RHONDDA SEQUENCE

JKr — Sequence of thick massive conglomerates and minor gritty sandstones interbedded with an increasing abundance of siltstones and mudstones towards the basal contact.

MALLOCH SEQUENCE

JKm — Thick interbeds of mudstones, argillaceous siltstones, fine grained argillaceous sandstones and thin beds of orange weathering siliceous nodular siltstones. Conglomerate beds tend to be laterally discontinuous. Thick clean sandstone beds and thin coal seams increase in abundance towards the basal gradational contact. Sequence can contain petrified wood and plant fossils. Bivalves are rare.

KLAPPAN SEQUENCE (main coal-bearing unit)

JKk — Sequence of fine to coarse grained sandstones interbedded with mudstones, siltstones, occasional thin bands of orange weathering calcareous siltstones, conglomerates and abundant coal seams. Conglomerate beds grade laterally into sandstone. Sandstones often display tabular or trough cross-bedding. Several species of pelecypods and plants are common. Belemnites and ammonites are rare.

SPATSIZI SEQUENCE

Js — Predominantly a marine sequence comprised of beds of mudstones, siltstones and lesser amounts of sandstones and conglomerates. The upper contact is defined as the first occurrence of a non-marine bed. Discontinuous massive conglomerate beds lie in the upper portion of the sequence. Bivalves are abundant and belemnites are rare.

LICENCE BOUNDARY
COAL SEAM TRACE (DEFINED, INFERRED)
GEOLOGICAL CONTACT (APPROX., INFERRED)
FAULT TRACE (DEFINED, APPROX.,
BEDDING ATTITUDE
DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

0 1/16 1/8 MILE
0 50 100 150 200 250 METERS

GR Mount Klappan 84(?)A 709

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
1984
GEOLOGICAL CROSS SECTION
LOST FOX AREA
1250 N

PREPARED BY: K.J., B.G., J.T.	SCALE 1:2500
APPROVED BY: V.L.D. DATE: JAN. 1985	DRAWING No. KPN84LF-44

RHONDDA SEQUENCE

JKr — Sequence of thick massive conglomerates and minor gritty sandstones interbedded with an increasing abundance of siltstones and mudstones towards the basal contact.

MALLOCH SEQUENCE

JKm — Thick interbeds of mudstones, argillaceous siltstones, fine grained argillaceous sandstones and thin beds of orange weathering siliceous nodular siltstones. Conglomerate beds tend to be laterally discontinuous. Thick clean sandstone beds and thin coal seams increase in abundance towards the basal gradational contact. Sequence can contain petrified wood and plant fossils. Bivalves are rare.

KLAPPAN SEQUENCE (main coal-bearing unit)

JKk — Sequence of fine to coarse grained sandstones interbedded with mudstones, siltstones, occasional thin bands of orange weathering calcareous siltstones, conglomerates and abundant coal seams. Conglomerate beds grade laterally into sandstone. Sandstones often display tabular or trough cross-bedding. Several species of pelecypods and plants are common. Belemnites and ammonites are rare.

SPATSIZI SEQUENCE

Js — Predominantly a marine sequence comprised of beds of mudstones, siltstones and lesser amounts of sandstones and conglomerates. The upper contact is defined as the first occurrence of a non-marine bed. Discontinuous massive conglomerate beds lie in the upper portion of the sequence. Bivalves are abundant and belemnites are rare.

LICENCE BOUNDARY
COAL SEAM TRACE (DEFINED, INFERRED)
GEOLOGICAL CONTACT (APPROX., INFERRED)
FAULT TRACE (DEFINED, APPROX.,
BEDDING ATTITUDE
DDH 83001
DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

0 1/16 1/8 MILE
0 50 100 150 200 250 METERS

GR Mount Klappan 84(2)A 709

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
1984
GEOLOGICAL CROSS SECTION
LOST FOX AREA
1500 N

PREPARED BY: K.J., B.G., J.T.	SCALE 1:2500
APPROVED BY: V.L.D. DATE: JAN. 1985	DRAWING No. KPN84LF-45

RHONDDA SEQUENCE

JKr Sequence of thick massive conglomerates and minor gritty sandstones interbedded with an increasing abundance of siltstones and mudstones towards the basal contact.

MALLOCH SEQUENCE

JKm Thick interbeds of mudstones, argillaceous siltstones, fine grained argillaceous sandstones and thin beds of orange weathering siliceous nodular siltstones. Conglomerate beds tend to be laterally discontinuous. Thick clean sandstone beds and thin coal seams increase in abundance towards the basal gradational contact. Sequence can contain petrified wood and plant fossils. Bivalves are rare.

KLAPPAN SEQUENCE (main coal-bearing unit)

JKk Sequence of fine to coarse grained sandstones interbedded with mudstones, siltstones, occasional thin bands of orange weathering calcareous siltstones, conglomerates and abundant coal seams. Conglomerate beds grade laterally into sandstone. Sandstones often display tabular or trough cross-bedding. Several species of pelecypods and plants are common. Belemnites and ammonites are rare.

SPATSIZI SEQUENCE

Js Predominantly a marine sequence comprised of beds of mudstones, siltstones and lesser amounts of sandstones and conglomerates. The upper contact is defined as the first occurrence of a non-marine bed. Discontinuous massive conglomerate beds lie in the upper portion of the sequence. Bivalves are abundant and belemnites are rare.

LICENCE BOUNDARY
COAL SEAM TRACE (DEFINED, INFERRED)
GEOLOGICAL CONTACT (APPROX., INFERRED)
FAULT TRACE (DEFINED, APPROX.,
BEDDING ATTITUDE
DDH 83001 DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

0 1/16 1/8 MILE
0 50 100 150 200 250 METERS

GR Mount Klappan 84(2)A 709

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA
Gulf

MOUNT KLAPPAN COAL PROPERTY
1984
GEOLOGICAL CROSS SECTION
LOST FOX AREA
1750 N

PREPARED BY: K.J., B.G., J.T.	SCALE 1:2500
APPROVED BY: V.L.D. DATE: JAN. 1985	DRAWING No. KPN84LF-46

RHONDDA SEQUENCE

JKr	Sequence of thick massive conglomerates and minor gritty sandstones interbedded with an increasing abundance of siltstones and mudstones towards the basal contact.

MALLOCH SEQUENCE

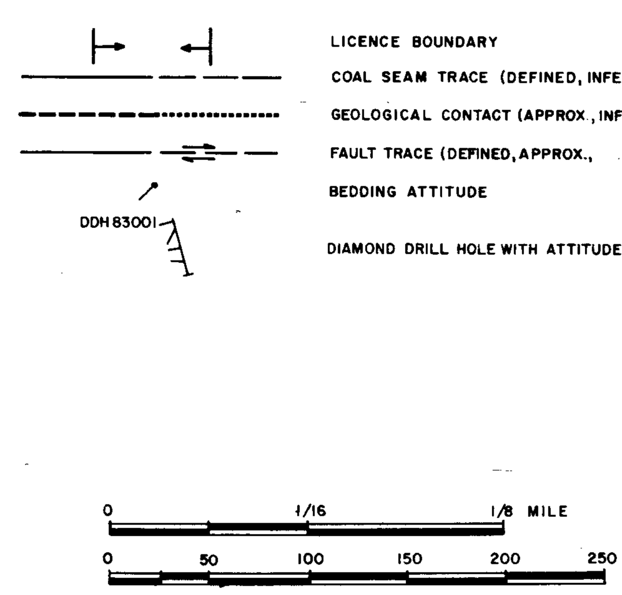
JKm	Thick interbeds of mudstones, argillaceous siltstones, fine grained argillaceous sandstones and thin beds of orange weathering siliceous nodular siltstones. Conglomerate beds tend to be laterally discontinuous. Thick clean sandstone beds and thin coal seams increase in abundance towards the basal gradational contact. Sequence can contain petrified wood and plant fossils. Bivalves are rare.

KLAPPAN SEQUENCE (main coal-bearing unit)

JKk	Sequence of fine to coarse grained sandstones interbedded with mudstones, siltstones, occasional thin bands of orange weathering calcareous siltstones, conglomerates and abundant coal seams. Conglomerate beds grade laterally into sandstone. Sandstones often display tabular or trough cross-bedding. Several species of pelecypods and plants are common. Belemnites and ammonites are rare.

SPATSIZI SEQUENCE

Js	Predominantly a marine sequence comprised of beds of mudstones, siltstones and lesser amounts of sandstones and conglomerates. The upper contact is defined as the first occurrence of a non-marine bed. Discontinuous massive conglomerate beds lie in the upper portion of the sequence. Bivalves are abundant and belemnites are rare.



GR Mount Klappan 84(2)A 709

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
1984
GEOLOGICAL CROSS SECTION
LOST FOX AREA
2000 N

PREPARED BY: K.J., B.G., J.T.	SCALE 1:2500
APPROVED BY: V.L.D. DATE: JAN. 1985	DRAWING No. KPN84LF-47

RHONDDA SEQUENCE

JKr — Sequence of thick massive conglomerates and minor gritty sandstones interbedded with an increasing abundance of siltstones and mudstones towards the basal contact.

MALLOCH SEQUENCE

JKm — Thick interbeds of mudstones, argillaceous siltstones, fine grained argillaceous sandstones and thin beds of orange weathering siliceous nodular siltstones. Conglomerate beds tend to be laterally discontinuous. Thick clean sandstone beds and thin coal seams increase in abundance towards the basal gradational contact. Sequence can contain petrified wood and plant fossils. Bivalves are rare.

KLAPPAN SEQUENCE (main coal-bearing unit)

JKk — Sequence of fine to coarse grained sandstones interbedded with mudstones, siltstones, occasional thin bands of orange weathering calcareous siltstones, conglomerates and abundant coal seams. Conglomerate beds grade laterally into sandstone. Sandstones often display tabular or trough cross-bedding. Several species of pelecypods and plants are common. Belemnites and ammonites are rare.

SPATSIZI SEQUENCE

Js — Predominantly a marine sequence comprised of beds of mudstones, siltstones and lesser amounts of sandstones and conglomerates. The upper contact is defined as the first occurrence of a non-marine bed. Discontinuous massive conglomerate beds lie in the upper portion of the sequence. Bivalves are abundant and belemnites are rare.

LICENCE BOUNDARY
COAL SEAM TRACE (DEFINED, INFERRED)
GEOLOGICAL CONTACT (APPROX., INFERRED)
FAULT TRACE (DEFINED, APPROX.,
BEDDING ATTITUDE
DDH 83001 — DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

0 — 1/16 — 1/8 MILE
0 — 50 — 100 — 150 — 200 — 250 METERS

GR Mount Klappan 84(2)A 709

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA
Gulf

MOUNT KLAPPAN COAL PROPERTY
1984
GEOLOGICAL CROSS SECTION
LOST FOX AREA
2250 N

PREPARED BY: K.J., B.G., J.T.	SCALE 1:2500
APPROVED BY: V.L.D. DATE: JAN. 1985	DRAWING No. KPN84LF-48

RHONDDA SEQUENCE

JKr — Sequence of thick massive conglomerates and minor gritty sandstones interbedded with an increasing abundance of siltstones and mudstones towards the basal contact.

MALLOCH SEQUENCE

JKm — Thick interbeds of mudstones, argillaceous siltstones, fine grained argillaceous sandstones and thin beds of orange weathering siliceous nodular siltstones. Conglomerate beds tend to be laterally discontinuous. Thick clean sandstone beds and thin coal seams increase in abundance towards the basal gradational contact. Sequence can contain petrified wood and plant fossils. Bivalves are rare.

KLAPPAN SEQUENCE (main coal-bearing unit)

JKk — Sequence of fine to coarse grained sandstones interbedded with mudstones, siltstones, occasional thin bands of orange weathering calcareous siltstones, conglomerates and abundant coal seams. Conglomerate beds grade laterally into sandstone. Sandstones often display tabular or trough cross-bedding. Several species of pelecypods and plants are common. Belemnites and ammonites are rare.

SPATSIZI SEQUENCE

Js — Predominantly a marine sequence comprised of beds of mudstones, siltstones and lesser amounts of sandstones and conglomerates. The upper contact is defined as the first occurrence of a non-marine bed. Discontinuous massive conglomerate beds lie in the upper portion of the sequence. Bivalves are abundant and belemnites are rare.

LICENCE BOUNDARY

COAL SEAM TRACE (DEFINED, INFERRED)

GEOLOGICAL CONTACT (APPROX., INFERRED)

FAULT TRACE (DEFINED, APPROX.,

BEDDING ATTITUDE

DDH 83001 — DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

0 — 1/16 — 1/8 MILE

0 — 50 — 100 — 150 — 200 — 250 METERS

GR Mount Klappan 84(2)A 709

GULF CANADA RESOURCES INC.

Coal Division

CALGARY ALBERTA

Gulf

MOUNT KLAPPAN COAL PROPERTY
1984
GEOLOGICAL CROSS SECTION
LOST FOX AREA
2500 N

PREPARED BY: K.J., B.G., J.T.	SCALE 1:2500
APPROVED BY: V.L.D. DATE: JAN. 1985	DRAWING No. KPN84LF-49

RHONDDA SEQUENCE

JKr Sequence of thick massive conglomerates and minor gritty sandstones interbedded with an increasing abundance of siltstones and mudstones towards the basal contact.

MALLOCH SEQUENCE

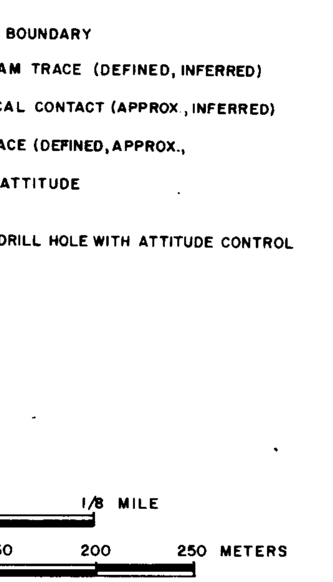
JKm Thick interbeds of mudstones, argillaceous siltstones, fine grained argillaceous sandstones and thin beds of orange weathering siliceous nodular siltstones. Conglomerate beds tend to be laterally discontinuous. Thick clean sandstone beds and thin coal seams increase in abundance towards the basal gradational contact. Sequence can contain petrified wood and plant fossils. Bivalves are rare.

KLAPPAN SEQUENCE (main coal-bearing unit)

JKk Sequence of fine to coarse grained sandstones interbedded with mudstones, siltstones, occasional thin bands of orange weathering calcareous siltstones, conglomerates and abundant coal seams. Conglomerate beds grade laterally into sandstone. Sandstones often display tabular or trough cross-bedding. Several species of pelecypods and plants are common. Belemnites and ammonites are rare.

SPATSIZI SEQUENCE

Js Predominantly a marine sequence comprised of beds of mudstones, siltstones and lesser amounts of sandstones and conglomerates. The upper contact is defined as the first occurrence of a non-marine bed. Discontinuous massive conglomerate beds lie in the upper portion of the sequence. Bivalves are abundant and belemnites are rare.



GR Mount Klappan 84(2)A **709**

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

Gulf

MOUNT KLAPPAN COAL PROPERTY
1984
GEOLOGICAL CROSS SECTION
LOST FOX AREA
2750 N

PREPARED BY: K.J., B.G., J.T.	SCALE 1:2500
APPROVED BY: V.L.D. DATE: JAN. 1985	DRAWING No. KPN84LF-50

RHONDDA SEQUENCE

JKr — Sequence of thick massive conglomerates and minor gritty sandstones interbedded with an increasing abundance of siltstones and mudstones towards the basal contact.

MALLOCH SEQUENCE

JKm — Thick interbeds of mudstones, argillaceous siltstones, fine grained argillaceous sandstones and thin beds of orange weathering siliceous nodular siltstones. Conglomerate beds tend to be laterally discontinuous. Thick clean sandstone beds and thin coal seams increase in abundance towards the basal gradational contact. Sequence can contain petrified wood and plant fossils. Bivalves are rare.

KLAPPAN SEQUENCE (main coal-bearing unit)

JKk — Sequence of fine to coarse grained sandstones interbedded with mudstones, siltstones, occasional thin bands of orange weathering calcareous siltstones, conglomerates and abundant coal seams. Conglomerate beds grade laterally into sandstone. Sandstones often display tabular or trough cross-bedding. Several species of pelecypods and plants are common. Belemnites and ammonites are rare.

SPATSIZI SEQUENCE

Js — Predominantly a marine sequence comprised of beds of mudstones, siltstones and lesser amounts of sandstones and conglomerates. The upper contact is defined as the first occurrence of a non-marine bed. Discontinuous massive conglomerate beds lie in the upper portion of the sequence. Bivalves are abundant and belemnites are rare.

LICENCE BOUNDARY
COAL SEAM TRACE (DEFINED, INFERRED)
GEOLOGICAL CONTACT (APPROX., INFERRED)
FAULT TRACE (DEFINED, APPROX.,
BEDDING ATTITUDE
DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

0 1/16 1/8 MILE
0 50 100 150 200 250 METERS

GR Mount Klappan 84(2)A 709

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA
Gulf

MOUNT KLAPPAN COAL PROPERTY
1984
GEOLOGICAL CROSS SECTION
LOST FOX AREA
3000 N

PREPARED BY: K.J., B.G., J.T.	SCALE 1:2500
APPROVED BY: V.L.D. DATE: JAN. 1985	DRAWING No. KPN84LF-51

RHONDDA SEQUENCE

JKr — Sequence of thick massive conglomerates and minor gritty sandstones interbedded with an increasing abundance of siltstones and mudstones towards the basal contact.

MALLOCH SEQUENCE

JKm — Thick interbeds of mudstones, argillaceous siltstones, fine grained argillaceous sandstones and thin beds of orange weathering siliceous nodular siltstones. Conglomerate beds tend to be laterally discontinuous. Thick clean sandstone beds and thin coal seams increase in abundance towards the basal gradational contact. Sequence can contain petrified wood and plant fossils. Bivalves are rare.

KLAPPAN SEQUENCE (main coal-bearing unit)

JKk — Sequence of fine to coarse grained sandstones interbedded with mudstones, siltstones, occasional thin bands of orange weathering calcareous siltstones, conglomerates and abundant coal seams. Conglomerate beds grade laterally into sandstone. Sandstones often display tabular or trough cross-bedding. Several species of pelecypods and plants are common. Belemnites and ammonites are rare.

SPATSIZI SEQUENCE

Js — Predominantly a marine sequence comprised of beds of mudstones, siltstones and lesser amounts of sandstones and conglomerates. The upper contact is defined as the first occurrence of a non-marine bed. Discontinuous massive conglomerate beds lie in the upper portion of the sequence. Bivalves are abundant and belemnites are rare.

LICENCE BOUNDARY
COAL SEAM TRACE (DEFINED, INFERRED)
GEOLOGICAL CONTACT (APPROX., INFERRED)
FAULT TRACE (DEFINED, APPROX.,
BEDDING ATTITUDE
DDH83001 — DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

0 — 1/16 — 1/8 MILE
0 — 50 — 100 — 150 — 200 — 250 METERS

GR Mount Klappan 84(2)A 709

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

Gulf

MOUNT KLAPPAN COAL PROPERTY
1984
GEOLOGICAL CROSS SECTION
LOST FOX AREA
3250 N

PREPARED BY: K.J., B.G., J.T.	SCALE 1:2500
APPROVED BY: V.L.D. DATE: JAN. 1985	DRAWING No. KPN84LF-52

RHONDDA SEQUENCE

JKr — Sequence of thick massive conglomerates and minor gritty sandstones interbedded with an increasing abundance of siltstones and mudstones towards the basal contact.

MALLOCH SEQUENCE

JKm — Thick interbeds of mudstones, argillaceous siltstones, fine grained argillaceous sandstones and thin beds of orange weathering siliceous nodular siltstones. Conglomerate beds tend to be laterally discontinuous. Thick clean sandstone beds and thin coal seams increase in abundance towards the basal gradational contact. Sequence can contain petrified wood and plant fossils. Bivalves are rare.

KLAPPAN SEQUENCE (main coal-bearing unit)

JKk — Sequence of fine to coarse grained sandstones interbedded with mudstones, siltstones, occasional thin bands of orange weathering calcareous siltstones, conglomerates and abundant coal seams. Conglomerate beds grade laterally into sandstone. Sandstones often display tabular or trough cross-bedding. Several species of pelecypods and plants are common. Belemnites and ammonites are rare.

SPATSIZI SEQUENCE

Js — Predominantly a marine sequence comprised of beds of mudstones, siltstones and lesser amounts of sandstones and conglomerates. The upper contact is defined as the first occurrence of a non-marine bed. Discontinuous massive conglomerate beds lie in the upper portion of the sequence. Bivalves are abundant and belemnites are rare.

LICENCE BOUNDARY
COAL SEAM TRACE (DEFINED, INFERRED)
GEOLOGICAL CONTACT (APPROX., INFERRED)
FAULT TRACE (DEFINED, APPROX.,
BEDDING ATTITUDE
DDH 83001
DIAMOND DRILL HOLE WITH ATTITUDE CONTROL

0 1/16 1/8 MILE
0 50 100 150 200 250 METERS

GR Mount Klappan 84(2)A 709

GULF CANADA RESOURCES INC.
Coal Division
CALGARY ALBERTA

MOUNT KLAPPAN COAL PROPERTY
1984
GEOLOGICAL CROSS SECTION
LOST FOX AREA
3500 N

PREPARED BY: K.J., B.G., J.T.	SCALE 1:2500
APPROVED BY: V.L.D. DATE: JAN. 1985	DRAWING No. KPN84LF-53