

GULF CANADA RESOURCES INC. - COAL DIVISION
 07/FEB/86 PROJECT DATA SOURCE SUMMARY PAGE 1

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNLROTC85001	6345650.0	506550.0	1478.0	32.0			
KPNLROTC85002	6344650.0	506730.0	1737.0	24.0			
KPNXXOTC85003	6358920.0	508850.0	1768.0	313.0			
KPNKHOTC85004	6342370.0	510895.0	1943.0	98.0			
KPNKHOTC85005	6342465.0	511155.0	1870.0	93.0			
KPNXXOTC85006	6353000.0	512000.0	2042.0	101.0			
KPNXXOTC85007	6360190.0	505070.0	1585.0	236.0			
KPNXXOTC85008	6353900.0	509000.0	1875.0	256.0			
KPNXXOTC85009	6355950.0	504039.0	2042.0	88.0			
KPNXXOTC85010	6353700.0	515780.0	2030.0	128.0			
KPNNROTC85011	6338450.0	500450.0	1920.0	176.0			
KPNNROTC85012	6347800.0	493100.0	1555.0	100.0			
KPNXXOTC85013	6346700.0	494300.0	1981.0	50.0			
KPNLROTC85014	6342650.0	506550.0	1645.0	61.0			
KPNNROTC85015	6346035.0	498345.0	2040.0	432.0			
KPNNROTC85016	6335200.0	486450.0	2027.0	165.0			

GULF CANADA RESOURCES INC. - COAL DIVISION
07/FEB/86 PROJECT DATA SOURCE SUMMARY PAGE 2

DATA SOURCE	LOCATION		ELEVATION	LENGTH	ANGLE	AZIMUTH	LOG TYPE
	NORTHING	EASTING					
KPNXX0TC85017	6334220.0	510700.0	2042.0	460.0			
KPNXX0TC85018	6334000.0	488200.0	1645.0	113.0			
KPNSS0TC85019	6328400.0	486000.0	2042.0	421.0			

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNXXOTC85006

DATE - 10/15/85

- HISTORY -

START DATE - 07/10/85
END DATE - 07/10/85

CONTRACTOR -
GEOLOGIST - JENNER

OPERATOR - GULF CANADA
SURVEYOR -

REMARKS - OFF PROPERTY; SPATSIZI PARK COMPOSITE SECTION; APP
ROXIMATE THICKNESS; MIDDLE SPATSIZI SEQUENCE

- LOCATION -

PROVINCE - BC
ELEVATION - 2042.00

ZONE - 9
NORTHING - 6353000.00
EASTING - 512000.00

LICENCE/LEASE NUMBER -

LATITUDE - 571918
LONGITUDE - 1284803

- ORIENTATION -

LENGTH - 101.00

INCLINATION - 0.0
AZIMUTH - 0.0

SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LYTHOLOGY	DESCRIPTION
* 90	0.00	0.70	0.70			MUDSTONE	CARB. DK. GY MINOR COAL STRINGERS
* 90	0.70	15.70	15.00			OVERBURDEN	
* 90	15.70	23.70	8.00			SANDSTONE	FG. M. GY BIVALVE DEATH HORIZONS ON BEDDING SURFACES
* 90	23.70	30.70	7.00			OVERBURDEN	
* 90	30.70	38.70	8.00			SILTSTONE	M. GY. THNB
* 90	38.70	43.70	5.00			MUDSTONE	DK. GY. LAM CONTAINS BIVALVES; INTERBEDDED SILTSTONE.
* 90	43.70	45.70	2.00			SANDSTONE	FG. M. GY. THNB SPARSE BIVALVES
* 90	45.70	46.70	1.00			SILTSTONE	DK. GY. LAM MINOR VERY FINE GRAINED INTERBEDS
* 90	46.70	54.70	8.00			MUDSTONE	DK. GY. LAM INTERLAMINATED SILTSTONE.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85006

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LYTHOLOGY	DESCRIPTION
* 90	54.70	61.70	7.00			OVERBURDEN	
* 90	61.70	61.90	0.20			COAL	C-6. BLK WEATHERED CARBONACEOUS MUDSTONE LAMINAE
* 90	61.90	64.90	3.00			OVERBURDEN	
* 90	64.90	70.90	6.00			SANDSTONE	VFG. M. GY. THNB INTERBEDDED SILTSTONE; HIGHLY CLEAVED
* 90	70.90	80.90	10.00			SANDSTONE	FG. M. GY. MB
* 90	80.90	84.90	4.00			SANDSTONE	FG. LT. GY. THNB FRIABLE; HIGHLY CLEAVED
* 90	84.90	85.90	1.00			MUDSTONE	DK. GY. LAM
* 90	85.90	88.90	3.00			SANDSTONE	VFG. M. GY. THNB BIVALVE DEATH HORIZONS.
* 90	88.90	89.90	1.00			SILTSTONE	M. GY. THNB HIGHLY CLEAVED
* 90	89.90	100.90	11.00			SANDSTONE	FG. M. GY. MB

* DENOTES MEASURED BCA
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----- GULF CANADA RESOURCES INC. -----

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNXXOTC85003

DATE - 10/15/85

- HISTORY -

START DATE - 07/04/85
END DATE - 07/04/85

CONTRACTOR -
GEOLOGIST - JENNER

OPERATOR - GULF CANADA
SURVEYOR -

REMARKS - OFF PROPERTY; SPATSIZI PARK COMPOSITE SECTION; THICKNESSES APPROXIMATE; LOWER SPATSIZI SEQUENCE

- LOCATION -

PROVINCE - BC
ELEVATION - 1768.00

ZONE - 9
NORTHING - 6358920.00
EASTING - 508850.00

LICENCE/LEASE NUMBER -

LATITUDE - 572230
LONGITUDE - 1285110

- ORIENTATION -

LENGTH - 313.00
SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0

INCLINATION - 0.0
AZIMUTH - 0.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE



85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: DATA SOURCE: OTCB5003

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	5.00	5.00			CONGLOMERATE	
* 90	5.00	155.00	150.00			SANDSTONE	FG GRADES UP TO SLTST AND MDST
* 90	155.00	157.00	2.00			CONGLOMERATE	CHERT CLASTS SUBROUNDED TO SUBANGULAR 3-15CM IN SIZE; CLAST SUPPORTED CONGL LENSOID INTERFINGERS WITH SS UNITS; GRADATIONAL CONTACT (CONGL-SS); 10CM RIP UP CLASTS; BEDDING 125/45SH
* 90	157.00	197.00	40.00			SANDSTONE	REPEATED SEQUENCE SS SLTST AND MUDST; SEDIMENTS FINER GRAINED TOWARDS SHARP CONGLOMERATE BASE; FINING UP SEQUENCES
* 90	197.00	200.00	3.00			CONGLOMERATE	AT BASE CLASTS 3-10MM FINING UPWARDS TO 2-5MM; CLAST SUPPORTED SUBROUNDED GREY WHITE CHERT; LENSOIDAL THROUGHOUT INTERFINGERING WITH SS LENSES SS INTERBEDDED WITH SLTST AT TOP OF CONGL; BEDDING 150/35SH
* 90	200.00	300.00	100.00			SILTSTONE	SLTST INTERBEDDED WITH MUDST; MINOR FINER GRAINED ORANGE BROWN SS; HELMINTHODACE IN MUDST; BEDDING 10CM THICK; BEDDING 150/62SH; DEMATERING INDICATES TOPS UP

* DENOTES MEASURED BCA

85/11/01

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: LR DATA SOURCE: OTCB5003

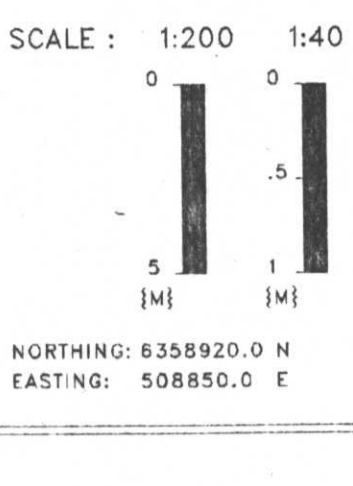
BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	300.00	302.00	2.00			SANDSTONE	GRADES INTO CONGL
* 90	302.00	304.00	2.00			CONGLOMERATE	MATRIX SUPPORTED; CHERT CLASTS 3-10MM SUBROUNDED TO SUBANGULAR; ABUNDANT QTZ VEINS THROUGHOUT; BEDDING 145/49SH
* 90	304.00	309.00	5.00			SILTSTONE	INTERBEDDED WITH MUDSTL CONGL AT BASE
* 90	309.00	313.00	4.00			CONGLOMERATE	MATRIX SUPPORTED; CHERT CLASTS 10-15MM SUBROUNDED

* DENOTES MEASURED BCA
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GULF CANADA RESOURCES INC.
 COAL DIVISION
 KLAPPAN PROJECT
 STRATIGRAPHIC LOG
 KPN LR OTC85003

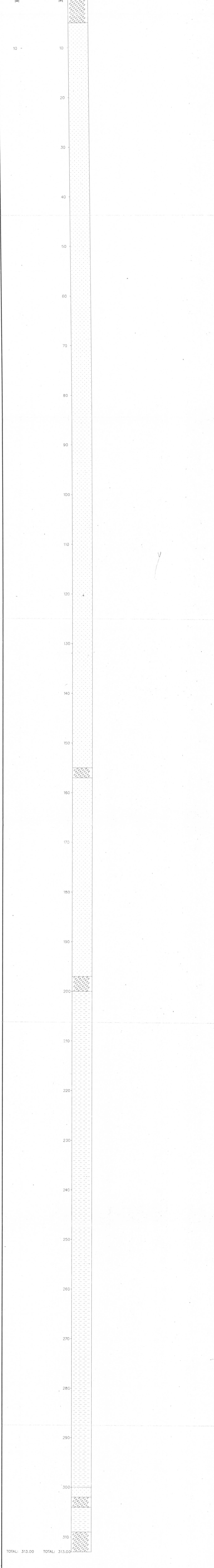
GEOLOGIST : JENNER DATE : NOV 14/85 DRAWING NO. :



NORTHING: 6358920.0 N
 EASTING: 508850.0 E

LITHOLOGIC SYMBOLS

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED



TOTAL: 313.00 TOTAL: 313.00

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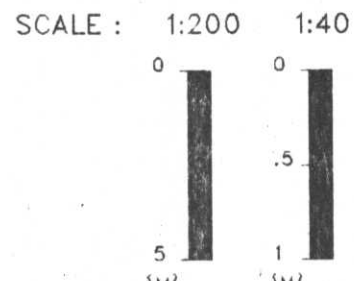
GULF CANADA RESOURCES INC.
 COAL DIVISION
 KLAPPAN PROJECT
 STRATIGRAPHIC LOG
 KPN XX OTC85006

GEOLOGIST : JENNER

DATE : NOV 14/85

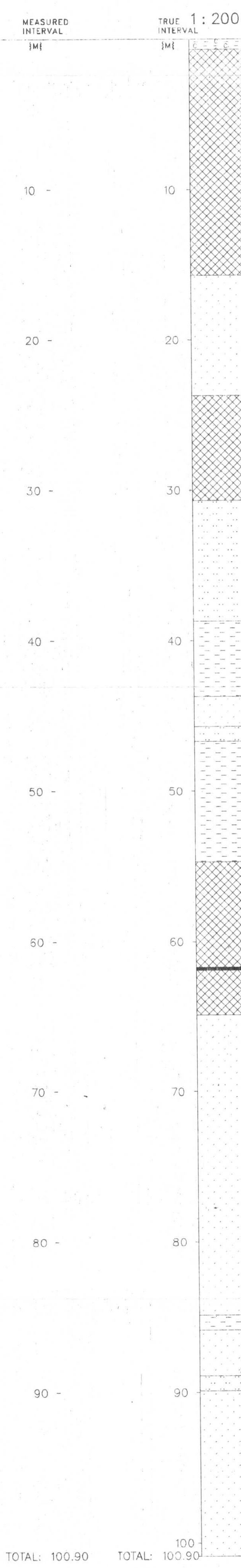
DRAWING NO. :

LITHOLOGIC SYMBOLS



NORTHING: 6353000.0 N
 EASTING: 512000.0 E

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNXXOTC85007

DATE - 10/15/85

- HISTORY -

START DATE - 07/12/85
END DATE - 07/12/85

CONTRACTOR -
GEOLOGIST - JENNER

OPERATOR - GULF CANADA
SURVEYOR -

REMARKS - OFF PROPERTY; SPATSIZI PARK COMPOSITE SECTION; APP
ROXIMATE THICKNESS; MIDDLE SPATSIZI SEQUENCE

- LOCATION -

PROVINCE - BC
ELEVATION - 1585.00

ZONE - 9
NORTHING - 6360190.00
EASTING - 505070.00

LICENCE/LEASE NUMBER -

LATITUDE - 572311
LONGITUDE - 1285456

- ORIENTATION -

LENGTH - 236.00
SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0

INCLINATION - 0.0
AZIMUTH - 0.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

PROJECT: KPN BLOCK: XX DATA SOURCE: OYC85007

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LYTHOLOGY	DESCRIPTION
* 90	0.00	50.00	50.00			SANDSTONE	FG.M.GY.MB CONGLOMERATE LENSES THROUGHOUT
* 90	50.00	60.00	10.00			SANDSTONE	FG.M.GY.MB
* 90	60.00	70.00	10.00			SILTSTONE	DK.GY.LAM INTERBEDDED SILTSTONE AND MUDSTONE
* 90	70.00	70.50	0.50			SANDSTONE	FG.M.GY.THMB BIVALVES
* 90	70.50	75.50	5.00			SILTSTONE	DK.GY.LAM INTERBEDDED MUDSTONE
* 90	75.50	125.50	50.00			SANDSTONE	FG.M.GY
* 90	125.50	145.50	20.00			OVERBURDEN	
* 90	145.50	205.50	60.00			SANDSTONE	FG.M.GY.MB CONGLOMERATIC INTERBEDS.
* 90	205.50	225.50	20.00			CONGLOMERATE	MOD.M.GY.THKB
* 90	225.50	235.50	10.00			SANDSTONE	FG.M.GY

* DENOTES MEASURED BCA
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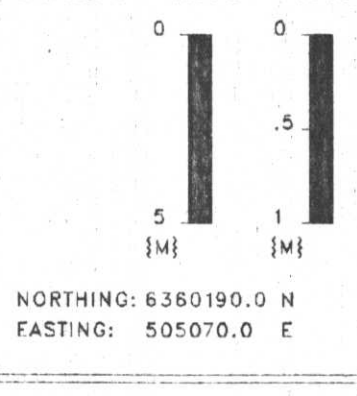
GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN XX OTC85007

GEOLOGIST : JENNER

DATE : NOV 14/85

DRAWING NO. :

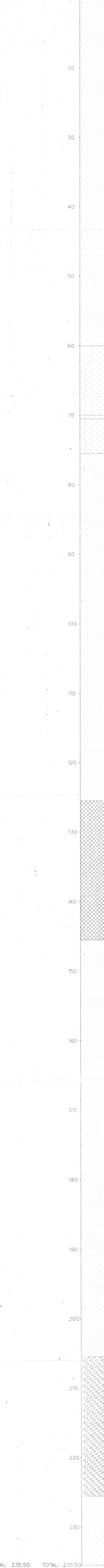
LITHOLOGIC SYMBOLS



	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED INTERVAL TRUE INTERVAL 1:200

IMI TMI



TOTAL: 235.50 TOTAL: 235.50

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNXXOTC85008

DATE - 10/15/85

- HISTORY -

START DATE - 07/13/85

END DATE - 07/13/85

CONTRACTOR -
GEOLOGIST - JENNER

OPERATOR - GULF CANADA
SURVEYOR -

REMARKS - OFF PROPERTY; SPATSIZI PARK COMPOSITE SECTION; THICKNESS APPROXIMATE; MIDDLE TO UPPER SPATSIZI SEQUENCE

- LOCATION -

PROVINCE - BC
ELEVATION - 1875.00

ZONE - 9
NORTHING - 6353900.00
EASTING - 509000.00

LICENCE/LEASE NUMBER -

LATITUDE - 571947
LONGITUDE - 1285102

- ORIENTATION -

LENGTH - 256.00

INCLINATION - 0.0
AZIMUTH - 0.0

SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

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PROJECT: KPN BLOCK: XX DATA SOURCE: 0YC85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	15.00	15.00			SANDSTONE	M. GY. THNB PLANT FOSSILS ON BEDDING SURFACE
* 90	15.00	21.00	6.00			SILTSTONE	DK. GY. THNB INTERBEDDED MUDSTONE
* 90	21.00	31.00	10.00			OVERBURDEN	
* 90	31.00	46.00	15.00			CONGLOMERATE	
* 90	46.00	49.00	3.00			SANDSTONE	
* 90	49.00	59.00	10.00			OVERBURDEN	CONSISTS OF CARBONACEOUS MATERIAL
* 90	59.00	74.00	15.00			CONGLOMERATE	PR. GY ORTHO. CONGLOMERATE; OLIGOMICTIC.
* 90	74.00	77.00	3.00			SILTSTONE	LAM INTERLAMINATED MUDSTONE
* 90	77.00	177.00	100.00			OVERBURDEN	
* 90	177.00	183.00	6.00			CONGLOMERATE	
* 90	183.00	184.00	1.00			MUDSTONE	CARB. DK. GY
* 90	184.00	189.00	5.00			SANDSTONE	FG. MB MASSIVE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: 0YC85008

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	189.00	191.00	2.00			SILTSTONE	M. BN NODULAR
* 90	191.00	199.00	8.00			SANDSTONE	FG. MB MASSIVE
* 90	199.00	211.00	12.00			MUDSTONE	CARB. DK. GY BIOTURBATION
* 90	211.00	226.00	15.00			SANDSTONE	FG. M. GY. MB
* 90	226.00	256.00	30.00			CONGLOMERATE	MOD. THKB PEBBLE SUPPORTED SUBROUNDED CHERT SOME FINE GRAINED GREEN SANDSTONE LENSES

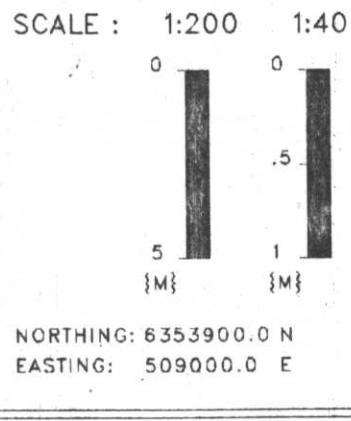
* DENOTES MEASURED BCA
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GULF CANADA RESOURCES INC.
 COAL DIVISION
 KLAPPAN PROJECT
 STRATIGRAPHIC LOG
 KPN XX 0TC85008

GEOLOGIST : JENNER

DATE : NOV 14/85

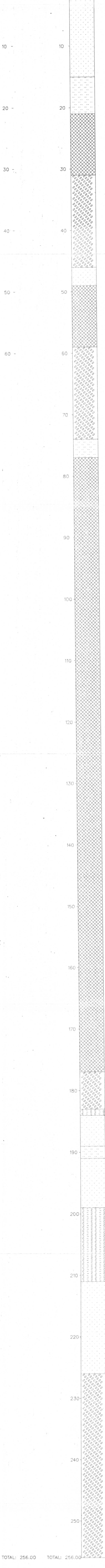
DRAWING NO. :



LITHOLOGIC SYMBOLS

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED INTERVAL [m] TRUE INTERVAL [m] 1:200



TOTAL: 256.00 TOTAL: 256.00

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNXXOTC85009

DATE - 10/15/85

- HISTORY -

START DATE - 07/14/85
END DATE - 07/14/85

CONTRACTOR -
GEOLOGIST - JENNER

OPERATOR - GULF CANADA
SURVEYOR -

REMARKS - OFF PROPERTY; SPATSIZI PARK COMPOSITE; APPROXIMATE
THICKNESSES; MIDDLE SPATSIZI SEQUENCE

- LOCATION -

PROVINCE - BC
ELEVATION - 2042.00

ZONE - 9
NORTHING - 6355950.00
EASTING - 504039.00

LICENCE/LEASE NUMBER -

LATITUDE - 572054
LONGITUDE - 1285558

- ORIENTATION -

LENGTH - 88.00
SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0

INCLINATION - 0.0
AZIMUTH - 0.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	3.00	3.00			OVERBURDEN	
* 90	3.00	5.00	2.00			CONGLOMERATE	
* 90	5.00	15.00	10.00			OVERBURDEN	
* 90	15.00	19.00	4.00			CONGLOMERATE	PR 5-25MM CLASTS COMPOSED OF ANGULAR CHERT ; MATRIX SUPPORTED.
* 90	19.00	22.00	3.00			SILTSTONE	ORNG BIOTURBATED; WORM BURROWS; RUSTY MEATHE RING.
* 90	22.00	30.00	8.00			MUDSTONE	DK. GY LAMINATED.
* 90	30.00	35.00	5.00			SANDSTONE	FG. THNB WEATHERED SURFACE GREY WITH BROWN INTER BEDS
* 90	35.00	38.00	3.00			SANDSTONE	FG. GY. MAS BIVALVES
* 90	38.00	50.00	12.00			SANDSTONE	FG. MAS HIGHLY FRACTURED

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85009

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	50.00	57.00	7.00			MUDSTONE	HIGH ANGLE NORMAL & REVERSE FAULTING
* 90	57.00	62.00	5.00			SANDSTONE	ORNG. THNB HELL CLEAVED; BROWN COLOUR.
* 90	62.00	72.00	10.00			SANDSTONE	ORNG. THNB HELL CLEAVED; BROWN COLOUR.
* 90	72.00	73.00	1.00			COAL	
* 90	73.00	88.00	15.00			CONGLOMERATE	MOD MATRIX SUPPORTED; AVERAGE CHERT PEBBLE SIZE OF 1CM, LARGEST OF 2CM; ROUNDED.

* DENOTES MEASURED BCA
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GULF CANADA RESOURCES INC.
 COAL DIVISION
 KLAPPAN PROJECT
 STRATIGRAPHIC LOG
 KPN XX OTC85009

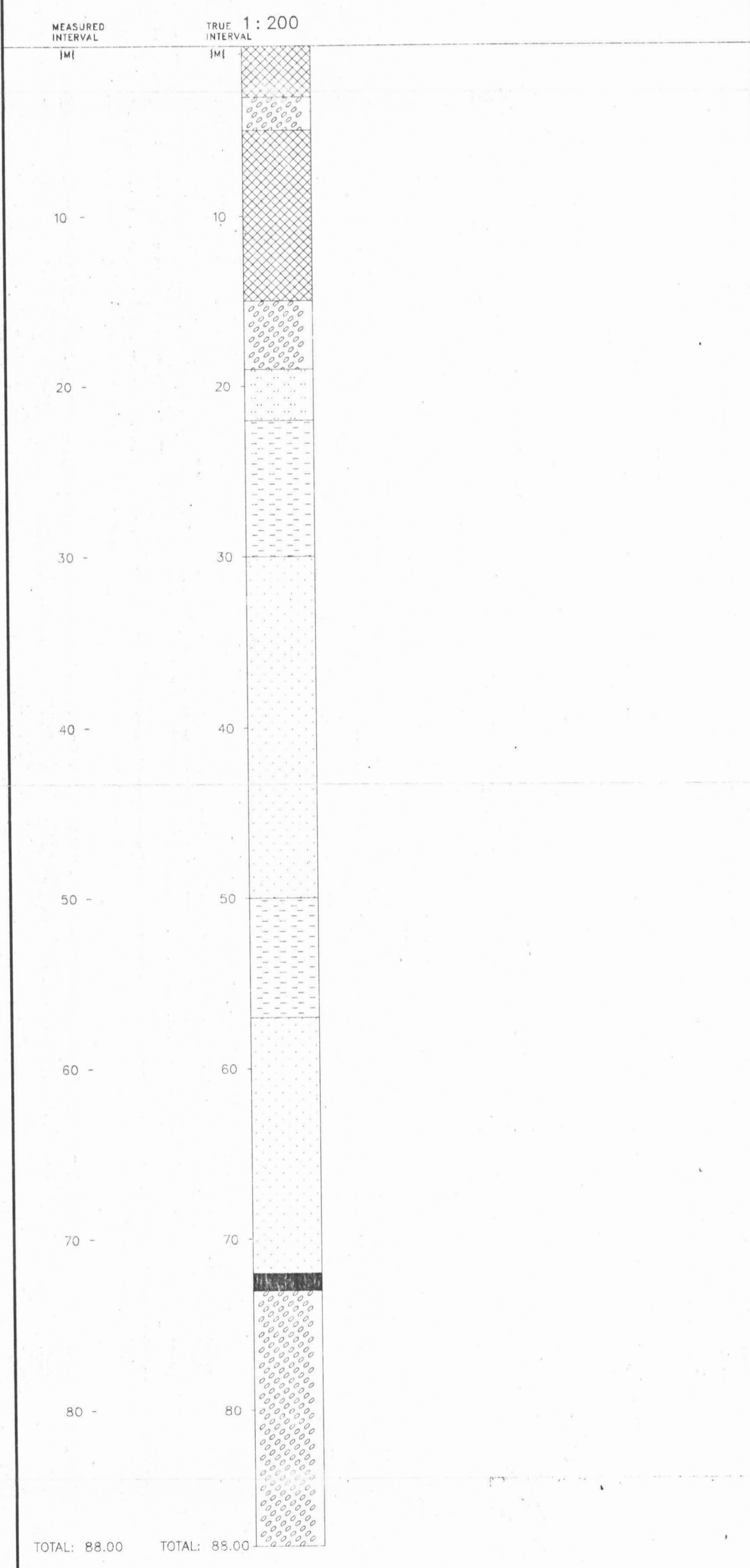
GEOLOGIST : JENNER DATE : NOV 14/85 DRAWING NO. :

SCALE : 1:200 1:40

NORTHING: 6355950.0 N
 EASTING: 504039.0 E

LITHOLOGIC SYMBOLS

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNXXOTC85010

DATE - 10/15/85

- HISTORY -

START DATE - 07/15/85
END DATE - 07/15/85

CONTRACTOR -
GEOLOGIST - JENNER

OPERATOR - GULF CANADA
SURVEYOR -

REMARKS - OFF PROPERTY; SPATSIZI PARK COMPOSITE SECTION; APP
ROXIMATE THICKNESSES; UPPER SPATSIZI SEQUENCE

- LOCATION -

PROVINCE - BC
ELEVATION - 2030.00

ZONE - 9
NORTHING - 6353700.00
EASTING - 515780.00

LICENCE/LEASE NUMBER -

LATITUDE - 571940
LONGITUDE - 1284417

- ORIENTATION -

LENGTH - 128.00

INCLINATION - 0.0
AZIMUTH - 0.0

SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

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86/01/22

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: XX DATA SOURCE: 07C85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	15.00	15.00			SANDSTONE	FG.WEL.M.GY
* 90	15.00	19.00	4.00			OVERBURDEN	
* 90	19.00	26.00	7.00			SANDSTONE	FG.H.GY.THNB
* 90	26.00	31.00	5.00			SANDSTONE	FG.H.GY.THNB CONTAINING GRADATIONAL CONGLOMERATE BAN DS UP TO 30 CM. TOWARDS BASE
* 90	31.00	42.00	11.00			OVERBURDEN	
* 90	42.00	50.00	8.00			CONGLOMERATE	MOD.H.GY.THKB MASSIVE
* 90	50.00	52.00	2.00			SANDSTONE	FG.H.GY
* 90	52.00	60.00	8.00			SILTSTONE	DK.GY.LAM INTERBEDDED MUDSTONE ; SHARP CONTACT WI TH UNDERLYING SANDSTONE.

* DENOTES MEASURED BCA

86/01/22

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 2

PROJECT: KPN BLOCK: XX DATA SOURCE: 07C85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	60.00	75.00	15.00			SANDSTONE	FG.H.GY.THNB INTERBEDDED SILTSTONE LAMINATED
* 90	75.00	85.00	10.00			OVERBURDEN	
* 90	85.00	88.00	3.00			SANDSTONE	FG.H.GY BLOCKY
* 90	88.00	90.00	2.00			SANDSTONE	FG.H.GY.VTHNB
* 90	90.00	95.00	5.00			SANDSTONE	FG.H.GY.MB MASSIVE
* 90	95.00	97.00	2.00			SILTSTONE	DK.GY.LAM GRADATIONAL INTO UNDERLYING SANDSTONE.
* 90	97.00	104.00	7.00			SANDSTONE	FG.WEL.M.GY.MB
* 90	104.00	108.00	4.00			SILTSTONE	DK.GY.LAM INTERBEDDED WITH VERY FINE-GRAINED SAND STONE.
* 90	108.00	111.00	3.00			OVERBURDEN	
* 90	111.00	113.00	2.00			SANDSTONE	VFG.H.GY.THNB INTERBEDDED SILTSTONE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: DTC85010

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
*	90	113.00	115.00	2.00		OVERBURDEN	
*	90	115.00	116.00	1.00		SANDSTONE	FG.M.GY.MB
*	90	116.00	120.00	4.00		SANDSTONE	FG.M.GY.MB BROWN WEATHERING INTERBEDS.
*	90	120.00	123.00	3.00		SANDSTONE	FG.M.GY.THNB
*	90	123.00	125.00	2.00		SANDSTONE	YFG.M.GY
*	90	125.00	126.00	1.00		SANDSTONE	FG.M.GY SILICEOUS
*	90	126.00	128.00	2.00		CONGLOMERATE	MOD.M.GY.THKB MASSIVE, AVERAGE PEBBLE SIZE 10 CM; SUBANGULAR CHERT PEBBLE.

* DENOTES MEASURED BCA
NEWPAGE

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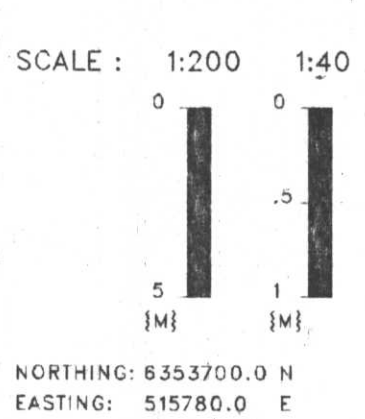
GULF CANADA RESOURCES INC.
 COAL DIVISION
 KLAPPAN PROJECT
 STRATIGRAPHIC LOG
 KPN XX OTC85010

GEOLOGIST : JENNER

DATE : NOV 14/85

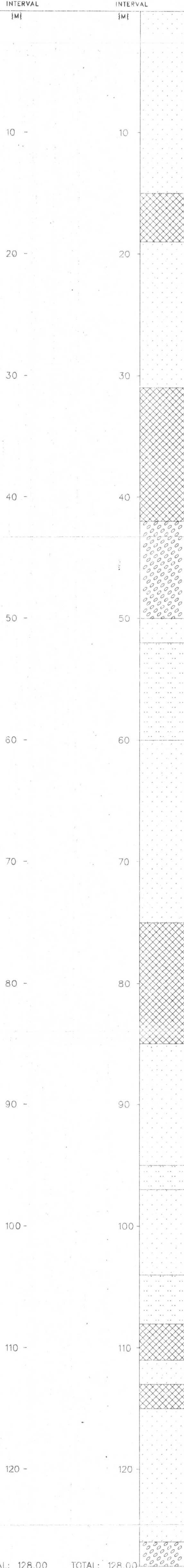
DRAWING NO. :

LITHOLOGIC SYMBOLS



	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED INTERVAL TRUE 1:200 INTERVAL



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNNROT85011

DATE - 10/15/85

- HISTORY -

START DATE - 07/18/85

END DATE - 07/18/85

CONTRACTOR -

GEOLOGIST - JENNER

OPERATOR - GULF CANADA

SURVEYOR -

REMARKS - OFF PROPERTY; EAST OF NASS LAKE; COMPOSITE SECTION
OF MALLOCH SEQUENCE; APPROXIMATE THICKNESSES

- LOCATION -

PROVINCE - BC

ELEVATION - 1920.00

LICENCE/LEASE NUMBER -

ZONE - 9

NORTHING - 6338450.00

EASTING - 500450.00

LATITUDE - 571128
LONGITUDE - 1285933

- ORIENTATION -

LENGTH - 176.00

INCLINATION - 0.0

AZIMUTH - 0.0

SIZE WIDTH - 0.0

SIZE HEIGHT - 0.0

ROOF STRIKE - 0

ROOF DIP - 0

ROOF DIR -

FLOOR STRIKE - 0

FLOOR DIP - 0

FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	4.00	4.00			SANDSTONE	M.GY.THNB TOPS UP ; SILTSTONE LAMINATIONS.
* 90	4.00	4.50	0.50			MUDSTONE	CARB WITH MINOR COAL STRINGERS ; CARBONACEOUS PLANT FRAGS.
* 90	4.50	6.50	2.00			OVERBURDEN	
* 90	6.50	10.50	4.00			SANDSTONE	DK.GY.THNB FRIABLE
* 90	10.50	11.50	1.00			MUDSTONE	DK.GY
* 90	11.50	16.50	5.00			SANDSTONE	FG.M.GY.THNB TOPS UP; CROSS BEDDING.
* 90	16.50	23.50	7.00			OVERBURDEN	
* 90	23.50	24.00	0.50			MUDSTONE	CARB WITH COAL ; PLANT FRAGMENTS
* 90	24.00	49.00	25.00			SANDSTONE	M.GY.THNB SILTSTONE INTERBEDS
* 90	49.00	57.00	8.00			OVERBURDEN	

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85011

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	57.00	58.60	1.60			COAL	
* 90	58.60	78.60	20.00			OVERBURDEN	
* 90	78.60	118.60	40.00			SANDSTONE	FG.MB BLOCKY; SILTSTONE INTERBEDS; MINOR MUDD STONE INTERBEDS; FINES UPWARD.
* 90	118.60	118.80	0.20			COAL	
* 90	118.80	125.80	7.00			SANDSTONE	FG.M.GY.THNB
* 90	125.80	130.80	5.00			OVERBURDEN	MUDSTONE AND SILTSTONE
* 90	130.80	175.80	45.00			SANDSTONE	FG.MB BLOCKY; SILTSTONE INTERBEDS; MINOR MUDD STONE INTERBEDS; FINES UPWARD.

* DENOTES MEASURED BCA
NEMPAGE

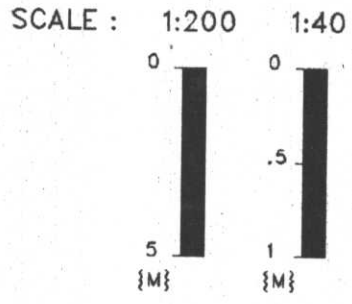
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GULF CANADA RESOURCES INC.
 COAL DIVISION
 KLAPPAN PROJECT
 STRATIGRAPHIC LOG
 KPN NR OTC85011

GEOLOGIST : JENNER

DATE : NOV 12/85

DRAWING NO. :

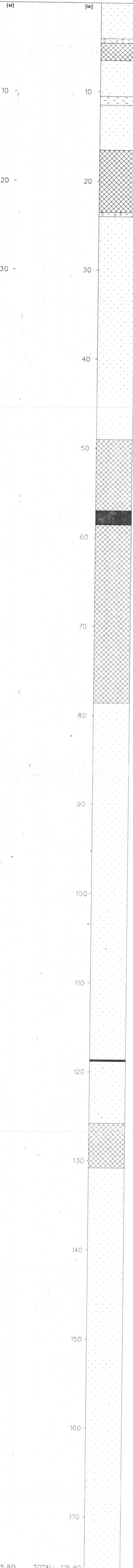


NORTHING: 6338450.0 N
 EASTING: 500450.0 E

LITHOLOGIC SYMBOLS

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED INTERVAL TRUE 1:200 INTERVAL



TOTAL: 175.80 TOTAL: 175.80

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNNROTC85012

DATE - 10/15/85

- HISTORY -

START DATE - 07/23/85
END DATE - 07/23/85

CONTRACTOR -
GEOLOGIST - FOELLMER

OPERATOR - GULF CANADA
SURVEYOR -

REMARKS - OFF PROPERTY; NORTH OF NASS AREA; APPROXIMATE THICKNESSES; MIDDLE TO UPPER SPATSIZI SEQUENCE

- LOCATION -

PROVINCE - BC
ELEVATION - 1555.00

ZONE - 9
NORTHING - 6347800.00
EASTING - 493100.00

LICENCE/LEASE NUMBER -

LATITUDE - 571630
LONGITUDE - 1290652

- ORIENTATION -

LENGTH - 100.00
SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0

INCLINATION - 0.0
AZIMUTH - 0.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	10.00	10.00			SANDSTONE	FG.GY WEATHERS GREY-RUSTY BROWN; CALCITIC CEMENT; BIVALVES IN RUSTY BROWN LAYERS INTERBEDDED WITH FINELY LAMINATED SILTSTONE WHICH IS DARK GREY AND HAS SAME WEATHERED APPEARANCE; 0.4 - 0.6 M BANDS; SIMILAR UNIT BELOW IS THINLY BEDDED WITH SHARP CONTACTS.
* 90	10.00	12.00	2.00			SANDSTONE	FG.DK.GY.LAM
* 90	12.00	19.00	7.00			SANDSTONE	MG.DK.GY SMALL BIVALVES; TOPS UP; STRAIGHT CRESTED RIPPLES; OCCASIONAL INCLUSIONS OF CALCITIC MUDSTONE WHICH WEATHERS RUSTY ORANGE BROWN; FINES DOWNWARD INTO DARK GREY - BLACK SILTSTONE WITH OCCASIONAL FINE GREY SANDSTONE LAMINAE (4%) WHICH WEATHER ORANGE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	19.00	32.00	13.00			SANDSTONE	FG.GY.THNB WEATHERS ORANGE-BROWN; STRAIGHT CRESTED RIPPLE MARKS; TOPS UP.
* 90	32.00	44.00	12.00			SANDSTONE	MG.DK.GY.THNB DISCONTINUOUS 5-20 CM BANDS OF DARK GREY MUDSTONE AND SILTSTONE (2%); BIVALVES
* 90	44.00	54.00	10.00			SILTSTONE	BLK.THNB FINES DOWNWARD TO BLACK MUDSTONE; BOTTOM 2 M HAS 2 CM THICK BANDS OF SHELL COQUINA
* 90	54.00	55.00	1.00			SANDSTONE	MG.DK.GY FINES DOWNWARD TO BLACK MUDSTONE; ABUNDANT BIVALVES
* 90	55.00	69.00	14.00			SANDSTONE	MG.GY.THKB FINES DOWNWARD INTO DARK GREY SILTSTONE WITH 5-20 CM BANDS OF FINE GREY SANDSTONE
* 90	69.00	70.00	1.00			SANDSTONE	MG.GY WEATHERS RUSTY ORANGE-BROWN; SHELL HAS H (30%) THROUGHOUT.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85012

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	70.00	77.00	7.00			SANDSTONE	MG.GY WEATHERS LIGHT BROWN ; SOME LENTICULAR BANDS OF ORANGE-RUST BROWN WEATHERING ; SMALL CARBONACEOUS MUDSTONE LENSES WITH PYRITE CRYSTALS AND MINOR COAL FRAGMENTS.
* 90	77.00	83.00	6.00			SILTSTONE	BLK INTERLAYERED WITH RUSTY ORANGE-BROWN SILTSTONE AND FINE GREY SANDSTONE BANDS 3-20 CM THICK (40%); UNDERLAIN BY BLACK SILTSTONE/MUDSTONE; THICKLY BEDDED WITH MINOR SHELL COQUINA BANDS.
* 90	83.00	86.00	3.00			SANDSTONE	MG.GY.XBDG WITH 1-4 CM SUBROUNDED COBBLES ; TOPS UP
* 90	86.00	94.00	8.00			SILTSTONE	BLK INTERLAYERED WITH 40 % FINE GRAIN GREY SANDSTONE WHICH WEATHERS BROWN
* 90	94.00	100.00	6.00			SILTSTONE	BLK SPORADIC BANDS OF SILTSTONE - VERY FINE GRAIN SANDSTONE (40%)

* DENOTES MEASURED BCA
NEWPAGE

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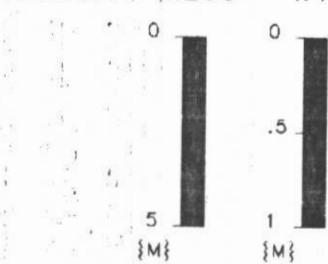
GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN NR OTC85012

GEOLOGIST : FOELLMER

DATE : NOV 12/85

DRAWING NO. :

SCALE : 1:200 1:40



NORTHING: 6347800.0 N
EASTING: 493100.0 E

LITHOLOGIC SYMBOLS

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED INTERVAL

{M}

TRUE 1:200 INTERVAL

{M}

10 -

20 -

10

20

30

40

50

60

70

80

90

TOTAL: 100.00

TOTAL: 100.00

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNXXOTC85013

DATE - 10/15/85

- HISTORY -

START DATE - 08/01/85
END DATE - 08/01/85

CONTRACTOR -
GEOLOGIST - JENNER

OPERATOR - GULF CANADA
SURVEYOR -

REMARKS - OFF PROPERTY; NORTH OF NASS AREA; APPROXIMATE THICKNESSES; MIDDLE SPATSIZI SEQUENCE

- LOCATION -

PROVINCE - BC
ELEVATION - 1981.00

ZONE - 9
NORTHING - 6346700.00
EASTING - 494300.00

LICENCE/LEASE NUMBER -

LATITUDE - 571555
LONGITUDE - 1290540

- ORIENTATION -

LENGTH - 50.00
SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0

INCLINATION - 0.0
AZIMUTH - 0.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	1.00	1.00			SANDSTONE	FG.M.GY.THNB BIVALVES
* 90	1.00	3.00	2.00			SILTSTONE	M-DK.GY.LAM INTERBEDDED SANDSTONE.
* 90	3.00	7.00	4.00			SANDSTONE	FG.M.GY.THNB,HRMBU WAVE RIPPLES.
* 90	7.00	14.00	7.00			SILTSTONE	M.GY.LAM INTERLAMINATED MUDSTONE
* 90	14.00	14.75	0.75			COAL	C-3.BLK FAIRLY DIRTY.
* 90	14.75	17.75	3.00			SANDSTONE	FG.M.GY.THNB MINOR PLANT FRAGMENTS.
* 90	17.75	19.75	2.00			MUDSTONE	DK.GY.LAM
* 90	19.75	31.75	12.00			SANDSTONE	FG.M.GY.MB,XBDG SILTSTONE INTERBEDS TOWARDS BASE; RIP-U P CLASTS.
* 90	31.75	39.75	8.00			MUDSTONE	DK.GY.LAM SILTSTONE LAMINATIONS; COARSENING UPWARD.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85013

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	39.75	49.75	10.00			SANDSTONE	FG.M.GY.THNB

* DENOTES MEASURED BCA
NEWPAGE

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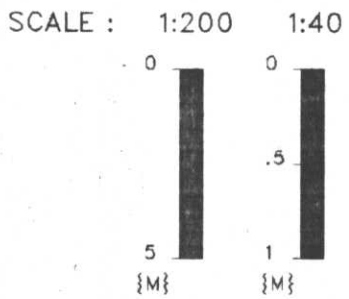
GULF CANADA RESOURCES INC.
 COAL DIVISION
 KLAPPAN PROJECT
 STRATIGRAPHIC LOG
 KPN XX OTC85013

GEOLOGIST : JENNER

DATE : NOV 12/85

DRAWING NO. :

LITHOLOGIC SYMBOLS



NORTHING: 6346700.0 N
 EASTING: 494300.0 E

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED INTERVAL
{M}

TRUE 1:200
INTERVAL
{M}

10 -

10

20 -

20

30

40

TOTAL: 49.75

TOTAL: 49.75



- DATA SOURCE SUMMARY -

DATA SOURCE - KPNNROT85015

DATE - 10/15/85

- HISTORY -

START DATE - 08/04/85
END DATE - 08/04/85

CONTRACTOR -
GEOLOGIST - JENNER

OPERATOR - GULF CANADA
SURVEYOR -

REMARKS - OFF PROPERTY; SOUTH OF REPEATER RIDGE; UPPER SPATS
IZI SEQUENCE

- LOCATION -

PROVINCE - BC
ELEVATION - 2040.00

ZONE - 9
NORTHING - 6346035.00
EASTING - 498345.00

LICENCE/LEASE NUMBER -

LATITUDE - 571533
LONGITUDE - 1290139

- ORIENTATION -

LENGTH - 432.00
SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0

INCLINATION - 0.0
AZIMUTH - 0.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85015

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	6.00	6.00			SANDSTONE	FG.WEL.M.GN WEATHERS LIGHT GREY; BEDDING VARIABLE; MINOR RIP-UP CLASTS; SHARP LOWER CONTACT.
* 90	6.00	11.10	5.10			SILTSTONE	DK.GY WEATHERS DARK GREY; LAMINATED AT BASE; THIN BEDDED AT TOP; SMALL SCALE CURRENT RIPPLES INDICATE TOPS UP; BANDED APPEARANCE WITH WEATHERED ORANGE-BROWN COARSE SILTSTONE INTERBEDS.
* 90	11.10	11.60	0.50			SANDSTONE	YFG.THNB HARD; WEATHERS LIGHT BROWN; MINOR RIP-UP CLASTS; SHARP LOWER CONTACT.
* 90	11.60	34.05	22.45			SILTSTONE	DK.GN.LAM WEATHERS DARK GREY; SMALL CURRENT RIPPLES; INTERBEDDED SANDSTONE UNITS 20CM THICK EVERY METRE; WEATHERS ORANGE-BROWN; VERY FINE-GRAINED; LAMINATED; THIN BEDDED.
* 90	34.05	49.05	15.00			MUDSTONE	DK.GY HIGHLY CLEAVED; IRON STAINING.
* 90	49.05	59.05	10.00			SILTSTONE	DK.GY.LAM FINE-GRAINED; INTERLAMINATED SANDSTONE; IRON STAIN

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85015

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	59.05	73.25	14.20			OVERBURDEN	MUDSTONE AT TOP; SANDSTONE AT BASE.
* 90	73.25	76.45	3.20			SANDSTONE	FG.WEL.M.GY WEATHERS LIGHT GREY; HARD; QTZ. VEINING; SHARP LOWER CONTACT.
* 90	76.45	84.25	7.80			SANDSTONE	FG.WEL.DK.GY.LAM THIN, DARK GREY SILTSTONE SCOUR INDICATES TOPS UP; GRADATIONAL LOWER CONTACT.
* 90	84.25	95.35	11.10			SILTSTONE	DK.GY.LAM.SSD BANDED WITH ORANGE-BROWN WEATHERED SANDSTONE INTERBEDS; TOPS UP; SANDSTONE INTERBEDS LESS FREQUENT NEAR BASE; COARSENING UPWARDS SEQUENCE
* 90	95.35	98.15	2.80			MUDSTONE	DK.GY.LAM GRADATIONAL INTO OVERLYING SILTSTONE
* 90	98.15	101.35	3.20			SANDSTONE	FG WEATHERS ORANGE-BROWN; OYSTER BED DEATH HORIZON
* 90	101.35	103.55	2.20			SANDSTONE	FG.LT.BN HARD; SIMILAR TO OVERLYING SANDSTONE; GRADATIONAL LOWER CONTACT.

* DENOTES MEASURED BCA

86/01/22

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85015

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	103.55	106.85	3.30			SANDSTONE	MG PEBBLY BANDS OF DARK CHERT; MATRIX SUPPORTED; SUBROUNDED; MINOR MUDSTONE CLASTS; POORLY SORTED PEBBLES; CONCENTRATED IN 70CM BAND.
* 90	106.85	110.85	4.00			SANDSTONE	FG.M.GY.MB WEATHERS LIGHT BROWN; SIMILAR TO SANDSTONE ABOVE; GRADATIONAL LOWER CONTACT.
* 90	110.85	136.85	26.00			SILTSTONE	DK.GY.LAM.SSD FINE-GRAIN SANDSTONE INCREASING TOWARDS TOP; SANDSTONE INDICATES TOPS UP; FAIRLY SHARP CONTACT WITH UNDERLYING SANDSTONE; BIVALVES AT BASE.
* 90	136.85	145.85	9.00			SANDSTONE	FG.M.GY.THNB.XBDG RIP-UPS TOWARDS BASE; MINOR LIGHT BROWN INTERBEDS 20CM; CROSS BEDDING INDICATES TOPS UP; SILICIFIED BIVALVES AT TOP; GRADATIONAL LOWER CONTACT
* 90	145.85	170.15	24.30			SILTSTONE	DK.GY.LAM SANDSTONE NEAR TOP; QUITE MONOTONOUS; GRADATIONAL LOWER CONTACT.
* 90	170.15	185.15	15.00			MUDSTONE	DK.GY.LAM MONOTONOUS; SHARP LOWER CONTACT
* DENOTES MEASURED BCA							

86/01/22

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85015

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	185.15	186.15	1.00			SILTSTONE	DK.GY.LAM GRADATIONAL LOWER CONTACT
* 90	186.15	201.35	15.20			SANDSTONE	M.GY.LAM.XBDG WEATHERS LIGHT GREY; ABUNDANT PLANTS; CROSS BEDDING; PREDOMINANTLY QUIET WATER ENVIRONMENT; SOFT TOWARDS BASE; GRADATIONAL LOWER CONTACT.
* 90	201.35	201.85	0.50			SILTSTONE	DK.GY.LAM GRADATIONAL LOWER CONTACT
* 90	201.85	205.95	4.10			MUDSTONE	DK.GY MONOTONOUS; COALIFIED PLANT FRAGMENTS IN UNIT; SHARP LOWER CONTACT.
* 90	205.95	210.95	5.00			SANDSTONE	FG.M.GY.MAS WEATHERS BROWN GREY; SILTSTONE INTERBEDS INCREASE TO BASE
* 90	210.95	217.45	6.50			SILTSTONE	DK.GY.LAM GRADATIONAL LOWER CONTACT; CONTAINS LAMINATED FINE-GRAINED SANDSTONE UNIT IN MIDDLE SECTION.
* 90	217.45	221.25	3.80			SANDSTONE	M.GY.MB SILTIER AT BASE; GRADATIONAL LOWER CONTACT; BEDDING MASSIVE TO MEDIUM.
* DENOTES MEASURED BCA							

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85015

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	221.25	226.25	5.00			SILTSTONE	DK.GY.LAM SHARP LOWER CONTACT
* 90	226.25	235.75	9.50			SANDSTONE	MG.WEL.M.GY.MAS WEATHERS LIGHT GREY, SHARP LOWER CONTACT; MINOR COQUINA
* 90	235.75	270.25	34.50			SILTSTONE	DK.GY.LAM MINOR VERY FINE-GRAIN SANDSTONE LAMINAE THROUGHOUT; WORM BURROWS (VERTICAL 20CM DEEP); BANDING WITH LIGHTER SANDSTONE INTERBEDS; SHARP LOWER CONTACT.
* 90	270.25	295.25	25.00			SANDSTONE	FG.M.GY.MAS GRADATIONAL LOWER CONTACT; BECOMES VERY FINE-GRAINED TO SILTY AT BASE; COARSENING UPWARDS SEQUENCE.
* 90	295.25	340.25	45.00			SILTSTONE	DK.GY.THNB RHYTHMIC ORANGE-BROWN INTERBEDS 10CM; MINOR COAL INCLUSIONS TOWARDS BASE; GRADATIONAL INTO CARBONACEOUS MUDSTONE; SHARP LOWER CONTACT
* 90	340.25	352.25	12.00			SANDSTONE	FG.WEL.M.GY.MAS WEATHERS LIGHT BROWN; FAIRLY SHARP LOWER CONTACT

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85015

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	352.25	375.45	23.20			SILTSTONE	DK.GY.LAM AS ABOVE, WITHOUT COAL
* 90	375.45	376.45	1.00			SANDSTONE	FG.M.GY WEATHERS ORANGE-BROWN; BIVALVE DEATH HORIZON
* 90	376.45	377.05	0.60			SANDSTONE	WEL.M.GY.MAS WEATHERS ORANGE-BROWN; SMALL CHANNEL 20M LONG; BIVALVE DEATH HORIZON
* 90	377.05	386.05	9.00			SANDSTONE	FG.M.GY.THNB WEATHERS MEDIUM GREY; GRADATIONAL LOWER CONTACT; LAMINATED TOWARDS BASE
* 90	386.05	397.45	11.40			SILTSTONE	DK.GY.MB LAMINATED; SOME ORANGE-BROWN WEATHERING BEDS; GRADATIONAL CONTACT
* 90	397.45	402.25	4.80			MUDSTONE	DK.GY.LAM MONOTONOUS; SHARP LOWER CONTACT
* 90	402.25	405.25	3.00			SANDSTONE	FG.M.GY.MB GRADATIONAL LOWER CONTACT
* 90	405.25	411.25	6.00			SILTSTONE	DK.GY.LAM FAIRLY SHARP LOWER CONTACT

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85015

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	411.25	422.85	11.60			SANDSTONE	FG.M.GY.THNB FAIRLY GRADATIONAL LOWER CONTACT
* 90	422.85	431.85	9.00			SANDSTONE	FG.M.GY.MAS SILTSTONE INTERBEDS EVERY 14M ARE 1M THICK; FAIRLY SHARP CONTACT

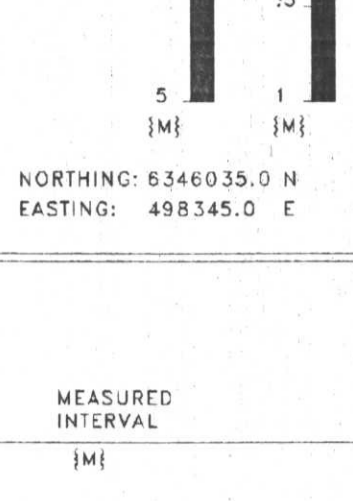
* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN NR 0TCB5015

GEOLOGIST : JENNER

DATE : NOV 12/85

DRAWING NO. :

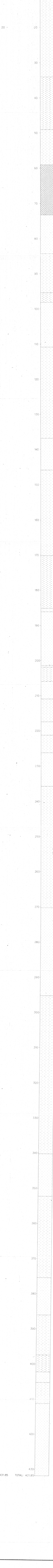


NORTHING: 6346035.0 N
EASTING: 498345.0 E

LITHOLOGIC SYMBOLS

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED INTERVAL [M] TRUE INTERVAL [M] 1:200



TOTAL: 431.85 TOTAL: 431.85

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNNROT85016

DATE - 10/15/85

- HISTORY -

START DATE - 08/16/85
END DATE - 08/16/85

CONTRACTOR -
GEOLOGIST - K. JENNER

OPERATOR - GULF CANADA
SURVEYOR -

REMARKS - OFF PROPERTY; NASS AREA; COMPOSITE SECTION OF MIDDLE TO UPPER MALLOCH SEQUENCE; APPROXIMATE THICKNESSES

- LOCATION -

PROVINCE - BC
ELEVATION - 2027.00

ZONE - 9
NORTHING - 6335200.00
EASTING - 486450.00

LICENCE/LEASE NUMBER -

LATITUDE - 570942
LONGITUDE - 1291326

- ORIENTATION -

LENGTH - 165.00
SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0

INCLINATION - 0.0
AZIMUTH - 0.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85016

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	2.00	2.00			SILTSTONE	GRADATIONAL LOWER CONTACT.
* 90	2.00	10.00	8.00			SANDSTONE	FG.MEL.LT.GY.THNB.XBDG PLANAR CROSS BEDDING; THIN BEDDED, ESPECIALLY TOWARDS TOP; WOOD FRAGMENTS.
* 90	10.00	13.00	3.00			SILTSTONE	M.GY WEATHERS ORANGE-BROWN; MINOR DARK GREY MUDSTONE INTERBEDS OF 50 CM; PARTIALLY COVERED INTERVAL.
* 90	13.00	23.00	10.00			OVERBURDEN	
* 90	23.00	38.00	15.00			CONGLOMERATE	PR.MAS MATRIX SUPPORTED BEDDING DISTINGUISHED BY COAL AND FINE PEBBLE BANDS; SUBANGULAR TO SUBROUNDED.
* 90	38.00	48.00	10.00			OVERBURDEN	
* 90	48.00	63.00	15.00			CONGLOMERATE	PR.MAS MATRIX SUPPORTED; BEDDING DISTINGUISHED BY COARSE TO FINE PEBBLE LAYERS.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85016

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	63.00	73.00	10.00			SANDSTONE	DK.GY.LAM BANDS AS ABOVE; INTERBEDDED SANDSTONE AND SILTSTONE; THIN BEDDED; SHARP UPPER CONTACT.
* 90	73.00	77.00	4.00			CONGLOMERATE	PR CLAST SUPPORTED; GREEN PEBBLES; FINE TO MEDIUM GRAINED SANDSTONE MATRIX; SHARP UPPER CONTACT.
* 90	77.00	89.00	12.00			SANDSTONE	FG.MEL.M.GY.THNB SHARP UPPER CONTACT; MEDIUM TO THICK BEDDING BECOMING THIN BEDDED AT TOP.
* 90	89.00	92.00	3.00			CONGLOMERATE	PR GREEN PEBBLES; 3-30 MM PEBBLE SIZE; MATRIX SUPPORTED; SUBROUNDED CHERT PEBBLES; SHARP UPPER CONTACT; CHANNEL DEPOSIT.
* 90	92.00	107.00	15.00			SANDSTONE	FG.M.GY.THNB NO SILTSTONE; PLANTS- CLADOPHLEBIS VIRGINIENSIS MARTINIANA, SOME MEDIUM BROWN SANDSTONE AS WELL; SHARP UPPER CONTACT
* 90	107.00	108.00	1.00			SANDSTONE	FG.M.GY.MAS GRADATIONAL UPPER CONTACT

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85016

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	108.00	118.00	10.00			SANDSTONE	THNB INTERBEDDED SANDSTONE SILTSTONE AND SILTSTONE; SS FINE-GRAINED, MED GREY; SLTST WEATHERS ORANGE-BROWN, MEDIUM GREY; LAMINATED.
* 90	118.00	120.00	2.00			SANDSTONE	FG. MEL. M. GY. MAS CHANNEL DEPOSIT; GRADATIONAL UPPER CONTACT.
* 90	120.00	128.00	8.00			SILTSTONE	INTERBEDDED WITH SANDSTONE AS ABOVE; APPROXIMATELY 2M SANDSTONE, 2M SILTSTONE; SHARP UPPER CONTACT.
* 90	128.00	131.00	3.00			SANDSTONE	FG. M. GY. MAS GRADATIONAL CONTACTS.
* 90	131.00	141.00	10.00			SANDSTONE	FG. M. GY. THNB INTERBEDDED SILTSTONE; ALSO MINOR ORANGE-BROWN WEATHERED SILTSTONE; LAMINATED; UPPER 20CM IS GRADATIONAL; SHARPLY DEFINED BEDDING.
* 90	141.00	143.00	2.00			SANDSTONE	FG. M. GY. THKB QUITE MASSIVE; GRADATIONAL UPPER CONTACT.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: NR DATA SOURCE: OTC85016

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	143.00	149.00	6.00			SANDSTONE	FG. DK. GY THIN BEDDED TO LAMINATED; INTERBEDDED WITH SILTSTONE; SHARP UPPER CONTACT
* 90	149.00	152.00	3.00			SANDSTONE	FG. MEL. M. GY MEDIUM TO THIN BEDDED; BLOCKY; CHANNEL DEPOSIT; GRADATIONAL UPPER CONTACT.
* 90	152.00	154.00	2.00			SILTSTONE	DK. GY. LAM SHARP UPPER CONTACT.
* 90	154.00	157.00	3.00			SANDSTONE	FG. MEL. M. GY. THNB GRADATIONAL UPPER CONTACT.
* 90	157.00	158.00	1.00			SILTSTONE	DK. GY GRADATIONAL UPPER CONTACT; THIN BEDDED TO LAMINATED.
* 90	158.00	163.00	5.00			SANDSTONE	FG. MEL. M. GY. MB GRADES UP TO SILTSTONE
* 90	163.00	163.50	0.50			SILTSTONE	DK. GY FINES UP; SHARP CONTACT WITH ABOVE SANDSTONE
* 90	163.50	164.50	1.00			SANDSTONE	FG. MEL. M. GY. MB THINLY BEDDED AT TOP; GRADATIONAL UPPER CONTACT.

* DENOTES MEASURED BCA
NEWPAGE

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GULF CANADA RESOURCES INC.
 COAL DIVISION
 KLAPPAN PROJECT
 STRATIGRAPHIC LOG
 KPN NR OTC85016

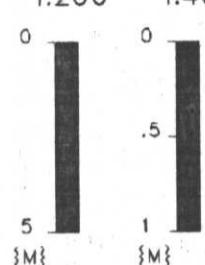
GEOLOGIST : K. JENNER

DATE : NOV 12/85

DRAWING NO. : -

LITHOLOGIC SYMBOLS

SCALE : 1:200 1:40



NORTHING: 6335200.0 N
 EASTING: 486450.0 E

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED INTERVAL TRUE 1:200 INTERVAL

{M} {M}

10 -

10

20 -

20

30 -

30

40 -

40

50 -

50

60

70

80

90

100

110

120

130

140

150

160

TOTAL: 164.50 TOTAL: 164.50

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNXXOTC85017

DATE - 10/15/85

- HISTORY -

START DATE - 08/23/85
END DATE - 08/23/85

CONTRACTOR -
GEOLOGIST - K JENNER

OPERATOR - GULF CANADA
SURVEYOR -

REMARKS - OFF PROPERTY; SOUTH OF TAHTSEDLE CREEK; COMPOSITE
SECTION OF UPPER MALLOCH AND LOWER RHONDDA

- LOCATION -

PROVINCE - BC
ELEVATION - 2042.00

ZONE - 9
NORTHING - 6334220.00
EASTING - 510700.00

LICENCE/LEASE NUMBER -

LATITUDE - 570911
LONGITUDE - 1284923

- ORIENTATION -

LENGTH - 460.00
SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0

INCLINATION - 0.0
AZIMUTH - 0.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LYTHOLOGY	DESCRIPTION
* 90	0.00	16.00	16.00			CONGLOMERATE	PBL.THNB.XBDG SMALL FINING UP CYCLES; PLANAR CROSS BE DDING; CHERT PEBBLES; SUBRD-SUBANG; 5-3 OMM, AVERAGE 15MM; CLAST SUPPORTED; REPR ESENTS BASE OF RHONNDA(?); SHARP LOWER CONTACT.
* 90	16.00	31.00	15.00			SANDSTONE	INTERBEDDED SANDSTONE AND SILTSTONE; TH IN TO LAMINATED BEDDING; WEATHERS DK BR ; MEDIUM-GRAINED SS WEATHERS LIGHT BR; SLTST FORMS RESISTANT BEDS; PLANTS- POD OZAMITES, PITYOPHYLLUM, EQUISETITES LYELL I.
* 90	31.00	33.00	2.00			SANDSTONE	FG.WEL.H.GY.THNB FINING UP; RESISTANT UNIT; CONTACT SHAR P; LITHOLOGIC CHANGE DISTINCT.
* 90	33.00	37.00	4.00			SANDSTONE	PARTIALLY COVERED INTERVAL; LESS RESIST ANT (POSSIBLY SILTSTONE AND FRIABLE SA NDSTONE)
* 90	37.00	41.00	4.00			SANDSTONE	FG.WEL.THNB WEATHERED ORANGE-BROWN; FRIABLE 130CM S ANDSTONE IN TERBEDS; RESISTANT UNIT; SHA RP LOWER CONTACT

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LYTHOLOGY	DESCRIPTION
* 90	41.00	46.00	5.00			SILTSTONE	LAM MINOR FRIABLE SANDSTONE INTERBEDS; WEAT HERS MED BR; RECESSIVE; CONTAINS PLANTS AS ABOVE; 10CM BED OF COAL; SHARP LOWE R CONTACT
* 90	46.00	46.10	0.10			COAL	VERY DIRTY; ALSO DARK GREY CARBONACEOUS MUDSTONE
* 90	46.10	56.10	10.00			SANDSTONE	FG.THNB WEATHERS BROWN-GREY; RESISTANT; LAMINAT ED; INTERBEDDED WITH SILTSTONE; SHARP L OWER CONTACT; FINES UPWARD.
* 90	56.10	68.10	12.00			SILTSTONE	THNB INTERBEDDED WITH MORE RESISTANT SANDSTO NE (30CM EVERY 2M); WEATHERS MED BR; 10 CM CARBONACEOUSMST E VERY 3M; PLANTS A S BEFORE; LOWER CONTACT GRADES TO RESIS TANT SANDSTONE
* 90	68.10	80.10	12.00			SANDSTONE	FG.WEL.THNB WEATHERS MED TO DK GREY; LAMINATED; CHA NNELLING APPROXIMATELY 50M WIDE BY 8M T HICK

* DENOTES MEASURED BCA

86/01/22

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LYTHOLOGY	DESCRIPTION
* 90	80.10	88.10	8.00			SILTSTONE	THNB INTERBEDDED SILTSTONE AND SANDSTONE AS BEFORE; SLTST PREDOMINANT; SIMILAR PLANTS BUT PODOZAMITES ABSENT.
* 90	88.10	94.10	6.00			SANDSTONE	FG.M.GY.THNB.XBDG VERY FEW SILTSTONE INTERBEDS; HIGHER ENERGY THAN ABOVE; MINOR PLANAR CROSS BEDDING; GRADATIONAL LOWER CONTACT.
* 90	94.10	109.10	15.00			CONGLOMERATE	PBL.MOD.XBDG SUBRD-SUBANG CHERT PEBBLES; CLAST SUPPORTED; LARGE CHANNEL LATERALLY GRADES TO MED DK GY; SANDSTONE TO WEST; PLANAR CROSS BEDDING (SMALL TO LARGE SCALE); SS WEDGE NEAR BASE UNDERLAIN BY MORE CGL; SHARP LOWER CONTACT; CGL FINES UP IN SOME LOCALES.
* 90	109.10	127.10	18.00			SILTSTONE	LAM INTERBEDDED WITH SANDSTONE; DK BR MINOR FRIABLE SANDSTONE INTERBEDS; PLANTS AS ABOVE; COAL; WOOD & SMALL TREES; UNIT RECESSIVE BUT FOR LOWEST SLTST BEDS. CLAD OPHLEBIS VIRGINIENSIS MARTINIANA
* 90	127.10	135.10	8.00			SANDSTONE	FG.MEL.THNB INTERBEDDED SANDSTONE AND SILTSTONE AS ABOVE; RECESSIVE.

* DENOTES MEASURED BCA

86/01/22

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LYTHOLOGY	DESCRIPTION
* 90	135.10	138.10	3.00			SILTSTONE	LAM WEATHERS MEDIUM DARK GREY; RESISTANT LATERAL FACIES CHANGE TO WEST TO SAME UNIT BUT LACKING RESISTANT BEDS & WITH MORE CARBONACEOUS MUDSTONE
* 90	138.10	150.10	12.00			SILTSTONE	THNB.XBDG INTERBEDDED SILTSTONE & SANDSTONE; FRIABLE SANDSTONE AS ABOVE; SS SHOWS SMALL SCALE PLANAR CROSS BEDDING; SILTSTONE RESISTANT.
* 90	150.10	154.10	4.00			SANDSTONE	FG.MEL.THNB WEATHERS HARD BROWN; THIN TO MED BEDDING FROM TOP TO BOTTOM; VERY FRIABLE; EASILY WEATHERED; RESISTANT FINING UP SEQUENCE BETWEEN THIS AND ABOVE SS; SHARP LOWER CONTACT.
* 90	154.10	160.10	6.00			SILTSTONE	LAM WEATHERS DK BROWN; CONTAINS MINOR COAL BANDS OF 10CM; GRADATIONAL DOWNWARDS.
* 90	160.10	163.10	3.00			SANDSTONE	FG.MEL.THNB.XBDG AS ABOVE; MINOR SLTST INTERBEDS WHICH PINCH OUT LATERALLY; FRIABLE BUT MODERATELY RESISTANT; TROUGH CROSS BEDDING

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	163.10	171.10	8.00			SILTSTONE	LAM MINOR SANDSTONE INTERBEDS; WEATHERS DARK BROWN; GRADATIONAL UPPER AND LOWER CONTACTS; MINOR 10CM COAL BANDS.
* 90	171.10	174.10	3.00			SANDSTONE	FG.THNB WEATHERS LT BROWN; MODERATELY FRIABLE BUT NOT AS WITH ABOVE SANDSTONE; CONTAINS WOOD FRAGMENTS; SHARP LOWER CONTACT.
* 90	174.10	176.10	2.00			SILTSTONE	DK.BN.LAM
* 90	176.10	179.10	3.00			SANDSTONE	FG.THNB WEATHERS LIGHT BROWN; RESISTANT.
* 90	179.10	180.10	1.00			SILTSTONE	DK.BN.LAM
* 90	180.10	184.10	4.00			SANDSTONE	FG RESISTANT BUT SOMEWHAT FRIABLE
* 90	184.10	191.10	7.00			SILTSTONE	DK.BN.LAM AS ABOVE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	191.10	196.10	5.00			SANDSTONE	FG.THNB WEATHERS LIGHT BROWN; MINOR SILTSTONE INTERBEDS; PEBBLY LENSES THROUGHOUT; CONGLOMERATE AT BASE. ALL CONTACTS BETWEEN SILTSTONE & SANDSTONE ARE SHARP BUT MORE SO AT BASES OF THE FINING UP SEQUENCES.
* 90	196.10	205.10	9.00			SILTSTONE	THNB LAMINATED; WEATHERS DK BROWN; MINOR SANDSTONE INTERBEDS WEATHER MEDIUM LT BROWN; PLANTS WITH CZEKANOWSKIA BECOMING MORE DOMINANT; MORE MASH; MODULAR IN PART.
* 90	205.10	208.10	3.00			SANDSTONE	FG.MEL WEATHERS LT MEDIUM GREY; THIN TO MEDIUM BEDDED; RESISTANT; SHARP BASAL CONTACT
* 90	208.10	216.10	8.00			SILTSTONE	LAM WEATHERS DK BROWN; PLANTS AS ABOVE; 5-10CM COALY BANDS EVERY 2M.
* 90	216.10	217.10	1.00			SANDSTONE	FG WEATHERS LT BROWN & ORANGE-BROWN; FRIABLE BUT RESISTANT

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	217.10	219.10	2.00			SILTSTONE	LAM AS ABOVE
* 90	219.10	225.10	6.00			SANDSTONE	FG.THNB WEATHERS LT BROWN & ORANGE-BROWN AT TOP; MEDIUM GREY AT BOTTOM; 20CM COAL BAND NEAR BASE; SHARP BASAL CONTACT
* 90	225.10	233.10	8.00			SILTSTONE	LAM WEATHERS DK BRN; COALY BANDS OF 5-10CM; MINOR SANDSTONE INTERBEDS; WEATHERS ORANGE-BROWN; MODERATELY FRIABLE; GRADATIONAL UPPER CONTACT
* 90	233.10	234.10	1.00			SANDSTONE	FG WEATHERS ORANGE-BROWN; MODERATELY FRIABLE; GRADATIONAL UPPER CONTACT.
* 90	234.10	242.10	8.00			SILTSTONE	LAM SOME COVER; WEATHERS DARK GREY
* 90	242.10	243.10	1.00			SANDSTONE	FG.THNB WEATHERS MED BROWN; VERY THIN SILTSTONE INTERBEDS OF 3CM EVERY 10CM; SHARP BASAL CONTACT
* 90	243.10	244.60	1.50			SANDSTONE	MG.THNB WEATHERS LT BROWN; FRIABLE BUT RESISTANT

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	244.60	244.70	0.10			MUDSTONE	CARB. BLK COAL FLECKS; WEATHERS LT GREY
* 90	244.70	245.70	1.00			SANDSTONE	VFG.LAM WEATHERS LT GREY
* 90	245.70	257.70	12.00			SILTSTONE	LAM WEATHERS DK BROWN; NODULAR; WEATHERS DARK RED; 20CM BANDS.
* 90	257.70	261.70	4.00			SANDSTONE	FG.MB.XBDG WEATHERS LT GREY; MINOR PEBBLY BANDS; TROUGH CROSS BEDDING AT TOP OF UNIT; LARGE SCALE CHANNEL ABOUT 20M LONG (THUS VARIES UNIT THICKNESS FROM 3-5M).
* 90	261.70	273.70	12.00			SILTSTONE	THNB WEATHERS DK GREY; MINOR ORANGE-BROWN INTERBEDS; PLANTS AS ABOVE; LAMINATED; 20CM COALY MUDSTONE TO BASE; RECESSIVE LOWER GRADATIONAL CONTACT.
* 90	273.70	279.70	6.00			SANDSTONE	FG WEATHERS MED GREY; THIN TO MEDIUM BEDDED; RESISTANT 50M LONG CHANNEL; SHARP LOWER CONTACT.
* 90	279.70	285.70	6.00			SILTSTONE	LAM WEATHERS DK GREY

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	285.70	286.70	1.00			SANDSTONE	FG.WEL.THNB WEATHERS MED GREY
* 90	286.70	336.70	50.00			SILTSTONE	THNB WEATHERS DK GREY; CYCLIC ORANGE-BROWN I NTBDS EVERY 5M; MODULAR IN PART; FRIABL E IN THIN BEDDED FINE-GRAIN SS; WEATHER S LT-BROWN; 3M RESISTANT SLTST UNIT AT B ASE; FEWER PLANTS; SHARP LOWER CONTACT.
* 90	336.70	338.70	2.00			SANDSTONE	FG.H.GY.XBDG TROUGH CROSS BEDDING IN THICK TROUGHS; PEBBLY TOWARDS BASE.
* 90	338.70	343.70	5.00			CONGLOMERATE	PBL.MOD.THNB SUBRD-SUBANG CHERT PEBBLES; SLIGHT FINI NG UP IN PEBBLE SIZE; CLAST SUPPORTED; AVG SIZE 10MM; SHARP BASAL CONTACT; LAR GE WAVE RIPPLES AT BASE; 1M BETWEEN TRO UGHS, 15CM AMPLITUDE.
* 90	343.70	351.70	8.00			SILTSTONE	DK.GY CYCLIC ORANGE-BROWN WEATHERING INTERBED S; LAMINATED TO THIN BEDDED.
* 90	351.70	356.70	5.00			SANDSTONE	FG.XBDG THIN BEDDED; WEATHERS MED GREY WITH BUF F INTERBEDS; SILTIER TO WEST; TROUGH CR OSS BEDDING.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	356.70	360.70	4.00			SILTSTONE	DK.GY LAMINATED TO THIN BEDDED; WEATHERS LT T O MED GREY; SHARP BASAL CONTACT.
* 90	360.70	363.70	3.00			SANDSTONE	FG.THNB SHARP BASAL CONTACT
* 90	363.70	367.70	4.00			SILTSTONE	DK.GY AS ABOVE
* 90	367.70	369.70	2.00			SANDSTONE	FG.WEL THIN TO MEDIUM BEDDED; WEATHERS MED GRE Y-BROWN; WOOD FRAGMENTS AT BASE.
* 90	369.70	381.70	12.00			SILTSTONE	THNB WEATHERS MED GREY; SANDSTONE CHANNEL L.E NSES THROUGHOUT UNIT.
* 90	381.70	384.70	3.00			SANDSTONE	FG.WEL THINNING TO WEST; THIN TO MEDIUM BEDDED
* 90	384.70	398.70	14.00			SILTSTONE	THNB INTERBEDDED WITH SANDSTONE LENSES; LAMI NATED; MINOR ORANGE-BROWN WEATHERING; 2 0CM SILTSTONE INTERBEDS; RESISTANT UNIT S BECOMING SANDIER TO BASE OF OVERALL S ECTION.

* DENOTES MEASURED BCA

86/01/22

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 11

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	398.70	408.70	10.00			SANDSTONE	FG THIN TO MEDIUM BEDDED; ORANGE-BROWN WEATHERING SILTSTONE INTERBEDS; SILTST BEDS RESISTANT; SHARP BASAL CONTACT.
* 90	408.70	416.70	8.00			SILTSTONE	DK.GY THIN TO MEDIUM BEDDED SANDSTONE THROUGH OUT
* 90	416.70	418.70	2.00			SANDSTONE	FG.M.GY.THNB WEATHERS MED GREY; RESISTANT; LATERALLY CONTINUOUS
* 90	418.70	426.70	8.00			SILTSTONE	COMMONLY HAVE 10CM CARBONACEOUS MUDSTONE BANDS; MINOR SANDSTONE INTERBEDS; LAMINATED TO THIN BEDDED; FEW PITYOPHYLLUM; MAINLY HASH OF CZEKANOWSKIA.
* 90	426.70	434.70	8.00			SANDSTONE	FG.THNB.XBDG WEATHERS LT BROWN; DK GREY SILTSTONE INTERBEDS; FRIABLE SANDSTONE; TROUGH CROSS BEDDING 1M HIGH
* 90	434.70	440.70	6.00			SILTSTONE	AS ABOVE, WITH INTERBEDS OF SANDSTONE
* 90	440.70	441.70	1.00			SANDSTONE	THNB.XBDG WEATHERS LT BROWN; MINOR SILTSTONE INTERBEDS

* DENOTES MEASURED BCA

86/01/22

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

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PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85017

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	441.70	444.70	3.00			SILTSTONE	AS ABOVE
* 90	444.70	449.70	5.00			SANDSTONE	FG.XBDG WEATHERS LT BROWN; RECESSIVE FRIABLE MINOR SILTSTONE INTERBEDS; THIN TO MEDIUM BEDDED
* 90	449.70	451.70	2.00			SILTSTONE	DK.GY LAMINATED TO THIN BEDDED
* 90	451.70	454.70	3.00			SANDSTONE	FG.M.GY THIN BEDDED TO LAMINATED; APPEARS CONGLOMERATIC TO WEST.
* 90	454.70	464.70	10.00			SILTSTONE	DK.GY.THNB MINOR ORANGE-BROWN WEATHERING INTERBEDS; PLANTS AS BEFORE; GRADATIONAL LOWER CONTACT.
* 90	464.70	465.70	1.00			SANDSTONE	FG.M.GY.THNB.XBDG SOME TROUGH CROSS BEDDING
* 90	465.70	471.70	6.00			SANDSTONE	VFG.LAM WEATHERS LIGHT GREY

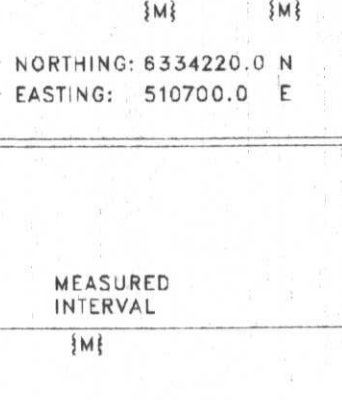
* DENOTES MEASURED BCA
NEWPAGE

GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN XX OTCB5017

GEOLOGIST : K JENNER

DATE : NOV 12/85

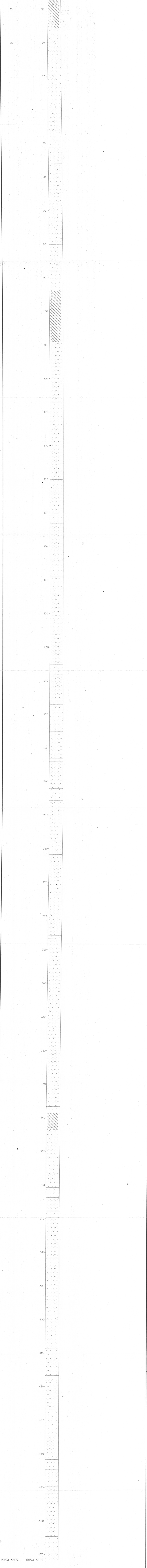
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EASTING: 510700.0 E

LITHOLOGIC SYMBOLS

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED



===== GULF CANADA RESOURCES INC. =====

- DATA SOURCE SUMMARY -

DATA SOURCE - KPNXXOTC85018

DATE - 10/15/85

- HISTORY -

START DATE - 08/25/85
END DATE - 08/25/85

CONTRACTOR -
GEOLOGIST - MACLEOD

OPERATOR - GULF CANADA
SURVEYOR -

REMARKS - OFF PROPERTY; UPPER KLAPPAN TO LOWER MALLOCH SEQUE
NCE;

- LOCATION -

PROVINCE - BC
ELEVATION - 1645.00

ZONE - 9
NORTHING - 6334000.00
EASTING - 488200.00

LICENCE/LEASE NUMBER -

LATITUDE - 570904
LONGITUDE - 1291142

- ORIENTATION -

LENGTH - 113.00

INCLINATION - 0.0
AZIMUTH - 0.0

SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

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PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85018

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	5.00	5.00			CONGLOMERATE	MAS CLAST SUPPORTED; SUBROUNDED GREY, GREEN, BLACK CHERT PEBBLES; MINOR MATRIX SUPPORTED AND COARSE-GRAIN SANDSTONE PORTION S; A FEW VERY LARGE COBBLES.
* 90	5.00	10.00	5.00			OVERBURDEN	
* 90	10.00	10.20	0.20			MUDSTONE	CARB. BLK THIN COAL STRINGERS
* 90	10.20	11.20	1.00			SANDSTONE	MG. GY WEATHERS BROWN-GREY; MINOR ORANGE THIN LAMINAE OF MUDSTONE
* 90	11.20	13.20	2.00			SILTSTONE	M. GY. LAM SS INTERBEDS; DISCONT THICK LENSES OF ORANGE WEATHERING SILTSTONE; VERY COMPETENT; MINOR PLANTS (BAIERA GRACILIS, NILSSONIA SCHAUMBERGENSIS, CLADOPHLEBIS VIRGINIENSIS, PTEROPHYLLUM RECTANGULARE)
* 90	13.20	16.20	3.00			SILTSTONE	DK. GY. MB HIGHLY FRACTURED; THIN LENSES OF ORANGE WEATHERING, DK. GREY, FINE-GRAIN SANDSTONE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85018

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	16.20	17.20	1.00			SANDSTONE	MG. DK. GY. MB SHARP CONTACT WITH UNDERLYING UNIT
* 90	17.20	21.20	4.00			CONGLOMERATE	MAS LENSES ONLY; CHERT PEBBLE AS ABOVE; MATRIX IS MEDIUM GREY; TAN WEATHERED SANDSTONE MOD. WELL SORTED; AVERAGE SIZE OF PEBBLE (LONG AXIS) IS .75CM; NO ALIGNMENT OF GRAINS
* 90	21.20	21.55	0.35			MUDSTONE	CARB. BLK COAL BANDS (C-2) UP TO 2 CM
* 90	21.55	21.90	0.35			SILTSTONE	LAM
* 90	21.90	24.90	3.00			SANDSTONE	LT. GY. LAM INTERLAMINATED WITH RED WEATHERING SILTSTONE; LAMINAE 2CM THICK EVERY 5-10CM; FINING UPWARDS
* 90	24.90	25.25	0.35			COAL	BLK C-2
* 90	25.25	25.60	0.35			MUDSTONE	CARB. BLK COAL BANDS UP TO 2 CM
* 90	25.60	25.90	0.30			SILTSTONE	

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85018

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	25.90	27.90	2.00			SANDSTONE	LT. GY. LAM INTERLAMINATED WITH RED WEATHERING SILT STONE LAMINAE 2CM THICK; FINING UPWARDS
* 90	27.90	28.00	0.10			COAL	BLK C-2
* 90	28.00	28.30	0.30			MUDSTONE	CARB. BLK COAL STRINGERS
* 90	28.30	28.70	0.40			SILTSTONE	
* 90	28.70	33.70	5.00			SANDSTONE	LT. GY. LAM INTERLAMINATED WITH RED WEATHERING SILT STONE LAMINAE 2CM THICK; FINING UPWARDS
* 90	33.70	35.20	1.50			SANDSTONE	LT. GY. LAM SILTSTONE LAMINAE WEATHER DK GREY OR RE. D; SANDSTONE WEATHERS MED RED-BROWN.
* 90	35.20	35.70	0.50			MUDSTONE	CARB. BLK COAL STRINGERS; FISSILE
* 90	35.70	35.80	0.10			COAL	BLK C-2, SOME CARBONACEOUS MUDSTONE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85018

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	35.80	40.20	4.40			SANDSTONE	MG. M. GY FINES DOWNWARD TO SILTSTONE; WEATHERS Y ELLOW-ORANGE TO MED GY; ABUNDANT SILTST ONE LAMINAE INCREASE TO BASE.
* 90	40.20	40.70	0.50			MUDSTONE	CARB. BLK COAL STRINGERS
* 90	40.70	40.95	0.25			COAL	BLK C-2, CARBONACEOUS MUDSTONE LAMINAE RARE
* 90	40.95	42.80	1.85			SANDSTONE	M. GY FINES DOWNWARD TO SILTSTONE; WEATHERS Y ELLOW-ORANGE TO MED GY; ABUNDANT SILTST ONE LAMINAE INCREASES DOWNWARDS.
* 90	42.80	44.45	1.65			SILTSTONE	GY
* 90	44.45	44.85	0.40			MUDSTONE	CARB. BLK COAL STRINGERS
* 90	44.85	45.20	0.35			COAL	BLK C-2
* 90	45.20	46.95	1.75			SANDSTONE	M. GY

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85018

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	46.95	48.70	1.75			SILTSTONE	COARSENS UPWARDS AS ABOVE
* 90	48.70	49.30	0.60			MUDSTONE	CARB. BLK COAL STRINGERS
* 90	49.30	49.45	0.15			COAL	BLK C-2
* 90	49.45	51.45	2.00			SANDSTONE	M.GY
* 90	51.45	53.45	2.00			SILTSTONE	GY COARSENS UPWARDS AS ABOVE
* 90	53.45	54.45	1.00			MUDSTONE	CARB. BLK COAL STRINGERS; BROKEN; SHARP CONTACT WITH UNDERLYING UNIT
* 90	54.45	56.45	2.00			SANDSTONE	MG. LAM INTERLAMINATED WITH RED WEATHERING SILTSTONE; WEATHERS YELLOW-GREY-RED; SILTSTONE LAMINAE INCREASE TOWARDS BASE
* 90	56.45	57.45	1.00			SILTSTONE	GY. LAM COARSENING UPWARDS SEQUENCE; RHYTHMIC WEATHERING PATTERN.
* 90	57.45	59.45	2.00			SILTSTONE	M.GY. THNB WEATHERS RED-GREY.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85018

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	59.45	59.75	0.30			MUDSTONE	CARB. BLK COAL STRINGERS.
* 90	59.75	60.45	0.70			SANDSTONE	MG. M. GY. MAS
* 90	60.45	60.90	0.45			MUDSTONE	CARB. BLK FISSILE COAL (C-2) UP TO FEW CM; SHARP CONTACT WITH OVERLYING SANDSTONE
* 90	60.90	61.20	0.30			MUDSTONE	CARB. BLK COAL STRINGERS
* 90	61.20	62.00	0.80			SANDSTONE	MG. M. GY. MAS
* 90	62.00	62.50	0.50			MUDSTONE	CARB. BLK FISSILE; COAL (C-2) UP TO FEW CM; SHARP CONTACT WITH OVERLYING SANDSTONE
* 90	62.50	62.80	0.30			MUDSTONE	CARB. BLK COAL STRINGERS
* 90	62.80	63.55	0.75			SANDSTONE	MG. M. GY. MAS
* 90	63.55	63.95	0.40			MUDSTONE	CARB. BLK FISSILE; COAL UP TO FEW CM; SHARP CONTACT WITH OVERLYING SANDSTONE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85018

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	63.95	67.45	3.50			SANDSTONE	FG. LT. GY. LAM INTERLAMINATED WITH RED WEATHERED MUDST ONE; MINOR LT GREY MEDIUM-GRAIN SANDSTO NE AND DK GREY SILTSTONE
* 90	67.45	70.45	3.00			MUDSTONE	SLTY. LAM. RIPMK RED-GREY WEATHERED; TOPS UP; COARSENING UPWARDS SEQUENCE.
* 90	70.45	73.45	3.00			SANDSTONE	MG. LT. GY. LAM. RIPMK INTERLAMINATED WITH RED MUDSTONE
* 90	73.45	74.45	1.00			MUDSTONE	CARB. BLK FRIABLE; THIN COAL.
* 90	74.45	74.95	0.50			SILTSTONE	DK. GY. LT GREY WEATHERED
* 90	74.95	78.20	3.25			SANDSTONE	MG. GY. THKB. RIPMK THIN MUDSTONE LAMINAE < 5%; TOPS UP; COARSENING UPWARDS SEQUENCE.
* 90	78.20	79.70	1.50			SILTSTONE	DK. GY. LAM WEATHERS DK GREY AND RED; HIGHLY BROKEN

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85018

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	79.70	80.70	1.00			MUDSTONE	SLTY. DK. GY. LAM INTERLAMINATED WITH SILTSTONE; THIN COAL STRINGERS UP TO 1 CM ESPECIALLY NEAR TOP WHERE MUDSTONE IS TWICE AS ABUNDANT AS SILTSTONE.
* 90	80.70	87.70	7.00			OVERBURDEN	
* 90	87.70	93.70	6.00			SANDSTONE	MG. H. GY. MAS WEATHERS YELLOW-ORANGE TO LT GY; THIN SILTST BANDS NEAR TOP; OCCASSIONAL RIPPLES ARE CLAY FILLED; ABUNDANT SHELL WASH; UNIT THINS CONSIDERABLY WHERE IT IS OVERLAIN BY SILTST/MOST/SS INTERBEDS AS ABOVE.
* 90	93.70	95.70	2.00			OVERBURDEN	
* 90	95.70	96.70	1.00			MUDSTONE	DK. GY. THNB FISSILE

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85018

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	96.70	98.70	2.00			SILTSTONE	DK.GY.THNB WEATHERS ORANGE,YELLOW AND DARK GREY
* 90	98.70	98.80	0.10			MUDSTONE	CARB.BLK THICK COAL BANDS UP TO 8' CM (C-2)
* 90	98.80	100.80	2.00			SANDSTONE	MG.M.GY.MAS MUDSTONE LAMINAE INCREASE TOWARDS TOP.
* 90	100.80	100.90	0.10			MUDSTONE	CARB.BLK
* 90	100.90	101.20	0.30			COAL	C-3.BLK SOFT BROKEN, SOME IRON STAIN
* 90	101.20	101.70	0.50			MUDSTONE	CARB.BLK VERY BROKEN
* 90	101.70	102.20	0.50			SILTSTONE	DK.GY WITH RED MUDSTONE LAMINAE UP TO 0.5 CM; ABUNDANT COAL STRINGERS; PLANT FOSSILS ; COALIFIED; CZEKANOWSKIA.
* 90	102.20	102.35	0.15			MUDSTONE	CARB.BLK FISSILE; WEATHERS ORANGE-YELLOW
* 90	102.35	104.60	2.25			SANDSTONE	LT.GY.THNB SILTSTONE LAMINAE INCREASE DOWNWARDS

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: XX DATA SOURCE: OTC85018

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	104.60	107.35	2.75			SILTSTONE	M.GY.THNB WEATHERS RED-GREY, RED OR YELLOW; COARS ENING UPWARDS SEQUENCE (SANDSTONE LAMIN AE INCREASE UPWARDS)
* 90	107.35	108.85	1.50			MUDSTONE	CARB.DK.GY.VTHNB VERY FISSILE; SILTSTONE INTERBEDS WEATH ER RUST-YELLOW; VERY NODULAR; SILTSTONE INCREASES TO TOP
* 90	108.85	109.35	0.50			COAL	C-2.BLK WELL CLEATED; FE STAINED.
* 90	109.35	110.35	1.00			SILTSTONE	DK.GY AS ABOVE; MUDSTONE INTERBEDS
* 90	110.35	111.85	1.50			MUDSTONE	BLK AS ABOVE; SILTSTONE INTERBEDS; TOP OF U NIT. IS MORE CARBONACEOUS.
* 90	111.85	112.85	1.00			SILTSTONE	DK.GY.THNB WEATHERS DK GREY TO RUSTY BROWN
* 90	112.85	113.35	0.50			COAL	C-2.BLK WELL CLEATED

* DENOTES MEASURED BCA
NEWPAGE

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GULF CANADA RESOURCES INC.
 COAL DIVISION
 KLAPPAN PROJECT
 STRATIGRAPHIC LOG
 KPN XX OTC85018

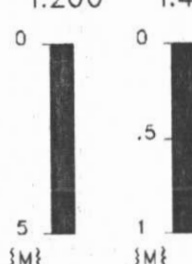
GEOLOGIST : MACLEOD

DATE : NOV 12/85

DRAWING NO. :

LITHOLOGIC SYMBOLS

SCALE : 1:200 1:40

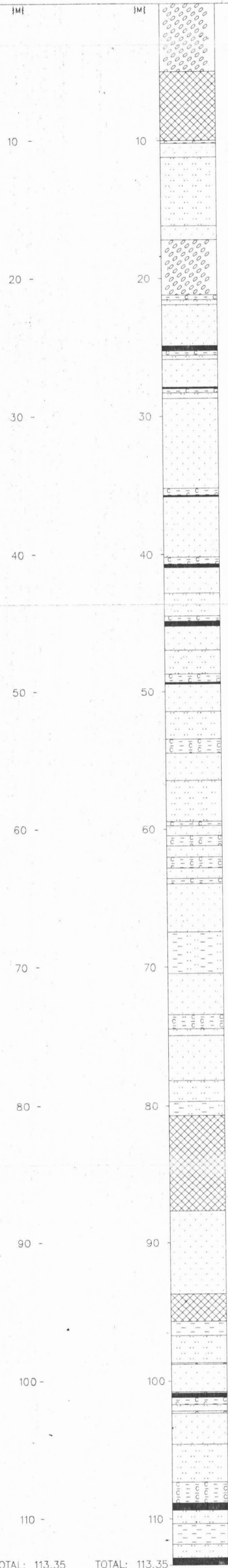


NORTHING: 6334000.0 N
 EASTING: 488200.0 E

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED

MEASURED
INTERVAL

TRUE 1:200
INTERVAL



7

- DATA SOURCE SUMMARY -

DATA SOURCE - KPSSOTC85019

DATE - 10/15/85

- HISTORY -

START DATE - 08/04/85
END DATE - 08/04/85

CONTRACTOR -
GEOLOGIST - KIM JENNER

OPERATOR - GULF CANADA
SURVEYOR -

REMARKS - OFF PROPERTY

- LOCATION -

PROVINCE - BC
ELEVATION - 2042.00

ZONE - 9
NORTHING - 6328400.00
EASTING - 486000.00

LICENCE/LEASE NUMBER -

LATITUDE - 570602
LONGITUDE - 1291352

- ORIENTATION -

LENGTH - 421.00
SIZE WIDTH - 0.0
SIZE HEIGHT - 0.0

INCLINATION - 0.0
AZIMUTH - 0.0

ROOF STRIKE - 0
ROOF DIP - 0
ROOF DIR -

FLOOR STRIKE - 0
FLOOR DIP - 0
FLOOR DIR -

*** NOTE *** 0 INDICATES NO VALUE

=====

PROJECT: KPN BLOCK: SS DATA SOURCE: OTC85019

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	0.00	6.00	6.00			SANDSTONE	FG. MEL. M. GY MED TO THICK BEDDED; MINOR RIP-UP CLAST S.
* 90	6.00	11.10	5.10			SILTSTONE	DK. GY LAMINAE AT BASE; THIN BEDDED; SMALL SCALE CURR. ENT. RIPPLES AT TOP.
* 90	11.10	11.60	0.50			SANDSTONE	VFG. M. GY THIN BEDDED; MINOR RIP-UP CLASTS; SMALL CHANNEL SAND.
* 90	11.60	34.05	22.45			SILTSTONE	DK. GY LAMINATED TO THIN BEDDED; VERY FINE-GRAIN SANDSTONE INTERBEDS; SMALL SCALE CURRENT RIPPLES.
* 90	34.05	49.05	15.00			MUDSTONE	DK. GY SOME IRON STAINING.
* 90	49.05	59.05	10.00			SILTSTONE	DK. GY LAMINATED; VERY FINE-GRAIN SANDSTONE; IRON STAINED
* 90	59.05	73.25	14.20			OVERBURDEN	COVERED; MUDSTONE AT TOP; SANDSTONE AT BASE.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: SS DATA SOURCE: OTC85019

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	73.25	76.45	3.20			SANDSTONE	FG. MEL. M. GY ABUNDANT QUARTZ VEINING; FINE TO MEDIUM GRAINED.
* 90	76.45	84.25	7.80			SANDSTONE	VFG. MEL. M-DK. GY LAMINATED; THIN SILTSTONE INTERBEDS; CROSS BEDDING AND BIOTURBATION.
* 90	84.25	87.05	2.80			MUDSTONE	DK. GY LAMINATED.
* 90	87.05	90.25	3.20			SANDSTONE	BN OYSTER BED; MOSTLY BIVALVES; DEATH HORIZON.
* 90	90.25	92.45	2.20			SANDSTONE	FG. LT. BN
* 90	92.45	95.75	3.30			SANDSTONE	PR. LT. BN NUMEROUS PEBBLES WITHIN APPROXIMATELY 1 CM IN DIAMETER; MAINLY CONCENTRATED IN TOP 20 CM.
* 90	95.75	99.75	4.00			SANDSTONE	FG. M. GY

* DENOTES MEASURED BCA

86/01/22

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 3

PROJECT: KPN BLOCK: SS DATA SOURCE: OTC85019

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
*	90 99.75	125.75	26.00			SILTSTONE	DK.GY LAMINATED; THIN BEDDED; VERY FINE-GRAIN SANDSTONE INCREASING IN ABUNDANCE TO TOP; SOFT SEDIMENT DEFORMATION; MINOR BI VALVES AT BASE
*	90 125.75	134.75	9.00			SANDSTONE	VFG.M-DK.GY THIN BEDDED; RIP-UPS AT BASE; CROSS BEDDING
*	90 134.75	159.05	24.30			SILTSTONE	DK.GY LAMINATED
*	90 159.05	174.05	15.00			MUDSTONE	DK.GY LAMINATED
*	90 174.05	175.05	1.00			SILTSTONE	DK.GY
*	90 175.05	190.25	15.20			SANDSTONE	M.GY THINLY LAMINATED WITH PLANAR LOW ANGLE CROSS BEDDING.
*	90 190.25	190.75	0.50			SILTSTONE	DK.GY LAMINATED
*	90 190.75	194.85	4.10			MUDSTONE	DK.GY SOME COALIFIED PLANT FRAGMENTS.

* DENOTES MEASURED BCA

86/01/22

GULF CANADA RESOURCES INC. - COAL DIVISION - DESCRIPTIVE LOG

PAGE 4

PROJECT: KPN BLOCK: SS DATA SOURCE: OTC85019

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
*	90 194.85	199.85	5.00			SANDSTONE	FG.M.GY MASSIVE
*	90 199.85	206.35	6.50			SILTSTONE	DK.GY LAMINATED TO THIN BEDDED; FINE-GRAINED SANDSTONE INTERBEDDED IN MIDDLE OF UNIT
*	90 206.35	210.15	3.80			SANDSTONE	FG.M.GY MED BEDDED; SILTIER TO BASE.
*	90 210.15	215.15	5.00			SILTSTONE	DK.GY LAMINATED.
*	90 215.15	224.65	9.50			SANDSTONE	MG.MEL.M.GY MASSIVE; MINOR BIVALVE HASH AT BASE.
*	90 224.65	259.15	34.50			SILTSTONE	DK.GY LAMINATED; VERY FINE-GRAINED SANDSTONE NORM BURROWS THROUGHOUT.
•	90 259.15	284.15	25.00			SANDSTONE	FG.M.GY MED TO THICK BEDDED; GRADES DOWN INTO SILTSTONE.
*	90 284.15	329.15	45.00			SILTSTONE	DK.GY MINOR COAL INCLUSIONS TOWARD BASE; CARB ONACEOUS MUDSTONE TOWARD BASE.

• DENOTES MEASURED BCA

PROJECT: KPN BLOCK: SS DATA SOURCE: OTC85019

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	329.15	341.15	12.00			SANDSTONE	FG.MEL.M.GY MEDIUM TO THICK BEDDED.
* 90	341.15	364.35	23.20			SILTSTONE	DK.GY THINLY LAMINATED.
* 90	364.35	365.35	1.00			SANDSTONE	FG.M.GY DEATH HORIZON; BIVALVES.
* 90	365.35	365.95	0.60			SANDSTONE	VFG.MEL.M.GY SMALL CHANNEL SAND; MASSIVE.
* 90	365.95	366.45	0.50			SANDSTONE	M.GY DEATH HORIZON; BIVALVES.
* 90	366.45	375.45	9.00			SANDSTONE	FG.M.GY THIN TO MED BEDDED; SILTSTONE LAMINATED AT BASE.
* 90	375.45	386.85	11.40			SILTSTONE	DK.GY LAMINATED TO MED BEDDED.
* 90	386.85	391.65	4.80			MUDSTONE	DK.GY THINLY LAMINATED.
* 90	391.65	394.65	3.00			SANDSTONE	FG.M.GY MED BEDDED; MASSIVE.

* DENOTES MEASURED BCA

PROJECT: KPN BLOCK: SS DATA SOURCE: OTC85019

BCA	DEPTH FROM	DEPTH TO	INTRVAL THICK.	SAMP. ID	SEAM ID	LITHOLOGY	DESCRIPTION
* 90	394.65	400.65	6.00			SILTSTONE	M-DK.GY LAMINATED.
* 90	400.65	412.25	11.60			SANDSTONE	VFG.M.GY THIN BEDDED; MASSIVE.
* 90	412.25	421.25	9.00			SANDSTONE	FG.M.GY INTERBEDDED WITH SILTSTONE; MASSIVE.

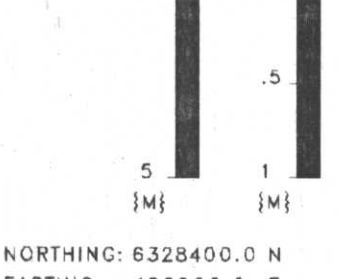
706

GULF CANADA RESOURCES INC.
COAL DIVISION
KLAPPAN PROJECT
STRATIGRAPHIC LOG
KPN SS 01C85019

GEOLOGIST : KIM JENNER

DATE : NOV 12/85

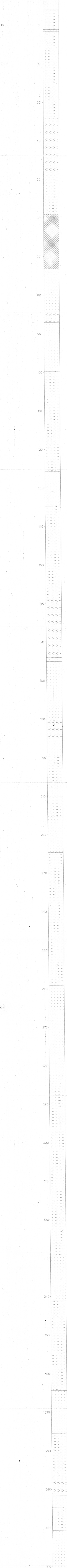
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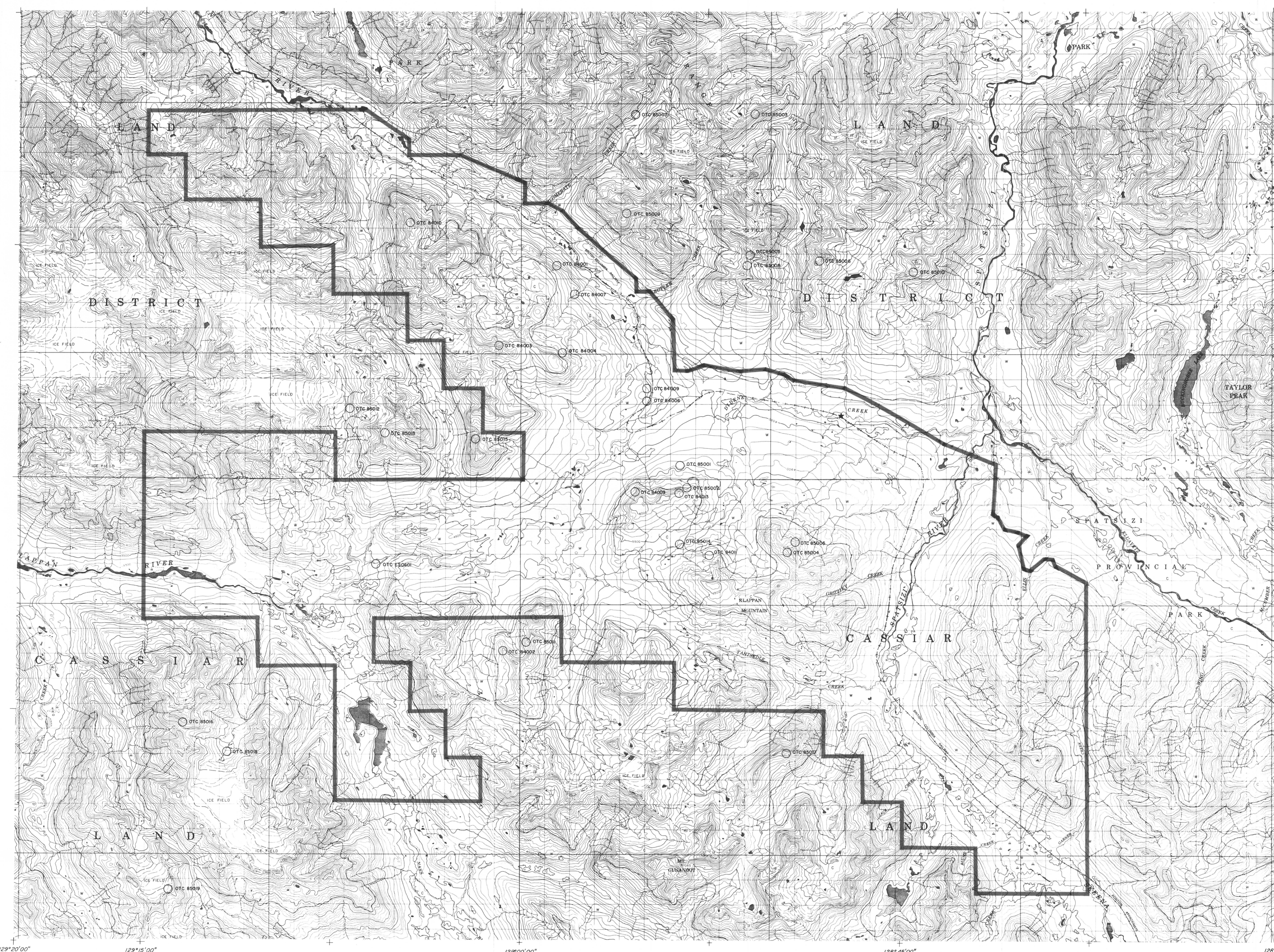
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EASTING: 486000.0 E

LITHOLOGIC SYMBOLS

	SANDSTONE		BENTONITE
	SILTSTONE		BRECCIA
	COAL		CARBONACEOUS
	OVERBURDEN		QUARTZ
	MUDSTONE, CLAYSTONE		PYRITE
	TUFF		FERRUGINOUS
	LIMESTONE		CONGLOMERATE
	COVERED		FOSSIL BED



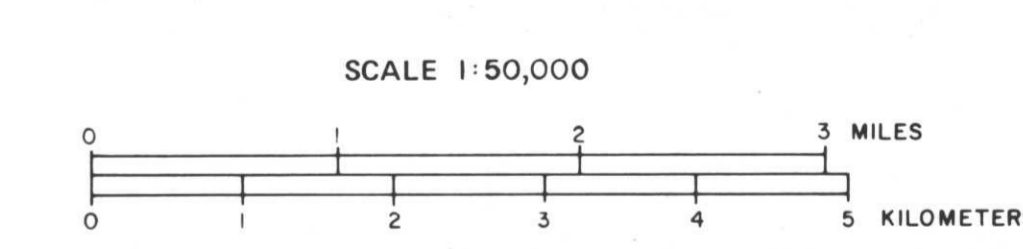
TOTAL: 421.25 TOTAL: 421.25



LEGEND

ROADS AND RELATED FEATURES	
HARD SURFACE ALL WEATHER	
LOOSE SURFACE	
CAMP TRACK WATER ROAD	
RAIL CUTLINE ROAD	
BUILT UP AREA	
RAILWAY SIGNAL STATION STOP	
BRIDGE	
BEAM AND BARS ANCHORAGE	
LANDMARK FEATURES	
HOUSE BARN	
CHURCH SCHOOL	
POST OFFICE	
HISTORICAL SITE	
TOWNSHIP FIRE MOUND	
WELL OIL GAS	
TANK OIL GASOLINE WATER	
TELEPHONE LINE	
POWER TRANSMISSION LINE	
RAIL	
CUTTING EMBANKMENT	
GRAVEL PIT	
BOUNDARIES AND CONTROL	
INTERNATIONAL PROVINCIAL MONUMENT	
COUNTY DISTRICT	
TOWNSHIP PARISH - SURVEYED	
TOWNSHIP DLS - SURVEYED	
MUNICIPALITY	
INDIAN RESERVE PARK, ETC.	
HORIZONTAL CONTROL POINT	
BENCH MARK	
SPOT ELEVATION ELEVATION APPROXIMATE	
DRAINAGE AND RELATED FEATURES	
DIRECTION OF FLOW	
LAKE INTERMITTENT	
WATERED FLOODPLAIN	
WASH CRIPPLE (WOODS)	
DRY RIVER BED WITH CHANNELS	
SAND ABOVE IN WATER	
STRING BOG	
TUNDRA/POSSIBLE POLYSONS	
RAVINE	
FORESHORE FLATS	
ROCK	
DAM	
WAMP	
DITCH	
RELIEF FEATURES	
CONTOURS	
APPROXIMATE CONTOUR	
DEPRESSION	
ESKER	
FRINGE	
SAND SAND DUNES	
FALSA BOG	
WOODED AREA	

PROPERTY BOUNDARY
MEASURED SECTION
FIELD CAMP LOCATION



104°11'	104°10'	104°9'	57°45'
104°10'	104°9'	104°8'	
104°9'	104°8'	104°7'	
104°8'	104°7'	104°6'	
104°7'	104°6'	104°5'	
104°6'	104°5'	104°4'	
104°5'	104°4'	104°3'	
104°4'	104°3'	104°2'	
104°3'	104°2'	104°1'	
104°2'	104°1'	104°0'	
104°1'	104°0'	103°59'	
104°0'	103°59'	103°58'	
103°59'	103°58'	103°57'	
103°58'	103°57'	103°56'	
103°57'	103°56'	103°55'	
103°56'	103°55'	103°54'	
103°55'	103°54'	103°53'	
103°54'	103°53'	103°52'	
103°53'	103°52'	103°51'	
103°52'	103°51'	103°50'	

129°20'00" 129°15'00" 129°00'00" 128°45'00" 128°30'00"

706

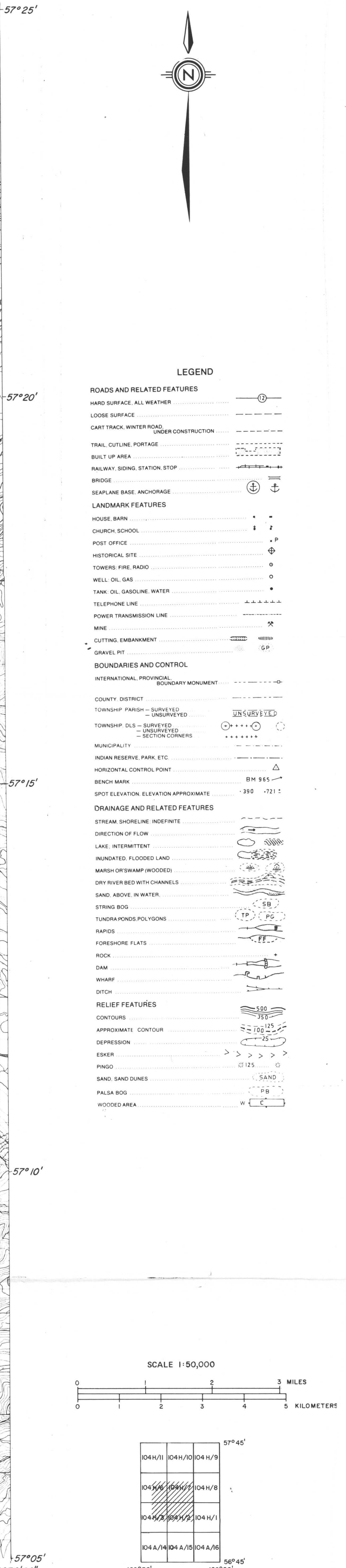
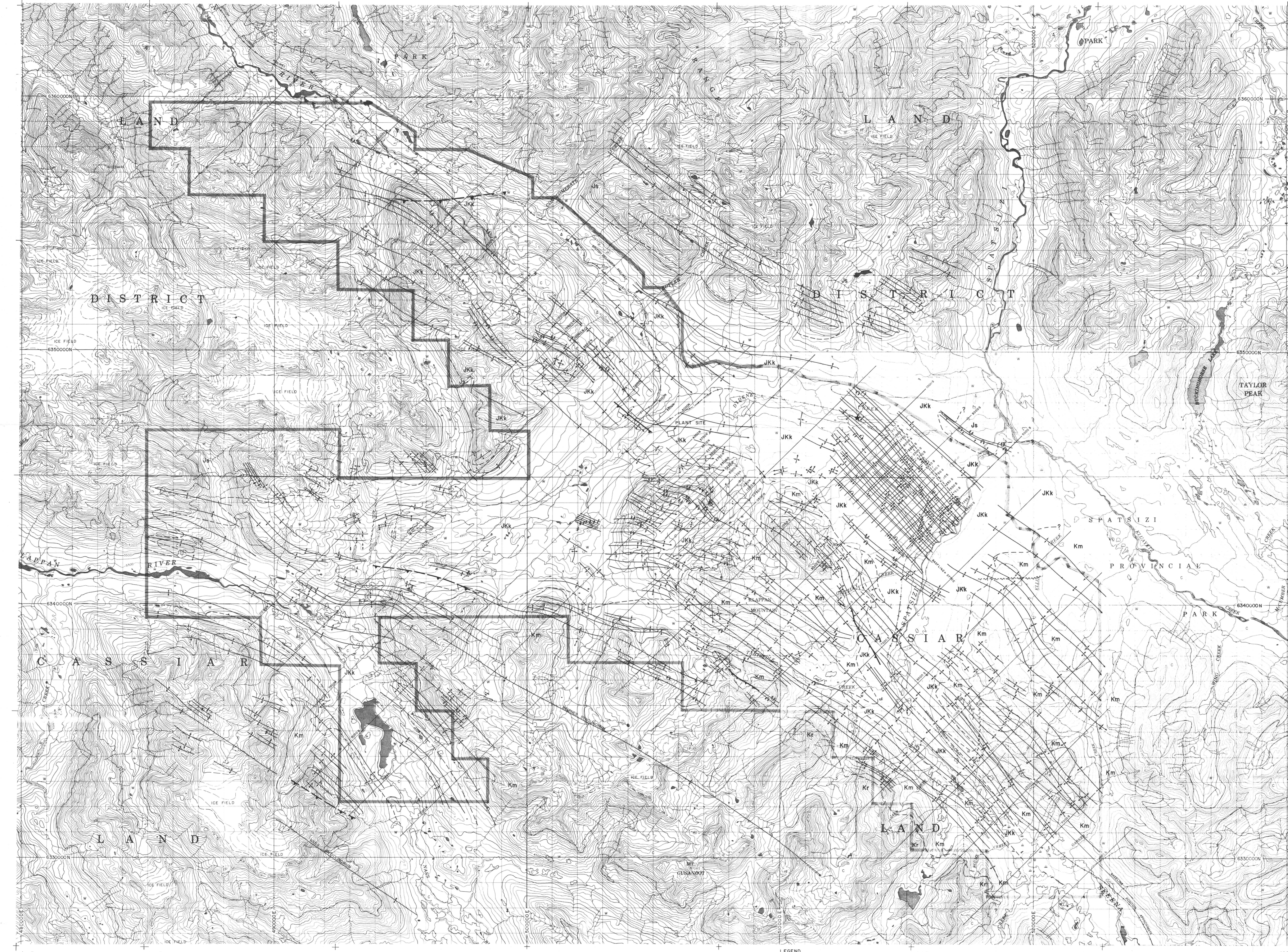
GULF CANADA RESOURCES INC.
Coal Division

ALBERTA

MT. KLAPPAN COAL PROPERTY

1981 - 1985 MEASURED SECTION MAP

PREPARED BY: S. MACLEOD DRAWING No. KPN 85005
APPROVED BY: K. JENNER DATE: NOV 1985



RHONDA SEQUENCE
 Kr Sequence of thick chert pebble conglomerates and minor gritty sandstones interbedded with an increasing number of siltstones and mudstones towards the basal contact. Large scale trough and ribbed cross beds are common. Six species of plant fossils increase in abundance towards the base of the sequence.

MALLOCH SEQUENCE
 Km Thick interbeds of mudstones, argillaceous siltstones, fine grained sandstones and thin interbeds of orange weathering nodular siltstones. Many conglomerate beds display large scale cross bedding and tend to be laterally discontinuous. Thick open sandstone beds and thin coal seams increase in abundance towards the basal gradational contact. Twenty species of plant fossils exist within the sequence. Bivalves are rare.

KLAPPAN SEQUENCE (main coal-bearing unit)
 Jk1 Fine to coarse grained sandstones interbedded with mudstones, siltstones, occasional thin bands of orange weathering argillaceous siltstones, conglomerates and abundant coal seams. Conglomerates have grade laterally into sandstone. Sandstones often display tabular or trough cross bedding. Rhythmites occur in the middle of the sequence. Twenty-three species of palaeoplants and twenty-two species of plants occur throughout. Jarfed wood and rare cones may be present towards the upper contact.

SPATSIZI SEQUENCE
 Js Predominantly a massive sequence of interbedded mudstones, siltstones, sandstones and conglomerates. Carbonaceous mudstones, thin coal seams and chert pebble conglomerates are more abundant in the upper part of the sequence. Nineteen species of bivalves are present. Bivalves are rare. Plant debris may occur near the upper gradational contact.

LEGEND

- LICENCE BOUNDARY
- GEOLOGICAL CONTACT (APPROXIMATE, INFERRED)
- COAL SEAM (DEFINED, INFERRED)
- ANTICLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
- SYNCLINE (DEFINED, APPROXIMATE) ARROW INDICATES PLUNGE DIRECTION
- OVERTURNED ANTICLINE (DEFINED, APPROXIMATE)
- OVERTURNED SYNCLINE (DEFINED, APPROXIMATE)
- MONOCLINE (DEFINED, APPROXIMATE)
- REGIONS (HORIZONTAL, INCLINED, OVERTURNED, VERTICAL, UPRIGHT, ESTIMATED)
- FOLIATIONS (INCLINED, VERTICAL, HORIZONTAL)
- JOINTS (INCLINED, VERTICAL, HORIZONTAL)
- THRUST FAULT (DEFINED, APPROXIMATE) TEETH INDICATE UP-THROW SIDE
- FAULT (DEFINED, APPROXIMATE) UPRIGHT, DOWN-THROW SIDE
- FAULT (DEFINED, APPROXIMATE) SHOWING RELATIVE MOVEMENT
- ADIT
- TRENCH
- COAL SHOULDER
- DIAMOND, ROTARY, WINKIE DRILL HOLE (VERTICAL, INCLINED WITH SURFACE PROJECTION)
- MEASURED SECTION
- SURVEY CABLE
- CROSS SECTION LINE

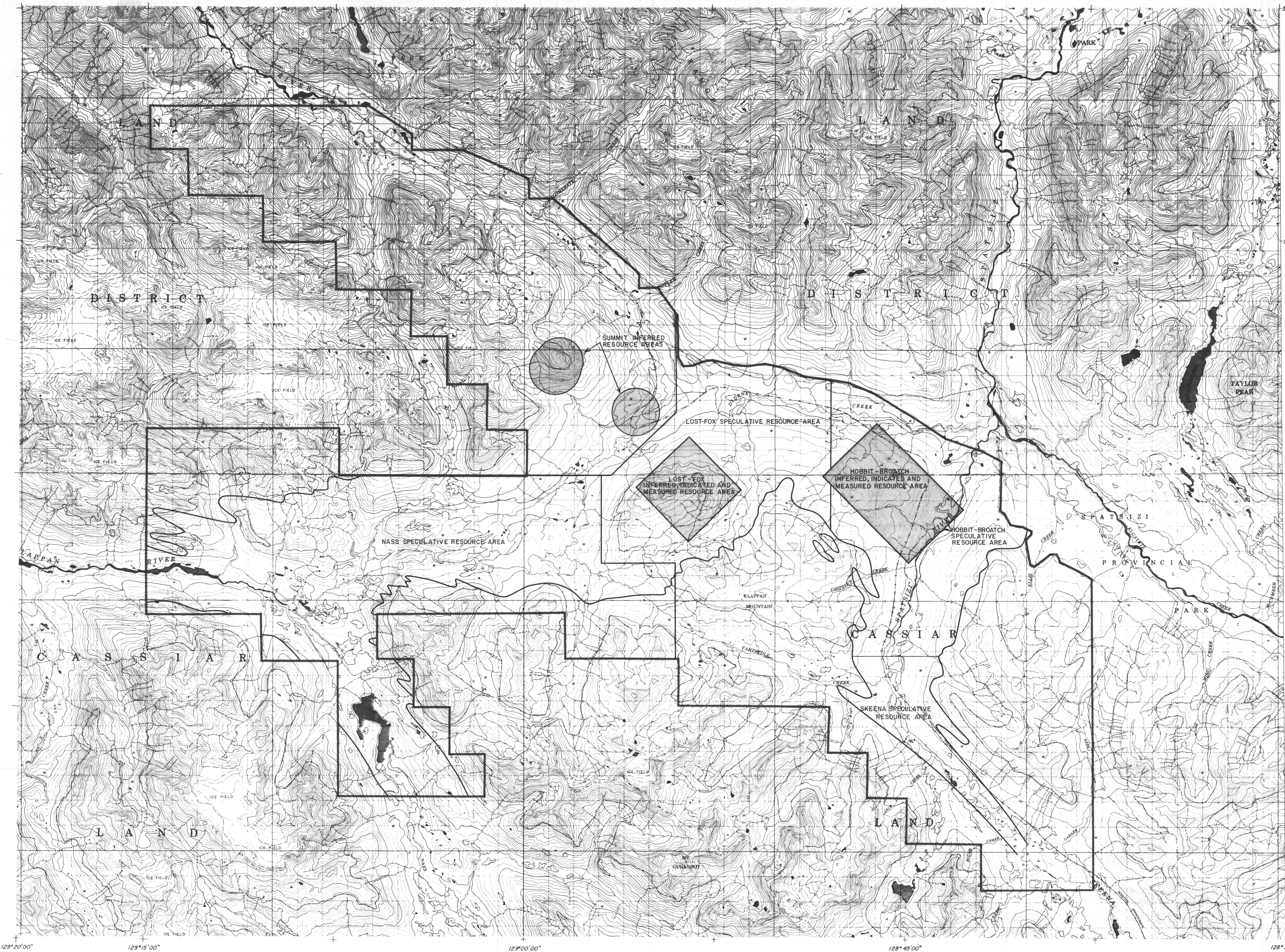
GULF CANADA RESOURCES INC.
 Coal Division

CALGARY ALBERTA

MT. KLAPPAN COAL PROPERTY
 1985
 GEOLOGY MAP

706

PREPARED BY: E.S., K.J., S.M., J.T. DRAWING No. KFN85001
 APPROVED BY: E.S., K.J. DATE: FEB 1986



LEGEND

ROADS AND RELATED FEATURES

- HARD SURFACE ALL WEATHER
- LOOSE SURFACE
- CART TRACK WINTER ROAD UNDER CONSTRUCTION
- TRAIL CUTLINE PORTAGE
- BUILT UP AREA
- RAILWAY BONDING STATION STOP
- BRIDGE
- SEAPLANE BASE ANCHORAGE

LANDMARK FEATURES

- HOUSE BARN
- CHURCH SCHOOL
- POST OFFICE
- HISTORICAL SITE
- TOWERS FIRE RADIO
- WELL OIL GAS
- TANK OIL GASOLINE WATER
- TELEPHONE LINE
- POWER TRANSMISSION LINE
- WIRE
- CUTTING EMBANKMENT
- GRAVEL PIT

BOUNDARIES AND CONTROL

- INTERNATIONAL PROVINCIAL BOUNDARY MONUMENT
- COUNTY DISTRICT
- TOWNSHIP PARISH - SURVEYED UNSURVEYED
- TOWNSHIP OLS - SURVEYED UNSURVEYED SECTION CORNERS
- MUNICIPALITY
- INDIAN RESERVE PARK ETC
- HORIZONTAL CONTROL POINT
- BENCH MARK
- SPOT ELEVATION ELEVATION APPROXIMATE

DRAINAGE AND RELATED FEATURES

- STREAM SHORELINE INDEFINITE
- DIRECTION OF FLOW
- LAKE INTERMITTENT
- WATERED FLOODED SAND
- MARSH OR SWAMP (WOODED)
- DRY RIVER BED WITH CHANNELS
- SAND ABOVE IN WATER
- STRING BOG
- TUNDRA PONDS POLYGONS
- RAPIDS
- FORESHORE FLATS
- ROCK
- DAM
- WHARF
- DITCH

RELIEF FEATURES

- CONTOURS
- APPROXIMATE CONTOUR
- DEPRESSION
- ESKER
- PINGO
- SAND SAND DUNES
- PALSA BOG
- WOODED AREA

SCALE 1:50,000

0 1 2 3 4 5 MILES
0 1 2 3 4 5 KILOMETERS

57°25' 57°20' 57°15' 57°10' 57°05'

129°20'00" 129°15'00" 129°00'00" 128°45'00" 128°30'00"

706

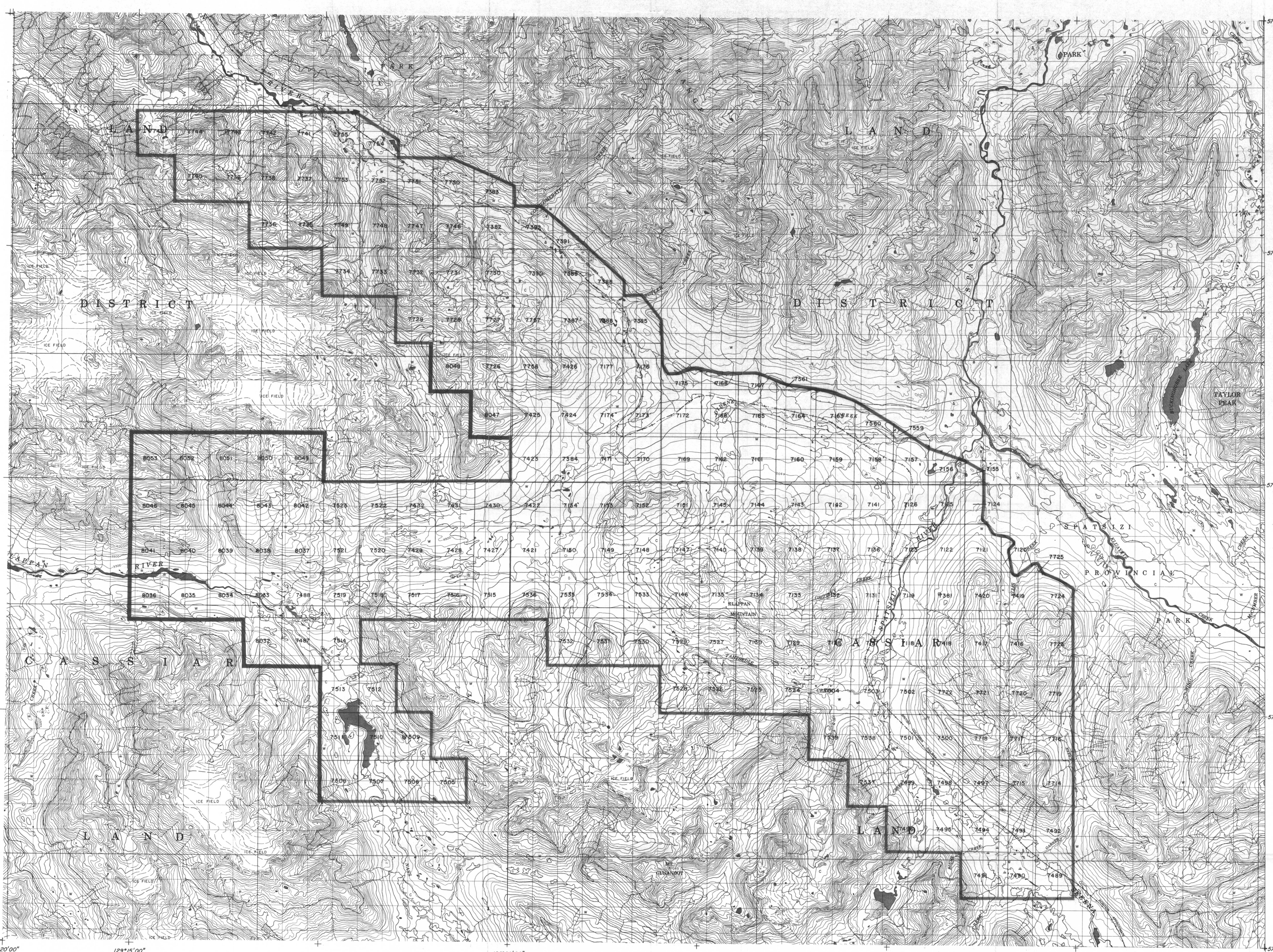
GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

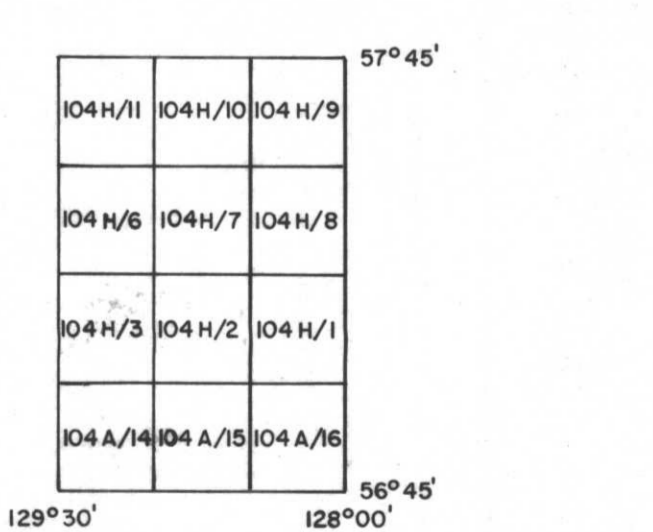
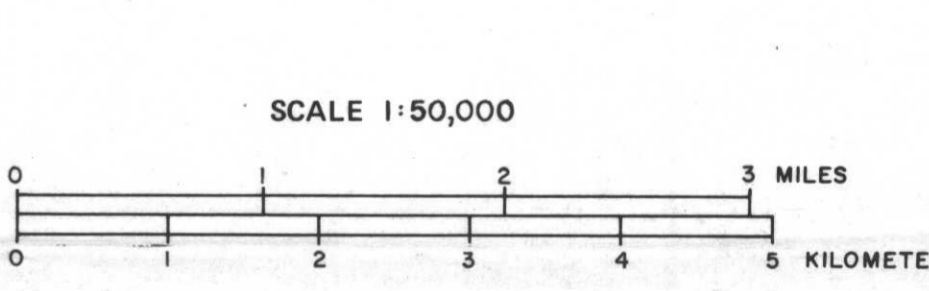
MOUNT KLAPPAN COAL PROPERTY
1985
COAL RESOURCE AREA MAP

PREPARED BY: S. MACLEOD
APPROVED BY: E. SWANBERGSON

DRAWING No. KPN85002
DATE: FEB. 1986



- LEGEND**
- ROADS AND RELATED FEATURES**
- HARD SURFACE, ALL WEATHER
 - LOOSE SURFACE
 - CART TRACK, WATER ROAD
 - TRAIL, CYCLING PORTAGE
 - BUILT UP AREA
 - RAILWAY, SONG, STATION, STOP
 - BRIDGE
 - SEAWALL, BASE, ANCHORAGE
 - LANDMARK FEATURES
 - HOUSE, BARN
 - CHURCH, SCHOOL
 - POST OFFICE
 - HISTORICAL SITE
 - TOWER, FIRE, MOUND
 - WELL, OIL, GAS
 - TANK, OIL, GASOLINE, WATER
 - TELEPHONE LINE
 - POWER TRANSMISSION LINE
 - RAIL
 - CUTTING, EMBANKMENT
 - GRAVEL PIT
- BOUNDARIES AND CONTROL**
- INTERNATIONAL, PROVINCIAL
 - COUNTY, DISTRICT
 - TOWNSHIP, PARISH - SURVEYED
 - TOWNSHIP, D.L.S. - SURVEYED
 - MUNICIPALITY
 - INDIAN RESERVE, PARK, ETC.
 - HORIZONTAL CONTROL POINT
 - BENCH MARK
 - SPOT ELEVATION, ELEVATION APPROXIMATE
- DRAINAGE AND RELATED FEATURES**
- STREAK, SHORELINE, INDEFINITE
 - DIRECTION OF FLOW
 - LAKE, INTERMITTENT
 - INDICATED, FLOODED LAND
 - MARSH, SWAMP, WOODS
 - DRY RIVER BED WITH CHANNELS
 - SAND, ABOVE, IN WATER
 - STRONG BARS
 - TURBIDITY, FORDS, POLYVONS
 - RAPIDS
 - FORESHORE FLATS
 - ROCK
 - DAM
 - WHARF
 - DITCH
 - RELIEF FEATURES
 - CONTOURS
 - APPROXIMATE CONTOUR
 - DEPRESSION
 - ESKER
 - PINGO
 - SAND, SAND DUNES
 - PALSA BOG
 - HOODED AREA
- PROPERTY BOUNDARY**
- LICENCE BOUNDARY**
- LICENCE NUMBER** 7425



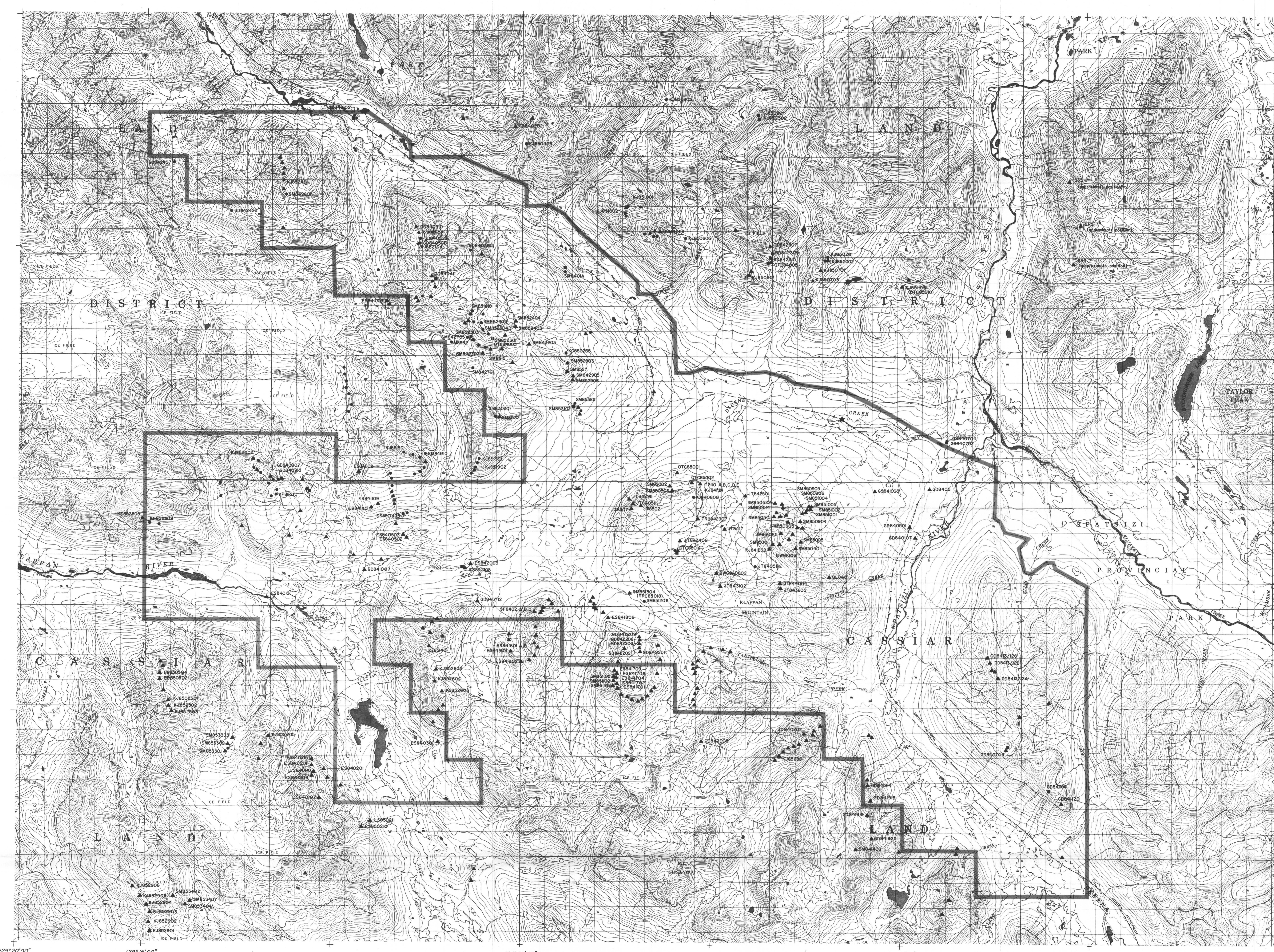
706

GULF CANADA RESOURCES INC.
Coal Division

CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
1985
COAL LICENCE MAP

PREPARED BY: R I
APPROVED BY: E.S., V.L.D., G.S. DATE: FEB. 1985 DRAWING No. KFM 85003



57°25'
57°20'
57°15'
57°10'
57°05'
128°20'00"
128°15'00"
128°10'00"
128°05'00"
128°00'00"



LEGEND

ROADS AND RELATED FEATURES

- HARD SURFACE, ALL WEATHER
- LOOSE SURFACE
- CART TRACK, WATER ROAD
- UNDER CONSTRUCTION
- TRAIL CUTLINE, PORTAGE
- BUILT UP AREA
- RAILWAY, SIGNAL, STATION STOP
- BRIDGE
- SEAPLANE BASE, MOORING

LANDMARK FEATURES

- HOUSE, BARN
- CHURCH, SCHOOL
- POST OFFICE
- HISTORICAL SITE
- TOWERS, FIRE RADIO
- WELL, OIL, GAS
- TANK, OIL, GASOLINE, WATER
- TELEPHONE LINE
- POWER TRANSMISSION LINE
- MADE
- CUTTING, EMBANKMENT
- GRAVEL PIT

BOUNDARIES AND CONTROL

- INTERNATIONAL, PROVINCIAL
- BOUNDARY MONUMENT
- COUNTY, DISTRICT
- TOWNSHIP, PARISH - SURVEYED
- TOWNSHIP, C.S. - SURVEYED
- MUNICIPALITY
- INDIAN RESERVE, PAST, ETC.
- HORIZONTAL CONTROL POINT
- BENCH MARK
- SPOT ELEVATION, ELEVATION APPROXIMATE

DRAINAGE AND RELATED FEATURES

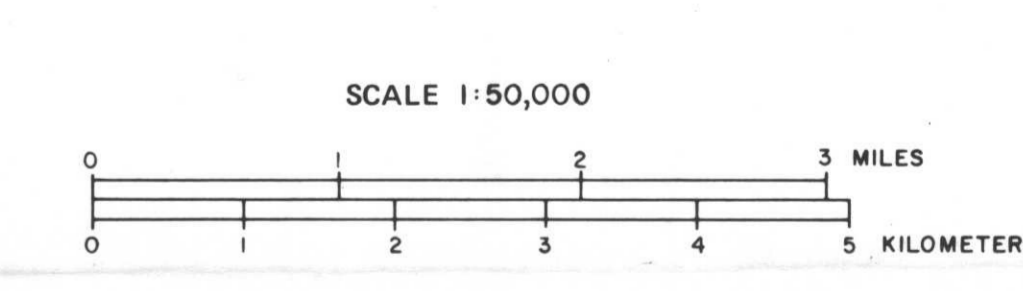
- STREAM, SHOULDER, ROSEFANTE
- DIRECTION OF FLOW
- LAKE, INTERMITTENT
- INUNDATED, FLOODED LAND
- MARSH, OR SWAMP, WOODED
- DRY RIVER BED WITH CHANNELS
- SAND, MUD, IN WATER
- STRUNG BOG
- TUNDRA, PONDS, POLYDONS
- RAPIDS
- FORESHORE FLATS
- ROCK
- DAM
- WHARF
- DITCH

RELIEF FEATURES

- CONTOUR
- APPROXIMATE CONTOUR
- DEPRESSION
- ESKER
- FRIGO
- SAND, SAND DUNES
- PALSA BOG
- WOODED AREA

PROPERTY BOUNDARY

- FIELD CAMP LOCATION
- FLORA MACROFOSSILS
- FAUNA MACROFOSSILS
- TRACE FOSSILS



1044/1/1	1044/1/2	1044/1/3	57°45'
1044/2/1	1044/2/2	1044/2/3	57°40'
1044/3/1	1044/3/2	1044/3/3	57°35'
1044/4/1	1044/4/2	1044/4/3	57°30'

706

GULF CANADA RESOURCES INC.
Coal Division

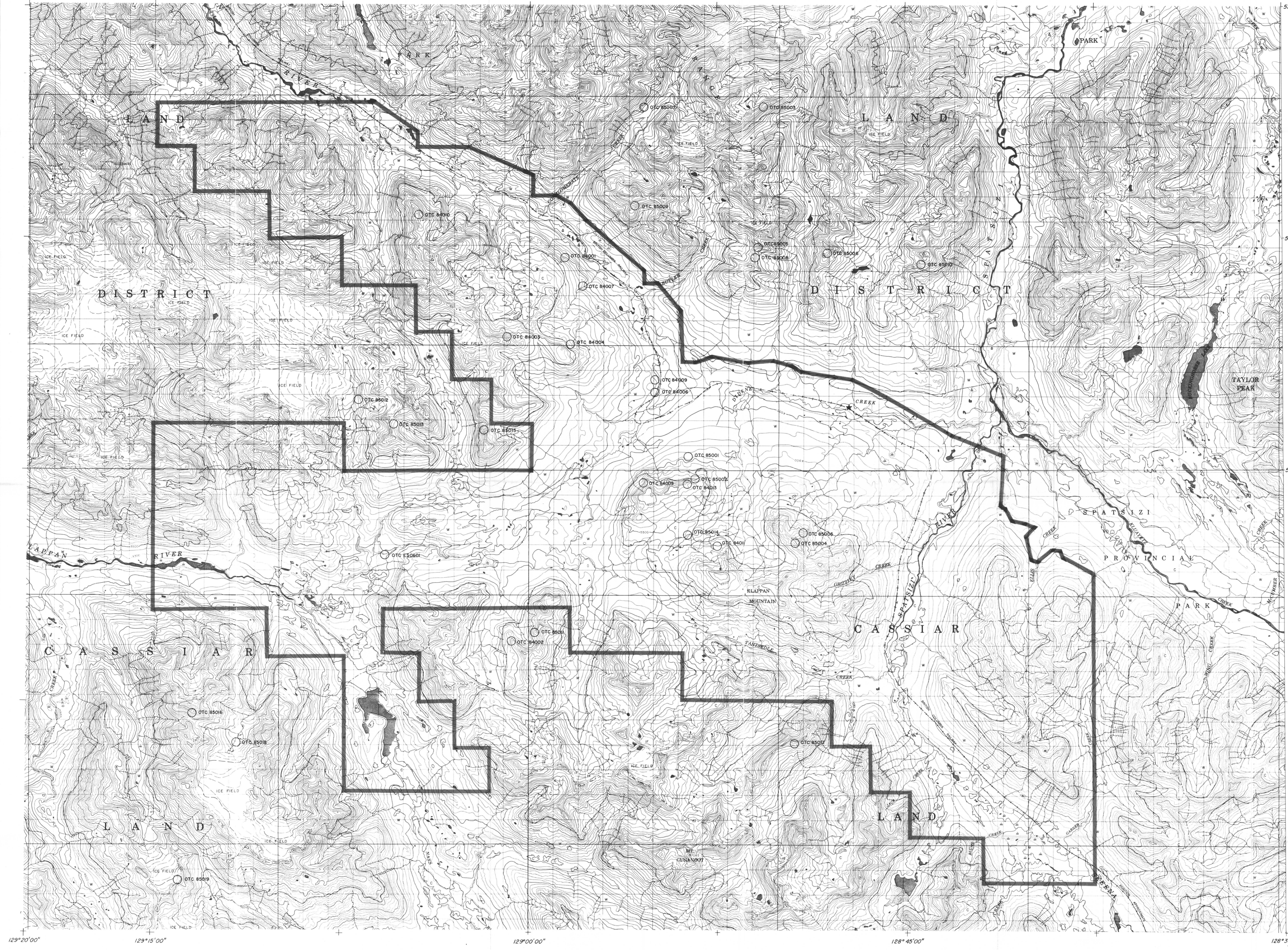
CALGARY ALBERTA

MT. KLAPPAN COAL PROPERTY

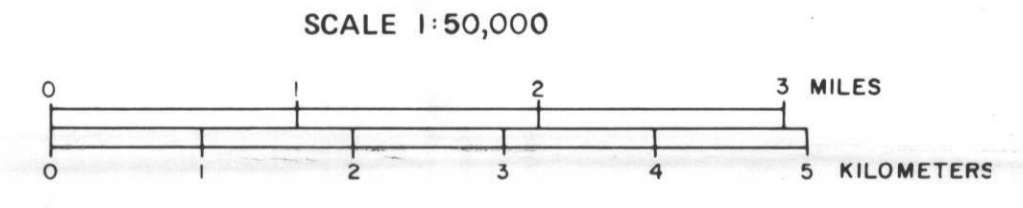
1984-1985 FOSSIL LOCATION MAP

PREPARED BY: S. MACLEOD
APPROVED BY: K. JENNER

DRAWING No. KPN85004
DATE: NOV. 1985



- LEGEND**
- ROADS AND RELATED FEATURES**
- HARD SURFACE, ALL WEATHER
 - LOOSE SURFACE
 - GRAVEL ROAD, UNDER CONSTRUCTION
 - TRAIL, CUTLINE, PORTAGE
 - BUILT-UP AREA
 - RAILWAY GOING STATION STOP
 - BRIDGE
 - SEAPLANE BASE AND DOCKAGE
- LANDMARK FEATURES**
- HOUSE BARN
 - CHURCH SCHOOL
 - POST OFFICE
 - HISTORICAL SITE
 - TOWNSHIP FIRE WARD
 - BELL OIL GAS
 - TANK OIL GASOLINE WATER
 - TELEPHONE LINE
 - POWER TRANSMISSION LINE
 - RAIL
 - CUTTING EMBANKMENT
 - GRAVEL PIT
- BOUNDARIES AND CONTROL**
- INTERNATIONAL, PROVINCIAL, COUNTY DISTRICT
 - TOWNSHIP PARISH - SURVEYED
 - TOWNSHIP DLS - SURVEYED
 - MUNICIPALITY
 - INDIAN RESERVE, PARK, ETC.
 - HORIZONTAL CONTROL POINT
 - BENCH MARK
 - SPOT ELEVATION, ELEVATION APPROXIMATE
- DRAINAGE AND RELATED FEATURES**
- STREAM SHORELINE, INDEFINITE
 - DIRECTION OF FLOW
 - LAKE, INTERMITTENT
 - NEARBY FLOODED LAND
 - MARSH OR SWAMP, WOODED
 - DRY RIVER BED WITH CHANNELS
 - SAND, ABOVE, IN WATER
 - STRAND BOG
 - TERRACE, SANDS, RELICS
 - RAPIDS
 - FORESHORE FLATS
 - ROCK
 - DAM
 - WEIR
 - DITCH
- RELIEF FEATURES**
- CONTOURS
 - APPROXIMATE CONTOUR
 - DEPRESSION
 - ESKER
 - PINGO
 - SAND, SAND DUNES
 - PALSA BOG
 - WOODED AREA
- PROPERTY BOUNDARY**
- MEASURED SECTION
 - FIELD CAMP LOCATION



128°30'	128°45'	129°00'	129°15'	129°30'
57°05'	57°10'	57°15'	57°20'	57°25'

706

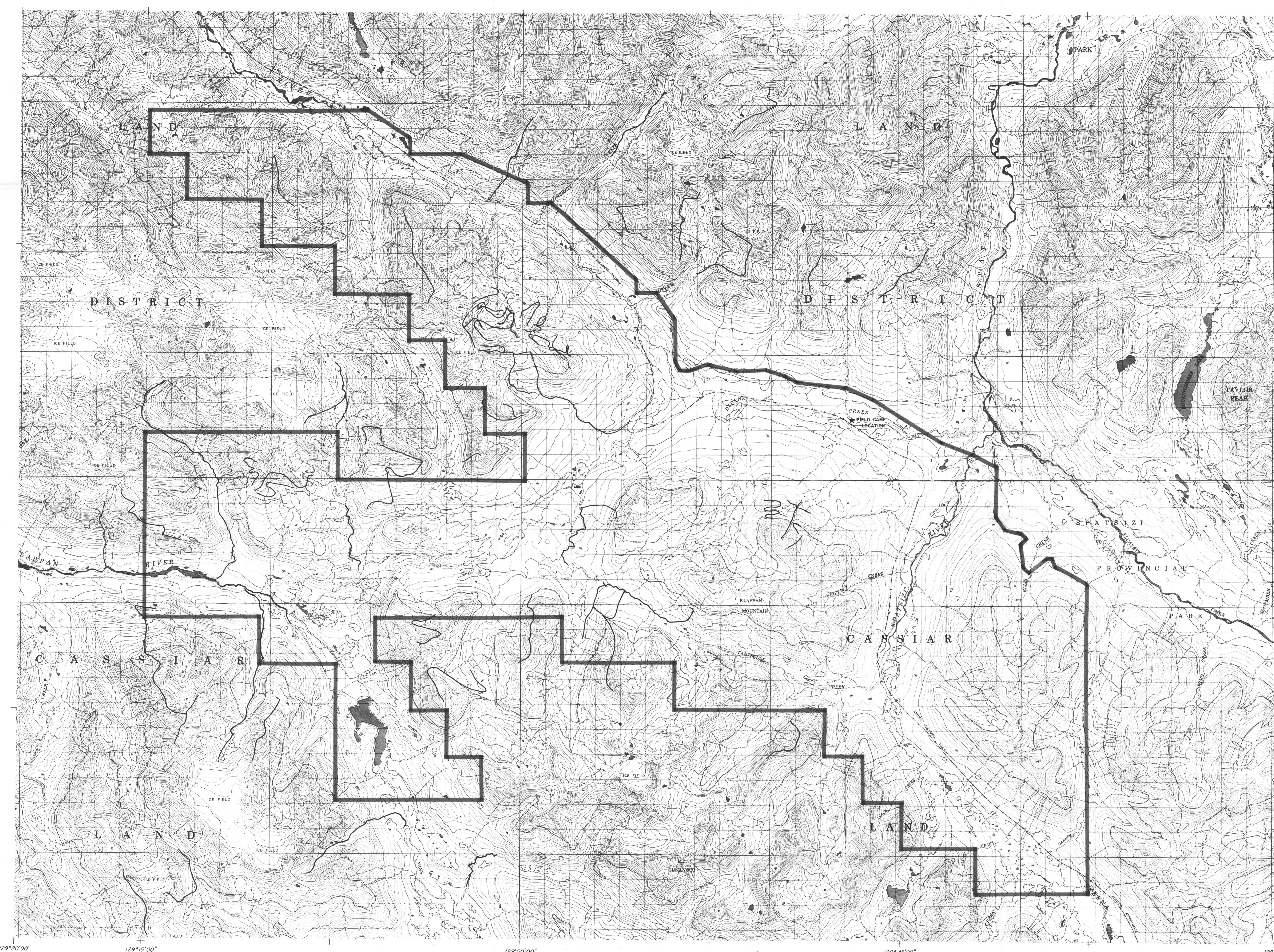
GULF CANADA RESOURCES INC.
 Coal Division

CALGARY ALBERTA

M.T. KLAPPAN COAL PROPERTY

1981 - 1985 MEASURED SECTION MAP

PREPARED BY: S. MACLEOD DRAWING No. KPN 85005
 APPROVED BY: K. JENNER DATE: NOV. 1985



57°25'

57°20'

57°15'

57°10'

57°05'

129°20'00"

129°15'00"

129°00'00"

128°45'00"

128°30'00"

LEGEND

ROADS AND RELATED FEATURES

- HARD SURFACE ALL WEATHER
- LOOSE SURFACE
- CART TRACK WINTER ROAD
- TRAIL CUTLINE PORTAGE
- BUILT UP AREA
- RAILWAY SIGNAL STATION STOP
- BRIDGE
- SEAPLANE BASE ANCHORAGE

LANDMARK FEATURES

- HOUSE BARN
- CHURCH SCHOOL
- POST OFFICE
- HISTORICAL SITE
- TOWERS FIRE RADIO
- WELL OIL GAS
- TANK OIL GASOLINE WATER
- TELEPHONE LINE
- POWER TRANSMISSION LINE
- MINE

CUTTING EMBANKMENT

- DRAIVE BY

BOUNDARIES AND CONTROL

- INTERNATIONAL PROVINCIAL BOUNDARY MONUMENT
- COUNTY DISTRICT
- TOWNSHIP PARISH - SURVEYED
- TOWNSHIP DLS - SURVEYED
- MUNICIPALITY
- INDIAN RESERVE PARK ETC.
- HORIZONTAL CONTROL POINT
- BENCH MARK
- SPOT ELEVATION ELEVATION APPROXIMATE

DRAINAGE AND RELATED FEATURES

- STREAM SLOSHLINE INDEFINITE
- DIRECTION OF FLOW
- LAKE INTERMITTENT
- INUNDATED FLOODED LAND
- MARSH (OR SWAMP) WOODS
- DIRTY RIVER BED WITH CHANNELS
- SAND ABOVE IN WATER
- STRONG BOG
- TUNDRA PONDS POLYTONS
- RAPIDS
- FORESHORE SLATS
- ROCK
- DAM
- WHARF
- QUAY

RELIEF FEATURES

- CONTOURS
- APPROXIMATE CONTOUR
- DEPRESSION
- ESKER
- FRASER
- SAND SAND DUNES
- PALSA BOG
- WOODED AREA

PROPERTY BOUNDARY

- TRAVERSE LOCATION
- FIELD CAMP LOCATION

SCALE 1:50,000

0 1 2 3 4 5 MILES

0 1 2 3 4 5 KILOMETERS

129°10' 128°55' 57°05'

GULF CANADA RESOURCES INC.

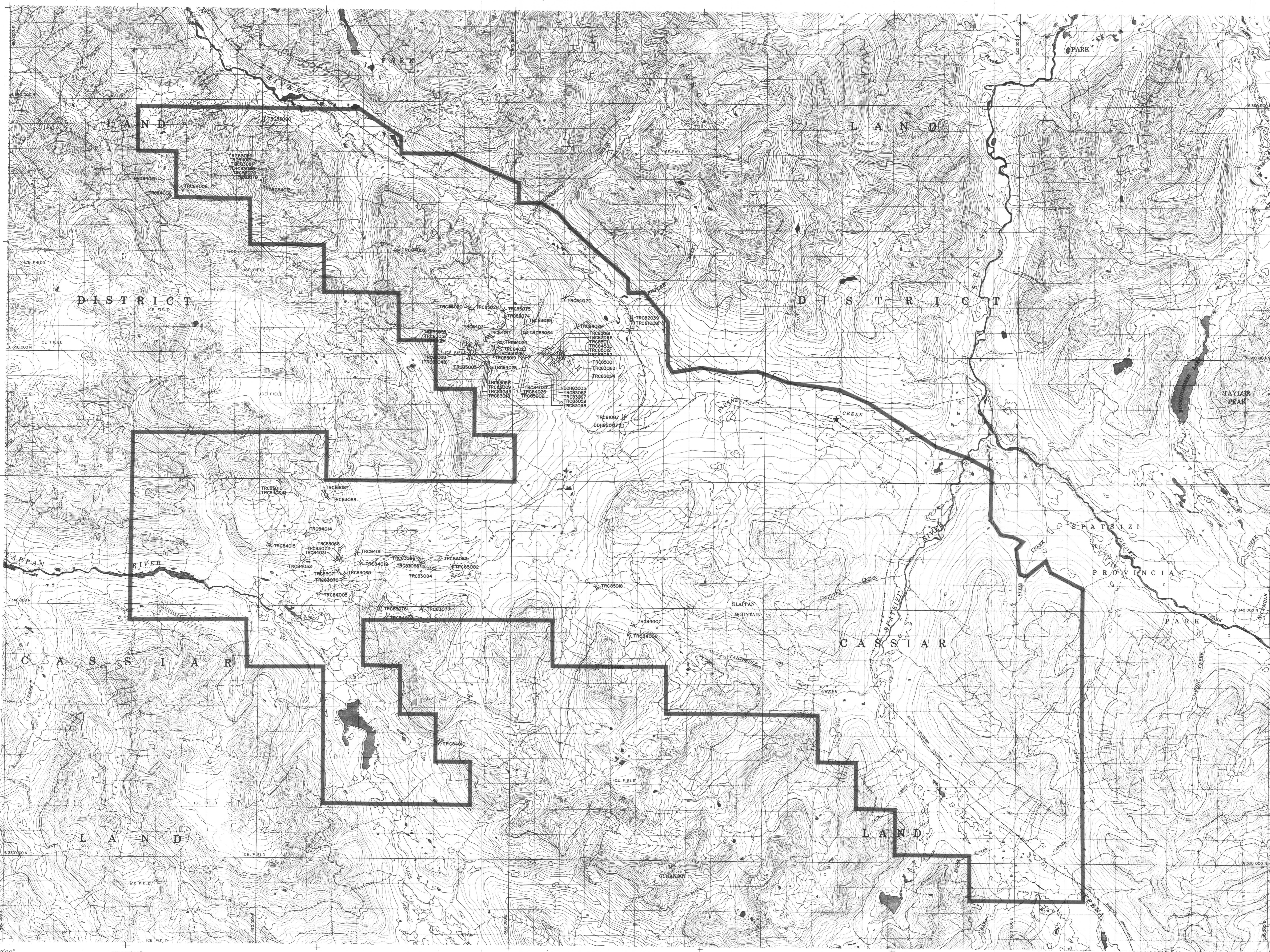
Calgary Coal Division ALBERTA

MOUNT KLAPPAN COAL PROPERTY

1985 TRAVERSE LOCATION MAP

PREPARED BY: S. MACLEOD DRAWING No. KPN85006
 APPROVED BY: K. JENNER DATE: NOV. 1985

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57°25'
57°20'
57°15'
57°10'
57°05'

129°20'00"
129°15'00"
129°00'00"
128°45'00"
128°30'00"



LEGEND

ROADS AND RELATED FEATURES

- HARD SURFACE, ALL WEATHER
- LOOSE SURFACE
- CACT TRACK, WINTER ROAD
- TRAIL, CUTLINE, PORTAGE
- BUILT UP AREA
- RAILWAY, STATION, STOP
- BRIDGE
- SEAPLANE BASE, ANCHORAGE

LANDMARK FEATURES

- HOUSE, BARN
- CHURCH, SCHOOL
- POST OFFICE
- HISTORICAL SITE
- TOWERS, FIRE RADIO
- WELL, OIL, GAS
- TANK, OIL, GASOLINE, WATER
- TELEPHONE LINE
- POWER TRANSMISSION LINE
- RAIL
- CUTTING, EMBANKMENT
- DAM, BY

BOUNDARIES AND CONTROL

- INTERNATIONAL, PROVINCIAL, BOUNDARY MONUMENT
- COUNTY, DISTRICT
- TOWNSHIP, PARISH - SURVEYED
- TOWNSHIP, O.S. - SURVEYED
- MUNICIPALITY
- INDIAN RESERVE, PARK, ETC.
- HORIZONTAL CONTROL POINT
- BENCH MARK
- SPOT ELEVATION, ELEVATION APPROXIMATE

DRAINAGE AND RELATED FEATURES

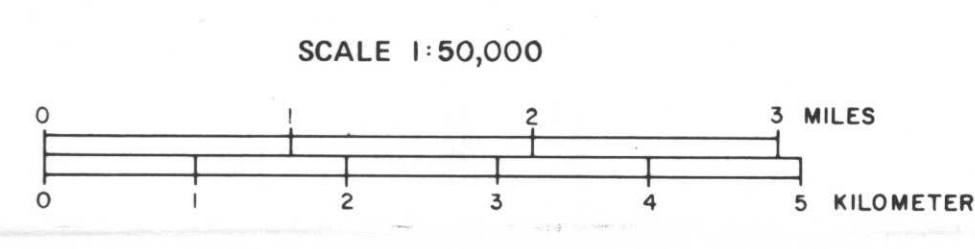
- DRAINAGE BOUNDARY, INDEFINITE
- DIRECTION OF FLOW
- LAKE, INTERMITTENT
- UNDATED, FLOODED LAND
- MARSH, SWAMP, WOODS
- DIRT ROAD, BRUSH, CHANNELS
- SAND, ABOVE IN WATER
- STING BOG
- TUNDRA, PONDS, POLYGENS
- RAPIDS
- FRESHWATER FLATS
- ROCK
- DAM
- WHARF
- DITCH

RELIEF FEATURES

- CONTOUR
- APPROXIMATE CONTOUR
- DEPRESSION
- ESKER
- FRINGE
- SAND, SAND DUNES
- FALSA BOG
- WOODED AREA

PROPERTY BOUNDARY

- TRENCH LOCATION
- DRILL HOLE LOCATION
- FIELD CAMP LOCATION



04H/1	04H/10	04H/3
04H/6	04H/7	04H/8
04H/2	04H/2	04H/1
04A/10/4	10/4	10/4

GULF CANADA RESOURCES INC.

CALGARY Coal Division ALBERTA

MT. KLAPPAN COAL PROPERTY

1981 - 1985 TRENCH AND DRILL HOLE LOCATION MAP

PREPARED BY: S. MACLEOD DRAWING No. KPN85007
 APPROVED BY: K. JENNER DATE: NOV. 1985

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