TABLE OF FORMATIONS

	Q	QUATERNARY Glacial deposits and alluvium
Lower Cretaceous	Kcm	COMMOTION FORMATION Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
	Kmb	MOOSEBAR FORMATION Mudstones, minor siltstones, marine
	Kbs	BLUESKY Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
CRASSIER GROUP	Kgt	GETHING FORMATION Cyclothems; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit; COAL
	Kdr	DRESSER FORMATION Incomplete cyclothems; discontinuous coal measures in varying thicknesses; medium to very coarse grained sandstones, grits, and conglomerates
	JKb	BRENOT FORMATION Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
Transitional	JKmc	MONACH FORMATION Marine lithic and quartzose sandstones with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates
BEAUDETTE GROUP	JKbp	BEATTIE PEAKS FORMATION Buff to brownish sandstones, fine to medium grained; thinly bedded black and dark grey shales, silty shales, siltstones; thin sandstones with ironstone banding
	JKmt	MONTEITH FORMATION Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings; occasional thin conglomerates
Jurassic	Jf	FERNIE FORMATION Dark grey and black shales, mudstones, sandstones, siltstones, marine

LEGEND

- Property Boundary
- Coal Seam Subcrop
- Geological Boundary, (defined, approximate)
- Anticline (defined, approximate)
- Syncline (defined, approximate)
- Anticline and Syncline (overturned)
- Fault (defined showing dip, approx. position of fault)
- Normal Fault
- Strike and Dip (bedding, overturned bedding)
- Cross Section Location
- Monocline
- Bedding (vertical, horizontal)
- Trench Location

LITHOLOGICAL SYMBOLS

- Conglomerate
- Sandstone
- Siltstone
- Quartzite
- Claystone/Mudstone
- Coal
- Silty Claystone
- Carbonaceous Claystone

LEGEND

- RIVER
- STREAM
- LAKE
- SAND
- TREE LINE
- FORM LINES
- DEPRESSION FORM LINE
- SPOT HEIGHT
- MAIN ROAD
- SECONDARY ROAD
- TRACK
- TRAIL
- CUT LINE
- RAILROAD
- BUILDING
- COAL LICENCE 5534

FORM LINE INTERVAL 10 METRES

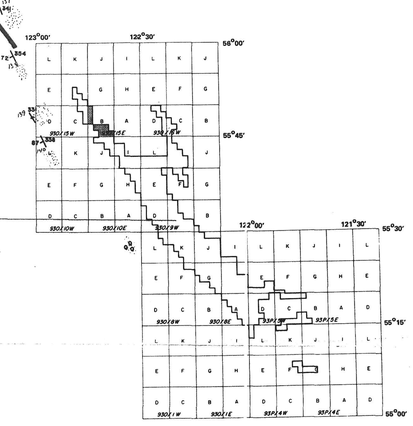
SURVEY NOTE

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

0 1/8 1/4 1/2 3/4 1 MILE

0 100 200 400 600 800 1000 METERS

SCALE : 1:10,000



GOODRICH
INDEX MAP

533

2R-Goodrich 82(2)A

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY

Northeastern British Columbia

digitized May 29/91 KJ
file: GOODGULF
map# 5330155EB

1982 GEOLOGY MAP

WHITERABBIT BLOCK

930 / 15 B

PREPARED BY: V.O			SCALE 1:10,000
APPROVED BY: C.W.		DATE: SEPT. 82	DRAWING No. GDR-82-012

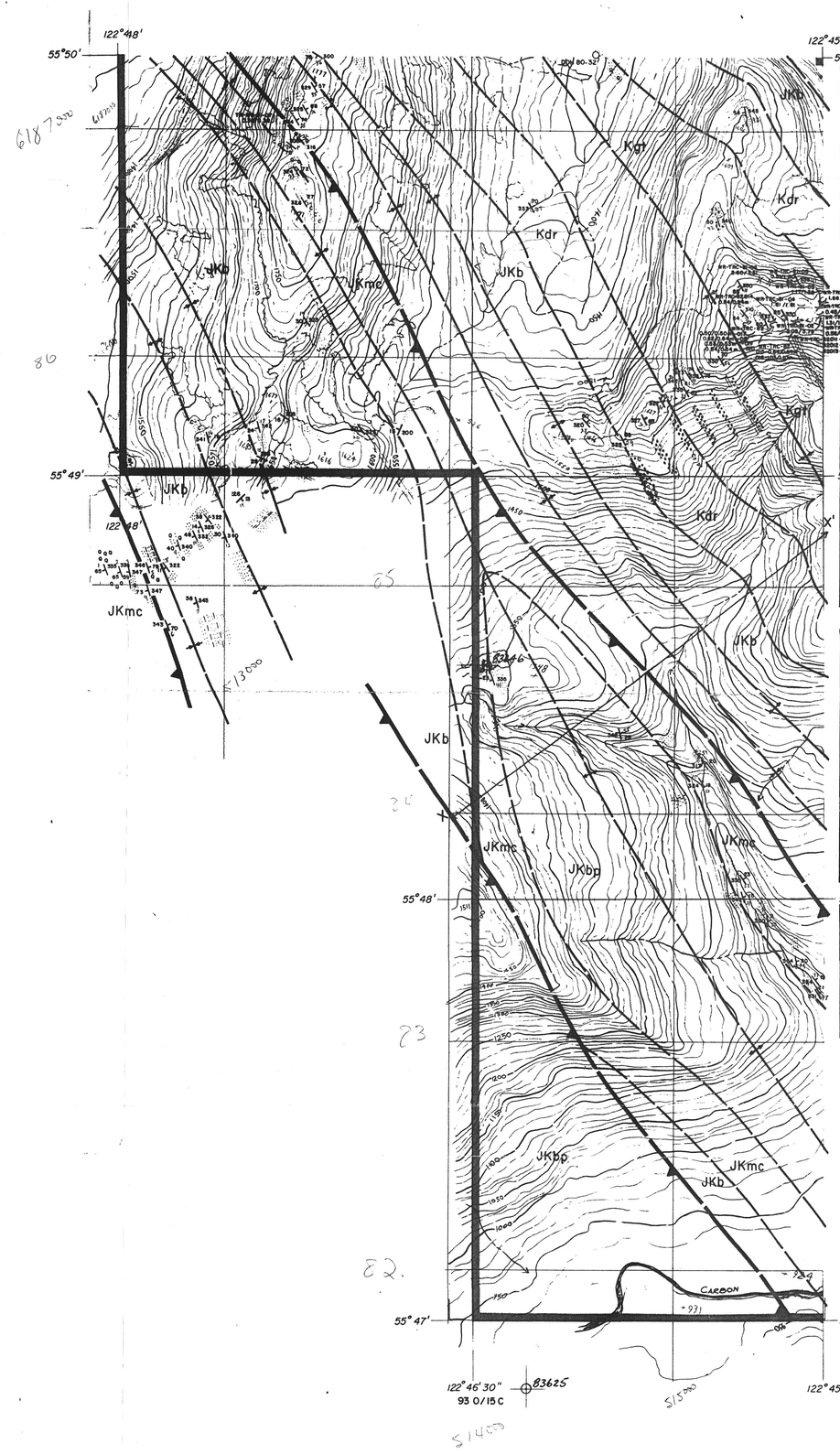


TABLE OF FORMATIONS

	Q	QUATERNARY Glacial deposits and alluvium
Lower Cretaceous	Kcm	COMMOTION FORMATION Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
	Kmb	MOOSEBAR FORMATION Mudstones, minor siltstones, marine
	Kbs	BLUESKY Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
CRASSIER GROUP	Kgt	GETHING FORMATION Cyclothems: dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit; COAL
	Kdr	DRESSER FORMATION Incomplete cyclothems; discontinuous coal measures in varying thicknesses; medium to very coarse grained sandstones, grits, and conglomerates
	JKb	BRENOT FORMATION Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
BEAUDETTE GROUP	JKmc	MONACH FORMATION Marine lithic and quartzose sandstones with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates
Transitional	JKbp	BEATTIE PEAKS FORMATION Buff to brownish sandstones, fine to medium grained; thinly bedded black and dark grey shales, silty shales, siltstones; thin sandstones with ironstone banding
	JKmt	MONTEITH FORMATION Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings; occasional thin conglomerates
Jurassic	Jf	FERNIE FORMATION Dark grey and black shales, mudstones, sandstones, siltstones, marine

LEGEND

- Property Boundary
- Coal Seam Subcrop
- Geological Boundary, (defined, approximate)
- Anticline (defined, approximate)
- Syncline (defined, approximate)
- Anticline and Syncline (overturned)
- Fault (defined showing dip, approx. position of fault)
- Normal Fault
- Strike and Dip (bedding, overturned bedding)
- Cross Section Location (A – A')
- Monocline
- Bedding (vertical, horizontal)
- Trench Location

LITHOLOGICAL SYMBOLS

Conglomerate	Claystone/Mudstone
Sandstone	Coal
Siltstone	Silty Claystone
Quartzite	Carbonaceous Claystone

LEGEND

- RIVER
- STREAM
- LAKE
- SAND
- TREE LINE
- FORM LINES
- DEPRESSION FORM LINE
- SPOT HEIGHT (x 1134)
- MAIN ROAD
- SECONDARY ROAD
- TRACK
- TRAIL
- CUT LINE
- RAILROAD
- BUILDING
- COAL LICENCE (5534)

FORM LINE INTERVAL 10 METRES

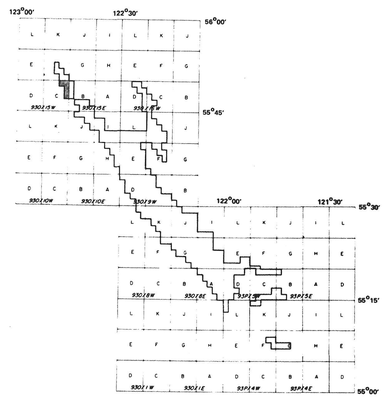
SURVEY NOTE

SURVEY CONTROL TAKEN FROM EXISTING PHOTO IDENTIFIABLE GOVERNMENT SURVEY MONUMENTS AND N.T.S. MAPS. MAPPING IS BASED ON UNIVERSAL TRANSVERSE MERCATOR GRID AND GEODETIC DATUM.

0 1/8 1/4 1/2 3/4 MILE

0 100 200 400 600 800 1000 METERS

SCALE : 1:10,000



GOODRICH
INDEX MAP

533

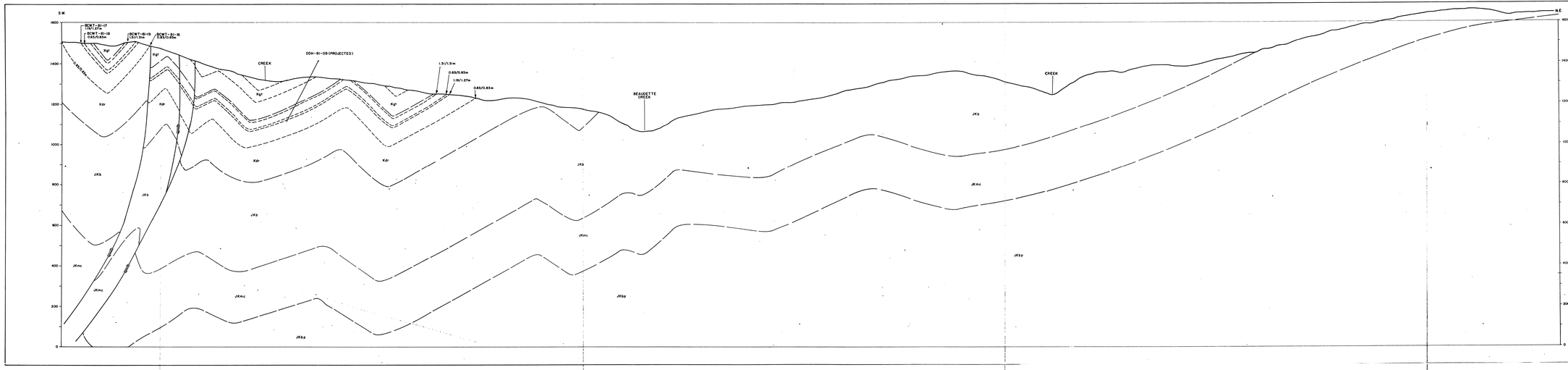
PR Goodrich 82(2)A

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia

1982 GEOLOGY MAP
WHITERABBIT BLOCK
93 O/15WC

PREPARED BY: V O	SCALE 1 : 10,000
APPROVED BY: C. W. DATE: SEPT / 82	DRAWING No. GDR-82-013



LEGEND

		QUATERNARY — Glacial deposits and alluvium
	Kcm	**COMMOTION FORMATION** — Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
	Kms	**MOOSEBAR FORMATION** — Mudstones, minor siltstones, marine
LOWER CRETACEOUS — CRASSIER GROUP	Kbl	**BLUESKY** — Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
	Kgl	**GETHING FORMATION** — Cyclothems, dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones, coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit, COAL
	Kdr	**DRESSER FORMATION** — Repeatable cyclothems, discontinuous coal seams in varying thicknesses, repeatable sandstones, carbonaceous mudstones, grits, and conglomerates
JURASSIC — TRANSITIONAL	JKb	**BREWER PORCELLANITE** — Lithic salt and pepper sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
	JKmc	**MONACH FORMATION** — Marine lithic and quartzose sandstones with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates
BEAUDETTE GROUP	JKbp	**BEATTIE PEAKS FORMATION** — Buff to brownish sandstones, fine to medium grained, thinly bedded black and dark grey shales, silty shales, siltstones; thin sandstones with ironstone banding
	JKmt	**MONTEITH FORMATION** — Grey and brown sandstones, fine to medium grained, fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.
	Jf	**FERNIE FORMATION** — Dark grey and black shales, mudstones, sandstones, siltstones, marine

COAL/COAL + MAX — COAL SEAM

BASELINE

0 100 200 300 400 500

scale in metres

P.L. Goodwin 82/03/19

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

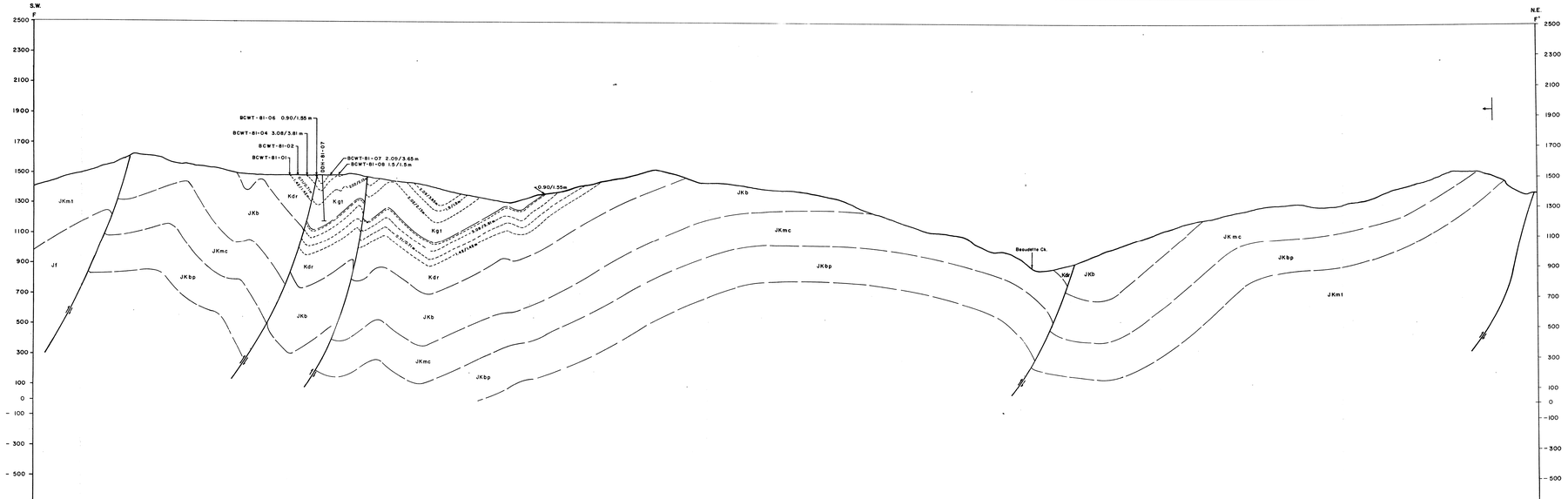
GOODRICH COAL PROPERTY
Northeastern British Columbia
1982

GOODRICH CENTRAL
GEOLOGICAL CROSS SECTION
E-E'

PREPARED BY:	J. LAMARRE	SCALE:	1:5000
APPROVED BY:	C.M.	DATE: NOV. 82	DRAWING No. GCR-82-C02

533

APPENDIX A - PART 2



LEGEND

Q	**QUATERNARY** — Glacial deposits and alluvium
Kcm	**COMMOTION FORMATION** — Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
Kmb	**MOOSEBAR FORMATION** — Mudstones, minor siltstones, marine
Kbs	**BLUESKY** — Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
Kgt	**GETHING FORMATION** — Cyclothems; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit; COAL
Kdr	**DRESSER FORMATION** — Incomplete cyclothems; discontinuous coal measures in varying thicknesses; medium to very coarse grained sandstones, grits, and conglomerates
JKb	**BRENOT FORMATION** — Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
JKmc	**MONACH FORMATION** — Marine lithic and quartzose sandstones with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates
JKbp	**BEATTIE PEAKS FORMATION** — Buff to brownish sandstones, fine to medium grained; thinly bedded black and dark grey shales, silty shales, siltstones; thin sandstones with ironstone banding
JKmt	**MONTEITH FORMATION** — Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.
Jf	**FERNIE FORMATION** — Dark grey and black shales, mudstones, sandstones, siltstones, marine

LOWER CRETACEOUS — CRASSIER GROUP — BEAULETTE GROUP — TRANSITIONAL — JURASSIC

BASE LINE

COAL SEAM

GULF LICENCE BOUNDARIES

0 200 400 600 800 1000

scale in metres

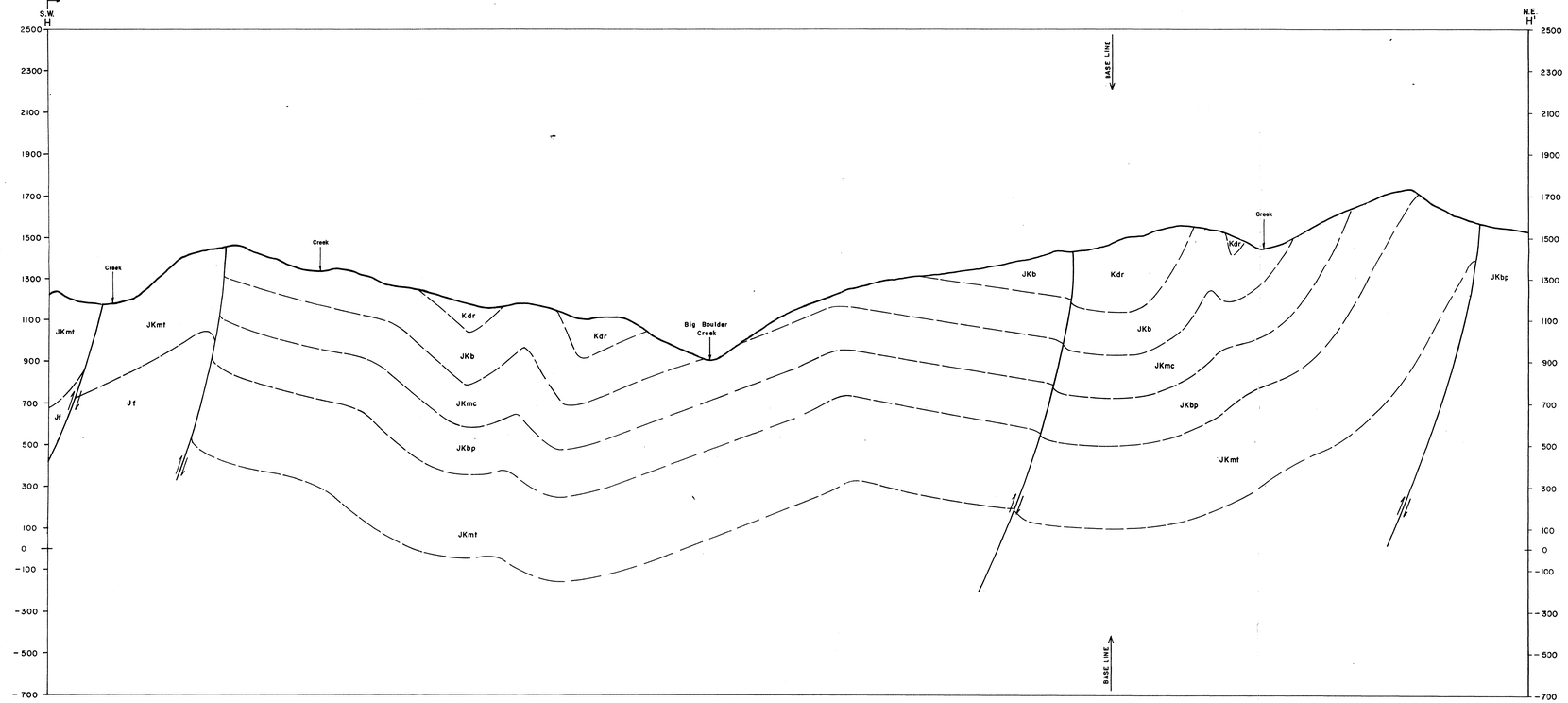
P.R. Goodrich Ra(a)A

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
GOODRICH CENTRAL
GEOLOGICAL CROSS SECTION
F - F'

PREPARED BY: J.L.	SCALE 1:10,000	GDR-82-041
APPROVED BY: C. WILLIAMS	DATE: OCT. '82	DRAWING No.

533



LEGEND

		QUATERNARY
	Q	Glacial deposits and alluvium
LOWER CRETACEOUS — CRASSIER GROUP		**COMMOTION FORMATION**
	Kcm	Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
		MOOSEBAR FORMATION
	Kmb	Mudstones, minor siltstones, marine
		BLUESKY
	Kbs	Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
		GETHING FORMATION
	Kgt	Cyclothems; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit; COAL
		DRESSER FORMATION
	Kdr	Incomplete cyclothems; discontinuous coal measures in varying thicknesses; medium to very coarse grained sandstones, grits, and conglomerates
TRANSITIONAL — BEAUDETTE GROUP		**BRENOT FORMATION**
	JKb	Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
		MONACH FORMATION
	JKmc	Marine lithic and quartzose sandstones with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates
		BEATTIE PEAKS FORMATION
	JKbp	Buff to brownish sandstones, fine to medium grained; thinly bedded black and dark grey shales, silty shales, siltstones; thin sandstones with ironstone banding
JURASSIC		**MONTEITH FORMATION**
	JKmt	Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.
		FERNIE FORMATION
	Jf	Dark grey and black shales, mudstones, sandstones, siltstones, marine

BASE LINE

COAL/COAL+ROCK — COAL SEAM

GULF LICENCE BOUNDARIES

0 200 400 600 800 1000

scale in metres

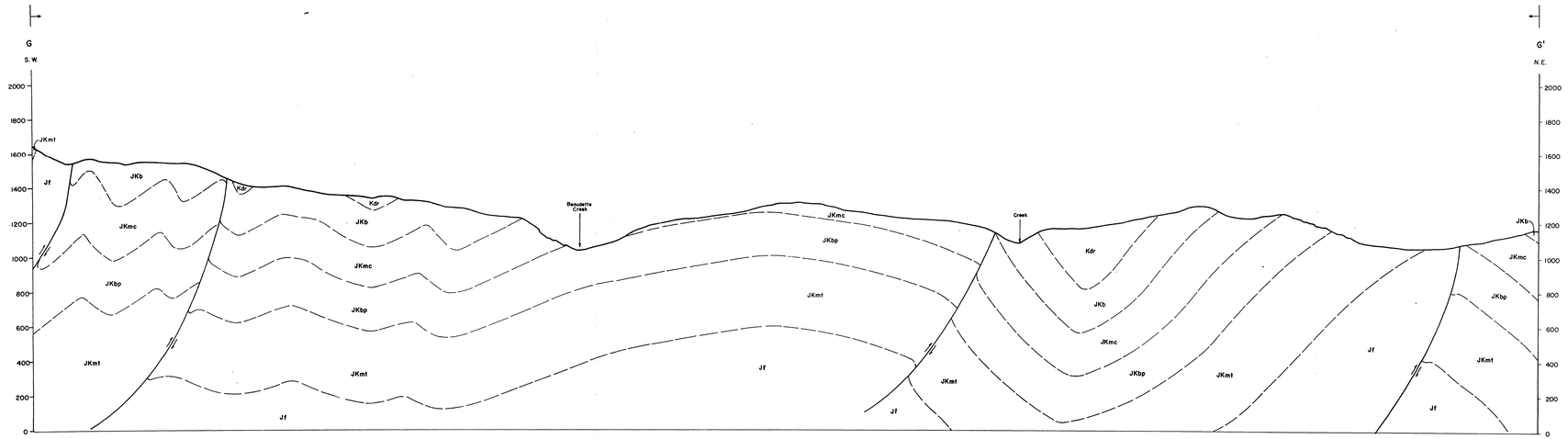
PR-Goodrich 82(2)A

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
GOODRICH CENTRAL
GEOLOGICAL CROSS SECTION
H - H'

PREPARED BY: M. BESSO		SCALE 1:10,000
APPROVED BY: C. WILLIAMS	DATE: OCT. '82	DRAWING No. GDR-82-043

533



LEGEND

Q	**QUATERNARY** — Glacial deposits and alluvium
Kcm	**COMMOTION FORMATION** — Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
Kmb	**MOOSEBAR FORMATION** — Mudstones, minor siltstones, marine
Kbs	**BLUESKY** — Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
Kgt	**GETHING FORMATION** — Cyclothems; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit; COAL
Kdr	**DRESSER FORMATION** — Incomplete cyclothems; discontinuous coal measures in varying thicknesses; medium to very coarse grained sandstones, grits, and conglomerates
JKb	**BRENOT FORMATION** — Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
JKmc	**MONACH FORMATION** — Marine lithic and quartzose sandstones with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates
JKbp	**BEATTIE PEAKS FORMATION** — Buff to brownish sandstones, fine to medium grained; thinly bedded black and dark grey shales, silty shales, siltstones, thin sandstones with ironstone banding
JKmt	**MONTEITH FORMATION** — Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.
Jf	**FERNIE FORMATION** — Dark grey and black shales, mudstones, sandstones, siltstones, marine

LOWER CRETACEOUS — CRASSIER GROUP — BEAUDETTE GROUP — TRANSITIONAL — JURASSIC

BASE LINE

COAL/COAL + ROCK — COAL SEAM

GULF LICENCE BOUNDARIES

0 200 400 600 800 1000

scale in metres

PC-Goodrich 6a(G)A

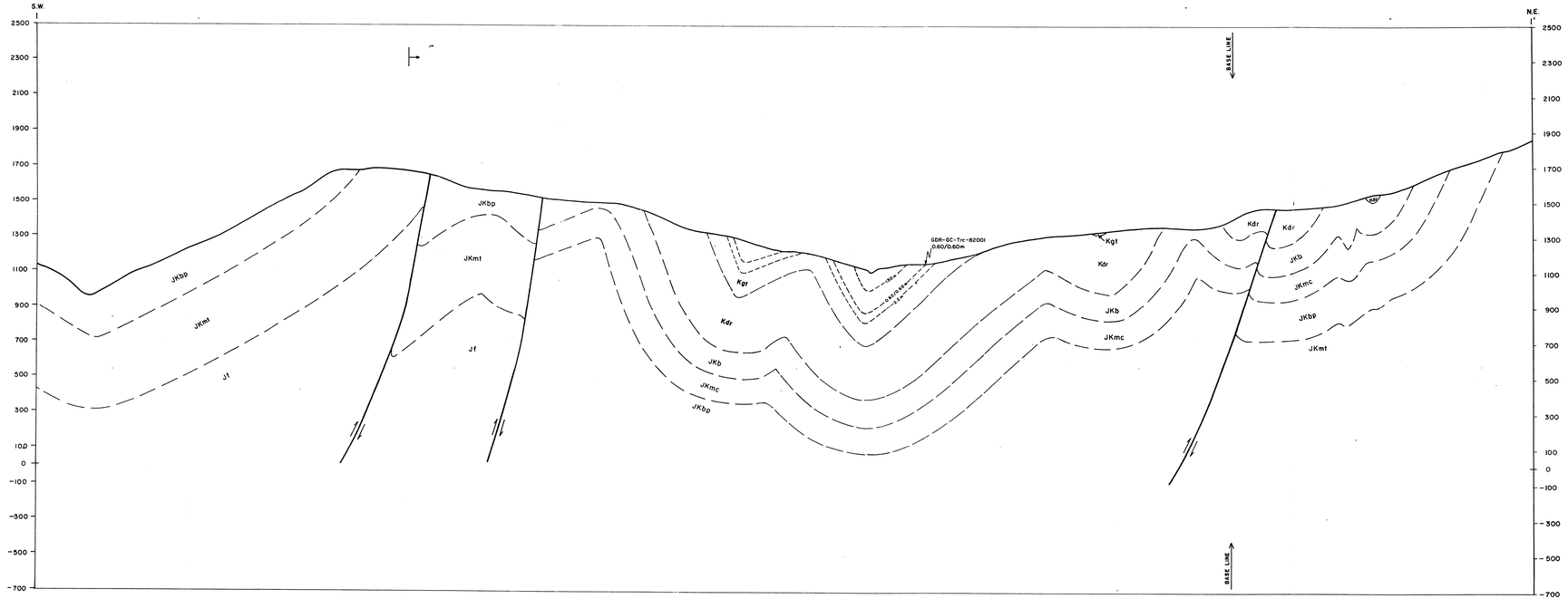
GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982

GOODRICH CENTRAL
GEOLOGICAL CROSS SECTION
G - G'

PREPARED BY: M. BESSO	SCALE 1:10,000	GDR-82-052
APPROVED BY: C. WILLIAMS	DATE: OCT. '82	DRAWING No.

533



LEGEND

Q	**QUATERNARY** — Glacial deposits and alluvium
Kcm	**COMMOTION FORMATION** — Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
Kmb	**MOOSEBAR FORMATION** — Mudstones, minor siltstones, marine
Kbs	**BLUESKY** — Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
Kgt	**GETHING FORMATION** — Cyclothems; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit; COAL
Kdr	**DRESSER FORMATION** — Incomplete cyclothems; discontinuous coal measures in varying thicknesses; medium to very coarse grained sandstones, grits, and conglomerates
JKb	**BRENOT FORMATION** — Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
JKmc	**MONACH FORMATION** — Marine lithic and quartzose sandstones with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates
JKbp	**BEATTIE PEAKS FORMATION** — Buff to brownish sandstones, fine to medium grained, thinly bedded black and dark grey shales, silty shales, siltstones; thin sandstones with ironstone banding
JKmt	**MONTEITH FORMATION** — Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.
Jf	**FERNIE FORMATION** — Dark grey and black shales, mudstones, sandstones, siltstones, marine

LOWER CRETACEOUS — CRASSIER GROUP
JURASSIC — TRANSITIONAL — BEAUDETTE GROUP

BASE LINE

COAL/COAL + ROCK — COAL SEAM

GULF LICENCE BOUNDARIES

0 200 400 600 800 1000
scale in metres

PR-Goodrich 82(a)A.

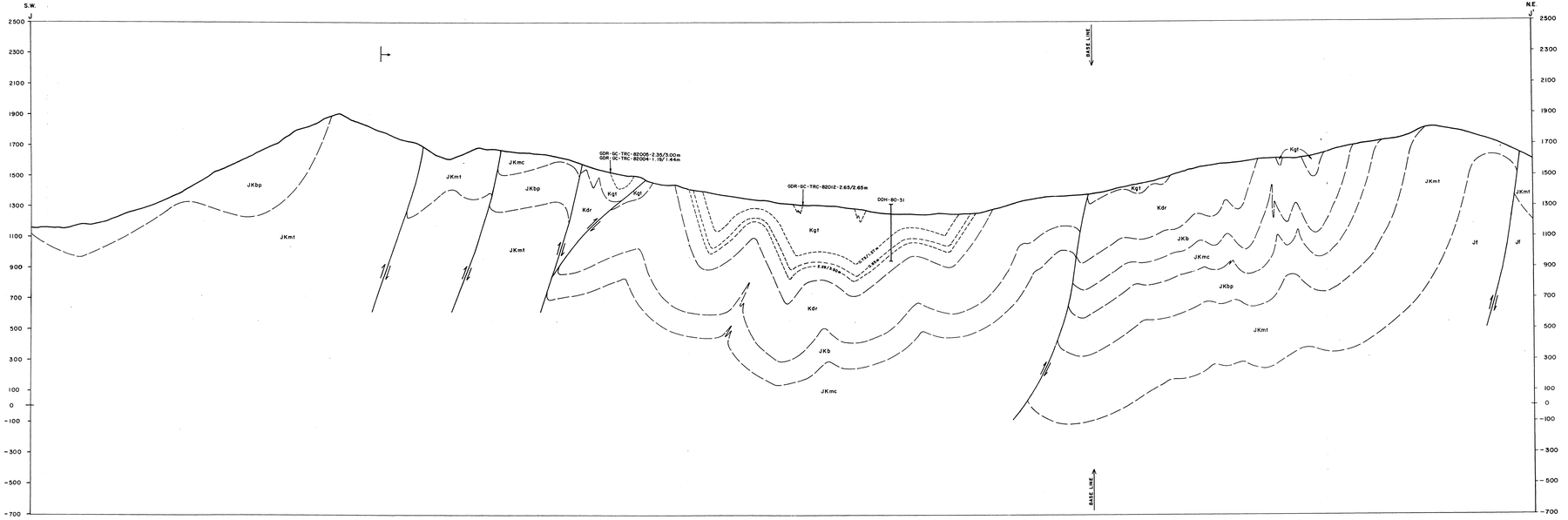
GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
GOODRICH CENTRAL
GEOLOGICAL CROSS SECTION
I - I'

GDR-82-044

PREPARED BY: M. BESSO		SCALE 1:10,000
APPROVED BY: C. WILLIAMS	DATE: OCT. '82	DRAWING No.

533



LEGEND

		QUATERNARY
Q		*Glacial deposits and alluvium*
Kcm		**COMMOTION FORMATION**
		Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
Kmb		**MOOSEBAR FORMATION**
		Mudstones, minor siltstones, marine
Kbs		**BLUESKY**
		Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
Kgt		**GETHING FORMATION**
		Cyclothems; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit; COAL
Kdr		**DRESSER FORMATION**
		Incomplete cyclothems; discontinuous coal measures in varying thicknesses; medium to very coarse grained sandstones, grits, and conglomerates
JKtf		**BRENOT FORMATION**
		Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
JKmc		**MONACH FORMATION**
		Marine lithic and quartzose sandstones with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates
JKbp		**BEATTIE PEAKS FORMATION**
		Buff to brownish sandstones, fine to medium grained; thinly bedded black and dark grey shales, silty shales, siltstones; thin sandstones with ironstone banding
JKmt		**MONTEITH FORMATION**
		Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates
Jf		**FERNIE FORMATION**
		Dark grey and black shales, mudstones, sandstones, siltstones, marine

LOWER CRETACEOUS — CRASSIER GROUP
JURASSIC — TRANSITIONAL — BEAUCETTE GROUP

BASE LINE

COAL/COAL + ROCK COAL SEAM

GULF LICENCE BOUNDARIES

0 200 400 600 800 1000

scale in metres

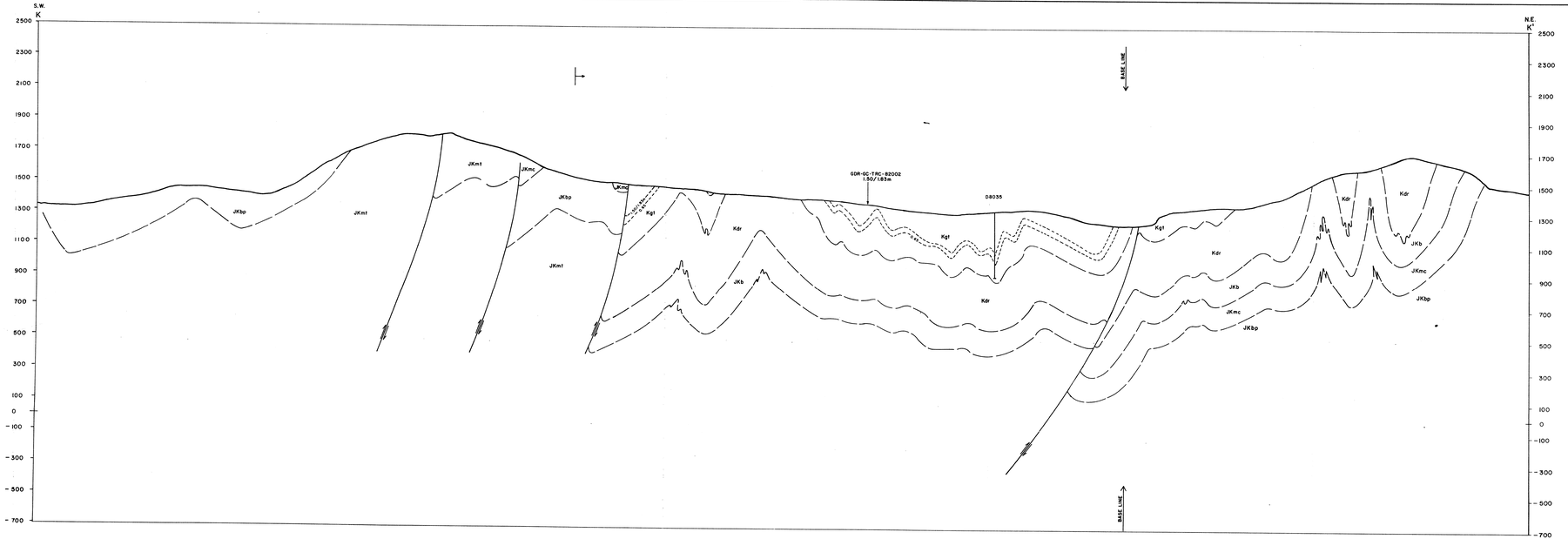
PE Goodrich Basin.

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
GOODRICH CENTRAL
GEOLOGICAL CROSS SECTION
J - J'

PREPARED BY: M. BESSO		SCALE 1:10,000
APPROVED BY: C. WILLIAMS	DATE: OCT. '82	DRAWING No. GDR-82-045

533



LEGEND

		QUATERNARY
Q		Glacial deposits and alluvium
	LOWER CRETACEOUS	**COMMOTION FORMATION**
Kcm		Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
		MOOSEBAR FORMATION
Kmb		Mudstones, minor siltstones, marine
		BLUESKY
Kbs		Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
	CRASSIER GROUP	**GETHING FORMATION**
Kgt		Cyclothems; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit; COAL
		DRESSER FORMATION
Kdr		Incomplete cyclothems; discontinuous coal measures in varying thicknesses; medium to very coarse grained sandstones, grits, and conglomerates
		BRENOT FORMATION
JKb		Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
	TRANSITIONAL	**MONACH FORMATION**
JKmc		Marine lithic and quartzose sandstones with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates
	BEAUDETTE GROUP	**BEATTIE PEAKS FORMATION**
JKbp		Buff to brownish sandstones, fine to medium grained, thinly bedded black and dark grey shales, silty shales, siltstones; thin sandstones with ironstone banding
	JURASSIC	**MONTEITH FORMATION**
JKmt		Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.
		FERNIE FORMATION
Jf		Dark grey and black shales, mudstones, sandstones, siltstones, marine

BASE LINE

COAL/COAL + ROCK — COAL SEAM

GULF LICENCE BOUNDARIES

0 200 400 600 800 1000

scale in metres

P2 Goodrich 82(2)A

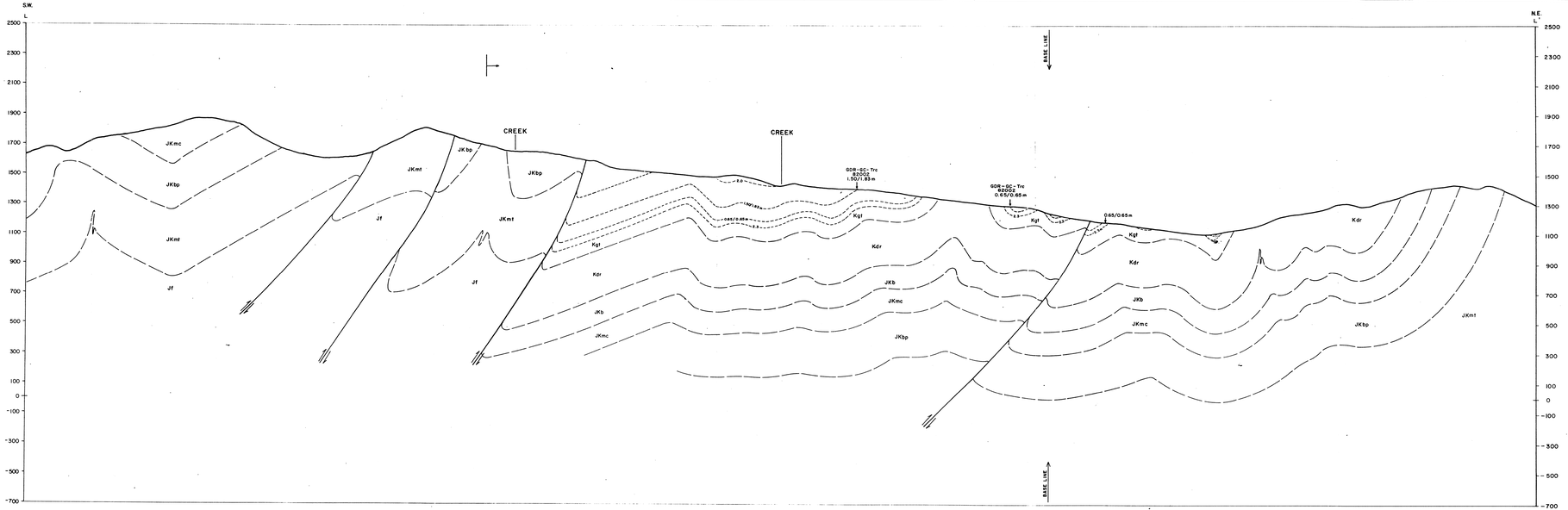
GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982

GOODRICH CENTRAL
GEOLOGICAL CROSS SECTION
K - K'

PREPARED BY: M. BESSO		SCALE 1:10,000
APPROVED BY: C. WILLIAMS	DATE: OCT. '82	DRAWING No. GDR-82-046

533



LEGEND

Q	**QUATERNARY** Glacial deposits and alluvium
Kcm	**COMMOTION FORMATION** Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
Kmb	**MOOSEBAR FORMATION** Mudstones, minor siltstones, marine
Kbs	**BLUESKY** Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
Kgt	**GETHING FORMATION** Cyclothems; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit; COAL
Kdr	**DRESSER FORMATION** Incomplete cyclothems; discontinuous coal measures in varying thicknesses; medium to very coarse grained sandstones, grits, and conglomerates
JKb	**BRENOT FORMATION** Lithic 'salt and pepper' sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
JKmc	**MONACH FORMATION** Marine lithic and quartzose sandstones with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates
JKbp	**BEATTIE PEAKS FORMATION** Buff to brownish sandstones, fine to medium grained; thinly bedded black and dark grey shales, silty shales, siltstones; thin sandstones with ironstone banding
JKmt	**MONTEITH FORMATION** Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.
Jf	**FERNIE FORMATION** Dark grey and black shales, mudstones, sandstones, siltstones, marine

LOWER CRETACEOUS — CRASSIER GROUP — BEAUDETTE GROUP — TRANSITIONAL — JURASSIC

BASE LINE

COAL SEAM

GULF LICENCE BOUNDARIES

0 200 400 600 800 1000

scale in metres

PR Goodrich 82(a)14

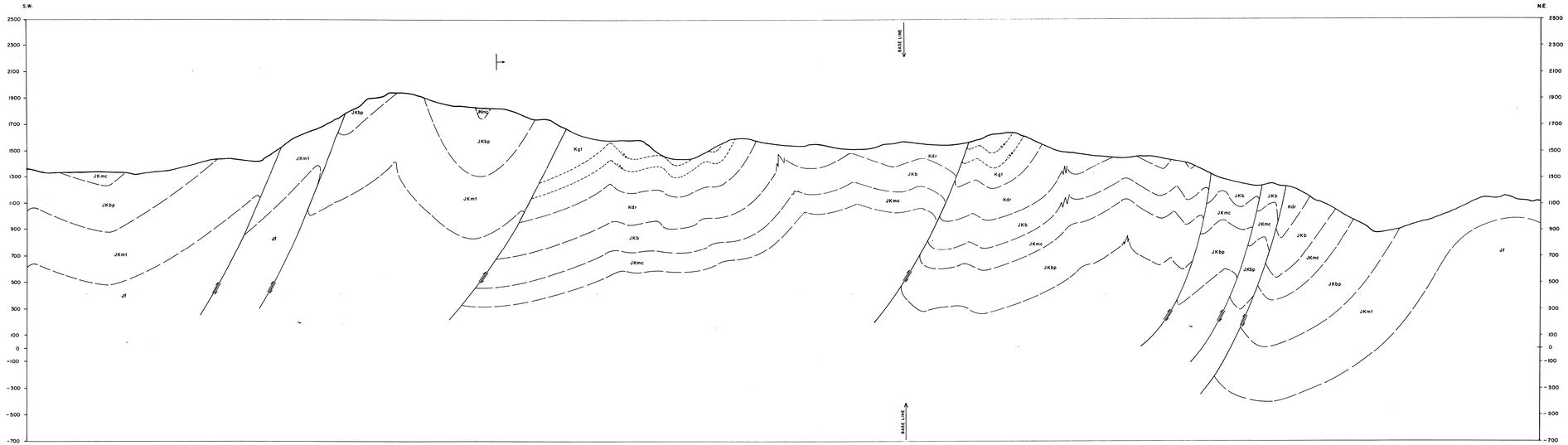
GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
GOODRICH CENTRAL
GEOLOGICAL CROSS SECTION
L-L'

GDR-82-047

PREPARED BY: M. BESSO	SCALE 1:10,000	
APPROVED BY: C. WILLIAMS	DATE: OCT. '82	DRAWING No.

533



LEGEND

Q	**QUATERNARY** — Glacial deposits and alluvium
Kcm	**COMMOTION FORMATION** — Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
Kmb	**MOOSEBAR FORMATION** — Mudstones, minor siltstones, marine
Kbs	**BLUESKY** — Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
Kgt	**GETHING FORMATION** — Cyclothems, dark grey mudstones, siltstones, carbonaceous, silty, sandy, mudstones; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit; COAL
Kdr	**DRESSER FORMATION** — Incomplete cyclothems; discontinuous coal measures in varying thicknesses; medium to very coarse grained sandstones, grits, and conglomerates
JKb	**BRENOT FORMATION** — Lithic "salt and pepper" sandstones, siltstone, mudstones, carbonaceous mudstones, COAL
JKmc	**MONACH FORMATION** — Marine lithic and quartzose sandstones with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates
JKbp	**BEATTIE PEAKS FORMATION** — Buff to brownish sandstones, fine to medium grained; thinly bedded black and dark grey shales, silty shales, siltstones; thin sandstones with inconstant banding
JKmt	**MONTEITH FORMATION** — Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates
Jf	**FERNIE FORMATION** — Dark grey and black shales, mudstones, sandstones, siltstones, marine

JURASSIC ⟷ TRANSITIONAL ⟷ LOWER CRETACEOUS

BEAUCETTE GROUP | CRASSIER GROUP

BASE LINE

COAL SEAM

GULF LICENCE BOUNDARIES

0 200 400 600 800 1000

scale in metres

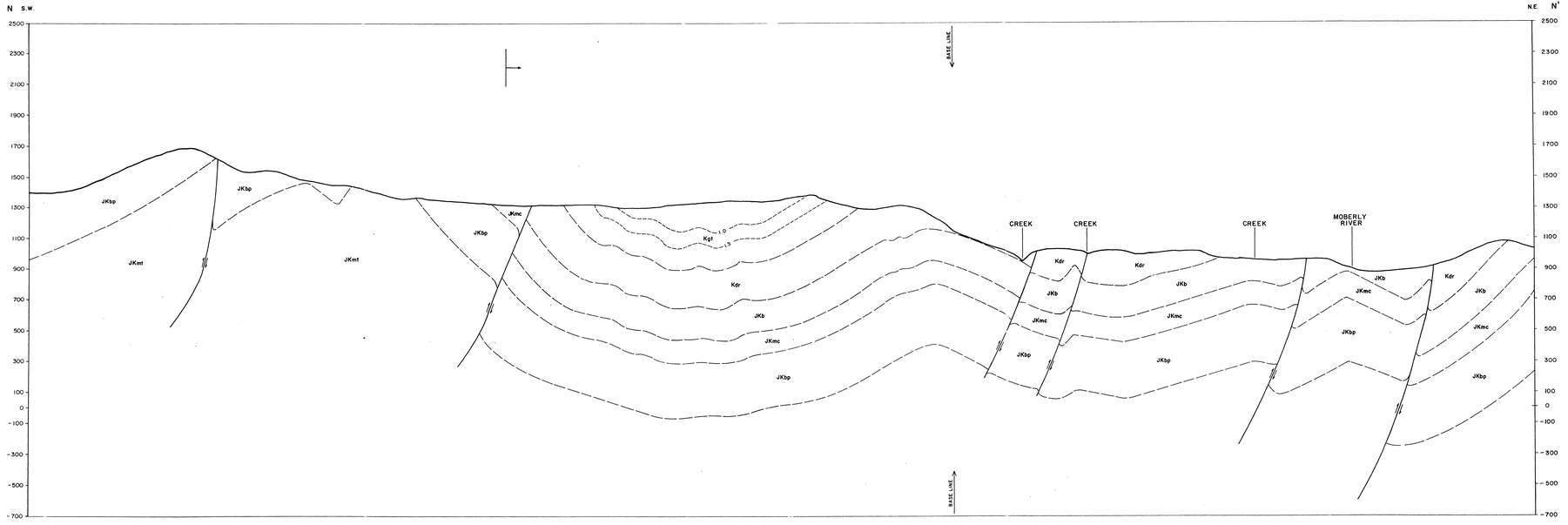
K.E. Goodrich Ralph

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
GOODRICH CENTRAL
GEOLOGICAL CROSS SECTION
M - M'

PREPARED BY: M. B.	SCALE 1:10,000	GDR-82-048
APPROVED BY: C. WILLIAMS	DATE: OCT. 82	DRAWING No.

533



LEGEND

Q	**QUATERNARY** — Glacial deposits and alluvium
Kcm	**COMMOTION FORMATION** — Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
Kmb	**MOOSEBAR FORMATION** — Mudstones, minor siltstones, marine
Kbl	**BLUESKY** — Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
Kgt	**GETHING FORMATION** — Cyclothems; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit; COAL
Kdr	**DRESSER FORMATION** — Incomplete cyclothems, discontinuous coal measures in varying thicknesses; medium to very coarse grained sandstones, grits, and conglomerates
JKn	**BRENOT FORMATION** — Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
JKmc	**MONACH FORMATION** — Marine lithic and quartzose sandstones with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates
JKbp	**BEATTIE PEAKS FORMATION** — Buff to brownish sandstones, fine to medium grained; thinly bedded black and dark grey shales, silty shales, siltstones; thin sandstones with ironstone banding
JKmt	**MONTEITH FORMATION** — Grey and brown sandstones, fine to medium grained, fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates
Jf	**FERNIE FORMATION** — Dark grey and black shales, mudstones, sandstones, siltstones, marine

LOWER CRETACEOUS — CRASSIER GROUP — BEAUDETTE GROUP — TRANSITIONAL — JURASSIC

BASE LINE

COAL SEAM

GULF LICENCE BOUNDARIES

0 200 400 600 800 1000

scale in metres

ffl:/ocatron#ul(2)2

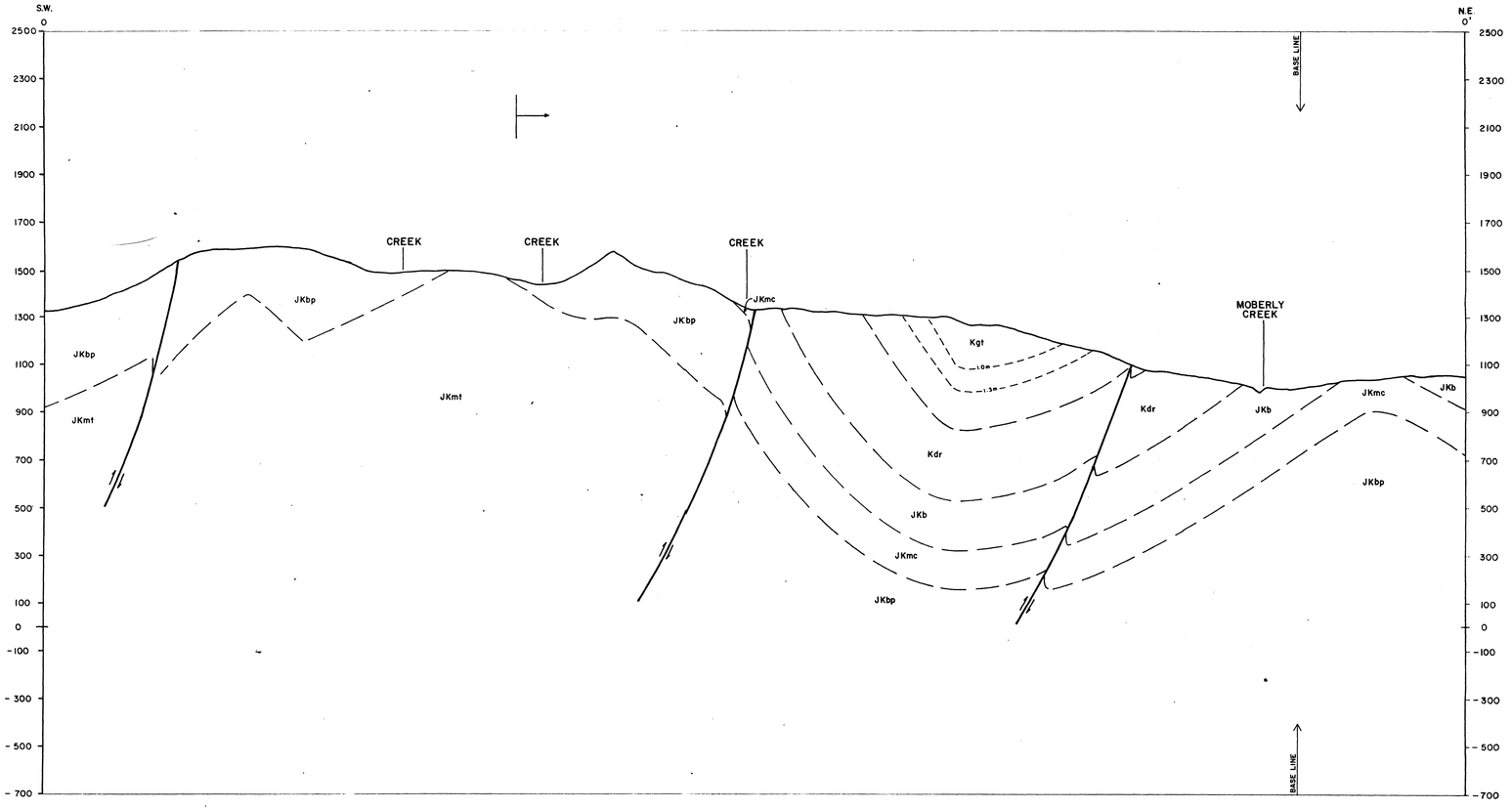
GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
GOODRICH CENTRAL
GEOLOGICAL CROSS-SECTION
N-N'

GDR-82-049

PREPARED BY: V. ODEGAARD		SCALE	1:10,000
APPROVED BY: C. WILLIAMS	DATE: SEPT 82	DRAWING No.	

533



LEGEND

Q	**QUATERNARY** — Glacial deposits and alluvium
Kcm	**COMMOTION FORMATION** — Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
Kmb	**MOOSEBAR FORMATION** — Mudstones, minor siltstones, marine
Kbs	**BLUESKY** — Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
Kgt	**GETHING FORMATION** — Cyclothems; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones; codified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit; COAL
Kdr	**DRESSER FORMATION** — Incomplete cyclothems; discontinuous coal measures in varying thicknesses; medium-to-very coarse grained sandstones, grits, and conglomerates
JKb	**BRENOT FORMATION** — Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
JKmc	**MONACH FORMATION** — Marine lithic and quartzose sandstones with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates
JKbp	**BEATTIE PEAKS FORMATION** — Buff to brownish sandstones, fine to medium grained; thinly bedded black and dark grey shales, silty shales, siltstones; thin sandstones with ironstone banding
JKmt	**MONTEITH FORMATION** — Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.
Jf	**FERNIE FORMATION** — Dark grey and black shales, mudstones, sandstones, siltstones, marine

JURASSIC — TRANSITIONAL — LOWER CRETACEOUS
BEAUDETTE GROUP | CRASSIER GROUP

BASE LINE

1.0m COAL SEAM

GULF LICENCE BOUNDARIES

0 200 400 600 800 1000

scale in metres

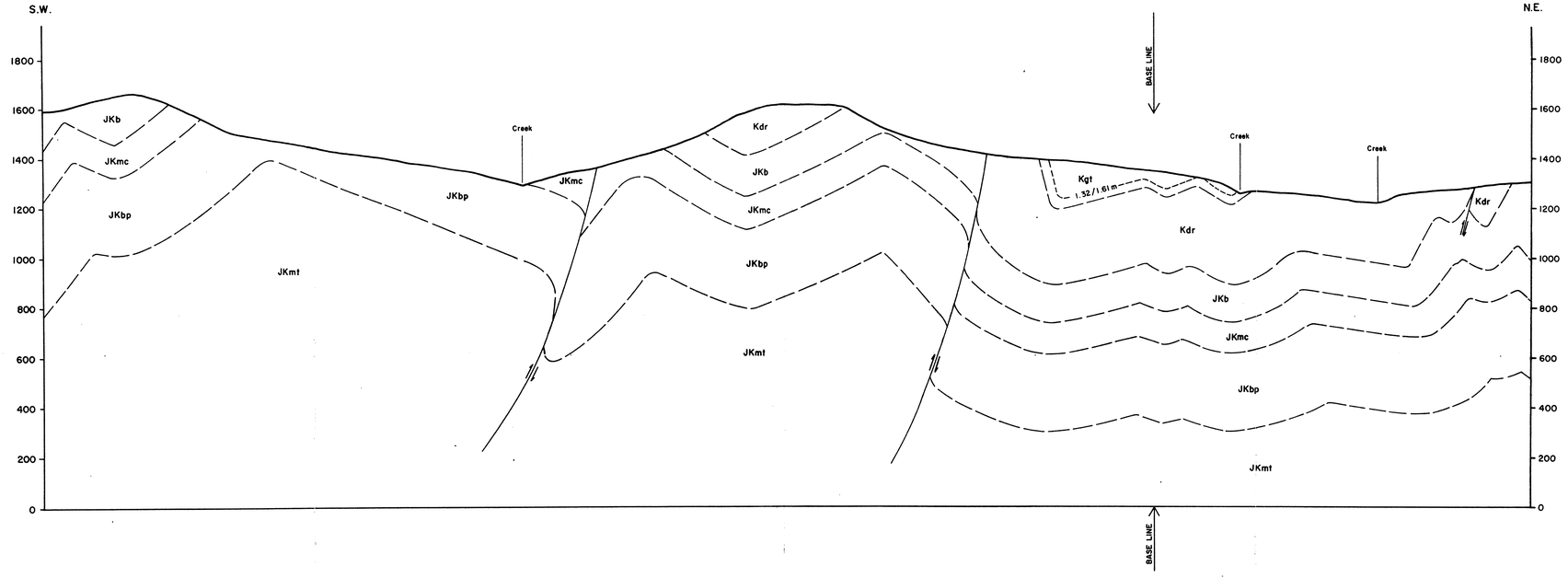
PR-Goodrich 82(a)A

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
GOODRICH CENTRAL
GEOLOGICAL CROSS SECTION
O-O'

GDR-82-050

PREPARED BY: V. ODEGAARD		SCALE	1 : 10,000
APPROVED BY: C. WILLIAMS	DATE: SEPT. '82	DRAWING No.	



LEGEND

APPENDIX A - PART 2

Q	**QUATERNARY** — Glacial deposits & alluvium
Kcm	**COMMOTION FORMATION** — Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
Kmb	**MOOSEBAR FORMATION** — Mudstones, minor siltstones, marine
Kbs	**BLUESKY** — Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
Kgt	**GETHING FORMATION** — Cyclothems ; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones ; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit ; COAL
Kdr	**DRESSER FORMATION** — Incomplete cyclothems ; discontinuous coal measures in varying thicknesses ; medium to very coarse grained sandstones, grits, and conglomerates
JKb	**BRENOT FORMATION** — Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
JKmc	**MONACH FORMATION** — Marine lithic and quartzose sandstones, with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates.
JKbp	**BEATTIE PEAKS FORMATION** — Buff to brownish sandstones, fine to medium grained ; thinly bedded black and dark grey shales, silty shales, siltstones ; thin sandstones with ironstone banding
JKmt	**MONTEITH FORMATION** — Grey and brown sandstones, fine to medium grained ; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.
Jf	**FERNIE FORMATION** — Dark grey and black shales, mudstones, sandstones, siltstones, marine

LOWER CRETACEOUS — CRASSIER GROUP — Kcm, Kmb, Kbs, Kgt, Kdr

TRANSITIONAL — BEAUDETTE GROUP — JKb, JKmc, JKbp, JKmt

JURASSIC — Jf

BASELINE

COAL/COAL & ROCK — COAL SEAM

533

PR-Goodrich 83(2)A

SCALE 1:10,000

0 500 1000

METRES

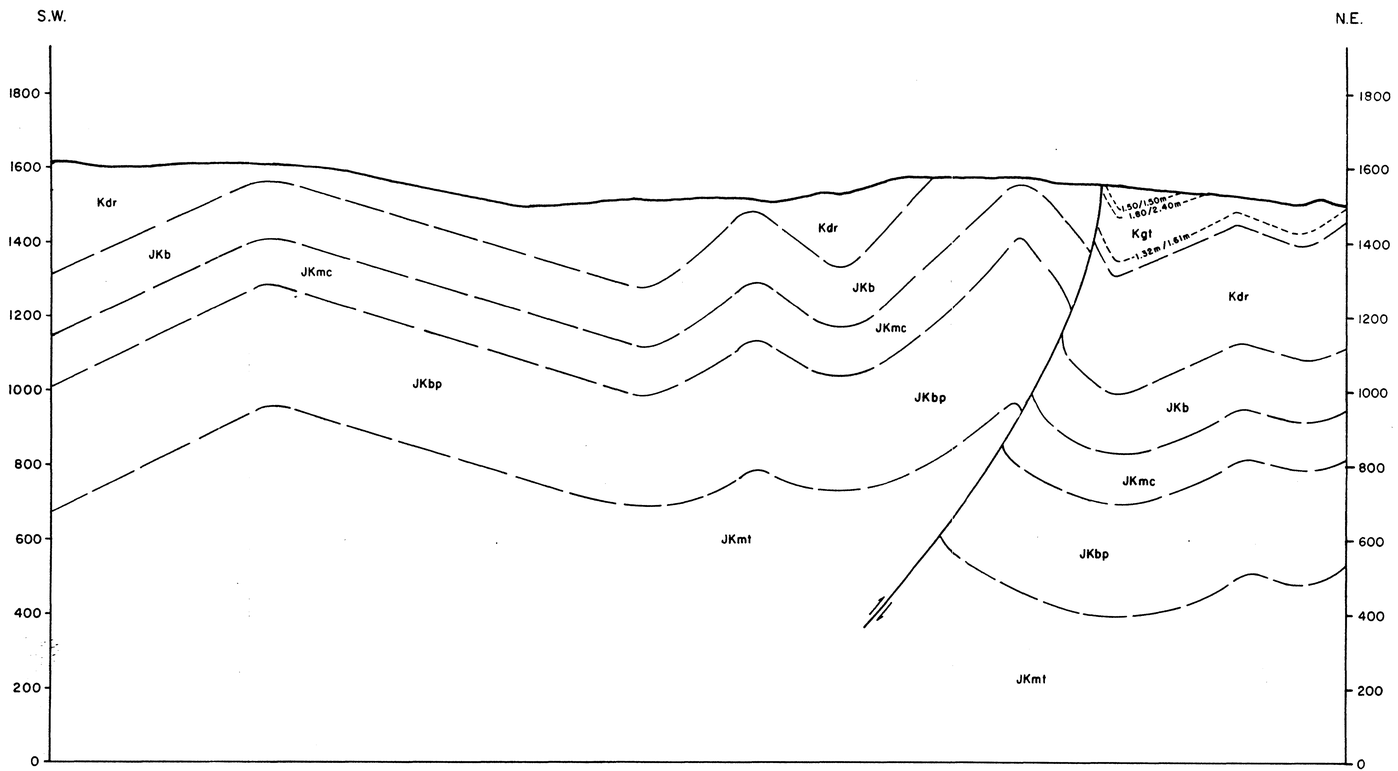
GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
WHITERABBIT
GEOLOGICAL CROSS-SECTION
Q-Q'

SCALE 1:10,000

PREPARED BY: V. ODEGAARD
APPROVED BY: C. WILLIAMS DATE: SEPT/82

GDR-82-188



LEGEND

APPENDIX A - PART 2

JURASSIC — TRANSITIONAL — LOWER CRETACEOUS

BEAUDETTE GROUP — CRASSIER GROUP

Q — *QUATERNARY*
Glacial deposits & alluvium

Kcm — *COMMOTION FORMATION*
Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates

Kmb — *MOOSEBAR FORMATION*
Mudstones, minor siltstones, marine

Kbs — *BLUESKY*
Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite

Kgt — *GETHING FORMATION*
Cyclothems ; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones ; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit ; COAL

Kdr — *DRESSER FORMATION*
Incomplete cyclothems ; discontinuous coal measures in varying thicknesses ; medium to very coarse grained sandstones, grits, and conglomerates

JKb — *BRENOT FORMATION*
Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL

JKmc — *MONACH FORMATION*
Marine lithic and quartzose sandstones, with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates.

JKbp — *BEATTIE PEAKS FORMATION*
Buff to brownish sandstones, fine to medium grained ; thinly bedded black and dark grey shales, silty shales, siltstones ; thin sandstones with ironstone banding

JKmt — *MONTEITH FORMATION*
Grey and brown sandstones, fine to medium grained ; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.

Jf — *FERNIE FORMATION*
Dark grey and black shales, mudstones, sandstones, siltstones, marine

↓ BASELINE

— — COAL/COAL & ROCK — — COAL SEAM

533

PR-Goodrich 82(a)A

SCALE 1:10,000

0 500 1000
METRES

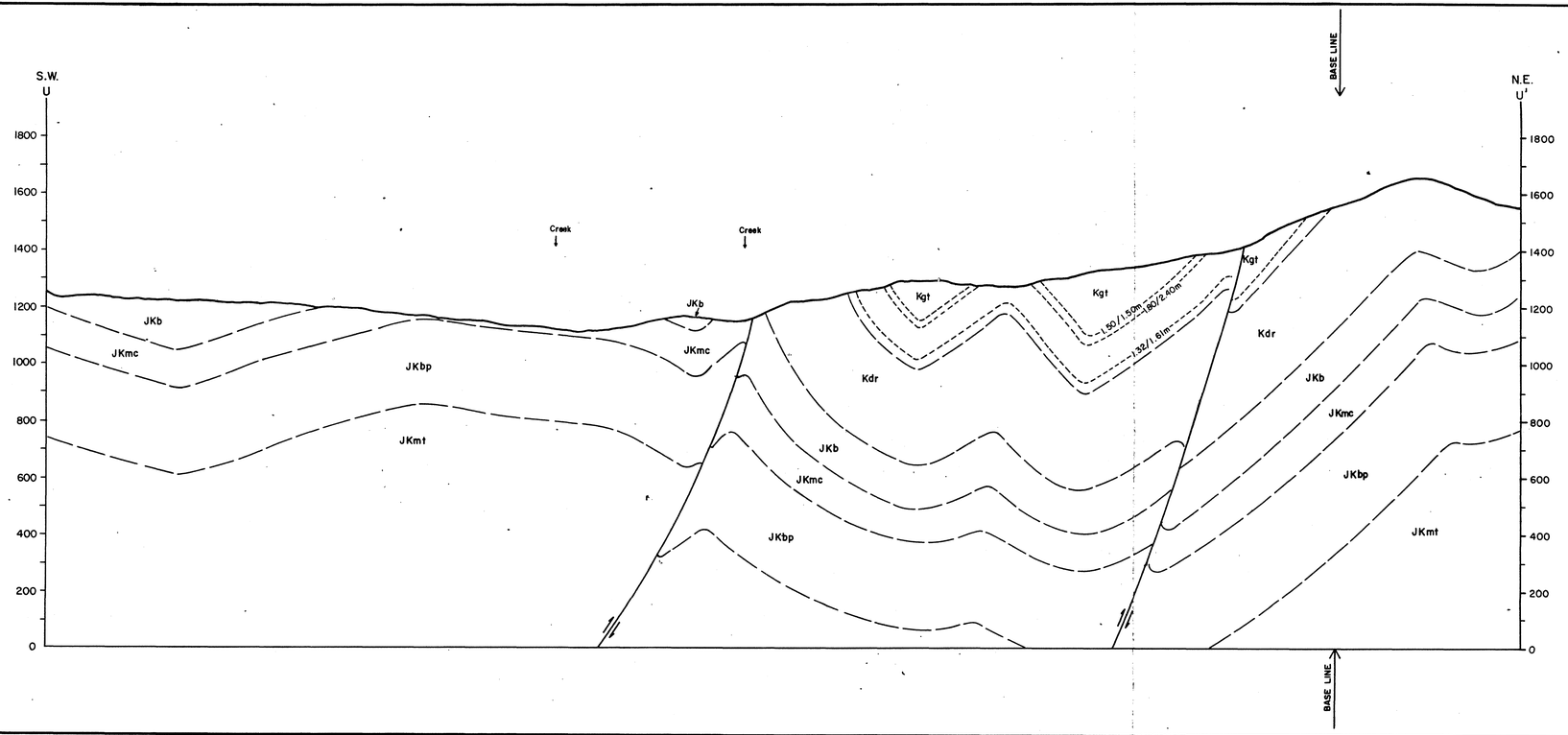
GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
WHITERABBIT
GEOLOGICAL CROSS-SECTION
T-T'

SCALE 1:10,000

PREPARED BY: V. ODEGAARD
APPROVED BY: C. WILLIAMS DATE: SEPT/82

GDR-82-034



LEGEND

APPENDIX A - PART 2

LOWER CRETACEOUS — CRASSIER GROUP

Q — *QUATERNARY*
Glacial deposits & alluvium

Kcm — *COMMOTION FORMATION*
Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates

Kmb — *MOOSEBAR FORMATION*
Mudstones, minor siltstones, marine

Kbs — *BLUESKY*
Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite

Kgt — *GETHING FORMATION*
Cyclothems ; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones ; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit ; COAL

Kdr — *DRESSER FORMATION*
Incomplete cyclothems ; discontinuous coal measures in varying thicknesses ; medium to very coarse grained sandstones, grits, and conglomerates

TRANSITIONAL — BEAUDETTE GROUP

JKb — *BRENOT FORMATION*
Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL

JKmc — *MONACH FORMATION*
Marine lithic and quartzose sandstones, with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates.

JURASSIC

JKbp — *BEATTIE PEAKS FORMATION*
Buff to brownish sandstones, fine to medium grained ; thinly bedded black and dark grey shales, silty shales, siltstones ; thin sandstones with ironstone banding

JKmt — *MONTEITH FORMATION*
Grey and brown sandstones, fine to medium grained ; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.

Jf — *FERNIE FORMATION*
Dark grey and black shales, mudstones, sandstones, siltstones, marine

BASELINE

—COAL/COAL & ROCK— COAL SEAM

533

PR-Goodrich 82(2)A

SCALE 1:10,000

0 500 1000
METRES

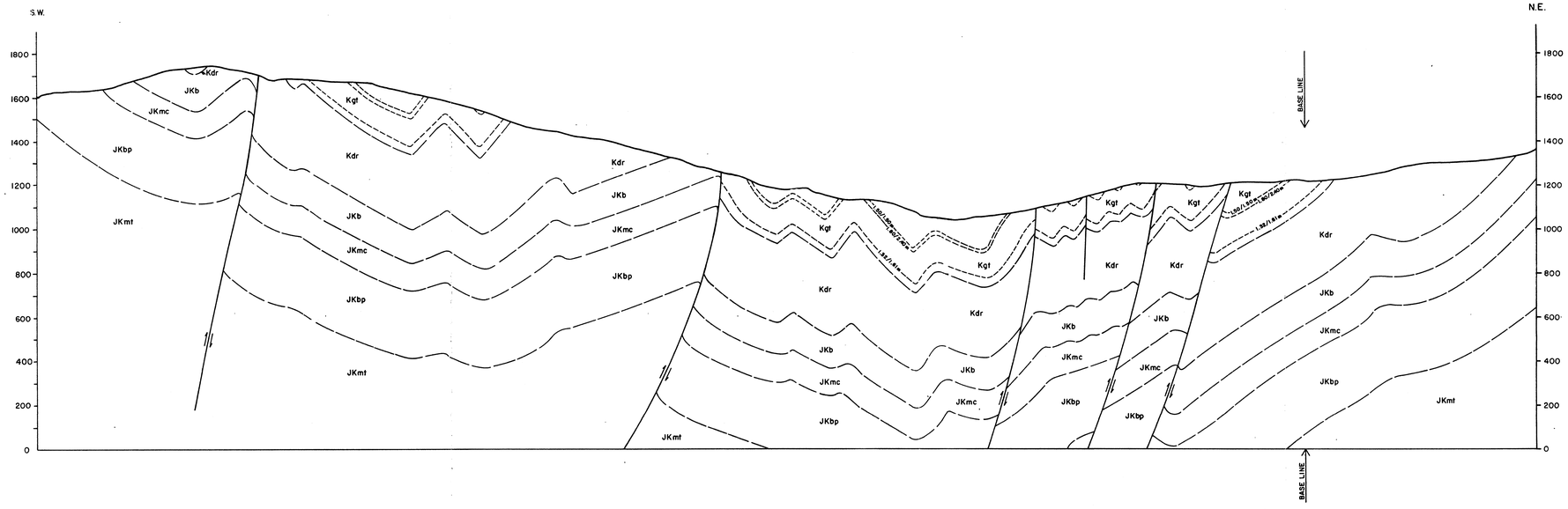
GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
WHITERABBIT
GEOLOGICAL CROSS-SECTION
U-U'

SCALE 1:10,000

PREPARED BY: V. ODEGAARD
APPROVED BY: C. WILLIAMS DATE: SEPT/82

GDR - 82 - 035



LEGEND

APPENDIX A - PART 2

	Q	**QUATERNARY** *Glacial deposits & alluvium*
LOWER CRETACEOUS — CRASSIER GROUP	Kcm	**COMMOTION FORMATION** *Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates*
	Kmb	**MOOSEBAR FORMATION** *Mudstones, minor siltstones, marine*
	Kbs	**BLUESKY** *Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite*
	Kgt	**GETHING FORMATION** *Cyclothems ; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones ; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit ; COAL*
	Kdr	**DRESSER FORMATION** *Incomplete cyclothems ; discontinuous coal measures in varying thicknesses ; medium to very coarse grained sandstones, grits, and conglomerates*
TRANSITIONAL — BEAUDETTE GROUP	JKb	**BRENOT FORMATION** *Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL*
	JKmc	**MONACH FORMATION** *Marine lithic and quartzose sandstones, with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates.*
JURASSIC	JKbp	**BEATTIE PEAKS FORMATION** *Buff to brownish sandstones, fine to medium grained ; thinly bedded black and dark grey shales, silty shales, siltstones ; thin sandstones with ironstone banding*
	JKmt	**MONTEITH FORMATION** *Grey and brown sandstones, fine to medium grained ; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.*
	Jf	**FERNIE FORMATION** *Dark grey and black shales, mudstones, sandstones, siltstones, marine*

↓ BASELINE

— —COAL/COAL & ROCK— — COAL SEAM

SCALE 1:10,000

0 500 1000
METRES

533 OR-Goodrich 82(2)A

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

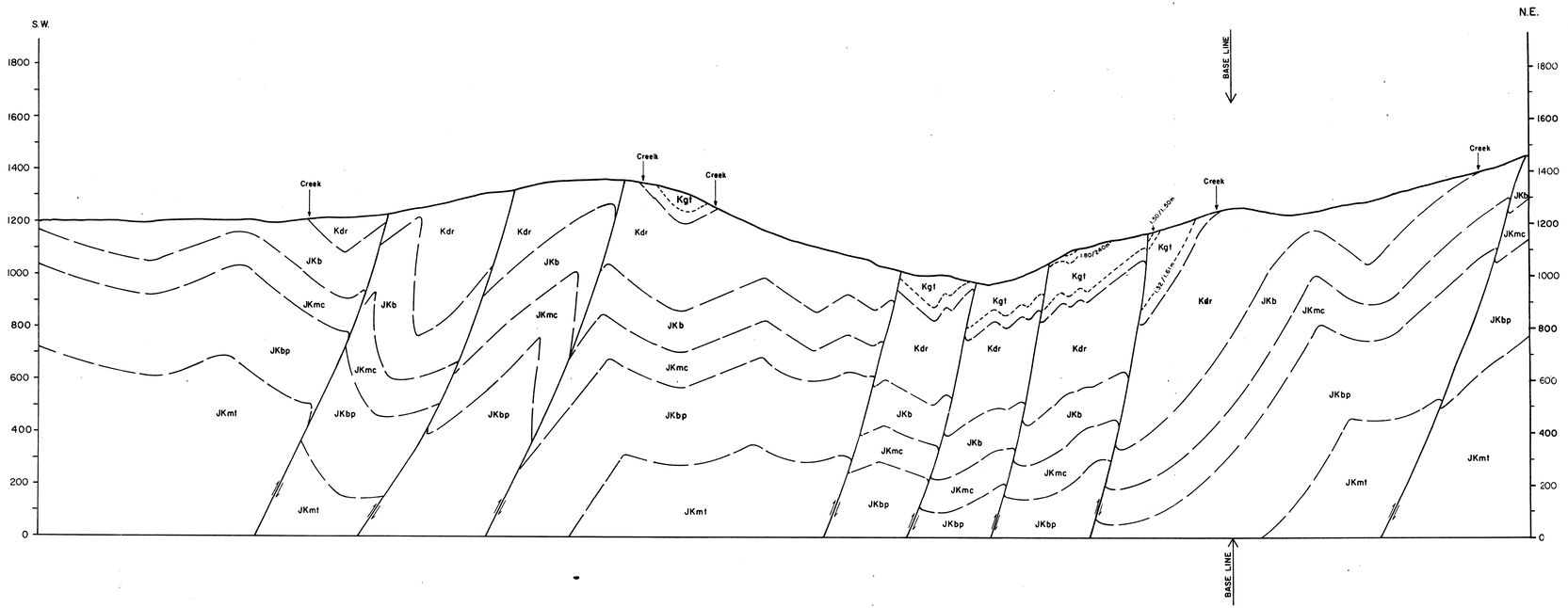
GOODRICH COAL PROPERTY
Northeastern British Columbia
1982

WHITERABBIT
GEOLOGICAL CROSS-SECTION
V-V'

SCALE 1:10,000

PREPARED BY: V. ODEGAARD
APPROVED BY: C. WILLIAMS DATE: SEPT/82

GDR - 82-036



LEGEND

APPENDIX A - PART 2

Q	*QUATERNARY* — *Glacial deposits & alluvium*
Kcm	*COMMOTION FORMATION* — *Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates*
Kmb	*MOOSEBAR FORMATION* — *Mudstones, minor siltstones, marine*
Kbs	*BLUESKY* — *Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite*
Kgt	*GETHING FORMATION* — *Cyclothems ; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones ; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit ; COAL*
Kdr	*DRESSER FORMATION* — *Incomplete cyclothems ; discontinuous coal measures in varying thicknesses ; medium to very coarse grained sandstones, grits, and conglomerates*
JKb	*BRENOT FORMATION* — *Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL*
JKmc	*MONACH FORMATION* — *Marine lithic and quartzose sandstones, with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates.*
JKbp	*BEATTIE PEAKS FORMATION* — *Buff to brownish sandstones, fine to medium grained ; thinly bedded black and dark grey shales, silty shales, siltstones ; thin sandstones with ironstone banding*
JKmt	*MONTEITH FORMATION* — *Grey and brown sandstones, fine to medium grained ; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.*
Jf	*FERNIE FORMATION* — *Dark grey and black shales, mudstones, sandstones, siltstones, marine*

LOWER CRETACEOUS — CRASSIER GROUP
TRANSITIONAL — BEAUDETTE GROUP
JURASSIC

BASELINE

— — COAL / COAL & ROCK — — COAL SEAM

SCALE 1:10,000

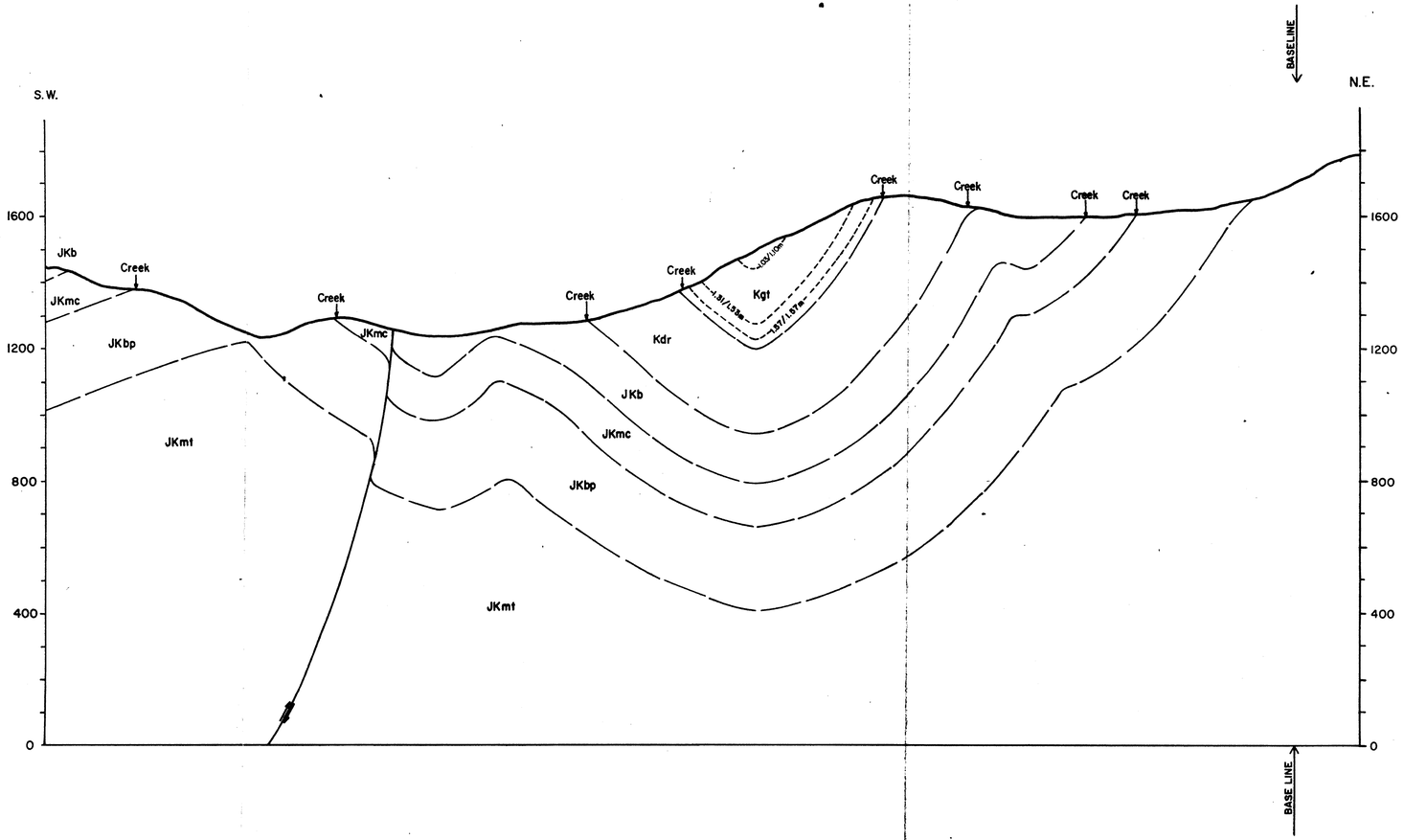
0 500 1000
METRES

533 PR Goodrich 82(2)A

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
WHITERABBIT
GEOLOGICAL CROSS-SECTION
W - W'
SCALE 1:10,000

PREPARED BY: V. ODEGAARD
APPROVED BY: C. WILLIAMS DATE: SEPT/82
GDR - 82-037



LEGEND

APPENDIX A - PART 2

JURASSIC — TRANSITIONAL — LOWER CRETACEOUS

BEAUDETTE GROUP — CRASSIER GROUP

Q	***QUATERNARY*** *Glacial deposits & alluvium*
Kcm	***COMMOTION FORMATION*** *Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates*
Kmb	***MOOSEBAR FORMATION*** *Mudstones, minor siltstones, marine*
Kbs	***BLUESKY*** *Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite*
Kgt	***GETHING FORMATION*** *Cyclothems ; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones ; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit ; COAL*
Kdr	***DRESSER FORMATION*** *Incomplete cyclothems ; discontinuous coal measures in varying thicknesses ; medium to very coarse grained sandstones, grits, and conglomerates*
JKb	***BRENOT FORMATION*** *Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL*
JKmc	***MONACH FORMATION*** *Marine lithic and quartzose sandstones, with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates.*
JKbp	***BEATTIE PEAKS FORMATION*** *Buff to brownish sandstones, fine to medium grained ; thinly bedded black and dark grey shales, silty shales, siltstones ; thin sandstones with ironstone banding*
JKmt	***MONTEITH FORMATION*** *Grey and brown sandstones, fine to medium grained ; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.*
Jf	***FERNIE FORMATION*** *Dark grey and black shales, mudstones, sandstones, siltstones, marine*

BASELINE

— — COAL/COAL & ROCK — — COAL SEAM

SCALE 1:10,000

0 500 1000

METRES

533

PR-Goodrich 83(2)A

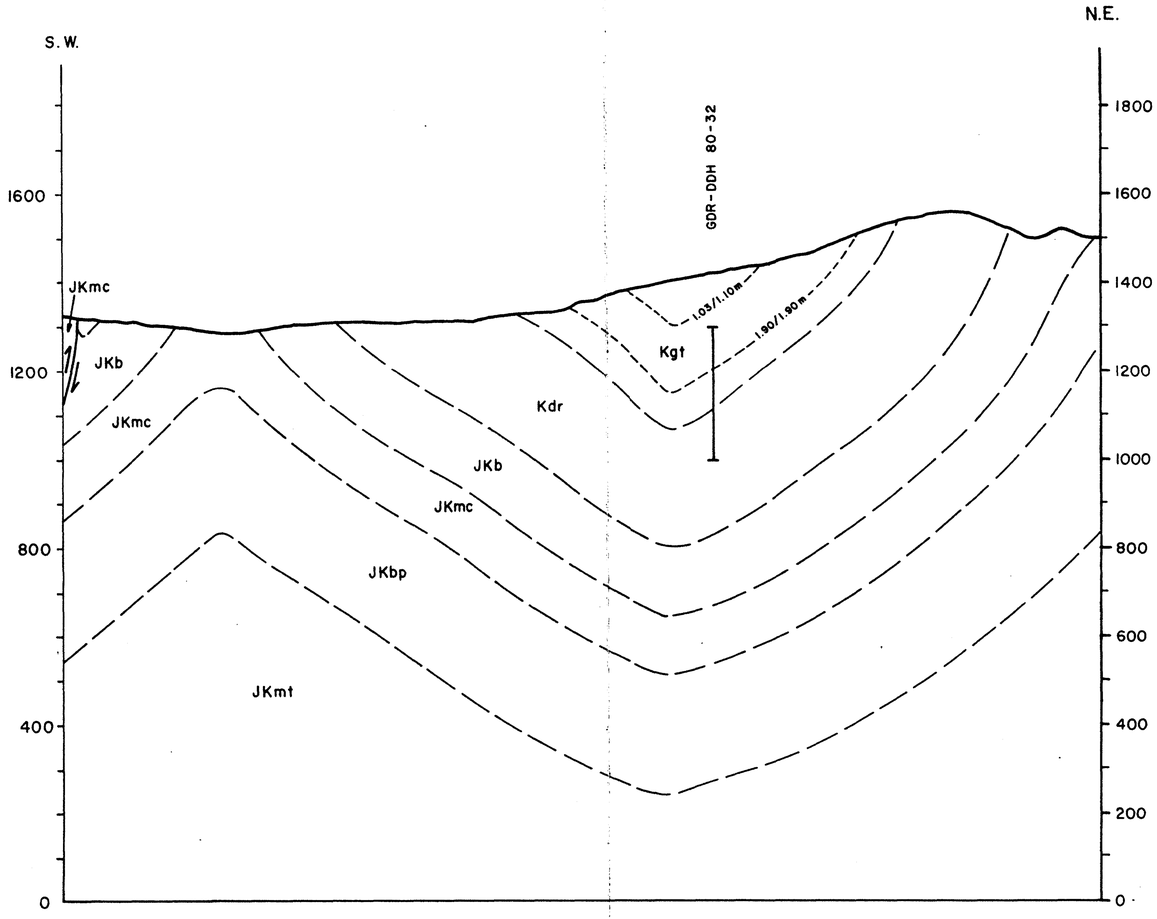
GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
WHITERABBIT
GEOLOGICAL CROSS-SECTION
X–X'

SCALE 1:10,000

PREPARED BY: V. ODEGAARD
APPROVED BY: C. WILLIAMS DATE: SEPT/82

GDR-82-034



LEGEND

JURASSIC — TRANSITIONAL — BEAUDETTE GROUP

LOWER CRETACEOUS — CRASSIER GROUP

Q — *QUATERNARY*
Glacial deposits & alluvium

Kcm — *COMMOTION FORMATION*
Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates

Kmb — *MOOSEBAR FORMATION*
Mudstones, minor siltstones, marine

Kbs — *BLUESKY*
Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite

Kgt — *GETHING FORMATION*
Cyclothems ; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones ; coalified plant debris, minor bentonite, black shales, and occasional minor tuffs in upper unit ; COAL

Kdr — *DRESSER FORMATION*
Incomplete cyclothems ; discontinuous coal measures in varying thicknesses ; medium to very coarse grained sandstones, grits, and conglomerates

JKb — *BRENOT FORMATION*
Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL

JKmc — *MONACH FORMATION*
Marine lithic and quartzose sandstones, with thick beds of clean, coarse grained white quartzites at top. Minor shales, siltstones and sandstones with occasional thin conglomerates.

JKbp — *BEATTIE PEAKS FORMATION*
Buff to brownish sandstones, fine to medium grained ; thinly bedded black and dark grey shales, silty shales, siltstones ; thin sandstones with ironstone banding

JKmt — *MONTEITH FORMATION*
Grey and brown sandstones, fine to medium grained ; fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates.

Jf — *FERNIE FORMATION*
Dark grey and black shales, mudstones, sandstones, siltstones, marine

↓ BASELINE

— — COAL/COAL & ROCK — — COAL SEAM

SCALE 1:10,000

0 500 1000
METRES

533 PR-Goodrich 82(2)A

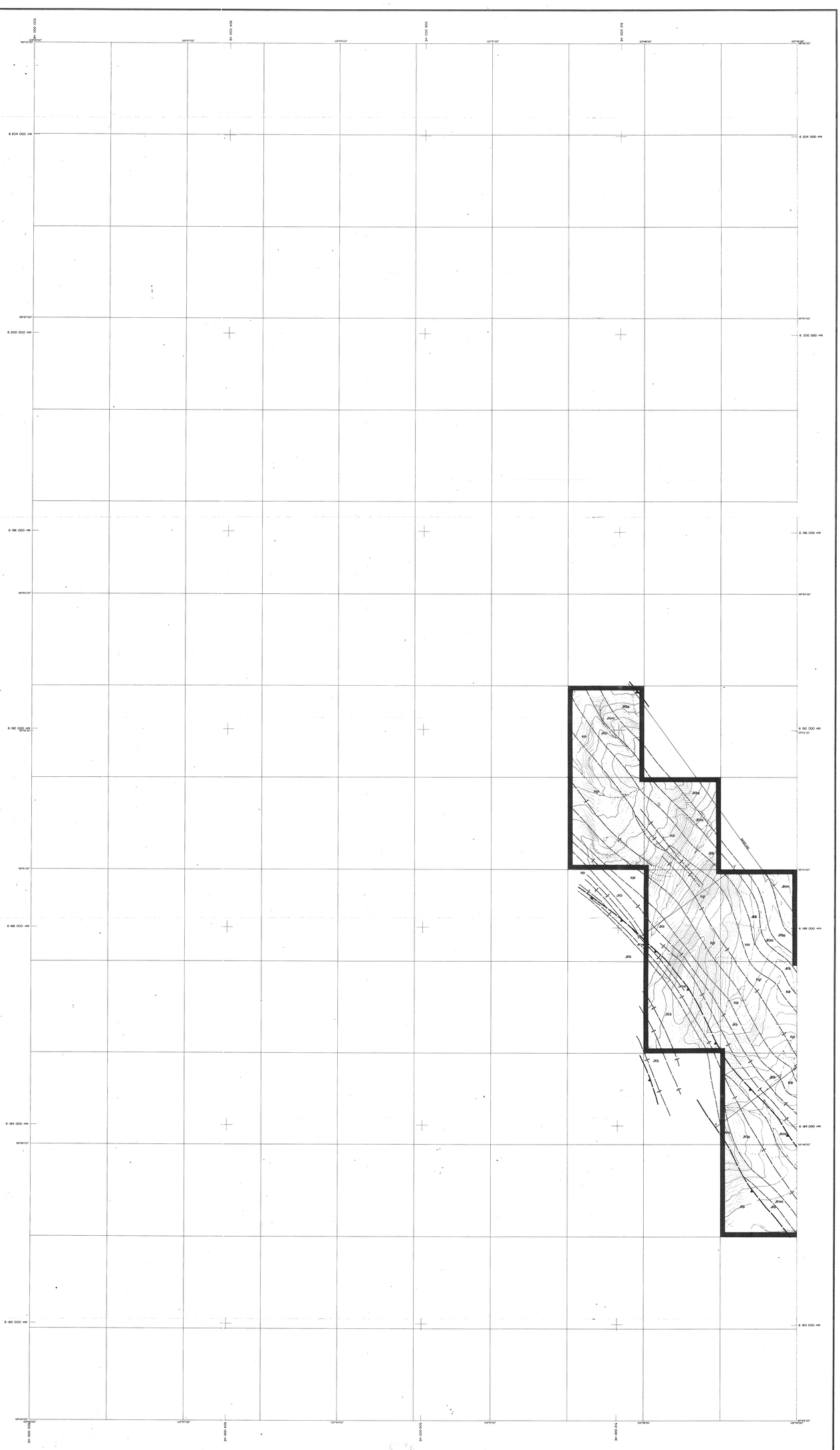
GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeastern British Columbia
1982
WHITERABBIT
GEOLOGICAL CROSS-SECTION
Y-Y'

SCALE 1:10,000

PREPARED BY: V. ODEGAARD
APPROVED BY: C. WILLIAMS DATE: SEPT/82

GDR - 82 - 039


6 204 000 mN
6 200 000 mN
6 196 000 mN
6 192 000 mN
6 188 000 mN
6 184 000 mN
6 180 000 mN
JK
Kgf
Kb
Kc
Kp
JKbc
JKmc
JKbp
JKc
JKp
JKs
JKd
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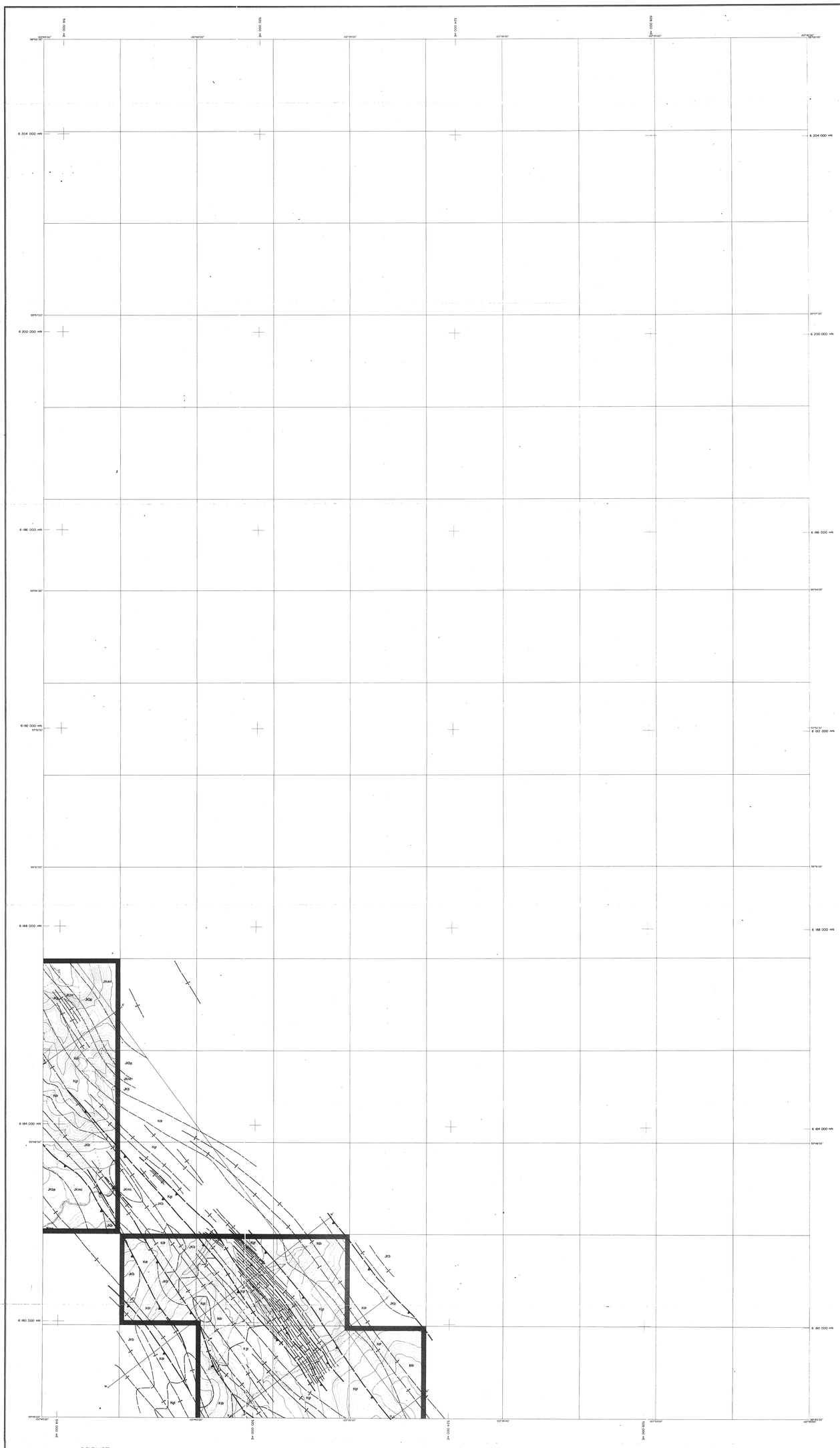
JKbp
JKc
JKp
JKs
JKd
JKmc
JKbp
JKc
JKp
JKs
JKd



SURVEY NOTE

The map data was compiled photogrammetrically and is based on the Universal Transverse Mercator grid and geodetic datum.

LEGEND

MAIN ROAD
SECONDARY ROAD
TRACK or TRAIL
ELT LINE
RIVER
STREAM
LAKE
CONTOURS

LEGEND

- Property Boundary
- Coal Seam Subcrop
- Geological Boundary, (defined, approximate)
- Anticline (defined, approximate)
- Syncline (defined, approximate)
- Anticline and Syncline (overturned)
- Fault (defined showing dip, approx. position of fault)
- Normal Fault
- Strike and Dip (bedding, overturned bedding)
- Cross Section Location
- Monocline
- Bedding (vertical, horizontal)
- Trench Location

TABLE OF FORMATIONS

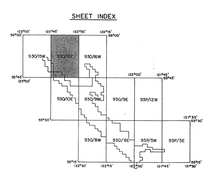
	Q	**QUATERNARY** Glacial deposits and alluvium
CENOZOIC	Kcm	**COMINCO FORMATION** Siltstones, sandstones, interbedded, conformous of marine origin, COAL at the top member, and conglomerates
	Kmb	**MOOSEBAR FORMATION** Mudstones, minor siltstones, marine
	Klm	**ALLISON** Up to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
MESOZOIC — CRETACEOUS — LOWER CRETACEOUS	Kgf	**GETHING FORMATION** Conglomerate, dark gray mudstones, siltstones, sandstones, coal seams, thin bedded carbonaceous plant debris, minor bentonite, black shales, and tuffaceous minor tuffs in upper unit; COAL
	Kgr	**GREENHORN FORMATION** Thin bedded siltstones, discontinuous coal measures in varying thicknesses, medium to very coarse grained sandstones, thin conglomerates, (but mostly conglomerates)
	JKb	**BRIGHT FORMATION** LOWER "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
MESOZOIC — JURASSIC	JKm	**MONACH FORMATION** Marine Shale and quartzose sandstones with thick COAL seam at the base and thin coal seams near the top. Minor shales, siltstones and sandstones with occasional thin conglomerates
	JKm	**BEATTIE PEAKS FORMATION** Buff to brownish sandstones, fine to medium grained, thin to very coarse grained quartzite, minor shales, siltstones, thin sandstones with massive bedding
	JKm	**MONTNEY FORMATION** Gray and brown sandstones, fine to medium grained, thin to very coarse grained quartzite, minor shales, thin bedded shales and siltstones and sandstones perhaps, occasional thin conglomerates
	P	**PERMIAN FORMATION** Dark gray and black shales, mudstones, sandstones, siltstones, marine

SCALE 1:20,000

Metres 100 0 500 1000 1500 2000 2500 3000 Metres

CONTOUR INTERVAL 20m

SHEET INDEX



533 P.E. Goodrich 82/03/30

GULF CANADA RESOURCES INC.

Coal Division

CALGARY ALBERTA

GOODRICH COAL PROPERTY

Northeast British Columbia

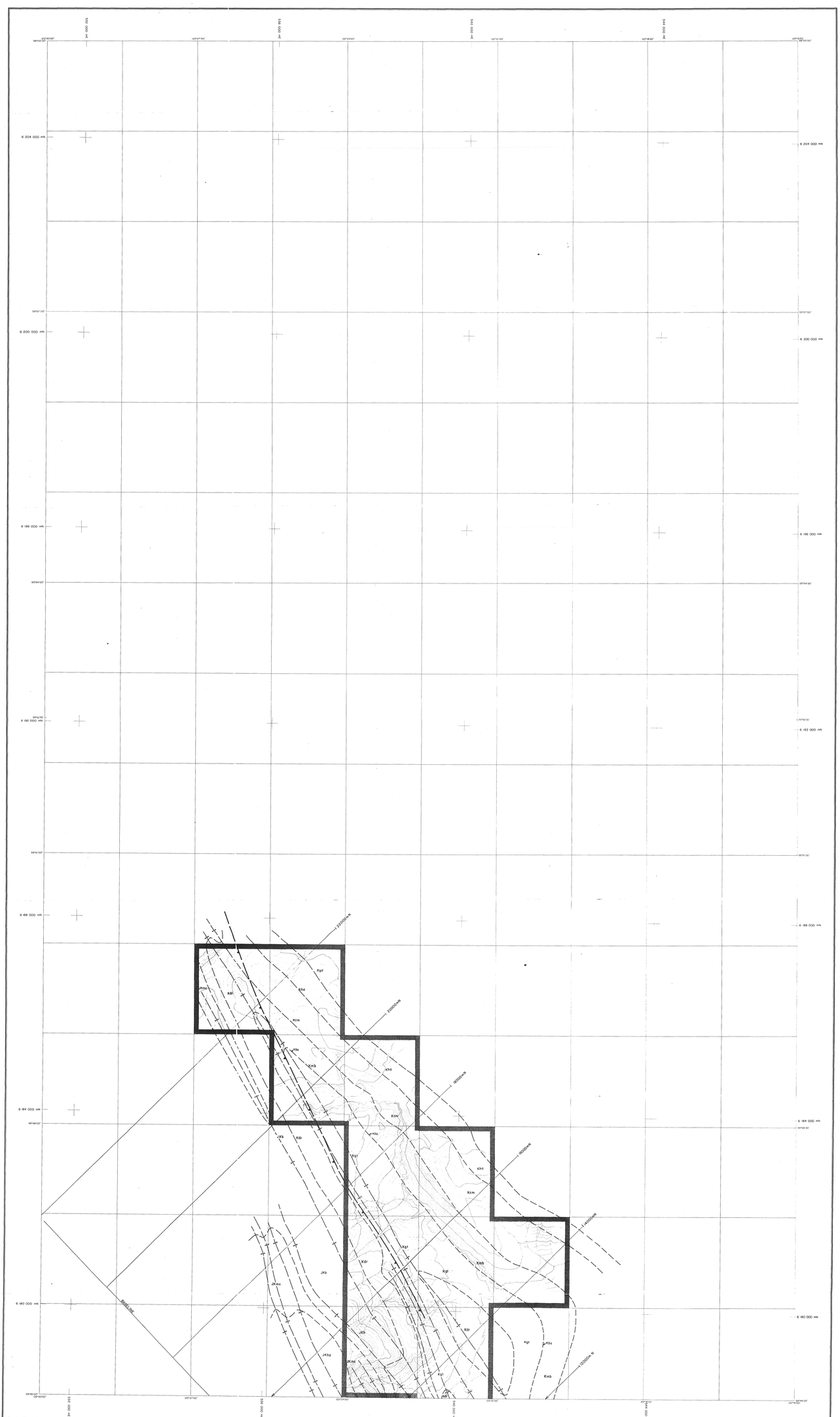
1982

REGIONAL GEOLOGY MAP

930/15 E

DRAWN BY: Hardy Assoc. Ltd. DATE: SEPT. 1981	SCALE 1:20,000
PREPARED BY: GOODRICH GEOLOGICAL STAFF	DRAWING No. GCR-82-195
APPROVED BY: C.W. DATE: NOV., 1982	

Appendix A Part 3



SURVEY NOTE

The map data was compiled photogrammetrically and is based on the Universal Transverse Mercator grid and geodetic datum.

LEGEND

MAIN ROAD
SECONDARY ROAD
TRACK or TRAIL
RAILLINE
RIVER
STREAM
LAKE
CONTOURS

LEGEND

- Property Boundary
- Coal Seam Subcrop
- Geological Boundary, (defined, approximate)
- Anticline (defined, approximate)
- Syncline (defined, approximate)
- Anticline and Syncline (overturned)
- Fault (defined showing dip, approx. position of fault)
- Normal Fault
- Strike and Dip (bedding, overturned bedding)
- Cross Section Location
- Monocline
- Bedding (vertical, horizontal)
- Trench Location

TABLE OF FORMATIONS

Q — QUATERNARY
Glacial deposits and alluvium

Kdm — CORNETTA FORMATION
Dark grey mudstone, siltstone interbedded, claystones of marine origin, (Kdd), at the top (Kdm), and conglomerate (Kdc)

Kmb — MOOSEBAR FORMATION
Mudstone, minor siltstones, marine

Kns — SLOCAN:
Fine to medium grained sandstones, mudstone, siltstone, carbonate unit at the with an altered glauconite

Kgt — GETTING FORMATION
Carbonaceous dark grey mudstones, siltstones, carbonaceous, silty sandy mudstones, coaliferous beds, coal seams, (Kgt), carbonate unit, occasional minor tuffs in upper unit, (Kgt).

Kdr — DRESSER FORMATION
Dark grey mudstones, diamictitious (till) measuring in varying thicknesses; medium to very coarse grained sandstones, grits, and conglomerates (that mostly conglomerates)

JKb — BRENT FORMATION
"Jurassic" and "Cretaceous" sandstones, siltstones, mudstones, carbonaceous mudstones, (Coal).

JKmc — MONACH FORMATION
Marine shale and nonfoliated sandstones with drop stones, fine to medium grained white quartzitic at top. Minor shales, siltstones and sandstones with occasional thin conglomerates

JKbp — BEATTIE PEAKS FORMATION
Buff to brownish sandstones, fine to medium grained, fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates

JKnt — MONTSITA FORMATION
Buff to brownish sandstones, fine to medium grained, fine to very coarse grained quartzite. Minor beds of shales, and shales with siltstone and sandstone partings, occasional thin conglomerates

JT — FERNIE FORMATION
Dark grey and black shales, mudstones, sandstones, siltstones, marine

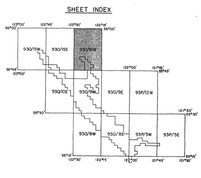
Lower — Middle — Upper — Cretaceous — Lower Cretaceous — BLUESKIN GROUP — SPARWOOD GROUP

SCALE 1:20,000

Metres 100 0 100 1000 2000 3000 4000 Metres

CONTOUR INTERVAL 20m

SHEET INDEX



533

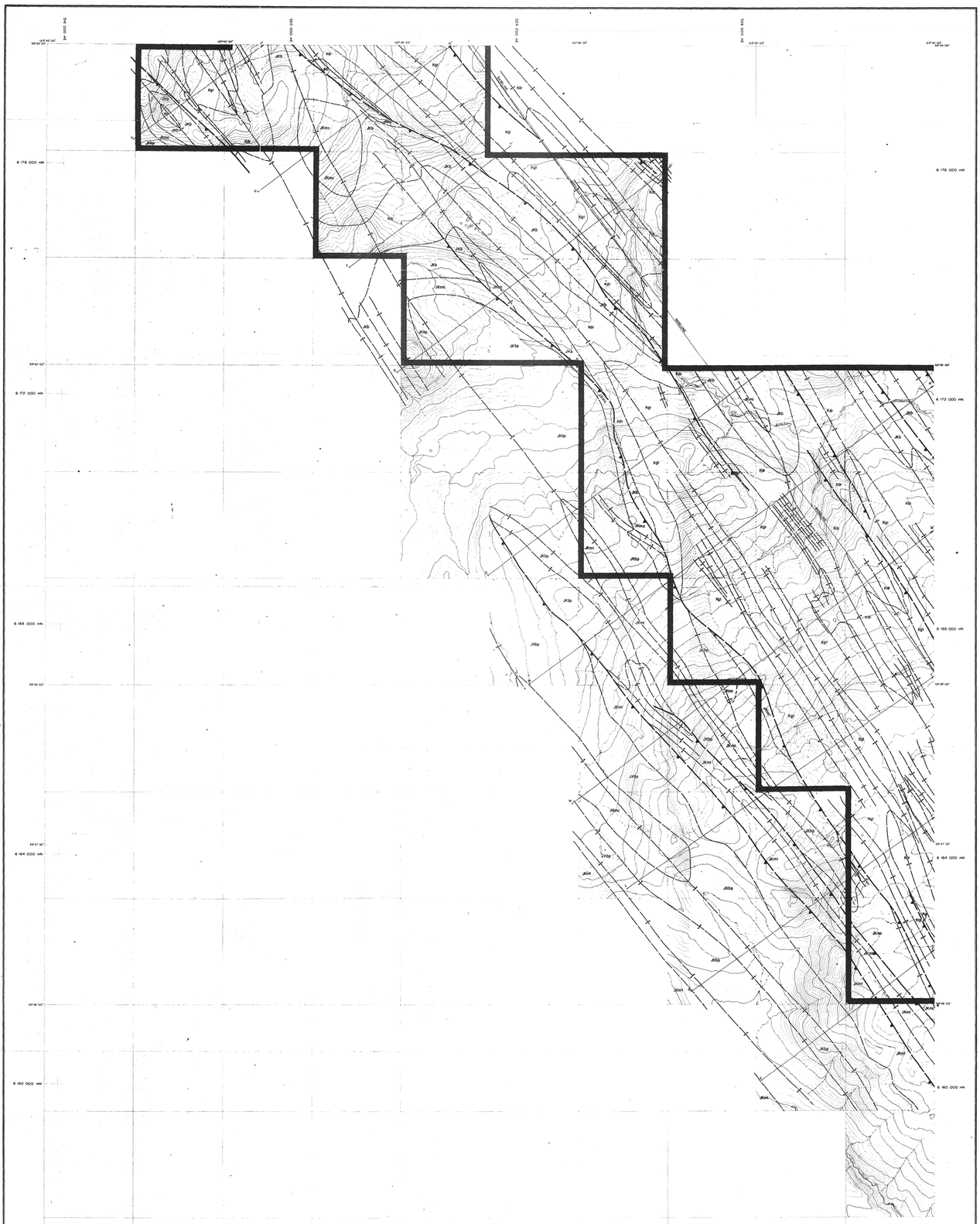
Pg. Goodrich 8-21-18

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeast British Columbia
1982
REGIONAL GEOLOGY MAP
930/16W

DRAWN BY: Hardy Assoc. Ltd. DATE: SEPT. 1981	SCALE 1:20,000
PREPARED BY: GOODRICH GEOLOGICAL STAFF	DRAWING No. GDR-82-196
APPROVED BY: C.W. DATE: NOV. 1982	

Appx. A Part 3



SURVEY NOTE

The map data was compiled photogrammetrically and is based on the Universal Transverse Mercator grid and geodetic datum.

LEGEND

MAIN ROAD
SECONDARY ROAD
TRACK or TRAIL
CUT LINE
RIVER
STREAM
LAKE
CONTOURS

LEGEND

- Property Boundary
- Coal Seam Subcrop
- Geological Boundary, (defined, approximate)
- Anticline (defined, approximate)
- Syncline (defined, approximate)
- Anticline and Syncline (overturned)
- Fault (defined showing dip, approx. position of fault)
- Normal Fault
- Strike and Dip (bedding, overturned bedding)
- Cross Section Location
- Monocline
- Bedding (vertical, horizontal)
- Trench Location

TABLE OF FORMATIONS

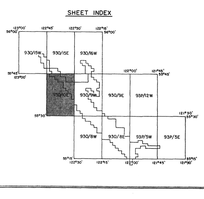
	Q	QUATERNARY Glacial deposits and alluvium.
Cretaceous	Kpm	CORBERTON FORMATION Siltstone, sandstone interbedded, claystone of variable origin, COAL at the top member, and conglomerate.
	Kmb	MOUSEBAKE FORMATION Mudstone, minor siltstone, marine
	Klm	BLUEMAN FORMATION Fine to medium grained sandstone, mudstone, and conglomerate unit at top with or without coal seams.
Kootenay Group - Upper Cretaceous	Kgl	GETHING FORMATION Conglomerate, dark grey mudstone, siltstone, sandstone, COAL, and minor bituminous shale and pearl shale, minor bentonite, black shale, and carbonaceous shale. Coal at top with or without conglomerate.
	Kgr	GREGSON FORMATION Interbedded siltstones, mudstones and sandstone in varying thicknesses; medium to very coarse grained sandstone, COAL, and conglomerate. (Kod Kootie conglomerate).
	JKb	BRENOT FORMATION Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
Kootenay Group - Lower Cretaceous	JKbc	MONACLA CONGLOMERATE Coarse grained to pebble conglomerate, with thick beds of chert, coarse grained white quartzite, or white quartz, and minor black argillite, sandstone and carbonaceous conglomerate.
	JKbe	BEAVER MINES FORMATION Fine to medium sandstones, fine to medium grained, thick bedded black chert and white quartz, minor black argillite, thin sandstones with thin black argillites.
	JKbm	MORISSETA FORMATION Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite, minor black argillite, thin sandstones with thin black argillites.
	JT	TATRA FORMATION Dark grey and black shales, mudstones, sandstone, siltstones, marine.

SCALE 1:20,000

Metres 500 0 500 1000 1500 2000 2500 3000 Metres

CONTOUR INTERVAL 20m

SHEET INDEX



533

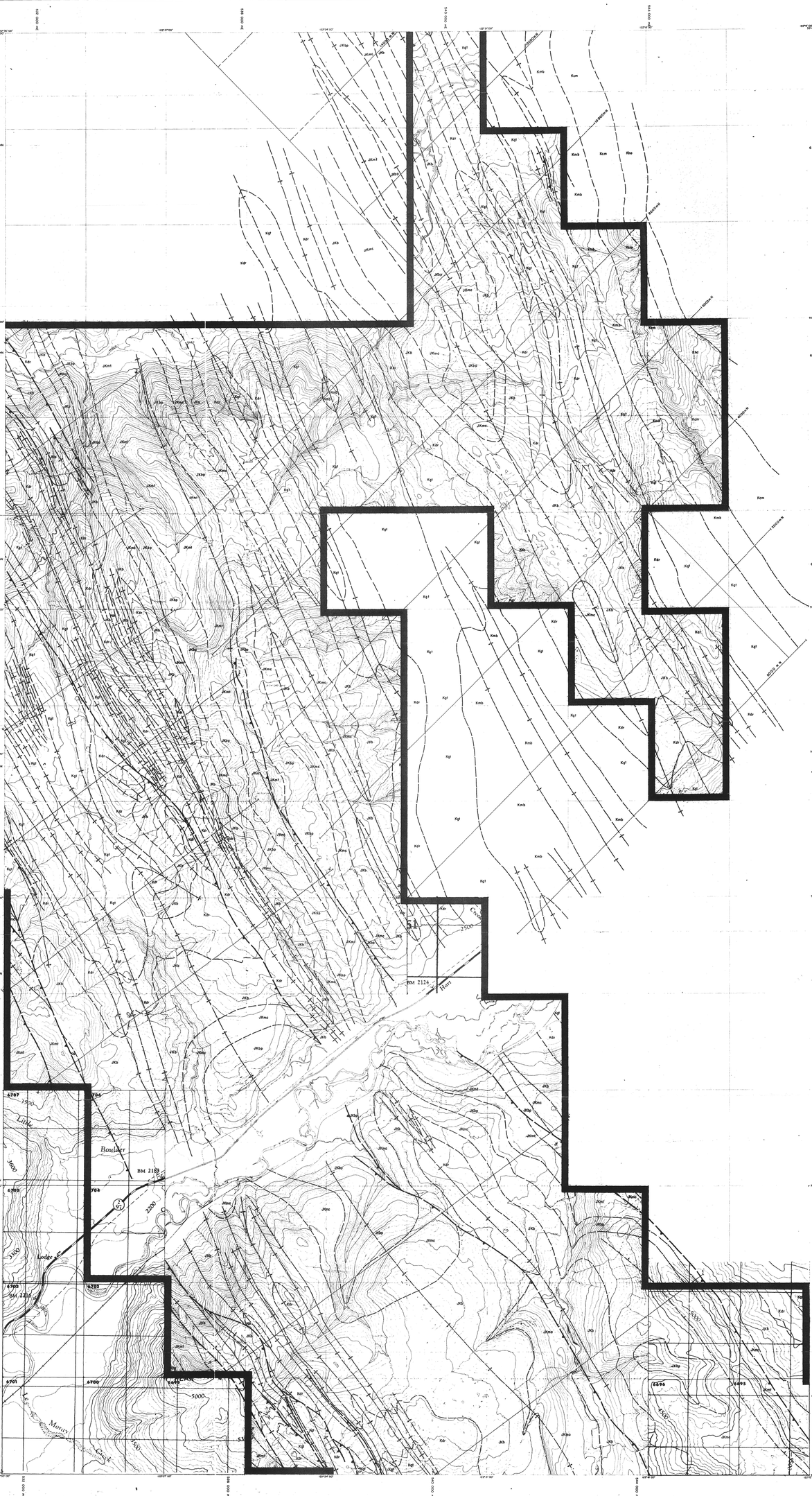
FILE: Goodrich Rpt (93)A

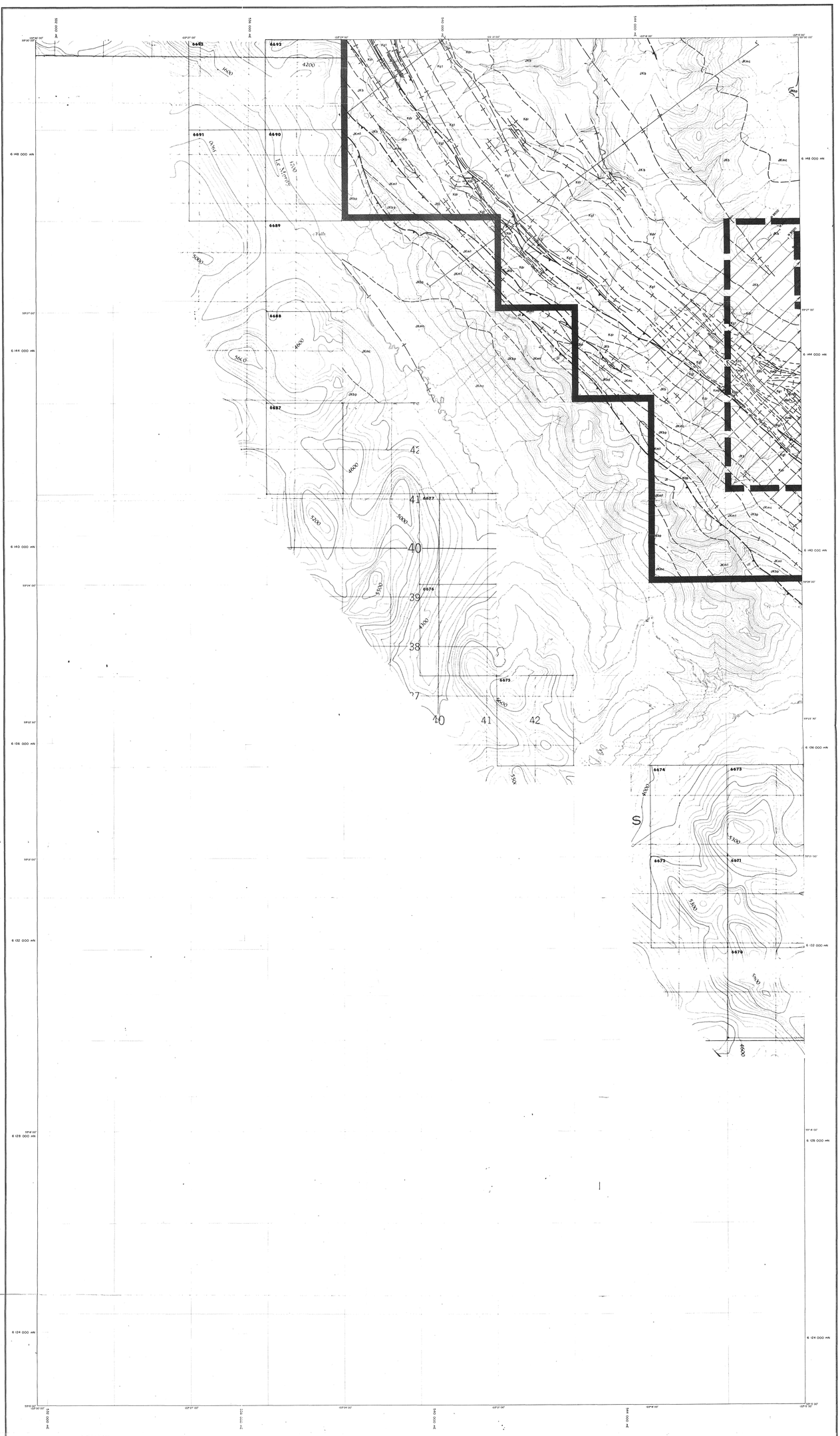
GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeast British Columbia
1982
REGIONAL GEOLOGY MAP
93O/10 E

DRAWN BY: Hardy Assoc. Ltd. DATE: SEPT. 1981	SCALE 1:20,000
PREPARED BY: GOODRICH GEOLOGICAL STAFF	DRAWING No.
APPROVED BY: C.W. DATE: NOV., 1982	GDR-82-137

Appendix A - Part 3


Boulder
Creek
Little
Moran's Creek
Lodge Ck
BM 2124
BM 2183
BM 2216
Hart
Kgl
Kdr
Kmb
Kcm
JKmc
JKs
JKmc
JKmc
JKmc



SURVEY NOTE

The map data was compiled photogrammetrically and is based on the Universal Transverse Mercator grid and geodetic datum.

LEGEND

MAIN ROAD	
SECONDARY ROAD	
TRACK or TRAIL	
CUT LINE	
RIVER	
STREAM	
LAKE	
CONTOURS	

LEGEND

- Property Boundary
- Coal Seam Subcrop
- Geological Boundary, (defined, approximate)
- Anticline (defined, approximate)
- Syncline (defined, approximate)
- Anticline and Syncline (overturned)
- Fault (defined showing dip, approx. position of fault)
- Normal Fault
- Strike and Dip (bedding, overturned bedding)
- Cross Section Location
- Monocline
- Bedding (vertical, horizontal)
- Trench Location

TABLE OF FORMATIONS

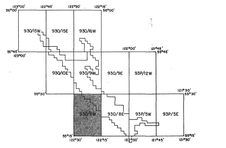
	Q	QUATERNARY Glacial deposits, and alluvium
Cretaceous	Kcm	CORNETTON FORMATION Siltstones, sandstones interbedded, claystones of marine origin, COAL at the top member, and conglomerates
	Kmb	MOOSEBAR FORMATION Mudstones, minor siltstones, marine
	Kbl	BLUESKY Fine to medium grained sandstones, mudstones, thin conglomerate unit at top with or without glauconite
Lower Cretaceous	Klgr	GETHING FORMATION Conglomerate, dark gray mudstones, siltstones, sandstones, COAL, and carbonaceous mudstones, plant debris, minor bentonite, black shale, and occasional minor tuffs in upper unit, COAL
	Klgr	GINGRAS FORMATION Sandstones, mudstones, claystones, carbonaceous coal, massive to varying thicknesses, medium to very coarse grained sandstones, minor conglomerates, and rarely conglomerates
Gravelbourg Group	JKL	WIMENT FORMATION COAL "rock and gaspers" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
	JKbn	BONANZA FORMATION Marine Shale and quartzose sandstones with lines of coal, COAL, and carbonaceous mudstones, at the top. Minor shales, siltstones and sandstones with occasional thin conglomerate
	JKbl	BEATTIE PEAKS FORMATION Buff to brownish sandstones, fine to medium, graded, fine to very coarse grained quartzo, minor shales, siltstones, and mudstones, and rarely conglomerate, occasional thin conglomerates
	JKbn	BONANZA FORMATION Dark gray and black shales, mudstones, sandstones, siltstones, marine
Triassic	JT	TERRACE FORMATION Dark gray and black shales, mudstones, sandstones, siltstones, marine

SCALE 1:20,000

Metres 100 0 100 200 300 400 500 Metres

CONTOUR INTERVAL 20m

SHEET INDEX



533

PR-Goodrich 6a(3)a

GULF CANADA RESOURCES INC.

Coal Division

CALGARY ALBERTA

GOODRICH COAL PROPERTY

Northeast British Columbia

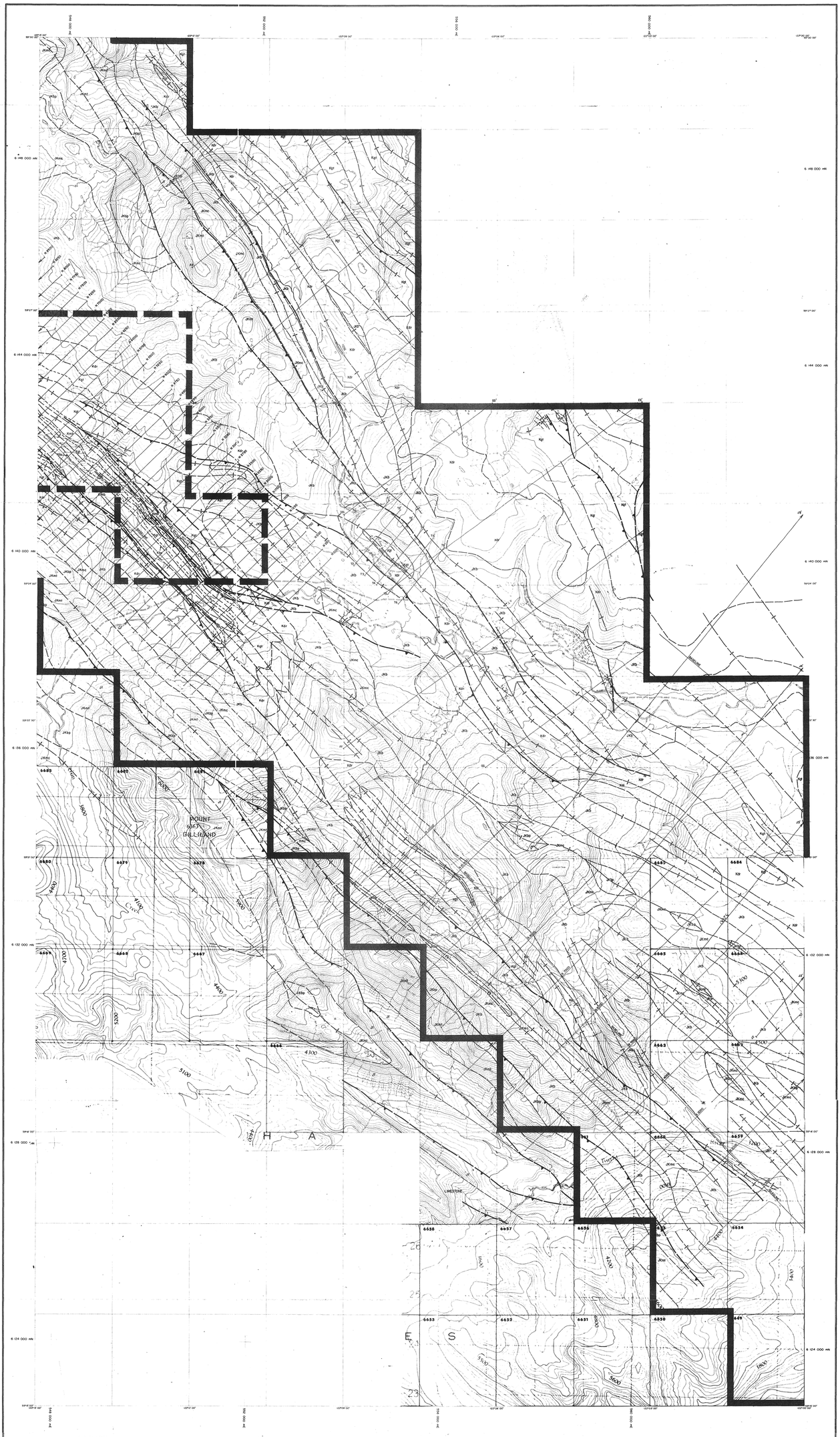
1982

REGIONAL GEOLOGY MAP

93O/8 W

DRAWN BY: Hardy Assoc. Ltd. DATE: SEPT. 1981	SCALE 1:20,000
PREPARED BY: GOODRICH GEOLOGICAL STAFF	DRAWING No. GDR-82-159
APPROVED BY: C.W. DATE: NOV., 1982	

Appendix A. Part 3



SURVEY NOTE

The map-data was compiled photogrammetrically and is based on the Universal Transverse Mercator grid and geodetic datum.

LEGEND

MAIN ROAD
UNIMPROVED ROAD
TRACK or TRAIL
CUT LINE
RIVER
STREAM
LAKE
CONTOURS

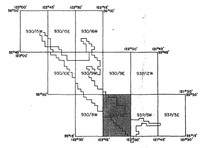
LEGEND

Property Boundary
Coal Seam Subcrop
Geological Boundary, (defined, approximate)
Anticline (defined, approximate)
Syncline (defined, approximate)
Anticline and Syncline (overturned)
Fault (defined showing dip, approx. position of fault)
Normal Fault
Strike and Dip (bedding, overturned bedding)
Cross Section Location
Monocline
Bedding (vertical, horizontal)
Trench Location

TABLE OF FORMATIONS

	Q	QUATERNARY Glacial deposits and alluvium
	Kcm	CONNIPTON FORMATION Mudstone, minor siltstone, marine
	Kmb	MOOSEBAR FORMATION Mudstone, minor siltstone, marine
	Klm	BLUESKY Fine to medium grained sandstone, mudstone, thin conglomerate unit at top with or without glauconite
Cretaceous (Lower Cretaceous)	Kgl	GETHING FORMATION Sandstone, dark grey mudstone, siltstone, coal seams, dark grey mudstone, siltstone and coal seams with sandstone, pebbly sandstone and conglomerate, minor tuffs in upper unit, COAL
	Kdr	DRESSER FORMATION Feldspathic sandstone, discontinuous coal seams, dark grey mudstone, siltstone in very coarse grained sandstone, grits, and conglomerate, (Gold Hunter Conglomerate)
	Kbt	BRIGHT FORMATION Lithic "salt and pepper" sandstone, siltstone, mudstone, minor carbonaceous mudstone, COAL
	JKm	MONAHEE FORMATION Marine silty and quartzose sandstone with thick beds of pebbly sandstone and conglomerate, thin bed silver shales, siltstone and sandstone with occasional thin conglomerates
Triassic (Upper Triassic)	JTRb	BEATTIE PEAKS FORMATION Buff to brownish sandstone, fine to medium grained, thick to very massive beds, thin beds, silty shales, siltstone, thin sandstone with occasional thin conglomerates
	JTRm	MONKMAN FORMATION Buff to brownish sandstone, fine to medium grained, thick to very massive beds, thin beds, silty shales, siltstone, thin sandstone with occasional pebbly sandstone and conglomerate
Permian	P	PERMIAN FORMATION Dark grey and black chalks, mudstones, mudstone, siltstone, marine

SHEET INDEX



SCALE 1:20,000

CONTOUR INTERVAL 20m

533

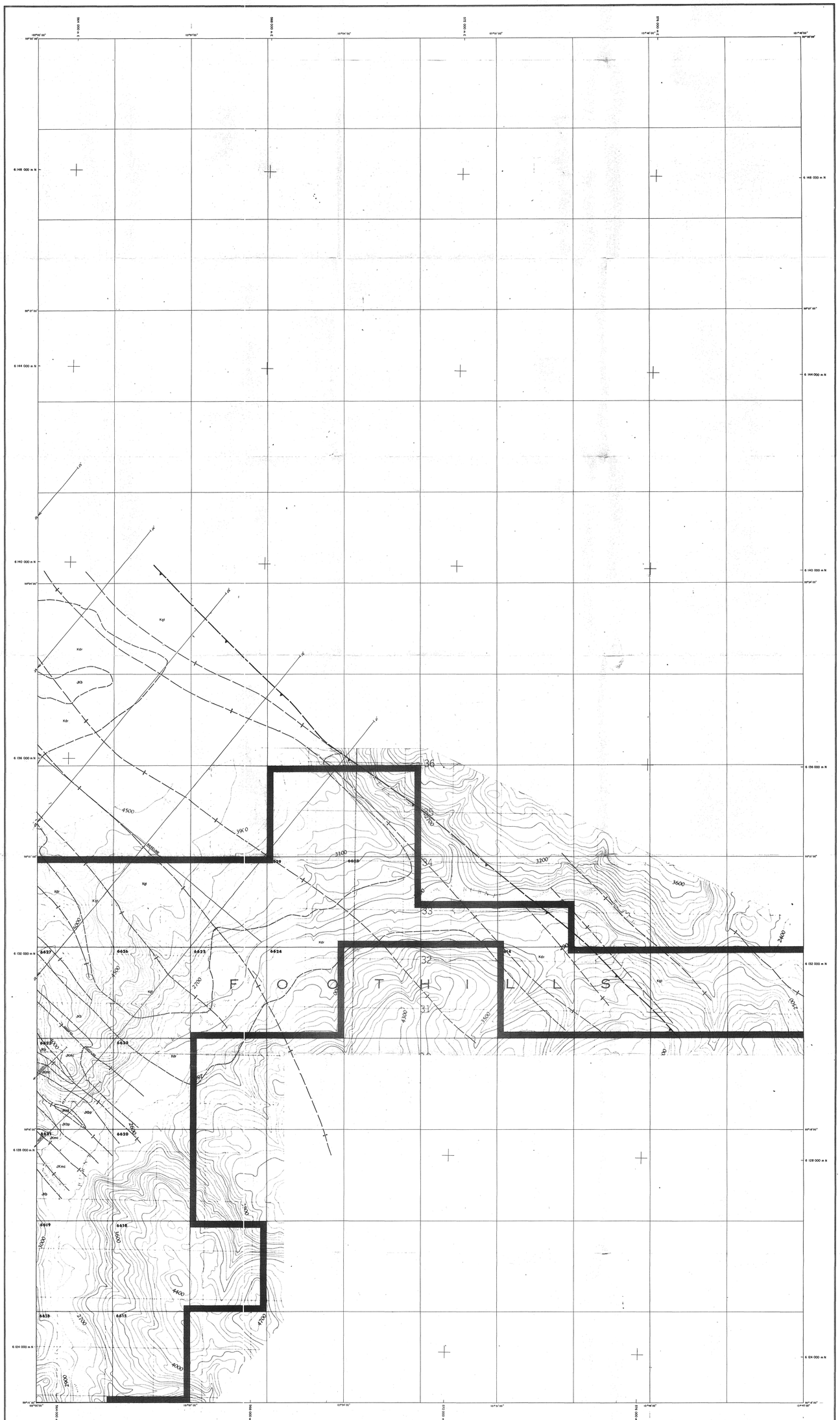
FR-Goodrich 82/3/8

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

GOODRICH COAL PROPERTY
Northeast British Columbia
1982
REGIONAL GEOLOGY MAP
93O/8 E

DRAWN BY: Hardy Assoc. Ltd DATE: SEPT. 1981	SCALE 1:20,000
PREPARED BY: GOODRICH GEOLOGICAL STAFF	DRAWING No.
APPROVED BY: C. W. DATE: NOV., 1982	GCR-82-200
	FILE No.

Appendix A - Part 3



LEGEND

- MAIN ROAD
- SECONDARY ROAD
- TRACK or TRAIL
- CUT LINE
- RIVER
- STREAM
- LAKE
- CONTOURS

LEGEND

- Property Boundary
- Coal Seam Subcrop
- Geological Boundary, (defined, approximate)
- Anticline (defined, approximate)
- Syncline (defined, approximate)
- Anticline and Syncline (overturned)
- Fault (defined showing dip, approx. position of fault)
- Normal Fault
- Strike and Dip (bedding, overturned bedding)
- Cross Section Location
- Monocline
- Bedding (vertical, horizontal)
- Trench Location

TABLE OF FORMATIONS

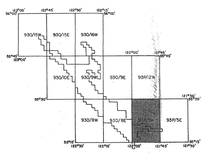
	Q	QUATERNARY Glacial deposits and alluvium
Lower Cretaceous	Kcm	CORNETTE FORMATION Dark grey mudstone, massive interbedded, conglomerate at marine edge, COAL at the top member, and conglomerates
	Kcb	MOUNTAIN FORMATION Mudstones, minor siltstones, marine
	Kbu	BLUEBERRY Fine to medium grained sandstones, mudstones, conglomerate unit at top with or without glauconite
	Kgl	GETHING FORMATION Conglomerate; dark grey mudstones, siltstones, carbonaceous, silty, sandy mudstones; modified marine, coal seams, COAL, coal seam at top member, associated minor tuffs in upper unit, COAL
	Kcr Kgl	CRESSER FORMATION Incoherent siltstones; discontinuous coal measures in varying thicknesses; medium to very coarse grained sandstones, tuffs, conglomerates, (Kcl mostly conglomerates)
Jurassic	JKb	BRENT FORMATION Lithic "salt and pepper" sandstones, siltstones, mudstones, carbonaceous mudstones, COAL
	JKmc	MONACHE FORMATION Fine grained to coarse quartzose sandstones with thin beds of shale, coarse grained white quartzite at base, thin coal seams, dark grey and dark grey shales, dry shales, siltstones, thin sandstones with occasional thin conglomerate
	JKbp	BEATTIE PEAKS FORMATION Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite, conglomerate, dark grey and black shales, siltstones and sandstone partings; occasional thin conglomerate
	JKmc	MONTNEY FORMATION Grey and brown sandstones, fine to medium grained; fine to very coarse grained quartzite, conglomerate, dark grey and black shales, siltstones and sandstone partings; occasional thin conglomerate
Triassic	JT	FERNIE FORMATION Dark grey and black shales, mudstones, sandstones, siltstones, marine

SCALE 1:20,000

Metres 100 0 500 1000 1500 2000 2500 3000 Metres

CONTOUR INTERVAL 20m

SHEET INDEX



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PR-Goodrich B2(a)n

GULF CANADA RESOURCES INC.

Coal Division

CALGARY ALBERTA

GOODRICH COAL PROPERTY

Northeast British Columbia

1982

REGIONAL GEOLOGY MAP

93P/5W

DRAWN BY: Hardy Assoc. Ltd.	DATE: SEPT. 1981	SCALE 1:20,000	
PREPARED BY: GOODRICH GEOLOGICAL STAFF		DRAWING No. GCR-82-201	
APPROVED BY: C.W.	DATE: NOV., 1982	FILE No.	

Appendix A. Part 3