree Farm Licence 48, part of the Dawson Creek Timber Supply Area. Some cut-blocks have been operated for timber harvesting within the Willow South block. As a result, forest cover exhibits a range of ages and states of maturity. The high-grade road (Willow Creek Forest Service Road) which follows the northeastern bank of Willow Creek was initially constructed as a logging road, subsequently also used by the oil and gas industry, and now used in support of coal exploration activities.

2.7 Acknowledgements and professional responsibility

Thanks are due to many past and present workers:

- Dr. Muzaffer Sultan P.Geo. at Walter Energy, and Ian MacLeod P.Geo. at Peace River Coal (formerly a Walter Energy employee involved in Willow South drilling), provided details of the year-2012 bulk-sample drilling, coal-sampling and analysis programme.
- Laura LeMay B.Sc., and Preetpal Singh M.A.Sc., both at Walter Energy, compiled borehole records and many of this report's data tables.
- Dr. Peter Jones, at International Tectonic Consultants, continued to offer thought-provoking insights into the structural geology of the Mink-Brazion coalfield, including the Pine River Anticlinorium.
- Sara McPhail P.Geo. and David Richardson P.Geo., at the B.C. Ministry of Natural Gas Development, assisted in locating details of natural-gas wells.
- Blake Snodsmith, at Jim Walter Resources, provided a regional TRIM base-map, from which the topographic base of **Map 2-2** was derived.
- Connie Wong, at Walter Energy's former regional office in Vancouver, provided administrative support to this project, and to previous coal-assessment reporting projects.

Gwyneth Cathyl-Huhn P.Geo. Lic.Geol. RMSME accepts professional responsibility for data and conclusions presented within this report.

3 Exploration

Both historic (pre-2008) and current (years 2008 through 2012) coal exploration has been done by various parties within the Willow South segment of the Willow Creek coal lease. The vast majority of the work is of current vintage. The author of the present report, whilst in the employ of a third party, briefly visited the Willow South property as part of a regional structural and coal-quality survey, in the summer of 1981.

3.1 History of exploration

The following discussion is adapted mainly from an unpublished report for Unicorn International Mines Group Inc. (Ryan, 2010).

Coal was first discovered in the Peace River District in 1793, by Alexander MacKenzie's exploring expedition (MacKenzie, 1801). Prior to 1980, less than 100,000 tonnes of coal were mined at all locations within northeastern British Columbia (Ryan, 2002).

At a location on Hasler Creek, situated about 12 kilometres southeast of Willow South, the Hasler Creek Coal Company commenced small-scale underground coal-mining in 1943, continuing through 1944 and 1945. At this time, considerable geological mapping and some prospecting were undertaken within the Pine River Anticlinorium, including the Willow South area (Wickenden and Shaw, 1943, Spivak, 1944, Stott, 1973).

From 1946 onward to 1951, British Columbia's former Department of Mines conducted a diamond-drilling and trenching programme of the then-known coal deposits near the Pine River valley (McKechnie, 1955). This programme may have extended within the Willow South block, but survey information and logs of boreholes have not yet been located, although they might eventually be found within the working files of the British Columbia Geological Survey Branch.

In the late 1950s, several oil companies undertook structural and stratigraphic mapping within and adjacent to Willow South, and within the Mink-Brazion coalfield generally. A report done for Triad Oil, by Dr. Peter Jones (1960) is the most useful of those reports which are publicly-available. In 1963, Dr. John Hughes compiled a dissertation for McGill University, concerning structural geology and tectonics of the Pine River valley, including the Willow South area (Hughes, 1963). Dr Hughes' work was sponsored by the then-extent British Columbia Department of Mines, leading to the publication of two provincial Geological Survey Bulletins (Hughes, 1964; 1967).

The expansion of steel production in mid-1960s stimulated exploration for metallurgical coking coal. By the mid-1970s within northeastern British Columbia, most of the land with coal potential had been acquired by mining companies, or by oil and gas companies seeking to enter the coal industry as a means of diversification. Initial development interest was along the existing railway (then known as the British Columbia Railway) which passed through Pine Pass and thus connected Chetwynd and Dawson Creek with then-existing ports along British Columbia's western coast. A subsidiary of the British Columbia Railway joined a joint venture with private coal companies, to explore the coal deposits of the Pine River Anticlinorium, including the Willow South area (Marton and Jones, 1981; Marton, 1981).

Interest in coal development increased with rapid increase in crude oil prices, and concomitant increase in coal prices. These price increases were followed in short order by the signing of a joint government-industry agreement between Japan and Canada, to develop new

coal mines, highways, railways, other infrastructure, and a workers' townsite at Tumbler Ridge. Shipments of northeastern British Columbia coal through a new port at Ridley Island (near Prince Rupert, British Columbia) commenced in 1984, and have continued to the present day, albeit at currently-reduced levels owing to the present depression in global coal prices.

The Geological Survey of Canada published a regional-scale structural synthesis (McMechan, 1984), consisting of a map and cross-section at a scale of 1:250,000, followed by a journal article concerning the geometry of thrust-faults (McMechan, 1985).

Owing to its proximity to the British Columbia Railway's Pine Pass mainline, the Willow South area received a modest amount of exploratory attention in the early 1980s (Marton and Jones, 1981) and again in the middle and late 1990s (James, 1998). Initial concepts of mine development revolved around underground mining, commencing from a site several kilometres northwest of Willow South. A long exploratory adit was proposed by David Minerals, who acquired a second-hand continuous miner and ancillary equipment (previously used at Sukunka Colliery), and shipped it to a site adjoining the northern end of the Willow South area. The extent of David Minerals' underground development is as-yet not known; however, it is unlikely that the adit (if indeed it was actually commenced) would have extended to within the Willow South area.

As the oil and gas industry and the forestry industry gradually extended their industrial road networks southward from Pine River, it became easier to bring drilling rigs into the Willow South area. This increased access accounts for the sparse extent of historic drilling at Willow South (**Table 2-2**), and the much greater extent of current drilling (**Table 2-3**).

In all, 72 historic boreholes (as reported in previous coal-assessment reports, and cited within **Section 10** of the present report), totalling 4,363 metres' length, have been drilled at Willow South. Note that the total of historic boreholes does not include holes which may have been drilled by the British Columbia Government (McKechnie, 1955) between 1946 and 1951 -- this issue is still being examined, and copies of detailed logs have been requested from the British Columbia Geological Survey Branch.

As well, results of the 156 current (year-2008 and later) boreholes, totalling 21,151.13 metres' length, are here-reported for the first time, with geophysical logs presented in **Appendix A** of this report, and interpreted coal intersections presented in **Table 5-2** and **Tables A-2** through **A-10**.

Historic and current drilling at Willow South, within the northwestern half of the block, is regarded as having validly tested the coal potential of the coal-measures of the Gaylard Member of the Gething Formation. Drilling is still relatively sparse within the southeastern half of the block, and very sparse along the southwestern bank of Willow Creek, where untested exploratory potential remains.

Table 3-1: Historic (pre-2008) coal exploration boreholes

	UTM NAD83 (Zone 10)		Metres				
Borehole	Easting	Northing	Collar Elevation	Total Depth	Year Drilled	Record Source	Drilling Method
H-1	553616	6157367	1126	470	1973	CAR-584	Core
H-2	554502	6156766	1230	183	1973	CAR-584	Core
H-3	555245.99	6156552.63	1230	213	1973	CAR-584	Core
H-5	554644	6156541	1208	62	1973	CAR-584	Core
WRH96011	551536	6161313	1170	57	1996	CAR-861	Rotary
WRH96012	551817.71	6160891.02	1183.2	62	1996	CAR-861	Rotary
WRH96013	551695.9	6160762.72	1172.4	97	1996	CAR-861	Rotary
WRH96014	551846.3	6160918.02	1182.1	56	1996	CAR-861	Rotary
WRH96015	551489.5	6160528.42	1169.1	102	1996	CAR-861	Rotary
WRH96016	551392.59	6160430.72	1164.6	57	1996	CAR-861	Rotary
WRH96017	551523.2	6160560.62	1170.6	57	1996	CAR-861	Rotary
WRH96018	551885.9	6160976.32	1187.4	69	1996	CAR-861	Rotary
WRH96019	552026	6160322	1197	89	1996	CAR-861	Rotary
WRH96020	551919.29	6159614.12	1136.4	96	1996	CAR-861	Rotary
WRH96027	551489.21	6161279.22	1168.1	110	1996	CAR-861	Rotary
WRH96028	551458.91	6161227.22	1164.8	37	1996	CAR-861	Rotary
WRH96029	551013.8	6161211.21	1123.6	121	1996	CAR-861	Rotary
WRH96030	550960	6161151	1126	97	1996	CAR-861	Rotary
WRH96031	550906.51	6161128.71	1118.5	45	1996	CAR-861	Rotary
WRH96032	551057.6	6161253.02	1131.5	99	1996	CAR-861	Rotary
WRH96033	551688.91	6161342.12	1180.3	120	1996	CAR-861	Rotary
WRH96034	551331.07	6161739.49	1160	152	1996	CAR-861	Rotary
WRH96035	551632	6160678	1169	132	1996	CAR-861	Rotary
WRH96036	552022	6159597	1139	45	1996	CAR-861	Rotary
WRH96037	552188	6160053	1154	46	1996	CAR-861	Rotary
WRH96038	551366	6161191	1156	30	1996	CAR-861	Rotary
WRH96039	551025	6161225	1124	17	1996	CAR-861	Rotary
WRH96040	551016	6161213	1123	30	1996	CAR-861	Rotary
WRH96041	552145	6159229	1118	97	1996	CAR-861	Rotary
WRH96042	552410	6159232	1132	97	1996	CAR-861	Rotary
WRH96042A	552506	6159324	1136	16	1996	CAR-861	Rotary
WRH96043	552229	6159904	1157	96	1996	CAR-861	Rotary
WRH96049	551003	6161202	1123	32	1996	CAR-861	Rotary
WRH96193	550988	6161185	1124	12	1996	CAR-861	Rotary
WRH96194	550831	6161037	1114	30	1996	CAR-861	Rotary
WRH96195	550831	6161037	1119	32	1996	CAR-861	Rotary
WRH96196	550872	6161080	1118	30	1996	CAR-861	Rotary

Table 3-1: Historic (pre-2008) coal exploration boreholes (concluded)

	UTM NAD83 (Zone 10)		Metres				
Borehole	Easting	Northing	Collar Elevation	Total Depth	Year Drilled	Record Source	Drilling Method
WRH96197	550803	6161025	1114	30	1996	CAR-861	Rotary
WRH96198	550812	6161034	1115	30	1996	CAR-861	Rotary
WRH96199	550974	6161171	1124	30	1996	CAR-861	Rotary
WRH96217	551293	6161215	1150	30	1996	CAR-861	Rotary
WRH96218	551063	6161262	1131	27	1996	CAR-861	Rotary
WRH96219	551080	6161282	1128	18	1996	CAR-861	Rotary
WRH96220	551117	6161308	1138	30	1996	CAR-861	Rotary
WRH96221	551164	6161294	1143	15	1996	CAR-861	Rotary
WRH97019	551874	6160247	1191	30	1997	CAR-862	Rotary
WRH97020	551823	6160227	1183	30	1997	CAR-862	Rotary
WRH97021	551247	6160279	1128	30	1997	CAR-862	Rotary
WRH97022	551221	6160269	1126	14	1997	CAR-862	Rotary
WRH97023	551192	6160260	1122	24	1997	CAR-862	Rotary
WRH97024	551161	6160241	1119	14	1997	CAR-862	Rotary
WRH97025	550987	6160102	1099	7	1997	CAR-862	Rotary
WRH97026	551124	6160211	1116	6	1997	CAR-862	Rotary
WRH97027	551129	6160218	1116	18	1997	CAR-862	Rotary
WRH97028	551279	6160288	1132	30	1997	CAR-862	Rotary
WRH97029	551232	6160272	1127	26	1997	CAR-862	Rotary
WRH97030	551492	6160248	1159	30	1997	CAR-862	Rotary
WRH97051	553110	6159470	1100	69	1997	CAR-862	Rotary
WRH97052	552247	6159915	1158	74	1997	CAR-862	Rotary
WRH97053	552763	6159487	1120	1	1997	CAR-862	Rotary
WRH97054	552438	6159695	1132	64	1997	CAR-862	Rotary
WRH97055	552114	6160395	1202	67	1997	CAR-862	Rotary
WRH97056	551770	6160217	1180	67	1997	CAR-862	Rotary
WRH97057C	552244	6159904	1157	61	1997	CAR-862	Core
WRH97061	551453	6160207	1154	7	1997	CAR-862	Rotary
WRH97062	551415	6160198	1148	30	1997	CAR-862	Rotary
WRH97063	551562	6160215	1169	23	1997	CAR-862	Rotary
WRH97064	551633	6160180	1170	30	1997	CAR-862	Rotary
WRH97065	551590	6160193	1168	30	1997	CAR-862	Rotary
WRH97095	551255	6160288	1128	103	1997	CAR-862	Rotary
WRH97097	551486	6160243	1159	55	1997	CAR-862	Rotary
WRH97100C	551396	6160431	1164	20	1997	CAR-862	Core
Total of historic drilling within property: 72 boreholes, overall 4363 metres							

Note: Positions given are approximate in most cases, and should be confirmed by ground-based surveys as and when possible.

Table 3-2: Current (year-2008 through 2012) coal-exploration boreholes

Borehole	UTM NAD83 (Zone 10)		Metres		Degrees		Drilling Method
	Easting	Northing	Collar Elevation	Total Depth	Azi-muth	Dip	
Year-2008							
WC08-100	551438.02	6160617.92	1160.15	161.54	0	-90	Rotary
WC08-101	551516.98	6160700.9	1156.31	201.77	0	-90	Rotary
WC08-102	551603	6160796	1163	108	162.7	-87.5	Rotary
WC08-103	551171	6160265	1121	28	240.4	-60.2	Rotary
WC08-104	551466	6160208.23	1156.52	228.66	222.5	-60	Rotary
WC08-105	551413	6160151	1147	92	245.4	-59.9	Rotary
WC08-106	551369.14	6160107.72	1130.9	67	240.1	-63	Rotary
WC08-107	551734	6160201	1175	174	238.4	-59	Rotary
WC08-108	551547	6160002	1149	165	235	-58.8	Rotary
WC08-109	551497	6159951	1134	117	235.4	55.8	Rotary
WC08-110	551775	6159813	1146	104	234.1	59.7	Rotary
WC08-111	551691.43	6159721.13	1119	76.5	237.1	-61	Rotary
WC08-112	551789.25	6159531.69	1109.62	100.16	240.1	-61.8	Rotary
WC08-113	551862.13	6159609.3	1125.95	243.84	236.4	-60	Rotary
WC08-114	552089.73	6159417.84	1118.69	215.49	259.5	-60	Rotary
WC08-115	551995	6159307	1103	135	230.7	-63	Rotary
Year-2010							
WC10-01	551145.57	6161578.15	1111.9	167.64	215.1	-60	Rotary
WC10-02	551150.3	6161332.15	1138.06	201.16	0	-90	Rotary
WC10-03	551200.38	6160320.43	1127.88	146.3	0	-90	Rotary
WC10-04	551324.75	6160056.63	1120.64	93.89	0	-90	Rotary
WC10-05	551434.77	6159883.37	1113.84	151.56	0	-90	Rotary
WC10-06	551652.91	6159683.59	1099.77	151.72	221.8	-60	Rotary
WC10-07	551157.59	6160181.46	1114.93	45.7	*unknown*		Rotary
WC10-08	551747.42	6159484.59	1102.95	207	0	-90	Rotary
WC10-09	551901.86	6159216.67	1063.9	33.5	*unknown*		Rotary
WC10-09B	551834.19	6159300.8	1078.68	225.52	229.6	-88	Rotary
WC10-10	552017.85	6158892.64	1025.68	140	0	-90	Rotary
WC10-11	552341.77	6158784.34	1038.91	158.49	0	-90	Rotary
WC10-12	552320.58	6158484.6	1040.11	200.55	0	-90	Rotary
WC10-13	552595.92	6158340.8	1042.27	140.2	0	-90	Rotary
WC10-14	551791.93	6159100.25	1071.1	197.45	0	-90	Rotary
WC10-15	551618.7	6159351.7	1084.89	179.12	0	-90	Rotary
WC10-16	551520.58	6159521.36	1052.76	105.45	0	-90	Rotary
WC10-17	550934.35	6160098.56	1090.44	17	*unknown*		Rotary
WC10-18	551275.27	6160739.81	1146.39	121.92	0	-90	Rotary
WC10-19	551117.94	6160576.4	1113.9	145.2	0	-90	Rotary
WC10-20	551092.86	6160829.96	1124.89	97.53	208.8	-60	Rotary
WC10-22	551246.59	6161142.58	1151.24	185.92	0	-90	Rotary
WC10-23	552196.14	6159092.99	1103.93	222.5	0	-90	Rotary
WC10-24	552624.43	6158507.71	1089.62	207.26	0	-90	Rotary
WC10-25	551195.03	6161241.91	1150.6	207.26	0	-90	Rotary
WC10-26	552808.56	6158116.86	1049.24	149.85	0	-90	Rotary

Table 3-2: Current (year-2008 through 2012) coal-exploration boreholes (continued)

Borehole	UTM NAD83 (Zone 10)		Metres		Degrees		Drilling Method
	Easting	Northing	Collar Elevation	Total Depth	Azi-muth	Dip	
WC10-27	551255.36	6161672.54	1147.19	100.6	215.5	-60	Rotary
WC10-28	552206.55	6158369.42	1037.33	171.84	0	-90	Rotary
WC10-29	551417.52	6160868.65	1136.99	137.16	0	-90	Rotary
WC10-30	551798.38	6158665.08	1023.13	103.63	0	-90	Rotary
WC10-31	551298.98	6160460.22	1140.34	73.15	46	-60	Rotary
WC10-32	551583.92	6159599.69	1072.08	102.98	0	-90	Rotary
WC10-33	552468.04	6158947.89	1074.31	216.4	0	-90	Rotary
WC10-34	551771.02	6159072.83	1067.37	231.6	210.8	-60	Rotary
WC10-35	551601.71	6159334.54	1085.17	142.09	222.3	-60	Rotary
WC10-36	551348.62	6159799.17	1079.84	93.77	0	-90	Rotary
WC10-37	552902.66	6158234.05	1052.21	222.5	0	-90	Rotary
WC10-39	551619.36	6160376.33	1188.17	243.84	0	-90	Rotary
WC10-40	551382.04	6161141.38	1160.46	198.12	222.1	-60	Rotary
WC10-41	551115.06	6159841.25	1064.43	65.91	0	-90	Rotary
WC10-42	550985.83	6160034.09	1081.72	146.3	0	-90	Rotary
WC10-43	551368.2	6160550.76	1154.08	91.44	0	-90	Rotary
WC10-45	551290.82	6159725.81	1054.18	87.68	0	-90	Rotary
WC10-46	551009.43	6161547.94	1131.54	178.6	0	-90	Rotary
WC10-47	550969.08	6161430.57	1087.46	100.58	0	-90	Rotary
WC10-48	552860.22	6158632.54	1093.9	219.45	247.8	-60	Rotary
WC10-49	552766.03	6158515.97	1086.23	210.31	0	-90	Rotary
WC10-52	551763.34	6160532.82	1204.18	124.96	250.5	-88.3	Rotary
WC10-53	552016.58	6160071.77	1176.3	198.12	0	-90	Rotary
WC10-54	550887.34	6160320.21	1092.23	60	0	-90	Rotary
WC10-55	550713.56	6160580.19	1082.67	106.68	0	-90	Rotary
WC10-56	551257.6	6161029.62	1143.71	152.4	0	-90	Rotary
WC10-57	551933.38	6159687.38	1149.8	210.31	0	-90	Rotary
WC10-58	552761.69	6158959.86	1071.23	124.96	233.7	-59.9	Rotary
WC10-59	551180.66	6159619.16	1026.2	106.68	0	-90	Rotary
WC10-60	551324.03	6161521.71	1152.63	262.13	216.6	-60	Rotary
WC10-61	551329.68	6161373.79	1134.6	97.53	222.3	-60	Rotary
WC10-62	550992.57	6161317.13	1116.82	91.44	217	-60	Rotary
WC10-63	551451.28	6161353.63	1146.86	277.36	221.7	-60	Rotary
WC10-64	551677.07	6161171.41	1192.79	140.2	226.9	-60	Rotary
WC10-65	552630.53	6158820.35	1045.54	216.4	0	-90	Rotary
WC10-66	554122.09	6157087.56	1151.73	213.36	230.2	-60	Rotary
Year-2011							
MW11-01	551323.3	6160444.58	1144.59	24.46	0	-90	Rotary
MW11-06	551918.1	6159041.27	1049.19	5	*unknown*		Rotary (casing only?)
MW11-07	551685.97	6159617.2	1103.91	5	*unknown*		Rotary (casing only?)
WC11-08	552492.68	6158230.852	1042.75	146.3	0	-90	Rotary
WC11-09	551883.3	6158901.33	1026.68	194.24	0	-90	Rotary

Table 3-2: Current (year-2008 through 2012) coal-exploration boreholes (continued)

Borehole	UTM NAD83 (Zone 10)		Metres		Degrees		Drilling Method
	Easting	Northing	Collar Elevation	Total Depth	Azi-muth	Dip	
WC11-10	551684.35	6159132.69	1078.49	152.4	227.5	-60	Rotary
WC11-11	551776.43	6158932.53	1022.79	121.92	231.2	-60	Rotary
WC11-12	551635.21	6159223.69	1087.21	137.16	231.9	-60	Rotary
WC11-13	551729.34	6159318.22	1086.42	207.24	0	-90	Rotary
WC11-14	551517.05	6159374.49	1054.86	106.68	0	-90	Rotary
WC11-15	551573.68	6159445.8	1082.43	179.83	0	-90	Rotary
WC11-16	551668.04	6159588.42	1096.43	211.97	0	-90	Rotary
WC11-17	551712.2	6159742.29	1130.78	192.02	0	-90	Rotary
WC11-18	551251.72	6159838.18	1079.73	21.34	33.8	-60	Rotary
WC11-19	551167.13	6159746.58	1059.97	82.28	0	-90	Rotary
WC11-21	551387.68	6159694.49	1060.15	97.53	0	-90	Rotary
WC11-26	551590.5	6159759.46	1111.04	128.01	0	-90	Rotary
WC11-27	551471.27	6159780.05	1103.7	103.63	0	-90	Rotary
WC11-29	551231.63	6159967.08	1106.17	3.28	*unknown*		Rotary (casing only?)
WC11-30	551184.52	6160065.45	1102.35	9.14	*unknown*		Rotary (casing only?)
WC11-31	552039.29	6159213.71	1096.47	182.88	0	-90	Rotary
WC11-32	551825.17	6159724.37	1142.12	231.64	0	-90	Rotary
WC11-33	551570.78	6159886.52	1137.62	149.35	0	-90	Rotary
WC11-34	551439.21	6160037.54	1135.43	155.44	0	-90	Rotary
WC11-35	551256.44	6160202.74	1124.92	24.4	*unknown*		Rotary (casing only?)
WC11-36	551257.44	6160130.78	1120.64	85.34	0	-90	Rotary
WC11-37	551367.11	6160257.05	1143.48	179.83	247.7	-60	Rotary
WC11-38	551336.92	6160299.19	1142.61	161.54	0	-90	Rotary
WC11-39	551330.11	6160358.65	1140.37	121.92	42.1	-60	Rotary
WC11-40	551318.07	6160412.67	1143.45	167.64	0	-90	Rotary
WC11-41	551233.37	6160468	1125.15	57.91	0	-90	Rotary
WC11-42	551388.05	6160495.68	1157.85	97.53	0	-90	Rotary
WC11-43	551482.76	6160447.78	1170.76	170.68	0	-90	Rotary
WC11-44	551536.82	6160433.66	1174.26	198.11	42.1	-60	Rotary
WC11-45	551302.12	6160545.81	1146.12	70.1	0	-90	Rotary
WC11-46	551289.5	6160603.51	1144.1	76.2	0	-90	Rotary
WC11-47	551162.6	6160485.06	1115.18	60.96	0	-90	Rotary
WC11-48	551346.53	6160741.39	1147.69	172.65	0	-90	Rotary
WC11-49	551400.63	6160731.63	1149.36	207.26	0	-90	Rotary
WC11-50	551478.27	6160936.59	1131.02	132.58	0	-90	Rotary
WC11-53	551611.01	6160521.44	1180.13	251	0	-90	Rotary
WC11-54	551730.99	6160638.42	1187.88	185.92	0	-90	Rotary
WC11-55	551454.96	6160564.6	1161.75	170.69	0	-90	Rotary
WC11-56	551645.24	6160775.21	1166.36	158.49	0	-90	Rotary
WC11-57	551567.98	6160616.99	1167.25	232.09	0	-90	Rotary
WC11-58C	551602.14	6160064.73	1156.88	233.63	0	-90	Core

Table 3-2: Current (year-2008 through 2012) coal-exploration boreholes (concluded)

Borehole	UTM NAD83 (Zone 10)		Metres		Degrees		Drilling Method
	Easting	Northing	Collar Elevation	Total Depth	Azi-muth	Dip	
Year-2012							
WC12-01	551901.42	6159068.67	1051.83	259.08	0	-90	Rotary
WC12-02P	551378.57	6160127.14	1135.92	43	0	-90	Rotary (pilot hole)
WC12-03BS	551329.21	6160512.03	1150.4	49.27	0	-90	Core
WC12-03P	551330.23	6160511.98	1150.3	48.77	0	-90	Rotary (pilot hole)
WC12-04	552296.27	6158979.67	1085.18	240.79	0	-90	Rotary
WC12-05	552127.82	6158799.95	1023.05	169.16	0	-90	Rotary
WC12-06	551387.87	6160420.06	1164.15	121	0	-90	Rotary
WC12-07BS	551372.19	6160510.95	1155.18	35.66	0	-90	Core
WC12-07P	551372.06	6160512.04	1155.19	39.62	0	-90	Rotary (pilot hole)
WC12-08BS	551052.78	6159762.61	1035.88	30.17	0	-90	Core
WC12-08P	551054.54	6159763.53	1035.89	36.57	0	-90	Rotary (pilot hole)
WC12-09BS	551339.45	6159490.18	1023.67	58.52	0	-90	Core
WC12-09BS2	551328.34	6159499.68	1023.92	45.18	0	-90	Core
WC12-09P	551333.99	6159491.44	1023.69	60.96	0	-90	Rotary (pilot hole)
WC12-10BS	551472.6	6159483.87	1034.38	13.71	0	-90	Core
WC12-10P	551472.49	6159482.21	1034.32	18.28	0	-90	Rotary (pilot hole)
WC12-11BS	551518.46	6159541.83	1046.92	33.83	0	-90	Core
WC12-11P	551519.07	6159543.14	1046.9	39.62	0	-90	Rotary (pilot hole)
WC12-12	551745.17	6159627.52	1117.07	201.16	0	-90	Rotary
WC12-13	551071.31	6159778.78	1046.68	39.62	0	-90	Rotary
WC12-14	551495.41	6159662.08	1078.31	161.54	0	-90	Rotary
WC12-15	551116.99	6159898.09	1075.73	51.82	0	-90	Rotary
WC12-16	551434.01	6159594.35	1059.55	134.11	214.7	-60	Rotary
WC12-17	551337.03	6159627.88	1031.54	73.15	218.4	-60	Rotary
WC12-18	551349	6159933.72	1110.66	103.63	0	-90	Rotary
WC12-19	551547.73	6160669.88	1159.89	210.31	0	-90	Rotary
WC12-20	551629.04	6160609.54	1179.35	228.6	0	-90	Rotary
WC12-21	552053.74	6160834.75	1205.24	201.16	0	-90	Rotary
WC12-22	551736.79	6160721.88	1182.35	201.16	0	-90	Rotary
WC12-23	551283.05	6160887.15	1096.56	161.54	0	-90	Rotary
WC12-24	551447.65	6160332.49	1164.75	236.22	0	-90	Rotary
WC12-25	552669.13	6159624.93	1115.53	100.58	0	-90	Rotary
Totals:	156 boreholes, 21,151.13 metres						

Note: table compiled by Preetpal Singh, from survey data lists, geophysical-log headers, and downhole verticality survey data. Logs have not yet been located for year-2012 core holes, despite a diligent search for records.

3.2 Current (year-2008 through year-2012) exploration

Willow Creek Coal Partnership conducted rotary-drilling programmes within the Willow South block in years-2008, 2010, 2011, 2012, accompanied by the drilling of a single year-2011 cored borehole and several more cored boreholes in 2012. **Tables 3-3** and **A-1** summarise the drilling and geophysical details of these boreholes.

Access to drill sites was generally via a combination of existing and new trails, including reactivated logging trails where they were conveniently located with regard to the desired drilling locations. Some drill-pads were built immediately adjacent to existing high-grade roads.

The purpose of the drilling was to test the Gaylard Member coal-measures for potentially-mineable coal seams, to assess the lateral continuity of the coal beds, and to provide a preliminary indication of coal quality. The drilling mainly examined the coals of zones No. 5, No. 6 and No. 7, within the middle portion of the Gaylard Member. Stratigraphically-higher coals of zones 1 through 4, and of A-zone, were drilled less-intensively, and minimal attention was paid to coal zones 8 through 12. A summary of coal-beds intersected within current boreholes is presented as **Table 5-2**.

3.2.1 Borehole geophysics

Downhole geophysical logging of nearly all of the current boreholes was done by Weatherford in 2008, and by Century Wireline Services in 2010, 2011 and 2012. A standard coal-industry suite of logs was run:

- Gamma/caliper/resistivity/density;
- Gamma/density through drill rods (as an expedient; uncalibrated);
- Gamma/neutron; and
- Deviation/verticality.

Digital and/or scanned copies of resultant downhole geophysical logs are presented in **Appendix A**, with an inventory of logs as **Table A-1**.

3.2.2 Current coal-quality work

Coal samples, and samples of accompanying rock partings along with immediate roof and floor rocks, were collected from year-2012 borehole cores, and submitted to Loring Laboratories of Calgary, Alberta. Analytical results for raw (unwashed) samples are presented in **Appendix B**, and results of laboratory-scale washability tests are presented in confidential **Appendix C**.

Petrographic or reflectometric analyses are not known to have been done on the year-2012 samples. Records of coking-tests have not been found, and the senior author of this report considers it unlikely that such advanced tests were done on the Willow South coals.

3.2.3 Cross-reference to historic coal-quality work

Several historic coal samples were taken from historic boreholes. Details of these samples, and their associated analytical results, are reported within a previous coal-assessment report (James, 1998) concerning the Willow Creek lease area as a whole.

4 Geological setting

The coalfields of northeastern British Columbia are hosted by marine and non-marine clastic sediments of Jurassic, Cretaceous and earliest Tertiary age. These rocks form a series of thick sequences of molasse and flysch, all of which was deposited into the Rocky Mountain Foreland Basin of Western Canada. The basin is bounded by the mobile crustal terranes of the Cordilleran Orogen to the west, and the cratonic rocks and Palaeozoic cover sequences of the Canadian Shield to the east.

4.1 Regional structural setting

Most of the Jura-Cretaceous sediments were derived from orogenically-uplifted landmasses lying to the southwest of the basin, although patterns of sedimentation were to some extent influenced by occasional vertical movements of underlying structures within the cratonic basement rocks, chief amongst which was the Peace River Arch (Stott, 1968).

During Late Mesozoic and Early Cenozoic time, the Cordilleran Orogen underwent two main phases of deformation: the Late Jurassic to earliest Late Cretaceous Columbian Orogeny, and the Late Cretaceous to Oligocene Laramide Orogeny (Douglas *et al*, 1970). Both of these orogenies were driven by transpressional crustal movements along the outboard (western) edge of the North American continent. In each case, orogenic activity was driven by the collision of northward-moving exotic crustal terranes, which in turn caused compressive strains within the previously-accreted western margin of the continent. Northeast-directed overthrusting of Palaeozoic rocks caused episodic uplift of the Cordilleran Orogen, in turn providing a ready source of sediment into the Foreland Basin (Cant and Stockmal, 1989; Cant, 1996; Cant and Abrahamson, 1996).

The present-day Rocky Mountains are the most visible manifestation of Columbian and Laramide overthrusting, which gradually proceeded northeastward, with successively-younger thrusts tending to break through the Foreland's rocks at successively-deeper stratigraphic levels. As successively-younger thrusts developed, they generated passive folding within overlying, previously-deformed rocks. Overlying, older thrusts were therefore passively folded along with their adjoining strata. Recognition of this folding is essential to understanding the structural geology of the Willow South property and its surroundings.

From southwest to northeast, the Cordilleran fold-thrust belt gradually changes structural styles (Thompson, 1979) from a thrust-dominant regime(within the mostly-Palaeozoic carbonate-clastic rocks of the Rocky Mountain Main Ranges and Front Ranges) to a mixed fold-thrust regime (within the Inner Foothills, including the Willow South property) to a gently-folded frontal regime (within the Outer Foothills, five or more kilometres to the northeast of Willow South).

4.2 Regional stratigraphic setting

Regional stratigraphic nomenclature within the coalfields of northeastern British Columbia has undergone considerable revision during the past fifty years. Principal workers, whose reports were used as primary references for the present report, are J.E. Hughes (1964, 1967), D. Stott (1968, 1973, 1981, 1998), P.McL.D. Duff and R.D. Gilchrist (1981), and D.W. Gibson (1992a, 1992b).

The stratigraphic sequence within the northwestern part of the Mink-Brazion coalfield (including Willow South) comprises Lower Cretaceous rocks of the Fort St. John and Bullhead groups, and older Jurassic to Lower Cretaceous rocks of the Minnes Group (**Table 4-1**). Fort St. John Group rocks are present only along the northeastern and southwestern fringes of the Willow South block, owing to substantial erosion. Minnes Group rocks are present only in the subsurface at Willow South, inasmuch as the Bullhead Group rocks are nowhere completely stripped-away by erosion (**Map 2-3**). Almost all of the block is covered with coal-measures of the Gaylard Member of the Gething Formation, which forms the upper part of the Bullhead Group.

Considerable stratigraphic controversy (as expressed in works of Hughes and Stott) has revolved around the identity and stratigraphic topology of rocks underlying and overlying the coal-measures of the Gething Formation. In this report, the Gething Formation, as well as immediate sub-Gething rocks, are assigned to the Bullhead Group, following Stott's extensive regional work.

At the latitude of the Willow South block, and within the Pine Pass area in general, only the Gaylard Member of the Gething Formation contains coal of potentially-mineable thickness, although within the nearby Burnt River property (McClymont, 1981; Cathyl-Huhn and Avery, 2014b), the Chamberlain Member (there the uppermost subdivision of the Gething Formation) also appears to be coal-bearing.

Owing to the general southwestward back-stepping of the Gething paleodelta complex, at Willow South the Bluesky is recognised as a formation in its own right (homotaxial with the more-extensive Bluesky sediments within the Deep Basin of the Alberta Syncline), and the Bullmoose and Chamberlain members (elsewhere assigned to the Gething Formation) are both considered to be members of the Moosebar Formation, as neither the Bullmoose rocks nor the Chamberlain rocks manifest any non-marine indicators. Supra-Gething rocks (from the Bluesky Formation upwards) are assigned to the Fort St. John Group, following Stott's work as subsequently modified by Gibson (1992b).

4.3 Local structural geology

Structural geology of the Willow South area would be difficult to decipher on the sole basis of bedding attitudes within exposed bedrock, owing to the isolated nature of the outcrops. Much of our understanding of local structural geology comes from borehole intersections of coal-measures, supplemented by isolated exposures of bedrock alongside roads and trails. An additional source of structural information, albeit indirect, is from the interpretation of landforms as visible in aerial photographs and on detailed topographic maps, although this indirect observation is locally hampered by Drift cover.

Map 2-3 (above) and **Figure 4-1** (below) depict the current understanding of bedrock structure. **Figure 4-1** is a redraughted section taken from a suite of closely-spaced cross-sections which have been cut from the Willow South digital structural model. As these illustrations show, the Willow South block is broadly to tightly folded throughout its extent, and locally-disrupted by thrust faults, indicative of a compressional tectonic regime consistent with its setting within the Inner Foothills structural zone.

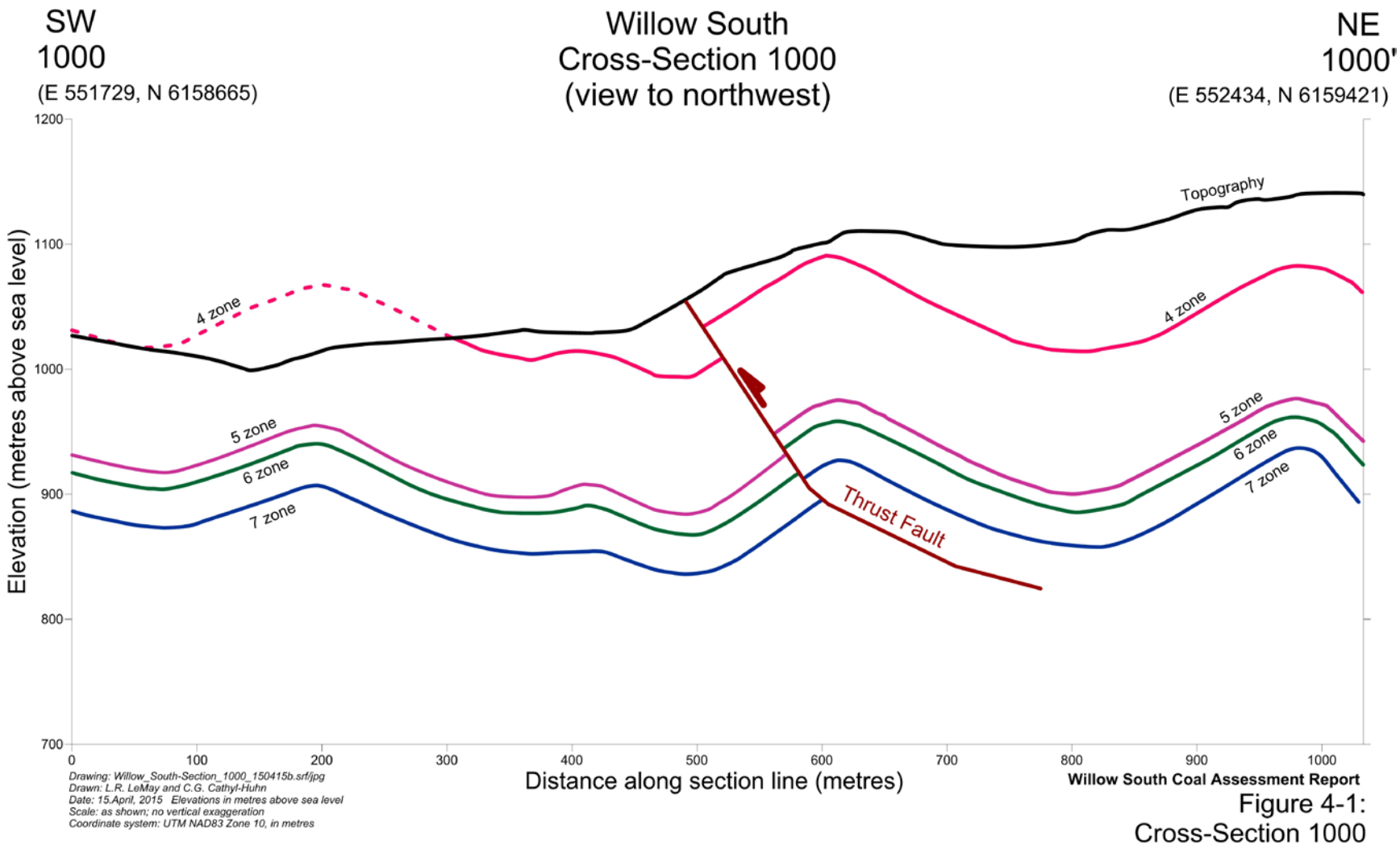

Figure 4-1:
Cross-Section 1000

The most prominent of the folds is the Pine River Anticline, which traverses the entire width of the Willow South block, in a generally-southeastward direction. Several less-extensive folds, some of which are in en-echelon relationship to each other, appear to be tectonically-stacked above the northeastern limb of the Pine River Anticline, forming an overall anticlinorial stack. Northeast-dipping, southwest-verging thrust-faults are occasionally present within this stack of folded strata, and it appears likely that the lesser folds have (to some extent at least) originated as fault-bend folds within a substantial thrust-stack.

The southwestward vergence of the thrust-faults at Willow South is unusual as compared with the general northeastward vergence of thrust-faults within the coalfields of northeastern British Columbia, but this geometry is fairly well-established by drilling, and it is consistent with the existence of upper detachment(s) above a triangle zone (McMechan, 1984; 1985; Lingrey, 1996).

Despite the local intensity of deformation, normal stratigraphic sequences are generally preserved at Willow South (as seen in **Figure 4-1**). Thrust-induced tectonic shortening, leading to structural thickening of the Gaylard coal-measures, is suspected but not yet firmly-established by drilling.

4.4 Local stratigraphy

Based largely upon geophysical log interpretation, the following stratigraphic sequence (as shown in **Table 4-1**) has been identified within and adjacent to the Willow South block.

Table 4-1: Table of formations and subdivisions

Group/Formation/Member			Map-unit	Lithology and thickness		
Quaternary Drift			D	Alluvium; lodgement till; moraines; talus; glaciolacustrine silts, generally less than 5 m thick		
	Goodrich Fm.		8b	Sandstone; minor siltstone and mudstone; 185 to 300 m thick		
Fort St. John Group	Hasler Fm.		8a	Siltstone and mudstone; minor sandstone; ironstone as bands of concretions; 335 o 365 m thick		
	Boulder Creek Fm.	Walton Mb.	7b	Sandstone and siltstone; conglomerate; coal; 45 to 50 m	*Presence of coal not yet proven within Willow South block*	
		Cadotte Mb.	7a	Conglomerate and sandstone; 30 to 45 m thick		
	Hulcross Fm.		6	Siltstone and mudstone; minor sandstone and tuff; basal pebbly gritstone; 120 to 130 m thick		
	Gates Fm. 190 to 230 m thick	Notikewin Mb.	5	Siltstone, sandstone and conglomerate; minor coal	*Presence of coal not yet proven within Willow South block*	
		Falher Mb.		Sandstone, conglomerate and siltstone; minor coal	*Presence of coal not yet proven within Willow South block*	
		Torrens Mb.		Sandstone; minor siltstone		
	Moosebar Fm.	Spieker Mb.	4	Siltstone, sandstone; minor mudstone; 30 to 70 m thick		
		Cowmoose Mb.		Mudstone; minor tuff and ironstone; erosive-based basal glauconitic grit [Green Marker, map-unit 4a -- too thin to map separately]; 50 to 80 m thick		
		Chamberlain Mb.		Sandstone and siltstone; 3 to 6 m thick		
		Bullmoose Mb.		Siltstone and sandstone; mudstone; minor tuff; 120 m thick		
	Bluesky Fm.		3b	Glauconitic sandstone and gritstone; siltstone and mudstone; 1 to 8 m		
Bullhead Group	Gething Fm.	Gaylard Mb.	3a	Numerous fining-upward cycles of sandstone, siltstone, mudstone and coal (zones 1 through 10); minor tuff; local concentration of sandstone beds; 260 to 360? metres thick	3a5	Siltstone, sandstone, mudstone and coal (zones 1 through 4); minor tuff
					3a4	Siltstone and mudstone; coal (zones A, 5 and 6)
					3a3	Sandstone; minor siltstone and mudstone; coal (zones 7 and 8)
					3a2	Siltstone and mudstone; minor sandstone and coal (zone 9)
					3a1	Basal sandy unit: sandstone and siltstone; minor coal (zones 10 to 12 -- correlations tentative)
	Cadomin Fm.		2	Gritty to pebbly, siliceous sandstone and sandy conglomerate with distinctive 'blocky' gamma-log response; minor siltstone and coal; 2.5 to 14? m thick; erosional base		
Minnes Gp.	Bickford Fm.		1	Siltstone, sandstone, conglomerate, and mudstone; minor coal; 285 to 300 m thick	*present only at depth beneath the property*	
	Monach Fm.			Sandstone and conglomerate; siltstone; 210 to 260 m thick		
	Beattie Peaks Fm.			Siltstone, sandstone and mudstone; minor coal; 285 to 350 m thick		
	Monteith Fm.			Quartzite and sandstone; minor siltstone; 340 to 425 m thick		

Relationships between the various rock-units that occur within and adjacent to the Willow South block are shown on the geological map (**Map 2-3**) accompanying this report. **Map 2-3** incorporates results of current drilling, together with historic drilling and geological mapping done by others, as cross-referenced in **Section 10** of this report. Geological contacts shown on the map are approximate to inferred, owing to the generally-discontinuous nature of bedrock exposures, and lack of documented stratigraphic and structural fieldwork.

Rock-units are discussed in detail below, in order from youngest (generally nearest the ground surface) to oldest. Localised inversions of stratigraphic position have been induced by thrust-faulting, but the overall stratigraphic relations remain readily-recognisable, owing to distinctive geophysical and lithological characteristics of the various rock-units.

4.5 Drift

Unconsolidated sediments, of Quaternary age, form a patchy blanket at the ground surface throughout the Willow South block. For reasons of clarity, Drift is not mapped as a separate entity within **Map 2-3**.

The most pervasive Drift cover consists of glacial till, usually less than 5 metres thick. Patches of sandy, gravelly and bouldery alluvium are present within stream channels. McKechnie (1955) noted the presence of possibly-glaciolacustrine silt deposits within the southeastern portion of the Willow South area; the extent of such deposits has yet to be assessed in detail.

4.6 Fort St. John Group (map-units 8b through 4)

The uppermost of the Early Cretaceous rocks of the Fort St. John Group have been completely removed by erosion at Willow South. Most of this erosion is likely to have occurred during a prolonged episode of regional uplift during the Tertiary era (Cant and Stockmal, 1989), followed by further glacial scouring during the Quaternary era, and continuing through fluvial down-cutting to the present time. Within the Group, the remainder of its constituent formations remain at least locally-present within the Willow South map-area. From top down, these are the Goodrich, Hasler, Boulder Creek, Hulcross, Gates, Moosebar and Bluesky formations.

4.6.1 Goodrich Formation (map-unit 8b)

The Goodrich Formation comprises at least 185 metres (Wickenden and Shaw, 1943) and perhaps up to 250 or 300 metres of medium- to thick-bedded, locally cliff-forming sandstone, with frequent interbeds of siltstone and mudstone. The Goodrich Formation forms mesas in the northeastern part of the area covered by **Map 2-3**, entirely outside the northeastern boundary of the Willow Creek coal lease (and therefore outside the bounds of the Willow South block). The Goodrich is of Late Albian age, as established by its molluscan fauna (Stott, 1968), most prominent among which is the genus *Oxytoma* (Wickenden and Shaw, *op.cit*.). The basal contact of the Goodrich Formation with the underlying Hasler Formation is gradational.

4.6.2 Hasler Formation (map-unit 8a)

The Hasler Formation, of late Middle Albian to Late Albian age (Gibson, 1992b) forms subdued slopes within the upland area northeast of the Willow South block. An extremely small part of the block's northeastern margin is underlain by Hasler rocks, to perhaps a total thickness of 50 metres. The Hasler comprises marine siltstone, overlain by dark grey to black marine mudstone with occasional bands of sideritic concretions. The undeformed thickness of the Hasler is approximately 335 to 365 metres (Wickenden and Shaw, 1943). A few centimetres to decimetres of erosive-based cherty gritstone commonly mark the Hasler Formation’s abrupt basal contact with the underlying Boulder Creek Formation (Wickenden and Shaw, *op.cit*., page 6)

4.6.3 Boulder Creek Formation (map-units 7b and 7a)

The Boulder Creek Formation, of late Middle Albian age (Gibson, 1992b) forms prominent cliffs in the upland area, along and immediately to the northeast of the Willow South block's northeastern boundary. The Boulder Creek Formation is the uppermost of the three formations (Boulder Creek, Hulcross, and Gates) formerly covered by the now-superseded Commotion Formation of Wickenden and Shaw (1943).

Regionally, conglomerate and sandstone are the predominant lithologies of the Boulder Creek Formation, but the Walton Creek Member of the formation also contains fine-grained rocks including siltstone, root-penetrated, variably-carbonaceous mudstone, and coal, some of which attains thicknesses of interest for underground mining.

Conglomerate and sandstone are concentrated in the basal Cadotte Member (map-unit 7a) of the formation, while fine-grained rocks are concentrated in the overlying Walton Creek Member (map-unit 7b). The uppermost regionally-mapped division of the Boulder Creek Formation, comprising the conglomerate of the Paddy Member (map-unit 7c), is not recognised within the Willow South area.

The overall thickness of the Boulder Creek Formation is tentatively inferred to be 75 to 95 metres at Willow South, of which the basal 30 to 45 metres comprises the Cadotte Member and the overlying 45 to 50 metres comprises the Walton Creek Member. The basal contact of the Boulder Creek Formation with the underlying Hulcross Formation is abrupt to erosional at local scale, and likely to be interfingering at regional scale.

4.6.3.1 Walton Creek Member (map-unit 7b)

The Walton Creek Member of the Boulder Creek Formation comprises 45 to 50 metres of generally-recessive siltstone, variably-carbonaceous, locally root-penetrated mudstone and variably-thick coal beds, of which two or three appear to be laterally-continuous within Anglo-Pacific Group Plc's Trefi coal property (which adjoins the Willow South block to the east). The swale-forming fine-grained rocks of the Walton Creek Member are punctuated by cliff-forming lenses of sandstone, gritstone and pebble-conglomerate, inferred to be channel-fills.

Gibson (1992b) considered the Walton Creek Member to be of probable Late Albian age, based on angiosperm flora. The basal contact of the Walton Creek Member with the underlying Cadotte Member is generally abrupt, and regarded by Gibson (*op. cit.*) as being conformable.

4.6.3.2 Cadotte Member (map-unit 7a)

The Cadotte Member of the Boulder Creek Formation comprises 30 to 45 metres of cliff-forming sandstone and pebble-conglomerate with rare thin interbeds of siltstone. The Cadotte generally coarsens upward, with its sandstones being at its base and its conglomerates being in its middle and at its top. Other than isolated coalified logs, the Cadotte Member is devoid of coal. The basal contact of the Cadotte Member with the underlying Hulcross Formation is generally abrupt and therefore considered to be conformable at local scale (Gibson, 1992b), although it may intertongue at regional scale.

4.6.4 Hulcross Formation (map-unit 6)

The Hulcross Formation, of middle Albian age within the Early Cretaceous (Stelck and Leckie, 1988) comprises thinly-interbedded, locally-concretionary grey siltstone, fine-grained sandstone and dark grey mudstone with occasional very thin but extremely-persistent interbeds of soft, light grey to white tuff (Kilby, 1985; Gibson, 1992b) and rare thin stringers of coal. Sideritic concretions are commonly found in isolated, laterally-persistent bands.

Within the area covered by **Map 2-3**, the Hulcross Formation forms a recessive-weathering band along the northeastern corner of the Willow South block.

The thickness of the Hulcross Formation at Willow South is estimated to be 120 to 130 metres, based on borehole data and measured outcrop sections from nearby properties, as reported by Gibson (1992b). The formation's immediate base is characteristically marked by a thin (generally less than a metre thick) erosive-based bed of pebbly sandstone or gritstone, lying erosionally upon the underlying strata of the Notikewin Member of Gates Formation.

4.6.5 Gates Formation (map-unit 5)

The Gates Formation, of late Early Albian age within the Early Cretaceous, comprises thin to thick interbeds of sandstone, siltstone, conglomerate, and shale, locally accompanied by coal beds. Coals of the Gates Formation, and their enclosing sedimentary rocks, were deposited on the shoreline of the Clearwater Sea (part of the Western Interior Seaway) between 108.7 and 111.0 million years ago, as part of an extensive complex of coastal plains, deltas and estuaries collectively known as the Gates Delta.

At Willow South, the Gates coal-measures are present along the northeastern margin of the property. No boreholes have yet penetrated the Gates Formation at or near Willow South, and hence its coal potential is unknown in detail.

Regionally, the Gates Formation may be readily subdivided into three members: the uppermost, dominantly fine-grained Notikewin coal-measures (90 to 120 metres thick?), the medial, dominantly coarse-grained conglomeratic Falher coal-measures (50 to 90 metres thick?), and the basal Torrens sandstone (30 to 40 metres thick?). The Notikewin, Falher and Torrens members can be reasonably-distinguished in the logs of oil and gas wells drilled to the east and southeast of Willow South, but these units cannot be easily mapped separately without the aid of detailed aerial imagery (which has only recently become available), so no attempt has been made to depict them separately on **Map 2-3**.

The Gates Formation is inferred to be 190 to 230 metres thick within the area covered by **Map 2-3**. The nature of its contact with the underlying Moosebar Formation appears to be abrupt at local scale, but likely to be interfingering at the regional scale.

4.6.6 Moosebar Formation (map-unit 4)

The Moosebar Formation, of early Albian age (Stott, 1968) forms the basal part of the Fort St John Group. At and near Willow South, the Moosebar Formation has a typical stratigraphic thickness of at least 165 metres and perhaps 205 to 240 metres (Wickenden and Shaw, 1943, page 4).

The Moosebar Formation comprises an overall coarsening-upward sequence, comprised of several lesser coarsening-upward cycles, of mudstone passing upward to sandy siltstone. A basal pebbly, locally-glauconitic gritstone occurs within the middle of the formation in some

sections. Very thin (a few millimetres to one or two decimetres) bands of tuff form conspicuous marker bands within the basal 30 metres of the formation (Kilby, 1984a; 1985).

At Willow South, the Moosebar Formation is inferred to form bedrock along the block's northeastern and southwestern sides, flanking the Gething coal-measures exposed within the core of the Pine River Anticlinorium (**Map 2-3**).

Regionally, deep exploratory drilling for natural gas targets allows the recognition of five lithological subdivisions (from top down, the Spieker and Cowmoose members, the Green Marker, and the Chamberlain and Bullmoose members) within the Moosebar Formation of the Willow South area.

4.6.6.1 Spieker Member (map-unit 4c)

The Spieker Member of the Moosebar Formation (Duff and Gilchrist, 1981), of early Albian age (Stott, 1968), comprises thinly-interbedded, coarsening-upward units of siltstone and very fine sandstone, within an overall coarsening-upward sequence. Bioturbation is pervasive and intense within the Spieker Member, which is interpreted to have formed as shallow-water turbidites within a proximal shelf setting in advance of the northward-prograding Gates paleodelta. The undeformed thickness of the Spieker Member is 30 to 70 metres, possibly locally thickened through thrust-induced structural telescoping.

The basal contact of the Spieker Member with the underlying Cowmoose Member is abrupt, generally drawn at the base of an upward decrease in natural gamma radiation, which coincides with an upward increase in the silt content of the rocks. The basal Spieker is in some sections marked by one or two metres of distinctly-sandy siltstone.

4.6.6.2 Cowmoose Member (map-unit 4b)

At and near Willow South the Cowmoose Member of the Moosebar Formation, of early Albian age (Stott, 1968), consists of dark grey to black mudstone with occasional thin but laterally-persistent (centimetre- to decimetre-scale) bands of tuff and infrequent bands of concretionary ironstone. Without recourse to cored sections or gamma-neutron logs, the Cowmoose Member is superficially similar (and therefore difficult to distinguish in isolated exposures) from the basal part of the older Bullmoose Member.

The undeformed thickness of the Cowmoose Member is 50 to 80 metres, possible locally thickened to over 200 metres by thrust-induced structural telescoping (Cathyl-Huhn, 2015). The basal contact of the Cowmoose Member with the underlying Green Marker (an informal lithostratigraphic unit previously designated as the 'Bluesky-S unit' by Kilby, 1984b) is abrupt, being readily recognised as a downward decrease of gamma-log counts.

4.6.6.3 Green Marker (map-unit 4a)

The basal contact of the Moosebar Formation with the underlying Chamberlain Member of the Gething Formation is marked by the Green Marker (Cathyl-Huhn and Avery, 2014c), a thin but laterally-persistent zone of erosive-based, pebbly, intensely-bioturbated, commonly-glauconitic sandstone, siltstone and mudstone. The Green Marker is generally a few decimetres to a metre thick.

Although the lithology of the Green Marker is superficially similar to that of the older Bluesky Formation, these two glauconite-bearing zones are stratigraphically distinct,

both in space and in time (Kilby, 1984b; Legun, 1990). Kilby's (*op. cit.*) 'Bluesky-S unit' corresponds to the beds currently mapped as the Green Marker, whereas his older and stratigraphically-lower 'Bluesky-N' unit corresponds to beds here mapped as the Bluesky Formation.

The basal contact of the Green Marker with the underlying Chamberlain Member, or with the Bullmoose Member where the Chamberlain is absent, is characteristically abrupt and likely to at least locally be erosional.

4.6.6.4 Chamberlain Member (map-unit 3d)

At Willow South, the Chamberlain Member of the Moosebar Formation is a distinctive ledge-forming unit within the Moosebar, comprising a few (3 to perhaps 6) metres of very thinly- to thinly-interbedded, sparsely to moderately bioturbated very fine-grained sandstone and siltstone, with occasional bands of silty mudstone.

In contrast with the Chamberlain sections drilled in the Sukunka area (35 kilometres to the southwest of Willow South), no coal has been found within the Chamberlain Member at Willow South. The Chamberlain Member appears to thin to the east; it is locally altogether absent within oil and gas wells drilled at Highhat Mountain (well beyond the property's boundary), and in those wells the Cowmoose mudstones appear to directly overlie the Bullmoose siltstones. Willow South thus appears to be close to the expected northward limit of recognisable Chamberlain Member.

The Chamberlain Member is not known to contain diagnostic fossils; it has therefore been assigned an Early Albian age by Gibson (1992a) on the basis of fossils found within the overlying Cowmoose Member of the Moosebar Formation.

The basal contact of the Chamberlain Member with the underlying Bullmoose Member is gradational by interbedding, being drawn at the base of the Chamberlain’s sandstone. The Chamberlain-Bullmoose contact possibly rises stratigraphically, to the north and east, but available drilling does not suffice to confirm nor contradict this supposition.

4.6.6.5 Bullmoose Member (map-unit 3c)

The Bullmoose Member comprises about 120 metres of thinly-interbedded, recessive-weathering mudstone, siltstone and minor sandstone of turbiditic aspect, forming several fining-upward sequences within an overall coarsening-upward sequence.

The geophysical log response of the Bullmoose Member is very distinct, as compared with the overlying Chamberlain Member and the underlying Bluesky Member; Bullmoose rocks have characteristically-higher natural-gamma log responses.

The Bullmoose Member is inferred to form extensive areas of bedrock along the northeastern and southwestern margins of the Willow South block, and the Bullmoose is also inferred to be preserved within the core of a tight syncline along the block's northeastern side (**Map 2-3**).

The Bullmoose Member does not contain any coal, other than isolated coalified logs and coarse, poorly-preserved ‘plant trash’, likely of drifted origin. The Bullmoose does, however, contain abundant molluscan fossils, including *Pecten*

(Entolium) cf. *irenense* McLearn (Gibson, 1992a) and *Yoldia kissoumi* (Duff and Gilchrist, 1981), which, although not age-diagnostic, are locally-characteristic of the unit.

The Bullmoose Member likely corresponds with the 'Lower Silty Member' of the Moosebar Formation, as originally suggested by Duff and Gilchrist (1981), within those areas (for example, the deep subsurface under Highhat Mountain, southeast of the Willow South block) where the overlying Chamberlain Member is absent.

Geophysical logs of the Bullmoose Member show a characteristic high-gamma response at two horizons situated a few tens of metres above the Bullmoose/Bluesky contact. These gamma 'spikes' are interpreted to be thin bands of tuff, each of them one to two decimetres thick, with the lower of the two bands being more persistent. These bands provide a regionally-extensive geophysical marker throughout the Falling Creek region (Kilby, 1984a).

The basal contact of the Bullmoose Member with the underlying Bluesky Formation is drawn at the top of the underlying glauconitic sandy mudstone. In geophysical logs, the Bullmoose/Bluesky contact is readily recognised as a rapid downward change in log response to higher resistivity response, lower natural-gamma counts, and higher API neutron counts. This downward change is interpreted to correspond with a rapid downward passage from fine-grained mudstone of the basal Bullmoose, to the sandy mudstone and sandstone of the uppermost Bluesky.

The Bullmoose Member is of late Early Albian age (Gibson, 1992a). The thickness of the Bullmoose is typically about 120 metres within the Willow Creek area, although much thicker sections have been encountered by oil and gas wells lying to the southeast and east of the Willow Creek lease (189 and 237 metres respectively in wells b-91-L and a-23-D at Highhat Mountain (Cathyl-Huhn, 2015) suggest that some lateral thickening, perhaps further complicated by structural telescoping, is possible.

4.6.7 Bluesky Formation (map-unit 3b)

The Bluesky Formation is a transitional unit between marine and non-marine facies. Accordingly, there has been considerable debate within the geological literature (as cogently summarised by Stott, 1968, and further discussed by Kilby (1984b) and Legun (1990), as to the Bluesky's stratigraphic affinities and proper ranking. In the present report, the Bluesky is considered to constitute a formation in its own right, bounded above by the Moosebar Formation, and beneath by the Gething Formation, following earlier workers (*cf.* Legun, 1990 and James, 1998).

The Bluesky Formation generally consists of coarsening-upward cycles of interbedded mudstone, siltstone, and sandstone. The top of the Bluesky is characteristically marked by a glauconitic horizon. The glauconitic zone, where observed in the nearby Mink Creek property, is 40 to 57 centimetres thick (Sultan and Cathyl-Huhn, 2014), and contains abundant fine-grained, green glauconite within sandy mudstone and argillaceous, locally-pebbly, sandstone. The base of the Bluesky is marked by a distinctive erosive-based chert- and quartz-pebble conglomerate up to a metre thick, grading to argillaceous sandstone with few randomly-distributed chert and quartz pebbles.

The erosive-based Bluesky sediments likely represent the initial transgressive deposits of an early tongue of the Clearwater Sea, which shortly after deposition of the Bluesky had transgressed to a southerly limit several hundred kilometres southeast of the Willow Creek area (Gibson, 1992a).

The Bluesky, as-drilled at and near Willow South, is 1 to 8 metres thick. The age of the Bluesky Member is not directly known, but inferred to be late Early Albian on the basis of the ages of its bounding strata.

4.7 Bullhead Group (map-units 3 and 2)

Both formations of the Bullhead Group -- the younger Gething and the older Cadomin -- are present at Willow South, with the Gething containing all of the block's known potentially-mineable coal beds.

*4.7.1 **Gething Formation (map-unit 3)***

The Gething Formation, of Hauterivian to late Early Albian age (Gibson, 1992a), comprises thin to thick interbeds of siltstone, sandstone, mudstone and coal, with lesser amounts of gritstone, pebble-conglomerate, ironstone and tuff.

The Gething Formation originated as a complex of non-marine to shallow-marine sedimentary deposits, laid down by meandering and braided streams and rivers within a widely-extensive belt of coastal deltas and an intervening marine-influenced bay, of which the basal delta (the coal-bearing Gaylard paleodelta) extended throughout the Mink-Brazion coalfield, and the Willow Creek / Falling Creek area in general, including the Willow South block. At the latitude of Willow South, the overlying delta (the younger Chamberlain paleodelta) is presumed to have been only represented by a thin, non-coal-bearing, fringe of sandy/silty delta-front to prodeltaic deposits (Gibson, 1992a).

The Gething Formation forms the top of the Bullhead Group (Stott, 1968, as used in the present report), and of the Crassier Group (*sensu* Hughes, 1964, as previously observed in the Mink Creek coal property by Sultan and Cathyl-Huhn, 2014). At Willow South, the Gething Formation's original thickness was at least 260 metres, and possibly 360 metres. In contrast, within the nearby Highhat gasfield (15 kilometres to the southeast of Willow South), complete sections of the Gething Formation are 475 to 720 metres thick, although some of that thickness is made up by marginal-marine deposits which are considered to be homotaxial with the basal part of the Moosebar Formation as found at Willow South.

During historic (pre-2008) as well as current (year-2008 and more recently) drilling at the Willow South, nearly every coal-exploration borehole has intersected some section of the Gething Formation, but the thickness of the formation can only be indirectly estimated from this work, owing to limited drilling into the underlying Cadomin Formation, as well as the block's pervasive structural complexity.

The basal contact of the Gething Formation with the underlying Cadomin Formation is inferred to be abrupt to possibly erosional at the local scale (Cant, 1996) and interfingering at the regional scale (Stott, 1968; Gibson, 1992a), drawn at the top of a bed of coarse-grained, often gritty and occasionally pebbly sandstone which may laterally grade into more typical pebble-conglomerate or multi-storey sandstone characteristic of the underlying sub-Gething beds.

Only one member (the Gaylard Member) is recognised within the Gething Formation at Willow South.

4.7.1.1 Internal subdivisions of the Gaylard Member

The Gaylard Member may be conveniently divided into five informal subdivisions, on the basis of characteristic lithologies (chiefly changes in sand-shale ratio, with alternations of sandier and shalier sub-units), anchored by the presence of thick and laterally-extensive coal zones which likely formed atop regionally-extensive interfluves. The divisions of the Gaylard are numbered in upward succession from Division 1 at the base of the Gaylard, to Division 5 at the top of the Gaylard. Drilling has established that the thickest, and possibly more laterally-extensive, coals occur within the middle portion (Division 3) of the Gaylard Member.

4.7.1.2 Sedimentological and cyclothemic details

The Gaylard Member is interpreted to consist predominantly of non-marine sedimentary rocks within the Willow South block, although the presence of at least one coal zone with slightly-elevated sulphur content suggests that some marine influence may have occurred. The coal zone in question, No.8, lies within the basal half of the Gaylard Member.

The Gaylard Member consists principally of many vertically-stacked, locally erosive-based, fining-upward bedsets, such as are typical of fluvial and deltaic depositional settings.

A typical cyclic succession of Gaylard sediments commences with basal sandstone (rarely basal gritstone or pebble-conglomerate), passing upward through coarse- to fine-grained sandstone, siltstone, variably-carbonaceous mudstone, rooty seatearth mudstone and coal. Most, but not all, Gaylard cycles are capped by coal beds, although many of these coals are too thin, or too dirty, to be considered mineable. Coals frequently contain partings of siltstone or variably-carbonaceous mudstone, tuff (the 'tonstein' bands of Kilby, 1984a and 1985) and rarely of ironstone. The coals split and coalesce laterally, likely in interaction to avulsive events within river distributaries, and concomitant crevasse-splay sedimentation atop the coeval coal-forming wetlands (Banerjee and others, 1996).

Gamma-log response of the Gaylard sandstones (within and between these cycles) are 'ragged' in detail, occasionally capped by an upward-increasing 'bell-shaped' log response. In contrast, the siliceous sandstones and conglomerates within the underlying Cadomin Formation display distinctly 'blockier' responses than those of the Gaylard sandstones.

4.7.1.3 Speculations as to the thickness of the Gaylard Member at Willow South

The thickness of the Gaylard Member is not directly known at Willow South, owing to the lack of completely-drilled sections, and the pervasive presence of small- and large-scale folds within the coal-measures. From incomplete, but apparently-undisturbed, sections the Gaylard is established to be at least 260 metres thick at Willow South, and possibly up to 360 metres thick. Yet-greater thickness has not yet been ruled-out by ongoing structural and stratigraphic studies; still, the Gaylard Member's development at Willow South

appears to be thinner than the 460 to 485 metres calculated for the Highhat River area (Cathyl-Huhn, 2015).

4.7.2 Cadomin Formation (map-unit 2)

The Cadomin Formation immediately underlies the Gething Formation, forming the basal part of the Bullhead Group (Stott, 1968). As such, the Cadomin Formation includes strata which may alternatively be assigned to the now-deprecated Dresser Formation of the Crassier Group *sensu* Hughes (1964).

Regionally, the Cadomin Formation comprises one or more thick beds of coarse-grained, gritty to pebbly sandstone and pebble-conglomerate (McLean, 1977) with occasional lenses of siltstone and pebbly gritstone, and rare thin lenses of coal, several tens of metres thick overall.

The Cadomin Formation may be distinguished from the sandier parts of the Gaylard Member, upon the bases of the Cadomin Formation's greater lateral continuity, the Cadomin's distinctly-'blocky' gamma-log response, and the frequent (but not universal, *cf.* Cant and Abrahamson, 1996) presence of an intervening zone of fine-grained coal-measures strata.

Again regionally, the base of the Cadomin marks a northeastward-deepening angular unconformity, cutting down into successively-older rocks of the Minnes Group (Stott, 1973).

Locally, it remains uncertain whether the Cadomin Formation has been reached by any of the historic or current boreholes at Willow South. Current boreholes WC10-19 and WC10-54 may have reached the Cadomin, but if so, the formation would be anomalously-thin, represented by at most 2.5 metres of sandstone or conglomerate. It appears more likely that these two holes entered a zone of fine-grained coal-bearing rocks within the basal part of the sandstone-rich Division 1 of the Gaylard Member.

By comparison with nearby properties, the Cadomin's basal contact with the underlying Bickford Formation of the Minnes Group is presumed to be erosional, with considerable local scour into the older sediments.

4.8 Minnes Group (map-unit 1)

The Minnes Group comprises clastic sedimentary rocks of latest Jurassic and earliest Cretaceous age, forming a poorly-exposed deltaic/shelfal/basinal complex which is overlain by, and therefore largely concealed by, the Bullhead Group.

Four formations are locally recognised within the Minnes Group. From top down, they are the Bickford Formation (equivalent to most of the now-deprecated Brenot Formation of Hughes, 1964), the Monach Formation, the Beattie Peaks Formation, and the Monteith Formation (Stott, 1981; 1998). Coal is known to at least locally occur in all four of the Minnes Group's formations (Chowdry, 1980), but only the Bickford Formation is inferred to occur at reasonable depths within the Willow South block, and therefore to be a credible (albeit thus-far unrewarding) target for coal exploration.

4.8.1 Bickford Formation (map-unit 1d)

The Bickford Formation (named for Mount Bickford, near Pine Pass) consists of non-marine sandstone, siltstone, mudstone and coal, with a total thickness of 285 to 300 metres (Chowdry, 1980). Channel-filling conglomerates, up to 11 metres thick, locally occur near the top of the formation (Stott, 1998). The uppermost few metres of the formation, immediately beneath the base of the Cadomin Formation, is typically bleached and altered to a distinctively-soft, very light grey to white layer of clay-rich sediment.

Coals of potentially-mineable thickness were reported (Chowdry, 1980; Kalkreuth, 1982) from the Bickford Formation within the Rocky Creek coal property (several tens of kilometres southeast of Willow South), on the basis of extensive drilling during the early 1980s. Logs of oil and gas wells near Willow South indicate the presence of coal within the Bickford rocks, but the formation has not yet been drilled at Willow South, and it has only definitely been reached within one or two boreholes within the nearby Willow Creek block.

5 Coal

As discussed above in **Section 4**, the Gething Formation contains numerous coal beds, some of which are sufficiently thick and apparently laterally-continuous to constitute reasonable exploratory and mining targets, within the Willow South portion of the Willow Creek coal lease. Past workers (*vide* Marton, 1981; James, 1998) have made reasonable progress towards the delineation and correlation of the Gething coals, all of which occur within that formation's Gaylard Member.

Regional correlations of Gaylard coals are here proposed, although not examined in detail:

- No.4 zone at Willow Creek may be correlative with the Brenda Seam at Hasler Creek, F zone at Mink Creek, Seam C60 at Burnt River, and the Lower Gething B zone at Sukunka Colliery;
- No.6 zone at Willow South may be correlative with the Upper Seam at Burnt River; and
- No.7 zone at Willow South may be correlative with the Lower Seam at Burnt River.

Coals of the Gaylard Member at Willow South, and their enclosing sedimentary rocks, were deposited during Hauterivian to late Early Albian time, between 112 and 133 million years ago, on the basis of regional plant-fossil and foraminiferal zonations, as presented by Gibson (1992a).

5.1 Coals within the current boreholes at Willow South

Table 5-1 depicts the overall correlation scheme for coal zones, coal beds, and lesser subdivisions of coal beds, at Willow South. Coal zones are numbered downwards from No.1, near the top of the Gething Formation, to No.12, postulated to lie close to the base of the Gething (or even, conceivably, within the older Bickford Formation although that supposition is not yet established). Each coal zone contains at least one major coal bed, and numerous subordinate and associated 'splits', 'stringers' and 'stringer plies'. Designations of the various major and minor coal beds have evolved with time from McKechnie's (1955) original concept of a series of numbered coal beds, into a more complex scheme of subordinate relationships. A system of split numbering was established by James (1998), who assigned odd terminal digits to subordinate coals lying above a major coal bed, and even terminal digits to those lying below a major coal bed.

Table 5-2 presents information concerning which are either correlatable or non-correlatable. Most of the coal intersections listed have been given identifying codes, such as '610', 'M3', or 'A3'. These codes have been assigned in aid of generating digital deposit models, subject to explicit hierarchical rules denoting their 'parent-child' relationships as the various coal zones and coal beds are interpreted to split and possibly rejoin laterally.

Of note in **Table 5-2** is the limited extent of interpretation presently available for year-2012 boreholes; it should not be presumed that all coal beds encountered by these boreholes have yet been accounted for. Furthermore, certain of the coal intersections listed in **Table 5-2** are denoted simply as 'Coal'; this notation signifies that they have not been assigned an identifying code within the correlation scheme. Also listed in **Table 5-2** are faults (mostly as-interpreted from correlation of geophysical log responses), zones of burnt strata, and the drilled extent of Drift cover above bedrock.

5.1.1 Cross-reference

Additional tops-tables for Willow South coal beds are presented in **Tables A-2** through **A-10**, located in **Appendix A**.

5.1.2 Caveat concerning coal bed correlations

The system of coal-bed designation presented within **Table 5-1** is not intended to imply that major ('00' terminal-digit) coal beds become completely split into subordinate beds. Furthermore, not all stringers necessarily originate as laterally-continuous extensions of major coal beds. Considerable work likely remains to fully-establish splitting and coalescent relationships.

Table 5-1: Stratigraphic hierarchy of correlatable coal beds

Formation	Member	Division	Coal Zone	Coal Bed	Split	Stringer	Stringer Ply
Gething	Gaylard	Division 5	**Bird**				
			No.1			190	
						170	
						150	
						130	
						110	
				100			
			No.2		201		
				200			
					202		
			No.3			330	
						310	
				300			
						320	
						340	
						350	
			No.4			450	
						430	
						410	
				400			
					402		
						420	
						440	
						480	
							482
		Division 4	**A**				A71
						A7	
							A72
						A5	
						A3	
							A32
							A34
				M1			
				M2			
							M22
				A1			
					A12		
				A0			
					A02		
			No.5				531
						530	
							532
						510	
					501		
				500			
					502		
						520	
							541
						540	
			No.6			630	
						610	
					601		
				600			
					602		
						640	

Table 5-1: Stratigraphic hierarchy of correlatable coal beds (concluded)

Formation	Member	Division	Coal Zone	Coal Bed	Split	Stringer	Stringer Ply
Gething	Gaylard	Division 3	**No.7**			770	
						750	
						730	
						710	
				700			
					702		
							721
						720	
							722
						740	
						760	
			No.8	800			
					802		
						820	
						840	
						880	
		Division 2	**No.9**			910	
				900			
						920	
						940	
		Division 1	**No.10**			1010	
				1000			
						1020	
			No.11			1110	
				1100			
							1121
						1120	
							1122
						1140	
			No.12			1210	
				1200			
						1220	
Cadomin	(undivided)			(no correlatable coals recognised)			
Bickford	(undivided)			(under investigation)			

Note: table compiled by Laura R. LeMay from Willow South deposit-modelling files; amended by C.G. Cathyl-Huhn to incorporate postulated classification of coals with respect to the internal divisions of the Gaylard Member, and with the Cadomin and Bickford formations. Drilling of coal zones No.8 through No.12 is sparse. Assignment of coal zones 11 and 12 to the Gething Formation is speculative, and merits further critical consideration.

Interpreted coal intersections, Drift, and faults within current Willow South boreholes: **Table 5-2**

Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit
MW11-01	0	1.6	Drift	WC08-102	0	5.2	Drift	WC08-104	198.27	205.36	700	WC08-108	34.85	35.15	A3	WC08-110	96.7	97.15	510
MW11-01	8.89	9	610	WC08-102	5.55	6.1	A3	WC08-104	205.55	206	702	WC08-108	50.1	51.1	M1	WC08-111	0	2.5	Drift
MW11-01	13.13	16.34	600	WC08-102	21.25	22.1	A1	WC08-104	217	219.54	720	WC08-108	52.4	52.8	M2	WC08-111	4	4.35	480
WC08-100	0	3	Drift	WC08-102	22.1	22.4	A1	WC08-104	220.24	220.59	722	WC08-108	57.5	57.65	M22	WC08-111	15.1	15.4	A7
WC08-100	3.2	3.4	A0	WC08-102	22.4	22.7	A1	WC08-105	0	3	Drift	WC08-108	61	62	A1	WC08-111	26.3	26.75	A5
WC08-100	20.35	20.77	530	WC08-102	23.6	24.05	A0	WC08-105	11.3	12	A5	WC08-108	64	65	A0	WC08-111	37.25	37.35	A3
WC08-100	32.94	38.18	501	WC08-102	35.8	36	Fault	WC08-105	34.2	34.5	Coal	WC08-108	81.6	81.7	530	WC08-111	50.15	51.1	M1
WC08-100	43.45	43.76	540	WC08-102	52.5	52.7	Fault	WC08-105	41.3	43.75	M1	WC08-108	87.1	87.35	510	WC08-111	51.1	52.55	M1P
WC08-100	47.03	47.43	610	WC08-102	67.6	68.2	530	WC08-105	45.05	45.8	M2	WC08-108	88.9	89.1	501	WC08-111	52.55	53	M2
WC08-100	57.62	59.92	600	WC08-102	84.2	84.65	510	WC08-105	53.7	55.5	A1	WC08-108	89.45	90.55	502	WC08-111	62.5	63.65	A1
WC08-100	70.8	70.9	770	WC08-102	84.65	84.8	500	WC08-105	59.25	60.3	A0	WC08-108	110.3	110.6	610	WC08-111	67	68	A0
WC08-100	74.5	74.6	750	WC08-102	84.8	87.25	501	WC08-105	89	90	502	WC08-108	114.5	116.9	600	WC08-112	0	3.3	Drift
WC08-100	86.1	86.3	Fault	WC08-102	87.6	88	Coal	WC08-106	0	2.5	Drift	WC08-108	116.9	117	600	WC08-112	6	6.5	100
WC08-100	109.25	109.57	770	WC08-102	89.75	89.9	Coal	WC08-106	3.5	4.75	A1	WC08-108	117	117.4	602	WC08-112	26.7	27.75	200
WC08-100	113.53	113.75	750	WC08-102	92.7	92.95	630	WC08-106	8	9.4	A0	WC08-108	122.6	122.7	640	WC08-112	29.9	31	300
WC08-100	133.98	134.38	710	WC08-102	93.7	93.8	610	WC08-106	18.05	18.35	530	WC08-108	123.15	123.25	770	WC08-112	32.95	33.05	320
WC08-100	138.86	139.24	710	WC08-102	98.85	105.2	600	WC08-106	34.95	35.2	510	WC08-108	124.7	125	750	WC08-112	36.45	36.55	340
WC08-100	139.6	147.08	700	WC08-103	0	2.4	Drift	WC08-106	36.5	36.9	501	WC08-108	136.65	137.3	710	WC08-112	57.9	58.3	400
WC08-100	151.87	155.09	720	WC08-103	4.75	4.95	640	WC08-106	36.9	37	500	WC08-108	138.55	142.85	700	WC08-112	61.15	61.35	440
WC08-100	155.96	156.43	722	WC08-103	5.25	5.8	770	WC08-106	37	38.45	502	WC08-108	143.3	143.5	Coal	WC08-112	66.35	66.55	480
WC08-101	0	6.6	Drift	WC08-103	10.35	10.65	750	WC08-106	49.4	49.65	630	WC08-108	153.2	154.9	720	WC08-112	67.55	67.8	480
WC08-101	16.21	16.45	440	WC08-103	17.8	18.1	730	WC08-106	55	55.3	610	WC08-108	159.35	159.5	740	WC08-112	76.35	76.7	A7
WC08-101	23.02	23.35	480	WC08-103	24.5	27.75	700	WC08-106	57.9	61.25	600	WC08-108	160	160.35	740	WC08-112	80.4	80.5	Coal
WC08-101	44.31	44.54	Coal	WC08-104	0	12.2	Drift	WC08-106	60.75	60.85	600	WC08-109	0	10	Drift	WC08-112	89.1	89.9	A5
WC08-101	52.38	53.01	A5	WC08-104	23	23.85	400	WC08-107	0	6.3	Drift	WC08-109	24.65	24.9	530	WC08-112	93.55	93.65	A3
WC08-101	58.66	59.64	A3	WC08-104	34.18	34.28	440	WC08-107	43.9	44.55	Coal	WC08-109	32.65	33	510	WC08-113	0	2.8	Drift
WC08-101	63.71	63.83	A32	WC08-104	40.9	41.1	480	WC08-107	59.15	59.25	Coal	WC08-109	36	36.3	501	WC08-113	2.8	3	480
WC08-101	65.92	66.02	A32	WC08-104	51.6	51.7	A7	WC08-107	64.2	64.8	Coal	WC08-109	36.85	38.6	502	WC08-113	3.3	3.45	480
WC08-101	72.65	72.98	M1	WC08-104	66.3	67	A5	WC08-107	70.5	70.7	Coal	WC08-109	57.6	57.8	630	WC08-113	3.5	3.9	480
WC08-101	100.55	101.18	A1	WC08-104	75.3	75.59	A3	WC08-107	79.5	79.6	Coal	WC08-109	65.45	65.75	610	WC08-113	13.8	14.6	A7
WC08-101	102.82	103.45	A0	WC08-104	89.7	91.25	M1	WC08-107	86.95	87.05	Coal	WC08-109	69.2	72.55	600	WC08-113	14.85	14.95	A3
WC08-101	125.71	125.85	530	WC08-104	92.25	94.1	M1	WC08-107	95.6	96.1	Coal	WC08-109	72.55	72.75	600	WC08-113	15.2	15.35	A7
WC08-101	134.11	134.22	510	WC08-104	95.2	96	M2	WC08-107	98.75	99.05	Coal	WC08-109	72.75	73.25	602	WC08-113	34.13	34.81	A5
WC08-101	137.91	141.52	501	WC08-104	108.6	109.27	A1	WC08-107	104.95	105.05	Coal	WC08-109	79.95	80.1	640	WC08-113	34.81	34.9	A5
WC08-101	141.92	142.48	Coal	WC08-104	111.55	112.08	A0	WC08-107	117.25	117.9	Coal	WC08-109	80.35	80.7	770	WC08-113	34.9	35.41	A5
WC08-101	145.91	146.01	540	WC08-104	133.38	133.48	530	WC08-107	119.2	119.7	Coal	WC08-109	83.4	83.7	750	WC08-113	39	39.75	A3
WC08-101	158.05	158.15	610	WC08-104	138.91	139.12	510	WC08-107	124.4	124.6	Coal	WC08-109	99.4	100.1	710	WC08-113	49.25	49.35	Coal
WC08-101	159	160.31	600	WC08-104	141.22	143.13	501	WC08-107	130.4	131	Coal	WC08-109	101.9	107.05	700	WC08-113	70.95	71.78	M1
WC08-101	165.98	166.09	770	WC08-104	149.5	149.6	630	WC08-107	132.4	133	Coal	WC08-110	0	6	Drift	WC08-113	74.8	75.37	M2
WC08-101	168.95	169.05	750	WC08-104	157.2	157.34	610	WC08-107	149.7	150	410	WC08-110	27.15	28.3	A5	WC08-113	80.17	80.22	Coal
WC08-101	177.75	177.85	710	WC08-104	162.19	165.26	600	WC08-107	156	156.1	Coal	WC08-110	38.2	38.35	A3	WC08-113	84.23	85.35	A1
WC08-101	179.68	183.9	700	WC08-104	169.17	169.27	640	WC08-107	158.6	160.25	400	WC08-110	48.35	49.25	M1	WC08-113	90.81	91.35	A0
WC08-101	182.33	183.9	702	WC08-104	169.79	169.93	770	WC08-108	0	6.5	Drift	WC08-110	50.45	50.95	M2	WC08-113	111.2	111.4	Fault
WC08-101	187.26	188.2	720	WC08-104	172.5	172.63	750	WC08-108	7.5	8	480	WC08-110	65.45	66.5	A1	WC08-113	132.8	132.9	Fault
WC08-101	188.75	188.85	722	WC08-104	194.98	195.41	710	WC08-108	17.5	17.7	A7	WC08-110	68.15	68.45	A0	WC08-113	137.61	138.07	A7
WC08-101	195.05	195.15	Coal	WC08-104	195.92	196.3	710	WC08-108	27.4	28.5	A5	WC08-110	85.1	85.5	Coal	WC08-113	150.77	151.53	A5

Interpreted coal intersections, Drift, and faults within current Willow South boreholes: **Table 5-2 (continued)**

Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit
WC08-113	153.34	153.51	A3	WC08-115	15.75	16.2	440	WC10-03	36.42	37.07	750	WC10-05	83.15	87.02	700	WC10-08	53.8	54.2	A7
WC08-113	159.51	159.61	A32	WC08-115	18.7	19.25	480	WC10-03	67.85	68.18	710	WC10-05	87.45	87.6	702	WC10-08	66.45	67.1	A5
WC08-113	175.97	177.01	M1	WC08-115	19.6	20	480	WC10-03	68.91	69.05	710	WC10-05	97.15	98.8	720	WC10-08	70.9	71	A3
WC08-113	177.01	178.8	M1P	WC08-115	22.2	22.35	A71	WC10-03	69.93	74.98	700	WC10-05	103.55	103.65	740	WC10-08	76.9	77.05	A32
WC08-113	178.8	179.3	M2	WC08-115	25.1	26.85	A7	WC10-03	75.43	75.6	702	WC10-05	104.3	104.65	740	WC10-08	90	91	M1
WC08-113	183.1	183.2	Coal	WC08-115	32.9	33.8	A72	WC10-03	77.9	79.48	720	WC10-05	109.95	110.15	760	WC10-08	91	92.7	M1P
WC08-113	184.98	186.18	A1	WC08-115	45.2	45.3	Fault	WC10-03	80.31	80.65	722	WC10-05	110.8	111.1	760	WC10-08	92.7	93.1	M2
WC08-113	191	191.41	A0	WC08-115	54.7	55	Fault	WC10-03	88.3	88.5	740	WC10-05	112	112.1	760	WC10-08	99	99.8	A1
WC08-113	202.7	202.8	532	WC08-115	72.1	72.2	Fault	WC10-03	97	97.15	760	WC10-05	142.4	142.65	800	WC10-08	105.2	105.6	A0
WC08-113	208.05	208.18	530	WC08-115	72.65	73.1	A0	WC10-03	130	130.35	800	WC10-06	0	7.4	Drift	WC10-08	120.6	120.7	530
WC08-113	216.17	217.02	500	WC08-115	85	85.3	530	WC10-04	0	2.3	Drift	WC10-06	15.6	15.7	Fault	WC10-08	123.05	123.15	510
WC08-113	229.8	230	610	WC08-115	89.35	89.45	Coal	WC10-04	16.8	16.9	530	WC10-06	26.75	27.8	M1	WC10-08	129.45	129.8	502
WC08-113	233.4	235.33	600	WC08-115	96.35	96.7	501	WC10-04	22.3	22.5	510	WC10-06	27.8	29.65	M1P	WC10-08	129.8	130.2	500
WC08-113	235.81	235.92	602	WC08-115	97.2	98	502	WC10-04	23.7	24	501	WC10-06	29.65	30.3	M2	WC10-08	130.2	130.45	502
WC08-114	0	3	Drift	WC08-115	99.15	99.3	Coal	WC10-04	24	24.2	500	WC10-06	39.5	40.7	A1	WC10-08	131.65	131.95	540
WC08-114	7.9	8	400	WC08-115	120.6	120.9	630	WC10-04	24.2	25.45	502	WC10-06	44.45	45.2	A0	WC10-08	140.8	140.9	610
WC08-114	22.05	22.2	440	WC08-115	127.05	127.25	610	WC10-04	37.7	37.8	630	WC10-06	53.95	54.05	510	WC10-08	145.1	147	600
WC08-114	31.15	31.4	480	WC08-115	127.9	132.1	600	WC10-04	42.9	43.15	610	WC10-06	61.2	61.5	530	WC10-08	147.4	147.55	602
WC08-114	39.93	40.05	A7	WC10-01	0	9.1	Drift	WC10-04	45.2	47.9	600	WC10-06	69.75	70.8	502	WC10-08	154.95	155.05	770
WC08-114	41.15	41.9	A7	WC10-01	30.95	31.65	Coal	WC10-04	47.9	48.2	600	WC10-06	73.7	74.1	540	WC10-08	156.1	156.25	750
WC08-114	51.45	51.89	A5	WC10-01	60.9	61.4	Coal	WC10-04	48.2	48.45	602	WC10-06	84.3	84.65	610	WC10-08	165.1	165.6	710
WC08-114	53.91	54.12	A3	WC10-01	69.15	70.2	M1	WC10-04	53.2	53.3	640	WC10-06	87.3	89.65	600	WC10-08	184.2	187	700
WC08-114	73.72	73.91	M1	WC10-01	70.2	70.8	M1P	WC10-04	54.1	54.3	770	WC10-06	89.65	89.8	600	WC10-08	187.8	187.9	702
WC08-114	75.93	76.29	M2	WC10-01	70.8	71.25	M2	WC10-04	56.65	57	750	WC10-06	89.8	90.05	602	WC10-08	190	190.25	721
WC08-114	79.1	79.2	M22	WC10-01	108.3	108.8	Coal	WC10-04	70.85	71	710	WC10-06	97.9	98	770	WC10-08	190.25	190.65	720
WC08-114	81.7	82.44	A1	WC10-01	123.1	123.6	A1	WC10-04	71	71.3	710	WC10-06	99.5	99.6	750	WC10-08	190.65	191.85	720
WC08-114	85.8	86.15	A0	WC10-01	125	125.6	A0	WC10-04	71.3	71.45	710	WC10-06	108.2	109	710	WC10-08	199.45	199.55	740
WC08-114	103.1	103.2	531	WC10-01	148.9	152.2	500	WC10-04	72.4	76.45	700	WC10-06	125.7	129.35	700	WC10-08	200.1	200.4	740
WC08-114	108.95	109.24	530	WC10-01	160.35	161.95	600	WC10-04	76.9	77	702	WC10-06	129.9	130	702	WC10-08	201.75	202	740
WC08-114	115.52	115.85	501	WC10-02	0	3	Drift	WC10-04	81.6	82.8	720	WC10-06	131.5	131.85	720	WC10-08	202.85	203.35	760
WC08-114	116.35	116.58	502	WC10-02	8.7	9.4	M1	WC10-04	83.4	83.6	720	WC10-06	131.85	132.05	720	WC10-08	203.95	204.15	760
WC08-114	130.8	130.9	610	WC10-02	9.4	9.9	M1P	WC10-04	88.4	88.5	740	WC10-06	132.05	133.45	720	WC10-09	0	0.5	Drift
WC08-114	131.3	131.4	610	WC10-02	9.9	10.35	M2	WC10-04	89.25	89.45	740	WC10-06	139.95	140.1	740	WC10-09	20	33.5	Broken
WC08-114	135.36	136.67	600	WC10-02	45.4	45.8	A1	WC10-05	0	9.5	Drift	WC10-06	140.75	141	740	WC10-09B	0	3.5	Drift
WC08-114	137.15	137.25	602	WC10-02	47.1	47.5	A0	WC10-05	26.55	26.75	530	WC10-06	143.25	143.4	760	WC10-09B	5.45	6.12	201
WC08-114	142.8	142.9	750	WC10-02	77.9	80.65	500	WC10-05	31.65	31.85	510	WC10-06	144.35	144.9	760	WC10-09B	7.47	7.9	202
WC08-114	152.52	152.86	710	WC10-02	86.7	89.4	600	WC10-05	34.1	34.2	501	WC10-06	145.4	145.6	760	WC10-09B	11.6	11.7	Fault
WC08-114	166.35	169.44	700	WC10-02	92.7	93.7	Coal	WC10-05	34.85	35.7	502	WC10-07	0	1.5	Drift	WC10-09B	39.8	40.4	300
WC08-114	168.93	169.44	702	WC10-02	114.25	115.6	Coal	WC10-05	48.5	48.65	630	WC10-07	1.5	45.7	Burnt	WC10-09B	57.6	57.7	Fault
WC08-114	187.31	187.93	720	WC10-02	125.5	127.2	Coal	WC10-05	55.4	55.55	610	WC10-08	0	2.5	Drift	WC10-09B	61	61.1	340
WC08-114	187.93	188.42	722	WC10-02	134.8	141.4	700	WC10-05	57.5	60.05	600	WC10-08	7.6	7.8	320	WC10-09B	69.2	69.3	430
WC08-114	192.62	193.34	740	WC10-02	148.8	150.1	720	WC10-05	60.05	60.15	600	WC10-08	11.3	11.4	340	WC10-09B	84.35	84.4	410
WC08-114	198.32	198.67	760	WC10-03	0.6	3.2	500	WC10-05	60.15	60.5	602	WC10-08	35.15	35.5	400	WC10-09B	92.55	92.75	400
WC08-114	201.24	201.44	760	WC10-03	17.2	17.76	610	WC10-05	66.45	66.55	770	WC10-08	38.45	38.55	440	WC10-09B	95.8	95.9	440
WC08-115	0	2	Drift	WC10-03	20.21	24.27	600	WC10-05	68.8	68.9	750	WC10-08	43.7	43.8	480	WC10-09B	98.9	99.25	480
WC08-115	2.5	3	400	WC10-03	30.96	31.84	770	WC10-05	81.5	82	710	WC10-08	44.4	44.6	480	WC10-09B	99.95	100.15	480

Interpreted coal intersections, Drift, and faults within current Willow South boreholes: **Table 5-2 (continued)**

Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit
WC10-09B	108.8	109.2	A7	WC10-11	141.22	142.18	710	WC10-13	79	79.79	500	WC10-14	191.5	191.95	760	WC10-16	97.1	97.3	720
WC10-09B	122.6	123.4	A5	WC10-11	145.47	149.46	700	WC10-13	79.79	80.41	502	WC10-15	0	2.4	Drift	WC10-16	97.65	99.1	720
WC10-09B	126.9	127	A3	WC10-11	146	147.6	700	WC10-13	80.41	80.8	500	WC10-15	7.1	8	A5	WC10-17	0	17	Burnt
WC10-09B	133.2	133.25	A32	WC10-11	147.6	149.1	702	WC10-13	80.8	81.02	502	WC10-15	12.3	12.4	A3	WC10-18	0	1.5	Drift
WC10-09B	148.1	148.9	M1	WC10-11	149.1	149.46	721	WC10-13	105.07	106.72	600	WC10-15	30.6	31.55	M1	WC10-18	5.8	7	750
WC10-09B	148.9	150.65	M1P	WC10-12	0	9.6	Drift	WC10-13	110	110.1	770	WC10-15	31.55	33.25	M1P	WC10-18	37.8	39.02	710
WC10-09B	150.65	151.1	M2	WC10-12	13.75	13.85	440	WC10-13	119.4	119.5	730	WC10-15	33.25	33.7	M2	WC10-18	45.35	45.91	700
WC10-09B	154.95	155.05	M22	WC10-12	15.3	15.4	440	WC10-13	126.51	127.36	710	WC10-15	42.35	43	A1	WC10-18	45.91	46.06	700
WC10-09B	158.28	159	A1	WC10-12	36.25	36.58	480	WC10-13	131.22	132.46	700	WC10-15	50.6	51.25	A0	WC10-18	46.06	66.82	700
WC10-09B	165.7	166.15	A0	WC10-12	38.29	38.84	480	WC10-13	132.46	133.2	700	WC10-15	67.05	67.55	530	WC10-18	67.38	67.6	721
WC10-09B	170.55	170.65	A02	WC10-12	40.36	41.81	A7	WC10-13	133.2	135.58	702	WC10-15	70	70.1	510	WC10-18	70.24	71.41	720
WC10-09B	176.4	176.5	Coal	WC10-12	52.92	53.32	A5	WC10-13	135.58	135.79	721	WC10-15	81.95	82.5	501	WC10-18	72.81	73.2	722
WC10-09B	186.45	186.82	530	WC10-12	54.54	54.9	A3	WC10-14	0	2.4	Drift	WC10-15	84.35	84.85	502	WC10-18	91.8	92.13	740
WC10-09B	189.3	189.4	510	WC10-12	70.1	70.2	A34	WC10-14	4.7	4.8	410	WC10-15	85.4	85.5	502	WC10-18	104	104.25	740
WC10-09B	196.2	196.42	502	WC10-12	85.65	86.11	A1	WC10-14	10.45	11	400	WC10-15	86.55	86.9	540	WC10-19	0	4.6	Drift
WC10-09B	196.9	197.1	502	WC10-12	95.81	96.29	A0	WC10-14	23.4	23.65	440	WC10-15	94.6	95.1	610	WC10-19	11.25	11.5	900
WC10-09B	198.2	198.4	540	WC10-12	105.85	105.95	A02	WC10-14	26.25	26.75	480	WC10-15	99.9	100	601	WC10-19	14.75	14.85	920
WC10-09B	203.75	203.95	610	WC10-12	110.7	110.8	Coal	WC10-14	27.7	27.95	480	WC10-15	100.45	103.3	600	WC10-19	42.8	43.2	1000
WC10-09B	207.87	209.78	600	WC10-12	124.34	124.65	530	WC10-14	39.55	40.02	A7	WC10-15	104.7	105	602	WC10-19	46	46.22	1020
WC10-09B	210.9	211.14	602	WC10-12	130.36	130.57	501	WC10-14	51.8	52.45	A5	WC10-15	117.35	117.45	770	WC10-19	62.85	63.4	1110
WC10-10	0	42.9	Drift	WC10-12	131.66	132.42	502	WC10-14	56.85	56.95	A3	WC10-15	118.65	118.95	750	WC10-19	67.68	68.19	1100
WC10-10	46.75	46.9	Coal	WC10-12	136.57	136.86	540	WC10-14	62.45	62.55	A32	WC10-15	130.3	131	710	WC10-19	67.75	68.15	Coal
WC10-10	52.55	53.15	A1	WC10-12	137.35	137.45	540	WC10-14	76.7	77.25	M1	WC10-15	141.9	145.35	700	WC10-19	73.68	73.77	1120
WC10-10	64.3	65.75	A0	WC10-12	140	140.1	630	WC10-14	79.25	79.7	M2	WC10-15	145.9	146	702	WC10-19	76.37	76.5	1122
WC10-10	110.55	111.1	530	WC10-12	150.22	151.28	600	WC10-14	82.35	82.45	Coal	WC10-15	156.5	158.4	720	WC10-19	87.04	87.5	1140
WC10-10	113.7	113.85	510	WC10-12	152.55	152.65	602	WC10-14	86.35	87.2	A1	WC10-15	164.7	164.85	740	WC10-19	87.1	87.5	Coal
WC10-10	119.1	119.5	502	WC10-12	159.44	159.78	730	WC10-14	92.5	92.85	A0	WC10-15	165.75	165.95	740	WC10-19	110.3	110.65	Coal
WC10-10	123.3	124.35	610	WC10-12	169.2	169.84	710	WC10-14	107.7	108	530	WC10-15	166.85	167	740	WC10-19	110.32	110.7	1200
WC10-10	129.75	130.4	600	WC10-12	171.48	174.64	700	WC10-14	110.25	110.35	510	WC10-15	167.95	168.5	760	WC10-19	112	112.2	1220
WC10-10	130.4	131.95	600	WC10-12	172.47	173.04	700	WC10-14	118.3	118.5	502	WC10-15	169.15	169.4	760	WC10-20	2.25	2.55	760
WC10-10	131.95	132.55	600	WC10-12	173.04	174.64	702	WC10-14	119.05	119.45	502	WC10-16	0	1.9	Drift	WC10-20	38.08	38.6	800
WC10-11	0	4.2	Drift	WC10-12	174.64	175.03	721	WC10-14	119.95	120.05	540	WC10-16	5.9	6.5	A0	WC10-20	55.42	55.8	900
WC10-11	7	7.14	A3	WC10-12	188.95	189.33	720	WC10-14	126.2	126.7	610	WC10-16	24.4	24.8	530	WC10-20	84.05	84.68	1000
WC10-11	22.15	22.25	A34	WC10-12	189.95	190.26	720	WC10-14	129.3	131.15	600	WC10-16	27.3	27.4	510	WC10-20	88.74	89.2	1020
WC10-11	35.23	35.68	A1	WC10-12	193.39	193.78	740	WC10-14	132	132.2	602	WC10-16	33.1	34.15	502	WC10-22	0	3	Drift
WC10-11	42.12	42.85	A0	WC10-12	194.11	194.32	740	WC10-14	138.9	139	770	WC10-16	33.65	33.75	500	WC10-22	22.55	22.8	M1
WC10-11	54.5	54.6	A02	WC10-12	195	195.37	740	WC10-14	140.4	140.55	750	WC10-16	33.75	34.15	502	WC10-22	22.8	24.55	M1P
WC10-11	82.15	82.25	531	WC10-13	0	11.3	Drift	WC10-14	153.1	153.7	710	WC10-16	35.95	36.05	540	WC10-22	24.55	25	M2
WC10-11	90.4	90.78	530	WC10-13	25.48	25.83	A1	WC10-14	164	167.2	700	WC10-16	44	44.15	610	WC10-22	62.4	63	A1
WC10-11	101.75	101.9	501	WC10-13	27.8	27.9	A12	WC10-14	167.65	167.8	702	WC10-16	46.65	49.15	600	WC10-22	64.85	65.6	A0
WC10-11	102.7	103.68	502	WC10-13	37.49	38.52	A0	WC10-14	179.3	179.6	721	WC10-16	49.7	49.9	602	WC10-22	110.1	112.6	500
WC10-11	108.6	108.7	540	WC10-13	55.35	55.45	Coal	WC10-14	179.6	181.65	720	WC10-16	58.65	58.75	770	WC10-22	120.75	123.1	600
WC10-11	109.45	109.55	540	WC10-13	62.3	62.4	531	WC10-14	186.3	186.5	740	WC10-16	60	60.1	750	WC10-22	125.5	126	Coal
WC10-11	118.38	119.87	600	WC10-13	71.91	72.36	530	WC10-14	187.35	187.55	740	WC10-16	67.8	68.4	710	WC10-22	127.6	127.8	Fault
WC10-11	121.3	121.46	602	WC10-13	76.18	76.28	Coal	WC10-14	188.25	188.35	740	WC10-16	89.6	92.72	700	WC10-22	128.5	130.75	600
WC10-11	126.75	126.85	730	WC10-13	78.52	79	501	WC10-14	189.3	189.8	760	WC10-16	93.65	93.8	702	WC10-22	159	165.8	700

Interpreted coal intersections, Drift, and faults within current Willow South boreholes: **Table 5-2 (continued)**

Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit
WC10-22	172.3	173.6	720	WC10-24	155.21	156.15	502	WC10-28	82.34	82.78	300	WC10-31	5.76	6.86	770	WC10-33	153.8	153.9	750
WC10-23	0	0.3	Drift	WC10-24	160.29	160.75	541	WC10-28	82.78	83.1	300	WC10-31	8.53	8.84	750	WC10-33	165.2	166.3	710
WC10-23	8.4	8.55	410	WC10-24	161.51	161.7	540	WC10-28	83.1	83.81	300	WC10-31	29.8	30.22	710	WC10-33	169.5	169.6	Fault
WC10-23	18.45	18.6	400	WC10-24	162.17	162.36	540	WC10-28	84.17	84.28	300	WC10-31	32.97	33.25	710	WC10-33	172.23	173.04	710
WC10-23	30.35	30.5	440	WC10-24	178.88	180.31	600	WC10-28	92.18	92.28	320	WC10-31	34.44	43.19	700	WC10-33	177.9	179.02	700
WC10-23	31.5	31.65	440	WC10-24	187.64	187.74	770	WC10-28	94.98	95.08	340	WC10-31	48.05	48.7	721	WC10-33	179.02	181.6	702
WC10-23	45.85	46.15	480	WC10-24	195.02	195.88	710	WC10-28	113.4	113.72	410	WC10-31	52.55	54.1	720	WC10-33	181.6	181.97	700
WC10-23	51.1	52.95	A7	WC10-24	200.84	202.21	700	WC10-28	117.7	118.21	400	WC10-31	54.6	55	722	WC10-33	181.97	182.25	721
WC10-23	65.7	66.25	A5	WC10-24	202.21	203.5	700	WC10-28	124.1	124.32	440	WC10-31	64.1	64.2	740	WC10-33	193.6	193.8	720
WC10-23	68.3	68.55	A3	WC10-24	203.5	205.32	702	WC10-28	136.6	137	480	WC10-32	0	2.4	Drift	WC10-33	194.2	194.55	720
WC10-23	73.6	73.7	A32	WC10-24	205.75	205.85	721	WC10-28	138.48	138.94	480	WC10-32	5.75	6.95	A1	WC10-33	198.05	198.8	740
WC10-23	86.55	86.65	M1	WC10-25	0	5.5	Drift	WC10-28	140.65	140.85	A71	WC10-32	10.6	11.15	A0	WC10-33	201.45	201.83	760
WC10-23	91.35	91.8	M2	WC10-26	0	22.24	Drift	WC10-28	141.99	143.03	A7	WC10-32	25.35	25.5	530	WC10-34	5.4	6.35	480
WC10-23	94.05	94.15	M22	WC10-26	28.08	28.47	A5	WC10-28	152.96	153.28	A5	WC10-32	27.8	27.9	510	WC10-34	7.4	7.9	480
WC10-23	96.1	97.15	A1	WC10-26	29.57	29.9	A3	WC10-28	154.6	154.9	A3	WC10-32	34.55	35.3	502	WC10-34	19.1	19.55	A7
WC10-23	100.4	100.75	A0	WC10-26	36	36.1	A32	WC10-28	159.85	159.95	A32	WC10-32	37.4	37.6	540	WC10-34	32.4	33.1	A5
WC10-23	118.5	118.6	531	WC10-26	49.78	50.23	A1	WC10-29	10.55	14.8	501	WC10-32	47.05	47.15	610	WC10-34	37.35	37.45	A3
WC10-23	125.5	125.75	530	WC10-26	52.92	53.34	A12	WC10-29	17.6	20.4	502	WC10-32	49.65	51.95	600	WC10-34	59.85	60.35	M1
WC10-23	136.25	136.45	501	WC10-26	65.19	65.9	A0	WC10-29	21.5	21.95	Coal	WC10-32	51.95	52.25	600	WC10-34	60.35	62.45	M1P
WC10-23	137	137.6	502	WC10-26	80.16	80.33	Coal	WC10-29	23.05	25	540	WC10-32	52.25	52.5	602	WC10-34	62.45	62.85	M2
WC10-23	150.7	152.05	600	WC10-26	85.79	85.89	531	WC10-29	25.35	25.75	Fault	WC10-32	59.7	59.8	770	WC10-34	65.65	65.75	Coal
WC10-23	173.18	173.97	710	WC10-26	92.32	92.89	530	WC10-29	26.6	27.05	Coal	WC10-32	61	61.1	750	WC10-34	70.25	70.75	A1
WC10-23	177.25	177.5	Fault	WC10-26	99.47	99.63	501	WC10-29	72.44	76.62	500	WC10-32	69.05	69.6	710	WC10-34	77.4	77.7	A0
WC10-23	181.29	182.08	710	WC10-26	100.61	101.64	502	WC10-29	81.5	81.6	540	WC10-32	89.7	92.05	700	WC10-34	80.25	80.5	Coal
WC10-23	192.09	195.27	700	WC10-26	106.21	106.48	540	WC10-29	87.02	90.5	600	WC10-32	92.8	92.9	702	WC10-34	85.75	85.85	Coal
WC10-23	209.3	209.76	720	WC10-26	119.16	120.15	600	WC10-29	90.5	91.03	602	WC10-32	94.65	96	720	WC10-34	93.9	94.05	530
WC10-23	209.76	209.88	720	WC10-26	123.02	123.14	602	WC10-29	96.77	96.98	640	WC10-32	96	96.35	720	WC10-34	95.95	96.05	510
WC10-23	209.88	210.3	720	WC10-26	126.67	127.06	770	WC10-29	98.9	99.15	770	WC10-32	96.35	96.65	720	WC10-34	103.2	103.35	502
WC10-23	217.5	217.95	740	WC10-26	130.45	130.55	750	WC10-29	108.15	108.52	750	WC10-33	0	3.6	Drift	WC10-34	104	104.4	502
WC10-23	219.5	219.7	740	WC10-26	137.58	138.48	710	WC10-29	119.62	124.6	700	WC10-33	27.25	27.65	480	WC10-34	105	105.1	540
WC10-24	0	2	Drift	WC10-26	140.76	145.05	700	WC10-29	125	125.16	721	WC10-33	35.65	36.65	A7	WC10-34	112.75	113	610
WC10-24	22.58	22.7	480	WC10-27	0	3	Drift	WC10-29	129.97	131.52	720	WC10-33	49.95	50.5	A5	WC10-34	115.85	117.85	600
WC10-24	23.95	24.38	480	WC10-27	35.1	35.6	Coal	WC10-29	132.09	132.31	722	WC10-33	52.1	52.4	A3	WC10-34	118.7	118.8	602
WC10-24	25.82	26.19	480	WC10-27	36.35	37.4	100	WC10-30	0	41	Drift	WC10-33	55.65	55.75	A32	WC10-34	126.75	126.95	770
WC10-24	28.93	29.72	A7	WC10-27	49.6	50.45	200	WC10-30	46.65	46.9	A1	WC10-33	66.1	66.2	M1	WC10-34	128.35	128.5	750
WC10-24	40.67	40.98	A5	WC10-27	65.15	68.55	300	WC10-30	56.36	58.68	A0	WC10-33	75.7	76.1	M2	WC10-34	139	139.55	710
WC10-24	42.01	42.37	A3	WC10-28	0	59.1	Drift	WC10-30	65.32	65.35	A02	WC10-33	83.2	83.82	A1	WC10-34	147.9	151.2	700
WC10-24	46.8	46.9	A32	WC10-28	63.9	64	100	WC10-30	70.45	70.9	530	WC10-33	86.65	86.8	A0	WC10-34	161.5	161.75	721
WC10-24	63.72	64.1	A1	WC10-28	65.4	65.7	100	WC10-30	73.85	73.9	510	WC10-33	87.9	88.05	A0	WC10-34	163.65	164.55	720
WC10-24	74.93	76.09	A0	WC10-28	73.79	76.56	201	WC10-30	76.85	77.18	501	WC10-33	111.55	111.8	530	WC10-34	168.75	169	740
WC10-24	96.7	96.8	531	WC10-28	76.56	77.23	200	WC10-30	78.46	79.35	502	WC10-33	127.34	127.45	501	WC10-34	170.2	170.4	740
WC10-24	111.51	111.8	530	WC10-28	77.23	78.48	202	WC10-30	91.05	91.37	610	WC10-33	127.95	129.05	502	WC10-34	172	172.55	760
WC10-24	116	116.3	Fault	WC10-28	81.08	81.58	300	WC10-30	92.12	92.18	Coal	WC10-33	134.1	134.2	540	WC10-34	175.75	176.05	760
WC10-24	135.3	135.4	531	WC10-28	81.58	81.85	300	WC10-30	93.92	96.1	600	WC10-33	145.56	147.13	600	WC10-34	210.8	211.05	800
WC10-24	145.62	145.87	530	WC10-28	81.85	82.18	300	WC10-30	97.7	97.75	602	WC10-33	148.1	148.2	602	WC10-34	226.15	226.5	900
WC10-24	154.55	154.72	501	WC10-28	82.18	82.34	300	WC10-31	0	2.2	Drift	WC10-33	151.46	151.53	770	WC10-35	0	2.7	Drift

Interpreted coal intersections, Drift, and faults within current Willow South boreholes: **Table 5-2 (continued)**

Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit
WC10-35	12.85	13	Coal	WC10-37	25.4	25.61	482	WC10-39	163.4	164.21	602	WC10-43	24.94	25.23	770	WC10-48	57.7	57.82	440
WC10-35	13.55	13.7	Coal	WC10-37	29.99	30.61	A7	WC10-39	175.1	176.22	770	WC10-43	27.1	27.15	750	WC10-48	61.78	61.92	440
WC10-35	18.5	19.3	M1	WC10-37	31.09	31.41	A7	WC10-39	182.8	183.4	750	WC10-43	39.31	39.6	710	WC10-48	67.45	67.87	480
WC10-35	19.3	20.8	M1P	WC10-37	43	43.36	A5	WC10-39	183.5	183.8	Fault	WC10-43	41.66	41.82	710	WC10-48	76.84	77.67	A7
WC10-35	20.8	21.25	M2	WC10-37	44.78	45.03	A3	WC10-40	0	3	Drift	WC10-43	42.58	47.6	700	WC10-48	90.15	90.5	A5
WC10-35	29.4	30.2	A1	WC10-37	51.3	51.4	A32	WC10-40	72.9	73.7	A1	WC10-43	51.2	52.51	720	WC10-48	94.46	94.65	A3
WC10-35	37.6	38.3	A0	WC10-37	63.14	63.4	A1	WC10-40	74.9	75.55	A0	WC10-43	53.04	53.18	722	WC10-48	98.67	98.78	A32
WC10-35	38.7	38.8	A0	WC10-37	76.95	77.55	A0	WC10-40	121	129.5	500	WC10-43	59.85	60	740	WC10-48	116.14	116.5	A1
WC10-35	53.2	53.6	530	WC10-37	100.42	100.52	531	WC10-40	146.4	148.15	600	WC10-43	76.38	76.62	760	WC10-48	124	124.61	A0
WC10-35	55.65	55.85	510	WC10-37	105.35	105.74	530	WC10-40	174.4	178.9	700	WC10-45	0	11.3	Drift	WC10-48	141.15	141.25	531
WC10-35	64.85	65.1	502	WC10-37	115.7	115.83	501	WC10-40	184.95	186.3	720	WC10-45	24.65	25	610	WC10-48	160.45	160.55	501
WC10-35	65.7	65.9	502	WC10-37	116.87	117.81	502	WC10-41	0	3.3	Drift	WC10-45	26.25	28.85	600	WC10-48	161.4	162.22	502
WC10-35	67.2	67.3	540	WC10-37	120.3	120.5	Fault	WC10-41	3.9	7.65	600	WC10-45	29.6	29.9	602	WC10-48	166.31	166.59	541
WC10-35	71.25	71.65	610	WC10-37	141.65	141.75	531	WC10-41	8.2	8.55	602	WC10-45	37.15	37.3	770	WC10-48	170.18	170.28	540
WC10-35	74.25	76.45	600	WC10-37	145.59	145.9	530	WC10-41	16.6	16.9	640	WC10-45	39	39.2	750	WC10-48	185.5	186.51	600
WC10-35	77.3	77.6	602	WC10-37	158.12	158.22	501	WC10-41	18.55	18.7	770	WC10-45	54.45	55.3	710	WC10-48	188.1	188.12	602
WC10-35	84.65	84.8	770	WC10-37	158.83	159.87	502	WC10-41	19.55	19.8	750	WC10-45	57.8	58.25	700	WC10-48	194.26	194.36	750
WC10-35	85.65	85.9	750	WC10-37	161.9	162	520	WC10-41	33.9	34.6	710	WC10-45	58.25	58.6	700	WC10-48	201	201.75	710
WC10-35	94.5	95.1	710	WC10-37	163.42	163.72	540	WC10-41	35.75	40.1	700	WC10-45	58.6	61.45	700	WC10-48	205.66	206.96	700
WC10-35	107.25	111.2	700	WC10-37	164.47	164.57	540	WC10-41	40.9	41.1	702	WC10-45	75.95	77.6	720	WC10-48	208.4	210.3	702
WC10-35	112	112.15	702	WC10-37	173.1	173.96	600	WC10-41	48.65	49.85	720	WC10-45	77.6	77.9	720	WC10-48	210.64	210.74	721
WC10-35	123.35	125.35	720	WC10-37	176.3	176.4	602	WC10-41	50.25	50.5	720	WC10-45	77.9	78.5	720	WC10-49	0	4.6	Drift
WC10-35	131.5	131.7	740	WC10-37	183.25	183.35	750	WC10-41	56.1	56.2	740	WC10-45	86.3	86.5	740	WC10-49	5.65	5.75	440
WC10-35	132.7	132.85	740	WC10-37	190.46	191.07	710	WC10-41	58.05	58.25	740	WC10-46	0	3	Drift	WC10-49	9.12	9.22	440
WC10-35	133.7	133.9	740	WC10-37	192.56	195.9	700	WC10-41	59.4	59.7	740	WC10-46	8.9	9.75	Coal	WC10-49	22.46	22.78	480
WC10-35	134.55	135.15	760	WC10-37	203.25	203.79	720	WC10-41	62.45	62.65	760	WC10-46	10.25	11.2	Coal	WC10-49	25.08	25.29	480
WC10-35	135.75	136.05	760	WC10-37	216.2	216.3	740	WC10-41	63.35	63.45	760	WC10-46	30.95	31.5	Coal	WC10-49	29.21	30.26	A7
WC10-36	0	2.9	Drift	WC10-37	218.27	218.45	740	WC10-41	64.4	64.6	760	WC10-46	46.55	47.1	Coal	WC10-49	41.74	42.11	A5
WC10-36	9.8	10	540	WC10-39	0	4	Drift	WC10-42	0	20.62	Burnt	WC10-46	55.2	56	Coal	WC10-49	43.82	44	A3
WC10-36	18	18.1	610	WC10-39	6.4	7.1	A7	WC10-42	20.62	22.03	720	WC10-46	114.1	116.8	500	WC10-49	49	49.15	A32
WC10-36	20.7	23.25	600	WC10-39	23.9	24.55	A5	WC10-42	22.03	22.58	720	WC10-46	128.6	130.4	600	WC10-49	56.26	56.56	Fault
WC10-36	23.65	23.9	602	WC10-39	27.75	28.11	A3	WC10-42	22.58	23.03	722	WC10-46	132.05	133.85	600	WC10-49	59.51	60.7	A5
WC10-36	30.05	30.15	770	WC10-39	32.7	32.9	A32	WC10-42	28.95	29.05	740	WC10-46	161.6	163.8	700	WC10-49	62.02	62.38	Coal
WC10-36	31.95	32.05	750	WC10-39	41.6	42.05	M1	WC10-42	31.45	31.55	740	WC10-46	171.4	172.5	720	WC10-49	70.28	70.38	A32
WC10-36	44.2	44.7	710	WC10-39	43.55	44.18	M2	WC10-42	33.15	33.5	740	WC10-47	0	6.1	Drift	WC10-49	86.53	86.84	A1
WC10-36	46.3	50.32	700	WC10-39	65.5	66.25	A1	WC10-42	38.85	38.92	760	WC10-47	6.5	11.45	500	WC10-49	96.99	97.72	A0
WC10-36	50.75	50.95	702	WC10-39	67.73	68.23	A0	WC10-42	40.61	40.75	760	WC10-47	22.1	26.7	600	WC10-49	124.59	124.85	530
WC10-36	61.9	63.25	720	WC10-39	116	116.2	530	WC10-42	42.58	42.62	760	WC10-47	61.3	61.95	710	WC10-49	136.82	136.92	501
WC10-36	63.25	63.5	720	WC10-39	123.35	123.73	510	WC10-42	78.95	79.3	800	WC10-47	70.35	79.8	700	WC10-49	137.69	138.36	502
WC10-36	63.5	63.95	720	WC10-39	127.22	133.38	501	WC10-42	94.7	95	900	WC10-47	90.5	92.7	720	WC10-49	142.01	142.16	540
WC10-36	70.2	70.4	740	WC10-39	139.45	139.55	540	WC10-42	101.3	101.45	Coal	WC10-48	0	12.3	Drift	WC10-49	143.05	143.15	540
WC10-36	71.3	71.6	740	WC10-39	147.2	147.5	610	WC10-42	121.25	121.72	1000	WC10-48	12.91	13.4	320	WC10-49	158.3	159.47	600
WC10-36	73.45	73.7	760	WC10-39	149.4	149.8	Coal	WC10-43	0	1.5	Drift	WC10-48	19.66	20.18	340	WC10-49	166.54	166.64	750
WC10-36	74.8	75.2	760	WC10-39	151.4	151.75	Coal	WC10-43	1.8	3.8	500	WC10-48	27.73	27.91	410	WC10-49	172.51	173.34	710
WC10-36	76.65	76.75	760	WC10-39	158.5	158.8	601	WC10-43	9.95	10.05	610	WC10-48	40.01	40.56	400	WC10-49	174.02	174.32	Fault
WC10-37	0	21.8	Drift	WC10-39	159.2	162.85	600	WC10-43	14.01	17.52	600	WC10-48	43.4	43.51	402	WC10-49	176.34	176.45	750

Interpreted coal intersections, Drift, and faults within current Willow South boreholes: **Table 5-2 (continued)**

Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit
WC10-49	182.33	183.07	710	WC10-54	26.35	26.46	Coal	WC10-57	200.05	200.47	721	WC10-63	155.3	155.7	A1	WC10-65	145.07	147	702
WC10-49	185.86	186.98	700	WC10-54	46.18	46.78	1110	WC10-57	200.47	200.65	720	WC10-63	157.15	157.6	A0	WC10-65	147	147.35	700
WC10-49	188.25	190.02	702	WC10-54	52.63	53.05	1100	WC10-57	200.65	202.29	720	WC10-63	187.45	190.3	500	WC10-65	147.35	147.51	721
WC10-49	190.45	190.55	721	WC10-55	0	2.1	Drift	WC10-58	0	10.8	Drift	WC10-63	198.9	200.5	600	WC10-65	160.37	160.77	720
WC10-49	200.13	200.7	720	WC10-55	10.8	11.1	1110	WC10-58	18.35	18.59	440	WC10-63	217.9	221.05	700	WC10-65	161.46	161.79	720
WC10-49	205.61	205.83	740	WC10-55	18.05	18.55	1100	WC10-58	39.97	40.5	480	WC10-63	230.4	231.3	720	WC10-65	164.88	165.5	740
WC10-52	0	2.3	Drift	WC10-55	18.15	18.5	Coal	WC10-58	50.73	51.3	A7	WC10-64	0	1	Drift	WC10-65	166.2	166.3	740
WC10-52	8.55	8.65	410	WC10-55	21.6	21.7	1121	WC10-58	61.02	61.42	A5	WC10-64	9.8	10	170	WC10-65	167.39	167.71	760
WC10-52	15.3	16.08	400	WC10-55	22.75	22.85	1120	WC10-58	63.77	63.98	A3	WC10-64	21.05	22.05	150	WC10-65	207	207.22	800
WC10-52	16.58	16.87	440	WC10-55	27.75	27.85	1122	WC10-58	67.71	67.81	A32	WC10-64	22.5	22.68	130	WC10-66	0	2	Drift
WC10-52	25.8	26.04	480	WC10-55	38.9	39.4	1140	WC10-58	91.39	91.67	A1	WC10-64	28.1	28.4	Fault	WC10-66	8.88	9.07	100
WC10-52	36.02	36.47	A7	WC10-55	38.95	39.35	1000	WC10-58	101.68	102.44	A0	WC10-64	29.4	29.7	Fault	WC10-66	10	10.27	100
WC10-52	36.85	37.11	A7	WC10-55	59.1	59.2	1210	WC10-58	104.28	104.38	A02	WC10-64	58.05	58.65	100	WC10-66	15.22	15.41	Coal
WC10-52	46.99	47.39	Coal	WC10-55	70	70.3	1200	WC10-58	118.87	118.97	531	WC10-64	68	68.1	201	WC10-66	20.01	20.7	201
WC10-52	53.67	54.22	A5	WC10-55	71.25	71.45	1220	WC10-59	0	40	Drift	WC10-64	69.21	70.07	202	WC10-66	21.23	21.7	202
WC10-52	57.32	57.66	A3	WC10-56	0	3	Drift	WC10-59	69.85	70.2	800	WC10-64	79.14	81.05	300	WC10-66	22.27	23.55	300
WC10-52	59.85	59.95	A32	WC10-56	34.2	35.45	Coal	WC10-59	85.85	86.1	900	WC10-64	89.75	89.85	Coal	WC10-66	25.23	25.54	320
WC10-52	70.47	70.66	M1	WC10-56	71.2	72.2	Coal	WC10-59	96.2	96.4	Coal	WC10-64	102.24	102.55	450	WC10-66	30.85	30.95	340
WC10-52	73.95	74.05	M2	WC10-56	73.95	74.75	Coal	WC10-60	0	5.5	Drift	WC10-64	106.55	106.65	Coal	WC10-66	41.15	41.32	430
WC10-52	95.83	96.41	A1	WC10-56	110.3	116.85	700	WC10-60	15.5	16.3	200	WC10-64	107.71	107.83	430	WC10-66	49.2	49.3	410
WC10-52	97.55	98.06	A0	WC10-56	119.95	121.8	720	WC10-60	19	21.7	300	WC10-64	109.38	109.48	410	WC10-66	60.43	61.02	400
WC10-53	0	2	Drift	WC10-57	12.3	12.8	400	WC10-60	41.1	41.6	400	WC10-64	113.27	113.74	400	WC10-66	65.03	66.23	440
WC10-53	3.45	3.7	400	WC10-57	21.6	22	440	WC10-60	67.1	67.65	Coal	WC10-64	114.16	114.33	400	WC10-66	90.18	90.32	480
WC10-53	9.15	9.7	440	WC10-57	31.1	31.45	480	WC10-60	126.5	126.9	M1	WC10-64	122.35	122.45	480	WC10-66	92.06	92.35	480
WC10-53	23.3	23.8	480	WC10-57	36	36.65	A7	WC10-60	126.9	127.55	M1P	WC10-64	133.4	133.88	A7	WC10-66	96.32	96.75	A7
WC10-53	35.2	35.35	480	WC10-57	45.7	46.4	A5	WC10-60	127.55	127.9	M2	WC10-64	134.02	134.2	A7	WC10-66	115.14	115.81	A5
WC10-53	41.45	41.75	Coal	WC10-57	48.6	48.9	A3	WC10-60	192.2	195.7	500	WC10-65	0	25.4	Drift	WC10-66	122.9	123	A32
WC10-53	45.15	45.4	Coal	WC10-57	75.63	76.21	M1	WC10-60	205.05	206.95	600	WC10-65	44.43	44.87	A1	WC10-66	132.76	133.05	A1
WC10-53	53.3	54.25	A5	WC10-57	78.51	78.85	M2	WC10-60	229.6	234.65	700	WC10-65	51.53	52.26	A0	WC10-66	139.83	139.96	A1
WC10-53	54.9	55.35	A3	WC10-57	80.02	80.6	M2	WC10-60	244.35	245.5	720	WC10-65	60.27	60.41	A02	WC10-66	145.91	146.19	A12
WC10-53	59.45	59.65	A32	WC10-57	89.75	90.55	A1	WC10-61	0	3	Drift	WC10-65	65.05	65.15	531	WC10-66	151.62	152.35	A0
WC10-53	75.15	75.35	M1	WC10-57	94.14	95.05	A0	WC10-61	80.1	80.4	M1	WC10-65	74.8	74.99	530	WC10-66	153.46	153.77	A0
WC10-53	79.45	79.6	M2	WC10-57	117.8	118	Coal	WC10-61	80.4	82.4	M1P	WC10-65	89.7	89.8	501	WC10-66	159.76	160	530
WC10-53	88.36	90.27	A1	WC10-57	128.55	128.9	510	WC10-61	82.4	82.6	M2	WC10-65	90.5	91.23	502	WC10-66	174	174.66	500
WC10-53	91.1	91.6	A0	WC10-57	132.15	132.3	501	WC10-62	0	3	Drift	WC10-65	95.1	95.22	540	WC10-66	177.55	177.65	540
WC10-53	113.85	113.95	Coal	WC10-57	133.22	134.6	502	WC10-62	17	19.8	500	WC10-65	95.94	96.04	540	WC10-66	178.62	178.72	540
WC10-53	122.6	122.9	530	WC10-57	133.82	134.15	500	WC10-62	27	28.9	600	WC10-65	110.32	111.55	600	WC10-66	178.9	179.03	540
WC10-53	124.05	124.55	510	WC10-57	134.15	134.6	502	WC10-62	56.1	60.8	700	WC10-65	112.43	112.53	602	WC10-66	179.15	179.25	540
WC10-53	127.45	128.6	501	WC10-57	138.25	138.35	540	WC10-62	73.05	74.4	720	WC10-65	117.1	117.2	750	WC10-66	185.75	186.49	600
WC10-53	128.6	129.1	502	WC10-57	148.2	148.35	610	WC10-63	0	6.1	Drift	WC10-65	119.7	120	Fault	WC10-66	187.41	187.63	602
WC10-53	158.39	162.58	600	WC10-57	152.73	154.55	600	WC10-63	32.4	33.2	100	WC10-65	122.15	123.17	600	WC10-66	188.07	188.52	770
WC10-53	162.58	162.81	600	WC10-57	154.55	154.8	600	WC10-63	48.8	49.5	200	WC10-65	124.25	124.35	602	WC11-08	0	58	Drift
WC10-53	162.81	163.42	602	WC10-57	154.8	155.15	602	WC10-63	52.75	54.6	300	WC10-65	128.71	128.81	750	WC11-08	60.98	62.42	400
WC10-53	173.15	173.4	770	WC10-57	163.8	164.1	750	WC10-63	126.45	126.75	M1	WC10-65	136.04	136.84	710	WC11-08	63.41	63.62	Coal
WC10-53	174.8	175.15	750	WC10-57	181.96	182.68	710	WC10-63	126.75	127.65	M1P	WC10-65	143.33	144.28	700	WC11-08	85.95	86.05	480
WC10-54	23.22	23.8	1000	WC10-57	187.46	191.73	700	WC10-63	127.65	127.95	M2	WC10-65	144.28	145.07	700	WC11-08	88.1	88.2	480

Interpreted coal intersections, Drift, and faults within current Willow South boreholes: **Table 5-2 (continued)**

Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit
WC11-08	88.5	88.6	480	WC11-10	82.95	83.17	502	WC11-12	71.91	72.07	502	WC11-14	16.74	16.95	502	WC11-15	157.06	157.57	740
WC11-08	91.21	92.4	A7	WC11-10	83.92	84.22	540	WC11-12	73.04	73.16	540	WC11-14	18.27	18.32	540	WC11-15	158.22	158.52	740
WC11-08	99.4	99.5	Coal	WC11-10	89.06	89.8	610	WC11-12	77.07	77.46	610	WC11-14	22.93	23.17	610	WC11-16	0	1.6	Drift
WC11-08	108.53	108.65	A5	WC11-10	92.53	94.66	600	WC11-12	80.53	82.68	600	WC11-14	25.36	27.82	600	WC11-16	12.23	13.05	A5
WC11-08	110	110.2	A3	WC11-10	95.67	95.77	602	WC11-12	83.86	83.94	602	WC11-14	28.66	28.74	602	WC11-16	18.04	18.18	A3
WC11-08	116.5	116.6	A32	WC11-10	104.3	104.4	770	WC11-12	91.65	91.75	770	WC11-14	36.1	36.2	770	WC11-16	24.43	24.62	A32
WC11-08	118.25	118.35	M1	WC11-10	106.1	106.2	750	WC11-12	93.75	93.85	750	WC11-14	37.45	37.55	750	WC11-16	27.85	28.25	Fault
WC11-08	133.55	134.1	A1	WC11-10	116.37	116.93	710	WC11-12	103.03	103.56	710	WC11-14	45.48	46.04	710	WC11-16	36.88	37.73	M1
WC11-09	26.87	27.35	A7	WC11-10	126.21	129.21	700	WC11-12	114.16	118.52	700	WC11-14	61.71	65.72	700	WC11-16	39.31	39.73	M2
WC11-09	39.04	39.6	A5	WC11-10	130.41	130.59	702	WC11-12	119.31	119.46	702	WC11-14	66.56	66.67	702	WC11-16	44.5	44.6	M22
WC11-09	43.5	43.6	A3	WC11-10	141.29	141.58	721	WC11-13	0	3.6	Drift	WC11-14	78.23	78.58	721	WC11-16	46.66	47.67	A1
WC11-09	69.6	69.92	M1	WC11-10	141.93	143.43	720	WC11-13	17.42	17.52	410	WC11-14	78.58	80.18	720	WC11-16	51.91	52.46	A0
WC11-09	69.92	72.65	M1P	WC11-10	148.61	148.76	740	WC11-13	28.56	28.74	400	WC11-14	87.28	87.38	740	WC11-16	60.94	61.09	Coal
WC11-09	72.65	73.08	M2	WC11-10	150.06	150.26	740	WC11-13	35.21	35.32	480	WC11-14	88.31	88.41	740	WC11-16	66.09	66.39	530
WC11-09	75.45	75.63	Coal	WC11-10	150.89	151	740	WC11-13	36.43	36.71	480	WC11-14	89.34	89.5	740	WC11-16	68.95	69.05	510
WC11-09	82.85	83.2	A1	WC11-11	0	11.1	Drift	WC11-13	52.22	52.68	A7	WC11-14	90.92	91.31	760	WC11-16	74.37	75.49	500
WC11-09	88.55	88.73	A0	WC11-11	15.55	16.05	A1	WC11-13	67.15	67.92	A5	WC11-14	91.99	92.21	760	WC11-16	77.47	77.68	540
WC11-09	92.75	93	A02	WC11-11	21.85	22.13	A0	WC11-13	73.35	73.45	A3	WC11-15	3.67	3.93	A5	WC11-16	87.98	88.23	610
WC11-09	98.35	98.45	Coal	WC11-11	24.62	24.77	A02	WC11-13	82.29	82.42	A32	WC11-15	4.28	4.48	A5	WC11-16	90.53	92.63	600
WC11-09	106.42	106.55	530	WC11-11	30.38	30.48	Coal	WC11-13	93.13	94.52	M1	WC11-15	9.19	9.47	A3	WC11-16	93	93.13	602
WC11-09	109	109.1	510	WC11-11	37.98	38.24	530	WC11-13	94.52	96.55	M1P	WC11-15	19.58	19.82	A32	WC11-16	100.8	100.9	770
WC11-09	127.3	128.1	501	WC11-11	41.05	41.15	510	WC11-13	96.55	96.89	M2	WC11-15	29.47	30.52	M1	WC11-16	102.15	102.25	750
WC11-09	129.45	130.37	502	WC11-11	48.24	48.42	501	WC11-13	100.9	101	M22	WC11-15	31.94	32.46	M2	WC11-16	110.87	111.37	710
WC11-09	131.1	131.37	540	WC11-11	49.21	49.63	502	WC11-13	104.13	104.89	A1	WC11-15	37	37.23	M22	WC11-16	128.68	132.2	700
WC11-09	146.12	146.46	610	WC11-11	50.15	50.31	540	WC11-13	112.28	112.85	A0	WC11-15	42	43.17	A1	WC11-16	132.66	132.78	702
WC11-09	150.2	152.07	600	WC11-11	59.67	59.9	610	WC11-13	122.63	122.78	Coal	WC11-15	49.52	50.31	A0	WC11-16	134.52	134.86	721
WC11-09	153.16	153.26	602	WC11-11	62.64	64.75	600	WC11-13	130.18	130.6	530	WC11-15	56	56.12	Coal	WC11-16	134.86	136.36	720
WC11-09	159.5	159.6	770	WC11-11	73	73.1	770	WC11-13	133.05	133.17	510	WC11-15	63.14	63.27	Coal	WC11-16	143.23	143.33	740
WC11-09	161.2	161.3	750	WC11-11	74.7	74.8	750	WC11-13	142.48	142.58	501	WC11-15	70.17	71.22	530	WC11-16	144	144.18	740
WC11-09	175.86	176.4	710	WC11-11	86.1	86.7	710	WC11-13	143.38	143.63	502	WC11-15	74.82	74.96	510	WC11-16	146.07	146.2	740
WC11-09	179.35	179.45	Coal	WC11-11	93.73	97.07	700	WC11-13	144.84	144.94	540	WC11-15	82.66	83	501	WC11-16	147.48	147.87	740
WC11-09	180.34	183.52	700	WC11-11	97.7	97.8	Coal	WC11-13	152.54	152.8	610	WC11-15	83	83.38	500	WC11-16	148.41	148.61	740
WC11-09	184.15	184.25	702	WC11-11	114	114.97	720	WC11-13	156.13	158.26	600	WC11-15	83.38	85.38	502	WC11-16	177	177.39	800
WC11-10	0	4.7	Drift	WC11-11	118.52	118.71	740	WC11-13	159.49	159.59	602	WC11-15	85.27	85.38	540	WC11-16	192.57	192.82	900
WC11-10	8.45	9.35	A5	WC11-12	0	4.5	Drift	WC11-13	167.2	167.3	770	WC11-15	92.47	92.72	610	WC11-17	0	2.62	Drift
WC11-10	13.35	13.45	A3	WC11-12	6.3	6.5	A3	WC11-13	168.7	168.8	750	WC11-15	96.08	98.38	600	WC11-17	24.47	24.83	400
WC11-10	34.32	35.13	M1	WC11-12	22.66	23.4	M1	WC11-13	180.03	180.61	710	WC11-15	99.11	99.42	602	WC11-17	27.86	27.88	420
WC11-10	37.09	37.53	M2	WC11-12	25.01	25.31	M2	WC11-13	188.16	191.92	700	WC11-15	107.47	107.57	770	WC11-17	35.92	36.41	480
WC11-10	41.06	41.12	M22	WC11-12	32.71	33	A1	WC11-13	192.57	192.68	Coal	WC11-15	108.83	108.93	750	WC11-17	46.94	47.13	A7
WC11-10	45.26	45.82	A1	WC11-12	33.2	33.3	A1	WC11-13	200.06	200.34	721	WC11-15	116.73	117.3	710	WC11-17	58.69	59.52	A5
WC11-10	52.18	52.51	A0	WC11-12	40.65	40.95	A0	WC11-13	200.34	200.84	720	WC11-15	134	137.13	700	WC11-17	62.72	62.92	Coal
WC11-10	55.46	55.66	A02	WC11-12	44.3	44.4	A02	WC11-13	200.84	202.19	720	WC11-15	137.73	137.83	702	WC11-17	69.33	69.47	A3
WC11-10	62.15	62.25	Coal	WC11-12	49.95	50.05	Coal	WC11-14	0	4.6	Drift	WC11-15	143.97	145.93	720	WC11-17	82.12	82.28	M1
WC11-10	68.66	68.97	530	WC11-12	57.3	57.5	530	WC11-14	6.11	6.44	530	WC11-15	153.72	153.83	740	WC11-17	84.26	84.64	M2
WC11-10	71.92	72.21	510	WC11-12	60.38	60.5	510	WC11-14	8.98	9.14	510	WC11-15	154.62	154.83	740	WC11-17	94.99	95.66	A1
WC11-10	81.85	81.95	501	WC11-12	70.98	71.18	501	WC11-14	15.94	16.21	501	WC11-15	155.86	156.05	740	WC11-17	99.26	99.64	A0

Interpreted coal intersections, Drift, and faults within current Willow South boreholes: **Table 5-2 (continued)**

Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit
WC11-17	116.45	116.66	530	WC11-21	80.29	80.4	Coal	WC11-27	94.76	96.5	720	WC11-32	100.21	101.26	501	WC11-34	52.62	52.85	500
WC11-17	119.08	119.18	510	WC11-21	88.57	89.82	720	WC11-27	102.32	102.42	740	WC11-32	100.64	101.01	500	WC11-34	77.3	77.4	630
WC11-17	120.87	121.86	502	WC11-21	90.34	90.64	722	WC11-29	0	3	Burnt	WC11-32	115.52	115.62	610	WC11-34	84.51	84.9	610
WC11-17	134.82	134.92	610	WC11-26	0	2.15	Drift	WC11-30	0	6.1	Burnt	WC11-32	120.62	123.23	600	WC11-34	90.44	94.63	600
WC11-17	139.58	141.39	600	WC11-26	4.65	5.05	M1	WC11-31	0	3.8	Drift	WC11-32	123.25	123.35	Fault	WC11-34	94.74	95.2	602
WC11-17	141.71	141.86	602	WC11-26	6.45	6.6	M2	WC11-31	25.02	25.37	M1	WC11-32	124.2	127.13	600	WC11-34	102.47	102.57	640
WC11-17	149.62	149.81	770	WC11-26	17.35	18.2	A1	WC11-31	28.28	28.79	M2	WC11-32	127.75	128.19	602	WC11-34	106.15	106.33	750
WC11-17	151.41	151.51	750	WC11-26	21.37	21.65	A0	WC11-31	30.89	30.99	Coal	WC11-32	140.06	140.16	640	WC11-34	123.55	124.29	710
WC11-17	159.48	160.09	710	WC11-26	27.45	28.85	Fault	WC11-31	33.47	34.38	A1	WC11-32	141.78	141.88	770	WC11-34	126	131.17	700
WC11-17	173.16	176.74	700	WC11-26	36.15	36.25	530	WC11-31	38.16	38.54	A0	WC11-32	144.22	144.82	750	WC11-34	131.57	131.82	Coal
WC11-17	177.08	177.22	Coal	WC11-26	42.28	42.38	510	WC11-31	59.39	59.49	531	WC11-32	196.19	197.26	710	WC11-34	141.35	142.82	720
WC11-17	182.9	184.7	720D	WC11-26	45.1	45.2	501	WC11-31	67.77	68	530	WC11-32	201.97	202.07	Coal	WC11-34	143.38	143.76	722
WC11-18	0	21.3	Burnt	WC11-26	47.35	48.45	502	WC11-31	74.8	75.11	501	WC11-32	204	209.28	700	WC11-34	150.68	150.78	740
WC11-19	0	4.1	Drift	WC11-26	63.17	63.27	610	WC11-31	75.11	75.25	500	WC11-32	209.28	209.33	700	WC11-35	0	24.4	Burnt
WC11-19	9.67	10.48	500	WC11-26	67.07	69.51	600	WC11-31	75.25	75.78	502	WC11-32	209.33	209.88	Coal	WC11-36	0	1.4	Drift
WC11-19	17.13	17.37	540	WC11-26	69.51	69.92	602	WC11-31	87.9	88	610	WC11-32	221.71	222	721	WC11-36	13.55	13.65	530
WC11-19	21.08	21.18	630	WC11-26	76.38	76.48	770	WC11-31	95.12	96.46	600	WC11-32	222.49	224.53	720	WC11-36	19.48	19.58	510
WC11-19	28.41	28.57	610	WC11-26	78.26	78.36	750	WC11-31	97.13	97.23	602	WC11-32	223.65	223.78	720	WC11-36	20.98	22.55	500
WC11-19	30.15	32.68	600	WC11-26	87.56	88.67	710	WC11-31	101.3	101.4	770	WC11-32	223.78	224.53	720	WC11-36	31.52	31.62	540
WC11-19	33.12	33.27	602	WC11-26	103.68	103.94	Coal	WC11-31	102.8	102.9	750	WC11-33	0	3	Drift	WC11-36	36.88	36.98	610
WC11-19	40.78	40.88	770	WC11-26	104.74	108.46	700	WC11-31	115.13	115.75	710	WC11-33	22.05	22.26	M1	WC11-36	38.76	41.37	601
WC11-19	42.53	42.63	750	WC11-26	108.9	109	Coal	WC11-31	126.08	129.82	700	WC11-33	24.13	24.46	M2	WC11-36	41.7	42.03	602
WC11-19	53.78	54.26	710	WC11-26	110.52	110.7	720	WC11-31	130.26	130.36	Coal	WC11-33	35.47	35.74	A1	WC11-36	46.79	46.89	770
WC11-19	55.93	59.64	700	WC11-26	110.7	111.07	720	WC11-31	149.35	150.07	720	WC11-33	38.88	39.3	A0	WC11-36	49.4	49.5	750
WC11-19	60.53	60.64	Coal	WC11-26	111.07	112.39	720	WC11-31	150.07	150.57	720	WC11-33	61.05	61.15	530	WC11-36	64.79	64.89	710
WC11-19	69.57	70.8	720	WC11-26	117.83	117.93	740	WC11-31	150.57	150.82	722	WC11-33	66.33	66.5	510	WC11-36	64.89	65.39	710
WC11-19	70.8	70.87	720	WC11-26	118.54	118.64	740	WC11-31	155.36	155.54	740	WC11-33	70.45	71.58	502	WC11-36	65.39	65.42	710
WC11-19	70.87	71.05	Coal	WC11-26	124.02	124.12	Coal	WC11-31	155.8	155.9	Fault	WC11-33	90.36	90.46	610	WC11-36	66.53	71.04	700
WC11-19	71.05	71.16	720	WC11-26	125.08	125.25	760	WC11-31	161.27	164.32	600x	WC11-33	95.02	97.27	600	WC11-36	71.46	71.56	Coal
WC11-19	71.16	71.46	722	WC11-26	126.53	126.63	Coal	WC11-31	164.44	164.73	Coal	WC11-33	97.69	97.95	602	WC11-36	75.36	76.44	720
WC11-19	76.3	76.4	740	WC11-27	0	3	Drift	WC11-31	171.82	172.03	Coal	WC11-33	104.28	104.38	770	WC11-36	77.06	77.27	722
WC11-19	81.05	81.15	740	WC11-27	7.73	8.83	A1	WC11-31	172.52	172.86	Coal	WC11-33	107.2	107.3	750	WC11-37	0	4.2	Drift
WC11-21	0	3.8	Drift	WC11-27	11.85	12.82	A0	WC11-31	175.2	175.56	Coal	WC11-33	119.76	120.54	710	WC11-37	7.15	7.95	480
WC11-21	10.92	11.06	530	WC11-27	28.92	29.02	530	WC11-31	179.2	179.85	Coal	WC11-33	123.79	129.06	700	WC11-37	23.4	23.5	A7
WC11-21	17.86	17.96	510	WC11-27	33.98	34.16	510	WC11-32	0	2	Drift	WC11-33	129.55	129.67	Coal	WC11-37	43.4	43.9	A5
WC11-21	20.53	20.63	Coal	WC11-27	36.9	37	501	WC11-32	13.8	14.5	480	WC11-33	137	137.26	720	WC11-37	51.2	51.3	A3
WC11-21	25.13	26.39	500	WC11-27	38.22	39.25	502	WC11-32	21.25	21.43	A7	WC11-33	137.26	138.49	720	WC11-37	65.36	67.07	M1
WC11-21	31.07	31.17	540	WC11-27	55.72	55.86	610	WC11-32	32.12	32.67	A5	WC11-33	138.49	138.56	720	WC11-37	68.3	68.59	M2
WC11-21	41.98	42.19	610	WC11-27	58.16	60.66	600	WC11-32	34.35	34.58	A3	WC11-33	138.56	138.74	720	WC11-37	89.85	90.67	A1
WC11-21	44.06	46.72	600	WC11-27	61	61.2	602	WC11-32	39.95	40.05	A32	WC11-33	138.74	138.93	720	WC11-37	94.43	95.53	A0
WC11-21	47.18	47.39	602	WC11-27	68.2	68.3	770	WC11-32	54.89	55.63	M1	WC11-33	138.93	139.14	720	WC11-37	112.45	112.55	530
WC11-21	54.89	54.99	770	WC11-27	70.05	70.15	750	WC11-32	56.95	57.05	M2	WC11-33	145.5	145.95	740	WC11-37	118.7	118.8	510
WC11-21	57.26	57.42	750	WC11-27	80.26	80.86	710	WC11-32	63.91	64.58	A1	WC11-34	0	5.1	Drift	WC11-37	120.05	122.05	502
WC11-21	69.76	70.37	710	WC11-27	85.82	86.04	Coal	WC11-32	67.22	67.32	A0	WC11-34	34.88	35.14	530	WC11-37	135.25	135.52	610
WC11-21	74.19	74.24	Coal	WC11-27	86.5	89.86	700	WC11-32	96.2	96.46	530	WC11-34	48.63	49.16	510	WC11-37	136.83	139.77	600
WC11-21	75.54	79.58	700	WC11-27	90.34	90.44	Coal	WC11-32	99.3	99.4	510	WC11-34	51.85	55.09	501	WC11-37	144.03	144.13	720

Interpreted coal intersections, Drift, and faults within current Willow South boreholes: **Table 5-2 (continued)**

Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit
WC11-37	162.68	162.78	710	WC11-40	0	2.8	Drift	WC11-43	34	34.33	M2	WC11-45	46.3	46.4	760	WC11-49	146.12	153.78	600x
WC11-37	163.42	163.52	710	WC11-40	8.5	8.82	510	WC11-43	41.3	41.4	M22	WC11-45	49.75	49.85	760	WC11-49	163.18	166.48	600x
WC11-37	164.41	168.72	700	WC11-40	9.94	13.18	501	WC11-43	54.24	54.93	A1	WC11-46	13.48	13.88	760	WC11-49	175.48	175.72	770
WC11-37	171.73	172.82	720	WC11-40	17.4	17.65	540	WC11-43	56.62	57.02	A0	WC11-46	49.42	49.71	800	WC11-49	177.33	177.52	750
WC11-37	173.61	173.71	722	WC11-40	24.13	24.27	610	WC11-43	86.77	86.87	530	WC11-46	64.8	64.9	900	WC11-49	188.84	189.04	710
WC11-38	0	2.2	Drift	WC11-40	29.63	34.35	600	WC11-43	93.06	93.14	510	WC11-46	67.3	67.4	920	WC11-49	193.14	197.78	700
WC11-38	12.7	12.82	A5	WC11-40	43.62	44.61	770	WC11-43	93.94	95.92	501	WC11-46	70.52	70.62	940	WC11-49	198.26	198.36	Coal
WC11-38	22.4	22.6	A3	WC11-40	49.35	51.35	750	WC11-43	94.59	95	500	WC11-47	1.2	6.33	700	WC11-49	200.51	201.23	720
WC11-38	32.1	32.2	A32	WC11-40	82.56	82.93	710	WC11-43	95	95.92	502	WC11-47	6.91	7.11	Coal	WC11-49	201.51	201.95	722
WC11-38	34.1	34.2	Fault	WC11-40	85.05	85.2	710	WC11-43	98.65	98.75	540	WC11-47	9.14	10.44	720	WC11-50	0	1.9	Drift
WC11-38	38.5	38.85	M1	WC11-40	86.16	92.94	700	WC11-43	101.87	101.97	610	WC11-47	11.3	11.48	722	WC11-50	30.41	30.65	510
WC11-38	39.5	41.15	M1	WC11-40	93.4	93.6	721	WC11-43	106.2	108.92	600	WC11-47	22.19	22.29	740	WC11-50	37.66	42.85	500
WC11-38	42.45	43.12	M2	WC11-40	97.88	99.93	720	WC11-43	108.37	108.92	602	WC11-47	30.49	30.59	760	WC11-50	57.28	58.98	600
WC11-38	53.65	53.75	M22	WC11-40	100.41	100.87	722	WC11-43	114.82	115.34	770	WC11-47	35.05	35.15	760	WC11-50	58.98	59.36	602
WC11-38	60.55	61.35	A1	WC11-40	111.74	111.95	740	WC11-43	117.4	117.5	750	WC11-48	0	1.55	Drift	WC11-50	62.95	63.05	770
WC11-38	64.65	66.05	A0	WC11-40	123.64	123.82	760	WC11-43	129.32	129.42	710	WC11-48	7.57	8.73	Coal	WC11-50	65.3	65.47	750
WC11-38	88.35	88.65	530	WC11-40	158.65	159.15	800	WC11-43	131.3	131.4	710	WC11-48	10.55	10.75	Coal	WC11-50	73.85	74.05	730
WC11-38	94.6	94.7	510	WC11-41	0	1	Drift	WC11-43	132.14	136.24	700	WC11-48	56	56.3	Fault	WC11-50	84.61	85.07	Fault
WC11-38	95.73	96.27	501	WC11-41	2	4.53	600	WC11-43	134.86	136.24	702	WC11-48	65.45	65.96	530	WC11-50	98.11	98.21	710
WC11-38	96.27	97.03	500	WC11-41	4.53	4.63	600	WC11-43	136.72	136.82	Coal	WC11-48	75.32	80.32	501	WC11-50	98.37	105.35	700
WC11-38	97.03	97.82	502	WC11-41	4.63	5.15	602	WC11-43	142.59	143.73	720	WC11-48	88.46	88.84	610	WC11-50	106.05	106.18	721
WC11-38	100.7	100.8	540	WC11-41	14.3	14.85	770	WC11-43	144.29	144.39	722	WC11-48	96.22	100.94	600	WC11-50	111.2	112.09	720
WC11-38	108.7	108.8	610	WC11-41	17.35	17.75	750	WC11-44	0	2	Drift	WC11-48	104.8	104.9	Fault	WC11-50	113.7	113.88	722
WC11-38	111.13	114.38	600	WC11-41	36.93	37.22	710	WC11-44	3.45	3.85	A5	WC11-48	107.93	111.28	600x	WC11-50	122.75	122.85	740
WC11-38	118.3	118.62	770	WC11-41	39.07	39.17	710	WC11-44	7.98	9.18	A3	WC11-48	112.48	116.56	600x	WC11-53	0	3	Drift
WC11-38	121.35	121.45	750	WC11-41	39.88	45.95	700	WC11-44	12.9	13	A32	WC11-48	112.62	112.72	Fault	WC11-53	17.2	17.86	300
WC11-38	138.28	138.4	710	WC11-41	46.48	46.63	Coal	WC11-44	20.63	20.98	M1	WC11-48	128.65	129	770	WC11-53	17.86	18	300
WC11-38	139.1	139.2	710	WC11-41	49.35	50.75	720	WC11-44	22.18	22.41	M2	WC11-48	130.81	131.05	750	WC11-53	18	18.42	300
WC11-38	139.97	144.3	700	WC11-41	51.45	51.63	722	WC11-44	42.97	43.43	A1	WC11-48	148.16	148.69	710	WC11-53	30.35	30.95	Coal
WC11-38	144.77	144.87	Coal	WC11-42	0	0.9	Drift	WC11-44	45.06	45.41	A0	WC11-48	154.53	154.72	710	WC11-53	46.79	46.98	480
WC11-38	147.58	148.78	720	WC11-42	27.3	27.4	530	WC11-44	85.05	85.15	Fault	WC11-48	155.51	160.76	700	WC11-53	68.55	68.65	A7
WC11-38	149.5	149.65	722	WC11-42	34.4	36.6	501	WC11-44	128.45	128.66	Coal	WC11-48	162.95	164.94	720	WC11-53	85.2	86.32	A5
WC11-39	0	0.25	Drift	WC11-42	46	48.8	600	WC11-44	129.44	131.03	501x	WC11-48	165.9	166.12	722	WC11-53	86.86	86.96	A3
WC11-39	9.14	9.8	A1	WC11-42	56.7	57.05	770	WC11-44	133.47	134.53	502x	WC11-49	0	1.87	Drift	WC11-53	90.49	90.76	A32
WC11-39	12	13	A0	WC11-42	58.6	58.7	750	WC11-44	171.21	172.85	600x	WC11-49	16.11	16.73	Coal	WC11-53	103.86	105.46	M1
WC11-39	41.05	43.08	501	WC11-42	70.92	71.05	710	WC11-44	174.02	174.32	Coal	WC11-49	32.76	33.38	M1	WC11-53	106.26	106.56	M2
WC11-39	53.87	56.97	600	WC11-42	72.9	73	710	WC11-44	177.24	177.73	Coal	WC11-49	34.33	34.61	M1	WC11-53	107.42	107.52	M2
WC11-39	57.17	57.97	602	WC11-42	73.86	77.87	700	WC11-44	186.18	188	Coal	WC11-49	37.41	38.13	M2	WC11-53	115.37	115.52	Coal
WC11-39	62.98	63.3	770	WC11-42	78.34	78.46	Coal	WC11-45	0	2.2	Drift	WC11-49	55.32	55.55	Coal	WC11-53	120.46	120.84	M22
WC11-39	64.45	64.55	750	WC11-42	81.12	82.53	720	WC11-45	10.02	10.25	710	WC11-49	76.83	78.13	510	WC11-53	124.83	125.58	A1
WC11-39	80.86	81.13	710	WC11-42	83.5	83.6	722	WC11-45	12.35	12.45	710	WC11-49	78.94	79.4	Coal	WC11-53	126.12	126.22	A1
WC11-39	82.7	82.8	710	WC11-43	0	1.8	Drift	WC11-45	13.24	18.2	700	WC11-49	80.58	80.68	501	WC11-53	129.15	129.79	A0
WC11-39	83.56	101.7	700	WC11-43	13.67	14.16	A5	WC11-45	18.64	18.79	Coal	WC11-49	80.99	82.6	502	WC11-53	147.7	147.8	530
WC11-39	102.3	103.15	721	WC11-43	20.05	20.27	A3	WC11-45	21.72	23.02	720	WC11-49	83.5	83.75	502	WC11-53	154.46	154.63	510
WC11-39	111.25	113.6	720	WC11-43	23.8	23.9	A32	WC11-45	23.66	23.84	722	WC11-49	134.29	134.35	Coal	WC11-53	155.96	157.83	500
WC11-39	114.1	114.5	722	WC11-43	32.43	32.82	M1	WC11-45	31.45	31.55	740	WC11-49	136.56	136.69	Coal	WC11-53	165	165.1	540

Interpreted coal intersections, Drift, and faults within current Willow South boreholes: **Table 5-2 (concluded)**

Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit	Borehole	From	To	Unit
WC11-53	184.32	187.32	600	WC11-55	125.96	126.11	710	WC11-57	223.1	223.36	Coal	WC12-05	84.7	86.2	500	WC12-14	93.9	96	720
WC11-53	193.12	193.22	770	WC11-55	126.72	141.4	700	WC11-57	227.12	229.08	720	WC12-05	100.3	101.8	600	WC12-15	13.4	16	700
WC11-53	193.73	193.83	770	WC11-55	137.52	141.4	702	WC11-57	229.48	229.81	722	WC12-05	124.2	124.9	710	WC12-15	21.8	22.4	720
WC11-53	195.05	195.23	750	WC11-55	141.4	141.85	700	WC11-58C	0	3	Drift	WC12-05	128	132.2	700	WC12-16	24.5	25.6	500
WC11-53	210.7	211.5	710	WC11-55	141.85	142.44	Coal	WC11-58C	17.2	18.42	300	WC12-05	146.3	147.5	720	WC12-16	40.5	53.2	600
WC11-53	213	217.85	700	WC11-55	147.98	149.84	720	WC11-58C	17.86	18	300	WC12-06	58	60.4	500	WC12-16	72.9	73.8	710
WC11-53	224.2	224.8	720	WC11-55	150.47	150.78	722	WC11-58C	18	18.42	300	WC12-06	71.7	75.6	600	WC12-16	88.5	93	700
WC11-54	0	1.95	Drift	WC11-55	160.5	160.6	740	WC11-58C	30.35	30.95	Coal	WC12-06	104.1	108.7	700	WC12-16	99.3	102.1	720
WC11-54	6.58	7.38	A5	WC11-56	0	1.8	Drift	WC11-58C	46.79	46.98	480	WC12-06	113.2	114.4	720	WC12-17	11.5	12.6	500
WC11-54	10.76	11.09	A3	WC11-56	31.19	31.84	A1	WC11-58C	68.55	68.65	A7	WC12-07BS	18.9	21.8	500	WC12-17	25.8	29.2	600
WC11-54	13.36	13.5	A32	WC11-56	32.58	32.68	A1	WC11-58C	85.2	86.32	A5	WC12-07BS	31.5	34.7	600	WC12-17	46.5	47.2	710
WC11-54	22.77	22.92	M1	WC11-56	35.04	35.84	A0	WC11-58C	86.86	86.96	A3	WC12-08BS	12.5	13.2	710	WC12-17	52.6	55.9	700
WC11-54	24.36	24.42	M1	WC11-56	69.78	70.04	530	WC11-58C	90.49	90.76	A32	WC12-08BS	14.3	18.6	700	WC12-17	65.8	68	720
WC11-54	25.62	25.76	M2	WC11-56	83.13	83.47	510	WC11-58C	103.86	105.46	M1	WC12-08BS	27.5	28.8	720	WC12-18	27.6	29	500
WC11-54	26.5	26.6	M2	WC11-56	84.81	88.44	501	WC11-58C	106.26	106.56	M2	WC12-09BS	12.84	14.07	600	WC12-18	52.7	55.9	600
WC11-54	51.26	52.11	A1	WC11-56	92.89	93.09	Coal	WC11-58C	107.42	107.52	M2	WC12-09BS	14.07	14.56	600	WC12-18	77.1	77.8	710
WC11-54	53.61	54.41	A0	WC11-56	93.72	96.08	500	WC11-58C	115.37	115.52	Coal	WC12-09BS	14.56	15.18	600	WC12-18	78.7	82.9	700
WC11-54	83.25	83.6	530	WC11-56	108.22	109.66	600	WC11-58C	120.46	120.84	M22	WC12-09BS	15.18	15.7	600	WC12-18	92.9	94.8	720
WC11-54	92.98	93.19	510	WC11-56	112.6	112.67	Coal	WC11-58C	124.83	125.58	A1	WC12-09BS	46.33	47.44	700	WC12-19	138.3	138.9	500
WC11-54	94.23	96.86	501	WC11-56	118.89	120.85	600	WC11-58C	126.12	126.22	A1	WC12-09BS	54.64	55.06	720	WC12-19	148.8	151.4	600
WC11-54	95.33	95.78	500	WC11-56	125.25	125.35	770	WC11-58C	129.15	129.79	A0	WC12-09BS	55.06	55.16	720	WC12-19	171.1	176.2	700
WC11-54	100.65	100.92	540	WC11-56	126.92	127.07	750	WC11-58C	147.7	147.8	530	WC12-09BS	55.16	56.2	720	WC12-19	178.4	179.4	720
WC11-54	111.77	112.76	610	WC11-56	134.55	134.73	710	WC11-58C	154.46	154.63	510	WC12-09BS	56.2	56.42	720	WC12-19	185.35	185.4	Fault
WC11-54	113.2	113.3	Fault	WC11-56	141.95	146.06	700	WC11-58C	155.96	157.83	500	WC12-09BS	56.42	57.05	720	WC12-19	191.2	194.5	700
WC11-54	115.07	117.63	600	WC11-56	148.87	149.91	720	WC11-58C	165	165.1	540	WC12-09BS2	10.1	12.8	600	WC12-19	196.9	198.3	720
WC11-54	123.4	123.5	Coal	WC11-57	0	1.2	Drift	WC11-58C	184.32	187.32	600	WC12-09BS2	37.7	38.1	710	WC12-20	154.5	157.7	500
WC11-54	132.4	132.5	610	WC11-57	19.04	19.62	400	WC11-58C	193.12	193.22	770	WC12-09BS2	40.7	44.8	700	WC12-20	174.2	176.9	600
WC11-54	134.11	136.82	600	WC11-57	26.95	27.05	440	WC11-58C	193.73	193.83	770	WC12-10BS	9.71	11.02	600	WC12-20	197.8	203.2	700
WC11-54	143.35	143.45	770	WC11-57	40.46	41.03	480	WC11-58C	195.05	195.23	750	WC12-10BS	11.02	11.81	600	WC12-20	203.25	203.35	Fault
WC11-54	146.71	147.05	750	WC11-57	57.3	58	A7	WC12-01	191.5	193.6	500	WC12-10BS	11.81	12.09	600	WC12-20	211	215	700
WC11-54	162	162.24	710	WC11-57	74.05	74.23	Coal	WC12-01	204.2	206.2	600	WC12-10BS	12.09	12.26	600	WC12-20	218.3	220	720
WC11-54	166.71	166.82	710	WC11-57	82.58	83.66	A5	WC12-01	229.6	230.4	710	WC12-10BS	12.83	13.16	602	WC12-22	30.5	31.7	400
WC11-54	167.25	172.82	700	WC11-57	88.87	89.28	A32	WC12-01	235.2	238.5	700	WC12-10P	10	12.5	600	WC12-22	154.9	157	600
WC11-54	177.3	178.91	720	WC11-57	93.56	93.75	A32	WC12-3BS	38.86	39.62	700	WC12-11BS	31.86	32.45	501	WC12-22	177.7	181.9	700
WC11-54	178.91	179.33	722	WC11-57	103.12	103.27	A1	WC12-3BS	39.62	42.17	700	WC12-11BS	32.59	33.09	500	WC12-22	184.6	186.3	720
WC11-55	0	2.3	Drift	WC11-57	111.46	112.2	A0	WC12-3BS	42.17	42.78	700	WC12-12	124.7	125.7	500	WC12-23	56	58.7	500
WC11-55	30.1	30.2	530	WC11-57	143	143.47	530	WC12-3BS	42.78	43.78	700	WC12-12	141.8	144.8	600	WC12-23	66.4	69.1	600
WC11-55	36.51	39.12	501	WC11-57	156.96	160.2	500	WC12-3BS	47.14	48.71	720	WC12-12	161.5	162.3	710	WC12-23	98.3	102.7	700
WC11-55	43.93	44.06	610	WC11-57	179.98	184.15	600	WC12-03P	7.95	11.3	600	WC12-12	178	181.5	700	WC12-23	104.9	106.2	720
WC11-55	49.5	52.78	600	WC11-57	189.59	189.78	770	WC12-03P	37.87	42.49	700	WC12-12	183.3	185.2	720	WC12-24	102.6	104.6	500
WC11-55	52.35	52.45	Fault	WC11-57	192.5	192.6	750	WC12-03P	45.84	47.33	720	WC12-13	22.18	26.15	700	WC12-24	116.8	120	600
WC11-55	55.86	58.33	500x	WC11-57	203	203.19	710	WC12-04	161.4	162	500	WC12-13	33.45	35.42	720	WC12-24	151.7	152.5	710
WC11-55	67.81	69.16	600x	WC11-57	206.3	210.05	700	WC12-04	178	179.4	600	WC12-14	36.95	37.95	500	WC12-24	155.5	164.7	700
WC11-55	69.75	69.96	602	WC11-57	213.15	214.17	720	WC12-04	199.8	200.5	710	WC12-14	54.8	57.9	600	WC12-24	175.2	177	720
WC11-55	72.53	72.74	Coal	WC11-57	214.75	214.85	722	WC12-04	209.2	212.3	700	WC12-14	73.5	74.2	710				
WC11-55	122.32	122.56	710	WC11-57	220.7	220.8	Fault	WC12-04	224.4	225.2	720	WC12-14	88.2	91.7	700				

Note: *'Coal' denotes uncorrelated coal intersections. All depths are given in metres, as measured along the length of the boreholes. 'Drift' refers to unconsolidated material overlying bedrock. Compilation by L.R. LeMay.*

6 Coal quality

Current coal-quality data were obtained as a consequence of the year-2012 core drilling at Willow South. The cored boreholes were drilled at a larger than usual diameter, likely 15 centimetres (Ian MacLeod, personal communication, April 2015), in order to maximise the amount of material available for analysis.

Results of analytical work are presented in **Appendices B** and **C** of the present report. To sum up, coal-quality data were obtained concerning the No.5, No.6, and No.7 coal zones. [redacted]

6.1 Note concerning historic coal-quality data

A modest amount of coal-quality data were obtained in the course of historic exploration at and near Willow South, and previously-reported within Coal Assessment Report No. 861 (James, 1998).

7 Coal-resource estimation

Exploratory drilling is now sufficiently close-spaced to allow for coal-resource estimation to Canadian standards (Hughes and others, 1989) within the northeastern half of the Willow South block, despite the complex geological conditions. This work is presently underway, although at a low priority as compared with ongoing technical support to Walter Energy's presently-idled mining operations.

8 Reclamation

Drilling at Willow South between the years 2008 and 2012 required the construction or reoccupation of 156 drill sites, mostly situated along a combination of pre-existing and newly-built exploration trails. Some sites were accessed directly from existing high-grade roads, while others were reached via re-activated logging trails and spur-roads. As per usual practice, the drill sites were cleared of equipment, supplies and trash prior to removal of the drilling rig, and appropriate revegetation seed mix was applied to the sites. The extent of reclamation of access trails is unknown, although some natural revegetation is considered likely to have taken place since the cessation of the year-2012 drilling programme.

9 Statement of costs

'Current work' at Willow South, for purposes of the present report, comprises exploratory work done in years 2008 through 2012. Work consisted mainly of drilling, mostly by means of rotary (non-coring) methods. Nearly all of the boreholes were logged by means of downhole geophysical surveys (as discussed in **Appendix A** of this report), and some core samples of coal and associated rocks were taken for analysis, with results reported in Appendices B and C of this report.

Owing to near-complete turnover of technical and operational staff, and the closure of Walter Energy's Canadian regional corporate office in Vancouver, British Columbia, detailed cost data have not been found for the current work. Costs given below in **Table 9-1** are therefore estimated, based upon provincial average unit-costs on a per-metre basis relative to the overall total depth of drilling and geophysical surveying. Drilling and geophysical depths have been compiled from a collection of individual records, aggregated as hole-by-hole running totals. **Table 9-1** presents the resultant estimated cost breakdown for work at Willow South.

Table 9-1: Estimated exploratory cost for Willow South by activity and year

Items and Years		2008	2009	2010	2011	2012	Totals
Rotary Drilling	Meters	2217.96	nil	9420.17	5831.58	3181.45	20651.16
	Unit cost $201.53/m	446,985.48	0	1,898,446.86	1,175,238.32	641,157.62	$4,161,828.27
Core Drilling	Meters	nil	nil	nil	233.63	266.34	499.97
	Unit Cost $210.34/m	0	0	0	49,141.73	56,021.96	$105,163.69
Geophysical Logging	Meters	2198.85	nil	8946.83	5750.64	3322.31	20218.63
	Unit Cost $17.56/m	38,947.38	0	165,418.19	102,402.54	55,866.26	$362,634.37
Lab Analysis	Meters	nil	nil	nil	233.63	266.33	499.96
	Unit Cost $79.63/m	0	0	0	18,603.96	21,208.18	$39,812.13
Roadwork	Meters	2218	nil	9420.2	6065.21	3447.79	21151.2
	Unit Cost $23.30/m	51,679.40	0	219,490.66	141,319.39	80,333.51	$492,822.96
Personnel	Meters	2218	nil	9420.2	6065.21	3447.79	21151.2
	Unit Cost $20.49/m	45,446.82	0	193,019.90	124,276.15	70,645.22	$433,388.09
Yearly Cost Totals	Canadian dollars	583,059.08	0.00	2,476,375.60	1,610,982.10	925,232.74	*$5,595,649.52*

Notes: this table compiled by Laura LeMay. Unit costs are given on a per-metre drilled (or logged) length basis, derived from provincial average unit-costs, vide *Bouchard (2011) report on behalf of Natural Resources Canada. Geophysical log metreage is slightly lower than drilled metreage, as the boreholes generally could not be logged to their total depths. Roadwork cost is derived from overall length of drilling, not scaled length of access trails.*

10 References

The following reference materials were used in the compilation of this report, with citations given at relevant points within the report's text. All coal-assessment reports here cited are available in digital versions via the British Columbia Geological Survey Branch's webspace, with the exception that year-2014 and year-2015 reports are still confidential at the time of this writing, with expected public release in 2017 and 2018.

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11 Conclusions

Coal occurrences, of potentially-workable thickness, occur within the Willow South block of the Willow Creek coal property. These coals are contained within the Gaylard Member of the Lower Cretaceous (Hauterivian to Early Albian) Gething Formation. The Gaylard coal-measures have a stratigraphic thickness of at least 260 metres, possibly 360 metres or more. Numerous coal zones, each containing one or more major coal beds, are present within the Gaylard Member.

Rocks at Willow South have been folded, and broken by thrust faults, which themselves are likely to have been folded. As well, the coal beds split and coalesce laterally, complicating their correlation and tracing throughout the Willow South block.

In all, at least 72 historic boreholes (as reported in previous coal-assessment reports), totalling 4363 metres' length, have been drilled within the Willow South block of the Willow Creek coal lease. An additional 156 current boreholes (here-reported for the first time), with overall length of 21,151.13 metres, were drilled on the property in years-2008 through 2012. Overall drilling totals to date are 228 boreholes and 25,514.13 metres. This total does not include drilling, at locations not yet confirmed by site surveys, of boreholes by the British Columbia Department of Mines in years-1946 through 1951.

Estimated current exploratory costs to date, covering year-2008 through year-2012 activities, are $5,595,649.52. The Willow South block is regarded as being a property of merit, warranting further study of coal-quality trends.

12 Statement of qualifications

I, Preetpal Singh M.A.Sc., do hereby certify that:

a) I am currently employed on a full-time basis by Walter Canadian Coal Partnership, a subsidiary of Walter Energy, in their Northeast British Columbia office in Tumbler Ridge, British Columbia.

b) This certificate applies to the current report, titled *Coal Assessment Report for the Willow Creek coal lease -- Volume 1: Willow South area*, dated April 21, 2015.

c) I am a member of the IEEE Computer Society since 2006.

d) I am in the process of applying for registration with the Association of Professional Engineers and Geoscientists of British Columbia.

e) I received my Bachelor of Science in Computer Science from Laurentian University in 2008, and my Master's of Applied Science in Mineral Resource Engineering, also from Laurentian University, in 2012.

f) I have worked as a data analyst for Walter Canadian Coal Partnership since July of 2013.

g) I am a contributing author of this report, titled *Coal Assessment Report for the Willow Creek coal lease -- Volume 1: Willow South area*, dated April 21, 2015, concerning the Willow South block of the Willow Creek coal property.

I, Laura Rose LeMay B.Sc. B.Ed., do hereby certify that:

a) I am currently employed on a full-time basis by Walter Canadian Coal Partnership, a subsidiary of Walter Energy, in their Northeast British Columbia office in Chetwynd, British Columbia.

b) This certificate applies to the current report, titled *Coal Assessment Report for the Willow Creek coal lease -- Volume 1: Willow South area*, dated April 21, 2015.

c) I am in the process of applying for registration with the Association of Professional Engineers and Geoscientists of British Columbia.

d) I received my Bachelor of Science from Saint Mary's University in Halifax in 2006.

e) I have worked in the coal industry for 3 years and 7 months.

f) I have been pit geologist for the Brazion group of mines since March 2012.

g) I am a contributing author of this report, titled *Coal Assessment Report for the Willow Creek coal lease -- Volume 1: Willow South area*, dated April 21, 2015, concerning the Willow South block of the Willow Creek coal property.

I, C.G. Cathyl-Huhn P.Geo.(BC) Lic.Geol.(WA) RMSME, do hereby certify that:

a) I am currently employed on a full-time basis by Walter Canadian Coal Partnership, a subsidiary of Walter Energy, in their Northeast British Columbia office in Tumbler Ridge, British Columbia.

b) This certificate applies to the current report, titled *Coal Assessment Report for the Willow Creek coal lease -- Volume 1: Willow South area*, dated April 21, 2015.

c) I am a member (Professional Geoscientist, Licence No.20550) of the Association of Professional Engineers and Geoscientists of British Columbia, licensed as a geologist (Licence No.2089) in Washington State, and a founding Registered Member of the Society for Mining, Metallurgy and Exploration (SME, Member No.518350). I have worked as a colliery geologist in several countries for over 36 years since my graduation from university.

d) I certify that by reason of my education, affiliation with professional associations, and past relevant work experience, having written numerous published and private reports and technical papers concerning coalfield geology, coal-mining geology and coal-resource estimation, that I am qualified as a Qualified Person as defined by Canadian *National Instrument 43-101* and a Competent Person as defined by the Australian *JORC Code*.

e) My most recent visit to the Willow South block of the Willow Creek coal property was in the summer of 1981.

f) I am principal author of this report, titled *Coal Assessment Report for the Willow Creek coal lease -- Volume 1: Willow South area*, dated April 21, 2015, concerning the Willow South block of the Willow Creek coal property.

g) As of the date of the writing of this report, I am not independent of Willow Creek Coal Partnership or Pine Valley Coal Ltd., pursuant to the tests in Section 1.4 of *National Instrument 43-101*.

"original signed and sealed by"

Dated this 21st day of April, 2015. C.G. Cathyl-Huhn P.Geo. Lic.Geol. RMSME

Appendix A: Geophysical logs and borehole statistics

Geophysical logging and the pertinent statistics of the current (years 2008, 2010, 2011 and 2012) boreholes are summarised in **Table A-1**. (commencing on the following page). Copies of the geophysical logs are submitted as digital files on a CD (optically-readable compact disk) accompanying this report, in LAS, TIF, and/or PDF formats.

LAS and TIF are the primary digital formats within which geophysical logs were provided by borehole-logging service companies; PDF is a secondary format, derived from scanning of hard-copy logs in those fewer cases in which digital logs have not been found within Walter Energy's files.

Geophysical logs are obtained by lowering a self-contained cylindrical sonde to the bottom of a borehole (or as close to the bottom as is safely practicable, given borehole wall stability conditions), and then drawing the sonde upward by means of a cable which contains power and data-transfer conductors. Depth reference on each log is based upon readings of a depth transponder connected to the geophysical logging system's drawworks. A very small amount of cable stretch may occur, depending upon the weight and diameter of each sonde; this accounts for slight variations in reported depths of log measurements as compared from one log suite to another.

Ordinarily, geophysical logs are run within boreholes once the drilling rods have been withdrawn. This practice allows for measurement of borehole diameter with a caliper instrument, and further allows for the effective collection of properly-calibrated log measurements. In some occasions, logs have been run within the drill rods, owing to concerns regarding borehole stability; these logs may or may not be subsequently be re-run with the rods withdrawn, again depending upon borehole conditions.

Positional and elevation data for boreholes are given in metres. Depths given on all geophysical logs are also given in metres, below the datum points mentioned in the headers of each log. Downhole depths reached by individual logging suites will vary, according to the length of each sonde, and also according to the source/detector geometry (and hence the measurement reference point) of each sonde. Geophysical log depth is therefore generally slightly less than driller's reported depth of each hole.

Downhole geophysical logs run in current boreholes: **Table A-1**

Borehole	UTM NAD83 (Zone 10)		Metres		Degrees		Depths reached by each geophysical log (in metres)				
	Easting	Northing	Collar Elevation	Total Depth	Azi-muth	Dip	Density/Gamma/ Caliper/ Resistivity	Gamma/Density (through rods)	Gamma/ Neutron	Gamma/ Neutron (through rods)	Deviation
Year-2008											
WC08-100	551438.02	6160617.92	1160.15	161.54	0	-90	160.81		160.85		160.25
WC08-101	551516.98	6160700.9	1156.31	201.77	0	-90	200.35		200.35		194.39
WC08-102	551603	6160796	1163	108	162.7	-87.5	107.38				107.38
WC08-103	551171	6160265	1121	28	240.4	-60.2			20		20
WC08-104	551466	6160208.23	1156.52	228.66	222.5	-60	226.6		226.54		210.85
WC08-105	551413	6160151	1147	92	245.4	-59.9			91.3		91.3
WC08-106	551369.14	6160107.72	1130.9	67	240.1	-63			66.33		66.33
WC08-107	551734	6160201	1175	174	238.4	-59			173.3		173.3
WC08-108	551547	6160002	1149	165	235	-58.8			164.6		164.6
WC08-109	551497	6159951	1134	117	235.4	55.8			116.4		116.4
WC08-110	551775	6159813	1146	104	234.1	59.7			104.01		104.01
WC08-111	551691.43	6159721.13	1119	76.5	237.1	-61			76.25		76.25
WC08-112	551789.25	6159531.69	1109.62	100.16	240.1	-61.8			100.16		100.16
WC08-113	551862.13	6159609.3	1125.95	243.84	236.4	-60	241.84		241.98		219.46
WC08-114	552089.73	6159417.84	1118.69	215.49	259.5	-60	214.08		214.34		193.61
WC08-115	551995	6159307	1103	135	230.7	-63			135.1		135.1
Year-2010											
WC10-01	551145.57	6161578.15	1111.9	167.64	215.1	-60	166.78		166.84		152.23
WC10-02	551150.3	6161332.15	1138.06	201.16	0	-90	192		192.31		181.91
WC10-03	551200.38	6160320.43	1127.88	146.3	0	-90	142.54		142.4		139.2
WC10-04	551324.75	6160056.63	1120.64	93.89	0	-90	93.89		93.85		93.09
WC10-05	551434.77	6159883.37	1113.84	151.56	0	-90	151.56		151.58		146.25
WC10-06	551652.91	6159683.59	1099.77	151.72	221.8	-60	151.72		151.72		137.15
WC10-07	551157.59	6160181.46	1114.93	45.7			*not logged?*				
WC10-08	551747.42	6159484.59	1102.95	207	0	-90	206.54		206.56		196.55
WC10-09	551901.86	6159216.67	1063.9	33.5			*not logged?*				

Downhole geophysical logs run in current boreholes: **Table A-1 (continued)**

Borehole	UTM NAD83 (Zone 10)		Metres		Degrees		Depths reached by each geophysical log (in metres)				
	Easting	Northing	Collar Elevation	Total Depth	Azi-muth	Dip	Density/Gamma/ Caliper/ Resistivity	Gamma/Density (through rods)	Gamma/ Neutron	Gamma/ Neutron (through rods)	Deviation
WC10-09B	551834.19	6159300.8	1078.68	225.52	229.6	-88	217.15		220.09		209.27
WC10-10	552017.85	6158892.64	1025.68	140	0	-90	132.81		132.79		132.11
WC10-11	552341.77	6158784.34	1038.91	158.49	0	-90	154.58	151.3	154.54		150.42
WC10-12	552320.58	6158484.6	1040.11	200.55	0	-90	199.64		199.62		181.58
WC10-13	552595.92	6158340.8	1042.27	140.2	0	-90	139.02		139.26		138.79
WC10-14	551791.93	6159100.25	1071.1	197.45	0	-90	197.45		197.47		178.02
WC10-15	551618.7	6159351.7	1084.89	179.12	0	-90	179.12		179.18		173.95
WC10-16	551520.58	6159521.36	1052.76	105.45	0	-90	105.45		105.55		104.44
WC10-17	550934.35	6160098.56	1090.44	17			*not logged?*				
WC10-18	551275.27	6160739.81	1146.39	121.92	0	-90	121.25		121.11		120.71
WC10-19	551117.94	6160576.4	1113.9	145.2	0	-90	145.09	135.74	145.39		139.5
WC10-20	551092.86	6160829.96	1124.89	97.53	208.8	-60	96.85		96.71		77.44
WC10-22	551246.59	6161142.58	1151.24	185.92	0	-90	182.28	181.83	181.75		180.61
WC10-23	552196.14	6159092.99	1103.93	222.5	0	-90	221.77		221.73		212.3
WC10-24	552624.43	6158507.71	1089.62	207.26	0	-90	206.56				199.63
WC10-25	551195.03	6161241.91	1150.6	207.26	0	-90	182.58		182.8		170.37
WC10-26	552808.56	6158116.86	1049.24	149.85	0	-90	147.54		147.62		146.68
WC10-27	551255.36	6161672.54	1147.19	100.6	215.5	-60	99.9		100		87.33
WC10-28	552206.55	6158369.42	1037.33	171.84	0	-90	171.84		171.72		169.59
WC10-29	551417.52	6160868.65	1136.99	137.16	0	-90	135.3		136.33		135.83
WC10-30	551798.38	6158665.08	1023.13	103.63	0	-90	101.81		102.02		101.84
WC10-31	551298.98	6160460.22	1140.34	73.15	46	-60	72.4		72.34		63
WC10-32	551583.92	6159599.69	1072.08	102.98	0	-90	102.9		102.98		102.14
WC10-33	552468.04	6158947.89	1074.31	216.4	0	-90	155.84		155.82		155.19
WC10-34	551771.02	6159072.83	1067.37	231.6	210.8	-60	230.12		230.12		194.84
WC10-35	551601.71	6159334.54	1085.17	142.09	222.3	-60	142.09		142.11		129.14
WC10-36	551348.62	6159799.17	1079.84	93.77	0	-90	93.77		93.71		93.14

Downhole geophysical logs run in current boreholes: **Table A-1 (continued)**

Borehole	UTM NAD83 (Zone 10)		Metres		Degrees		Depths reached by each geophysical log (in metres)				
	Easting	Northing	Collar Elevation	Total Depth	Azi-muth	Dip	Density/Gamma/ Caliper/ Resistivity	Gamma/Density (through rods)	Gamma/ Neutron	Gamma/ Neutron (through rods)	Deviation
WC10-37	552902.66	6158234.05	1052.21	222.5	0	-90	220.61	218.46	221.92		219.23
WC10-39	551619.36	6160376.33	1188.17	243.84	0	-90	206.22	178.74	205.39		202.11
WC10-40	551382.04	6161141.38	1160.46	198.12	222.1	-60	197.33		197.39		177.67
WC10-41	551115.06	6159841.25	1064.43	65.91	0	-90	65.91		65.91		65.16
WC10-42	550985.83	6160034.09	1081.72	146.3	0	-90	133.59	120.69	133.03		130.72
WC10-43	551368.2	6160550.76	1154.08	91.44	0	-90	89.83		89.91		88.59
WC10-45	551290.82	6159725.81	1054.18	87.68	0	-90	87.68		87.72		86.81
WC10-46	551009.43	6161547.94	1131.54	178.6	0	-90	179.16		178.78		172.92
WC10-47	550969.08	6161430.57	1087.46	100.58	0	-90	99.96		99.92		99.58
WC10-48	552860.22	6158632.54	1093.9	219.45	247.8	-60	215.4				201.71
WC10-49	552766.03	6158515.97	1086.23	210.31	0	-90	154.88		154.98		154.44
WC10-52	551763.34	6160532.82	1204.18	124.96	250.5	-88.3	121.41		121.37		118.52
WC10-53	552016.58	6160071.77	1176.3	198.12	0	-90	194.14		194.03		187.08
WC10-54	550887.34	6160320.21	1092.23	60	0	-90	69.43				
WC10-55	550713.56	6160580.19	1082.67	106.68	0	-90	105.63		105.67		105.34
WC10-56	551257.6	6161029.62	1143.71	152.4	0	-90	151.44		151.78		148.29
WC10-57	551933.38	6159687.38	1149.8	210.31	0	-90	204.51		203.6		189.91
WC10-58	552761.69	6158959.86	1071.23	124.96	233.7	-59.9	121.83		119.72		108.58
WC10-59	551180.66	6159619.16	1026.2	106.68	0	-90	103.02		103.08		102.74
WC10-60	551324.03	6161521.71	1152.63	262.13	216.6	-60	258.12		258.24		231.28
WC10-61	551329.68	6161373.79	1134.6	97.53	222.3	-60		93.33	47.66		40.02
WC10-62	550992.57	6161317.13	1116.82	91.44	217	-60	90.39		89.95		74.39
WC10-63	551451.28	6161353.63	1146.86	277.36	221.7	-60	274.18	273.27	271.06		240.8
WC10-64	551677.07	6161171.41	1192.79	140.2	226.9	-60	139.34		138.98		122.58
WC10-65	552630.53	6158820.35	1045.54	216.4	0	-90	209.75		209.81		209.53
WC10-66	554122.09	6157087.56	1151.73	213.36	230.2	-60	206.68	209.19	206.9		156.6

Downhole geophysical logs run in current boreholes: **Table A-1 (continued)**

Borehole	UTM NAD83 (Zone 10)		Metres		Degrees		Depths reached by each geophysical log (in metres)				
	Easting	Northing	Collar Elevation	Total Depth	Azi-muth	Dip	Density/Gamma/ Caliper/ Resistivity	Gamma/Density (through rods)	Gamma/ Neutron	Gamma/ Neutron (through rods)	Deviation
Year-2011											
MW11-01	551323.3	6160444.58	1144.59	24.46	0	-90	22.83		22.83		22.55
MW11-06	551918.1	6159041.27	1049.19	5	*unknown*		*not logged?*				
MW11-07	551685.97	6159617.2	1103.91	5	*unknown*		*not logged?*				
WC11-08	552492.68	6158230.852	1042.75	146.3	0	-90		142.19			
WC11-09	551883.3	6158901.33	1026.68	194.24	0	-90	194.18	169.65	194.24		183.47
WC11-10	551684.35	6159132.69	1078.49	152.4	227.5	-60	151.38		151.36		140.69
WC11-11	551776.43	6158932.53	1022.79	121.92	231.2	-60	120.34		120.34		108.2
WC11-12	551635.21	6159223.69	1087.21	137.16	231.9	-60	136.22		136.28		126.8
WC11-13	551729.34	6159318.22	1086.42	207.24	0	-90	205.29		205.25		201.12
WC11-14	551517.05	6159374.49	1054.86	106.68	0	-90	106.07		106.07		105.68
WC11-15	551573.68	6159445.8	1082.43	179.83	0	-90	178.96		178.96		172.65
WC11-16	551668.04	6159588.42	1096.43	211.97	0	-90	211.97		211.95		201.84
WC11-17	551712.2	6159742.29	1130.78	192.02	0	-90	177.65		177.75		167.41
WC11-18	551251.72	6159838.18	1079.73	21.34	33.8	-60					
WC11-19	551167.13	6159746.58	1059.97	82.28	0	-90	81.67		81.69		81.27
WC11-21	551387.68	6159694.49	1060.15	97.53	0	-90	96.75		96.83		96.02
WC11-26	551590.5	6159759.46	1111.04	128.01	0	-90	127.16		127.2		125.9
WC11-27	551471.27	6159780.05	1103.7	103.63	0	-90	102.9		103		102.16
WC11-29	551231.63	6159967.08	1106.17	3.28	*unknown*		*not logged?*				
WC11-30	551184.52	6160065.45	1102.35	9.14	*unknown*		*not logged?*				
WC11-31	552039.29	6159213.71	1096.47	182.88	0	-90	182.03		181.89		178.89
WC11-32	551825.17	6159724.37	1142.12	231.64	0	-90	229.21		229.63		216.64
WC11-33	551570.78	6159886.52	1137.62	149.35	0	-90	146.74		146.7		140.82
WC11-34	551439.21	6160037.54	1135.43	155.44	0	-90	154.09		154.07		151.97
WC11-35	551256.44	6160202.74	1124.92	24.4	*unknown*		*not logged?*				
WC11-36	551257.44	6160130.78	1120.64	85.34	0	-90	83.36		83.32		82.76

Downhole geophysical logs run in current boreholes: **Table A-1 (continued)**

Borehole	UTM NAD83 (Zone 10)		Metres		Degrees		Depths reached by each geophysical log (in metres)				
	Easting	Northing	Collar Elevation	Total Depth	Azi-muth	Dip	Density/Gamma/ Caliper/ Resistivity	Gamma/Density (through rods)	Gamma/ Neutron	Gamma/ Neutron (through rods)	Deviation
WC11-37	551367.11	6160257.05	1143.48	179.83	247.7	-60	176.85		176.99		140.16
WC11-38	551336.92	6160299.19	1142.61	161.54	0	-90	159.16		159.22		156.79
WC11-39	551330.11	6160358.65	1140.37	121.92	42.1	-60	120.97		120.97		98.09
WC11-40	551318.07	6160412.67	1143.45	167.64	0	-90	166.66		166.68		163.34
WC11-41	551233.37	6160468	1125.15	57.91	0	-90	57.15		57.17		56.88
WC11-42	551388.05	6160495.68	1157.85	97.53	0	-90	95.78		95.82		93.93
WC11-43	551482.76	6160447.78	1170.76	170.68	0	-90	168.16		168.06		164.02
WC11-44	551536.82	6160433.66	1174.26	198.11	42.1	-60	196.17		196.39		152.63
WC11-45	551302.12	6160545.81	1146.12	70.1	0	-90	69.41		69.39		69
WC11-46	551289.5	6160603.51	1144.1	76.2	0	-90	75.44		75.46		73.89
WC11-47	551162.6	6160485.06	1115.18	60.96	0	-90	60.3		60.38		59.41
WC11-48	551346.53	6160741.39	1147.69	172.65	0	-90	172.65		172.77		167.77
WC11-49	551400.63	6160731.63	1149.36	207.26	0	-90	205.67		205.71		193.72
WC11-50	551478.27	6160936.59	1131.02	132.58	0	-90	130.82		130.82		130.42
WC11-53	551611.01	6160521.44	1180.13	251	0	-90	152.69	148.31	152.83		150.82
WC11-54	551730.99	6160638.42	1187.88	185.92	0	-90	130.29		130.25		129.25
WC11-55	551454.96	6160564.6	1161.75	170.69	0	-90	169.03		169.11		165.31
WC11-56	551645.24	6160775.21	1166.36	158.49	0	-90	157.11		157.01		155.22
WC11-57	551567.98	6160616.99	1167.25	232.09	0	-90	232.09	230.8	232.05		221.83
WC11-58C	551602.14	6160064.73	1156.88	233.63	0	-90	201.61		201.61		201.39
Year-2012											
WC12-01	551901.42	6159068.67	1051.83	259.08	0	-90	258.14		258.32	216.85	231.45
WC12-02P	551378.57	6160127.14	1135.92	43	0	-90					
WC12-03BS	551329.21	6160512.03	1150.4	49.27	0	-90	49.27				
WC12-03P	551330.23	6160511.98	1150.3	48.77	0	-90					
WC12-04	552296.27	6158979.67	1085.18	240.79	0	-90	238.2		237.94	204.89	220.8
WC12-05	552127.82	6158799.95	1023.05	169.16	0	-90	167.72		167.78	164.95	155.52

Downhole geophysical logs run in current boreholes: **Table A-1 (concluded)**

Borehole	UTM NAD83 (Zone 10)		Metres		Degrees		Depths reached by each geophysical log (in metres)				
	Easting	Northing	Collar Elevation	Total Depth	Azi-muth	Dip	Density/Gamma/ Caliper/ Resistivity	Gamma/Density (through rods)	Gamma/ Neutron	Gamma/ Neutron (through rods)	Deviation
WC12-06	551387.87	6160420.06	1164.15	121	0	-90	120.83		120.79		117.04
WC12-07BS	551372.19	6160510.95	1155.18	35.66	0	-90	35.46				
WC12-07P	551372.06	6160512.04	1155.19	39.62	0	-90	38.98				
WC12-08BS	551052.78	6159762.61	1035.88	30.17	0	-90	30.17				
WC12-08P	551054.54	6159763.53	1035.89	36.57	0	-90	36.04				
WC12-09BS	551339.45	6159490.18	1023.67	58.52	0	-90	57.45				
WC12-09BS2	551328.34	6159499.68	1023.92	45.18	0	-90	44.93				
WC12-09P	551333.99	6159491.44	1023.69	60.96	0	-90	60.12				
WC12-10BS	551472.6	6159483.87	1034.38	13.71	0	-90	13.77				
WC12-10P	551472.49	6159482.21	1034.32	18.28	0	-90	17.51				
WC12-11BS	551518.46	6159541.83	1046.92	33.83	0	-90	32.28				
WC12-11P	551519.07	6159543.14	1046.9	39.62	0	-90	38.19				
WC12-12	551745.17	6159627.52	1117.07	201.16	0	-90	199.88		199.86		172.45
WC12-13	551071.31	6159778.78	1046.68	39.62	0	-90	39.06		39.08		38.86
WC12-14	551495.41	6159662.08	1078.31	161.54	0	-90	158.34		158.26		149.82
WC12-15	551116.99	6159898.09	1075.73	51.82	0	-90	51.36		51.4		51.01
WC12-16	551434.01	6159594.35	1059.55	134.11	214.7	-60	130.64		130.58		122.17
WC12-17	551337.03	6159627.88	1031.54	73.15	218.4	-60	72.06		72.38		67.78
WC12-18	551349	6159933.72	1110.66	103.63	0	-90	102.35		102.12		100.51
WC12-19	551547.73	6160669.88	1159.89	210.31	0	-90	209.71		209.67		185.74
WC12-20	551629.04	6160609.54	1179.35	228.6	0	-90	226.76		225.98		214.21
WC12-21	552053.74	6160834.75	1205.24	201.16	0	-90	200.39		200.33		177.83
WC12-22	551736.79	6160721.88	1182.35	201.16	0	-90	200.43		200.41		194.4
WC12-23	551283.05	6160887.15	1096.56	161.54	0	-90	157.83		157.49		148.38
WC12-24	551447.65	6160332.49	1164.75	236.22	0	-90	234.84		234.78		221.81
WC12-25	552669.13	6159624.93	1115.53	100.58	0	-90	98.98		98.82		98.31

Coalbed roofs and floors in current boreholes (Part 1: roof of coal bed 170 to roof of coal bed 310): **Table A-2**

Borehole	Drift	170 Roof	170 floor	150 Roof	150 floor	130 Roof	130 Floor	110 Roof	110 Floor	100 Roof	100 Floor	201 Roof	201 Floor	200 Roof	200 Floor	202 Roof	202 Floor	330 Floor	310 Roof
MW11-01	1.6																		
WC08-100	3																		
WC08-101	6.6																		
WC08-102	5.2																		
WC08-103	2.4																		
WC08-104	12.2																		
WC08-105	3																		
WC08-106	2.5																		
WC08-107	6.3																		
WC08-108	6.5																		
WC08-109	10																		
WC08-110	6																		
WC08-111	2.5																		
WC08-112	3.3									6	6.5			26.7	27.75				
WC08-113	2.8																		
WC08-114	3																		
WC08-115	2																		
WC10-01	9.1																		
WC10-02	3																		
WC10-03	0.6																		
WC10-04	2.3																		
WC10-05	9.5																		
WC10-06	7.4																		
WC10-07	1.5	Burnt																	
WC10-08	2.5																		
WC10-09	0.5	Strata are broken																	
WC10-09B	3.5											5.45	6.12			7.47	7.9		
WC10-10	42.9																		
WC10-11	4.2																		
WC10-12	9.3																		
WC10-13	11.3																		
WC10-14	2.4																		
WC10-15	2.4																		
WC10-16	1.9																		
WC10-17	17	Burnt																	
WC10-18	1.5																		
WC10-19	4.6																		

Coalbed roofs and floors in current boreholes (Part 1: roof of coal bed 170 to roof of coal bed 310): **Table A-2 (continued)**

Borehole	Drift	170 Roof	170 floor	150 Roof	150 floor	130 Roof	130 Floor	110 Roof	110 Floor	100 Roof	100 Floor	201 Roof	201 Floor	200 Roof	200 Floor	202 Roof	202 Floor	330 Floor	310 Roof
WC10-20	2.25																		
WC10-22	3																		
WC10-23	0.3																		
WC10-24	2																		
WC10-25	5.5																		
WC10-26	22.24																		
WC10-27	3									36.35	37.4			49.6	50.45				
WC10-28	59.1									63.9*	65.7*	73.79	76.56	76.56	77.23	77.23	78.48		
WC10-29	10.55																		
WC10-30	41																		
WC10-31	2.2																		
WC10-32	2.4																		
WC10-33	3.6																		
WC10-34	5.4																		
WC10-35	4																		
WC10-36	2.9																		
WC10-37	21.8																		
WC10-39	4																		
WC10-40	3																		
WC10-41	3.3																		
WC10-42	20.62	Strata are burnt down to 20.62 metres																	
WC10-43	1.5																		
WC10-45	11.3																		
WC10-46	3																		
WC10-47	6.1																		
WC10-48	12.3																		
WC10-49	4.6																		
WC10-52	2.3																		
WC10-53	2																		
WC10-54	23.22																		
WC10-55	2.1																		
WC10-56	3																		
WC10-57	12.3																		
WC10-58	10.8																		

Coalbed roofs and floors in current boreholes (Part 1: roof of coal bed 170 to roof of coal bed 310): **Table A-2 (continued)**

Borehole	Drift	170 Roof	170 floor	150 Roof	150 floor	130 Roof	130 Floor	110 Roof	110 Floor	100 Roof	100 Floor	201 Roof	201 Floor	200 Roof	200 Floor	202 Roof	202 Floor	330 Floor	310 Roof
WC10-59	40																		
WC10-60	5.5													15.5	16.3				
WC10-61	3																		
WC10-62	3																		
WC10-63	6.1									32.45	33.2			48.8	49.5				
WC10-64	1	9.8	10	21.05	22.05	22.5	22.68~			58.05	58.65	68	68.1			69.21	70.07		
WC10-65	25.4																		
WC10-66	2									8.88*	10.27*	20.01	20.7			21.23	21.7		
WC11-08	58																		
WC11-09																			
WC11-10	4.7																		
WC11-11	11.1																		
WC11-12	4.5																		
WC11-13	3.6																		
WC11-14	4.6																		
WC11-15	3																		
WC11-16	1.6																		
WC11-17	2.62																		
WC11-19	4.1																		
WC11-21	3.8																		
WC11-26	2.15																		
WC11-27	3																		
WC11-29	3	Burnt																	
WC11-30	6.1	Burnt																	
WC11-31	3.8																		
WC11-32	2																		
WC11-33	3																		
WC11-34	5.1																		
WC11-35	24.4	Burnt																	
WC11-36	1.4																		
WC11-37	4.2																		
WC11-38	2.2																		
WC11-39	0.25																		
WC11-40	2.8																		

Coalbed roofs and floors in current boreholes (Part 1: roof of coal bed 170 to roof of coal bed 310): **Table A-2 (continued)**

Borehole	Drift	170 Roof	170 floor	150 Roof	150 floor	130 Roof	130 Floor	110 Roof	110 Floor	100 Roof	100 Floor	201 Roof	201 Floor	200 Roof	200 Floor	202 Roof	202 Floor	330 Floor	310 Roof
WC11-41	1																		
WC11-42	0.9																		
WC11-43	1.8																		
WC11-44	2																		
WC11-45	2.2																		
WC11-46																			
WC11-47	1.2																		
WC11-48	1.55																		
WC11-49	1.87																		
WC11-50	1.9																		
WC11-53	3																		
WC11-54	1.95																		
WC11-55	2.3																		
WC11-56	1.8																		
WC11-57	1.2																		
WC11-58C	3																		
WC12-01																			
WC12-03BS																			
WC12-03P																			
WC12-04																			
WC12-05																			
WC12-06																			
WC12-07BS																			
WC12-08BS																			
WC12-09BS																			
WC12-09BS2																			
WC12-10BS																			
WC12-10P																			
WC12-11BS																			
WC12-12																			
WC12-13																			
WC12-14																			
WC12-15																			

Coalbed roofs and floors in current boreholes (Part 1: roof of coal bed 170 to roof of coal bed 310): **Table A-2 (concluded)**

Borehole	Drift	170 Roof	170 floor	150 Roof	150 floor	130 Roof	130 Floor	110 Roof	110 Floor	100 Roof	100 Floor	201 Roof	201 Floor	200 Roof	200 Floor	202 Roof	202 Floor	330 Floor	310 Roof
WC12-16																			
WC12-17																			
WC12-18																			
WC12-19																			
WC12-20																			
WC12-22																			
WC12-23																			
WC12-24																			
WC12-25																			

Notes: this table is compiled by L.R. LeMay. 'Burnt' indicates burned strata. One through five asterisks (*) indicate one through five rock partings within a given coal bed. A tilde (~) indicates that more than one intersection of a given coal bed is present within the borehole; only the shallowest intersection is here given. For additional information, refer to ***Table 5-****1. All depths are downhole depths, along borehole trajectory, given in metres below the borehole's collar.*

Coalbed roofs and floors in current boreholes (Part 2: roof of coal bed 300 to roof of coal bed 420): **Table A-3**

Borehole	300 Roof	300 Floor	320 Roof	320 Floor	340 Roof	340 Floor	360 Roof	360 Floor	450 Roof	450 Floor	430 Roof	430 Floor	410 Roof	410 Floor	400 Roof	400 Floor	402 Roof	402 Floor	420 Roof
MW11-01																			
WC08-100																			
WC08-101																			
WC08-102																			
WC08-103																			
WC08-104															23	23.85			
WC08-105																			
WC08-106																			
WC08-107													149.7	150	158.6	160.25			
WC08-108																			
WC08-109																			
WC08-110																			
WC08-111																			
WC08-112	29.9	31	32.95	33.05	36.45	36.55									57.9	58.3			
WC08-113																			
WC08-114															7.9	8			
WC08-115															2.5	3			
WC10-01																			

Coalbed roofs and floors in current boreholes (Part 2: roof of coal bed 300 to roof of coal bed 420): **Table A-3 (continued)**

Borehole	300 Roof	300 Floor	320 Roof	320 Floor	340 Roof	340 Floor	360 Roof	360 Floor	450 Roof	450 Floor	430 Roof	430 Floor	410 Roof	410 Floor	400 Roof	400 Floor	402 Roof	402 Floor	420 Roof
WC10-02																			
WC10-03																			
WC10-04																			
WC10-05																			
WC10-06																			
WC10-07																			
WC10-08			7.6	7.8	11.3	11.4									35.15	35.5			
WC10-09																			
WC10-09B	39.8	40.4			61	61.1					69.2	69.3	84.35	84.4	92.55	92.75			
WC10-10																			
WC10-11																			
WC10-12																			
WC10-13																			
WC10-14													4.7	4.8	10.45	11			
WC10-15																			
WC10-16																			
WC10-17																			
WC10-18																			
WC10-19																			
WC10-20																			
WC10-22																			
WC10-23													8.4	8.55	18.45	18.6			
WC10-24																			
WC10-25																			
WC10-26																			
WC10-27	65.15	68.55																	
WC10-28	81.08*	84.28*	92.18	92.28	94.98	95.08							113.4	113.72	117.7	118.21			
WC10-29																			
WC10-30																			
WC10-31																			
WC10-32																			
WC10-33																			
WC10-34																			
WC10-35																			

Coalbed roofs and floors in current boreholes (Part 2: roof of coal bed 300 to roof of coal bed 420): **Table A-3 (continued)**

Borehole	300 Roof	300 Floor	320 Roof	320 Floor	340 Roof	340 Floor	360 Roof	360 Floor	450 Roof	450 Floor	430 Roof	430 Floor	410 Roof	410 Floor	400 Roof	400 Floor	402 Roof	402 Floor	420 Roof
WC10-36																			
WC10-37																			
WC10-39																			
WC10-40																			
WC10-41																			
WC10-42																			
WC10-43																			
WC10-45																			
WC10-46																			
WC10-47																			
WC10-48			12.91	13.4	19.66	20.18							27.73	27.91	40.01	40.56	43.4	43.51	
WC10-49																			
WC10-52													8.55	8.65	15.3	16.08			
WC10-53															3.45	3.7			
WC10-54																			
WC10-55																			
WC10-56																			
WC10-57															12.3	12.8			
WC10-58																			
WC10-59																			
WC10-60	19	21.7													41.1	41.6			
WC10-61																			
WC10-62																			
WC10-63	52.75	54.6																	
WC10-64	79.14	81.05							102.24	102.55	107.71	107.83	109.83	109.48	113.27*	114.33*			
WC10-65																			
WC10-66	22.27	23.55	25.23	25.54	30.85	30.95					41.15	41.32	49.2	49.3	60.43	61.02			
WC11-08															60.98	62.42			
WC11-09																			
WC11-10																			
WC11-11																			
WC11-12																			
WC11-13													17.42	17.52	28.56	28.74			
WC11-14																			

Coalbed roofs and floors in current boreholes (Part 2: roof of coal bed 300 to roof of coal bed 420): **Table A-3 (continued)**

Borehole	300 Roof	300 Floor	320 Roof	320 Floor	340 Roof	340 Floor	360 Roof	360 Floor	450 Roof	450 Floor	430 Roof	430 Floor	410 Roof	410 Floor	400 Roof	400 Floor	402 Roof	402 Floor	420 Roof
WC11-15																			
WC11-16																			
WC11-17															24.47	24.83			27.86
WC11-19																			
WC11-21																			
WC11-26																			
WC11-27																			
WC11-29																			
WC11-30																			
WC11-31																			
WC11-32																			
WC11-33																			
WC11-34																			
WC11-35																			
WC11-36																			
WC11-37																			
WC11-38																			
WC11-39																			
WC11-40																			
WC11-41																			
WC11-42																			
WC11-43																			
WC11-44																			
WC11-45																			
WC11-46																			
WC11-47																			
WC11-48																			
WC11-49																			
WC11-50																			
WC11-53	17.2**	18.42**																	
WC11-54																			
WC11-55																			
WC11-56																			
WC11-57															19.04	19.62			

Coalbed roofs and floors in current boreholes (Part 2: roof of coal bed 300 to roof of coal bed 420): **Table A-3 (concluded)**

Borehole	300 Roof	300 Floor	320 Roof	320 Floor	340 Roof	340 Floor	360 Roof	360 Floor	450 Roof	450 Floor	430 Roof	430 Floor	410 Roof	410 Floor	400 Roof	400 Floor	402 Roof	402 Floor	420 Roof
WC11-58C	17.2**	18.42**																	
WC12-01																			
WC12-03BS																			
WC12-03P																			
WC12-04																			
WC12-05																			
WC12-06																			
WC12-07BS																			
WC12-08BS																			
WC12-09BS																			
WC12-09BS2																			
WC12-10BS																			
WC12-10P																			
WC12-11BS																			
WC12-12																			
WC12-13																			
WC12-14																			
WC12-15																			
WC12-16																			
WC12-17																			
WC12-18																			
WC12-19																			
WC12-20																			
WC12-22															30.5	31.7			
WC12-23																			
WC12-24																			
WC12-25																			

Notes: this table is compiled by L.R. LeMay. 'Burnt' indicates burned strata. One through five asterisks (*) indicate one through five rock partings within a given coal bed. A tilde (~) indicates that more than one intersection of a given coal bed is present within the borehole; only the shallowest intersection is here given. For additional information, refer to ***Table 5-****1. All depths are downhole depths, along borehole trajectory, given in metres below the borehole's collar.*

Coalbed roofs and floors in current boreholes (Part 3: roof of coal bed 440 to roof of coal bed A34): **Table A-4**

Borehole	440 Roof	440 Floor	480 Roof	480 Floor	482 Roof	482 Floor	A71 Roof	A71 Floor	A7 Roof	A7 Floor	A72 Roof	A72 Floor	A5 Roof	A5 Floor	A3 Roof	A3 Floor	A32 Roof	A32 Floor	A34 Roof
MW11-01																			
WC08-100																			
WC08-101	16.21	16.45	23.02	23.35									52.38	53.01	58.66	59.64	63.71*	66.02*	
WC08-102															5.55	6.1			
WC08-103																			
WC08-104	34.18	34.28	40.9	41.1					51.6	51.7			66.3	67	75.3	75.59			
WC08-105													11.3	12					
WC08-106																			
WC08-107																			
WC08-108			7.5	8					17.5	17.7			27.4	28.5	34.85	35.15			
WC08-109																			
WC08-110													27.15	28.3	38.2	38.35			
WC08-111			4	4.35					15.1	15.4			26.3	26.75	37.25	37.35			
WC08-112	61.15	61.35	66.35*	67.8*					76.35	76.7			89.1	89.9	93.55	93.65			
WC08-113			2.8**	3.9**					13.8	14.6					14.85	14.95	~		
WC08-114	22.05	22.2	31.15	31.4					39.93*	41.9*			51.45	51.89	53.91	54.12			
WC08-115	15.75	16.2	18.7*	20*			22.2	22.35	25.1	26.85	32.9	33.8							
WC10-01																			
WC10-02																			
WC10-03																			
WC10-04																			
WC10-05																			
WC10-06																			
WC10-07																			
WC10-08	38.45	38.55	43.7*	44.6*					53.8	54.2			66.45	67.1	70.9	71	76.9	77.05	
WC10-09																			
WC10-09B	95.8	95.9	98.9*	100.15*					108.8	109.2			122.6	123.5	126.9	127	133.2	133.25	
WC10-10																			
WC10-11															7	7.14			22.15
WC10-12	13.75*	15.4*	36.25*	38.84*					40.36	41.81			52.92	53.32	54.54	54.9			70.1
WC10-13																			
WC10-14	23.4	23.65	26.25*	27.95*					39.55	40.02			51.8	52.45	56.85	56.95	62.45	62.55	
WC10-15													7.1	8	12.3	12.4			
WC10-16																			

Coalbed roofs and floors in current boreholes (Part 3: roof of coal bed 440 to roof of coal bed A34): **Table A-4 (continued)**

Borehole	440 Roof	440 Floor	480 Roof	480 Floor	482 Roof	482 Floor	A71 Roof	A71 Floor	A7 Roof	A7 Floor	A72 Roof	A72 Floor	A5 Roof	A5 Floor	A3 Roof	A3 Floor	A32 Roof	A32 Floor	A34 Roof
WC10-17																			
WC10-18																			
WC10-19																			
WC10-20																			
WC10-22																			
WC10-23	30.35*	31.65	45.85	46.15					51.1	52.95			65.7	66.25	68.3	68.55	73.6	73.7	
WC10-24			22.58**	26.19**					28.93	29.72			40.67	40.98	42.01	42.37	46.8	46.9	
WC10-25																			
WC10-26													28.08	28.47	29.57	29.9	36	36.1	
WC10-27																			
WC10-28	124.1	124.32	136.6*	138.94			140.65	140.85	141.99	143.03			152.96	153.28	154.6	154.9	159.85	159.95	
WC10-29																			
WC10-30																			
WC10-31																			
WC10-32																			
WC10-33			27.25	27.65					35.65	36.65			49.95	50.5	52.1	52.4	55.65	55.75	
WC10-34			5.4*	7.9*					19.1	19.55			32.4	33.1	37.35	37.45			
WC10-35																			
WC10-36																			
WC10-37					25.4	25.61			29.99*	31.41*			43	43.36	44.78	45.03	51.3	51.4	
WC10-39									6.4	7.1			23.9	24.55	27.75	28.11	32.7	32.9	
WC10-40																			
WC10-41																			
WC10-42																			
WC10-43																			
WC10-45																			
WC10-46																			
WC10-47																			
WC10-48	57.7*	61.92*	67.45	67.87					76.84	77.67			90.15	90.5	94.46	94.65	98.67	98.78	
WC10-49	5.65*	9.22*	22.46*	25.29*					29.21	30.26			41.74	42.11	43.82	44	49	49.15~	
WC10-52	16.58	16.87	25.8	26.04					36.02*	37.11*			53.67	54.22	57.32	57.66	59.85	59.95	
WC10-53	9.15	9.7	23.3*	35.35*									53.3	54.25	54.9	55.35	59.45	59.65	
WC10-54																			
WC10-55																			

Coalbed roofs and floors in current boreholes (Part 3: roof of coal bed 440 to roof of coal bed A34): **Table A-4 (continued)**

Borehole	440 Roof	440 Floor	480 Roof	480 Floor	482 Roof	482 Floor	A71 Roof	A71 Floor	A7 Roof	A7 Floor	A72 Roof	A72 Floor	A5 Roof	A5 Floor	A3 Roof	A3 Floor	A32 Roof	A32 Floor	A34 Roof
WC10-56																			
WC10-57	21.6	22	31.1	31.45					36	36.65			45.7	46.4	48.6	48.9			
WC10-58	18.35	18.59	39.97	40.5					50.73	51.3			61.02	61.42	63.77	63.98	67.71	67.81	
WC10-59																			
WC10-60																			
WC10-61																			
WC10-62																			
WC10-63																			
WC10-64			122.35	122.45					133.4*	134.2*									
WC10-65																			
WC10-66	65.03	66.23	90.18*	92.35*					96.32	96.75			115.14	115.81			122.9	123	
WC11-08			85.95**	88.6**					91.21	92.4			108.53	108.65	110	110.2	116.5	116.6	
WC11-09									26.87	27.35			39.04	39.6	43.05	43.6			
WC11-10													8.45	9.35	13.35	13.45			
WC11-11																			
WC11-12															6.3	6.5			
WC11-13			35.21*	36.71*					52.22	52.68			67.15	67.92	73.35	73.45	82.29	82.42	
WC11-14																			
WC11-15													3.67*	4.48*	9.19	9.47	19.58	19.82	
WC11-16													12.23	13.058	18.04	18.18	24.43	24.62~	
WC11-17			35.92	36.41					46.94	47.13			58.69	59.52	69.33	69.47			
WC11-19																			
WC11-21																			
WC11-26																			
WC11-27																			
WC11-29																			
WC11-30																			
WC11-31																			
WC11-32			13.8	14.5					21.25	21.43			32.12	32.67	34.35	34.58	39.95	40.05	
WC11-33																			
WC11-34																			
WC11-35																			
WC11-36																			
WC11-37			7.15	7.95					23.4	23.5			43.4	43.9	51.2	51.3			

Coalbed roofs and floors in current boreholes (Part 3: roof of coal bed 440 to roof of coal bed A34): **Table A-4 (continued)**

Borehole	440 Roof	440 Floor	480 Roof	480 Floor	482 Roof	482 Floor	A71 Roof	A71 Floor	A7 Roof	A7 Floor	A72 Roof	A72 Floor	A5 Roof	A5 Floor	A3 Roof	A3 Floor	A32 Roof	A32 Floor	A34 Roof
WC11-38													12.7	12.82	22.4	22.6	32.1	32.2~	
WC11-39																			
WC11-40																			
WC11-41																			
WC11-42																			
WC11-43													13.67	14.16	20.05	20.27	23.8	23.9	
WC11-44													3.45	3.85	7.98	9.18	12.9	13	
WC11-45																			
WC11-46																			
WC11-47																			
WC11-48																			
WC11-49																			
WC11-50																			
WC11-53			46.79	46.98					68.55	68.65			85.2	86.32	86.86	86.96	90.49	90.76	
WC11-54													6.58	7.38	10.76	11.09	13.36	13.5	
WC11-55																			
WC11-56																			
WC11-57	26.95	27.05	40.46	41.03					57.3	58			82.58	83.66			88.87*	93.75*	
WC11-58C			46.79	46.98					68.55	68.65			85.2	86.32	86.86	86.96	90.49	90.76	
WC12-01																			
WC12-03BS																			
WC12-03P																			
WC12-04																			
WC12-05																			
WC12-06																			
WC12-07BS																			
WC12-08BS																			
WC12-09BS																			
WC12-09BS2																			
WC12-10BS																			
WC12-10P																			
WC12-11BS																			
WC12-12																			
WC12-13																			

Coalbed roofs and floors in current boreholes (Part 3: roof of coal bed 440 to roof of coal bed A34): **Table A-4 (concluded)**

Borehole	440 Roof	440 Floor	480 Roof	480 Floor	482 Roof	482 Floor	A71 Roof	A71 Floor	A7 Roof	A7 Floor	A72 Roof	A72 Floor	A5 Roof	A5 Floor	A3 Roof	A3 Floor	A32 Roof	A32 Floor	A34 Roof
WC12-14																			
WC12-15																			
WC12-16																			
WC12-17																			
WC12-18																			
WC12-19																			
WC12-20																			
WC12-22																			
WC12-23																			
WC12-24																			
WC12-25																			

Notes: this table is compiled by L.R. LeMay. 'Burnt' indicates burned strata. One through five asterisks (*) indicate one through five rock partings within a given coal bed. A tilde (~) indicates that more than one intersection of a given coal bed is present within the borehole; only the shallowest intersection is here given. For additional information, refer to ***Table 5-****1. All depths are downhole depths, along borehole trajectory, given in metres below the borehole's collar.*

Coalbed roofs and floors in current boreholes (Part 4: floor of coal bed A34 to roof of coal bed 532): **Table A-5**

Borehole	A34 Floor	M1 Roof	M1 Floor	M2 Roof	M2 Floor	M22 Roof	M22 Floor	A1 Roof	A1 Floor	A12 Roof	A12 Floor	A0 Roof	A0 Floor	A02 Roof	A02 Floor	531 Roof	531 Floor	530 Roof	530 Floor	532 Roof
MW11-01																				
WC08-100												3.2	3.4					20.35	20.77	
WC08-101		72.65	72.98					100.55	101.18			102.82	103.45					125.71	125.85	
WC08-102								21.25**	22.7**			23.6	24.05					67.6	68.2	
WC08-103																				
WC08-104		89.7*	94.1*	95.2	96			108.6	109.27			111.55	112.08					133.38	133.48	
WC08-105		41.3	43.75	45.05	45.8			53.7	55.5			59.25	60.3							
WC08-106								3.5	4.75			8	9.4					18.05	18.35	
WC08-107																				
WC08-108		50.1	51.1	52.4	52.8	57.5	57.65	61	62			64	65					81.6	81.7	
WC08-109																		24.65	24.9	
WC08-110		48.35	49.25	50.45	50.95			65.45	66.5			68.15	68.45							
WC08-111		50.15	51.1	52.55	53			62.5	63.65			67	68							
WC08-112																				
WC08-113		70.95	71.78	74.8	75.37			84.23	85.35			90.18	91.35	~		202.7	202.8	208.05	208.18	
WC08-114		73.72	73.91	75.93	76.29	79.1	79.2	81.7	82.44			85.8	86.15			103.1	103.2	108.95	109.24	

Coalbed roofs and floors in current boreholes (Part 4: floor of coal bed A34 to roof of coal bed 532): **Table A-5 (continued)**

Borehole	A34 Floor	M1 Roof	M1 Floor	M2 Roof	M2 Floor	M22 Roof	M22 Floor	A1 Roof	A1 Floor	A12 Roof	A12 Floor	A0 Roof	A0 Floor	A02 Roof	A02 Floor	531 Roof	531 Floor	530 Roof	530 Floor	532 Roof
WC08-115												72.65	73.1					85	85.3	
WC10-01		69.15	70.2	70.8	71.25			123.1	123.6			125	125.6							
WC10-02		8.7	9.4	9.9	10.35			45.4	45.8			47.1	47.5							
WC10-03																				
WC10-04																		16.8	16.9	
WC10-05																		26.55	26.75	
WC10-06		26.75	27.8	29.65	30.3			39.5	40.7			44.45	45.2					53.95	54.05	
WC10-07																				
WC10-08		90	91	92.7	93.1			99	99.8			105.2	105.6					120.6	120.7	
WC10-09																				
WC10-09B		148.1	148.9	150.65	151.1	154.95	155.05	158.28	159			165.7	166.15					186.45	186.82	
WC10-10								52.55	53.15			64.3	65.75					110.5	111.1	
WC10-11	22.25							35.23	35.68			42.12	42.85	54.5	54.6	82.15	82.25	90.4	90.78	
WC10-12	70.20							85.65	86.11			95.81	96.29	105.85	105.95			124.34	124.65	
WC10-13								25.48	25.83	27.8	27.9	37.49	38.52			62.3	62.4	71.91	72.36	
WC10-14		76.7	77.25	79.25	79.7			86.35	87.2			92.5	92.85					107.7	108	
WC10-15		30.6	31.55	33.25	33.7			42.35	43			50.6	51.25					67.05	67.55	
WC10-16												5.9	6.5					24.4	24.8	27.3
WC10-17																				
WC10-18																				
WC10-19																				
WC10-20																				
WC10-22		22.55	22.8	24.55	25			62.4	63			64.85	65.6							
WC10-23		86.55	86.65	91.35	91.8	94.05	94.15	96.1	97.15			100.4	100.75			118.5	118.6	125.5	125.75	
WC10-24								63.72	64.1			74.93	76.09			96.7	96.8	111.15	111.8~	
WC10-25																				
WC10-26								49.78	50.23	52.92	53.34	65.19	65.9			85.79	85.89	92.32	92.89	
WC10-27																				
WC10-28																				
WC10-29																				
WC10-30								46.65	46.9			56.36	58.68	65.32	65.35			70.45	70.9	
WC10-31																				
WC10-32								5.75	6.95			10.6	11.15					25.35	25.5	
WC10-33		66.1	66.2	75.7	76.1			83.2	83.82			86.65*	88.05*					111.55	111.8	

Coalbed roofs and floors in current boreholes (Part 4: floor of coal bed A34 to roof of coal bed 532): **Table A-5 (continued)**

Borehole	A34 Floor	M1 Roof	M1 Floor	M2 Roof	M2 Floor	M22 Roof	M22 Floor	A1 Roof	A1 Floor	A12 Roof	A12 Floor	A0 Roof	A0 Floor	A02 Roof	A02 Floor	531 Roof	531 Floor	530 Roof	530 Floor	532 Roof
WC10-34		59.85	60.35	62.45	62.85			70.25	70.75			77.4	77.7					93.9	94.05	
WC10-35		18.5	19.3	20.8	21.25			29.4	30.2			37.69*	38.8*					53.2	53.6	
WC10-36																				
WC10-37								63.14	63.4			76.95	77.55			100.42	100.52	105.35	105.74	
WC10-39		41.6	42.05	43.55	44.18			65.5	66.25			67.73	68.23					116	166.2	
WC10-40								72.9	73.7			74.9	75.55							
WC10-41																				
WC10-42																				
WC10-43																				
WC10-45																				
WC10-46																				
WC10-47																				
WC10-48								116.14	116.5			124	124.61			141.15	141.25			
WC10-49								86.53	86.84			96.99	97.72					124.59	124.85	
WC10-52		70.47	70.66	73.95	74.05			95.83	96.41			97.55	98.06							
WC10-53		75.15	75.35	79.45	79.6			88.36	90.27			91.1	91.6					122.6	122.9	
WC10-54																				
WC10-55																				
WC10-56																				
WC10-57		75.63	76.21	78.51*	80.6*			89.75	90.55			94.14	95.05							
WC10-58								91.39	91.67			101.68	102.44	104.28	104.38	118.87	118.97			
WC10-59																				
WC10-60		126.5	126.9	127.55	127.9															
WC10-61		80.1	80.4	82.4	82.6															
WC10-62																				
WC10-63		126.45	126.75	127.65	127.95			155.3	155.7			157.15	157.6							
WC10-64																				
WC10-65								44.43	44.87			51.53	52.26	60.27	60.41	65.05	65.15	74.8	74.99	
WC10-66								132.76*	139.96*	145.91	146.19	151.62*	153.77*					159.76	160	
WC11-08		118.25	118.35					133.55	134.1											
WC11-09		69.6	69.92	72.65	73.08			82.85	83.2			88.55	88.73	92.75	93			106.42	106.55	
WC11-10		34.32	35.13	37.09	37.53	41.06	41.12	45.26	45.82			52.18	52.51	55.46	55.66			68.66	68.97	
WC11-11								15.55	16.05			21.85	22.13	24.62	24.77			37.98	38.24	
WC11-12		22.66	23.4	25.01	25.31			32.71*	33.3*			40.65	40.95	44.3	44.4			57.3	57.5	

Coalbed roofs and floors in current boreholes (Part 4: floor of coal bed A34 to roof of coal bed 532): **Table A-5 (continued)**

Borehole	A34 Floor	M1 Roof	M1 Floor	M2 Roof	M2 Floor	M22 Roof	M22 Floor	A1 Roof	A1 Floor	A12 Roof	A12 Floor	A0 Roof	A0 Floor	A02 Roof	A02 Floor	531 Roof	531 Floor	530 Roof	530 Floor	532 Roof
WC11-13		93.13	94.52	96.55	96.89	100.9	1	104.13	104.89			112.28	112.85					130.18	130.6	
WC11-14																		6.11	6.44	
WC11-15		29.47	30.52	31.94	32.46	37	37.23	42	43.17			49.52	50.31					70.17	71.22	
WC11-16		36.88	37.73	39.31	39.73	44.5	44.6	46.66	47.67			51.91	52.46					66.09	66.39	
WC11-17		82.12	82.28	84.26	84.64			94.99	95.66			99.26	99.64					116.45	116.66	
WC11-19																				
WC11-21																		10.92	11.06	
WC11-26		4.65	5.05	6.45	6.6			17.35	18.2			21.37	21.65~					36.15	36.25	
WC11-27								7.73	8.83			11.85	12.82					28.92	29.02	
WC11-29																				
WC11-30																				
WC11-31		25.02	25.37	28.28	28.79			33.47	34.38			38.16	38.54			59.39	59.49	67.77	68	
WC11-32		54.89	55.63	56.95	57.05			63.91	64.58			67.22	67.32					96.2	96.46	
WC11-33		22.05	22.26	24.13	24.46			35.47	35.74			38.88	39.3					61.05	61.15	
WC11-34																		34.88	35.14	
WC11-35																				
WC11-36																		13.55	13.65	
WC11-37		65.36	67.07	68.3	68.59			89.85	90.67			94.43	95.53					112.45	112.55	
WC11-38		38.5*	41.15*	42.45	43.12	53.65	53.75	60.55	61.35			64.65	66.05					88.35	88.65	
WC11-39								9.14	9.8			12	13							
WC11-40																				
WC11-41																				
WC11-42																		27.3	27.4	
WC11-43		32.43	32.82	34	34.33	41.3	41.4	54.24	54.93			56.62	57.02					86.77	86.87	
WC11-44		20.63	20.98	22.18	22.41			42.97	43.43			45.06	45.41~							
WC11-45																				
WC11-46																				
WC11-47																				
WC11-48																		65.45	65.96	
WC11-49		32.76*	34.61*	37.41	38.13															
WC11-50																				
WC11-53		103.86	105.46	106.26*	107.52*	120.46	120.84	124.83*	126.22*			129.15	129.79					147.7	147.8	
WC11-54		22.77*	24.42	25.62	26.6			51.26	52.11			53.61	54.41					83.25	83.6	
WC11-55																		30.1	30.2	

Coalbed roofs and floors in current boreholes (Part 4: floor of coal bed A34 to roof of coal bed 532): **Table A-5 (concluded)**

Borehole	A34 Floor	M1 Roof	M1 Floor	M2 Roof	M2 Floor	M22 Roof	M22 Floor	A1 Roof	A1 Floor	A12 Roof	A12 Floor	A0 Roof	A0 Floor	A02 Roof	A02 Floor	531 Roof	531 Floor	530 Roof	530 Floor	532 Roof
WC11-56								31.19*	32.68*			35.04	35.84					69.78	70.04	
WC11-57								103.12	103.27			111.46	112.2					143	143.47	
WC11-58C		103.86	105.46	106.26*	107.52	120.46	120.84	124.83*	126.22*			129.15	129.79					147.7	147.8	
WC12-01																				
WC12-03BS																				
WC12-03P																				
WC12-04																				
WC12-05																				
WC12-06																				
WC12-07BS																				
WC12-08BS																				
WC12-09BS																				
WC12-09BS2																				
WC12-10BS																				
WC12-10P																				
WC12-11BS																				
WC12-12																				
WC12-13																				
WC12-14																				
WC12-15																				
WC12-16																				
WC12-17																				
WC12-18																				
WC12-19																				
WC12-20																				
WC12-22																				
WC12-23																				
WC12-24																				
WC12-25																				

Notes: this table is compiled by L.R. LeMay. 'Burnt' indicates burned strata. One through five asterisks (*) indicate one through five rock partings within a given coal bed. A tilde (~) indicates that more than one intersection of a given coal bed is present within the borehole; only the shallowest intersection is here given. For additional information, refer to ***Table 5-****1. All depths are downhole depths, along borehole trajectory, given in metres below the borehole's collar.*

Coalbed roofs and floors in current boreholes (Part 5: floor of coal bed 532 to roof of coal bed 601): **Table A-6**

Borehole	532 Floor	510 Roof	510 Floor	501 Roof	501 Floor	500 Roof	500 Floor	502 Roof	502 Floor	520 Roof	520 Floor	541 Roof	541 Floor	540 Roof	540 Floor	630 Roof	630 Floor	610 Roof	610 Floor	601 Roof
MW11-01																		8.89	9	
WC08-100				32.94	38.18									43.45	43.76			47.03	47.43	
WC08-101		134.11	134.22	137.91	141.52									145.91	146.01			158.05	158.15	
WC08-102		84.2	84.65	84.65	84.8	84.8	87.25									92.7	92.95	93.7	93.8	
WC08-103																				
WC08-104		138.91	139.12	141.22	143.13											149.5	149.6	157.2	157.34	
WC08-105								89	90											
WC08-106		34.95	35.2	36.5	36.9	36.9	37	37	38.45							49.4	49.65	55	55.3	
WC08-107																				
WC08-108		87.1	87.35		88.9	89.1		89.45	90.55									110.3	110.6	
WC08-109		32.65	33	36	36.3			36.85	38.6							57.6	57.8	65.45	65.75	
WC08-110		96.7	97.15																	
WC08-111																				
WC08-112																				
WC08-113						216.17	217.02											229.8	230	
WC08-114				115.52	115.85			116.35	116.58									130.8*	131.4*	
WC08-115				96.35	96.7			97.2	98							120.6	120.9	127.05	127.25	127.9
WC10-01						148.9	152.2													
WC10-02						77.9	80.65													
WC10-03						0.6	3.2											17.2	17.76	
WC10-04		22.3	22.5	23.7	24	24	24.2	24.2	25.45							37.7	37.8	42.9	43.15	
WC10-05		31.65	31.85	34.1	34.2	34.85	35.7									48.5	48.65	55.4	55.55	
WC10-06		61.2	61.5					69.75	70.8					73.7	74.1			84.3	84.65	
WC10-07																				
WC10-08		123.05	123.15	129.45	129.8	129.8	130.2	130.2	130.45					131.65	131.95			140.8	140.9	
WC10-09																				
WC10-09B		189.3	189.4					196.2*	197.1*					198.2	198.4			203.75	203.95	
WC10-10		113.7	113.85					119.1	119.5									123.3	124.35	
WC10-11				101.75	101.9			102.7	103.68					108.6*	109.55*					
WC10-12				130.36	130.57			131.66	132.42					136.57*	137.45*	140	140.1			
WC10-13				78.52	79	79	79.79	79.79	80.41~											
WC10-14		110.25	100.35					118.3*	119.45*					119.95	120.02			126.2	126.7	
WC10-15		70	70.1	81.95	82.5	84.35*	85.5*	86.55	86.9									94.6	95.1	99.9
WC10-16	27.4			33.1	34.15	66.65	33.75	33.75	34.15					35.95	36.05			44	44.15	

Coalbed roofs and floors in current boreholes (Part 5: floor of coal bed 532 to roof of coal bed 601): **Table A-6 (continued)**

Borehole	532 Floor	510 Roof	510 Floor	501 Roof	501 Floor	500 Roof	500 Floor	502 Roof	502 Floor	520 Roof	520 Floor	541 Roof	541 Floor	540 Roof	540 Floor	630 Roof	630 Floor	610 Roof	610 Floor	601 Roof
WC10-17																				
WC10-18																				
WC10-19																				
WC10-20																				
WC10-22						110.1	112.69													
WC10-23				136.25	136.45			137	137.6											
WC10-24				154.55	154.72			155.21	156.15			160.29	160.75	161.51*	162.36*					
WC10-25																				
WC10-26				99.47	99.63			100.61	101.64					106.21	106.48					
WC10-27																				
WC10-28				10.55	14.8			17.6	20.4					23.05	25~					
WC10-29																				
WC10-30		73.85	73.9	76.85	77.18			78.49	79.46									91.05	91.37	
WC10-31																				
WC10-32		27.8	27.9					34.55	35.3					37.4	37.6			47.05	47.15	
WC10-33				127.34	127.45			127.95	129.05					134.1	134.2					
WC10-34		95.95	96.05					103.2*	104.4*					105	105.1			112.75	113	
WC10-35		55.65	55.85					64.85*	65.9*					67.2	67.3			71.25	71.65	
WC10-36														9.8	10			18	18.1	
WC10-37				115.7	115.83			116.87	117.81~	161.9	162			163.42*	164.57*					
WC10-39		123.35	123.73	127.22	133.38									139.45	139.55			147.2	147.5	158.5
WC10-40						121	129.5													
WC10-41																				
WC10-42																				
WC10-43						1.8	3.8											9.95	10.05	
WC10-45																		24.65	25	
WC10-46						114.1	116.8													
WC10-47						6.5	11.45													
WC10-48				160.45	160.55			161.4	162.22			166.31	166.59	170.18	170.28					
WC10-49				136.82	136.92			137.69	138.36					142.01*	143.15*					
WC10-52																				
WC10-53		124.05	124.55	127.45	128.6			128.6	129.1											
WC10-54																				
WC10-55																				
WC10-56																				

Coalbed roofs and floors in current boreholes (Part 5: floor of coal bed 532 to roof of coal bed 601): **Table A-6 (continued)**

Borehole	532 Floor	510 Roof	510 Floor	501 Roof	501 Floor	500 Roof	500 Floor	502 Roof	502 Floor	520 Roof	520 Floor	541 Roof	541 Floor	540 Roof	540 Floor	630 Roof	630 Floor	610 Roof	610 Floor	601 Roof
WC10-57		128.55	128.9	132.15	132.3	133.82	134.15	134.15	134.6					138.25	138.35			148.2	148.35	
WC10-58																				
WC10-59																				
WC10-60						192.2	195.7													
WC10-61																				
WC10-62						17	19.8													
WC10-63						187.45	190.3													
WC10-64																				
WC10-65				89.7	89.8			90.5	91.23					95.1	96.04					
WC10-66						174	174.66							177.55***	179.25***					
WC11-08																				
WC11-09		109	109.1	127.3	128.1			129.45	130.37					131.1	131.37			146.12	146.46	
WC11-10		71.92	72.21	81.85	81.95			82.95	83.17					83.92	94.22			89.06	89.8	
WC11-11		41.05	41.15	48.24	48.42			49.21	49.63					50.15	50.31			59.67	59.9	
WC11-12		60.38	60.5	70.98	71.18			71.91	72.07					73.04	73.16			77.07	77.46	
WC11-13		133.05	133.17	142.48	142.58			143.38	143.63					144.84	144.94			152.54	152.8	
WC11-14		8.98	9.14	15.94	16.21			16.74	16.95					18.27	18.32			22.93	23.17	
WC11-15		74.82	74.96	82.66	83	83	83.38	83.38	85.38					85.27	85.38			92.47	92.72	
WC11-16		68.95	69.05			74.37	75.49							77.47	77.68			87.98	88.23	
WC11-17		119.08	119.18					120.87	121.86									134.82	134.92	
WC11-19						9.67	10.48							17.13	17.37	21.08	21.18	28.41	28.57	
WC11-21		17.86	17.96			25.13	26.39							31.07	31.17			41.98	42.19	
WC11-26		42.28	42.38	45.1	45.2			47.35	48.45									63.17	63.27	
WC11-27		33.98	34.16	36.9	37			38.22	39.25									55.72	55.86	
WC11-29																				
WC11-30																				
WC11-31				74.8	75.11	75.11	75.25	75.25	75.78									87.9	88	
WC11-32		99.3	99.4	100.21	101.26	100.64	101.01											115.52	115.62	
WC11-33		66.33	66.5					70.45	71.58									90.36	90.46	
WC11-34		48.63	49.16	51.85	55.09	52.62	52.85									77.3	77.4	84.51	84.9	
WC11-35																				
WC11-36		19.48	19.58			20.98	22.55							31.52	31.62			36.88	36.98	38.76
WC11-37		118.7	118.8					120.05	122.05									135.25	135.52	
WC11-38		94.6	94.7	95.73	96.27	96.27	97.03	97.03	97.82					100.7	100.8			108.7	108.8	

Coalbed roofs and floors in current boreholes (Part 5: floor of coal bed 532 to roof of coal bed 601): **Table A-6 (continued)**

Borehole	532 Floor	510 Roof	510 Floor	501 Roof	501 Floor	500 Roof	500 Floor	502 Roof	502 Floor	520 Roof	520 Floor	541 Roof	541 Floor	540 Roof	540 Floor	630 Roof	630 Floor	610 Roof	610 Floor	601 Roof
WC11-39				41.05	43.08															
WC11-40		8.5	8.82	9.94	13.18									17.4	17.65			24.13	24.27	
WC11-41																				
WC11-42				34.4	36.6															
WC11-43		93.06	93.14	93.94	95.92	94.59	95	95	95.92					98.65	98.75			101.87	101.97	
WC11-44				129.44	131.03			133.47	134.53											
WC11-45																				
WC11-46																				
WC11-47																				
WC11-48				75.32	80.32													88.46	88.48	
WC11-49		76.83	78.13	80.58	80.68			80.99*	83.75											
WC11-50		30.41	30.65			37.66	42.85													
WC11-53		154.46	154.63			155.96	157.83							165	165.1					
WC11-54		92.98	93.19	94.23	96.86	95.33	95.78							100.65	100.92			111.77	112.76~	
WC11-55				36.51	39.12													43.93	44.06	
WC11-56		83.13	83.47	84.81	88.44	93.72	96.08													
WC11-57						156.96	160.2													
WC11-58C		154.46	154.63			155.96	157.83							165	165.1					
WC12-01						191.5	193.6													
WC12-03BS																				
WC12-03P																				
WC12-04						161.4	162													
WC12-05						84.7	86.2													
WC12-06						58	60.4													
WC12-07BS						18.9	21.8													
WC12-08BS																				
WC12-09BS																				
WC12-09BS2																				
WC12-10BS																				
WC12-10P																				
WC12-11BS				31.86	32.45	32.59	33.09													
WC12-12						124.7	125.7													
WC12-13																				
WC12-14						36.95	37.95													

Coalbed roofs and floors in current boreholes (Part 5: floor of coal bed 532 to roof of coal bed 601): **Table A-6 (concluded)**

Borehole	532 Floor	510 Roof	510 Floor	501 Roof	501 Floor	500 Roof	500 Floor	502 Roof	502 Floor	520 Roof	520 Floor	541 Roof	541 Floor	540 Roof	540 Floor	630 Roof	630 Floor	610 Roof	610 Floor	601 Roof
WC12-15																				
WC12-16						24.5	25.6													
WC12-17						11.35	12.6													
WC12-18						27.9	29													
WC12-19						138.3	138.9													
WC12-20						154.5	157.7													
WC12-22																				
WC12-23						56	58.7													
WC12-24						102.6	104.6													
WC12-25																				

Notes: this table is compiled by L.R. LeMay. 'Burnt' indicates burned strata. One through five asterisks (*) indicate one through five rock partings within a given coal bed. A tilde (~) indicates that more than one intersection of a given coal bed is present within the borehole; only the shallowest intersection is here given. For additional information, refer to ***Table 5-****1. All depths are downhole depths, along borehole trajectory, given in metres below the borehole's collar.*

Coalbed roofs and floors in current boreholes (Part 6: floor of coal bed 601 to roof of coal bed 721): **Table A-7**

Borehole	601 Floor	600 Roof	600 Floor	602 Roof	602 Floor	640 Roof	640 Floor	770 Roof	770 Floor	750 Roof	750 Floor	730 Roof	730 Floor	710 Roof	710 Floor	700 Roof	700 Floor	702 Roof	702 Floor	721 Roof
MW11-01		13.13	16.34																	
WC08-100		57.62	59.92					70.8	70.9	74.5	74.6			133.98*	139.24	139.6	147.08			
WC08-101		159	160.31					165.98	166.09	168.95	169.05			177.75	177.85	179.68	182.33	182.33	183.9	
WC08-102		98.85	105.2																	
WC08-103						4.75	4.95	5.25	5.8	10.35	10.65	17.8	18.1			24.5	27.75			
WC08-104		162.19	165.26			169.17	169.27	169.79	169.93	172.5	172.63			194.98*	196.3*	198.27	205.36	205.55	206	
WC08-105																				
WC08-106		57.9*	60.85*																	
WC08-107																				
WC08-108		114.5*	117*	117	117.4	122.6	122.7	123.15	123.25	124.7	125			136.65	137.3	138.55	142.85			
WC08-109		69.2*	72.75*	72.75	73.25	79.95	80.1	80.35	80.7	83.4	83.7			99.4	100.1	101.9	107.05			
WC08-110																				
WC08-111																				
WC08-112																				
WC08-113		233.4	235.33	235.81	235.92															
WC08-114		135.36	136.67	137.15	137.25					142.8	142.9			152.52	152.86	166.35	169.44	168.93	169.44	
WC08-115	132.1																			

Coalbed roofs and floors in current boreholes (Part 6: floor of coal bed 601 to roof of coal bed 721): **Table A-7 (continued)**

Borehole	601 Floor	600 roof	600 Floor	602 Roof	602 Floor	640 Roof	640 Floor	770 roof	770 Floor	750 Roof	750 Floor	730 Roof	730 Floor	710 Roof	710 Floor	700 roof	700 Floor	702 Roof	702 Floor	721 Roof
WC10-01		160.35	161.95																	
WC10-02		86.7	89.4													134.8	141.4			
WC10-03		20.21	24.27					30.96	31.84	36.42	37.07			67.85*	69.05*	69.93	74.98	75.43	75.6	
WC10-04		45.2*	48.2*	48.2	48.45	53.2	53.3	54.1	54.3	56.65	57			70.85**	71.45**	72.4	76.45	76.9	77	
WC10-05		57.5*	60.15*	60.15	60.5			66.45	66.55	68.8	68.9			81.5	82	83.15	87.02	87.45	87.6	
WC10-06		87.3*	89.8*	89.8	90.05			97.9	98	99.5	99.6			108.2	109	125.7	129.35	129.9	130	
WC10-07																				
WC10-08		145.1	147	147.4	147.55			154.95	155.05	156.1	156.25			165.1	165.6	184.2	187	187.8	187.9	190
WC10-09																				
WC10-09B		207.87	209.78	210.9	211.14															
WC10-10		129.75**	132.55**																	
WC10-11		118.38	119.87	121.3	121.46							126.75	126.85	141.22	142.18	145.47*	147.6	147.6	149.1	149.1
WC10-12		150.22	151.28	152.55	152.65							159.44	159.78	169.2	169.84	171.48*	173.04*	173.04	174.64	174.64
WC10-13		105.07	106.72					110	110.1			119.4	119.5	126.51	127.36	131.22*	133.2	133.2	135.58	135.58
WC10-14		129.3	131.15	132	132.2			138.9	139	140.4	140.55			153.1	153.7	164	167.2	167.65	167.8	179.3
WC10-15	100	100.45	103.3	104.7	105			117.35	117.45	118.65	118.95			130.3	131	141.9	145.35	145.9	146	
WC10-16		46.65	49.15	49.7	49.9			58.65	58.75	60	60.1			67.8	68.4	89.6	92.72	93.65	93.8	
WC10-17																				
WC10-18										5.8	7			37.8	39.02	45.35**	66.82**			67.38
WC10-19																				
WC10-20																				
WC10-22		120.75	123.1~													159	165.8			
WC10-23		150.7	152.05											173.18	173.97~	192.09	195.27			
WC10-24		178.88	180.31					187.64	187.74					195.02	195.88	200.84*	203.5*	203.5	205.32	205.75
WC10-25																				
WC10-26		119.16	120.15	123.02	123.14			126.67	127.06	130.45	130.55			137.58	138.48	140.76	145.05			
WC10-27																				
WC10-28																				
WC10-29		87.02	90.5	90.5	91.03	96.77	96.98	98.9	99.15	108.15	108.52					119.62	124.6			125
WC10-30		93.92	96.1	97.7	97.75															
WC10-31								5.76	6.86	8.53	8.84			29.8*	33.25*	34.44	43.19			48.05
WC10-32		49.65	52.25	52.25	52.5			59.7	59.8	61	61.1			69.05	69.6	89.7	92.05	92.8	92.9	
WC10-33		145.56	147.13	148.1	148.2			151.46	151.53	153.8	153.9			165.2	166.3~	177.9	179.02	179.02	181.6~	181.97
WC10-34		115.85	117.85	118.7	118.8			126.75	126.95	128.35	128.5			139	139.55	147.9	151.2			161.5

Coalbed roofs and floors in current boreholes (Part 6: floor of coal bed 601 to roof of coal bed 721): **Table A-7 (continued)**

Borehole	601 Floor	600 roof	600 Floor	602 Roof	602 Floor	640 Roof	640 Floor	770 roof	770 Floor	750 Roof	750 Floor	730 Roof	730 Floor	710 Roof	710 Floor	700 roof	700 Floor	702 Roof	702 Floor	721 Roof
WC10-35		74.25	76.45	77.3	77.6			84.65	84.8	85.65	85.9			94.5	95.1	107.25	111.2	112	112.15	
WC10-36		20.7	23.25	23.65	23.9			30.05	30.15	31.95	32.05			44.2	44.7	46.3	50.32	50.75	50.95	
WC10-37		173.1	173.96	176.3	176.4					183.25	183.35			190.46	191.07	192.56	195.9			
WC10-39	158.8	159.2	162.85	163.4	164.21			175.1	176.22	182.8	183.4									
WC10-40		146.4	148.15													174.4	178.9			
WC10-41		3.9	7.65	8.2	8.55	16.6	16.9	18.55	18.7	19.55	19.8			33.9	34.6	35.75	40.1	40.9	41.1	
WC10-42																				
WC10-43		14.01	17.52					24.94	25.23	27.1	27.15			39.31*	41.82*	42.58	47.6			
WC10-45		26.25	28.85	29.6	29.9			37.15	37.3	39	39.2			54.45	55.3	57.8**	61.45**			
WC10-46		128.6*	133.85*													161.6	163.8			
WC10-47		22.1	26.7											61.3	61.95	70.35	79.8			
WC10-48		185.5	186.51	188.1	188.12					194.26	194.36			201	201.75	205.66	206.96	208.4	210.3	210.64
WC10-49		158.3	159.47							166.64				172.51	173.34~	185.86	186.98	188.25	190.02	190.45
WC10-52																				
WC10-53		158.39*	162.81*	162.81	163.42			173.15	173.4	174.5	175.15									
WC10-54																				
WC10-55																				
WC10-56																110.3	116.85			
WC10-57		152.73*	154.8*	154.8	155.15					163.8	164.1			181.96	182.68	187.46	191.73			200.05
WC10-58																				
WC10-59																				
WC10-60		205.05	206.95													229.6	234.65			
WC10-61																				
WC10-62		27	28.9													56.1	60.8			
WC10-63		198.9	200.5													217.9	221.05			
WC10-64																				
WC10-65		110.32	111.55	112.43	112.53					117.1	117.2~			136.04	136.84	143.33*	145.07*	145.07	147~	147.35
WC10-66		185.75	186.49	187.41	187.63			188.07	188.52											
WC11-08																				
WC11-09		150.2	152.07	153.16	153.26			159.5	159.6	161.2	161.3			175.86	176.4	180.34	183.52	184.15	184.25	
WC11-10		92.53	94.66	95.67	95.77			104.3	104.4	106.1	106.2			116.37	116.93	126.21	129.21	130.41	130.59	141.29
WC11-11		62.64	64.75					73	73.1	74.7	74.8			86.1	86.7	93.73	97.07			
WC11-12		80.53	82.68	83.86	83.94			91.65	91.75	93.75	93.85			103.03	103.56	114.16	118.52	119.31	119.46	
WC11-13		156.13	158.26	159.49	159.59			167.2	167.3	168.7	168.8			180.03	180.61	188.16	191.92			200.06

Coalbed roofs and floors in current boreholes (Part 6: floor of coal bed 601 to roof of coal bed 721): **Table A-7 (continued)**

Borehole	601 Floor	600 roof	600 Floor	602 Roof	602 Floor	640 Roof	640 Floor	770 roof	770 Floor	750 Roof	750 Floor	730 Roof	730 Floor	710 Roof	710 Floor	700 roof	700 Floor	702 Roof	702 Floor	721 Roof
WC11-14		25.36	27.82	28.66	28.74			36.1	36.2	37.45	37.55			45.48	46.04	61.71	65.72	66.56	66.67	78.23
WC11-15		96.08	98.38	99.11	99.42			107.47	107.57	108.83	108.93			116.73	117.3	134	137.13	137.73	137.83	
WC11-16		90.53	92.63	93	93.13			100.8	100.9	102.15	102.25			110.87	111.37	128.68	132.2	132.66	132.78	134.52
WC11-17		139.58	141.39	141.71	141.86			149.62	149.81	151.41	151.51			159.48						
WC11-19		30.15	32.68	33.12	33.27			40.78	40.88	42.53	42.63			53.78	54.26	55.93	59.64			
WC11-21		44.06	46.72	47.18	47.39			54.89	54.99	57.26	57.42			69.76	70.37	75.54	79.58			
WC11-26		67.07	69.51	69.51	69.92			76.38	76.48	78.26	78.36			87.56	88.67	104.74	108.46			
WC11-27		58.16	60.66	61	61.2			68.2	68.3	70.05	70.15			80.26	80.86	86.5	89.86			
WC11-29																				
WC11-30																				
WC11-31		95.12	96.46	97.13	97.23			101.3	101.4	102.8	102.9			115.13	115.75	126.08	129.82			
WC11-32		120.62	123.23~	127.75	128.19	140.06	140.16	141.78	141.88	144.22	144.82			196.19	197.26	204	209.33			221.71
WC11-33		95.02	97.27	97.69	97.95			104.28	104.38	107.2	107.3			119.76	120.54	123.79	129.06			
WC11-34		90.44	94.63	94.74	95.2	102.47	102.857			106.15	106.33			123.55	124.29	126	131.17			
WC11-35																				
WC11-36	41.37			41.7	42.03			46.79	46.89	49.4	49.5			64.79**	65.42**	66.53	71.04			
WC11-37		136.83	139.77					144.03	144.13					162.68*	163.52	164.41	168.72			
WC11-38		111.13	114.38					118.3	118.62	121.35	121.45			138.28*	139.2*	139.97	144.3			
WC11-39		53.87	56.97	57.17				62.98	63.3	64.45	64.55			80.86*	82.8*	83.56	101.7			102.3
WC11-40		29.63	34.35					43.62	44.61	49.35	51.35			82.56*	85.2*	86.16	92.94			93.4
WC11-41		2	4.63	4.63	5.15			14.3	14.85	17.35	17.75			36.93*	39.17*	39.88	45.95			
WC11-42		46	48.8					56.7	57.05	58.6	58.7			70.92*	73*	73.86	77.87			
WC11-43		106.2	108.37	108.37	108.92			114.82	115.34	117.4	117.5			129.32*	131.4*	132.14	134.86	134.86	136.24	
WC11-44		171.21	172.85																	
WC11-45														10.02*	12.45*	13.24	18.2			
WC11-46																				
WC11-47																1.2	6.33			
WC11-48		96.22	100.94~~					128.65	129	130.81	131.05			148.16*	154.72	155.51	160.76			
WC11-49		146.12*	166.48					175.48	175.72	177.33	177.52			188.84	189.04	193.14	197.78			
WC11-50		57.28	58.98	58.98	59.36			62.95	93.05	65.3	65.47	73.85	74.05~	98.11	98.21	98.37	105.35			106.05
WC11-53		184.32	187.32					193.12*	193.83*	195.05	195.23			210.7	211.5	213	217.85			
WC11-54		115.07	117.63~					143.35	143.45	146.71	147.05			162*	166.82*	167.25	172.82			
WC11-55		49.5	52.78~	69.75	69.96									122.32*	126.11	126.72	141.4	141.4	141.85	
WC11-56		108.22	109.66~					125.25	125.35	126.92	127.07			134.55	134.73	141.95	146.06			

Coalbed roofs and floors in current boreholes (Part 6: floor of coal bed 601 to roof of coal bed 721): **Table A-7 (concluded)**

Borehole	601 Floor	600 roof	600 Floor	602 Roof	602 Floor	640 Roof	640 Floor	770 roof	770 Floor	750 Roof	750 Floor	730 Roof	730 Floor	710 Roof	710 Floor	700 roof	700 Floor	702 Roof	702 Floor	721 Roof
WC11-57		179.98	184.15					189.59	189.78	192.5	192.6			203	203.19	206.3	210.05			
WC11-58C		184.32	187.32					193.12*	193.83	195.05	195.23									
WC12-01		204.2	206.2											229.6	230.4	235.2	238.5			
WC12-03BS																38.86***	43.78***			
WC12-03P		7.95	11.3													37.87	42.49			
WC12-04		178	179.4											199.8	200.5	209.2	212.3			
WC12-05		100.3	101.8											124.2	124.9	128	132.2			
WC12-06		71.7	75.6													104.1	108.7			
WC12-07BS		31.5	34.7																	
WC12-08BS														12.5	13.2	14.3	18.6			
WC12-09BS		12.84***	15.7***													46.33	47.44			
WC12-09BS2		10.1	12.8											37.7	38.1	40.7	44.8			
WC12-10BS		9.71***	12.26***	12.83	13.16															
WC12-10P		10	12.5																	
WC12-11BS																				
WC12-12		141.8	144.8											161.5	162.3	178	181.5			
WC12-13																22.18	26.15			
WC12-14		54.8	57.9											73.5	74.2	88.2	91.7			
WC12-15																13.4	16			
WC12-16		40.5	53.2											72.9	73.8	88.5	93			
WC12-17		25.8	29.2											46.5	47.2	52.6	55.9			
WC12-18		52.7	55.9											77.1	77.8	78.7	82.9			
WC12-19		148.8	151.4													171.1	176.2			
WC12-20		174.2	176.9													197.8	203.2~			
WC12-22		154.9	157													177.7	181.9			
WC12-23		66.4	69.1													98.3	102.7			
WC12-24		116.8	120											151.7	152.5	155.5	164.7			
WC12-25																				

Notes: this table is compiled by L.R. LeMay. 'Burnt' indicates burned strata. One through five asterisks (*) indicate one through five rock partings within a given coal bed. A tilde (~) indicates that more than one intersection of a given coal bed is present within the borehole; only the shallowest intersection is here given. For additional information, refer to ***Table 5-****1. All depths are downhole depths, along borehole trajectory, given in metres below the borehole's collar.*

Coalbed roofs and floors in current boreholes (Part 7: floor of coal bed 721 to floor of coal bed 910): **Table A-8**

Borehole	721 Floor	720 Roof	720 Floor	722 Roof	722 Floor	740 Roof	740 Floor	760 Roof	760 Floor	800 Roof	800 Floor	802 Roof	802 Floor	820 Roof	820 Floor	840 Roof	840 Floor	880 Roof	880 Floor	910 Roof	910 Floor
MW11-01																					
WC08-100			155.09	155.95	156.43																
WC08-101			188.2	188.75	188.85																
WC08-102																					
WC08-103																					
WC08-104			219.54	220.24	220.59																
WC08-105																					
WC08-106																					
WC08-107																					
WC08-108			154.9			159.35*	160.35*														
WC08-109																					
WC08-110																					
WC08-111																					
WC08-112																					
WC08-113																					
WC08-114			187.93	187.93	188.42	192.62	193.34	198.32*	201.44*												
WC08-115																					
WC10-01																					
WC10-02			150.1																		
WC10-03			79.48	80.31	80.65	88.3	88.5	97	97.15	130	130.35										
WC10-04			83.6*			88.4*	89.45*														
WC10-05			98.8			103.55*	104.65*	109.95*	112.1**	142.4	142.65										
WC10-06			133.45*			139.95*	141*	143.25*	145.6**												
WC10-07																					
WC10-08	190.25	190.25*	191.85*			199.45*	202**	202.85*	204.15*												
WC10-09																					
WC10-09B																					
WC10-10																					
WC10-11	149.46																				
WC10-12	175.03	188.95*	190.26*			193.39*	195.37*														
WC10-13	135.79																				
WC10-14	179.6	179.6	181.65			187.35*	188.35*	189.3*	191.95*												
WC10-15		156.5	158.4			164.7**	167**	167.95*	169.4*												
WC10-16		97.1*	99.1*																		
WC10-17																					
WC10-18	67.6	70.24	71.41	72.81	73.2	91.8*	104.25*														
WC10-19																					
WC10-20								2.25	2.55	38.08	38.6										

Coalbed roofs and floors in current boreholes (Part 7: floor of coal bed 721 to floor of coal bed 910): **Table A-8 (continued)**

Borehole	721 Floor	720 Roof	720 Floor	722 Roof	722 Floor	740 Roof	740 Floor	760 Roof	760 Floor	800 Roof	800 Floor	802 Roof	802 Floor	820 Roof	820 Floor	840 Roof	840 Floor	880 Roof	880 Floor	910 Roof	910 Floor
WC10-22		172.3	173.6																		
WC10-23		209.3**	210.3**			217.5*	219.7*														
WC10-24	205.85																				
WC10-25																					
WC10-26																					
WC10-27																					
WC10-28																					
WC10-29	125.16	129.97	131.52	132.09	132.31																
WC10-30																					
WC10-31	48.7	52.55	54.1	54.6	55	64.1	64.2														
WC10-32		94.65**	96.65**																		
WC10-33	182.25	194.2	194.55			198.05	198.8	201.45	210.83												
WC10-34	161.75	163.65	164.55			170.2	170.4	172*	176.05	210.8	211.05										
WC10-35		123.35	125.35			131.5*	133.9*	134.55	136.05												
WC10-36		61.9**	63.95			70.2*	71.6*	76.45*	76.75*												
WC10-37		203.25	203.79			216.2*	218.45														
WC10-39																					
WC10-40		184.95	186.3																		
WC10-41		48.65*	50.5*			56.1**	59.7**	62.45*	64.6**												
WC10-42		20.62*	22.58*	22.58	23.03	28.95*	33.5**	38.85*	42.62*	78.95	79.3										
WC10-43		51.2	52.51	53.04	53.18	59.85	60	76.38	76.62												
WC10-45		75.95**	78.5**			86.3	86.5														
WC10-46		171.4	172.5																		
WC10-47		90.5	92.7																		
WC10-48	210.74																				
WC10-49	190.55	200.13	200.7			205.61	205.83														
WC10-52																					
WC10-53																					
WC10-54																					
WC10-55																					
WC10-56		119.95	121.8																		
WC10-57	200.47	200.47*	202.29*																		
WC10-58																					
WC10-59										69.85	70.2										
WC10-60		244.35	245.5																		
WC10-61																					
WC10-62		73.05	74.4																		

Coalbed roofs and floors in current boreholes (Part 7: floor of coal bed 721 to floor of coal bed 910): **Table A-8 (continued)**

Borehole	721 Floor	720 Roof	720 Floor	722 Roof	722 Floor	740 Roof	740 Floor	760 Roof	760 Floor	800 Roof	800 Floor	802 Roof	802 Floor	820 Roof	820 Floor	840 Roof	840 Floor	880 Roof	880 Floor	910 Roof	910 Floor
WC10-63		230.4	231.3																		
WC10-64																					
WC10-65	147.51	160.37*	161.79*			164.88*	166.3*	167.39	167.71	207	207.22										
WC10-66																					
WC11-08																					
WC11-09																					
WC11-10	141.58	141.93	143.43			148.61**	151														
WC11-11		114.00	114.97			118.52	118.71														
WC11-12																					
WC11-13	200.34	200.34*	202.19*																		
WC11-14	78.58	78.58	80.18			87.28**	89.5**	90.92*	92.21*												
WC11-15		143.97	145.93			153.72****	158.52****														
WC11-16	134.86	134.86	136.36			143.23****	148.61****			177	177.39										
WC11-17		182.9	184.7																		
WC11-19		69.57**	71.16	71.16	71.46	76.3*	81.15*														
WC11-21		88.57	89.82	90.34	90.64																
WC11-26		110.52**	112.39			117.83*	118.64	125.08	125.25												
WC11-27		94.76	96.5			102.32	102.42														
WC11-29																					
WC11-30																					
WC11-31		149.35**	150.57*	150.57	150.82	155.36	155.54~														
WC11-32	222	222.49*	224.53*																		
WC11-33		137*****	139.14*****			145.5	145.95														
WC11-34		141.35	142.82	143.38	143.76	150.68	150.78														
WC11-35																					
WC11-36		75.63	76.44	77.06	77.27																
WC11-37		171.73	172.82	173.61	173.71																
WC11-38		147.58	148.78	149.5	149.65																
WC11-39	103.15	111.25	113.6	114.1	144.5																
WC11-40	93.6	97.88	99.93	100.41	100.87	111.74	111.95	123.64	123.82	158.65	159.15										
WC11-41		49.35	50.75	51.43	51.63																
WC11-42		81.12	82.53	83.5	83.6																
WC11-43		142.59	143.73	144.29	144.39																
WC11-44																					
WC11-45		21.72	23.02	23.66	23.84	31.45	31.55	46.3*	49.85*												

Coalbed roofs and floors in current boreholes (Part 7: floor of coal bed 721 to floor of coal bed 910): **Table A-8 (concluded)**

Borehole	721 Floor	720 Roof	720 Floor	722 Roof	722 Floor	740 Roof	740 Floor	760 Roof	760 Floor	800 Roof	800 Floor	802 Roof	802 Floor	820 Roof	820 Floor	840 Roof	840 Floor	880 Roof	880 Floor	910 Roof	910 Floor
WC11-46								13.48	13.88	49.42	49.71										
WC11-47		9.14	10.44	11.3	11.48	22.19	22.29	30.49*	35.15*												
WC11-48		162.95	164.94	165.9	166.12																
WC11-49		200.51	201.23	201.51	201.95																
WC11-50	106.18	111.2	112.09	113.7	113.88	122.75	122.85														
WC11-53		224.2	224.8																		
WC11-54		177.3	178.91	178.91	179.33																
WC11-55		147.98	149.84	150.47	150.78	160.5	160.6														
WC11-56		148.87	149.91																		
WC11-57		213.15	214.17	214.75	214.85~																
WC11-58C																					
WC12-01																					
WC12-03BS		47.14	48.71																		
WC12-03P		45.84	47.33																		
WC12-04		224.2	225.2																		
WC12-05		146.3	147.5																		
WC12-06		113.2	114.4																		
WC12-07BS																					
WC12-08BS		27.5	28.8																		
WC12-09BS		54.64****	57.05****																		
WC12-09BS2																					
WC12-10BS																					
WC12-10P																					
WC12-11BS																					
WC12-12		183.3	185.2																		
WC12-13		33.45	35.42																		
WC12-14		93.9	96																		
WC12-15		21.8	22.4																		
WC12-16		99.3	102.1																		
WC12-17		65.8	68																		
WC12-18		92.9	94.8																		
WC12-19		178.4	179.4																		
WC12-20		218.3	220																		
WC12-22		184.6	186.3																		
WC12-23		104.9	106.2																		
WC12-24		175.2	*no data*																		
WC12-25																					

Notes: this table is compiled by L.R. LeMay. 'Burnt' indicates burned strata. One through five asterisks (*) indicate one through five rock partings within a given coal bed. A tilde (~) indicates that more than one intersection of a given coal bed is present within the borehole; only the shallowest intersection is here given. For additional information, refer to ***Table 5-****1. All depths are downhole depths, along borehole trajectory, given in metres below the borehole's collar.*

Coalbed roofs and floors in current boreholes (Part 8: roof of coal bed 900 to roof of coal bed 1120): **Table A-9**

Borehole	900 Roof	900 Floor	920 Roof	920 Floor	940 Roof	940 Floor	1010 Roof	1010 Floor	1000 Roof	1000 Floor	1020 Roof	1020 Floor	1110 Roof	1110 Floor	1100 Roof	1100 Floor	1121 Roof	1121 Floor	1120 Roof
MW11-01																			
WC08-100																			
WC08-101																			
WC08-102																			
WC08-103																			
WC08-104																			
WC08-105																			
WC08-106																			
WC08-107																			
WC08-108																			
WC08-109																			
WC08-110																			
WC08-111																			
WC08-112																			
WC08-113																			
WC08-114																			
WC08-115																			
WC10-01																			
WC10-02																			
WC10-03																			
WC10-04																			
WC10-05																			
WC10-06																			
WC10-07																			
WC10-08																			
WC10-09																			
WC10-09B																			
WC10-10																			
WC10-11																			
WC10-12																			
WC10-13																			
WC10-14																			
WC10-15																			
WC10-16																			
WC10-17																			

Coalbed roofs and floors in current boreholes (Part 8: roof of coal bed 900 to roof of coal bed 1120): **Table A-9 (continued)**

Borehole	900 Roof	900 Floor	920 Roof	920 Floor	940 Roof	940 Floor	1010 Roof	1010 Floor	1000 Roof	1000 Floor	1020 Roof	1020 Floor	1110 Roof	1110 Floor	1100 Roof	1100 Floor	1121 Roof	1121 Floor	1120 Roof
WC10-18																			
WC10-19	11.25	11.5	14.75	14.85					42.8	43.2	46	46.22	62.85	63.4	67.68	68.19			73.68
WC10-20	55.42	55.8							84.05	84.68	88.74	89.2							
WC10-22																			
WC10-23																			
WC10-24																			
WC10-25																			
WC10-26																			
WC10-27																			
WC10-28																			
WC10-29																			
WC10-30																			
WC10-31																			
WC10-32																			
WC10-33																			
WC10-34	226.15	226.5																	
WC10-35																			
WC10-36																			
WC10-37																			
WC10-39																			
WC10-40																			
WC10-41																			
WC10-42	94.7	95							121.25	121.72									
WC10-43																			
WC10-45																			
WC10-46																			
WC10-47																			
WC10-48																			
WC10-49																			
WC10-52																			
WC10-53																			
WC10-54									23.22	23.8			46.18	46.78	52.63	53.05			
WC10-55													10.8	11.1	18.05	18.55	21.6	21.7	22.75
WC10-56																			
WC10-57																			

Coalbed roofs and floors in current boreholes (Part 8: roof of coal bed 900 to roof of coal bed 1120): **Table A-9 (continued)**

Borehole	900 Roof	900 Floor	920 Roof	920 Floor	940 Roof	940 Floor	1010 Roof	1010 Floor	1000 Roof	1000 Floor	1020 Roof	1020 Floor	1110 Roof	1110 Floor	1100 Roof	1100 Floor	1121 Roof	1121 Floor	1120 Roof
WC10-58																			
WC10-59	85.85	86.1																	
WC10-60																			
WC10-61																			
WC10-62																			
WC10-63																			
WC10-64																			
WC10-65																			
WC10-66																			
WC11-08																			
WC11-09																			
WC11-10																			
WC11-11																			
WC11-12																			
WC11-13																			
WC11-14																			
WC11-15																			
WC11-16	192.57	192.82																	
WC11-17																			
WC11-19																			
WC11-21																			
WC11-26																			
WC11-27																			
WC11-29																			
WC11-30																			
WC11-31																			
WC11-32																			
WC11-33																			
WC11-34																			
WC11-35																			
WC11-36																			
WC11-37																			
WC11-38																			
WC11-39																			

Coalbed roofs and floors in current boreholes (Part 8: roof of coal bed 900 to roof of coal bed 1120): **Table A-9 (continued)**

Borehole	900 Roof	900 Floor	920 Roof	920 Floor	940 Roof	940 Floor	1010 Roof	1010 Floor	1000 Roof	1000 Floor	1020 Roof	1020 Floor	1110 Roof	1110 Floor	1100 Roof	1100 Floor	1121 Roof	1121 Floor	1120 Roof
WC11-40																			
WC11-41																			
WC11-42																			
WC11-43																			
WC11-44																			
WC11-45																			
WC11-46	64.8	64.9	67.3	67.4	70.52	70.62													
WC11-47																			
WC11-48																			
WC11-49																			
WC11-50																			
WC11-53																			
WC11-54																			
WC11-55																			
WC11-56																			
WC11-57																			
WC11-58C																			
WC12-01																			
WC12-03BS																			
WC12-03P																			
WC12-04																			
WC12-05																			
WC12-06																			
WC12-07BS																			
WC12-08BS																			
WC12-09BS																			
WC12-09BS2																			
WC12-10BS																			
WC12-10P																			
WC12-11BS																			
WC12-12																			
WC12-13																			
WC12-14																			

Coalbed roofs and floors in current boreholes (Part 8: roof of coal bed 900 to roof of coal bed 1120): **Table A-9 (concluded)**

Borehole	900 Roof	900 Floor	920 Roof	920 Floor	940 Roof	940 Floor	1010 Roof	1010 Floor	1000 Roof	1000 Floor	1020 Roof	1020 Floor	1110 Roof	1110 Floor	1100 Roof	1100 Floor	1121 Roof	1121 Floor	1120 Roof
WC12-15																			
WC12-16																			
WC12-17																			
WC12-18																			
WC12-19																			
WC12-20																			
WC12-22																			
WC12-23																			
WC12-24																			
WC12-25																			

Notes: this table is compiled by L.R. LeMay. 'Burnt' indicates burned strata. One through five asterisks (*) indicate one through five rock partings within a given coal bed. A tilde (~) indicates that more than one intersection of a given coal bed is present within the borehole; only the shallowest intersection is here given. For additional information, refer to ***Table 5-****1. All depths are downhole depths, along borehole trajectory, given in metres below the borehole's collar.*

Coalbed roofs and floors in current boreholes (Part 9: floor of coal bed 1120 to floor of coal bed 1220): **Table A-10**

Borehole	1120 Floor	1122 Roof	1122 Floor	1140 Roof	1140 Floor	1210 Roof	1210 Floor	1200 Roof	1200 Floor	1220 Roof	1220 Floor	Total Depth
MW11-01												24.46
WC08-100												161.54
WC08-101												201.77
WC08-102												108
WC08-103												28
WC08-104												228.66
WC08-105												92
WC08-106												67
WC08-107												174
WC08-108												165
WC08-109												117
WC08-110												104
WC08-111												76.5
WC08-112												100.16
WC08-113												243.84
WC08-114												215.49
WC08-115												135
WC10-01												167.64
WC10-02												201.16
WC10-03												146.3
WC10-04												93.89
WC10-05												151.56
WC10-06												151.72
WC10-07												45.7
WC10-08												207
WC10-09												33.5
WC10-09B												225.52
WC10-10												140
WC10-11												158.49
WC10-12												200.55
WC10-13												140.2
WC10-14												197.45
WC10-15												179.12
WC10-16												105.45
WC10-17												17
WC10-18												121.92

Coalbed roofs and floors in current boreholes (Part 9: floor of coal bed 1120 to floor of coal bed 1220): **Table A-10 (continued)**

Borehole	1120 Floor	1122 Roof	1122 Floor	1140 Roof	1140 Floor	1210 Roof	1210 Floor	1200 Roof	1200 Floor	1220 Roof	1220 Floor	Total Depth
WC10-19	73.77	76.37	76.5	87.04	87.5			110.32	110.7	112	112.2	145.2
WC10-20												97.53
WC10-22												185.92
WC10-23												222.5
WC10-24												207.26
WC10-25												207.26
WC10-26												149.85
WC10-27												100.6
WC10-28												171.84
WC10-29												137.16
WC10-30												103.63
WC10-31												73.15
WC10-32												102.98
WC10-33												216.4
WC10-34												231.6
WC10-35												142.09
WC10-36												93.77
WC10-37												222.5
WC10-39												243.84
WC10-40												198.12
WC10-41												65.91
WC10-42												146.3
WC10-43												91.44
WC10-45												87.68
WC10-46												178.6
WC10-47												100.58
WC10-48												219.45
WC10-49												210.31
WC10-52												124.96
WC10-53												198.12
WC10-54												60
WC10-55	22.85	27.75	27.85	38.9	39.4	59.1	59.2	70	70.3	71.25	71.45	106.68
WC10-56												152.4
WC10-57												210.31
WC10-58												124.96

Coalbed roofs and floors in current boreholes (Part 9: floor of coalbed 1120 to floor of coal bed 1220): **Table A-10 (continued)**

Borehole	1120 Floor	1122 Roof	1122 Floor	1140 Roof	1140 Floor	1210 Roof	1210 Floor	1200 Roof	1200 Floor	1220 Roof	1220 Floor	Total Depth
WC10-59												106.68
WC10-60												262.13
WC10-61												97.53
WC10-62												91.44
WC10-63												277.36
WC10-64												140.2
WC10-65												216.4
WC10-66												213.36
WC11-08												146.3
WC11-09												194.24
WC11-10												152.4
WC11-11												121.92
WC11-12												137.16
WC11-13												207.24
WC11-14												106.68
WC11-15												179.83
WC11-16												211.97
WC11-17												192.02
WC11-19												82.28
WC11-21												97.53
WC11-26												128.01
WC11-27												103.63
WC11-29												3.28
WC11-30												9.14
WC11-31												182.88
WC11-32												231.64
WC11-33												149.35
WC11-34												155.44
WC11-35												24.4
WC11-36												85.34
WC11-37												179.83
WC11-38												161.54
WC11-39												121.92
WC11-40												167.64
WC11-41												57.91

Coalbed roofs and floors in current boreholes (Part 9: floor of coal bed 1120 to floor of coal bed 1220): **Table A-10 (continued)**

Borehole	1120 Floor	1122 Roof	1122 Floor	1140 Roof	1140 Floor	1210 Roof	1210 Floor	1200 Roof	1200 Floor	1220 Roof	1220 Floor	Total Depth
WC11-42												97.53
WC11-43												170.68
WC11-44												198.11
WC11-45												70.1
WC11-46												76.2
WC11-47												60.96
WC11-48												172.65
WC11-49												207.26
WC11-50												132.58
WC11-53												251
WC11-54												185.92
WC11-55												170.69
WC11-56												158.49
WC11-57												232.09
WC11-58C												233.63
WC12-01												259.08
WC12-03BS												49.27
WC12-03P												48.77
WC12-04												240.79
WC12-05												169.16
WC12-06												121
WC12-07BS												35.66
WC12-08BS												30.17
WC12-09BS												58.52
WC12-09BS2												45.18
WC12-10BS												13.71
WC12-10P												18.28
WC12-11BS												33.83
WC12-12												201.16
WC12-13												39.62
WC12-14												161.54
WC12-15												51.82
WC12-16												134.11
WC12-17												73.15
WC12-18												103.63

Coalbed roofs and floors in current boreholes (Part 9: roof of coal bed 1122 to floor of coal bed 1220): **Table A-10 (concluded)**

Borehole	1120 Floor	1122 Roof	1122 Floor	1140 Roof	1140 Floor	1210 Roof	1210 Floor	1200 Roof	1200 Floor	1220 Roof	1220 Floor	Total Depth
WC12-19												210.31
WC12-20												228.6
WC12-22												201.16
WC12-23												161.54
WC12-24												236.22
WC12-25												100.58

Notes: this table is compiled by L.R. LeMay. 'Burnt' indicates burned strata. One through five asterisks (*) indicate one through five rock partings within a given coal bed. A tilde (~) indicates that more than one intersection of a given coal bed is present within the borehole; only the shallowest intersection is here given. For additional information, refer to ***Table 5-****1. All depths are downhole depths, along borehole trajectory, given in metres below the borehole's collar.*

Appendix B: Raw coal quality data

This appendix presents scanned copies (presented in PDF format on a CD) of instructions to assayers, a sample inventory (replicated within **Table B-1**), and associated analytical results (summarised also within **Table B-1**)for raw coal samples taken from borehole cores obtained during the year-2012 drilling programme. Although one borehole was apparently cored in year-2011 (borehole WC11-58C), copies of analytical results have not been found within Walter Energy's files. Furthermore, copies of core descriptions for year-2011 and year-2012 boreholes have not been found.

Core samples are not known to have been taken from year-2008 or year-2010 drilling, which so far as currently-known was only conducted by rotary (non-coring) methods.

Analytical certificates and supporting correspondence (including sample inventory notes) are as found during the senior author's diligent search of records formerly held in Walter Energy's regional office in Vancouver, British Columbia.

In normal practice by Walter Energy and its predecessor companies, formal analytical instructions were issued to the assayers.

<u>One such set of instructions has been located</u>:

- Instructions WCS2012-1, dated June 20, 2012, concerning core samples taken from year-2012 boreholes.

Results from this work were presented by Loring Laboratories (Alberta) Ltd. in a report (their file number 55526) dated July 13, 2012.

Table B-1: Summary of year-2012 raw coal quality

Sample	Description		Bore-hole	Depths (metres) From	To	Comp-osites	Proximate analyses (on air-dried basis) M_{ad}	VM_{ad}	FC_{ad}	A_{ad}	S_{ad}	FSI_{ad}
3376	700 roof	rock	WC12-03BS	38.76	38.86	WCS 700-C1	1.52	10.84	26.53	61.31	1.57	0
3377	700	coal		38.86	39.62		1.12	16.13	79.74	3.01	0.67	1.5
3378		coal		39.62	42.17		1.26	15.00	82.16	1.58	0.36	0.5
3379		coal		42.17	42.78		1.09	17.87	79.62	1.42	0.42	1.5
3380		coal		42.78	43.78		1.22	16.48	79.51	2.79	0.39	1
3381	700 floor	rock		43.78	47.04		0.98	5.26	2.03	91.73	0.06	0
3382	720 roof	rock		47.04	47.14	WCS 720-C1	0.70	8.15	4.85	86.30	0.12	0
3383	720	coal		47.14	48.71		1.04	16.35	80.43	2.18	0.69	0.5
3384	720 floor	rock		48.71	48.81		0.94	6.65	2.84	89.57	0.12	0
3385	500 roof	rock	WC12-07BS	18.71	18.83	WCS 500-C1	1.18	10.38	27.31	61.13	0.42	0
3386	500	coal		18.83	18.97		0.93	18.51	77.22	3.34	0.69	0.5
3387		coal		18.97	19.65		1.02	17.54	78.43	3.01	0.70	1
3388		rock		19.65	20.05		0.85	17.25	55.97	25.93	0.76	0
3389		coal		20.05	20.61		0.84	20.44	76.16	2.56	0.72	0.5
3390		coal		20.61	21.64		0.89	17.51	69.83	11.77	0.63	1
3391	500 floor	rock		21.64	21.79		1.41	6.34	9.11	83.14	0.16	0
3392	600 roof	rock		31.38	31.50	WCS 600-C1	0.88	8.39	4.17	86.56	0.18	0
3393	600	coal		31.50	32.71		1.17	15.36	80.96	2.51	0.67	0.5
3394		coal		32.71	33.97		1.26	16.00	80.71	2.03	0.68	1
3395		rock		33.97	34.16		1.12	11.71	36.42	50.75	0.55	0.5
3396		coal		34.16	34.55		0.93	16.63	73.45	8.99	0.88	1
3397	600 floor	rock		34.55	34.68		0.94	4.71	3.72	90.63	0.08	0
3398	700 roof	rock	WC12-08BS	14.17	14.33	WCS 700-C2	1.35	8.93	13.67	76.05	0.81	0
3399	700	coal		14.33	15.27		1.19	17.80	78.54	2.47	0.70	1
3400		coal		15.27	15.42		1.05	19.42	69.39	10.14	0.48	0.5
3401		coal		15.42	16.78		1.35	21.14	75.35	2.16	0.51	0.5
3402		coal		16.78	17.44		1.41	15.82	80.69	2.08	0.48	1.5
3403		coal		17.44	17.76		0.99	22.13	74.34	2.54	0.57	6.5
3404		coal		17.76	18.75		0.92	19.37	77.90	1.81	0.56	1.5
3405	700 floor	rock		18.75	18.90		0.82	7.64	4.77	86.77	0.12	0
3406	720 roof	rock		27.13	27.26	WCS 720-C2	1.27	7.88	13.27	77.58	0.29	0
3407	720	coal		27.26	28.56		0.82	17.84	78.78	2.56	0.95	1.5
3408		rock		28.56	28.96		0.86	5.90	0.64	92.60	0.15	0
3409		coal		28.96	29.39		1.20	17.03	72.46	9.31	1.07	0.5
3410	720 floor	rock		29.39	29.51		1.13	5.50	5.15	88.22	0.07	0
3411	600 roof	rock	WC12-09BS	12.72	12.84	WCS 600-C2	1.65	9.87	25.79	62.69	0.43	0
3412	600	coal		12.84	14.07		1.46	14.49	80.21	3.84	0.63	0.5
3413		coal		14.07	14.56		1.41	15.89	80.78	1.92	0.70	0.5
3414		coal		14.56	15.18		0.96	15.61	81.91	1.52	0.68	0.5
3415		coal		15.18	15.70		0.70	20.13	72.61	6.56	0.99	5.5
3416	600 floor	rock		15.70	15.82		1.47	5.96	4.63	87.94	0.30	0
3417	700	coal		46.33	47.44		0.97	17.40	72.70	8.93	0.70	1
3418	700 floor	rock		47.44	47.55		1.32	4.97	4.02	89.69	0.12	0

Table B-1: Summary of year-2012 raw coal quality (concluded)

Sample	Description		Bore-hole	Depths (metres) From	To	Comp-osites	M_{ad}	VM_{ad}	FC_{ad}	A_{ad}	S_{ad}	FSI_{ad}
3419	720 roof	rock	WC12-09BS	54.49	54.64	WCS 720-C3	1.28	8.63	14.58	75.51	0.41	0
3420	720	coal		54.64	55.06		1.16	15.08	78.58	5.18	1.00	1
3421		rock		55.06	55.16		0.96	13.94	46.67	38.43	0.80	1.5
3422		coal		55.16	56.20		0.98	17.44	73.05	8.53	1.06	2
3423		rock		56.20	56.42		1.33	6.87	12.81	78.99	0.47	0
3424		coal		56.42	57.05		0.77	17.97	56.02	25.24	0.86	2.5
3425	720 floor	rock		57.05	57.18		0.92	9.94	21.69	67.45	0.40	0.5
3426	600 roof	rock	WC12-10BS	9.58	9.71	WCS 600-C3	0.95	7.04	1.68	90.33	0.18	0
3427	600	coal		9.71	11.02		1.39	15.68	80.22	2.71	0.74	1
3428		coal		11.02	11.81		0.83	16.46	81.07	1.64	0.70	0.5
3429		coal		11.81	12.09		0.76	20.89	74.05	4.30	0.94	6
3430		coal		12.09	12.26		0.72	20.48	73.55	5.25	0.84	4
3431	600 floor	rock		12.26	12.36		1.18	6.29	5.75	86.78	0.14	0
3432	602	coal		12.83	13.16		0.79	16.96	76.24	6.01	0.87	1.5
3433	500 roof	rock	WC12-11BS	31.70	31.86	WCS 500-C2	1.24	6.98	4.89	86.89	0.39	0
3434	500	coal		31.86	32.45		1.07	17.51	75.62	5.80	0.92	1
3435		rock		32.45	32.59		1.03	12.43	39.57	46.97	1.22	0.5
3436		coal		32.59	33.09		0.73	16.87	75.36	7.04	1.11	1
3437	500 floor	rock		33.09	33.19		0.89	8.21	5.62	85.28	0.15	0
3438	700 roof	rock	WC12-09BS2	41.63	41.73	WCS 700-C3	1.27	4.77	5.92	88.04	0.16	0
3439	700	coal		41.73	41.88		1.06	12.01	58.44	28.49	0.49	0
3440		coal		41.88	43.89		1.06	15.41	80.44	3.09	0.63	0.5
3441		coal		43.89	44.99		0.92	18.34	68.49	12.25	0.63	1.5
3442	700 floor	rock		44.99	45.19		0.65	5.11	0.47	93.77	0.09	0

Data source: Loring Laboratories (Alberta) Ltd. report dated July 13, 2012, their file 55526.
Abbreviations: M_{ad} = moisture, VM_{ad} = volatile matter, FC_{ad} = fixed carbon, A_{ad} = ash, S_{ad} = sulphur, FSI_{ad} = Free Swelling Index; all parameters given on air-dried basis. For other analytical bases, refer to scanned analytical results tables.

Results of laboratory-scale washability tests on composite samples are presented in Appendix C.

Access:

Road (main)

Road (other)

Trail

Seismic line

Drainage:

River or creek

Stream (perennial or intermittent flow)

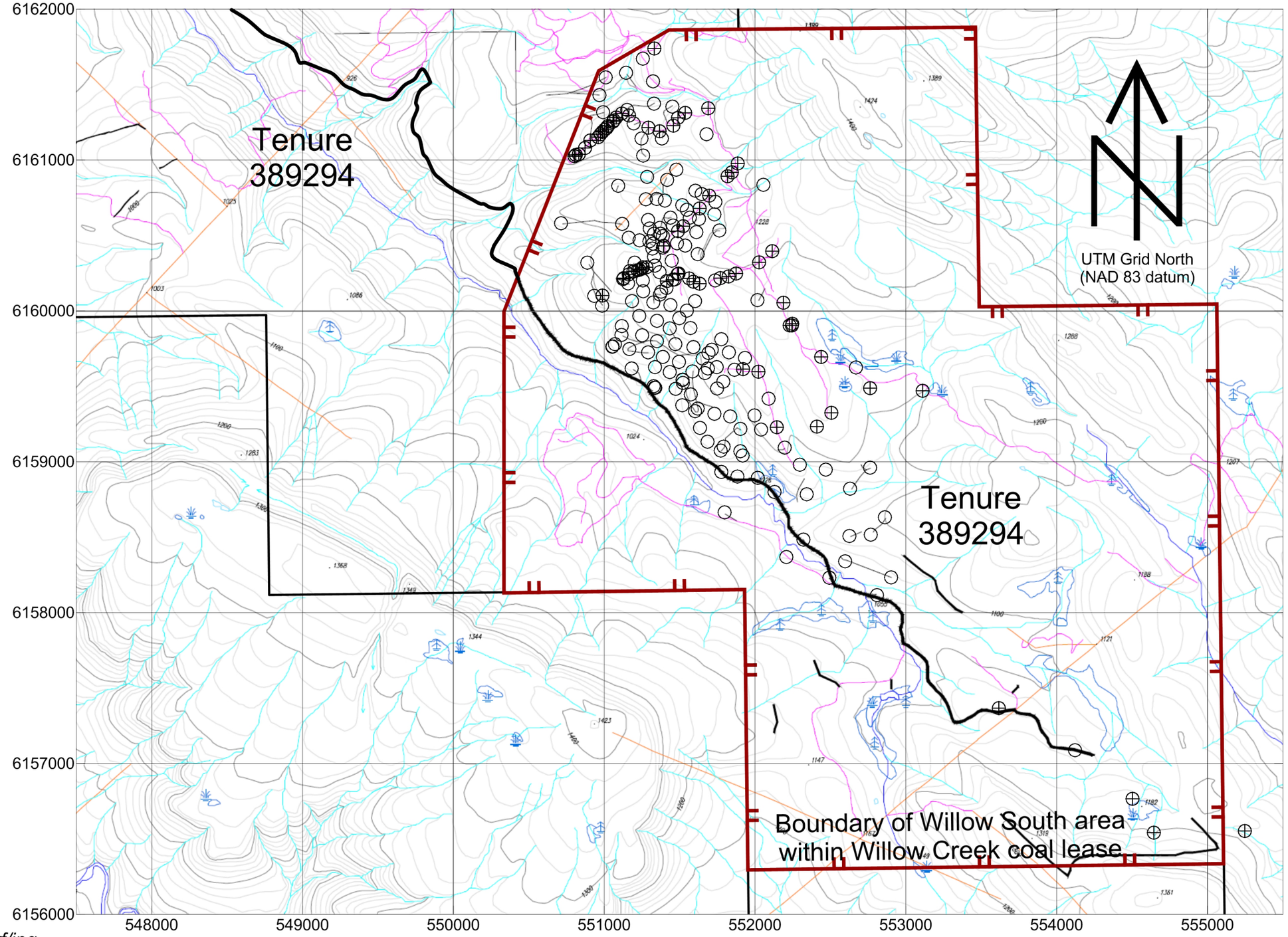
Outline of Willow South block within Willow Creek coal lease

Boreholes:

⊕ Historic (pre-2008)

○ Current (2008 to 2012)

Base mapping: British Columbia government TRIM-series maps sheets, at original scale of 1:20,000. Elevations are in metres above geodetic datum; contour interval is 20 metres.



Drawing: Willow_South-topography_150415f.srf/jpg
Drawn: C.G. Cathyl-Huhn, P.Geo.(BC) Lic.Geol.(WA) RMSME
Date: 18.April, 2015 Scale: as shown by bar scale
Grid: UTM Zone 10 to North American Datumn of 1983, in metres

metres
0 1000 2000 3000

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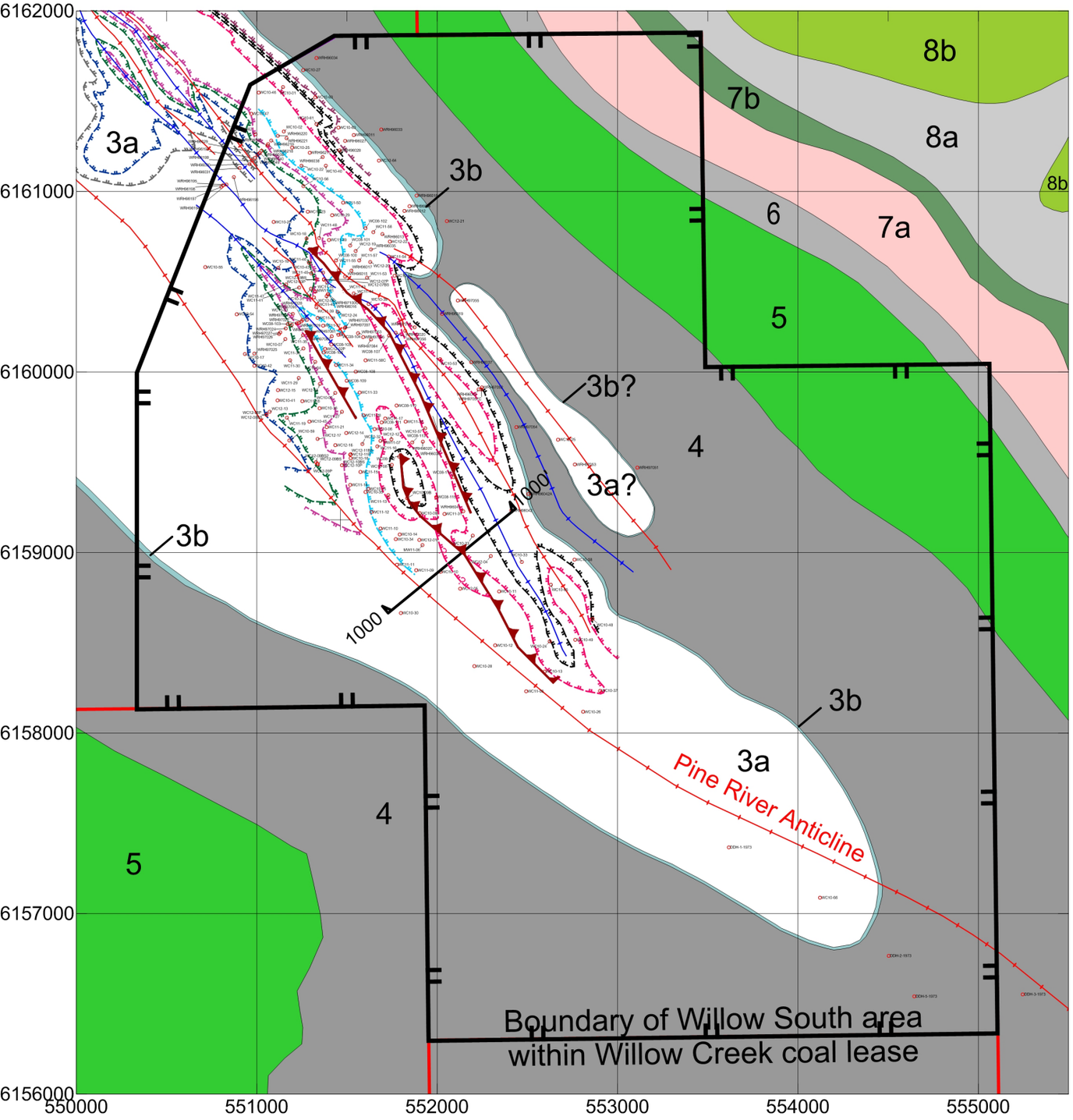
Map 2-2:
Coal Tenure and Topography



Drawing: Willow_South-local-geology-tracing-base-NAD83_150418g.srf/jpg
Drawn: C.G. Cathyl-Huhn, P.Geo.(BC) Lic.Geol.(WA) RMSME
Date: 18.April, 2015 Scale: as shown by bar scale
Grid: UTM Zone 10 to North American Datumn of 1983, in metres

metres
0 1000 2000

STRATIGRAPHIC LEGEND:

QUATERNARY

not shown — Alluvium and colluvium -- fluvial and glaciolacustrine deposits; moraines; talus; possible landslide deposits

FORT ST JOHN GROUP (Albian)

8b — Goodrich Formation -- sandstone; minor siltstone and mudstone

8a — Hasler Formation -- siltstone and mudstone; minor sandstone; ironstone as bands of concretions

Boulder Creek Formation:

7b — Walton Creek Member -- sandstone and siltstone; conglomerate, coal

7a — Cadotte Member -- conglomerate and sandstone

6 — Hulcross Formation -- siltstone and mudstone; minor sandstone and tuff; ironstone; basal pebbly gritstone

Gates Formation:

not mapped separately at this scale
- Notikewin Member -- siltstone, sandstone and conglomerate; minor coal
- Falher Member -- sandstone, conglomerate and siltstone, minor coal
- Torrens Member -- sandstone; minor siltstone

4 — Moosebar Formation:

not mapped separately at this scale
- Spieker Member -- siltstone, sandstone; minor mudstone
- Cowmoose Member -- mudstone, minor tuff and ironstone; erosive-based basal glauconitic grit [Green Marker, Unit 4a, not mapped separately]
- Chamberlain Member -- sandstone and siltstone
- Bullmoose Member -- siltstone and sandstone; mudstone; minor tuff

3b — Bluesky Formation -- glauconitic sandstone and gritstone; siltstone and mudstone

BULLHEAD GROUP (Hauterivian to Early Albian)

Gething Formation:

3a — Gaylard Member -- siltstone, sandstone and coal; minor conglomerate, minor tuff

not mapped separately at this scale
- Division 5 -- siltstone, sandstone and mudstone; coal (zones 1, 2, 3 and 4)
- Division 4 -- siltstone, mudstone and sandstone; coal (zones A, M, 5 and 6)
- Division 3 -- sandstone and siltstone; minor mudstone; coal (zones 7 and 8)
- Division 2 -- siltstone and mudstone; minor sandstone and coal (zones 9 through 12?)

not exposed within map-area
- Division 1 -- sandstone; minor siltstone, mudstone, and conglomerate

Cadomin Formation -- sandstone; minor conglomerate

Coal Zones:

No.1 zone
No.2 zone
No.3 zone
No.4 zone
A-zone
No.5 zone
No.6 zone
No.7 zone
No.8 zone

not shown owing to sparse control
- No.9 zone
- No.10 zone
- No.11 zone
- No.12 zone

Structure:

Anticlinal trace

Synclinal trace

Thrust-fault (with barbs on over-thrust plate)

Line of cross-section

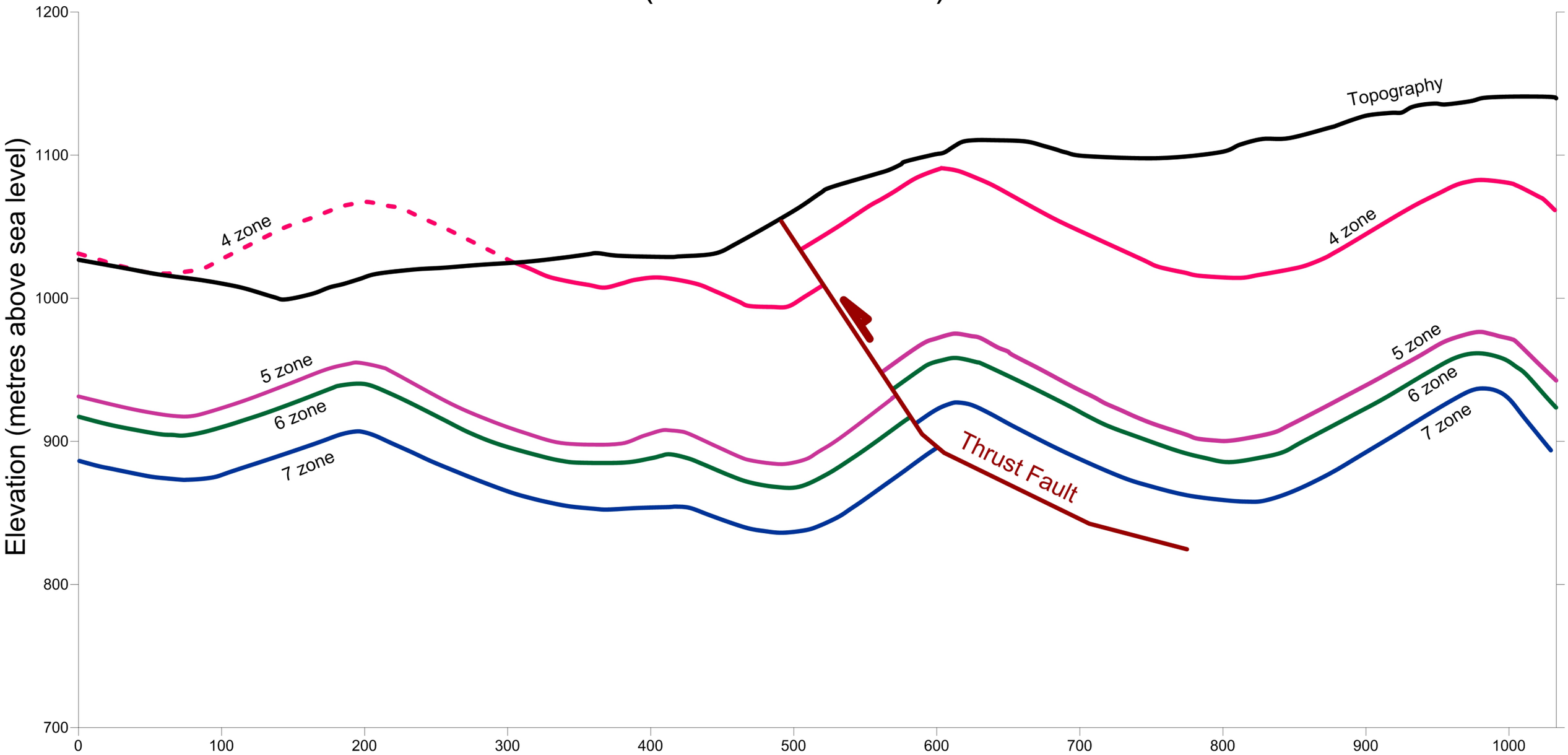
Willow South Coal Assessment Report

Map 2-3:
Bedrock geology of Willow South block

SW
1000
(E 551729, N 6158665)

Willow South
Cross-Section 1000
(view to northwest)

NE
1000'
(E 552434, N 6159421)



Drawing: Willow_South-Section_1000_150415b.srf/jpg
Drawn: L.R. LeMay and C.G. Cathyl-Huhn
Date: 15.April, 2015 Elevations in metres above sea level
Scale: as shown; no vertical exaggeration
Coordinate system: UTM NAD83 Zone 10, in metres

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Figure 4-1:
Cross-Section 1000