QUINTETTE COAL LIMITED
1987 GEOLOGICAL REPORT
TRANSFER, GRIZZLY AND PERRY CREEK AREAS
APRIL, 1988

Prepared by Technical Services Department
Quintette Coal Limited

TITLE PAGE

1987 GEOLOGICAL REPORT

TRANSFER, GRIZZLY AND PERRY CREEK AREAS

COAL LICENCES: 3340, 3335, 3341, 3661, 3662,
3660, 7849; 7848, 7847, 7846,
7845, 3339; 3596, 3600, 4534.

QUINTETTE COAL LIMITED - Owner/Operator

Submitted: April 15, 1988

Assessment Report for the January 16, 1988, Application to Extend the Term of Quintette Coal Limited's Licences

Location: Latitude - 55° 00' N
Longitude - 121° 10' W

NTS Map Sheet 93-P-3
93-I-14

Peace River Land District

Work conducted between May 5, 1987 and January 16, 1988

Report prepared by: Technical Services Department
Quintette Coal Limited

PREFACE

This report documents and describes the geology, based on exploration work completed to the end of 1987, of the areas known as Transfer, Grizzly and Perry Creek located on Quintette Coal Limited's Coal Licences in northeast British Columbia. This report is submitted in support of the application made January 16, 1988 to exte term of Quintette Coal Limited's licences.

Exploration work has been undertaken on Quintette's licences since 1971. The majority of work in the Transfer and Grizzly Areas was done in 1987. All work was completed under the supervision of Denison Mines Limited, Coal Division, and Quintette Coal Limited. The data presented in the report is from rotary/percussion drilling, core drilling, geologic mapping and adit driveage. The 1987 geologic data is recorded on geologic maps which locate the mapping, drill holes and adits. Correlation charts, seam structure contours and cross sections are presented to supplement the geology plans.

The report presents regional and detailed geologic descriptions of the three resource areas.

This report references all previous geologic reports on the Quintette Property. In particular, the 1987 Exploration Report dated February 1988 and prepared in support of Quintette's Application for a F.A.M.E. Grant, is incorporated herein. The whole is submitted in support of the application to extend the term of Quintette Coal Limited's Licences.

Previous nomenclature for the areas discussed in this Report:

Transfer Area - Johnson Area, Hermann Area
Grizzly Area - Hermann South, Dupont Licence Area
Perry Creek Area - Wolverine Area, Wolverine River North

STATEMENT OF QUALIFICATIONS

I, David G. S. Johnson, graduated from Mount Allison University, Sackville, New Brunswick, with a Bachelor of Science Degree in Geology in May, 1970. I have worked in Mineral Exploration for six years, managing field exploration programs and writing reports and recommendations on those programs. I have worked in coal exploration and mine development for the last ten years in northeast British Columbia. I have conducted field exploration, geologic mapping, core logging, trenching; supervised core drilling, rotary drilling, adit driveage, and associated field work; managed exploration crews, contractors, and reclamation; participated in mine development, coal quality control, reserve evaluation and have prepared several structural and stratigraphic interpretations of coal reserve areas in northeast British Columbia, including the Mesa Extension Reserve Area and the Transfer Area.

David G. S. Johnson
Senior Geologist
Quintette Coal Limited
Tumbler Ridge, B. C.

Bibliography

Wolverine Area - Report on Exploration Work North of the Wolverine River, January 1973

1974 Wolverine Exploration Report, December 1974

1984 Quintette Geological Report, April 1985

Transfer Area Geological Report, March 1987

Mesa Extension Geological Report, March 1987

1987 Exploration Report, February 1988

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1.0 SUMMARY

The Quintette Coal Limited (QCL) property is situated in the Peace River Land District of northeast British Columbia in the inner foothills of the northern Rocky Mountains. QCL has a contract in place to produce five million tonnes of clean metallurgical coal per year. All coal production is from the Lower Cretaceous Gates Formation.

Exploration work on the QCL property was initiated in 1971 and has proceeded almost continuously through mine startup in 1982 to date. Exploration of the Transfer and Grizzly areas was initiated in 1976 with regional scale and geologic mapping and some core drilling of the area. The Perry Creek Area has long been recognized for its coal potential, being the first area explored in 1971.

The Transfer and Grizzly Areas lie between the two current mining areas - Shikano and Mesa/Wolverine. The coal seams of this resource block can be readily corrlated with these operating areas. The Perry Creek Area's coal seams are also correlated with Mesa Pit's seams.

1.1 WORK COMPLETED

A total of 74 rotary drill holes and 23 core holes have been completed in the Transfer and Grizzly Areas to the end of 1987. Most of these holes have intersected Gates Formation coal seams, however, some have drilled the Moosebar and Gething Formations. Geologic mapping along 30 km of exploration road cuts and in areas of natural rock exposure has provided excellent structural and stratigraphic control.

As a result of the geologic data base, an interpretation at 1:2500 scale has been completed consisting of structure contours of the four major seams, cross sections at 100 m intervals and correlation charts.

The Perry Creek Area, with 10 core holes and 5 rotary holes is in the early stages of exploration. From this data and minor regional mapping, a

preliminary 1:5000 scale interpretation has been completed with five cross sections and one structure contour.

1.2 STRATIGRAPHY

The stratigraphy within the Transfer and Grizzly Areas and within the Perry Creek Area is typical of the regional stratigraphy of the Quintette property. The formations that have been identified are, from oldest to youngest, Gething, Moosebar, Gates, Hulcross and Boulder Creek.

The Moosebar and Hulcross Formations are marine transgressive units separating the Gething and Boulder Creek Formations from the Gates Formation. The Middle Gates Formation contains all the recoverable coal seams in these three areas. As has been noted regionally, the marine influence in the Gates Formation increases to the northwest between the Transfer/Grizzly Areas and the Perry Creek Area. This is particularly noted in the lower and upper Gates Formation. Within the middle Gates Formation, channel sands and conglomerates are present. These conglomerates can affect the coal seam development.

1.3 COAL SEAM DEVELOPMENT

A total of five continuous seams have been correlated in the Transfer and Grizzly Areas . These seams, F, G, J, K1 and K2 have an average aggregate thickness of 14.17 m in Transfer and 12.71 m (excludes K2) in Grizzly.

In the upper Gates Formation, B seam may be recoverable. D and E seams in the middle Gates occasionally attain mineable thicknesses but due to inseam partings their development is inconsistent.

The partings within G seam in the Grizzly Area can be greater than 1 m thick. Also, the parting thicknesses between J and K1, and K1 and K2 can be thin allowing the J-K sequence to be mined as one section.

In the Perry Creek Area, the main productive seam is J1 which may exceed 7 m. Other seams that are potentially recoverable are D3, E4, G1 and J3. An average aggregate thickness of these five seams is 12.04 m. A variation in

seam and parting thicknesses is expected in this area as a result of the significant channelling that has been noted between and within coal zones.

1.4 STRUCTURE

The resource of the Transfer and Grizzly Areas is in a series of northwest trending folds which are dominated by the Transfer Anticline and the Shikano Anticline in the Grizzly Area. Both these folds plunge to the northwest. The Shikano Syncline lies between these two major structures providing further resource potential to the Areas.

In the Perry Creek Area, the resource potential is in the Perry Creek Syncline which is an open fold in a series of tighter folds.

No major faulting is interpreted or expected in the three areas. Minor faulting is recognized near fold axes.

1.5 CONCLUSION

As a result of the current level of geologic data, the consistent seam development and the easily defined structures in the Transfer and Grizzly Areas, the resource in these blocks can be measured with a high degree of confidence.

Extensions to the resource area, in particular the Shikano Syncline and Transfer West Limb Areas, will require further definition. These will add significant resources to those defined in the Transfer and Grizzly Areas, thus enhancing an already favourable mining area.

Within the Perry Creek Area, a thick J seam sequence in a simple geologic structure is indicated. Further exploration is planned that may define an exploitable resource in close proximity to established transportation routes.

2.0 INTRODUCTION

The Quintette property is situated in the Peace River Land District of northeast British Columbia in the inner foothills of the northern Rocky Mountains. Quintette Coal Limited (QCL) has a contract to produce five million tonnes of clean metallurgical coal per year. All coal production is from the Lower Cretaceous Gates Formation.

Work on the QCL property was initiated in 1971 and has proceeded almost continually through mine startup in 1982 to the present. Exploration of the Transfer Area reserve began with regional scale and geologic mapping. Initial drilling was performed in 1976 in the Transfer Area, in 1984 in the Grizzly Area, and in 1971 in the Perry Creek Area. Drilling and mapping have continued as the need to evaluate the reserve potential has increased.

Extensive sampling and testing programs have confirmed that QCL coal is a good quality medium volatile coking coal. It is a strong coking coal, and is capable of replacing most of the world's best medium and low volatile coking coals in blends.

Potential mineable reserves on the QCL property are estimated at 2.8 billion tonnes of coal in-place to a maximum depth below surface of 500 m. Preliminary estimates indicate a total resource of 27.9 million tonnes of product coal in the Transfer and Grizzly areas.

The purpose for exploration in the Transfer, Grizzly and Perry Creek Areas is to develop mineable open pit reserves which may prove more economically attractive than certain portions of QCL's current long term mining plan. Drilling has been completed in all three of these areas in 1987.

2.1 LOCATION AND ACCESS

The QCL property is located in the Rocky Mountain Foothills belt of northeastern British Columbia (see Figures 2.1 and 2.2). The coal bearing trend of this region is commonly referred to as the Peace River Coal Block.

The locations of the Transfer, Grizzly and Perry Creek Areas relative to the property's primary infrastructure are illustrated in Figure 2.3. The focus of recent exploration activity (1987) and this report is on the two distinct geological structures which, in order of resource size, are Transfer and Grizzly. A minor amount of exploration (5 rotary drill holes) was carried out in the Perry Creek Area.

Air distances to communities surrounding the property are as follows:

City	Population*	Distance
Prince George	67,721	160 km southwest
Dawson Creek	10,544	106 km northeast
Chetwynd	2,774	98 km north
Tumbler Ridge	4,385	20 km east

*1986 Census

The property is accessible by three routes: thBoundary Road (Heritage Highway) from Tupper, British Columbia; the Fellers Heights Road (Heritage Highway) from Dawson Creek/Fellers Heights; and Highway 29 from Chetwynd to Tumbler Ridge. The distances for the routes are as follows:

Boundary Road - Dawson Creek to Tumbler Ridge	210 km
Fellers Heights Road - Dawson Creek to Tumbler Ridge	127 km
Chetwynd to Tumbler Ridge	100 km
Tumbler Ridge to plantsite	18 km

Access within the property is gained by several existing roads developed for the Mine. The 1986 and 1987 Exploration Programs established 4-wheel drive access routes from the existing roads into the exploration areas. The location of these routes is shown on the geology plans in Appendix 1.1.

The current road distance from the Preparation Plant and Mine Service Complex to the three target areas are listed as follows:

Exploration Areas
Current Road Access Distances

From	To	Distance (km)
Transfer	Preparation Plant	22
	Mine Service Complex	13
Grizzly	Preparation Plant	7
Perry Creek	Preparation Plant	28
	Mine Service Complex	20

2.2 PROPERTY DESCRIPTION

The QCL property consists of 136 Coal Licences covering an area of 33,001 ha and Coal Lease #6 consisting of 11,667 ha (see Figure 2.4 and Appendix T.1). The original QCL licences were acquired by Denison Mines Limited (DML) in 1969 and 1970. The first coal exploration on the property was undertaken by DML in 1970. A significant exploration program was conducted each of the following years to 1977. Smaller programs were completed in 1979 and 1980. In 1981, large scale exploration was again undertaken.

For the purpose of developing the Coal Licences, QCL was incorporated under the laws of British Columbia, on December 20, 1971.

DML was appointed by QCL to manage the QCL project through the feasibility and construction/development stages of the project and to assume responsibility for the management of operations thereafter.

Current major partners in Quintette Coal Limited are DML, Charbonnages de France, the Japanese Steel Industry, Mitsui Mining, Tokyo Boeki, and Sumitomo Corporation.

The Grizzly and Transfer Areas are situated between the two sections of Coal Lease #6. The Transfer Area is approximately 3 km long and 700 m wide (average) while the Grizzly Area is 1.6 km in length and 500 m wide on average. Slopes vary from gentle (0^{o} to 10^{o}) to maximum natural slopes of 36^{o}.

The Perry Creek Area is situated north of Mesa Pit on the North bank of the Wolverine River Valley. Its slopes are predominately gentle with local small cliffs due to thick conglomerates in the Middle Gates Formation.

The Transfer and Grizzly Areas range from sub alpine to well below tree line in the Murray River Valley. Stands of spruce and pine with cottonwood and poplar are predominant. The Perry Creek Area is also below tree line in the Wolverine River Valley and has been partially logged. The range in elevation for each area is as follows:

Maximum and Minimum Elevations Above Sea Level

Area	Maximum Elevation (m)	Minimum Elevation (m)
Transfer	1650	780
Grizzly	1150	780
Perry Creek	1100	925

2.3 EXPLORATION PROGRAMS

A summary of exploration activity undertaken in the Transfer and Grizzly Areas and the Perry Creek Area to the end of the 1987 field season is presented in Table 2.1. The QCL 1987 Exploration Report, February 1988, further details the exploration work.

Regional scale geologic mapping (1:5000) aided by aerial photograph interpretation was the only form of geological assessment undertaken in the Transfer and Grizzly Areas prior to 1984. This season saw the completion of the first rotary (6) and diamond (1) holes in the Hermann South Area, now referred to as the Grizzly Area. In 1985 limited mapping and the first two diamond drill holes were completed in the Transfer Anticline. One 1976 core

hole, QJD7643 was collared in the West Limb of the Transfer Syncline and may be useful in future interpretations of the Transfer Area. This hole intersected only B and D seams.

The 1986 Exploration program allowed for the completion of detailed geological mapping of naturally exposed outcrops as well as those exposed by access routes and trench construction. No rotary drilling was performed in the Transfer or Grizzly Areas, but 7 diamond drill holes, 2 in the Grizzly Area and 5 in the Transfer Area were completed. This supplemented the above-noted mapping such that a preliminary determination of resources could be made within approximate pit limits (unscheduled mine area).

In the Perry Creek Area, the coal measures were drilled in 1971 with the completion of six core holes on the northeastern slopes of Fortress Mountain. These holes were drilled to test for underground potential. Hole #QWD7119, closest to the current area of interest, intersected a thick J seam section. Later drilling in 1974 in adjacent areas also confirmed the presence of significant coal thicknesses in the Gates Formation in the Wolverine River Valley.

During the 1987 exploration season, 7 diamond and 36 rotary drill holes were completed in the Transfer Area while 5 diamond and 21 rotary drill holes were located in the Grizzly Area. Three adits were driven into the mineable coal seams in each area in order to obtain the necessary bulk samples.

In the Perry Creek Area, five rotary holes were completed in 1987. Four holes intersected a thick J seam sequence.

2.3.1 PROJECT MANAGEMENT AND PRIMARY CONTRACTORS

This report and the exploration work was completed by QCL geology staff, consultants and contractors.

Quintette Coal Limited

G. P. Gormley	- Chief Geologist
D. G. S. Johnson	- Senior Geologist
D. P. Lortie	- Geologist
N. C. Hori	- Geological Technician
T. Wall	- Geologist
K. Vandenameele	- Draftsperson
F. Worthington	- Senior Coal Preparation Engineer
G. Holmlund	- Geophysical Logging

Consultants

I. Kakizaki, H. Wada	- Mitsui Mining Overseas Development Company Ltd
R. Leeder, E. Toth	- Denison Mines Limited, Coal Division
J. H. Perry	- JHP Coal Ex Consulting Ltd
R. Johnson	- Thielio Drafting Service

Contractors 1987

Loiselle Contractors Ltd	- Road and Drillsite construction and Reclamation
Tonto Drilling	- Core drilling
Western Hydro Air Drilling	- Rotary drilling
BPB Instruments	- Geophysical Logging
Target Tunnelling	- Adit Construction and Sampling
Stables, Tryon and Associates	- Surveying
Western Photogrammetry	- Topographic mapping
Commercial Testing and Engineering	- Core analysis
Birtley Coal and Minerals Testing	- Bulk sample washing and analysis
Piteau and Associates	- Geotechnical Studies

2.4 STANDARDS AND PROCEDURES

2.4.1 Geologic Mapping

Geologic mapping in the Transfer and Grizzly Areas was conducted at 1:2500 scale by Quintette personnel and Mitsui consultants.

The majority of mapping was conducted along exploration roads constructed during 1987. These roads provided excellent rock and coal exposures. Control was based on survey points spaced atapproximately 100 m intervals along the roads. All of the geologic mapping was plotted on the Geology plans presented in Appendix 1.1.

Reconnaissance mapping off the exploration roads was controlled by previously established survey points, airphoto control points, geologic control points and drill holes. Accuracy was maintained by closing the traverses to one of the known points.

Field data was recorded on map cards at 1:2500 scale. The mapping was done by a modified plane table method using a chain and compass. Lithologies, structural and sedimentological features, and bed orientation were recorded on the map cards.

No geologic mapping was carried out in the Perry Creek area during 1987. The geology plan presented in Appendix 1.1.3 is based on regional mapping in the early 1970's and air photo interpretation.

2.4.2 Rotary Drilling

The contract rotary drilling companies have drilled both vertical holes and angle holes (to -45°) with both downhole hammer and conventional rotary bits, using reverse circulation equipment. During 1987, no sampling of the rotary cuttings was done. The drillers daily reports are kept on file at the Administration Building, Quintette Coal Limited. These reports record coal intersections, water levels and estimated flow rates. The locations of all rotary drill holes are on the geology plans in Appendix 1.1.

Appendix T.2.1 contains summaries of all rotary holes. These summaries identify seam intersections and other notable sedimentary and structural features. Table 2.2 lists all rotary holes with their location, elevation, and depth.

2.4.3 Diamond Drilling

Diamond drill holes were drilled vertically or at an angle providing H.Q. core (64 mm diameter) with conventional wireline recovery equipment. Each drill hole was geophysically logged followed by detailed visual core descriptions and complete sampling of all mineable coal sections. Approximately 5 kilograms of coal sample was taken from each metre of mineable section and sent to commercial laboratories for washability and related analyses as described in the following section.

The location of diamond drill holes are shown on the geology plans in Appendix 1.1 and a summary of each core hole is found in Appendix T.2.2. The detailed written descriptions of all recent cored drill holes are available in the QCL Administration building. Table 2.3 lists all diamond holes with their location, elevation and depth.

2.4.4 Drill Core Analysis

Drill core samples of mining sections where 80% or better core recovery has been achieved normally provide the primary data points for the assessment of in-place ash content, washability yield predictions, and other physical, rheological, and chemical properties. Normal procedures involve the segregation of a selected mining section into various sample components based on coal and rock partings. These samples are then combined into a single sample or composite, representing the actual section to be mined.

Analytical data has been presented in the 1987 Exploration Report dated February, 1988, and in the Transfer Area Geological Report, March, 1987.

2.4.5 Geophysical Logging

Rotary and diamond drill holes have been logged by down hole geophysical methods since the commencement of drilling in 1971 (Perry Creek) and 1976 (Transfer). However, in some instances, the caving of drill holes either prevented the completion of geophysical logs or required the holes to be logged through the drill stem.

The types of geophysical logs completed include:

1. Gamma
2. Neutron
3. Density
4. Caliper
5. Deviation
6. Resistivity

Geophysical logging was conducted by BPB Instruments Ltd and by QCL during 1987. Mining section thicknesses are determined from the core holes using detailed geophysical logs. Seam depths are determined from the 1:20 scale density geophysical log. The core descriptive log is then adjusted to these depths and missing core locations identified. The coal seam thickness is determined by adjusting the apparent seam thickness (distance between top and bottom as picked on the geophysical log) by the cosine of the measured bedding angle in the core.

Rotary drill holes are used for seam and rock thicknesses in the sense that the tops and bottoms of coal seams and correlation points are marked on the section profile of the drill holes. The interpretation then uses the elevation of these intersections when the top (and at times, the bottom) structure contour of each seam is drawn.

Copies of all geophysical logs are available in the Administration Building of Quintette Coal Limited.

2.4.6 Topographic Survey

During 1987, the Transfer/Grizzly Area was flown and 1:2500 scale topographic maps were prepared. Surveying of airphoto targets was by Stables, Tryon and Associates, Dawson Creek, British Columbia. Survey control for the topographic mapping is described as follows:

> "Photo targets numbered 1 to 13, and A to E were surveyed in the summer of 1987 by Stables, Tryon and Associates under the personal supervision of Tom Tryon, British Columbia Land Surveyor. Distances were measured by a "Model 14A" Geodometer and angles were measured using a "Wild T16" Theodolite. Co-ordinates and Elevations of targets 9, 11, 12 and "E" were determined from those of Triangulation Station "Airy". All others were surveyed from stations along conveyor and power lines Right-of-Way, from values tabulated by McElhanney and Associates."

Topographic mapping was done by Western Photogrammetry, Edmonton, Alberta. The maps were prepared from three east-west flight lines. Aerial Triangulation and preparation was undertaken on WILD PUG III and BC1 analytical system. The numerical adjustment was done using the PATM-43 program. The data was stream digitized on WILD BC1 using the T Map software system for graphics edit. The final copy topographic maps are filed at the QCL Administration Office along with the digitized data and survey control maps.

Topography for the Perry Creek Area Geology Map (Appendix 1.1.3) is a compilation based on digitizing metric 1:5000 topography (southeast half of the map) and Imperial 1:4800 cale plans for the remainder. The Imperial maps (K-10 and J-10) were from 1971 photography. The metric maps (Y-33 and Z-33) were from 1975 photography. The original maps, with survey notes, are on file at the QCL Administration Office.

2.4.7 Adits

In 1987, adits were driven into the mineable coal seams in both the Transfer and Grizzly Areas. Table 2.4 summarizes the adit driveage.

Target Tunnelling Limited, Strathmore, Alberta constructed and sampled all adits. Adits were constructed by drilling and blasting along the coal seam. Coal waste and coal samples were removed by an air tugger or wheelbarrow depending on conditions. The adits were ventilated by a forcing fan. Adit drawings are presented in Appendix T.3. Adit locations are plotted on the Geology Maps in Appendix 1.1.

2.4.8 Adit Sample Analysis

Bulk samples from the major seams (F, G, J, K) were obtained in both the Transfer and Grizzly Areas. These samples were shipped to Birtley Coal and Minerals Testing, Calgary, Alberta, for raw analysis, pilot scale washing and clean coal analysis. The results of this testing program are presented in the 1987 Exploration Report February 1988.

The Transfer J seam bulk sample was rewashed using different cut points that more closely simulated actual Quintette Preparation Plant conditions. This resulted in a clean coal product with a lower ash level.

2.4.9 Geotechnical Studies

During 1987, Piteau and Associates were contracted to carry out a geotechnical and hydrogeological assessment of the Transfer and Grizzly Areas. This report is presented as Appendix 2.2 in the 1987 Exploration Report, February, 1988.

2.4.10 Reclamation

Reclamation of the 1987 and some 1986 disturbances was conducted by Loiselle Contractors Limited, Tumbler Ridge, British Columbia.

The program included bucking of all slash to ensure rapid decomposition and to inhibit fires. Spruce slash was burned although some slash will not be totally disposed of until the 1988 field season when it will be drier. All slash requiring burning has been piled.

All roads have been crossditched as required for erosion control as well as seeded. Some main access roads were not revegetated as they will be used in the 1988 exploration season. Recontouring of the exploration road beyond QHD87008 was completed since topography is very steep in this area and it is close to a natural drainage.

Adit sites were totally reclaimed by burying the waste coal and resloping these piles. At QHA8704, a small drainage was reopened. All sites were seeded.

The equipment used for reclamation was a D6 or D7 bulldozer, a small backhoe, chainsaws and a seeder/spreader. The fertilizer mix was 8-36-17 at 125 kg per hectare. The seed mix consisted of Creeping Red Fescue at 55%, Kentucky Blue Grass at 25%, Alfalfa at 20% applied at 50 kg per hectare.

2.5 FUTURE DEVELOPMENT

Exploration work has defined a significant resource in the Transfer and Grizzly Areas. Further work will be required to:

1. Define structures on the Transfer Anticline's west limb that may extend the resource.

2. Define the Shikano Syncline/M-9 structure in the Murray River Valley. The structure itself needs better definition along with a dination of the depth of overburden as this is critical to resource evaluation.

3. Further define, by infill drilling, anomalies that may limit the resource such as:
   - F seam thickness on the Transfer Anticline east limb
   - K2 seam wash-out (QHR87030)
   - Transfer Anticline plunge in the nose area
   - Seam thicknesses in fold axis areas
   - Seam thicknesses around QHD87010 where structural thinning has been interpreted

4. Further define coal quality through core sample analysis where data is sparse or unreliable.

Regardless of the extent of future exploration or development work, definition of the geology in the Transfer and Grizzly Areas currently has a high degree

of confidence. The preliminary mine plan based on the geology presented in this report will also have similar confidence in its reserve figures supporting a possible Stage I submission to the Government of British Columbia.

The 1987 Exploration work also included hydrogeological and geotechnical studies that have been documented in the 1987 Exploration Report.

In the Perry Creek Area, the data from 1971, 1974 and 1987 have permitted a preliminary evaluation that indicates a simple geological structure with a thick coal sequence of medium volatile bituminous coal. Further investigations will be required to:

1. Define the structural simplicity
2. Confirm coal quality
3. Define the extent of thick coal seam development

Rotary and core drilling is planned for the initial assessment of the Perry Creek resource area. If a viable resource is defined further work will include more detailed drilling and bulk sampling followed by preliminary mine planning.

Table 2.1

EXPLORATION SUMMARY

		Transfer	Grizzly	Perry Creek	Totals
1987					
Rotary holes	#	46	21	5	72
	m	5169	3075	260	8504
Core holes	#	8	4	-	12
	m	1251	593	-	1844
Adits	#	3	3	-	6
	m	139	112	-	251
Roads	km	14.7	6.7	1.3	22.7
1986					
Core holes	#	6	2	-	8
	m	875	267	-	1142
Roads	km	6.1	1.5	-	7.6
1985					
Core holes	#	2	-	-	2
	m	374	-	-	374
Pre 1985					
Rotary holes	#	-	6	-	6
	m	-	686	-	686
Core holes	#	-	1	10	11
	m	-	110	2480	2590
Roads	km	-	1.5	10	11.5
Totals					
Rotary holes	#	46	27	5	78
	m	5169	3761	260	9190
Core holes	#	16	7	10	33
	m	2500	970	2480	5950
Adits	3	3	3	-	6
	m	139	112	-	251
Roads	km	20.8	9.7	11.3	41.8

Table 2.2

1987 Rotary Drilling Summary

Hole #	UTM Easting m	UTM Northing m	Elevation m	Depth m
QHR87001	624678.720	6096302.760	848.18	189.60
QHR87002	624465.260	6096356.150	879.90	156.30
QHR87003	624278.690	6096422.350	895.45	140.00
QHR87004	624117.600	6096486.650	931.67	121.80
QHR87005	623827.890	6096582.540	985.67	117.50
QHR87006	623311.920	6096741.680	1057.87	182.00
QHR87007	623136.870	6096526.690	1117.65	170.20
QHR87008	623196.400	6096594.040	1107.99	107.30
QHR87009	623293.440	6096471.160	1108.97	132.30
QHR87010	623296.430	6096347.630	1109.67	164.40
QHR87011	623132.370	6096681.670	1107.81	121.50
QHR87012	623063.540	6096590.370	1116.81	183.30
QHR87013	623477.310	6096728.480	1041.15	143.70
QHR87014	623194.300	6096773.650	1076.90	207.40
QHR87015	623456.490	6096508.620	1079.99	56.70
QHR87016	623627.550	6096078.360	1071.99	146.60
QHR87017	623801.660	6095936.650	1014.93	164.80
QHR87018	624093.480	6095705.400	978.03	123.00
QHR87019	624218.700	6095531.260	916.10	110.70
QHR87020	624879.720	6096256.360	797.81	244.00
QHR87021	620569.250	6096160.320	1572.82	168.80
QHR87022	620508.120	6096087.300	1580.60	144.60
QHR87023	620432.720	6095983.110	1601.62	171.00
QHR87024	620712.890	6096026.860	1564.25	128.50
QHR87025	620647.170	6095957.560	1585.04	110.00
QHR87026	620701.800	6095680.630	1573.08	140.00
QHR87027	620804.170	6095842.940	1549.64	80.00
QHR87028	620421.700	6096294.420	1542.16	172.00
QHR87029	620866.580	6095579.200	1545.46	110.00
QHR87030	621163.260	6095302.310	1489.50	86.80
QHR87031	621267.200	6095747.640	1425.42	50.00
QHR87032	621106.040	6095887.350	1451.87	92.70
QHR87033	621293.370	6095148.030	1437.70	98.70
QHR87034	621750.450	6095778.160	1319.00	108.00
QHR87035	620293.660	6096125.300	1558.01	129.00
QHR87036	620351.140	6096202.090	1544.31	117.60
QHR87037	620771.320	6095758.000	1562.42	91.80
QHR87038	620942.670	6096017.010	1490.85	129.00
QHR87039	621016.010	6095418.960	1522.50	99.00
QHR87040	622166.770	6095283.740	1361.19	98.20
QHR87041	623801.940	6095150.740	891.53	187.80
QHR87042	623748.750	6095081.350	891.10	129.70
QHR87043	623622.990	6094827.360	902.11	116.40
QHR87044	623705.190	6094992.350	880.04	135.70
QHR87045	623932.450	6094837.800	838.09	99.00
QHR87047	623977.780	6094922.280	838.73	79.00
QHR87048	624037.450	6095005.910	836.82	111.30
QHR87049	623876.650	6094780.330	841.24	90.80

Table 2.2

1987 Rotary Drilling Summary

Hole #	UTM Easting m	UTM Northing m	Elevation m	Depth m
QHR87050	624327.410	6095263.270	844.50	91.80
QHR87051	622728.370	6093986.570	857.50	147.70
QHR87052	622093.220	6093829.310	951.88	127.90
QHR87053	622065.950	6094070.220	1034.79	86.00
QHR87054	622091.590	6094207.210	1049.43	99.00
QHR87055	622506.620	6093811.200	890.45	55.60
QHR87056	623134.020	6093869.500	857.51	91.30
QHR87057	623303.900	6094089.280	876.83	91.30
QHR87058	623438.870	6094282.630	881.64	79.20
QHR87059	621392.130	6095942.590	1368.63	190.60
QHR87060	621503.170	6095749.250	1346.09	80.30
QHR87061	620875.610	6095928.120	1527.81	99.20
QHR87062	620103.840	6096057.410	1544.99	178.90
QHR87063	620168.560	6096279.540	1508.25	109.90
QHR87064	620222.270	6096360.010	1499.61	103.60
QHR87065	619929.820	6096311.430	1519.31	146.70
QHR87066	620077.600	6096322.920	1505.69	85.20
QHR87067	619995.340	6096417.410	1499.61	42.00
QHR87068	620065.100	6096527.440	1484.15	79.30
				=========
				8244.00
				*********
QPR87001	612398.180	6105215.210	918.24	73.50
QPR87002	612049.340	6104982.650	954.63	60.50
QPR87003	612166.360	6105131.430	945.01	44.40
QPR87004	612307.370	6105276.760	930.10	37.90
QPR87005	612422.970	6105449.840	923.61	43.30
				=========
				259.60
				*********

Table 2.3

1987 Diamond Drilling Summary

Hole #	UTM Easting m	UTM Northing m	Elevation m	Depth m
QHD87001	623618.590	6096689.550	1021.15	160.79
QHD87002	623250.510	6096678.450	1081.36	99.12
QHD87003	623915.720	6095802.930	996.29	177.52
QHD87004	620622.540	6095885.150	1589.74	151.10
QHD87005	620230.280	6096045.680	1573.26	185.78
QHD87006	620295.840	6096478.670	1486.07	202.44
QHD87007	622018.430	6095442.390	1329.15	120.63
QHD87008	621727.190	6094538.830	1167.00	138.62
QHD87009	622957.500	6095088.700	1108.43	105.14
QHD87010	623642.350	6094879.670	894.89	158.55
QHD87011	623875.170	6095267.550	877.77	189.12
QHD87012	624826.020	6096170.570	818.91	155.24
				=========
				1844.05
				*********

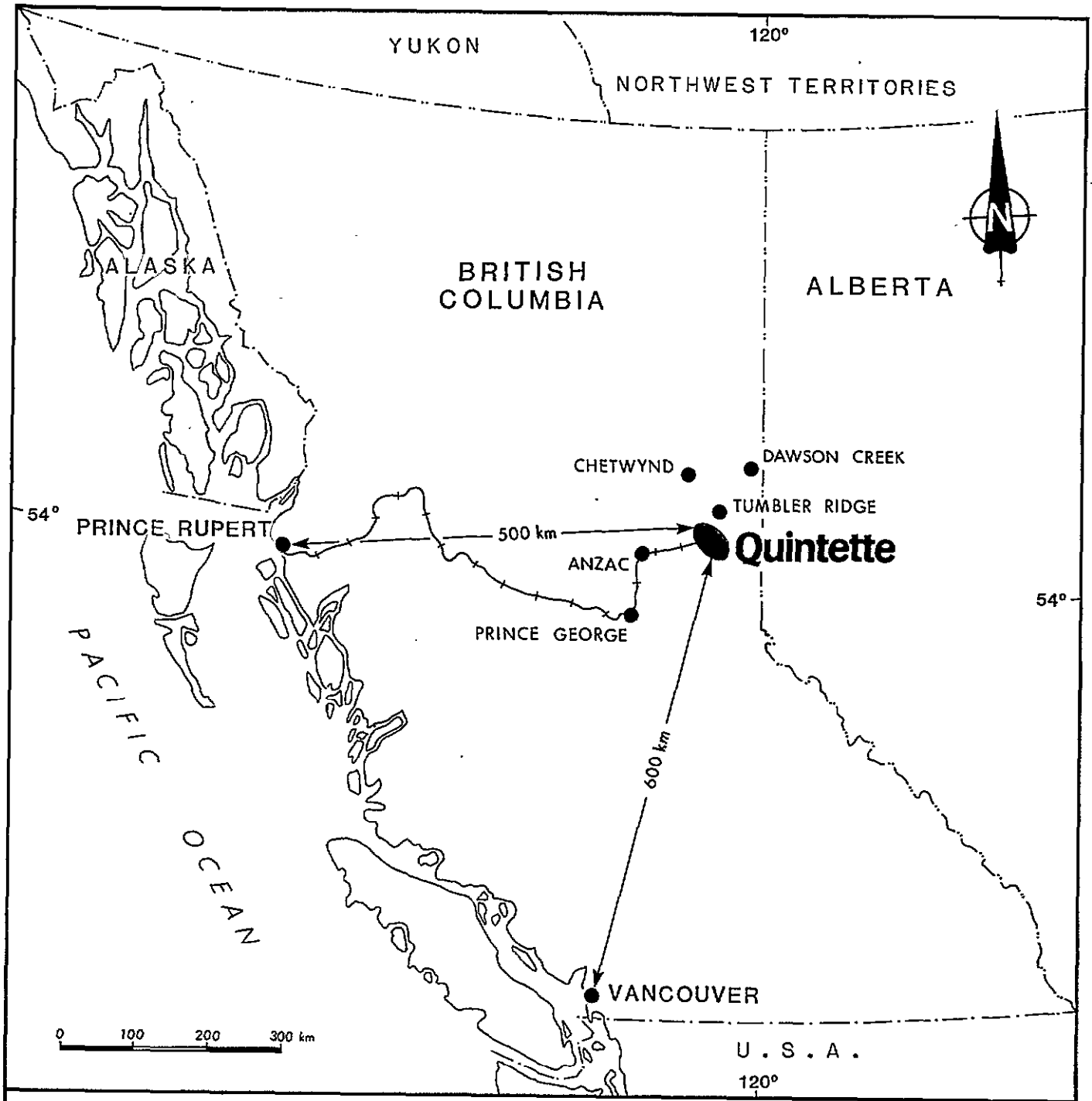
Table 2.4

TRANSFER/GRIZZLY

ADIT SUMMARY

Area	Adit #	UTM (Portal) Northing	UTM (Portal) Easting	Elevation	Length	Seams sampled
		m	m	m	m	
Grizzly	QHA87001	6095325.99	624536.73	854.44	34.3	J, K1
	QHA87002	6095311.63	624502.24	858.67	39.3	G
	QHA87003	6095276.27	624481.29	851.26	38	F
Transfer	QHA87004	6095890.45	620942.38	1502.52	45	F
	QHA87005	6095711.51	621260.97	1424.55	44	J, K1, K2
	QHA87006	6095747.71	621265.62	1423.45	49.5	G

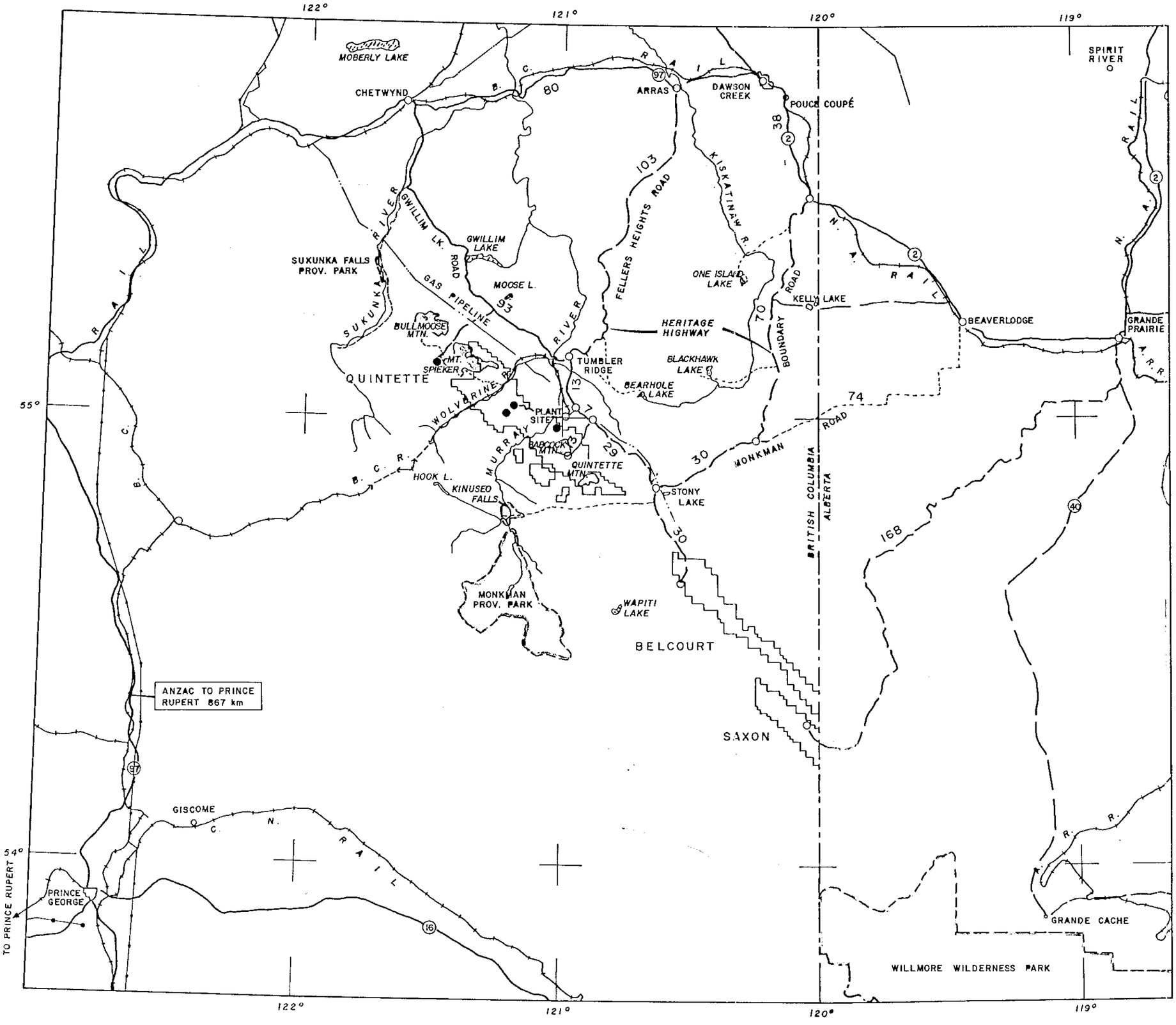
Total Driveage **251.1**



Quintette Coal Limited

GENERAL LOCATION

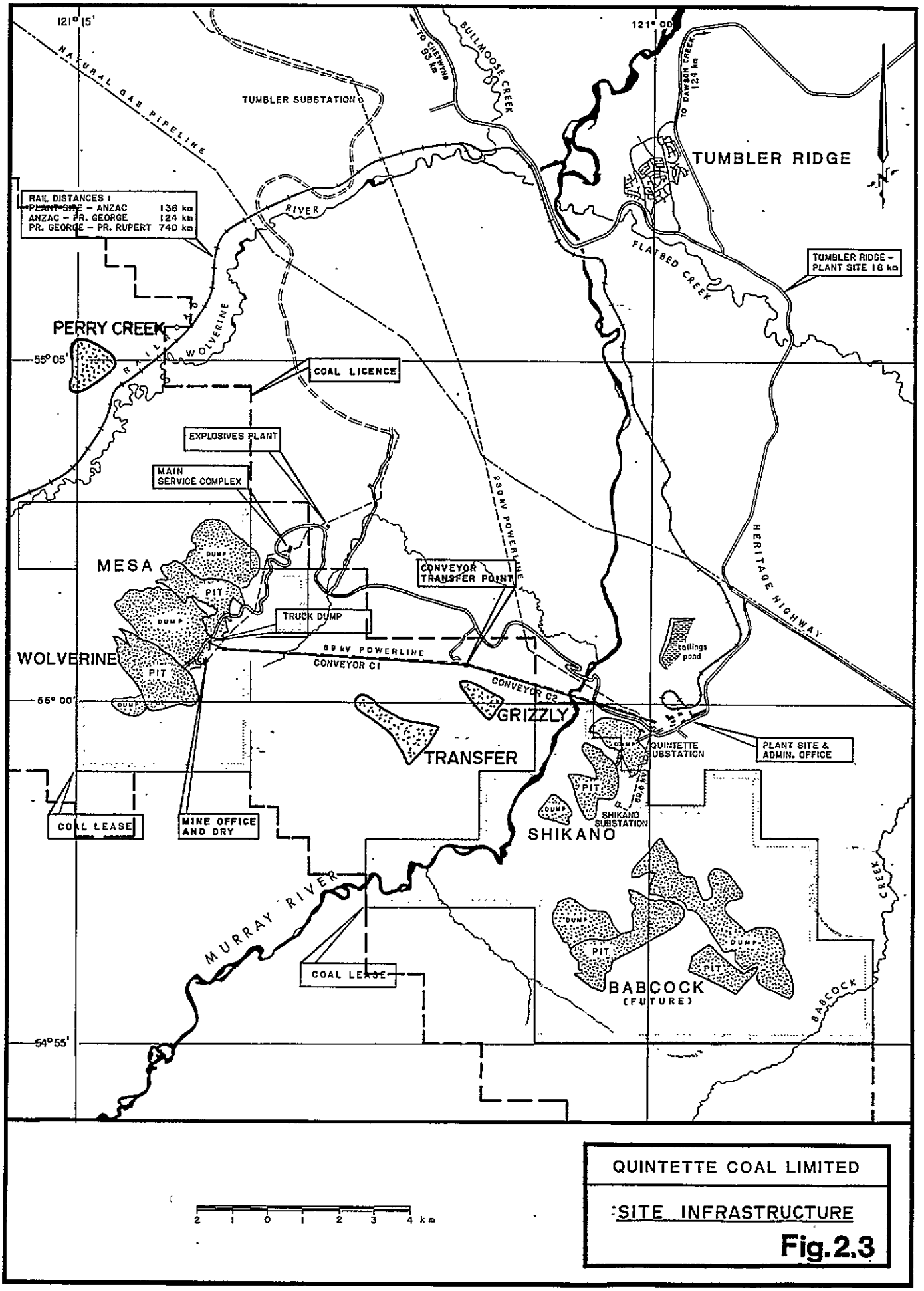
Figure 2.1

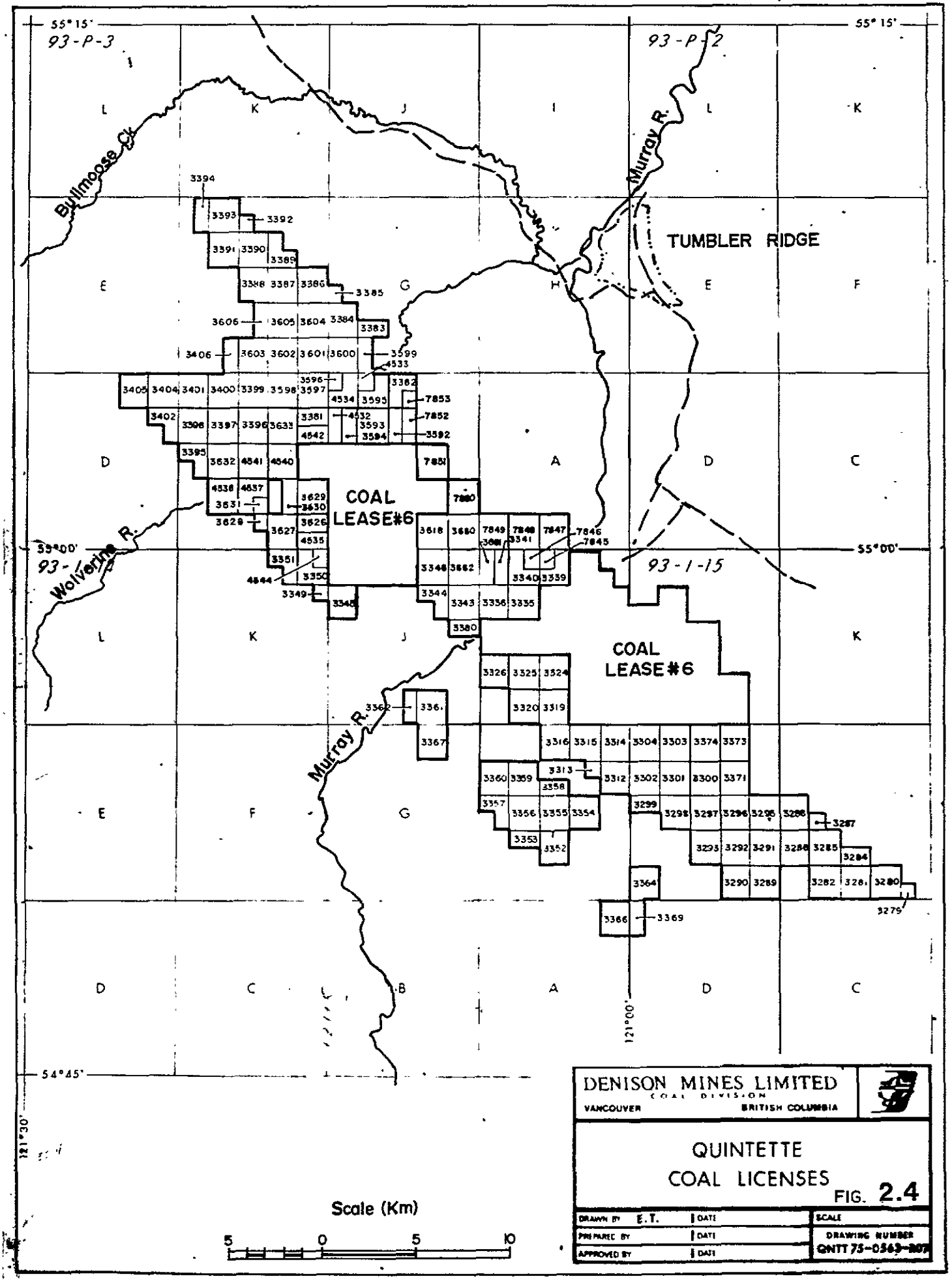


QUINTETTE COAL LIMITED

NORTHEAST B.C. PROPERTIES

Fig. 2.2


121° 15'
121° 00'
NATURAL GAS PIPELINE
TUMBLER SUBSTATION
TO CHETWYND 93 km
BULLMOOSE CREEK
TO DAWSON CREEK 124 km
TUMBLER RIDGE
RAIL DISTANCES :
PLANT SITE – ANZAC 136 km
ANZAC – PR. GEORGE 124 km
PR. GEORGE – PR. RUPERT 740 km
RIVER
FLATBED CREEK
TUMBLER RIDGE – PLANT SITE 16 km
PERRY CREEK
RAIL LOOP
WOLVERINE
55° 05'
COAL LICENCE
EXPLOSIVES PLANT
MAIN SERVICE COMPLEX
230 kV POWERLINE
MESA
DUMP
PIT
CONVEYOR TRANSFER POINT
HERITAGE HIGHWAY
TRUCK DUMP
WOLVERINE
69 kV POWERLINE
CONVEYOR C1
tailings pond
CONVEYOR C2
55° 00'
GRIZZLY
TRANSFER
QUINTETTE SUBSTATION
PLANT SITE & ADMIN. OFFICE
COAL LEASE
MINE OFFICE AND DRY
SHIKANO SUBSTATION
SHIKANO
MURRAY RIVER
COAL LEASE
BABCOCK (FUTURE)
BABCOCK CREEK
54° 55'
2 1 0 1 2 3 4 km
QUINTETTE COAL LIMITED
SITE INFRASTRUCTURE
Fig.2.3



DENISON MINES LIMITED
COAL DIVISION
VANCOUVER BRITISH COLUMBIA

QUINTETTE COAL LICENSES

FIG. 2.4

DRAWN BY E.T.	DATE	SCALE	
PREPARED BY	DATE	DRAWING NUMBER	QNTT 75-0363-B07
APPROVED BY	DATE		

3.0 GEOLOGY

3.1 REGIONAL STRATIGRAPHY

The stratigraphic succession exposed on the Quintette property ranges from Upper Jurassic to Lower Cretaceous in age. It consists of an interfingering of shales and sands both marine and continental in origin. Most of the coal-bearing strata is derived from deltaic and near-shore environments. The table of formations for Quintette is outlined in Figure 3.1 and indicates general formation thickness ranges and coal zones. The coal seams of economic thickness and quality are found in the Gates and Gething Formations. The regional distribution of these formations is illustrated on the Regional Geology Map in Appendix 1.1.4. Further descriptions of the formations encountered at QCL can be found in previous QCL Geological Reports. Table 3.1 summarizes formation thicknesses in the areas of interest.

3.2 LOCAL STRATIGRAPHY

3.2.1 Transfer

The stratigraphic sequence drilled and exposed in the Transfer Area is the Boulder Creek Formation, Hulcross Formation, Gates Formation, Moosebar Formation and Gething Formation. The Geology Maps (Appendix 1.1.1) illustrate the distribution of these stratigraphic units, where they are exposed, and the position of the economic coal seams.

Boulder Creek Formation

The Boulder Creek Formation, the uppermost unit exposed in the Transfer Area, is distributed in the northeast limb of the Transfer Anticline and in the core of the Transfer Syncline. This formation consists mainly of massive sandstone and conglomerate with minor shale and thin inferior coal seams. It is known to create ridges in this region. In the Transfer Area, a ridge formed by the lower part of the Boulder Creek Formation is conspicuous and easily traced both in the field and on the topography maps. The formation thickness is estimated at approximately 130 metres.

Hulcross Formation

The Hulcross Formation is conformably overlain by the Boulder Creek Formation. It is essentially characterized by homogeneous dark grey marine shales/siltstones interbedded with very fine sandstones. Intermittent thin beds of sandstone, calcareous shale and bentonite have been identified within this sequence as well. In the top and bottom 5 metres of the formation, siltstone is dominant and contains interbeds of shale. The base of the formation is marked by a thin bed of pebble conglomerate or coarse sandstone. The thickness of the Hulcross Formation is approximately 90 to 100 metres.

Owing to its very fine grained nature, the Hulcross Formation has little or no definitive outcrop in the area although the access road from the Gething to the Transfer Area provides good continuous exposures. The formation's location is defined as the recessive strata which exists between the resistant, ridge-forming conglomerate in the lower Boulder Creek Formation and the resistant, ridge-forming conglomerates and sandstones in the upper sequence of the Gates Formation.

Gates Formation

The Gates Formation contains the economic coal seams of the Transfer Area, and is widely distributed in both limbs of the Transfer Anticline. The formation can be divided into three members: Upper, Middle and Lower. Although each of the members contains coal, seams of economic thickness occur only in the Middle Gates Member. The total thickness of the formation is 290 metres ($\pm$ 10 metres). The correlation charts in Appendix T.4 show the stratigraphic variation within the Gates Formation.

(i) Upper Gates Member:

The upper member of the Gates Formation is defined as between the base of the Hulcross Formation and the top of the first productive coal seam, namely D1. This sequence is approximately 80 metres thick.

The upper half of this member is non-marine and consists of fluvial and estuarine channel deposits (interbedded sandstones, siltstones, mudstones) and thin coals typical of a coastal plain environment. Occasional thin and continuous conglomerates have been identified.

In the Transfer Area, as well as other areas of the property, three coal zones designated as A, B and C seams are found in this upper portion. All three are considered to be uneconomic due to their thinness (usually less than 0.5 metres) and inconsistent development. In the Transfer Area, A and C seams are poorly developed, present only as carbonaceous shale. However, the thickness of B seam may exceed 2.5 metres in the nose of the Transfer Anticline (see QHD87005).

The lower sequence of Upper Gates is basically a shallow marine to near shore distributary set of regression deposits. Very fine and fine sandstone are predominant with subordinate amounts of shale and siltstone. Halfway through this section is a tuffaceous horizon, used as a marker for stratigraphic correlation. The conglomerate present at the base of the Upper Gates in the Transfer Area is stratigraphically equivalent to the "Caprock" found in the Mesa, Wolverine and Shikano Pits. The thickness of the conglomerate is relatively thin compared to other locations and ranges up to 2.75 metres in the southwest of the area.

(ii) Middle Gates Member

The Middle Gates Member is from the top of D seam to the floor of K2 seam. The member contains six coal seams (D, E, F, G, J and K in descending order) which readily correlate to the coal seams in Shikano Pit (See Figure 3.2). Only the last four coal seams are considered mineable in the Transfer Area, since D and E seams have poorly developed thicknesses. The Stratigraphic Correlation Chart in Appendix T.4.1 illustrate the Middle Gates Development.

Interseam strata are related to fluvial channels and overbank deposits, composed mainly of shale with minor sandstone and siltstone, or of alternating beds of shale and sandstone. In some places, discontinuous channel sandstones are found at different horizons creating variations in interseam thickness

(ie; between D and E in QHD 86003, and F and G in QHD 86008). The thickness ranges and general lithologies of the interseam strata are summarized on Table 3.2. The Middle Gates Member is approximately 100 metres thick.

(iii) Lower Gates Member

The Lower Gates Member is comprised of two major thick coarsening-up sequences of fine to medium sandstones. The units were deposited in a near shore/shoreface-beach environment occasionally cut by distributary channels as evidenced by coarser less well sorted conglomerate and coarse sandstones occasionally found in these units. In the Transfer and Grizzly Areas, the two sequences are separated by a zone of non-marine carbonaceous units that progressively become more marine to the north (Perry Creek Area) where the non-marine units are replaced by two thinner marine coarsening-up sequences.

The upper massive light or pale green sandstones grade to underlying thinner beds of fine and very fine sandstones interbedded with sandy shales and shales of a marine transgression referred to as a transition zone. One thin coal seam designated as L seam is found between two coarsening-up sequences approximately 40 metres below K2. The thickness of the Lower Gates Member is approximately 110 metres, its base marked by the first thick sandstone in the lower transition zone.

Moosebar Formation

The Moosebar Formation is a marine sequence grading from very fine sandstones and interbedded siltstones and shales at the top, to marine shales with thin bentonite layers at its base. The unit is defined as between the base of the first thick sandstone in the Lower Gates Formation transition zone and the top of the Gething. In the Transfer area it is interpreted as 85 metres thick.

Gething Formation

The Gething Formation has been drilled and mapped at various locations in the Murray River Valley. It is divided into three zones with the upper zone, approximately 50 metres thick and containing coal seams exceeding 2 metres

thick. The middle zone is a marine coarsening up sequence of approximately 90 metres thickness while the lower zone is approximately 70 metres thick and made up of thin channels and overbank deposits, but no significant coal.

3.2.2 Grizzly

The stratigraphy underlying the Grizzly Area is identical to that of the Transfer Area: Boulder Creek, Hulcross, Gates, and Moosebar Formations in descending order. Four coal seams of mining interest, F, G, J and K1 seams, are found in the Middle Gates Member. The Grizzly Stratigraphic Correlation chart is in Appendix T.4.3. The development of the Middle Gates Member is the same as that of the Transfer Area, with the following primary differences:

i) a thick conglomerate and sandstone bed of zero to 30 metres is present between F and G seams, thickening the interval.

ii) the interseam thickness between J and K1 is relatively thin (0.38 metres - 1.16 metres) for most of the area.

iii) the interval between K1 and K2 is thicker (2.6 metres - 5.7 metres) than the Transfer area where it can be less than one metre thick.

The thickness ranges and general lithologies of the interseam strata are summarized on Table 3.3. The distribution of the various stratigraphic units is also illustrated on the Grizzly Geology Map in Appendix 1.1.2

3.2.3 Perry Creek

The stratigraphic sequence exposed in the Perry Creek Area is similar to the regional Quintette Stratigraphy. In the immediate area, the sequence is from the Boulder Creek Formation at the top of Fortress Mountain to the Gething Formation exposed in Perry Creek and the Wolverine River Valley.

Of particular interest is the Middle Gates Formation exposed in the Perry Creek Syncline. The Middle Gates sequence in this area contains a significant number of channel conglomerates between the coal seams. These conglomerates

are best developed between what are correlated as seams E and F, and seams G and J. The Gates Formation Correlation chart in Appendix T.4.5 illustrates the Middle Gates Formation stratigraphy.

The remaining stratigraphy is similar to other Quintette areas. For their descriptions, see the Transfer Area stratigraphy in this report and the descriptions in previous Quintette Geological reports.

3.2.4 Transfer Coal Seam Development and Correlation

As mentioned in the stratigraphic descriptions, six coal seams are present in the Middle Gates Member in the Transfer Area, four of these (F, G, J and K seams) are termed "mineable". The cumulative coal seam thickness (F,G,K,K1 and K2) in the Transfer Area exceeds 14 metres.

Both D and E seams are split into thin coal portions by partings and are considered as "non-mineable" in the area. In some drill holes, however, these seams have a mineable thickness of more than 1 metre ie; D seam in QHD86005 and E seam in QHD86003. A detailed reserve evaluation may delineate areas in which D and or E seams are recoverable. Table 3.4 summarizes average seam thickness for the Transfer Area. The seam correlation chart for the Transfer and Grizzly Areas are in Appendices T.4.2 and T.4.4 respectively.

F Seam

F seam is well developed in thickness throughout the Transfer Area, averaging more than 4 metres. The columnar section depicted in Figure 3.3 shows a typical F seam development. The seam is generally divided into three portions designated as F1, F2 Parting and F2 from top to base. In the vicinity of QHD86003, F1 is not present and the parting (F2P) forms the top portion of F seam. The parting between F1 and F2 (F2P) is composed mainly of high ash coal and carbonaceous shale. F2 comprises the major portion of the seam, and consists mainly of low ash coal with two to four discontinuous thin partings. The thickness of the partings is normally less than 10 centimetres, but the parting developed at the middle of F2 can be relatively thick. This in fact, results in the lower portion of F2 being unmineable in the vicinity of

QHD87009, resulting in a thinning of the seam in this area. The roof and floor of the seam consist of shale or carbonaceous shale, with coal stringers.

G seam

G seam is characterized by two major continuous partings, and is divided into five sections: three coal partings identified as G1, G2 and G3; and two rock partings denoted as G2P and G3P. Figure 3.4 shows a typical G seam section. G1 has little or no partings. G2P is composed of shale, carbonaceous shale, and inferior coal. G2 occasionally contains one or two very thin partings in the lower half. G3P is composed of shale and siltstone, in some places (QHD86001, 86007) consisting entirely of siltstone with very thin bands of shale at the top and bottom. G3 is characterized by a group of partings near the base. The roof of G seam is shale, occasionally with a thin carbonaceous layer underlying it. The floor of G seam consists of carbonaceous shale.

J Seam

J seam is well developed in thickness throughout the Transfer Area, averaging more than 4.5 metres. Figure 3.5 shows a typical J seam section. Although no major parting appears in J seam, many thin inferior coal bands (fusinite?), usually less than 5 centimetres thick, are present. The roof consists of shale or carbonaceous shale, and the floor is carbonaceous shale with coal bands.

K Seam

K seam is composed of two separate sub-seams identified as K1 for the upper and K2 for the lower. A typical K seam section is shown in Figure 3.6.

(i) K1 Seam

K1 seam is characterized by alternating thin beds of coal and carbonaceous shale in the upper section. This high ash zone is often excluded from the K1 Mining section and included in the K1 Parting between J and K1 seams. The

lower section of K1 seam is very clean and is usually considered the K1 Mining section.

In the Transfer Area, the interval between J and K1 is often less than 1 metre, however, toward the southeast on both limbs of the Transfer Anticline, the parting thickness can exceed 1.5 metres.

(ii) K2 Seam

K2 seam has one or two discontinuous thin partings. The interseam strata between K1 and K2 consist of shale, siltstone and carbonaceous shale with coal stringers, with sandstone appearing in the eastern part of the area. The thickness of the interseam is normally greater than 1 metre, increasing to more than 4 metres toward the southeast (Grizzly). In some areas the interseam is less than 1 metre in which case J to K2 Seam may form a single mining section. A small coal parting below K2 seam sometimes is part of the mining section (see the seam correlation chart) depending on its thickness and the parting thickness separating it from K2 seam.

In one drill hole (QHR87030) K2 is missing. This is currently considered to be a stratigraphic anomaly and therefore K2 Seam's thickness is considered to be 0 at this drill hole location.

3.2.5 Grizzly Coal Seam Development and Correlation

The characteristics of each mineable coal seam in the Grizzly Area are very similar to that of the Transfer Area. Only points of significant difference are described here. The cumulative mineable coal seam thickness (excluding K2) in the Grizzly Area exceeds 12 metres. Table 3.4 summarizes the average seam thickness for the Grizzly Area. The Grizzly Seam Correlation Chart is presented in Appendix T.4.4.

F Seam

F seam maintains its thickness as compared to the Transfer Area, averaging only 14 cm less. If the thinner F Seam around QHD87009 (Transfer Anticline

East Limb) is removed from the average, then there is a more significant thickness difference between Transfer and Grizzly.

G Seam

In the northeast limb of the Grizzly Structure, the thickness of the lower parting (G3P) thickens to just under 1 metre. It is noted to exceed 1 metre in the axis of the Shikano Anticline.

G seam is overlain directly by a thick conglomerate and sandstone bed in most of the Grizzly Area. This conglomerate rapidly thins in the west limb of the anticline.

J Seam

J seam has a similar development with an almost identical average thickness to Transfer.

K1 Seam

K1 seam may be mined together with J seam in a single mining section owing to the thin interval between the two seams and the better coal development in the upper part of K1 seam.

K2 Seam

K2 seam is thinner (less than 1 m), and is separated by a thick interseam (up to 5.7 metres) from K1, and may not be considered recoverable in the Grizzly Area.

3.2.6 Perry Creek Seam Development and Correlation

The most significant seam in the Perry Creek Area is J Seam. The 1987 drilling intersected a consistent J1/2 seam development of more than 5.5 metres. From the 1971 correlation, it is expected that the mineable section of J seam will decrease where the overlying channel conglomerate thickens. As

this conglomerate thickens, so does an ash parting, separating the J seam into J1 and J2. The underlying J3 seam is expected to maintain a consistent thickness of approximately 2 metres throughout the area. The Perry Creek Correlation chart is presented in Appendix T.4.5.

G seam was also intersected in the 1987 program and is correlated to G1 seam in the Mesa and Wolverine Pits. Its thickness does not exceed 1 metre in the 1987 rotary holes, however a thicker coal section has been noted in the 1971 drilling.

Other seams that may be recoverable include E4 and D3. Their extent and development in the current area of interest cannot be speculated. These seams in the upper section of Middle Gates Formation were not drilled in 1987. From previous drilling (1971 and 1974), thickness of these seams will not exceed 2 metres except where E4 and E3 seams coalesce in QWD7118.

The coal seam intersections are recorded on the drill hole summary sheets in Appendix T.2.1. Since the strata dips at less than 10^{0} where holes were drilled, these intersections can be considered as a true seam thickness. Average thickness and thickness ranges are as found in Table 3.6.

3.3 REGIONAL STRUCTURE

The regional geologic structure is best illustrated on the Regional Geology Map in Appendix 1.1.4. The Regional Map highlights the formation outcrops which are primarily controlled by a series of northwesterly trending folds. The fold system characterizes the structure of the three areas discussed in this report: Transfer, Grizzly and Perry Creek.

The Transfer and Grizzly Area is comprised of a series of major folds designated from west to east as the Transfer Syncline, Transfer Anticline, Shikano Syncline and Shikano Anticline. Smaller folds have developed on the Transfer Syncline east limb and on the Shikano Syncline west limb (M-9 structure).

The Perry Creek Area is dominated by the Perry Creek Syncline which forms the major resource area.

No major faults have been identified in these areas, however, a thrust fault must exist to the west of the Transfer Syncline, separating the Transfer Area from the Gething Area. Figure 3.7 highlights the regional structure and the relative position of each area.

3.4 LOCAL STRUCTURE

The local structures of the Transfer, Grizzly and Perry Creek Areas are illustrated by the Geology Maps in Appendix 1.1, the Structure Contours in Appendix 1.2 and the Cross Sections in Appendix T.5.

3.4.1 Transfer

The dominant structure in the Transfer Area is the northwest-southeast trending Transfer Anticline that plunges (10^{o}-20^{o}) to the northwest. The coal-bearing Gates Formation is distributed on both limbs of the anticline.

Dips on the northeast limb of the anticline are 35^{o} to 40^{o} in the north western half of the limb, becoming steeper toward the southeast and at depth, with dips exceeding 60^{o} at the southeastern end. On the southwest limb, dips are relatively steep and range from 50^{o} to 90^{o}.

The southwest limb of the Transfer Anticline is a relatively complicated structure. This limb between the Transfer Syncline axis and the Transfer Anticline axis is interpreted to have a smaller anticline and syncline pair near the Transfer Syncline axis (see Section 28000, Appendix T.5.1). This structure brings the coal seams near surface in a high relief area and has the potential to extend the reserves.

No major faults have been confirmed in the Transfer Area. The major thrust that separates the Gething Area and the Transfer Area is interpreted to be southwest dipping and therefore does not affect or limit the current reserve area.

Minor southwest dipping faults are interpreted along the backlimb of the Transfer Anticline (see Section 29000, Appendix T.5.1). These faults have the effect of increasing the Gates Formation thickness on the backlimb and the coal section along the axis of the anticline.

A stylized section of the Transfer/Grizzly structure is shown in Figure 3.8. The compiled structure contour of the top of J seam (Figure 3.9) also illustrates the structure of the Transfer and Grizzly Areas.

The M-9 Anticline and Syncline and the Shikano Syncline lie in the area between Transfer and Grizzly. These folds have the effect of bringing the coal section close to surface. The extent of overburden in the area has yet to be confirmed.

The southwest limb of the M-9 Syncline is interpreted to be vertical to overturned (see Section 26500, Appendix T.5.2) with structural thinning of the coal seams (see QHD87010 on the correlation charts in Appendix T.4.1 and T.4.2). This is a local phenomenon that is not considered to greatly affect resources.

3.4.2 Grizzly

The geologic structure of the Grizzly Area is controlled by the Shikano Anticline plunging 10^{o}-30^{o} to the northwest. This anticline has a broad or box-like top of about 100 metres in width. The strata dips 55^{o} to 65^{o} on the northeast limb of the anticline and about 45^{o} on the southwest limb. No major faults have been found in the area. As in the case of the Transfer Area, further minor faults will likely occur along or near fold axes resulting in seam and interseam thickening.

The stylized section (Figure 3.8) and the J seam contour (Figure 3.9) further illustrate the Grizzly structure.

3.4.3 Perry Creek

The Perry Creek resource area is the Perry Creek Syncline which is a doubly plunging open fold. The major plunge direction is to the southeast. The west limb of the fold has dips of less than 10^{0} near the axis while the east limb will have dips up to 45^{0}.

No major faulting is currently interpreted in the area, nor is any expected.

The structure is illustrated by the J3 seam structure contour in Appendix 1.2.3 and by the sections in Appendix T.5.3.

Table 3.1

TRANSFER/GRIZZLY/PERRY CREEK
SUMMARY OF FORMATION THICKNESSES

Area	Formation	Approximate Thickness Range (m)
Transfer/Grizzly	Boulder Creek	+110 m
	Hulcross	90-100 m
	Gates	280-300 m
	(i) Upper Gates Member	70- 90 m
	(ii) Middle Gates Member	90-115 m
	(iii) Lower Gates Member	100-120 m
	Moosebar	80- 90 m
	Gething	200-250 m
Perry Creek	Gates	
	(i) Upper Gates Member	Not confirmed
	(ii) Middle Gates Member	100-115 m
	(iii) Lower Gates Member	120-130 m
	Moosebar	80- 85 m
	Gething	200+m

Table 3.2

TRANSFER
INTERSEAM THICKNESS AND LITHOLOGY

Interval	Thickness Range (m)	General Lithology
D seam to E seam	11 - 26	Mainly shale with minor very fine sand and channel sandstone.
E seam to F seam	15 - 23	Southwest limb of Transfer Anticline - dominant sandstone with shale. North limb of Transfer Anticline - shale with minor sandstone and sandy shale.
F seam to G seam	14 - 33	Alternating beds of shale and sandstone, channel sandstone.
G seam to J seam	12 - 21	Shale sandstone. A 3 - 4 metre sandstone zone occurs at 3 metres above J seam.
J seam to K1 seam	0.7 - 1.6	Shale, carbonaceous shale.
K1 seam to K2 seam	0.6 - 4.5	Shale, carbonaceous shale and very fine to fine sandstone.

Table 3.3

GRIZZLY
INTERSEAM THICKNESS AND LITHOLOGY

Interval	Thickness Range (m)	General Lithology
D seam to E seam	12 - 30	Carbonaceous shale with very fine to medium sand.
E seam to F seam	17 - 22	Very fine to fine sand grading to shales and carbonaceous shales towards F seam.
F seam to G seam	16 - 39	Conglomerate and fine sandstone. Shale with fine sandstone bed in upper 6 to 9 metres.
G seam to J seam	14 - 18	Alternating beds of shale, siltstone and fine sandstone.
J seam to K1 seam	0.6 - 1.2	Carbonaceous shale and siltstone.
K1 seam to K2 seam	2.6 - 5.7	Shale with very fine to fine sandstone beds.

Table 3.4

TRANSFER
AVERAGE SEAM THICKNESS

Seam	Thickness Range (m)	Average Thickness (m)
F	2.36 - 4.75	3.89
G	2.88 - 4.50	3.56
J	3.91 - 6.09	4.58
K1	0.79 - 1.35	1.03
K2	0.77 - 1.44	1.11
	Total Cumulative Average	**14.17**

Table 3.5

GRIZZLY
AVERAGE SEAM THICKNESS

Seam	Thickness Range (m)	Average Thickness (m)
F	3.36 - 4.22	3.75
G	2.97 - 3.79	3.27
J	4.01 - 4.90	4.52
K1	0.90 - 1.52	1.17
K2	0.51 - 0.83	0.69
	Total Cumulative Average	**13.40**

Table 3.6

PERRY CREEK
AVERAGE SEAM THICKNESS

Seam	Thickness Range (m)	Average Thickness (m)
D3	1.68	1.68
E4	1.59	1.59
G1	0.84 - 0.92	0.89
J1/2	4.89 - 7.04	5.65
J3	2.00 - 2.36	2.23
	Total Cumulative Average	**12.04**

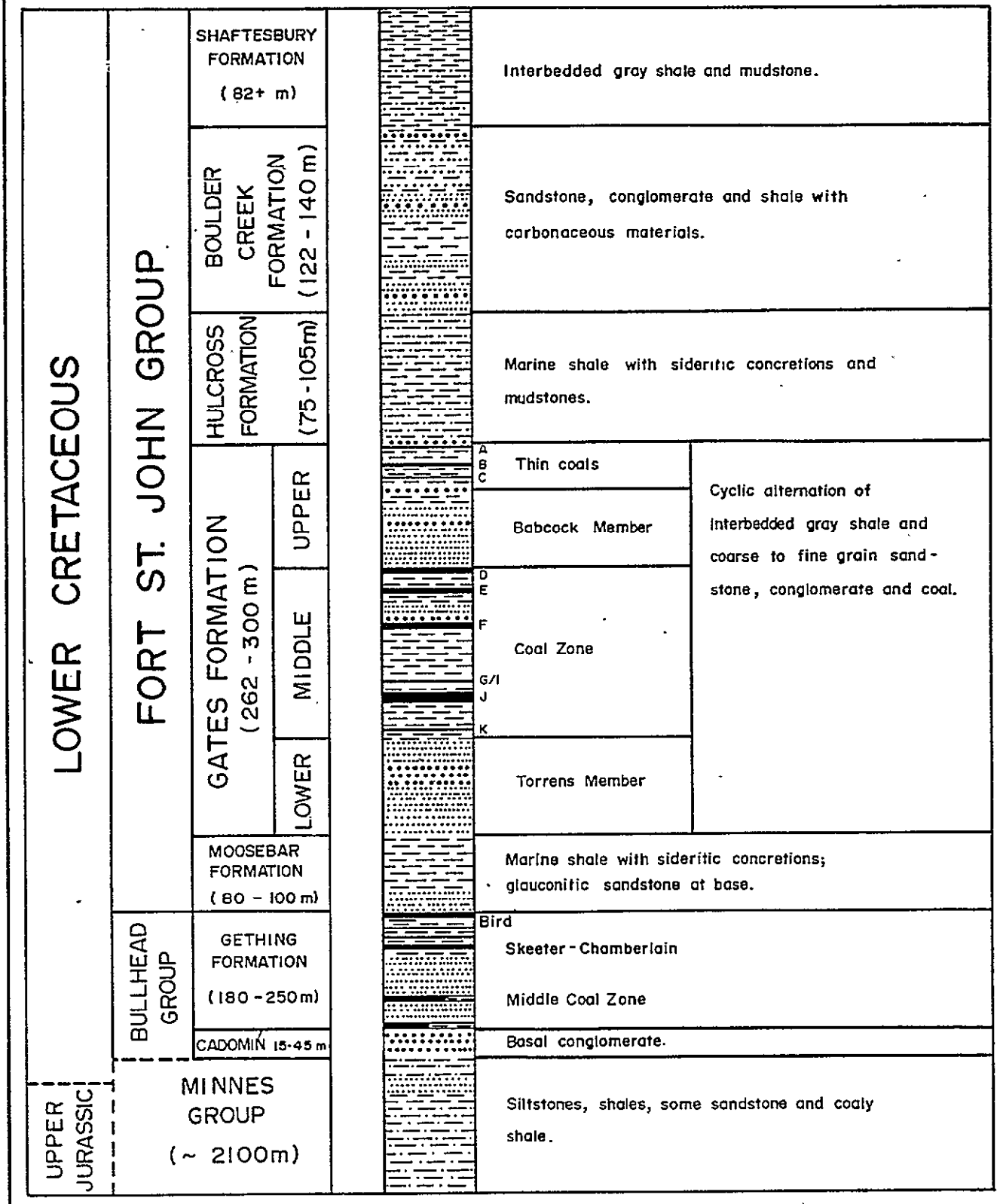
Note Data from: QWD7119, QPR82002 - 005

Table 3.7

PERRY CREEK
INTERSEAM THICKNESS AND LITHOLOGY

Interval	Thickness Range (m)	General Lithology
D3 seam to E2 seam	35 *	Channel sand & conglomerate with overlying carbonaceous shales and silty shales.
E2 seam to E3 seam	16 *	Shale and Silty shale with minor coal stringers Includes E2 coally zone.
E3 seam to E4 seam	7 *	Silty sands with interbedded shale. Includes E3 coally zone.
E4 seam to G1 seam	31 *	Thick channel sands and conglomerate overlying the carbonaceous F zone and silty shales.
G1 seam to J1/2 seams	8.4 - 16	Interbedded sand and shale.
J1/2 seams to J3 seam	1.3 - 1.9	Silty shale.

* from QWD7119

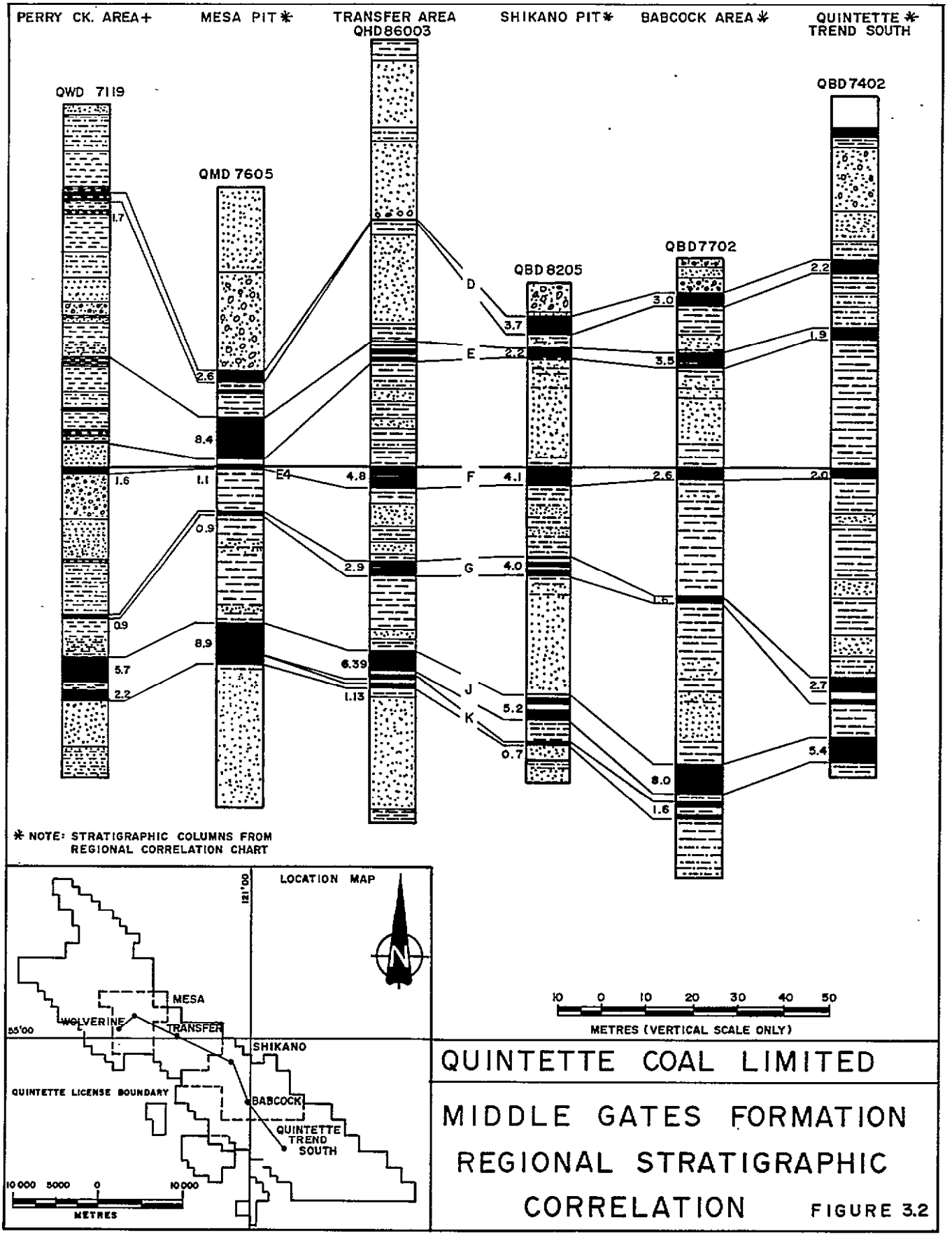


QUINTETTE COAL LIMITED

GENERAL STRATIGRAPHIC SECTION

(Updated April, 1988)

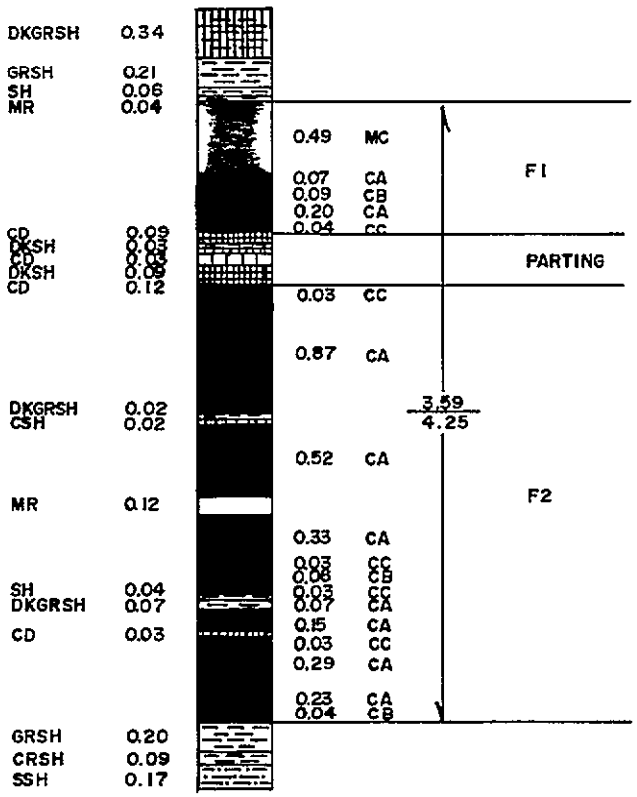
FIGURE 3.1



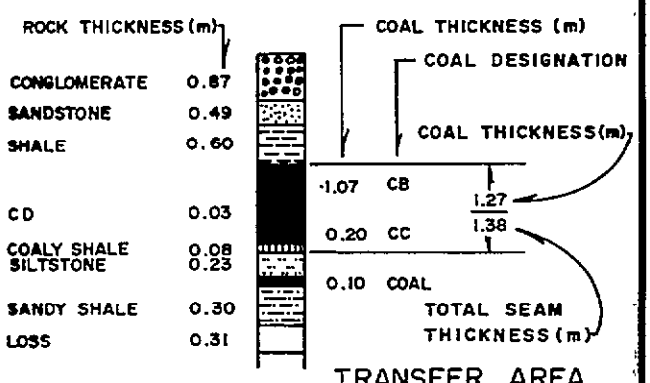
QUINTETTE COAL LIMITED

MIDDLE GATES FORMATION REGIONAL STRATIGRAPHIC CORRELATION

FIGURE 3.2



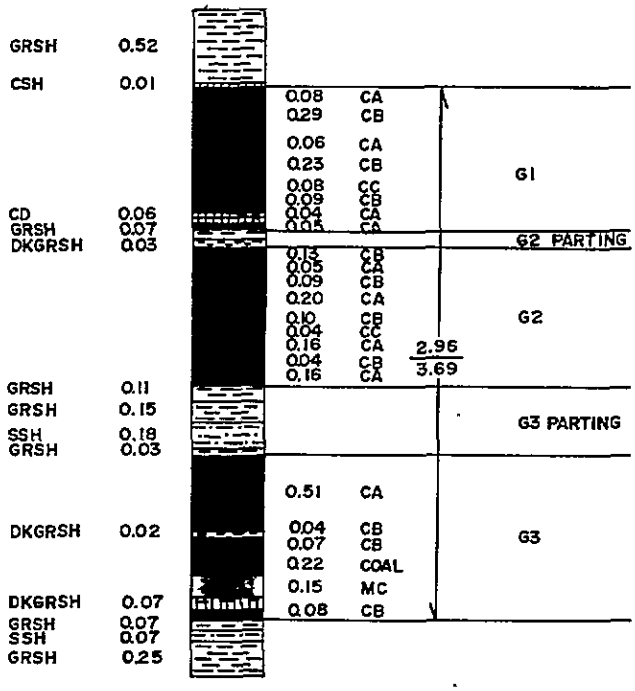
LEGEND



VERTICAL SCALE (metres)

Date: FEB 16, 1987	QUINTETTE COAL LIMITED	TYPICAL SECTION OF F SEAM	
Design: HTB		TAKEN FROM QHD 86008	
Drawn: KJV	Project Manager DENISON MINES LIMITED	FIGURE 3.3	Rev. 0
Scale:	COAL DIVISION		

BCIL 774.2 OCL



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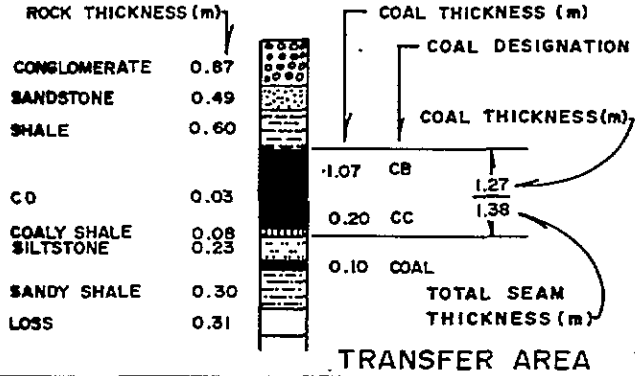
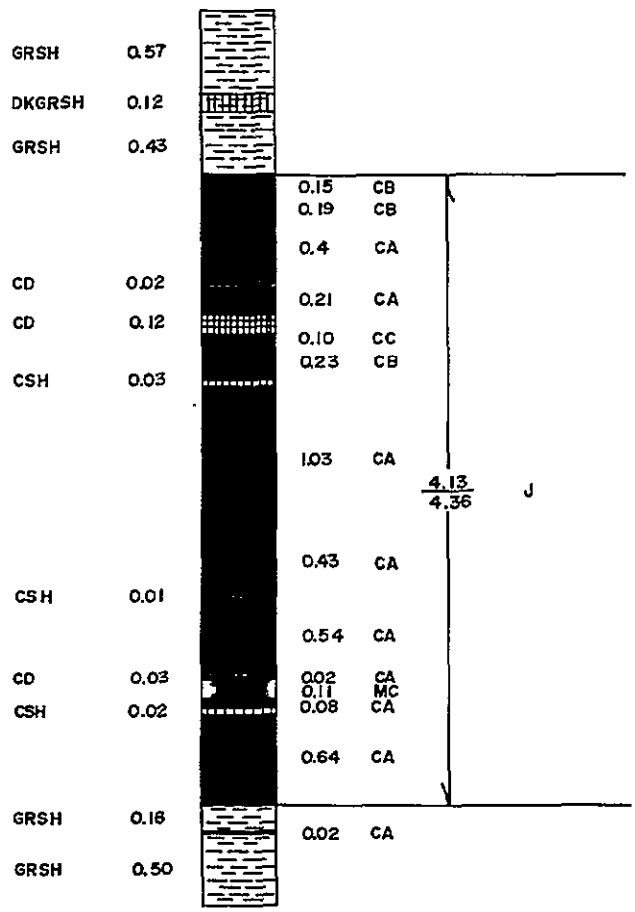


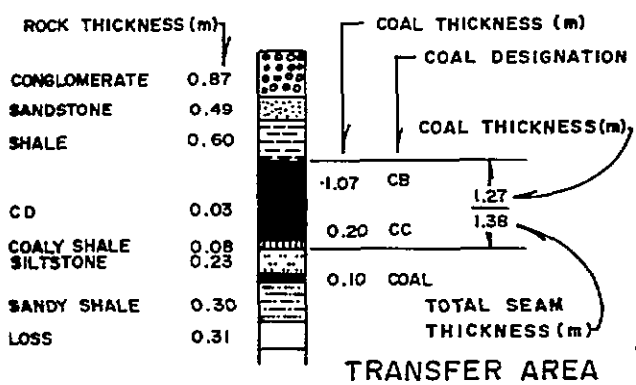
VERTICAL SCALE (metres)

Date: FEB 16, 1987	QUINTETTE COAL LIMITED	TYPICAL SECTION OF G SEAM TAKEN FROM QHD 86008
Design: HTB	Project Manager DENISON MINES LIMITED	
Drawn: KJV	COAL DIVISION	FIGURE 3.4 — Rev. 0
Scale:		

BCIL 774 2 OCL



LEGEND



Date:	FEB 16, 1987
Design:	HTB
Drawn:	KJV
Scale:	

QUINTETTE COAL LIMITED

Project Manager

DENISON MINES LIMITED

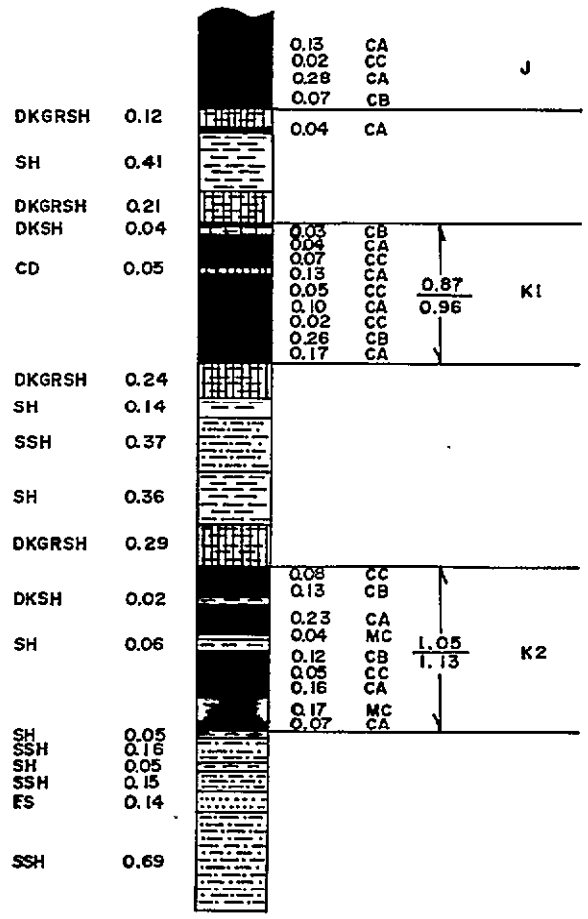
COAL DIVISION

TYPICAL SECTION OF J SEAM TAKEN FROM QHD 85002

FIGURE 3.5

Rev. 0

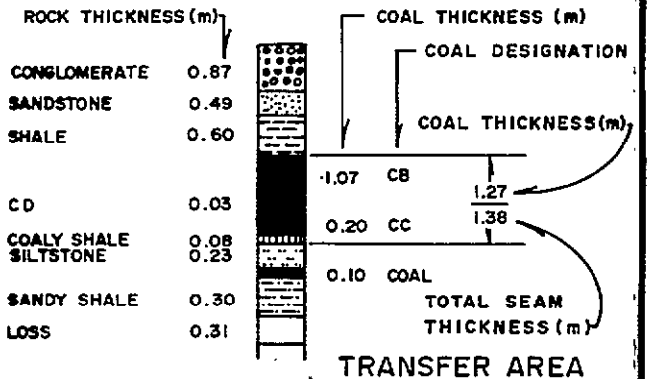
BCIL 7742 OCL



VERTICAL SCALE (metres)

1 0 1 2

LEGEND



Date:	FEB 16, 1987
Design:	HTB
Drawn:	KJV
Scale:	

QUINTETTE COAL LIMITED

Project Manager

DENISON MINES LIMITED

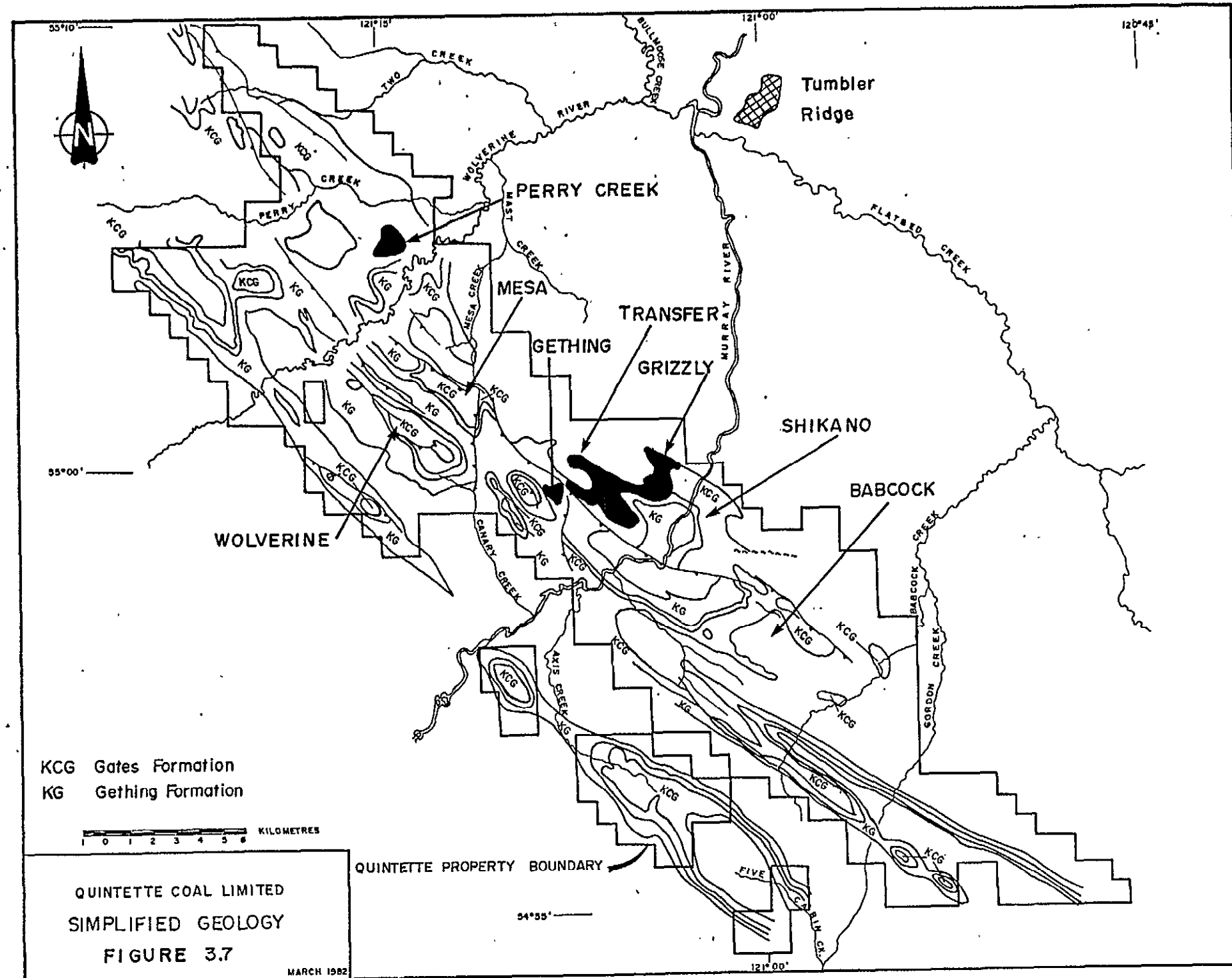
COAL DIVISION

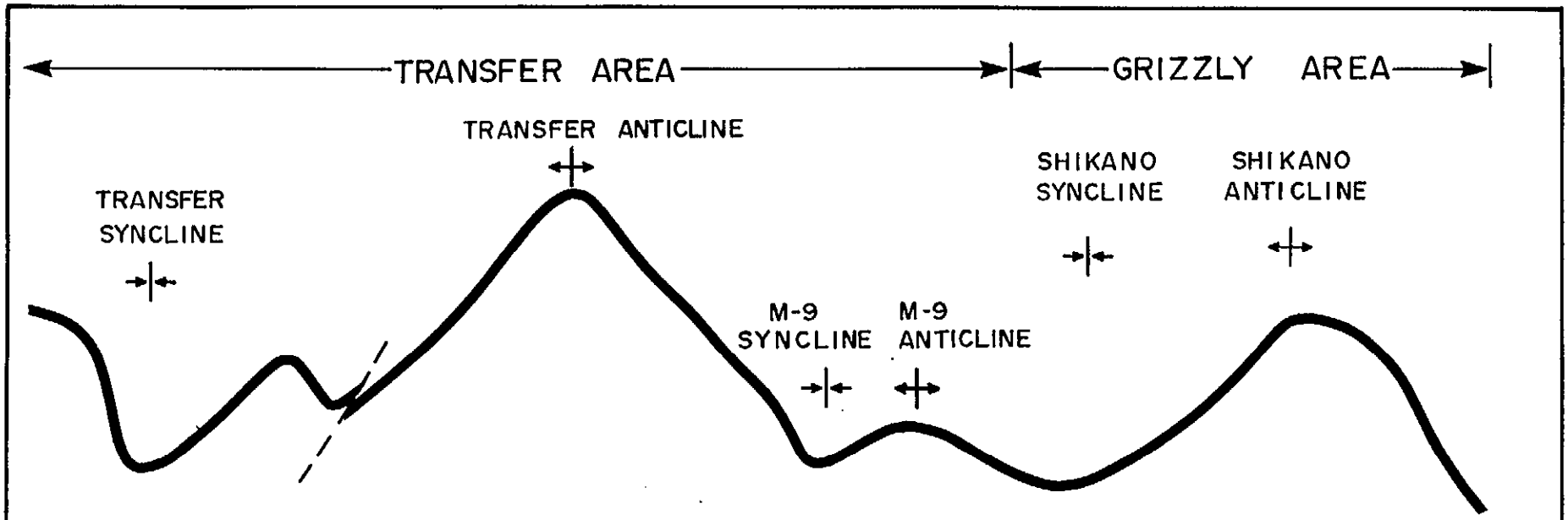
TYPICAL SECTION OF K SEAM TAKEN FROM QHD 86003

FIGURE 3.6

Rev. 0

BCIL 7742 OCL


Tumbler Ridge
PERRY CREEK
MESA
TRANSFER
GETHING
GRIZZLY
SHIKANO
BABCOCK
WOLVERINE
KCG Gates Formation
KG Gething Formation
KILOMETRES
QUINTETTE PROPERTY BOUNDARY
QUINTETTE COAL LIMITED
SIMPLIFIED GEOLOGY
FIGURE 3.7
MARCH 1982



Not to Scale

NOTE: Stylized Line Represents J Seam

TRANSFER/GRIZZLY STYLIZED SECTION

FIGURE 3.8

30500.0 30000.0 29500.0 29000.0 28500.0 28000.0 27500.0 27000.0 26500.0 26000.0 25500.0

23000.0 22000.0 21000.0 20000.0

621,000E 622,000E 623,000E 624,000E 625,000E

6,098,000N 6,097,000N 6,096,000N 6,095,000N 6,094,000N

U.T.M.

SHIKANO ANTICLINE

SHIKANO SYNCLINE

M-9 ANTICLINE

M-9 SYNCLINE

TRANSFER ANTICLINE

TRANSFER SYNCLINE

0 500 1000

METRES

TRANSFER/GRIZZLY TOP OF J SEAM STRUCTURE CONTOUR FIGURE 3.9

Appendix T.1

1987 Geological Report

Legal Description of Coal Licences

APPENDIX 1
LEGAL DESCRIPTION OF THE QUINTETTE COAL LICENCES

Licence No	Date Issued	Series	Block	Units	Paying Hectares
3633	May 27/75	93-P-3	C	63, 64, 73, 74	297
3632	May 27/75	93-P-3	C	47, 48, 57, 58	297
3631	May 27/75	93-P-3	C	25	75
3630	May 27/75	93-P-3	C	23, 33	149
3629	May 27/75	93-P-3	C	21, 22, 31, 32	298
3628	May 27/75	93-P-3	C	15	75
3627	May 27/75	93-P-3	C	3, 4, 13, 14	298
3626	May 27/75	93-P-3	C	11, 12	149
3618	May 27/75	93-P-3	B	3, 4, 13, 14	298
3606	Apr 29/75	93-P-3	F	25, 35	149
3605	Apr 29/75	93-P-3	F	23, 24, 33, 34	297
3604	Apr 29/75	93-P-3	F	21, 22, 31, 32	297
3603	Apr 29/75	93-P-3	F	5, 6, 15,16	297
3602	Apr 29/75	93-P-3	F	3, 4, 13, 14	297
3601	Apr 29/75	93-P-3	F	1, 2, 11, 12	297
3600	Apr 29/75	93-P-3	G	9, 10, 19, 20	297
3599	Apr 29/75	93-P-3	G	8, 18	149
3598	Apr 29/75	93-P-3	C	83, 84, 93, 94	297
3597	Apr 29/75	93-P-3	C	81, 82, 91, 92	297
3596	Apr 29/75	93-P-3	B	100	75
3595	Apr 29/75	93-P-3	B	87, 88, 97	223
3594	Apr 29/75	93-P-3	B	69, 79	149
3593	Apr 29/75	93-P-3	B	67, 68, 77, 78	297
3592	Apr 29/75	93-P-3	B	66, 76	149
3406	Feb 1/75	93-P-3	F	7, 17	149
3405	Feb 1/75	93-P-3	D	83, 84, 93, 94	297
3404	Feb 1/75	93-P-3	D	81, 82, 91, 92	297
3402	Feb 1/75	93-P-3	D	61, 71, 72	223
3401	Feb 1/75	93-P-3	C	89, 90, 99, 100	297
3400	Feb 1/75	93-P-3	C	87, 88, 97, 98	297
3399	Feb 1/75	93-P-3	C	85, 86, 95, 96	297
3398	Feb 1/75	93-P-3	C	69, 70, 79, 80	297
3397	Feb 1/75	93-P-3	C	67, 68, 77, 78	297
3396	Feb 1/75	93-P-3	C	65, 66, 75, 76	297
3395	Feb 1/75	93-P-3	C	49, 59, 60	223
3394	Nov 25/74	93-P-3	F	89, 99	149
3393	Nov 25/74	93-P-3	F	87, 88, 97, 98	296
3392	Nov 25/74	93-P-3	F	86	75

Licence No	Date Issued	Series	Block	Units	Paying Hectares
3391	Nov 25/74	93-P-3	F	67, 68, 77, 78	297
3390	Nov 25/74	93-P-3	F	65, 66, 75, 76	297
3389	Nov 25/74	93-P-3	F	63, 64, 74	223
3388	Nov 25/74	93-P-3	F	45, 46, 55, 56	297
3387	Nov 25/74	93-P-3	F	43, 44, 53, 54	297
3386	Nov 25/74	93-P-3	F	41, 42, 51, 52	297
3385	Nov 25/74	93-P-3	G	50	75
3384	Nov 25/74	93-P-3	G	29, 30 39, 40	297
3383	Nov 25/74	93-P-3	G	27, 28	149
3382	Nov 25/74	93-P-3	B	86, 95, 96	223
3381	Nov 25/74	93-P-3	C	71, 72	149
3380	Nov 25/74	93-I-14	J	51, 52	149
3374	Nov 25/74	93-I-15	E	85, 86, 95, 96	298
3373	Nov 25/74	93-I-15	E	83, 84, 93, 94	298
3371	Nov 25/74	93-I-15	E	63, 64, 73, 74	298
3369	Nov 25/74	93-I-15	D	90, 100	150
3367	Nov 25/74	93-I-14	G	83, 84, 93, 94	298
3366	Nov 25/74	93-I-14	A	81, 82, 91, 92	299
3364	Oct 16/74	93-I-15	E	9, 10, 19, 20	299
3362	Oct 16/74	93-I-14	J	5, 15	149
3361	Oct 16/74	93-I-14	J	3, 4, 13, 14	298
3360	Oct 16/74	93-I-14	H	69, 70, 79, 80	298
3359	Oct 16/74	93-I-14	H	67, 68, 77, 78	298
3358	Oct 16/74	93-I-14	H	65, 66	149
3357	Oct 16/74	93-I-14	H	49, 59, 60	224
3356	Oct 16/74	93-I-14	H	47, 48, 57,58	298
3355	Oct 16/74	93-I-14	H	45, 46, 55, 56	298
3354	Oct 16/74	93-I-14	H	43, 44, 53, 54	298
3353	Oct 16/74	93-I-14	H	37, 38	149
3352	Oct 16/74	93-I-14	H	25, 26, 35, 36	299
3351	Oct 16/74	93-I-14	K	83, 93, 94	223
3350	Oct 16/74	93-I-14	K	81, 82, 92	223
3349	Oct 16/74	93-I-14	K	71	75
3346	Oct 16/74	93-I-14	J	83, 84, 93, 94	298
3345	Oct 16/74	93-I-14	J	69, 70, 79, 80	298
3344	Oct 16/74	93-I-14	J	63, 73, 74	223
3343	Oct 16/74	93-I-14	J	61, 62, 71, 72	298
3341	Oct 16/74	93-I-14	I	89, 99	149
3340	Oct 16/74	93-I-14	I	87, 88, 98	223
3339	Oct 16/74	93-I-14	I	85, 86, 95	223
3336	Oct 16/74	93-I-14	I	69, 70, 79, 80	298
3335	Oct 16/74	93-I-14	I	67, 68, 77, 78	298
3326	Oct 16/74	93-I-14	I	29, 30, 39, 40	298

Licence No	Date Issued	Series	Block	Units	Paying Hectares
3325	Oct 16/74	93-I-14	I	27, 28, 37, 38	298
3324	Oct 16/74	93-I-14	I	25, 26, 35, 36	298
3320	Oct 16/74	93-I-14	I	7, 8, 17, 18	298
3319	Oct 16/74	93-I-14	I	5, 6, 15, 16	298
3316	Oct 16/74	93-I-14	H	85, 86, 95, 96	298
3315	Oct 16/74	93-I-14	H	83, 84, 93, 94	298
3314	Oct 16/74	93-I-14	H	81, 82, 91, 92	298
3313	Oct 16/74	93-I-14	H	73	75
3312	Oct 16/74	93-I-14	H	61, 62, 71, 72	298
3304	Oct 16/74	93-I-15	E	89, 90, 99, 100	298
3303	Oct 16/74	93-I-15	E	87, 88, 97, 98	298
3302	oct 16/74	93-I-15	E	69, 70, 79, 80	298
3301	Oct 16/74	93-I-15	E	67, 68, 77, 78	298
3300	Oct 16/74	93-I-15	E	65, 66, 75, 76	298
3299	Oct 16/74	93-I-15	E	59, 60	149
3298	Oct 16/74	93-I-15	E	47, 48, 57, 58	298
3297	Oct 16/74	93-I-15	E	45, 46,55, 56	298
3296	Oct 16/74	93-I-15	E	43, 44, 53, 54	298
3295	Oct 16/74	93-I-15	E	41, 42, 51, 52	298
3293	Oct 16/74	93-I-15	E	25, 26, 35, 36	299
3292	Oct 16/74	93-I-15	E	23, 24, 33, 34	299
3291	Oct 16/74	93-I-15	E	21, 22, 31, 32	299
3290	Oct 16/74	93-I-15	E	3, 4, 13, 14	299
3289	Oct 16/74	93-I-15	E	1, 2, 11, 12	299
3288	Oct 16/74	93-I-15	F	49, 50, 59, 60	298
3287	Oct 16/74	93-I-15	F	48	75
3286	Oct 16/74	93-I-15	F	29, 30, 39, 40	299
3285	Oct 16/74	93-I-15	F	27, 28, 37, 38	299
3284	Oct 16/74	93-I-15	F	25, 26	150
3282	Oct 16/74	93-I-15	F	7, 8, 17, 18	299
3281	Oct 16/74	93-I-15	F	5, 6, 15, 16	299
3280	Oct 16/74	93-I-15	F	3, 4, 13, 14	299
3279	Oct 16/74	93-I-15	F	2	75
3662	Sep 27/76	93-I-14	J	81, 82, 91, 92	298
3661	Sep 27/76	93-I-14	I	90, 100	149
3660	Sep 17/76	93-P-3	B	1, 2, 11,12	298
4532	Jan 15/79	93-P-3	B	70, 80	149
4533	Jan 15/79	93-P-3	B	98	75
4534	Jan 15/79	93-P-3	B	89, 90, 99	223
4535	Jan 15/79	93-P-3	C	1, 2	149
4537	Jan 15/79	93-P-3	C	26, 35, 36	223

Licence No	Date Issued	Series	Block	Units	Paying Hectares
4538	Jan 15/79	93-P-3	C	27, 28, 37, 38	297
4540	Jan 15/79	93-P-3	C	43, 44, 53, 54	297
4541	Jan 15/79	93-P-3	C	45, 46, 55, 56	297
4542	Jan 15/79	93-P-3	C	61, 62	149
4544	Jan 15/79	93-I-14	K	91	75
7845	Aug /84	93-I-14	I	96	75
7846	Aug /84	93-I-14	I	97	75
7847	Aug /84	93-P-3	S	5, 6, 15, 16	300
7848	Aug /84	93-P-3	A	7, 8, 17, 18	300
7849	Aug /84	93-P-3	A	9, 10, 19, 20	300
7850	Aug /84	93-P-3	B	21, 22, 31, 32	300
7851	Aug /84	93-P-3	B	43, 44, 53, 54	300
7852	Aug /84	93-P-3	B	65, 75	150
7853	Aug /84	93-P-3	B	85	75
				Total hectares	33,001

Appendix T.2

1987 Geological Report

Drill Hole Summaries

Appendix T.2.1

Rotary Drill Holes

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR84017	877.05	6095367.5500	624352.7310	128.00	OVER	0.00	4.50	0.00	128.00	51.70	90.00
					F1	44.72	45.16				
					F2P	45.16	45.41				
					F2	45.41	50.02				
					F	44.72	50.02				
					G1	71.99	-1.00				
					G2P	-1.00	-1.00				
					G2	-1.00	74.52				
					G12	71.99	74.52				
					G3P	74.52	75.14				
					G3	75.14	76.68				
					G	71.99	76.68				
					J	98.49	104.27				
					K1P	104.27	105.48				
					K1	105.48	107.56				
					K2P	107.56	110.75				
					K2	110.75	111.66				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR84018	857.66	6095285.3300	623971.7990	238.30	OVER	0.00	5.80	0.00	238.30	282.50	85.90
					COAL	19.94	20.87				
					COAL	78.40	79.83				
					COAL	114.50	115.04				
					COAL	115.29	115.64				
					COAL	115.92	116.13				
					F	142.80	145.35				
					FAULT	145.35	145.35				
					F	145.35	149.54				
					G1	187.50	188.43				
					G2P	188.43	188.77				
					G2	188.77	189.61				
					G12	187.50	189.61				
					G3P	189.61	190.00				
					G3	190.00	191.47				
					G	187.50	191.47				
					J	208.60	214.96				
					K1P	214.96	215.85				
					K1	215.85	217.18				
					K2P	217.18	222.80				
					K2	222.80	223.83				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR84027	860.26	6095326.5300	623962.4200	32.00	OVER	0.00	8.50	0.00	32.00	51.70	90.00
					COAL	29.00	30.50				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR84028	879.24	6095484.3600	624054.2890	198.00	OVER	0.00	3.00	0.00	150.00	129.70	85.37
					COAL	59.62	61.21	150.00	170.00	149.20	75.52
					COAL	61.60	62.31	170.00	198.00	162.00	72.86
					COAL	93.93	94.69				
					COAL	94.90	95.48				
					COAL	95.66	95.84				
					F1	118.93	119.33				
					F2P	119.33	119.76				
					F2	119.76	123.46				
					F	118.93	123.46				
					G1	-1.00	-1.00				
					G2P	-1.00	-1.00				
					G2	-1.00	-1.00				
					G12	144.08	146.12				
					G3P	146.12	146.80				
					G3	146.80	148.18				
					G	144.08	148.18				
					J	164.22	168.35				
					K1P	168.35	170.38				
					K1	170.38	171.72				
					FAULT	171.12	171.12				
					K1	171.89	173.09				
					K2P	173.09	179.44				
					K2	179.44	179.99				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHRB4029	861.39	6095305.8000	623944.9000	54.00	OVER	0.00	8.00	0.00	54.00	51.70	90.00
					COAL	21.65	22.50				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR84030	860.26	6095326.5300	623960.4200	36.00	OVER	0.00	8.00	0.00	36.00	51.70	90.00
					COAL	29.45	30.35				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87001	848.18	6096302.7600	624678.7200	189.60	OVER	0.00	6.00	0.00	10.00	260.72	60.28
					D1	72.60	73.60	10.00	20.00	261.42	59.24
					D2P	73.60	74.00	20.00	30.00	256.80	57.57
					D2	74.00	74.90	30.00	40.00	255.99	57.48
					D	72.60	74.90	40.00	50.00	259.99	56.93
					E1	88.70	88.90	50.00	60.00	261.60	56.89
					E2P	88.90	90.30	60.00	70.00	261.86	55.52
					E2	90.30	92.20	70.00	80.00	260.69	54.53
					E3P	92.20	92.80	80.00	90.00	260.17	54.65
					E3	92.80	95.00	90.00	100.00	257.68	53.93
					E	88.70	95.00	100.00	110.00	257.78	53.54
					F1	114.40	115.00	110.00	120.00	258.25	52.77
					F2P	115.00	115.30	120.00	130.00	258.86	52.44
					F2	115.30	118.50	130.00	140.00	260.29	52.33
					F	114.40	118.50	140.00	150.00	261.82	52.04
					FL	118.50	118.50	150.00	160.00	266.05	51.39
					GCGL	131.00	152.50	160.00	170.00	264.52	52.07
					G1	152.50	152.80	170.00	180.00	268.44	50.92
					G2P	152.80	153.00	180.00	189.60	268.44	50.92
					G2	153.00	154.10				
					G3P	154.10	154.90				
					G3	154.90	156.20				
					G	152.50	156.20				
					J	171.80	177.00				
					K1P	177.00	177.70				
					K1	177.70	179.70				
					K2P	179.70	184.30				
					K2	184.30	185.00				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87002	879.90	6096356.1500	624465.2600	156.30	OVER	0.00	5.00	0.00	5.00	260.98	63.64
					D1	19.80	22.30	5.00	10.00	261.61	64.03
					D2P	22.30	23.00	10.00	15.00	261.30	63.98
					D2	23.00	23.80	15.00	20.00	262.31	63.52
					D	19.80	23.80	20.00	25.00	265.08	64.32
					E2	45.60	45.90	25.00	30.00	262.92	63.77
					E	45.60	45.90	30.00	35.00	260.21	63.45
					F1	70.50	71.10	35.00	40.00	263.08	62.61
					F2P	71.10	71.60	40.00	45.00	261.88	62.51
					F2	71.60	75.80	45.00	50.00	262.13	62.30
					F	70.50	75.80	50.00	55.00	261.68	62.84
					FL	75.80	75.80	55.00	159.30	261.68	62.84
					GCGL	85.00	112.20				
					G1	112.20	112.50				
					G2P	112.50	112.60				
					G2	112.60	113.60				
					G3P	113.60	114.70				
					G3	114.70	115.90				
					G	112.20	115.90				
					J	134.00	138.90				
					K1P	138.90	140.20				
					K1	140.20	141.10				
					K2P	141.10	145.30				
					K2	145.30	145.70				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87003	895.45	6096422.3500	624278.6900	140.00	OVER	0.00	5.00	0.00	5.00	261.79	59.87
					E3	12.48	14.55	5.00	10.00	264.53	60.64
					E3	14.00	14.55	10.00	140.00	264.53	60.64
					E	12.48	14.55				
					F1	37.78	38.78				
					F2P	38.78	39.17				
					F2	39.17	42.50				
					F	37.78	42.50				
					FL	42.50	42.50				
					GCGL	48.50	82.18				
					G2	82.18	83.10				
					G3P	83.10	84.10				
					G3	84.10	85.36				
					G	82.18	85.36				
					J	102.22	106.92				
					K1P	106.92	107.71				
					K1	107.71	109.26				
					K2P	109.26	113.64				
					K2	113.64	114.34				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87004	931.67	6096486.6500	624117.6000	121.80	OVER	0.00	3.00	0.00	10.00	270.55	58.89
					E3	13.29	15.44	10.00	20.00	270.84	59.60
					E	13.29	15.44	20.00	30.00	269.84	58.76
					F1	37.39	38.23	30.00	40.00	267.33	58.05
					F2P	38.23	38.50	40.00	50.00	268.68	57.81
					F2	38.50	41.60	50.00	60.00	266.21	56.93
					F	37.39	41.60	60.00	70.00	269.25	57.37
					FL	41.60	42.10	70.00	80.00	269.39	57.22
					GCGL	48.90	78.80	80.00	90.00	269.26	56.82
					G1	78.80	79.10	90.00	100.00	269.79	57.01
					G2P	79.10	79.36	100.00	110.00	271.56	56.66
					G2	79.36	80.44	110.00	120.00	277.31	56.05
					G3P	80.44	80.84	120.00	121.80	277.31	56.05
					G3	80.84	82.43				
					G	78.80	82.43				
					J	102.12	107.04				
					K1P	107.04	107.72				
					K1	107.72	109.10				
					K2P	109.10	113.16				
					K2	113.16	113.83				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87005	985.67	6096582.5400	623827.8900	117.50	OVER	0.00	5.00	0.00	10.00	260.05	63.33
					F1	28.97	29.78	10.00	20.00	263.46	62.91
					F2P	29.78	29.96	20.00	30.00	265.37	61.03
					F2	29.96	32.98	30.00	40.00	266.85	60.03
					F	28.97	32.98	40.00	50.00	265.33	61.05
					FL	32.98	33.54	50.00	60.00	265.25	61.59
					GCGL	40.70	78.61	60.00	70.00	268.46	61.93
					G2P	78.61	78.77	70.00	80.00	263.33	62.12
					G2	78.77	79.63	80.00	90.00	265.39	61.86
					G3P	79.63	80.51	90.00	100.00	267.87	61.19
					G3	80.51	81.95	100.00	110.00	265.82	60.79
					G	78.77	81.95	110.00	117.50	265.82	60.79
					J	97.51	102.47				
					K1P	102.47	103.36				
					K1	103.36	104.94				
					K2P	104.94	108.77				
					K2	108.77	109.09				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87006	1057.87	6096741.6800	623311.9200	182.00	OVER	0.00	5.00				
					E2	2.50	3.30				
					E3P	3.30	11.80				
					E3	11.80	12.50				
					F1	44.30	45.20				
					F2P	45.20	45.60				
					F2	45.60	50.50				
					F	44.30	50.50				
					FL	50.50	51.50				
					GCGL	61.60	128.10				
					G2P	128.10	128.60				
					G2	128.60	129.80				
					G3P	129.80	130.90				
					G3	130.90	133.10				
					G	128.60	133.10				
					J	157.50	165.20				
					K1P	165.20	166.40				
					K1	166.40	169.00				
					K2P	169.00	174.80				
					K2	174.80	176.00				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87007	1117.65	6096526.6900	623136.8700	170.20	OVER	0.00	2.00	0.00	10.00	272.86	88.96
					D1	7.20	7.70	10.00	20.00	108.67	87.18
					D2P	7.70	8.20	20.00	30.00	133.88	85.55
					D2	8.20	8.70	30.00	40.00	139.52	85.54
					D	7.20	8.70	40.00	50.00	147.81	84.14
					E3	32.00	39.20	50.00	60.00	139.12	82.64
					E	32.00	39.20	60.00	70.00	129.66	80.38
					F1	81.64	82.44	70.00	80.00	126.27	79.76
					F2P	82.44	82.75	80.00	90.00	115.78	78.86
					F2	82.75	85.46	90.00	100.00	116.49	77.65
					F	81.64	85.46	100.00	110.00	123.51	77.72
					FL	85.46	86.37	110.00	120.00	125.51	77.10
					GCGL	94.00	134.44	120.00	130.00	125.32	76.59
					G1	134.44	134.74	130.00	140.00	128.68	75.80
					G2P	134.74	135.00	140.00	150.00	131.32	75.91
					G2	135.00	135.77	150.00	160.00	135.20	76.30
					G3P	135.77	135.91	160.00	170.00	150.90	78.50
					G3	135.91	137.34	170.00	170.20	150.90	78.50
					G	134.44	137.34				
					J	153.91	159.44				
					K1P	159.44	159.93				
					K1	159.93	162.03				
					K2P	162.03	164.13				
					K2	164.13	165.04				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87008	1107.99	6096594.0400	623196.4000	107.30	OVER	0.00	5.00				
					F1	21.00	21.50				
					F2P	21.50	21.80				
					F2	21.80	24.60				
					F	21.00	24.60				
					FL	24.60	25.50				
					GCGL	31.60	65.10				
					G1	65.60	66.20				
					G2P	66.20	67.00				
					G2	67.00	68.50				
					G3P	68.50	69.10				
					G3	69.10	70.10				
					G	65.60	70.10				
					J	85.10	89.90				
					K1P	89.90	90.80				
					K1	90.80	92.10				
					K2P	92.10	95.20				
					K2	95.20	96.10				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87009	1108.97	6096471.1600	623293.4400	132.30	OVER	0.00	3.00	0.00	10.00	140.54	88.83
					F2P	20.76	21.16	10.00	20.00	196.94	89.18
					F2	21.16	24.57	20.00	30.00	144.46	87.78
					F	19.88	24.57	30.00	40.00	119.93	87.33
					FL	24.57	25.48	40.00	50.00	121.17	86.19
					GCGL	33.20	82.00	50.00	60.00	129.87	85.36
					G2P	82.00	82.34	60.00	70.00	127.47	84.70
					G2	82.34	83.49	70.00	80.00	126.45	84.35
					G3P	83.49	84.02	80.00	90.00	127.27	83.63
					G3	84.02	85.60	90.00	100.00	129.39	83.33
					G	82.34	85.60	100.00	110.00	126.40	83.40
					J	103.39	108.83	110.00	120.00	123.28	82.51
					K1P	108.83	109.32	120.00	130.00	122.43	82.15
					K1	109.32	110.99	130.00	132.30	122.43	82.15
					K2P	110.99	114.62				
					K2	114.62	115.61				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87010	1109.67	6096347.6300	623296.4300	164.40	OVER	0.00	3.00	0.00	10.00	92.75	61.56
					D1	32.00	32.90	10.00	164.40	92.75	61.56
					D2P	32.90	33.40				
					D2	33.40	33.90				
					D	32.00	33.90				
					E3	66.80	67.20				
					E	66.80	67.20				
					F1	87.50	87.90				
					F2P	87.90	88.30				
					F2	88.30	90.50				
					F	87.50	90.50				
					FL	90.50	90.50				
					GCGL	98.40	125.90				
					G1	125.90	126.20				
					G2P	126.20	126.60				
					G2	126.60	127.20				
					G3P	127.20	127.80				
					G3	127.80	128.80				
					G	125.90	128.80				
					J	143.80	149.40				
					K1P	149.40	150.30				
					K1	150.30	151.70				
					K2P	151.70	154.30				
					K2	154.30	155.00				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87011	1107.81	6096681.6700	623132.3700	121.50	OVER	0.00	3.00	0.00	5.00	202.69	88.96
					F1	39.30	39.80	5.00	10.00	46.85	88.83
					F2P	39.80	40.10	10.00	15.00	40.96	87.91
					F2	40.10	42.80	15.00	20.00	2.98	88.01
					F	39.30	42.80	20.00	25.00	149.31	89.63
					FL	42.80	42.80	25.00	121.50	149.31	89.63
					GCGL	49.60	81.50				
					G1	81.50	81.70				
					G2P	81.70	81.90				
					G2	81.90	82.70				
					G3P	82.70	83.10				
					G3	83.10	84.10				
					G	81.50	84.10				
					J	100.70	106.10				
					K1P	106.10	106.80				
					K1	106.80	108.40				
					K2P	108.40	110.90				
					K2	110.90	111.40				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87012	1116.81	6096590.3700	623063.5400	183.30	OVER	0.00	2.00	0.00	10.00	310.00	88.15
					D1	22.30	23.06	10.00	20.00	250.02	89.48
					D2P	23.06	23.17	20.00	30.00	43.55	88.67
					D2	23.17	23.96	30.00	40.00	115.34	88.83
					D	22.30	23.96	40.00	50.00	130.98	88.12
					F1	97.09	97.80	50.00	60.00	158.55	88.83
					F2P	97.80	97.99	60.00	70.00	151.17	88.12
					F2	97.99	101.73	70.00	80.00	144.50	85.91
					F	97.09	101.73	80.00	90.00	135.53	84.81
					FL	101.73	102.87	90.00	100.00	129.55	83.54
					GCGL	109.20	147.58	100.00	110.00	127.89	82.96
					G1	147.58	147.69	110.00	120.00	126.57	81.11
					G2P	147.69	147.97	120.00	130.00	127.26	80.01
					G2	147.97	148.88	130.00	140.00	126.60	79.24
					G3P	148.88	149.08	140.00	150.00	128.81	78.87
					G3	149.08	150.81	150.00	160.00	129.37	77.73
					G	147.58	150.81	160.00	170.00	132.49	77.04
					J	166.44	170.82	170.00	180.00	132.25	76.30
					K1P	170.82	171.24	180.00	183.30	132.25	76.30
					K1	171.24	172.28				
					K2P	172.28	174.44				
					K2	174.44	175.25				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH des	DIP des
QHR87013	1041.15	6096728.4800	623477.3100	143.70	OVER	0.00	3.00	0.00	10.00	262.91	59.64
					F1	56.30	57.08	10.00	20.00	262.68	60.10
					F2P	57.08	57.34	20.00	30.00	262.34	59.73
					F2	57.34	60.33	30.00	40.00	263.98	60.09
					F	56.30	60.33	40.00	50.00	262.60	60.25
					FL	60.33	61.04	50.00	60.00	261.65	59.56
					GCGL	68.10	103.68	60.00	70.00	263.14	58.32
					G1	103.68	103.99	70.00	80.00	262.76	58.81
					G2P	103.99	104.22	80.00	90.00	260.87	59.11
					G2	104.22	105.11	90.00	100.00	260.88	59.20
					G3P	105.11	105.64	100.00	110.00	261.54	59.42
					G3	105.64	107.07	110.00	120.00	260.77	58.97
					G	103.68	107.07	120.00	130.00	258.00	58.19
					J	123.84	128.74	130.00	140.00	260.79	57.64
					K1P	128.74	129.23	140.00	143.70	260.79	57.64
					K1	129.23	131.01				
					K2P	131.01	134.25				
					K2	134.25	134.98				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87014	1076.90	6096773.6500	623194.3000	207.40	OVER	0.00	3.00				
					E3	34.90	35.20				
					E	34.90	35.20				
					F1	67.50	68.50				
					F2P	68.50	69.10				
					F2	69.10	74.00				
					F	67.50	74.00				
					FL	74.00	74.80				
					GCGL	85.00	148.70				
					G1	148.70	149.20				
					G2P	149.20	149.60				
					G2	149.60	150.90				
					G3P	150.90	152.60				
					G3	152.60	154.60				
					G	148.70	154.60				
					J	181.60	190.10				
					K1P	190.10	191.00				
					K1	191.00	193.70				
					K2P	193.70	198.30				
					K2	198.30	199.50				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87015	1079.99	6096508.6200	623456.4900	56.70	GCGL	0.00	7.70	0.00	5.00	180.40	88.83
					G2	7.70	9.70	5.00	10.00	87.40	88.48
					G3P	9.70	10.80	10.00	15.00	43.24	89.18
					G3	10.80	12.10	15.00	20.00	129.33	89.18
					G	7.70	12.10	20.00	25.00	135.13	88.96
					J	26.10	31.14	25.00	30.00	71.30	88.96
					K1P	31.14	32.19	30.00	35.00	182.46	89.63
					K1	32.19	33.44	35.00	40.00	126.11	88.52
					K2P	33.44	36.47	40.00	45.00	249.21	86.65
					K2	36.47	37.20	45.00	56.70	249.21	86.65

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
BHR87016	1071.99	6096078.3600	623627.5500	146.60	OVER	0.00	4.00	0.00	10.00	87.38	63.29
					D1	9.39	10.83	10.00	20.00	85.95	62.22
					D	9.39	10.83	20.00	30.00	86.83	60.74
					F1	69.83	70.57	30.00	40.00	87.64	59.61
					F2P	70.57	70.75	40.00	50.00	89.05	59.17
					F2	70.75	73.86	50.00	60.00	87.21	59.60
					F	69.83	73.86	60.00	70.00	87.28	59.20
					FL	73.86	74.50	70.00	80.00	88.06	58.78
					GCGL	83.30	108.07	80.00	90.00	90.55	58.75
					G1	108.07	108.23	90.00	100.00	94.74	58.75
					G2P	108.23	108.68	100.00	110.00	92.74	57.56
					G2	108.68	109.44	110.00	120.00	94.20	56.38
					G3P	109.44	109.94	120.00	130.00	97.43	55.22
					G3	109.94	111.00	130.00	140.00	95.40	54.20
					G	108.07	111.00	140.00	146.60	95.40	54.20
					J	126.15	130.59				
					K1P	130.59	131.30				
					K1	131.30	132.58				
					K2P	132.58	136.24				
					K2	136.24	136.97				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87017	1014.93	6095936.6500	623801.6600	164.80	OVER	0.00	3.00	0.00	10.00	78.98	89.63
					E3	44.09	46.63	10.00	20.00	219.65	89.18
					E4P	46.63	49.51	20.00	30.00	83.41	89.18
					E4	49.51	50.11	30.00	40.00	181.19	89.18
					E	44.09	50.11	40.00	50.00	139.74	89.18
					F1	73.34	74.31	50.00	60.00	150.77	88.96
					F2P	74.31	74.66	60.00	70.00	155.06	87.02
					F2	74.66	78.50	70.00	80.00	152.47	87.18
					F	73.34	78.50	80.00	90.00	145.69	86.84
					FL	78.50	78.50	90.00	100.00	146.48	86.23
					GCGL	94.70	110.30	100.00	110.00	139.87	85.91
					G1	110.30	110.70	110.00	120.00	138.44	84.15
					G2P	110.70	116.73	120.00	130.00	138.84	83.54
					G2	116.73	117.85	130.00	140.00	139.61	82.50
					G3P	117.85	118.51	140.00	150.00	152.47	80.98
					G3	118.51	120.06	150.00	160.00	153.67	80.38
					G	116.43	120.06	160.00	164.80	153.67	80.38
					J	137.65	142.72				
					K1P	142.72	144.24				
					K1	144.24	145.44				
					K2P	145.44	150.01				
					K2	150.01	150.84				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87018	978.03	6095705.4000	624093.4800	123.00	OVER	0.00	2.00	0.00	10.00	95.02	63.99
					E3	21.80	24.10	10.00	20.00	100.27	64.66
					E	21.80	24.10	20.00	30.00	101.91	64.32
					F101	47.08	47.99	30.00	40.00	104.14	64.54
					F2P01	47.99	48.21	40.00	50.00	102.16	64.52
					F201	48.21	50.20	50.00	60.00	106.01	62.72
					F01	47.08	50.20	60.00	70.00	105.97	60.64
					FAULT	49.65	0.00	70.00	80.00	106.28	58.71
					F1	50.43	51.09	80.00	90.00	108.91	58.92
					F2P	51.09	51.41	90.00	100.00	108.01	58.92
					F2	51.41	55.04	100.00	110.00	107.05	58.82
					F	50.43	55.04	110.00	120.00	108.57	57.10
					FL	55.04	55.78	120.00	123.00	108.57	57.10
					GCGL	74.25	74.25				
					G1	74.25	74.86				
					G2P	74.86	74.99				
					G2	74.99	76.31				
					G3P	76.31	77.04				
					G3	77.04	78.25				
					G	74.25	78.25				
					J	93.61	97.83				
					K1P	97.83	98.46				
					K1	98.46	99.80				
					K2P	99.80	104.42				
					K2	104.42	105.17				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87019	916.10	6095531.2600	624218.7000	110.70	OVER	0.00	4.00	0.00	10.00	96.16	61.93
					E3	17.10	18.30	10.00	20.00	101.03	62.30
					E	17.10	18.30	20.00	30.00	102.28	63.16
					F1	40.73	41.10	30.00	40.00	102.62	62.34
					F2P	41.10	41.41	40.00	50.00	102.15	62.34
					F2	41.41	44.87	50.00	60.00	102.64	61.90
					F	40.73	44.87	60.00	70.00	101.50	60.79
					FL	44.87	45.63	70.00	80.00	102.38	60.74
					GCGL	63.68	63.68	80.00	90.00	102.38	60.74
					G1	63.68	64.64	90.00	100.00	103.00	60.42
					G2P	64.64	64.86	100.00	110.70	92.80	57.26
					G2	64.86	65.72				
					G3P	65.72	66.34				
					G3	66.34	67.60				
					G	63.68	67.60				
					J	85.09	89.32				
					K1P	89.32	89.87				
					K1	89.87	91.57				
					K2P	91.57	96.34				
					K2	96.34	96.94				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87020	797.81	6096256.3600	624879.7200	244.00	OVER	0.00	12.00	0.00	10.00	266.54	63.39
					R	53.52	54.92	10.00	20.00	263.26	61.73
					C	74.40	75.20	20.00	30.00	258.67	58.60
					D1	123.88	124.67	30.00	40.00	258.72	56.73
					D2P	124.67	124.83	40.00	50.00	260.61	56.17
					D2	124.83	126.91	50.00	60.00	261.58	55.44
					D	123.88	126.91	60.00	70.00	262.05	54.88
					E1	140.77	141.08	70.00	80.00	262.46	54.41
					E2P	141.08	142.06	80.00	90.00	263.23	53.86
					E2	142.06	143.14	90.00	100.00	264.21	53.77
					E3P	143.14	143.44	100.00	110.00	264.55	53.53
					E3	143.44	145.46	110.00	120.00	264.37	53.28
					E	142.06	145.46	120.00	130.00	264.05	52.96
					F1	163.03	163.66	130.00	140.00	263.83	52.45
					F2P	163.66	163.90	140.00	150.00	265.45	51.31
					F2	163.90	167.08	150.00	160.00	266.33	50.37
					F	163.03	167.08	160.00	170.00	264.65	50.19
					GCGL	180.00	204.00	170.00	180.00	264.80	49.25
					G1	204.00	204.00	180.00	190.00	265.84	48.18
					G2P	204.00	204.00	190.00	200.00	264.64	47.59
					G2	204.00	204.71	200.00	210.00	263.92	47.13
					G3P	204.71	205.50	210.00	220.00	264.30	46.88
					G3	205.50	206.74	220.00	230.00	264.48	46.95
					G	204.00	206.74	230.00	244.00	265.65	47.09
					J	221.28	226.10				
					K1P	226.10	226.59				
					K1	226.59	228.29				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87021	1572.82	6096160.3200	620569.2500	168.80	OVER	0.00	5.00	0.00	5.00	237.85	88.82
					D1	46.65	47.42	5.00	10.00	255.02	88.73
					D	46.65	47.42	10.00	20.00	288.26	88.36
					E1	67.40	67.92	20.00	30.00	316.82	88.10
					E2P	67.92	68.61	30.00	40.00	333.35	88.39
					E2	68.61	70.18	40.00	50.00	317.52	88.32
					E3P	70.18	71.94	50.00	60.00	288.46	87.53
					E3	71.94	72.47	60.00	70.00	272.63	86.50
					E4P	70.18	71.94	70.00	168.80	272.63	86.50
					E4	71.94	72.47				
					F1	95.91	96.27				
					F2P	96.27	96.74				
					F2	96.74	100.11				
					F	95.91	100.11				
					G1	126.20	127.10				
					G2P	127.10	127.62				
					G2	127.62	128.30				
					G3P	128.30	128.85				
					G3	128.85	129.92				
					G	126.20	129.92				
					J	146.20	150.86				
					K1P	150.86	152.12				
					K1	152.12	152.99				
					K2P	152.99	154.06				
					K2	154.06	154.95				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87022	1580.60	6096087.3000	620508.1200	144.60	OVER	0.00	2.50	0.00	10.00	199.42	88.23
					E1	19.80	20.20	10.00	20.00	237.34	87.47
					E2P	20.20	20.80	20.00	30.00	259.21	87.76
					E2	20.80	24.40	30.00	40.00	245.95	88.88
					E3P	24.40	26.80	40.00	50.00	239.69	88.74
					E3	26.80	28.20	50.00	60.00	226.95	88.04
					F1	50.06	50.78	60.00	70.00	235.04	87.52
					F2P	50.78	51.01	70.00	80.00	232.73	86.87
					F2	51.01	54.83	80.00	90.00	225.30	86.43
					F	50.06	54.83	90.00	100.00	224.17	85.48
					G1	84.10	85.20	100.00	110.00	218.61	84.81
					G2P	85.20	85.32	110.00	120.00	220.00	85.13
					G2	85.32	87.22	120.00	130.00	219.35	85.00
					G3P	87.22	87.55	130.00	144.60	219.63	84.83
					G3	87.55	89.07				
					G	84.10	89.07				
					J	105.87	110.73				
					K1P	110.73	111.93				
					K1	111.93	112.79				
					K2P	112.79	113.73				
					K2	113.73	115.00				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87023	1601.62	6095983.1100	620432.7200	171.00	OVER	0.00	5.00	0.00	5.00	258.41	88.33
					D1	54.94	55.56	5.00	10.00	242.88	88.28
					D2P	55.76	55.71	10.00	20.00	177.06	87.73
					D2	55.71	56.10	20.00	30.00	111.15	86.85
					D3P	56.10	57.08	30.00	40.00	104.67	86.30
					D3	57.08	57.32	40.00	50.00	95.88	86.23
					D4P	57.32	57.89	50.00	60.00	98.38	85.92
					D4	57.89	58.50	60.00	70.00	143.13	85.15
					E1	73.05	73.51	70.00	80.00	185.12	84.05
					E2P	73.51	73.98	80.00	90.00	151.69	83.26
					E2	73.98	75.50	90.00	100.00	102.39	83.00
					E3P	75.50	77.94	100.00	110.00	107.59	82.28
					E3	77.94	79.84	110.00	120.00	111.37	81.43
					F1	97.76	98.40	120.00	130.00	115.53	80.33
					F2P	98.40	98.67	130.00	140.00	119.05	78.95
					F2	98.67	102.79	140.00	150.00	119.00	77.88
					F	97.76	102.79	150.00	160.00	118.93	76.49
					G1	128.92	129.98	160.00	171.00	119.14	75.66
					G2P	129.98	130.10				
					G2	130.10	130.91				
					G3P	130.91	131.36				
					G3	131.36	132.51				
					G	128.92	132.51				
					J	148.04	152.68				
					K1P	152.68	153.85				
					K1	153.85	154.55				
					K2P	154.55	155.40				
					FAULT	155.40	-1.00				
					K1	155.40	155.66				
					K1P	155.66	156.68				
					K2	156.68	157.84				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87024	1564.25	6096026.8600	620712.8900	128.50	OVER	0.00	5.00	0.00	5.00	216.61	88.65
					E1	19.30	19.80	5.00	10.00	223.26	88.49
					E2P	19.80	20.40	10.00	20.00	227.19	88.63
					E2	20.40	22.70	20.00	30.00	234.09	88.53
					E3P	22.70	25.57	30.00	40.00	244.87	88.11
					E3	25.57	26.78	40.00	50.00	244.08	87.63
					F1	49.29	49.70	50.00	60.00	246.62	86.89
					F2P	49.70	50.14	60.00	70.00	253.01	86.45
					F2	50.14	53.30	70.00	80.00	252.25	85.89
					F	49.29	53.30	80.00	90.00	252.87	84.90
					G1	87.55	88.64	90.00	100.00	256.77	83.97
					G2P	88.64	88.80	100.00	110.00	259.15	82.80
					G2	88.80	89.80	110.00	128.50	258.77	81.95
					G3P	89.80	90.37				
					G3	90.37	91.54				
					G	87.55	91.54				
					J	107.12	112.00				
					K1P	112.00	112.43				
					K1	112.43	113.56				
					K2P	113.56	114.16				
					K2	114.16	115.66				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87025	1585.04	6095957.5600	620647.1700	110.00	OVER	0.00	4.50	0.00	3.00	335.13	88.12
					F1	31.49	32.14	3.00	10.00	345.46	88.22
					F2P	32.14	32.29	10.00	20.00	335.32	88.49
					F2	32.29	36.20	20.00	30.00	314.35	88.65
					F	31.49	36.20	30.00	40.00	325.69	88.55
					G1	64.99	66.04	40.00	50.00	337.11	88.47
					G2P	66.04	66.41	50.00	60.00	319.50	88.65
					G2	66.41	67.50	60.00	70.00	283.09	88.57
					G3P	67.50	67.92	70.00	80.00	248.62	88.10
					G3	67.92	69.23	80.00	90.00	237.72	87.74
					G	64.99	69.23	90.00	100.00	239.68	87.68
					J	69.60	95.62	100.00	110.00	185.41	87.19
					K1P	95.62	96.93				
					K1	96.93	97.92				
					K2P	97.92	98.69				
					K2	98.69	100.11				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87026	1573.08	6095680.6300	620701.8000	140.00	OVER	0.00	6.50	0.00	3.00	101.97	89.47
					D1/D2	13.16	14.34	3.00	10.00	109.36	89.47
					D3P	14.34	15.06	10.00	20.00	128.75	88.61
					D3	15.06	15.35	20.00	30.00	138.57	87.26
					D4P	15.35	15.57	30.00	40.00	136.03	86.61
					D4	15.57	16.24	40.00	50.00	131.51	86.18
					E3	43.95	45.42	50.00	60.00	127.89	86.02
					F1	64.55	65.36	60.00	70.00	128.34	85.79
					F2P	65.36	65.81	70.00	80.00	124.22	85.13
					F2	65.81	66.98	80.00	90.00	123.98	85.21
					F	64.55	68.98	90.00	100.00	122.68	84.89
					G1	104.26	105.58	100.00	110.00	119.20	84.21
					G2P	105.58	105.77	110.00	120.00	118.19	83.74
					G2	105.77	106.85	120.00	130.00	113.18	83.14
					G3P	106.85	107.14	130.00	140.00	110.00	82.68
					G3	107.14	108.45				
					G	104.26	108.45				
					J	123.32	128.83				
					K1P	128.83	130.10				
					K1	130.10	131.13				
					K2P	131.13	132.68				
					K2	132.68	134.10				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87027	1549.64	6095842.9400	620804.1700	80.00	OVER	0.00	6.00	0.00	3.00	155.06	89.25
					G1	16.69	17.71	3.00	10.00	95.77	89.36
					G2P	17.71	17.83	10.00	20.00	333.45	89.32
					G2	17.83	19.19	20.00	30.00	249.52	88.81
					G3P	19.19	19.84	30.00	40.00	213.95	88.27
					G3	19.84	21.66	40.00	50.00	218.29	88.27
					G	16.69	21.66	50.00	60.00	238.27	88.16
					J	42.05	46.94	60.00	70.00	242.68	88.00
					K1P	46.94	47.92	70.00	80.00	241.77	87.97
					K1	47.92	49.00				
					K2P	49.00	49.99				
					K2	49.99	51.36				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87028	1542.16	6096294.4200	620421.7000	172.00	OVER	0.00	4.00	0.00	5.00	345.69	90.00
					D1	58.59	59.10	5.00	10.00	65.07	89.47
					D2P	59.10	59.21	10.00	20.00	165.74	89.29
					D2	59.21	59.60	20.00	30.00	260.86	89.40
					D3P	59.60	61.12	30.00	40.00	283.21	89.16
					D3	61.12	61.41	40.00	50.00	247.12	89.40
					D4P	61.41	61.74	50.00	60.00	279.42	89.40
					D4	61.74	62.30	60.00	70.00	287.82	88.81
					E1	78.72	79.22	70.00	80.00	279.46	88.03
					E2P	79.22	79.75	80.00	90.00	269.04	87.20
					E2	79.75	81.48	90.00	100.00	252.33	86.71
					E3P	81.48	82.53	100.00	110.00	249.37	86.28
					E3	82.53	83.72	110.00	120.00	251.59	85.70
					F1	107.54	108.19	120.00	130.00	251.15	85.21
					F2P	108.19	108.65	130.00	140.00	246.74	84.46
					F2	108.65	112.18	140.00	150.00	243.35	83.76
					F	107.54	112.18	150.00	160.00	244.29	83.38
					G1	134.88	136.09	160.00	172.00	243.00	82.83
					G2P	136.09	136.22				
					G2	136.22	137.10				
					G3P	137.10	137.80				
					G3	137.80	139.08				
					G	134.88	139.08				
					J	156.37	161.58				
					K1P	161.58	162.66				
					K1	162.66	163.77				
					K2P	163.77	164.67				
					K2	164.67	165.97				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87029	1545.46	6095579.2000	620866.5800	110.00	OVER	0.00	4.00	0.00	3.00	6.14	88.51
					F1	15.59	16.47	3.00	10.00	32.45	88.69
					F2P	16.47	16.71	10.00	20.00	51.57	88.24
					F2	16.71	19.34	20.00	30.00	73.68	87.34
					F	15.59	19.34	30.00	40.00	112.35	85.25
					G1	48.39	49.42	40.00	50.00	122.92	83.25
					G2P	49.42	49.54	50.00	60.00	122.55	81.70
					G2	49.54	50.63	60.00	70.00	121.37	79.81
					G3P	50.63	50.97	70.00	80.00	122.34	78.91
					G3	50.97	52.25	80.00	90.00	122.28	78.48
					G	48.39	52.25	90.00	100.00	121.83	78.48
					J	66.86	71.31	100.00	110.00	126.66	78.60
					K1P	71.31	72.35				
					K1	72.35	73.39				
					K2P	73.39	74.54				
					K2	74.54	75.80				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87030	1489.50	6095302.3100	621163.2600	86.80	OVER	0.00	6.00	0.00	3.00	227.25	89.63
					F	1.90	4.90	3.00	10.00	51.70	89.55
					G1	33.08	34.52	10.00	20.00	194.67	89.32
					G2P	34.52	34.79	20.00	30.00	114.65	89.32
					G2	34.79	36.30	30.00	40.00	126.89	89.32
					G3P	36.30	36.70	40.00	50.00	175.98	89.05
					G3	36.70	38.91	50.00	60.00	196.53	89.10
					G	33.08	38.91	60.00	70.00	188.75	89.36
					J	58.86	65.35	70.00	86.80	155.19	89.14
					K1P	65.35	66.44				
					K1	66.44	67.74				
					K2P	67.74	67.74				
					K2	67.74	67.74				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87031	1425.42	6095747.6400	621267.2000	50.00	OVER	0.00	6.00	0.00	3.00	168.40	89.16
					J	23.33	28.72	3.00	10.00	209.08	89.16
					K1P	28.72	30.23	10.00	20.00	232.34	88.91
					K1	30.23	31.30	20.00	30.00	224.24	88.55
					K2P	31.30	32.56	30.00	40.00	249.51	88.64
					K2	32.56	34.11	40.00	50.00	259.30	88.32

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87032	1451.87	6095887.3500	621106.0400	92.70	OVER	0.00	2.00	0.00	3.00	168.44	88.45
					F1	10.03	10.79	3.00	10.00	161.13	88.16
					F2P	10.79	11.15	10.00	20.00	151.01	87.74
					F2	11.15	14.23	20.00	30.00	156.50	87.60
					F	10.03	14.23	30.00	40.00	169.22	87.14
					G1	50.56	51.67	40.00	50.00	163.91	87.36
					G2P	51.67	51.78	50.00	60.00	176.71	87.71
					G2	51.78	52.85	60.00	70.00	203.65	87.66
					G3P	52.85	53.20	70.00	80.00	208.17	88.04
					G3	53.20	54.43	80.00	92.70	205.90	87.87
					G	50.56	54.43				
					J	71.09	76.65				
					K1P	76.65	78.30				
					K1	78.30	79.38				
					K2P	79.38	80.40				
					K2	80.40	82.00				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87033	1437.70	6095148.0300	621293.3700	98.70	OVER	0.00	3.00	0.00	3.00	120.90	87.48
					F1	2.95	4.10	3.00	10.00	97.13	87.68
					F2P	4.10	4.51	10.00	20.00	87.92	88.35
					F2	4.51	8.56	20.00	30.00	110.84	89.22
					F	2.95	8.56	30.00	40.00	123.75	88.63
					G1	31.35	32.64	40.00	50.00	127.10	87.67
					G2P	32.64	32.92	50.00	60.00	137.01	87.84
					G2	32.92	34.26	60.00	70.00	149.35	87.90
					G3P	34.26	34.66	70.00	80.00	148.99	87.39
					G3	34.66	36.86	80.00	98.70	141.55	86.78
					G	31.35	36.86				
					COAL	36.25	36.86				
					J	60.73	66.27				
					K1P	66.27	67.19				
					K1	67.19	68.17				
					K2P	68.17	70.18				
					K2	70.18	72.03				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87034	1319.00	6095778.1600	621750.4500	108.00	OVER	0.00	20.00				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR07035	1558.01	6096125.3000	620293.6600	129.00	OVER	0.00	6.00	0.00	1.00	122.29	86.17
					D1	16.40	17.00	1.00	10.00	102.13	86.58
					D2P	17.00	17.40	10.00	20.00	80.26	86.42
					D2	17.40	17.70	20.00	30.00	67.12	87.10
					D3P	17.70	18.00	30.00	40.00	60.12	88.43
					D3	18.00	18.40	40.00	50.00	86.05	88.17
					D4P	18.40	19.40	50.00	60.00	109.21	87.58
					D4	19.40	20.90	60.00	70.00	113.73	86.86
					E1	32.70	34.00	70.00	80.00	117.86	85.98
					E2P	34.00	34.80	80.00	90.00	118.56	83.64
					E2	34.80	39.15	90.00	100.00	114.80	82.56
					E3P	39.15	40.62	100.00	110.00	108.93	82.36
					E3	40.62	41.38	110.00	129.00	105.66	81.08
					F1	61.26	61.96				
					F2P	61.96	62.28				
					F2	62.28	65.65				
					F	61.26	65.65				
					G1	91.01	92.09				
					G2P	92.09	92.21				
					G2	92.21	93.02				
					G3P	93.02	93.61				
					G3	93.61	94.61				
					G	91.01	94.61				
					J	111.47	116.92				
					K1P	116.92	117.69				
					K1	117.69	118.83				
					K2P	118.83	120.00				
					K2	120.00	120.88				
					COAL	121.55	121.78				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR97036	1544.31	6096202.0900	620351.1400	117.60	OVER	0.00	4.00	0.00	10.00	188.70	88.10
					D	2.40	3.20	10.00	20.00	212.70	87.20
					E1	21.30	21.80	20.00	30.00	224.70	85.60
					E2P	21.80	22.40	30.00	40.00	227.70	86.00
					E2	22.40	24.24	40.00	50.00	228.70	85.60
					E3P	24.24	25.27	50.00	60.00	224.70	84.90
					E3	25.27	27.77	60.00	70.00	227.70	84.90
					F1	50.18	50.70	70.00	80.00	220.70	84.80
					F2P	50.70	51.14	80.00	90.00	219.70	84.00
					F2	51.14	54.25	90.00	100.00	214.70	83.20
					F	50.18	54.25	100.00	110.00	219.70	82.40
					G1	77.99	79.23	110.00	117.60	213.70	82.90
					G2P	79.23	79.40				
					G2	79.40	80.34				
					G3P	80.34	80.97				
					G3	80.97	82.12				
					G	77.99	82.12				
					J	97.80	103.48				
					K1P	103.48	104.56				
					K1	104.56	105.63				
					K2P	105.63	106.70				
					K2	106.70	107.98				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87037	1562.42	6095758.0000	620771.3200	91.80	OVER	0.00	4.00	0.00	5.00	148.70	89.50
					F1	7.70	8.10	5.00	10.00	145.70	88.80
					F2P	8.10	8.40	10.00	20.00	159.70	88.10
					F2	8.40	12.20	20.00	30.00	157.70	86.90
					F	7.70	12.20	30.00	40.00	164.70	85.50
					G1	41.47	42.70	40.00	50.00	170.70	86.10
					G2P	42.70	42.85	50.00	60.00	157.70	85.00
					G2	42.85	43.74	60.00	70.00	148.70	84.60
					G3P	43.74	44.22	70.00	80.00	146.70	84.10
					G3	44.22	45.60	80.00	91.80	144.70	84.00
					G	41.47	45.60				
					J	59.64	64.26				
					K1P	64.26	65.27				
					K1	65.27	66.22				
					K2P	66.22	67.01				
					K2	67.01	68.13				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87038	1490.85	6096017.0100	620942.6700	129.00	OVER	0.00	10.00	0.00	5.00	1.70	88.70
					D1	10.30	10.68	5.00	10.00	341.70	88.20
					D2P	10.68	10.94	10.00	20.00	315.70	87.80
					D2	10.94	11.38	20.00	30.00	297.70	86.70
					D3P	11.38	11.78	30.00	40.00	289.70	85.90
					D3	11.78	11.98	40.00	50.00	284.70	84.90
					D4P	11.98	12.27	50.00	60.00	284.70	84.00
					D4	12.27	12.90	60.00	70.00	288.70	83.00
					D	10.30	12.90	70.00	80.00	285.70	82.60
					E1	32.24	32.88	80.00	90.00	279.70	81.60
					E2P	32.88	33.32	90.00	100.00	279.70	80.30
					E2	33.32	36.03	100.00	110.00	274.70	79.80
					E3P	36.03	38.26	110.00	120.00	266.70	78.40
					E3	38.26	39.85	120.00	129.00	271.70	77.90
					F1	58.26	58.97				
					F2P	58.97	59.24				
					F2	59.24	62.50				
					F	58.26	62.50				
					G1	97.42	98.45				
					G2P	98.45	98.62				
					G2	98.62	99.58				
					G3P	99.58	100.15				
					G3	100.15	101.25				
					G	97.42	101.25				
					J	115.70	120.59				
					K1P	120.59	121.72				
					K1	121.72	122.76				
					K2P	122.76	123.53				
					K2	123.53	125.01				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87039	1522.50	6095418.9600	621016.0100	99.00	OVER	0.00	2.00	0.00	5.00	32.70	89.90
					F1	13.93	15.30	5.00	10.00	151.70	89.70
					F2P	15.30	15.63	10.00	20.00	139.70	88.80
					F2	15.63	20.81	20.00	30.00	149.70	87.40
					F	13.93	20.81	30.00	40.00	155.70	86.30
					G1	53.75	55.06	40.00	50.00	144.70	85.50
					G2P	55.06	55.27	50.00	60.00	140.70	85.30
					G2	55.27	56.74	60.00	70.00	138.70	83.50
					G3P	56.74	57.38	70.00	80.00	132.70	81.70
					G3	57.38	58.93	80.00	90.00	132.70	81.30
					G	53.75	58.93	90.00	99.00	130.70	80.80
					J	79.48	83.02				
					K1P	83.02	84.20				
					K1	84.20	85.54				
					K2P	85.54	87.10				
					K2	87.10	88.80				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87040	1361.19	6095283.7400	622166.7700	98.20	OVER	0.00	1.00	0.00	5.00	288.70	89.70
					F1	14.18	15.33	5.00	10.00	307.70	89.90
					F2P	15.33	15.60	10.00	20.00	350.70	89.50
					F2	15.60	20.29	20.00	30.00	284.70	88.10
					F	14.18	20.29	30.00	40.00	275.70	87.80
					FAULT	25.50	0.00	40.00	50.00	268.70	87.30
					F2	25.50	27.20	50.00	60.00	273.70	87.00
					G1	43.99	45.05	60.00	70.00	271.70	86.40
					G2P	45.05	45.22	70.00	80.00	263.70	86.20
					G2	45.22	46.49	80.00	90.00	266.70	86.20
					G3P	46.49	47.05	90.00	98.20	267.70	84.30
					G3	47.05	48.61				
					G	43.99	48.61				
					J	72.04	77.82				
					K1P	77.82	79.00				
					K1	79.00	80.67				
					K2P	80.67	83.59				
					K2	83.59	85.06				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87041	891.53	6095150.7400	623801.9400	187.80	OVER	0.00	5.00	0.00	5.00	139.70	89.50
					D1	24.62	25.17	5.00	10.00	86.70	88.50
					D2P	25.17	25.53	10.00	20.00	238.70	89.50
					D2	25.53	26.40	20.00	30.00	250.70	87.30
					E3	59.82	61.06	30.00	40.00	268.70	86.10
					F1	79.40	79.76	40.00	50.00	276.70	85.60
					F2P	79.76	80.10	50.00	60.00	269.70	84.20
					F2	80.10	83.47	60.00	70.00	264.70	83.50
					F	79.40	83.47	70.00	80.00	269.70	83.50
					G1	104.04	104.92	80.00	90.00	272.70	83.00
					G2P	104.92	105.01	90.00	100.00	263.70	83.00
					G2	105.01	105.77	100.00	110.00	266.70	82.30
					G3P	105.77	106.05	110.00	120.00	265.70	82.00
					G3	106.05	108.18	120.00	130.00	266.70	82.30
					G	104.04	108.18	130.00	140.00	269.70	82.00
					J	126.40	131.12	140.00	150.00	272.70	81.80
					K1P	131.12	131.61	150.00	160.00	272.70	81.20
					K1	131.61	133.18	160.00	170.00	268.70	80.80
					K2P	133.18	138.37	170.00	180.00	270.70	80.60
					K2	138.37	139.20	180.00	187.80	274.70	80.90

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87042	891.10	6095081.3500	623748.7500	129.70	OVER	0.00	7.00	0.00	5.00	143.93	89.17
					E3	38.64	40.15	5.00	10.00	116.42	88.91
					F1	57.89	58.38	10.00	20.00	98.74	88.77
					F2P	58.38	58.72	20.00	30.00	125.06	88.85
					F2	58.72	62.68	30.00	40.00	135.78	88.85
					F	57.89	62.68	40.00	50.00	144.26	88.85
					G1	84.59	85.62	50.00	60.00	157.54	88.64
					G2P	85.62	85.79	60.00	70.00	160.76	88.28
					G2	85.79	86.36	70.00	80.00	166.38	88.12
					G3P	86.36	86.76	80.00	90.00	167.22	87.86
					G3	86.76	87.93	90.00	100.00	160.89	87.45
					G	84.59	87.93	100.00	110.00	155.71	87.28
					J	106.80	111.88	110.00	129.70	151.14	87.02
					K1P	111.88	112.36				
					K1	112.36	114.18				
					K2P	114.18	120.33				
					K2	120.33	121.06				
					FAULT	121.60	121.61				
					K2	121.98	122.75				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87043	902.11	6094827.3600	623622.9900	116.40	OVER	0.00	2.00	0.00	5.00	299.70	89.20
					G1	36.40	37.63	5.00	10.00	310.70	88.60
					G2P	37.63	37.80	10.00	20.00	316.70	89.50
					G2	37.80	39.39	20.00	30.00	301.70	88.60
					G3P	39.39	40.35	30.00	40.00	290.70	88.40
					G3	40.35	42.32	40.00	50.00	290.70	87.70
					G	36.40	42.32	50.00	60.00	280.70	85.50
					J	71.76	79.63	60.00	70.00	274.70	82.60
					K1P	79.63	80.81	70.00	80.00	274.70	82.80
					K1	80.81	81.25	80.00	90.00	272.70	80.60
					K2P	81.25	90.37	90.00	100.00	274.70	76.90
					K2	90.37	91.48	100.00	110.00	270.70	75.60
					COALZ	91.60	92.47	110.00	116.40	268.70	75.10

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87044	880.04	6094992.3500	623705.1900	135.70	OVER	0.00	3.00	0.00	5.00	179.70	89.30
					D1	10.68	11.69	5.00	10.00	150.70	89.80
					D2P	11.69	12.04	10.00	20.00	97.70	89.10
					D2	12.04	12.87	20.00	30.00	113.70	88.20
					D	10.68	12.87	30.00	40.00	123.70	88.20
					E3	47.27	48.86	40.00	50.00	130.70	87.90
					F1	65.53	65.91	50.00	60.00	131.70	87.70
					F2P	65.91	66.09	60.00	70.00	130.70	87.30
					F2	66.09	69.50	70.00	80.00	128.70	86.40
					F	65.53	69.50	80.00	90.00	125.70	85.60
					G1	92.10	92.80	90.00	100.00	119.70	85.10
					G2P	92.80	92.98	100.00	110.00	124.70	84.70
					G2	92.98	93.85	110.00	120.00	122.70	83.50
					G3P	93.85	94.23	120.00	130.00	113.70	81.50
					G3	94.23	95.55	130.00	135.70	110.70	80.70
					G	92.10	95.55				
					J	112.72	117.12				
					K1P	117.12	117.61				
					K1	117.61	119.07				
					K2P	119.07	125.06				
					K2	125.06	125.80				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87045	838.09	6094837.8000	623932.4500	99.00	OVER	0.00	12.00	0.00	5.00	99.08	87.96
					G1	24.76	25.64	5.00	10.00	46.33	87.84
					G2P	25.64	25.90	10.00	20.00	69.26	87.75
					G2	25.90	26.64	20.00	30.00	147.89	87.60
					G3P	26.64	26.85	30.00	40.00	149.86	86.97
					G3	26.85	28.14	40.00	50.00	153.39	86.35
					G	24.76	28.14	50.00	60.00	157.02	85.39
					J	48.25	53.28	60.00	70.00	150.90	83.50
					K1P	53.28	53.90	70.00	80.00	149.05	82.46
					K1	53.90	55.62	80.00	99.00	145.49	81.29
					K2P	55.62	61.62				
					K2	61.62	62.15				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87047	838.73	6094922.2800	623977.7800	79.00	OVER	0.00	5.00	0.00	5.00	333.67	88.13
					F1	13.78	14.16	5.00	10.00	285.55	88.32
					F2P	14.16	14.46	10.00	20.00	256.13	87.81
					F2	14.46	17.91	20.00	30.00	268.33	86.75
					F	13.78	17.91	30.00	40.00	283.66	86.29
					G1	39.64	40.68	40.00	50.00	307.12	86.36
					G2P	40.68	41.05	50.00	60.00	308.53	86.39
					G2	41.05	41.80	60.00	70.00	301.64	86.03
					G3P	41.80	42.10	70.00	79.00	292.54	85.12
					G3	42.10	43.23				
					G	39.64	43.23				
					J	59.72	66.28				
					K1P	66.28	67.44				
					K1	67.44	68.98				
					K2P	68.98	75.54				
					K2	75.54	76.19				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87048	836.82	6095005.9100	624037.4500	111.30	OVER	0.00	2.00	0.00	5.00	349.27	88.10
					E3	27.32	28.90	5.00	10.00	300.62	87.65
					F1	47.49	47.93	10.00	20.00	254.59	86.86
					F2P	47.93	48.17	20.00	30.00	267.59	85.19
					F2	48.17	51.80	30.00	40.00	280.17	83.19
					F	47.49	51.80	40.00	50.00	291.24	82.73
					G1	72.33	73.29	50.00	60.00	298.31	82.38
					G2P	73.29	73.53	60.00	70.00	296.27	81.69
					G2	73.53	74.27	70.00	80.00	294.56	81.41
					G3P	74.27	74.46	80.00	90.00	292.03	80.99
					G3	74.46	75.74	90.00	100.00	291.89	80.44
					G	72.33	75.74	100.00	111.30	294.03	80.10
					J	94.07	98.57				
					K1P	98.57	99.34				
					K1	99.34	100.68				
					K2P	100.68	105.87				
					K2	105.87	106.58				
					K3	107.65	107.96				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87049	841.24	6094780.3300	623876.6500	90.80	OVER	0.00	14.00				
					F1	25.76	26.24				
					G1	49.71	50.43				
					G2P	50.43	50.77				
					G2	50.77	51.37				
					G3P	51.37	52.00				
					G3	52.00	53.24				
					G	49.71	53.24				
					J	70.69	75.21				
					K1P	75.21	75.90				
					K1	75.90	77.94				
					K2P	77.94	83.74				
					K2	83.74	84.20				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87050	844.50	6095263.2700	624327.4100	91.80	OVER	0.00	6.00				
					D1	16.32	17.71				
					D2P	17.71	18.34				
					D2	18.34	19.58				
					D	16.32	19.58				
					E3	49.48	51.80				
					F1	75.43	75.72				
					F2P	75.72	76.09				
					F2	76.09	79.53				
					F	75.43	79.53				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87051	857.50	6093986.5700	622728.3700	147.70	OVER	0.00	6.00	0.00	5.00	203.50	89.30
					COAL	114.98	115.50	5.00	10.00	19.70	89.50
					COAL	115.75	115.92	10.00	15.00	69.00	88.50
					COAL	116.22	117.65	15.00	20.00	81.30	88.10
					COAL	130.34	130.97	20.00	25.00	87.00	87.60
					COAL	131.25	136.86	25.00	30.00	86.50	86.60
					COAL	138.55	139.43	30.00	35.00	74.50	86.60
					COAL	139.84	141.92	35.00	40.00	83.10	86.80
					COAL	142.74	142.87	40.00	45.00	75.40	86.30
								45.00	50.00	80.40	86.00
								50.00	55.00	77.10	85.70
								55.00	60.00	80.00	85.20
								60.00	65.00	82.90	84.70
								65.00	70.00	86.60	84.20
								70.00	75.00	87.50	83.70
								75.00	80.00	82.70	83.10
								80.00	85.00	84.20	83.20
								85.00	90.00	82.70	82.50
								90.00	95.00	84.20	82.00
								95.00	100.00	82.50	81.50
								100.00	105.00	82.30	81.30
								105.00	110.00	84.20	80.50
								110.00	115.00	84.90	80.00
								115.00	120.00	84.10	80.30
								120.00	125.00	83.70	80.60
								125.00	130.00	83.40	80.20
								130.00	135.00	82.70	79.80
								135.00	140.00	82.70	79.70
								140.00	145.00	84.60	80.00
								145.00	147.70	85.60	80.20

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87052	951.88	6093829.3100	622093.2200	127.90	OVER	0.00	7.00				
					MB/GTC	58.10	58.11				
					GT1	67.00	69.30				
					GT2	74.60	78.40				
					GT3U	84.80	85.50				
					GT3L	86.60	88.40				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87053	1034.79	6094070.2200	622065.9500	86.00	OVER	0.00	3.00				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87054	1049.43	6094207.2100	622091.5900	99.00	OVER	0.00	3.00	0.00	10.00	308.40	89.10
					K2	3.75	5.28	10.00	20.00	284.80	88.60
					HIG	54.15	54.94	20.00	30.00	274.60	88.50
								30.00	40.00	283.50	87.30
								40.00	50.00	275.50	86.50
								50.00	99.00	262.80	86.30

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87055	890.45	6093811.2000	622506.6200	55.60	OVER	0.00	6.00				
					COAL	12.80	13.57				
					COAL	13.95	15.35				
					COAL	23.04	26.69				
					COAL	33.63	34.13				
					COAL	34.71	36.28				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87056	857.51	6093869.5000	623134.0200	91.30	OVER	0.00	9.00	0.00	91.30	98.90	62.83
					COAL	5.27	5.81				
					COAL	10.23	10.93				
					COAL	18.02	18.81				
					COAL	22.33	25.54				
					COAL	26.60	29.72				
					COAL	30.28	30.57				
					CGL	75.20	82.30				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87057	876.83	6094089.2800	623303.9000	91.30	OVER	0.00	5.00				
					CGL	0.00	8.50				
					LGT	8.50	62.80				
					CADOMI	62.80	91.30				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87058	881.64	6094282.6300	623438.8700	79.20	OVER	0.00	6.00				
					MB/GT	41.20	41.21				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87059	1368.63	6095942.5900	621392.1300	190.60	OVER	0.00	2.00	0.00	10.00	259.70	89.20
					D1	48.80	49.60	10.00	20.00	240.60	89.30
					D2P	49.60	49.80	20.00	30.00	170.70	88.60
					D2	49.80	50.90	30.00	40.00	56.20	89.60
					D3P	50.90	51.40	40.00	50.00	246.20	88.70
					D3	51.40	52.10	50.00	60.00	177.70	88.00
					D	48.80	52.10	60.00	70.00	96.20	89.10
					E1	73.00	74.10	70.00	80.00	276.50	89.40
					E3	101.90	104.80	80.00	90.00	251.90	88.10
					F1	140.40	142.15	90.00	100.00	218.40	87.90
					F2P	142.15	142.85	100.00	110.00	153.10	88.20
					F2	142.85	149.85	110.00	120.00	160.70	88.50
					F	140.40	149.85	120.00	130.00	245.20	88.50
								130.00	140.00	269.90	87.70
								140.00	150.00	258.40	88.00
								150.00	160.00	251.10	87.80
								160.00	170.00	262.10	87.70
								170.00	190.60	253.40	87.40

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87060	1346.09	6095749.2500	621503.1700	80.30	OVER	0.00	3.00	0.00	10.00	280.30	89.50
					G1	32.00	33.40	10.00	20.00	55.00	87.00
					G2P	33.40	33.55	20.00	30.00	254.20	88.70
					G2	33.55	34.90	30.00	40.00	126.20	89.40
					G3P	34.90	35.40	40.00	50.00	350.60	88.80
					G3	35.40	37.80	50.00	60.00	318.10	86.50
					G	32.00	37.80	60.00	70.00	314.00	85.20
					J	56.70	64.10	70.00	80.30	308.80	83.90
					K1P	50.70	64.10				
					K1	65.30	67.40				
					K2P	67.40	69.50				
					K2	69.50	71.70				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87061	1527.81	6095928.1200	620875.6100	99.20	OVER	0.00	4.00	0.00	10.00	87.20	88.80
					F1	17.90	18.40	10.00	20.00	92.40	88.50
					F2P	18.40	18.70	20.00	30.00	176.70	89.10
					F2	18.70	23.15	30.00	40.00	194.70	88.60
					F	17.90	23.15	40.00	50.00	194.90	88.40
					GCGL	33.30	56.15	50.00	60.00	208.30	88.00
					G1	56.15	57.20	60.00	70.00	233.50	86.70
					G2P	57.20	57.50	70.00	80.00	248.80	84.70
					G2	57.50	58.50	80.00	90.00	249.10	84.70
					G3P	58.50	59.20	90.00	99.20	251.60	83.90
					G3	59.20	60.60				
					G	56.15	60.60				
					J	75.50	80.40				
					K1P	80.40	81.50				
					K1	81.50	82.60				
					K2P	82.60	83.25				
					K2	83.25	84.95				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87062	1544.99	6096057.4100	620103.8400	178.90	OVER	0.00	6.00				
					B	25.10	26.20				
					C	45.20	47.50				
					HG	69.30	69.31				
					D1/D2	87.40	89.20				
					D3P	89.20	90.70				
					D3	90.70	91.40				
					D4P	91.40	91.90				
					D4	91.90	92.90				
					E1	107.60	108.00				
					E2P	108.00	108.40				
					E2	108.40	109.95				
					E3P	109.95	111.25				
					E3	111.25	112.00				
					F1	129.20	129.80				
					F2P	129.80	130.20				
					F2	130.20	133.60				
					F	129.20	133.60				
					GCGL	157.80	160.10				
					G1	160.60	161.75				
					G2P	161.75	161.95				
					G2	161.95	162.80				
					G3P	162.80	163.20				
					G3	163.20	164.50				
					G	160.60	164.50				
					J	178.10	178.90				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87063	1508.25	6096279.5400	620168.5600	109.90	OVER	0.00	3.00				
					E1	15.20	15.70				
					E2P	15.70	16.30				
					E2	16.30	19.10				
					E3P	19.10	20.80				
					E3	20.80	22.20				
					F1	44.20	44.80				
					F2P	44.80	45.30				
					F2	45.30	48.80				
					F	44.20	48.80				
					G1	69.30	70.20				
					G2P	70.20	70.60				
					G2	70.60	71.50				
					G3P	71.50	72.00				
					G3	72.00	73.40				
					G	69.30	73.40				
					J	90.00	95.20				
					K1P	95.20	95.90				
					K1	95.90	97.00				
					K2P	97.00	98.30				
					K2	98.30	99.50				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR07064	1499.61	6096360.0100	620222.2700	103.60	OVER	0.00	5.00				
					D	21.20	22.60				
					E1	43.40	44.20				
					E2P	44.20	45.00				
					E2	45.00	45.80				
					E3P	45.80	46.90				
					E3	46.90	48.40				
					F1	68.00	68.40				
					F2P	68.40	68.80				
					F2.	68.80	73.20				
					F	68.00	73.20				
					G1	91.90	92.80				
					G2P	92.80	93.20				
					G2	93.20	94.20				
					G3P	94.20	94.60				
					G3	94.60	95.90				
					G	91.90	95.90				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87065	1519.31	6096311.4300	619929.8200	146.70	OVER	0.00	7.00				
					HG	19.60	19.61				
					D	50.80	52.00				
					E1	80.20	81.00				
					E2P	81.00	81.40				
					E2	81.40	83.00				
					E3P	83.00	83.50				
					E3	83.50	85.40				
					F1	105.80	106.20				
					F2P	106.20	106.70				
					F2	106.70	110.75				
					F	106.70	110.75				
					GCGL	129.20	130.50				
					G1	131.40	132.10				
					G2P	132.10	132.30				
					G2	132.30	133.50				
					G3P	133.50	134.00				
					G3	134.00	135.70				
					G	130.40	135.70				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87066	1505.69	6096322.9200	620077.6000	85.20	OVER	0.00	6.00				
					E1	27.20	28.20				
					E2P	28.20	28.50				
					E2	28.50	29.80				
					E3P	29.80	30.90				
					E3	30.90	32.00				
					F1	62.10	62.80				
					F2P	62.80	63.30				
					F2	63.30	67.10				
					F	62.10	67.10				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87067	1499.61	6096417.4100	619995.3400	42.00	COAL	41.00	42.00				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHR87068	1484.15	6096527.4400	620065.1000	79.30	OVER	0.00	8.00				
					C	19.60	22.80				
					HG	46.80	46.81				
					D	65.70	67.60				

Appendix T.2.2

Diamond Drill Holes

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD84004	875.76	6095357.4400	624377.1800	109.62	OVER	0.00	8.58	0.00	109.62	120.50	77.80
					E3	5.38	8.57				
					F1	31.30	31.65				
					F2P	31.65	31.93				
					F2	31.93	35.27				
					F	31.30	35.27				
					G1	55.46	55.73				
					G2P	55.73	55.95				
					G2	55.95	57.36				
					G12	55.46	57.36				
					G3P	57.36	57.93				
					G3	57.93	58.89				
					G	55.46	58.89				
					J	80.40	85.37				
					K1P	85.37	86.58				
					K1	86.58	87.63				
					K2P	87.63	91.37				
					K2	91.37	92.06				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH des	DIP des
QHD85001	1543.20	6095479.7200	620842.4600	157.28	OVER	0.00	4.57	0.00	5.00	111.32	67.47
					D1	17.21	18.15	5.00	15.00	111.32	67.47
					D2P	18.15	18.56	15.00	25.00	107.82	67.50
					D2	18.56	19.02	25.00	35.00	108.59	67.58
					D	17.21	19.02	35.00	45.00	108.42	67.32
					D3P	19.02	19.35	45.00	55.00	108.62	67.20
					D3	19.35	19.54	55.00	65.00	107.27	67.37
					D4P	19.54	19.92	65.00	75.00	107.90	67.40
					D4	19.92	20.78	75.00	85.00	109.85	67.52
					E1	33.10	34.00	85.00	95.00	110.75	67.56
					E2P	34.00	34.40	95.00	105.00	107.23	67.55
					E2	34.40	36.80	105.00	115.00	106.84	67.41
					E3P	36.80	45.69	115.00	125.00	106.16	67.19
					E3	45.69	47.33	125.00	135.00	106.68	67.21
					FAULT	47.33	47.33	135.00	145.00	106.64	67.46
					E3	47.33	47.84	145.00	150.00	109.45	67.44
					E	45.69	45.89				
					F1	69.58	70.36				
					F2P	70.36	70.83				
					F2	70.83	74.89				
					F	69.58	74.89				
					G1	99.24	100.20				
					G2P	100.20	100.51				
					G2	100.51	101.39				
					G12	99.24	101.39				
					G3P	101.39	101.93				
					G3	101.93	102.87				
					G	99.24	102.87				
					J	116.91	121.43				
					K1P	121.43	122.39				
					K1	122.39	123.43				
					K2P	123.43	124.35				
					K2	124.35	125.23				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
BHD85002	1549.76	6096247.8900	620665.9900	216.20	OVER	0.00	3.70	0.00	15.00	293.33	75.87
					B	37.73	38.74	15.00	25.00	289.45	76.13
					D1	98.98	99.77	25.00	35.00	284.59	76.47
					D2P	99.77	99.91	35.00	45.00	283.98	76.14
					D2	99.91	100.31	45.00	55.00	282.73	75.80
					D	98.98	100.31	55.00	65.00	279.23	76.11
					D3P	100.31	101.13	65.00	75.00	278.98	76.20
					D3	101.13	101.37	75.00	85.00	280.61	76.04
					D3P	101.37	101.74	85.00	95.00	281.24	76.41
					D4	101.74	102.08	95.00	105.00	280.71	76.41
					E1	117.80	118.35	105.00	115.00	281.60	76.24
					E2P	118.35	118.81	115.00	125.00	279.19	76.70
					E2	118.81	120.31	125.00	135.00	276.75	76.41
					E3P	120.31	121.67	135.00	145.00	279.89	75.97
					E3	121.67	122.77	145.00	155.00	279.70	75.10
					E	117.80	120.31	155.00	165.00	273.70	75.50
					F1	144.92	145.59	165.00	175.00	275.70	75.30
					F2P	145.59	146.04	175.00	185.00	277.70	75.00
					F2	146.04	149.15	185.00	195.00	275.70	75.10
					F	144.92	149.15	195.00	205.00	274.70	75.30
					G1	172.60	173.50	205.00	215.00	275.70	75.00
					G2P	173.50	173.68	215.00	225.00	273.70	75.00
					G2	173.68	174.54				
					G12	172.60	174.54				
					G3P	174.54	175.07				
					G3	175.07	176.01				
					G	172.60	176.01				
					J	191.28	195.88				
					K1P	195.88	196.87				
					K1	196.87	198.06				
					K2P	198.06	198.80				
					K2	198.80	200.12				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD86001	953.93	6096557.3300	623975.7500	147.00	OVER	0.00	7.01	0.00	26.00	260.70	63.00
					E3	27.17	29.35	26.00	35.00	258.70	63.10
					E	27.17	29.35	35.00	45.00	258.70	62.70
					F1	51.65	52.38	45.00	55.00	258.70	63.00
					F2P	52.38	52.70	55.00	65.00	259.70	62.90
					F2	52.70	55.78	65.00	75.00	258.70	62.50
					F	51.65	55.78	75.00	85.00	259.70	62.90
					G1	90.47	90.73	85.00	95.00	259.70	62.60
					G2P	90.73	91.08	95.00	105.00	260.70	62.40
					G2	91.08	92.03	105.00	115.00	260.70	62.40
					G12	90.47	92.03	115.00	125.00	260.70	61.90
					G3P	92.03	92.96	125.00	135.00	261.70	61.90
					G3	92.96	94.28	135.00	145.00	261.70	62.30
					G	90.47	94.28	145.00	147.00	260.70	62.10
					J	115.86	120.56				
					K1P	120.56	121.00				
					K1	121.00	122.60				
					K2P	122.60	127.25				
					K2	127.25	127.85				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
GHD86002	1095.53	6096236.9800	623500.7600	120.40	OVER	0.00	3.66	0.00	6.00	92.70	63.70
					F1	38.31	38.96	6.00	15.00	92.70	64.10
					F2P	38.96	39.37	15.00	25.00	92.70	64.00
					F2	39.37	42.03	25.00	35.00	93.70	64.20
					F	38.31	42.03	35.00	45.00	92.70	63.90
					G1	77.60	77.73	45.00	55.00	93.70	64.10
					G2P	77.73	77.82	55.00	65.00	92.70	64.00
					G2	77.82	78.63	65.00	75.00	91.70	63.90
					G12	77.60	78.63	75.00	85.00	92.70	64.10
					G3P	78.63	79.14	85.00	95.00	91.70	63.90
					G3	79.14	80.90	95.00	105.00	91.70	63.90
					G	77.60	80.90	105.00	115.00	90.70	63.80
					J	95.56	100.49	115.00	120.40	89.70	63.50
					K1P	100.49	101.06				
					K1	101.06	102.34				
					K2P	102.34	105.60				
					K2	105.60	106.34				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD86003	1532.05	6096400.2400	619865.6300	225.86	D1	52.45	53.01	0.00	5.00	19.26	88.67
					D2P	53.01	53.15	5.00	15.00	321.58	88.81
					D2	53.15	53.53	15.00	25.00	246.27	89.07
					D	52.45	53.58	25.00	35.00	241.11	89.04
					E1	83.98	84.80	35.00	45.00	253.98	89.04
					E2P	84.80	85.30	45.00	55.00	243.55	89.01
					E2	85.30	87.14	55.00	65.00	218.60	88.83
					E3P	87.14	88.23	65.00	75.00	200.06	89.01
					E3	88.23	89.97	75.00	85.00	207.65	89.41
					E	84.00	87.08	85.00	95.00	208.19	89.63
					F1	130.66	130.71	95.00	105.00	202.96	89.63
					F2P	130.71	131.40	105.00	115.00	218.91	89.56
					F2	131.40	135.58	115.00	125.00	228.96	89.48
					F	130.66	135.58	125.00	135.00	217.43	89.33
					G1	153.74	154.70	135.00	145.00	247.70	88.92
					FAULT	154.70	154.70	145.00	155.00	228.09	89.08
					G1	163.28	163.81	155.00	165.00	192.00	89.48
					G2P	163.81	163.97	165.00	175.00	207.38	89.48
					G2	163.97	165.10	175.00	185.00	186.87	89.37
					G12	163.28	165.10	185.00	195.00	170.27	89.08
					G3P	165.10	165.44	195.00	205.00	174.08	89.08
					G3	165.44	166.22	205.00	215.00	169.48	89.26
					G	163.28	166.16	215.00	225.86	145.63	89.11
					J	183.90	188.68				
					K1P	188.68	189.48				
					K1	189.48	190.47				
					K2P	190.47	192.00				
					K2	192.00	193.14				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH des	DIP des
QHDB6004	1328.95	6095039.7100	621025.4900	63.70	OVER	0.00	6.10	0.00	63.70	51.70	90.00
					D	12.50	12.50				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH des	DIP des
QHD86005	1329.25	6095040.5100	621025.8900	178.31	OVER	0.00	6.10	0.00	5.00	104.70	67.27
					D1	14.00	16.01	5.00	15.00	104.70	67.60
					D	14.00	16.01	15.00	25.00	103.90	67.85
					D2P	16.01	16.44	25.00	35.00	104.43	67.94
					D2	16.44	17.21	35.00	45.00	103.98	68.13
					D3P	17.21	17.65	45.00	55.00	104.14	68.14
					D3	17.65	18.07	55.00	65.00	103.96	68.27
					D4P	18.07	18.36	65.00	75.00	102.94	68.42
					D4	18.36	18.91	75.00	85.00	103.50	68.75
					E1	33.40	33.90	85.00	95.00	103.53	68.73
					E2P	33.90	34.70	95.00	105.00	103.09	68.63
					E2	34.70	36.50	105.00	115.00	102.51	68.78
					E3P	36.50	47.60	115.00	125.00	101.99	68.63
					E3	47.60	48.70	125.00	135.00	103.30	68.80
					F	78.64	79.97	135.00	145.00	103.88	69.06
					F2P	79.97	80.26	145.00	155.00	103.37	68.77
					F2	80.26	83.83	155.00	165.00	103.34	68.70
					FAULT	83.83	83.83	165.00	178.31	103.73	68.92
					F2	83.83	88.08				
					F	78.64	88.08				
					G1	116.40	117.58				
					G2P	117.58	117.80				
					G2	117.80	119.14				
					G12	116.40	119.14				
					G3P	119.14	119.77				
					G3	119.77	121.04				
					G	116.40	121.04				
					J	146.80	151.38				
					K1P	151.38	152.67				
					K1	152.67	153.52				
					K2P	153.52	154.74				
					K2	154.74	155.84				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH des	DIP des
QHD86006	1325.06	6095648.4600	621718.5900	99.06	OVER	0.00	3.20	0.00	7.50	270.00	63.20
					F1	11.16	12.05	7.50	12.50	270.00	63.40
					F2P	12.05	12.49	12.50	17.50	270.00	60.70
					F2	12.49	15.35	17.50	22.50	269.30	61.30
					F	11.16	15.35	22.50	27.50	267.40	61.60
					G1	41.76	42.66	27.50	32.50	269.70	61.60
					G2P	42.66	42.86	32.50	37.50	270.90	61.50
					G2	42.86	43.91	37.50	42.50	271.40	61.90
					G12	41.76	43.91	42.50	47.50	274.70	62.50
					G3P	43.91	44.30	47.50	52.50	271.80	60.80
					G3	44.30	45.73	52.50	57.50	269.40	61.10
					G	41.76	45.73	57.50	62.50	272.00	61.20
					J	65.50	70.46	62.50	67.50	271.90	61.30
					K1P	70.46	71.59	67.50	72.50	269.00	61.50
					K1	71.59	72.61	72.50	77.50	266.70	61.50
					K2P	72.61	73.88	77.50	82.50	269.60	61.50
					K2	73.88	75.10	82.50	87.50	268.00	61.60
								87.50	92.50	273.50	61.30
								92.50	97.50	271.20	61.40
								97.50	99.06	268.70	61.80

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD86007	1292.95	6095276.7300	622427.3300	138.68	OVER	0.00	3.00	0.00	5.00	258.70	66.10
					F	42.83	43.91	5.00	15.00	262.70	65.90
					FAULT	43.91	43.91	15.00	25.00	263.70	66.10
					F	43.91	47.43	25.00	35.00	263.70	66.60
					FAULT	47.43	47.43	35.00	45.00	263.70	66.80
					F	47.43	49.01	45.00	55.00	260.70	67.30
					G1	72.59	73.39	55.00	65.00	261.70	67.00
					G2P	73.39	73.56	65.00	75.00	262.70	66.70
					G2	73.56	74.69	75.00	85.00	261.70	66.80
					G12	72.59	74.69	85.00	95.00	261.70	66.60
					G3P	74.69	75.04	95.00	105.00	260.70	66.80
					G3	75.04	76.34	105.00	115.00	262.70	66.90
					G	72.59	76.34	115.00	125.00	264.70	66.10
					J	98.46	104.57	125.00	135.00	263.70	66.40
					K1P	104.57	105.49	135.00	138.68	261.70	66.30
					K1	105.49	106.81				
					K2P	106.81	110.17				
					K2	110.17	111.32				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD86008	1413.39	6095971.6100	621225.6800	169.50	D1	27.07	27.79	0.00	5.00	129.21	87.79
					D2P	27.79	28.04	5.00	15.00	117.23	88.37
					D2	28.04	28.43	15.00	25.00	110.37	88.81
					D3P	28.43	28.59	25.00	35.00	204.41	89.07
					D3	28.59	28.80	35.00	45.00	231.77	89.07
					D4P	28.80	29.08	45.00	55.00	181.55	88.91
					D4	29.08	29.62	55.00	65.00	174.65	88.75
					D	27.07	28.43	65.00	75.00	153.98	88.38
					E3	56.80	59.19	75.00	85.00	146.99	88.55
					F1	79.40	80.45	85.00	95.00	140.57	88.55
					F2P	80.45	80.89	95.00	105.00	145.60	88.43
					F2	80.89	84.40	105.00	115.00	121.45	88.96
					F	79.40	84.40	115.00	125.00	123.48	89.08
					G1	125.05	126.26	125.00	135.00	155.35	88.67
					G2P	126.26	126.40	135.00	145.00	187.65	88.95
					G2	126.40	127.73	145.00	155.00	162.28	89.08
					G12	125.05	127.73	155.00	169.50	162.28	89.08
					G3P	127.73	128.36				
					G3	128.36	129.88				
					G	125.05	129.88				
					J	152.94	160.02				
					K1P	160.02	161.01				
					K1	161.01	162.61				
					K2P	162.61	165.64				
					K2	165.64	166.97				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD87001	1021.15	6096689.5500	623618.5900	160.79	OVER	0.00	8.96	0.00	10.00	308.18	67.35
					E3	44.08	45.03	10.00	20.00	289.65	67.11
					F1	67.94	68.91	20.00	30.00	269.98	66.85
					F2P	68.91	69.15	30.00	40.00	268.03	66.91
					F2	69.15	73.61	40.00	50.00	267.28	66.93
					F	67.96	73.61	50.00	60.00	267.34	66.88
					GCGL	81.55	117.96	60.00	70.00	266.51	66.97
					G1	118.04	118.46	70.00	80.00	265.69	67.17
					G2P	118.46	118.82	80.00	90.00	265.86	67.16
					G2	118.82	119.88	90.00	100.00	264.80	67.17
					G3P	119.88	120.79	100.00	110.00	265.36	67.33
					G3	120.79	122.16	110.00	120.00	267.28	67.17
					G	118.04	122.16	120.00	130.00	266.92	67.17
					J	141.76	147.69	130.00	140.00	267.61	67.16
					K1P	147.69	149.07	140.00	150.00	267.32	67.12
					K1	149.07	150.52	150.00	160.79	267.32	67.12
					K2P	150.52	154.58				
					K2	154.58	155.50				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
RHD87002	1081.36	6096678.4500	623250.5100	99.12	OVER	0.00	4.65	0.00	10.00	294.64	87.87
					F1	17.14	17.71	10.00	20.00	301.05	87.87
					F2P	17.71	18.00	20.00	30.00	18.32	88.61
					F2	18.00	20.87	30.00	40.00	139.41	88.98
					F	17.14	20.87	40.00	50.00	196.47	88.45
					GCGL	28.15	61.72	50.00	60.00	206.57	88.21
					G1	61.85	62.06	60.00	70.00	210.69	88.13
					G2P	62.06	62.44	70.00	80.00	225.24	87.89
					G2	62.44	63.57	80.00	90.00	222.69	87.96
					G3P	63.57	63.77	90.00	99.12	222.69	87.96
					G3	63.77	66.43				
					G	61.85	66.43				
					J	82.25	87.45				
					K1P	87.45	88.21				
					K1	88.21	89.83				
					K2P	89.83	92.68				
					K2	92.68	93.48				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD87003	996.29	6095802.9300	623915.7200	177.52	OVER	0.00	3.50	0.00	5.00	272.26	65.87
					D1	24.17	24.80	5.00	10.00	357.81	66.54
					D2P	24.80	25.24	10.00	20.00	83.07	66.83
					D2	25.24	25.98	20.00	30.00	82.49	66.22
					D	24.17	25.98	30.00	40.00	82.71	65.93
					E3	54.50	56.66	40.00	50.00	83.58	66.04
					E3	55.94	56.66	50.00	60.00	83.85	66.22
					E	54.50	55.38	60.00	70.00	84.26	66.21
					F1	82.64	83.17	70.00	80.00	84.50	66.03
					F2P	83.17	83.53	80.00	90.00	85.24	65.85
					F2	83.53	87.22	90.00	100.00	85.86	65.65
					F	82.64	87.22	100.00	110.00	86.01	65.27
					FL	87.57	87.79	110.00	120.00	87.12	64.88
					GCGL	104.14	108.75	120.00	130.00	86.70	64.75
					G1	108.78	109.38	130.00	140.00	86.16	64.53
					G2P	109.38	109.89	140.00	150.00	86.25	64.31
					G2	109.89	110.69	150.00	160.00	86.31	64.37
					G3P	110.69	111.33	160.00	170.00	86.49	64.70
					G3	111.33	112.09	170.00	177.52	86.49	64.70
					G	108.78	112.09				
					J	129.08	133.22				
					K1P	133.22	134.40				
					K1	134.40	135.41				
					K2P	135.41	139.48				
					K2	139.48	140.37				
					COAL	140.22	140.37				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD87004	1589.74	6095885.1500	620622.5400	151.10	OVER	0.00	8.25	0.00	5.00	19.22	88.41
					D1	8.51	9.07	5.00	10.00	285.80	89.14
					D2P	9.07	9.23	10.00	20.00	137.37	88.73
					D2	9.23	9.69	20.00	30.00	34.83	88.82
					D3P	9.69	10.57	30.00	40.00	19.22	88.41
					D3	10.57	10.77	40.00	50.00	39.96	88.23
					D4P	10.77	11.29	50.00	60.00	30.56	88.40
					D4	11.29	11.92	60.00	70.00	35.70	88.49
					D	8.51	9.69	70.00	80.00	72.32	88.65
					E1	25.60	25.99	80.00	90.00	71.17	88.19
					E2P	25.99	26.62	90.00	100.00	60.63	87.66
					E2	26.62	30.00	100.00	110.00	78.33	87.37
					E3P	30.00	33.40	110.00	120.00	87.52	87.44
					E3	33.40	35.05	120.00	130.00	93.93	87.73
					F1	52.36	53.07	130.00	140.00	93.72	87.52
					F2P	53.07	53.34	140.00	150.00	84.00	87.08
					F2	53.34	56.36	150.00	151.10	84.00	87.08
					FAULT	56.36	56.36				
					F2	56.36	57.90				
					FAULT	57.90	57.90				
					F2	57.90	58.40				
					F	52.36	58.40				
					G101	85.14	85.56				
					FAULT	86.56	86.57				
					G1	86.79	87.78				
					G2P	87.78	87.98				
					G2	87.98	88.84				
					G3P	88.84	89.56				
					G3	89.56	90.48				
					G	86.79	90.48				
					J	104.60	108.60				
					K1P	108.60	109.62				
					K1	109.62	110.52				
					K2P	110.52	111.28				
					K2	111.28	112.53				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD87005	1573.26	6096045.6800	620230.2800	185.78	OVER	0.00	6.71	0.00	10.00	230.74	88.14
					R	15.47	18.63	10.00	20.00	234.44	88.32
					C	32.60	36.50	20.00	30.00	276.52	88.58
					D1	80.71	81.19	30.00	40.00	271.19	88.77
					D2P	81.19	81.31	40.00	50.00	252.99	88.61
					D2	81.31	81.45	50.00	60.00	289.34	88.37
					D3P	81.45	83.20	60.00	70.00	281.77	88.41
					D3	83.20	83.70	70.00	80.00	291.68	88.37
					D4P	83.70	84.10	80.00	90.00	299.37	88.64
					D4	84.10	85.00	90.00	100.00	279.96	88.94
					E1	100.02	100.65	100.00	110.00	323.09	89.05
					E2P	100.65	100.96	110.00	120.00	339.02	89.17
					E2	100.96	102.50	120.00	130.00	355.23	89.06
					E3P	102.50	103.64	130.00	140.00	71.22	88.94
					E3	103.64	105.02	140.00	150.00	48.08	89.06
					E	100.02	105.02	150.00	160.00	46.54	88.91
					F1	123.48	124.09	160.00	170.00	129.52	88.53
					F2P	124.09	124.55	170.00	185.78	165.45	88.61
					F2	124.55	127.44				
					F	123.48	127.44				
					G1	157.47	158.21				
					G2P	158.21	158.35				
					G2	158.35	159.61				
					G3P	159.61	160.18				
					G3	160.18	161.33				
					G	157.47	161.33				
					J	175.50	180.40				
					K1P	180.40	181.31				
					K1	181.31	182.88				
					K2P	182.88	183.85				
					K2	183.85	184.96				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD87006	1486.07	6096478.6700	620295.8400	202.44	OVER	0.00	13.72	0.00	10.00	14.07	87.50
					B	15.43	16.58	10.00	20.00	325.82	88.03
					C1	31.50	31.85	20.00	30.00	188.86	88.30
					C2P	31.85	34.38	30.00	40.00	164.93	88.49
					C2	34.38	35.14	40.00	50.00	181.79	88.81
					C	31.50	35.14	50.00	60.00	79.02	88.28
					D1	83.08	83.82	60.00	70.00	320.56	88.43
					D2P	83.82	83.99	70.00	80.00	284.69	88.75
					D2	83.99	84.30	80.00	90.00	282.59	88.64
					D3P	84.30	85.52	90.00	100.00	173.76	88.54
					D3	85.52	85.97	100.00	110.00	144.23	88.56
					D4P	85.97	86.35	110.00	120.00	228.74	88.74
					D4	86.35	87.11	120.00	130.00	224.61	88.69
					D	83.08	84.30	130.00	140.00	223.38	88.59
					E1	105.93	106.46	140.00	150.00	248.98	88.59
					E2P	106.46	106.89	150.00	160.00	160.04	88.56
					E2	106.89	108.25	160.00	170.00	354.79	88.46
					E3P	108.25	109.32	170.00	180.00	207.85	88.49
					E3	109.32	110.03	180.00	190.00	232.92	88.55
					E	105.93	110.03	190.00	202.44	37.34	88.57
					F1	135.74	136.37				
					F2P	136.37	136.94				
					F2	136.94	140.41				
					F	137.74	140.41				
					G1	161.71	162.78				
					G2P	162.78	163.18				
					G2	163.18	164.03				
					G3P	164.03	164.65				
					G3	164.65	166.02				
					G	161.71	166.02				
					J	186.83	192.19				
					K1P	192.19	193.05				
					K1	193.05	194.26				
					K2P	194.26	195.39				
					K2	195.39	196.41				
					K3P	196.41	196.79				
					K3	196.79	197.17				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD87007	1329.15	6095442.3900	622018.4300	120.63	OVER	0.00	4.88	0.00	1.00	132.14	88.48
					F1	32.22	33.40	1.00	10.00	142.20	88.98
					F2P	33.40	33.95	10.00	20.00	206.68	89.56
					F2	33.95	38.68	20.00	30.00	180.09	89.41
					F	32.22	38.68	30.00	40.00	129.47	88.92
					G1	72.66	73.93	40.00	50.00	158.26	88.67
					G2P	73.93	74.15	50.00	60.00	167.28	89.08
					G2	74.15	75.62	60.00	70.00	181.63	89.22
					G3P	75.62	76.00	70.00	80.00	183.44	88.96
					G3	76.00	78.47	80.00	90.00	186.49	88.56
					G	72.66	78.47	90.00	100.00	204.30	88.41
					J	103.12	109.99	100.00	120.63	223.43	88.81
					K1P	109.99	111.76				
					K1	111.76	113.28				
					K2P	113.28	116.54				
					K2	116.54	118.16				

HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD87008	1167.00	6094538.8300	621727.1900	138.62	OVER	0.00	17.37	0.00	10.00	93.59	67.19
					F1	37.22	37.87	10.00	20.00	92.90	67.19
					F2P	37.87	38.12	20.00	30.00	92.84	67.30
					F2	38.12	40.26	30.00	40.00	92.88	67.39
					F	37.22	40.26	40.00	50.00	92.05	67.25
					FL	40.26	41.27	50.00	60.00	91.37	67.10
					G1	58.87	60.16	60.00	70.00	91.18	67.32
					G2P	60.16	60.20	70.00	80.00	91.99	67.58
					G2	60.20	62.41	80.00	90.00	91.59	67.41
					G3P	62.41	62.94	90.00	100.00	90.90	67.46
					G3	62.94	64.75	100.00	110.00	91.12	67.65
					G	58.87	64.75	110.00	120.00	91.33	67.86
					J	84.51	90.06	120.00	138.62	90.85	67.92
					K1P	90.06	91.98				
					K1	91.98	93.42				
					K2P	93.42	98.49				

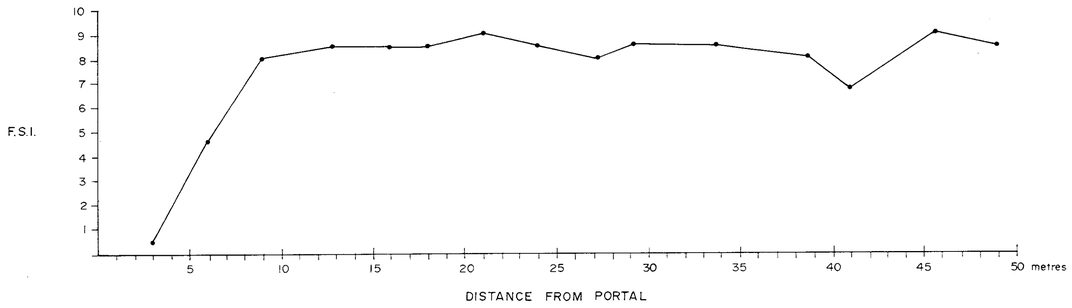
HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD87009	1108.43	6095088.7000	622957.5000	105.14	OVER	0.00	6.70	0.00	10.00	247.70	65.80
					F1	24.70	25.34	10.00	20.00	249.70	65.40
					F2P	25.34	25.71	20.00	30.00	248.70	66.70
					F2	25.71	27.56	30.00	40.00	251.70	65.50
					F	24.70	27.56	40.00	50.00	250.70	65.50
					G1	61.08	61.93	50.00	60.00	249.70	65.60
					G2P	61.93	62.10	60.00	70.00	251.70	65.40
					G2	62.10	63.23	70.00	80.00	251.70	65.00
					G3P	63.23	63.65	80.00	90.00	251.70	64.80
					G3	63.65	65.20	90.00	100.00	250.70	65.20
					G	61.08	65.20	100.00	105.14	249.70	65.10
					J	88.12	93.94				
					K1P	93.94	95.40				
					K1	95.40	96.62				
					K2P	96.62	100.29				
					K2	100.29	101.27				

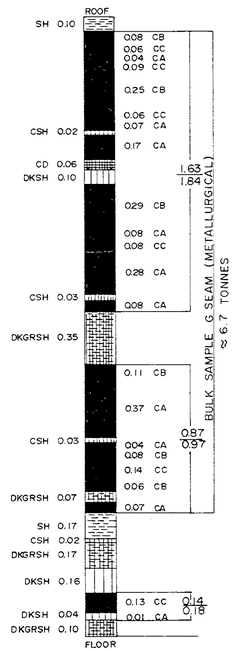
HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD87010	894.89	6094879.6700	623642.3500	158.55	OVER	0.00	3.05	0.00	5.00	255.70	64.60
					E3	22.18	24.03	5.00	10.00	258.70	64.60
					FAULT	48.09	48.10	10.00	20.00	258.70	64.90
					F	48.09	49.40	20.00	30.00	259.70	64.90
					G1	89.91	90.82	30.00	40.00	260.70	64.50
					G2P	90.82	91.03	40.00	50.00	261.70	64.50
					G2	91.03	92.01	50.00	60.00	257.70	64.20
					G3P	92.01	92.40	60.00	70.00	258.70	64.20
					G3	92.40	94.50	70.00	80.00	260.70	64.40
					G	89.91	94.50	80.00	90.00	258.70	64.40
					J	114.68	117.62	90.00	100.00	261.70	64.40
					K1P	117.62	118.78	100.00	110.00	259.70	64.20
					K1	118.78	119.81	110.00	120.00	258.70	64.00
					K2P	119.81	128.06	120.00	130.00	258.70	64.00
					K2	128.06	129.77	130.00	140.00	258.70	64.50
					K2L	130.03	131.11	140.00	150.00	261.70	64.40
								150.00	158.55	258.70	64.50

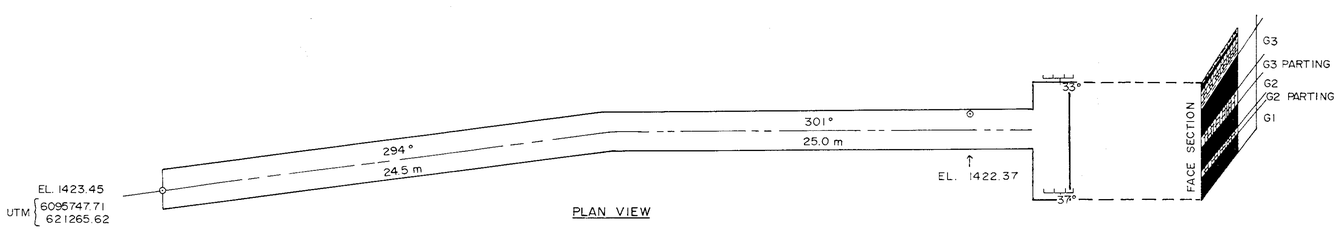
HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD87011	877.77	6095267.5500	623875.1700	189.12	OVER	0.00	7.62	0.00	5.00	227.60	88.65
					D1	61.40	62.22	5.00	10.00	270.59	88.91
					D1P	62.22	62.64	10.00	20.00	306.62	88.81
					D2	62.64	63.47	20.00	30.00	300.40	88.56
					D	61.40	63.47	30.00	40.00	303.33	88.57
					E3	97.80	99.50	40.00	50.00	296.96	88.30
					F1	121.53	121.92	50.00	60.00	291.26	88.46
					F2P	121.92	122.08	60.00	70.00	296.42	88.57
					F2	122.08	125.93	70.00	80.00	293.24	88.41
					F	121.53	125.93	80.00	90.00	286.04	88.30
					G1	146.22	147.27	90.00	100.00	283.26	88.38
					G2P	147.27	147.59	100.00	110.00	287.50	88.39
					G2	147.59	148.41	110.00	120.00	286.57	87.91
					G3P	148.41	148.88	120.00	130.00	278.89	87.84
					G3	148.88	150.42	130.00	140.00	281.39	87.66
					G	146.22	150.42	140.00	150.00	283.09	87.21
					J	170.19	175.22	150.00	160.00	277.29	87.07
					K1P	175.22	176.36	160.00	170.00	277.89	86.95
					K1	176.36	177.43	170.00	189.12	282.08	86.64
					K2P	177.43	183.82				
					K2	183.82	184.66				

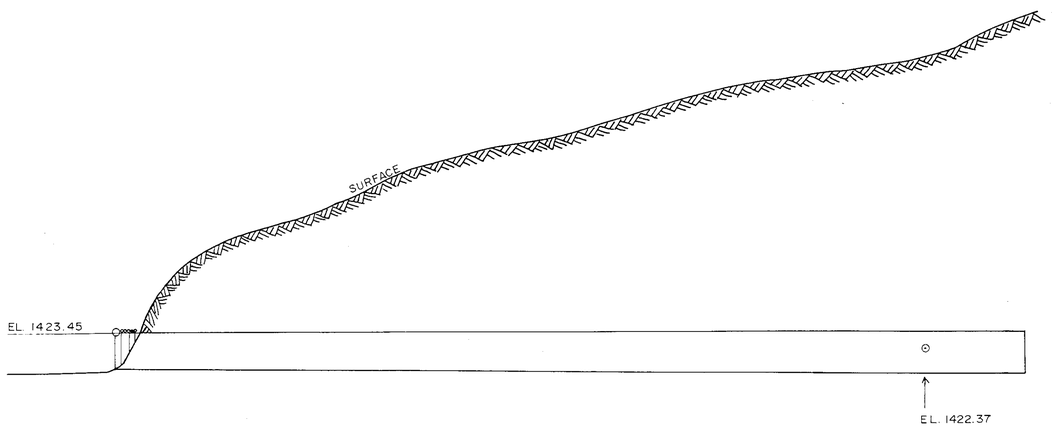
HOLE_ID	ELEVATION metres	NORTHING UTM	EASTING UTM	DEPTH metres	SEAM_ID	FROM metres	TO metres	DEV. FROM	DEV TO	AZIMUTH deg	DIP deg
QHD87012	818.91	6096170.5700	624826.0200	155.24	OVER	0.00	8.53	0.00	10.00	258.70	66.30
					D1	24.66	26.41	10.00	20.00	259.70	66.40
					D2P	26.41	26.74	20.00	30.00	258.70	66.20
					D2	26.74	27.64	30.00	40.00	258.70	66.00
					D	24.66	27.64	40.00	50.00	258.70	65.90
					E1	43.12	43.41	50.00	60.00	258.70	65.60
					E2P	43.41	44.68	60.00	70.00	260.70	65.80
					E2	44.68	46.02	70.00	80.00	260.70	65.90
					E3P	46.02	47.18	80.00	90.00	258.70	65.50
					E3	47.18	49.36	90.00	100.00	259.70	65.70
					F1	71.44	72.10	100.00	110.00	259.70	65.40
					F2P	72.10	72.43	110.00	120.00	262.70	65.70
					F2	72.43	76.35	120.00	130.00	259.70	65.10
					F	71.44	76.35	130.00	140.00	260.70	65.40
					G1	118.83	119.16	140.00	150.00	261.70	65.10
					G2P	119.16	119.27	150.00	155.24	260.70	65.10
					G2	119.27	120.73				
					G3P	120.73	121.96				
					G3	121.96	123.22				
					G	118.83	123.22				
					J	141.94	148.00				
					K1P	148.00	149.30				
					K1	149.30	150.90				
					K2P	150.90	155.24				

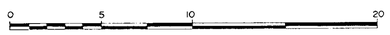
Q.C.L. FILE No.

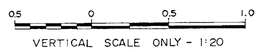












LEGEND

- SHALE
- SANDY SHALE (SILTSTONE)
- COALY SHALE
- GREY SHALE
- DARK SHALE
- DARK GREY SHALE
- CA COAL 0-10% ASH
- CB COAL 11-20% ASH
- CC COAL 21-30% ASH
- CD COAL 30% ASH
- TOPOGRAPHY

Rev.	D	M	Y	Revision Description	Drn.	Des.	App.
0	17	02	88	ORIGINAL DRAFT	DKL	NH	DJ

QUINTETTE COAL LIMITED

Project Manager

DENISON MINES LIMITED

COAL DIVISION

Area TRANSFER | Category ADITS

Drawing Title

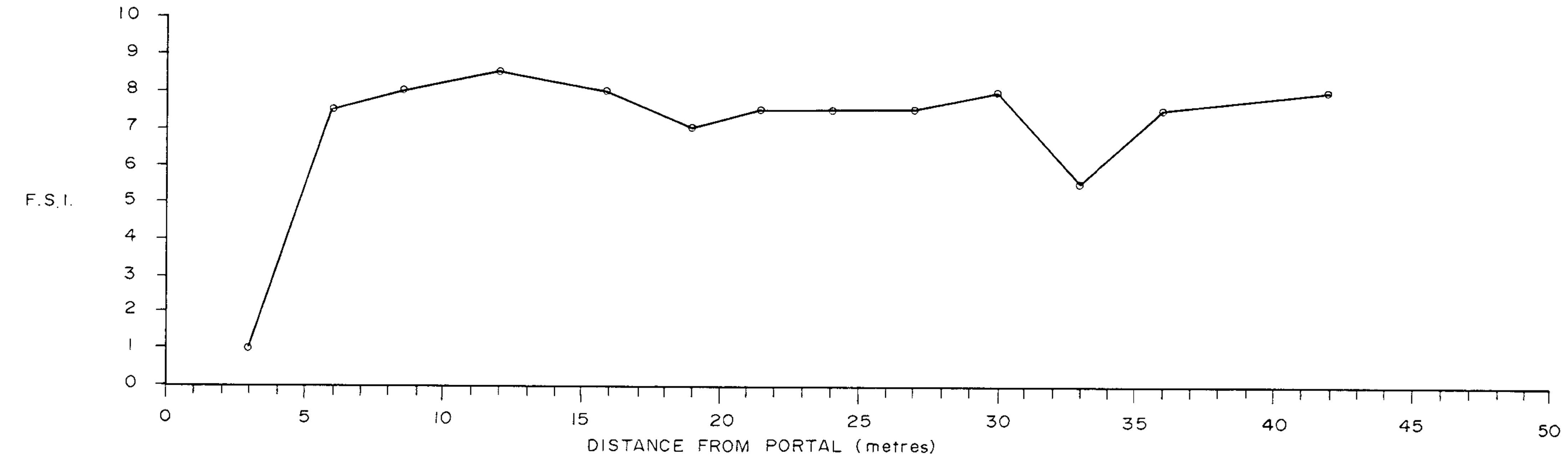
TRANSFER ADIT QHA 8706 G SEAM

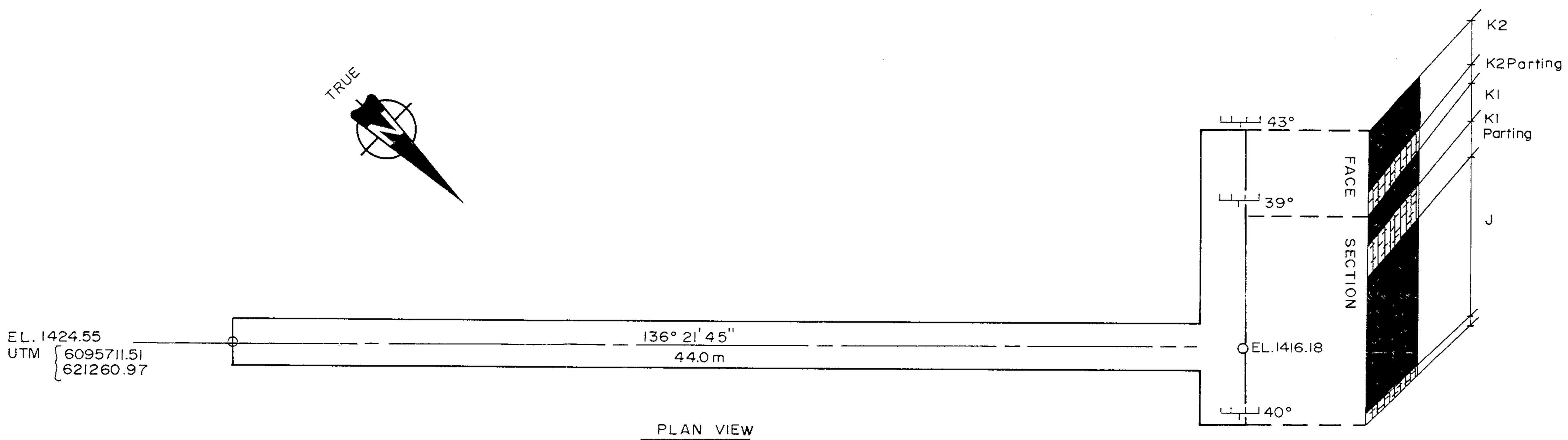
739

Scale	Drawing No.	Rev.
AS SHOWN	88-903-25-006	0

DCL 779 (DCL)

Q.C.L. FILE No.





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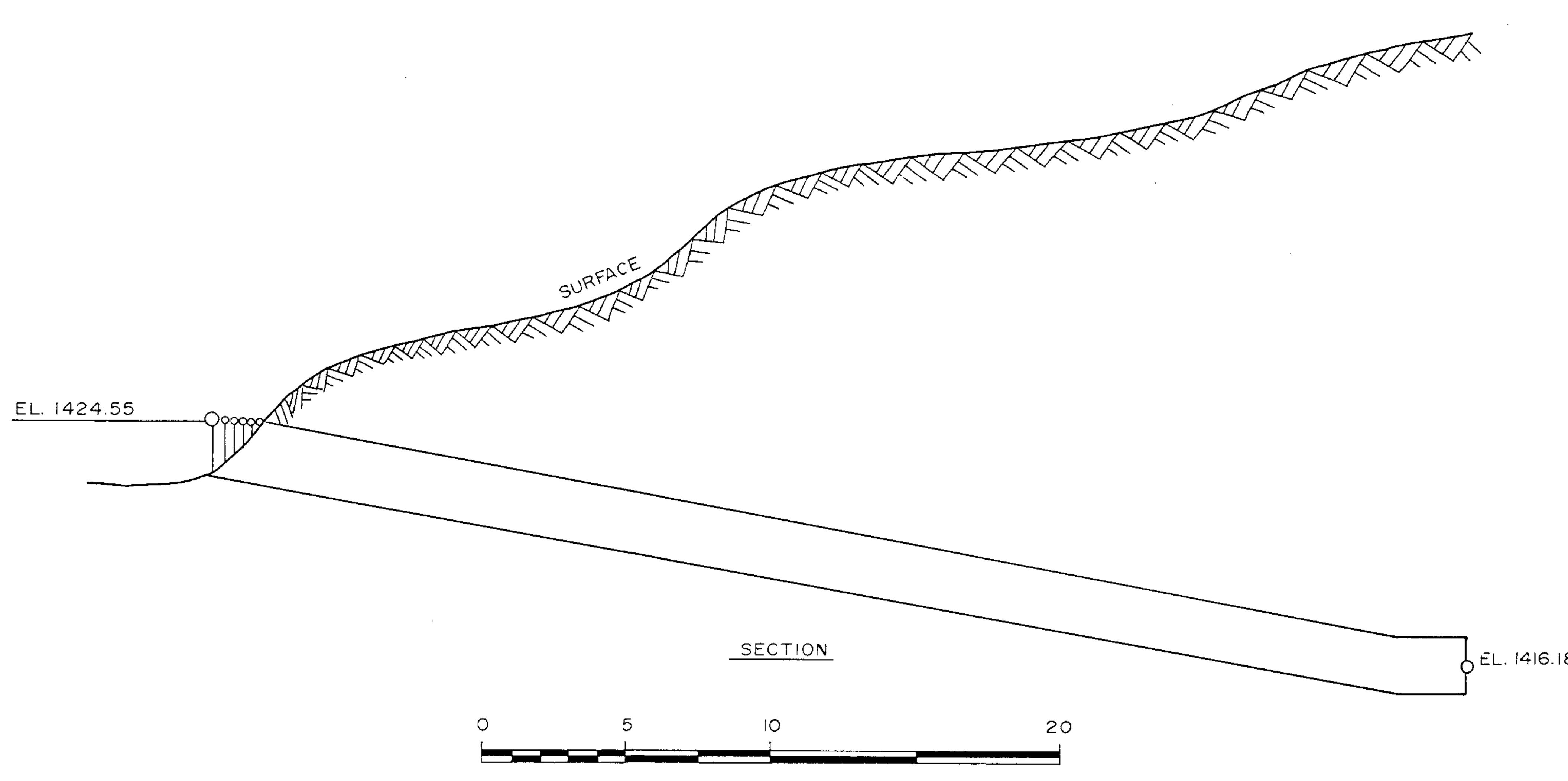

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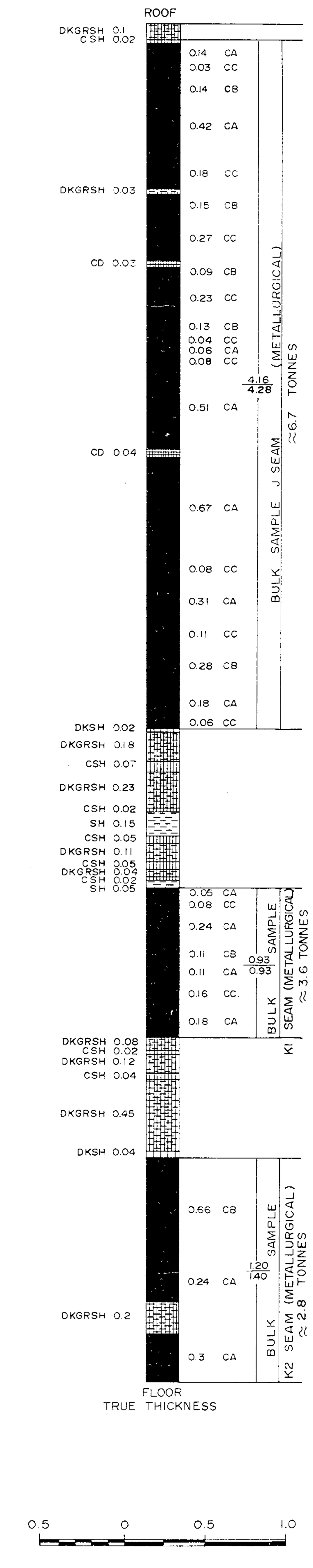


LEGEND

- SHALE
- SANDY SHALE (SILTSTONE)
- COALY SHALE
- GREY SHALE
- DARK SHALE
- DARK GREY SHALE
- CA COAL 0-10% ASH
- CB COAL 11-20% ASH
- CC COAL 21-30% ASH
- CD COAL 30% ASH
- TOPOGRAPHY

Rev.	D	M	Y	Revision Description	Drn.	Des.	App.
0	16	02	88	ORIGINAL DRAFT	RLR	NH	DJ

QUINTETTE COAL LIMITED

Project Manager

DENISON MINES LIMITED

COAL DIVISION

Area TRANSFER Category ADITS

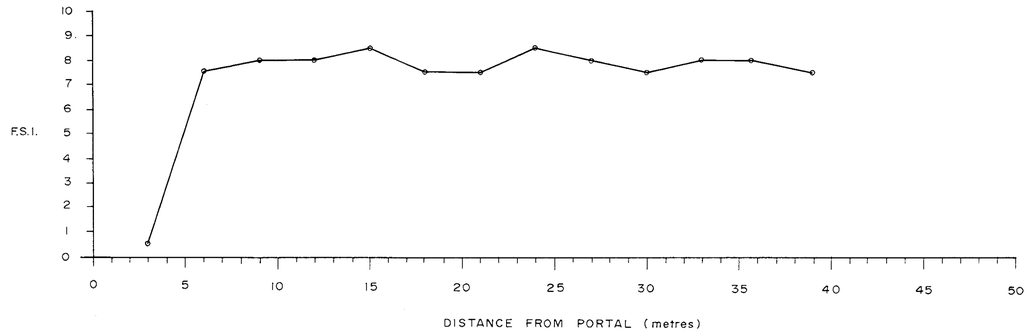
Drawing Title

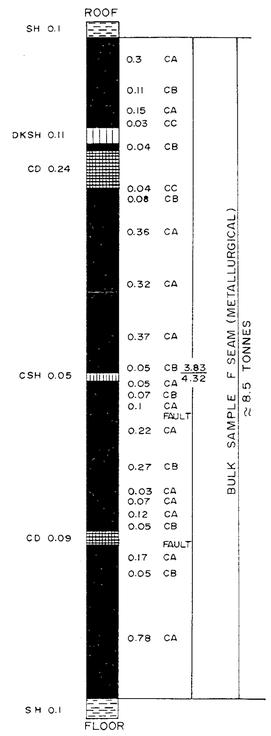
739

TRANSFER
ADIT QHA 8705
J, K1, K2 SEAMS

Scale AS SHOWN | Drawing No. 88-903-25-005 | Rev. 0

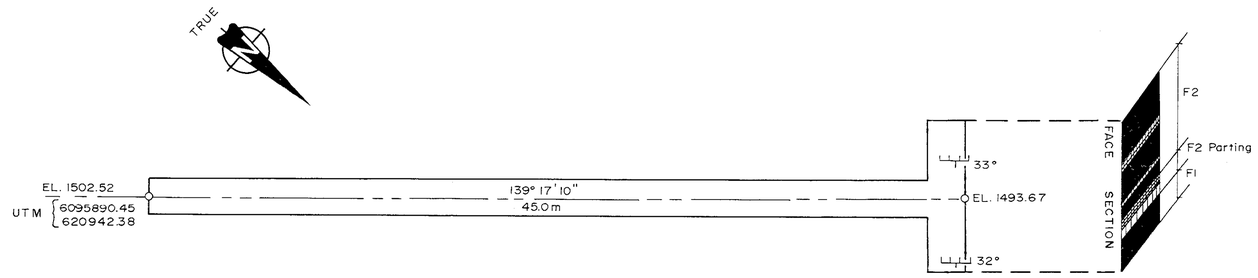
Q.C.L. FILE No.



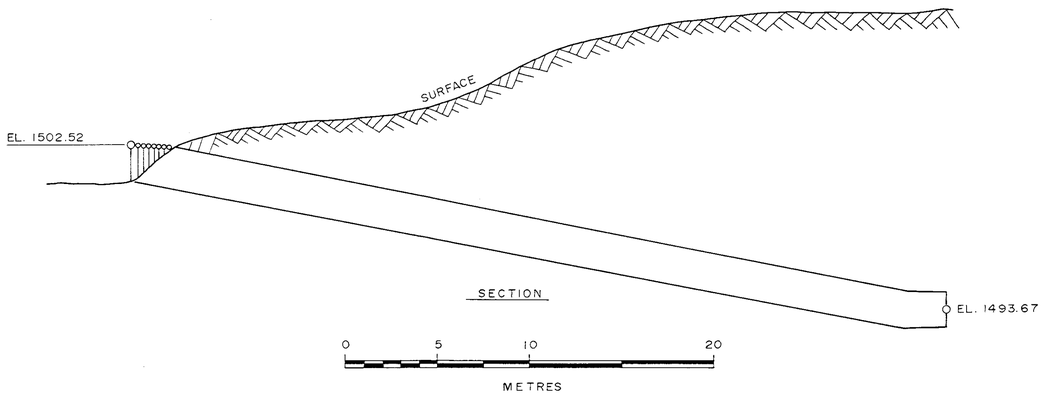


LEGEND

- SHALE
- SANDY SHALE (SILTSTONE)
- COALY SHALE
- GREY SHALE
- DARK SHALE
- DARK GREY SHALE
- CA COAL 0-10% ASH
- CB COAL 11-20% ASH
- CC COAL 21-30% ASH
- CD COAL 30% ASH
- TOPOGRAPHY



PLAN VIEW



SECTION

0	27	2	88	ORIGINAL DRAFT	RLR	NH	DJ
Rev.	D	M	Y	Revision Description	Drn.	Des.	App.

QUINTETTE COAL LIMITED

Project Manager

DENISON MINES LIMITED

COAL DIVISION

Area	Category
TRANSFER	ADITS

Drawing Title

TRANSFER ADIT QHA 8704 F SEAM

739

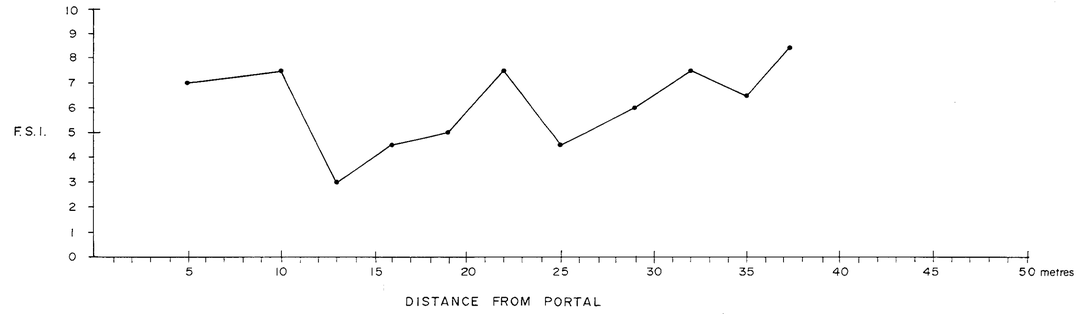
Scale	Drawing No.	Rev.
AS SHOWN	88-903-25-004	0

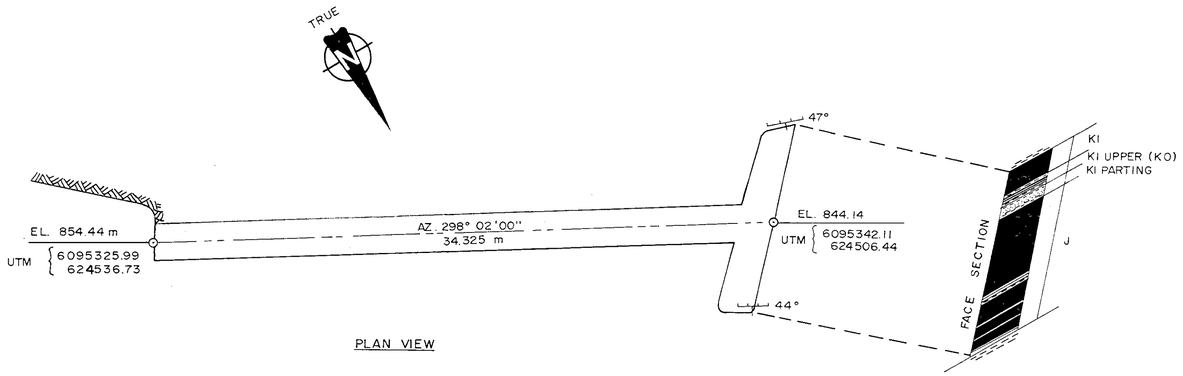
BCAL 7183-GC1

Appendix T.3

Adit Drawings

Q.C.L. FILE No.





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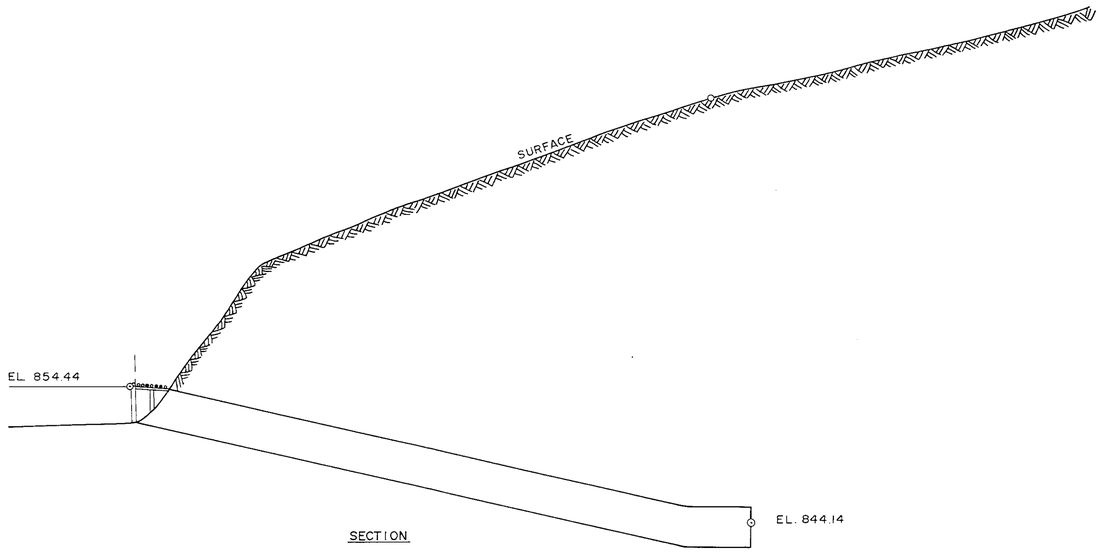
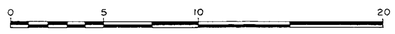
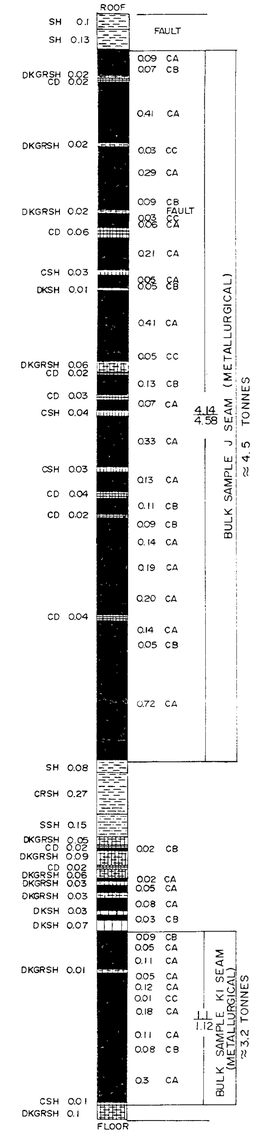


SECTION





TRUE THICKNESS

VERTICAL SCALE ONLY - 1:20

LEGEND

- SHALE
- SANDY SHALE (SILTSTONE)
- COALY SHALE
- GREY SHALE
- DARK SHALE
- DARK GREY SHALE
- CA COAL 0-10% ASH
- CB COAL 11-20% ASH
- CC COAL 21-30% ASH
- CD COAL 30% ASH
- TOPOGRAPHY

Rev.	D	M	Y	Revision Description	Drn.	Des.	App.
0	16	02	88	ORIGINAL DRAFT	DKL	NH	DJ

QUINTETTE COAL LIMITED

Project Manager

DENISON MINES LIMITED

COAL DIVISION

Area GRIZZLY | Category ADITS

Drawing Title

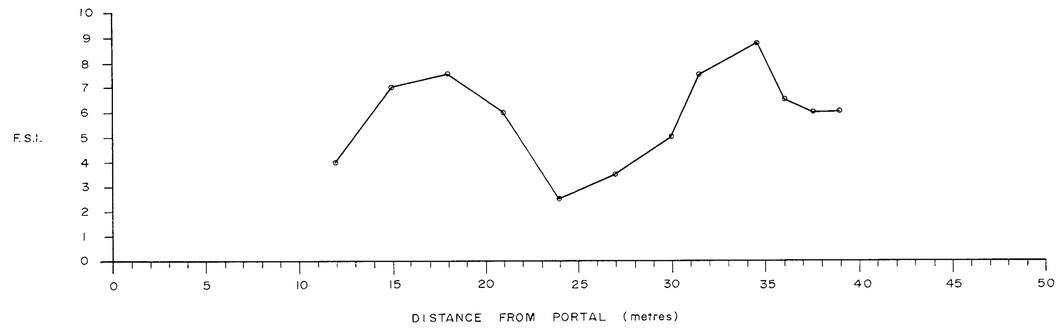
GRIZZLY ADIT QHA 8701 J AND KI SEAMS

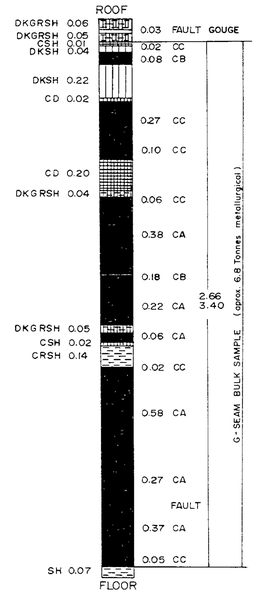
739

Scale	Drawing No.	Rev.
AS SHOWN	88 - 905 - 25 - 001	0

BCIL 1760 QCL

Q.C.L. FILE No.



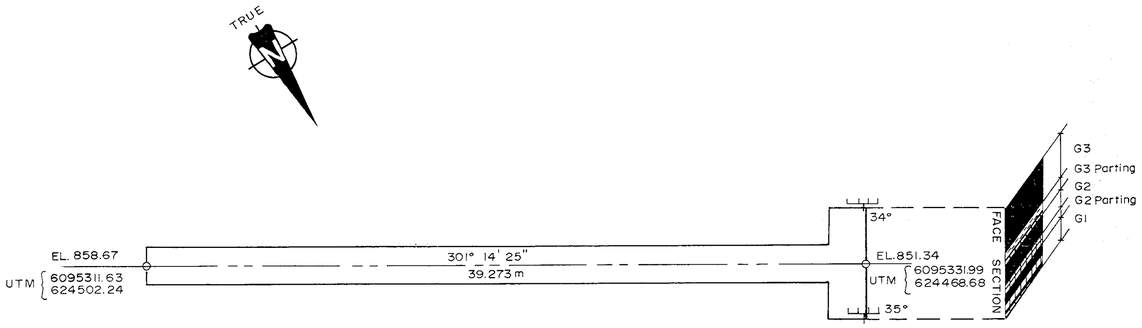


TRUE THICKNESS

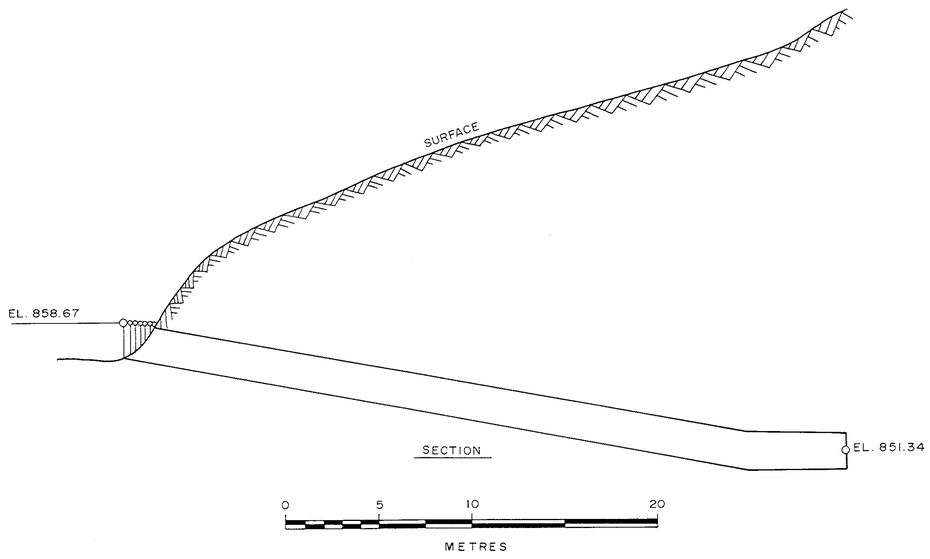
VERTICAL SCALE ONLY 1:20

LEGEND

- SHALE
- SANDY SHALE (SILTSTONE)
- COALY SHALE
- GREY SHALE
- DARK SHALE
- DARK GREY SHALE
- CA COAL 0-10% ASH
- CB COAL 11-20% ASH
- CC COAL 21-30% ASH
- CD COAL 30% ASH
- TOPOGRAPHY



PLAN VIEW



SECTION

Rev.	D	M	Y	Revision Description	Drn.	Des.	App.
0	16	02	88	ORIGINAL DRAFT	RLR	NH	DJ

QUINTETTE COAL LIMITED

Project Manager

DENISON MINES LIMITED

COAL DIVISION

Area: GRIZZLY | Category: ADITS

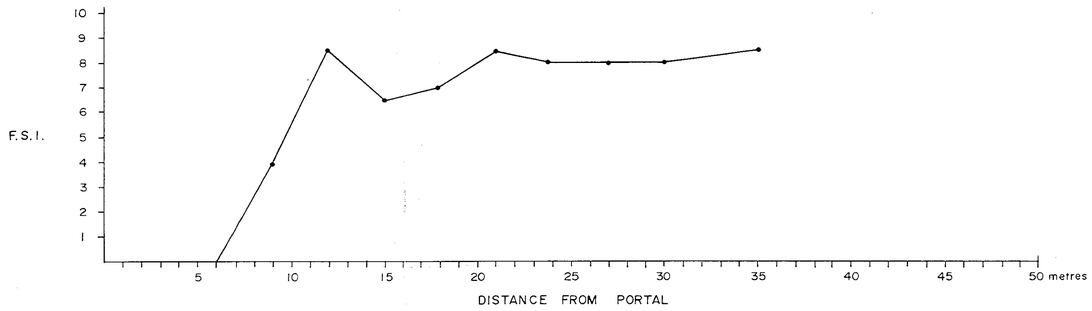
Drawing Title

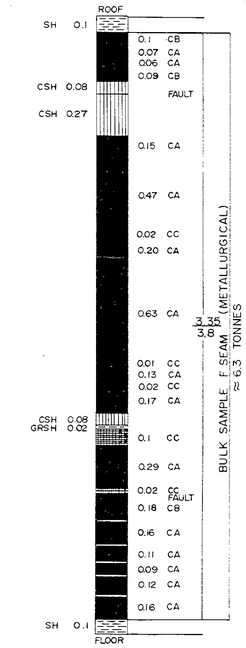
GRIZZLY ADIT QHA 8702 G- SEAM

739

Scale	Drawing No.	Rev.
AS SHOWN	88-905-25-002	0

Q.C.L. FILE No.



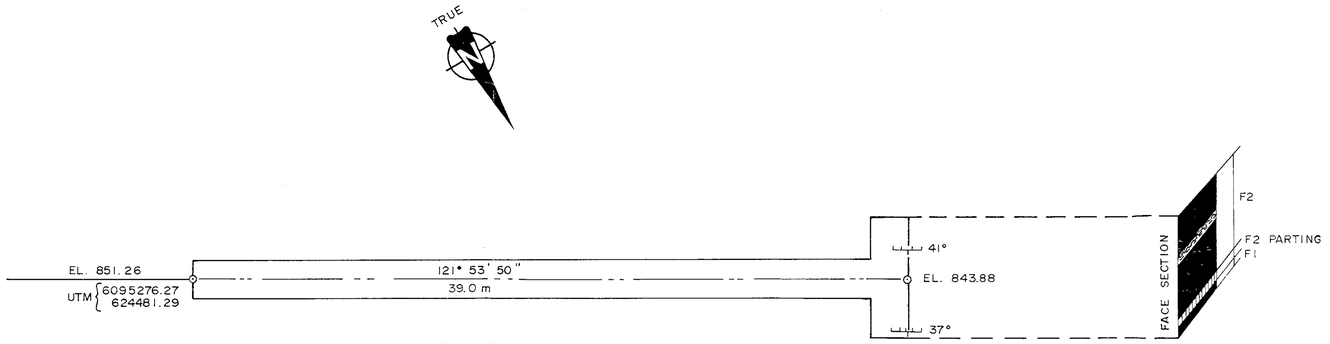


TRUE THICKNESS

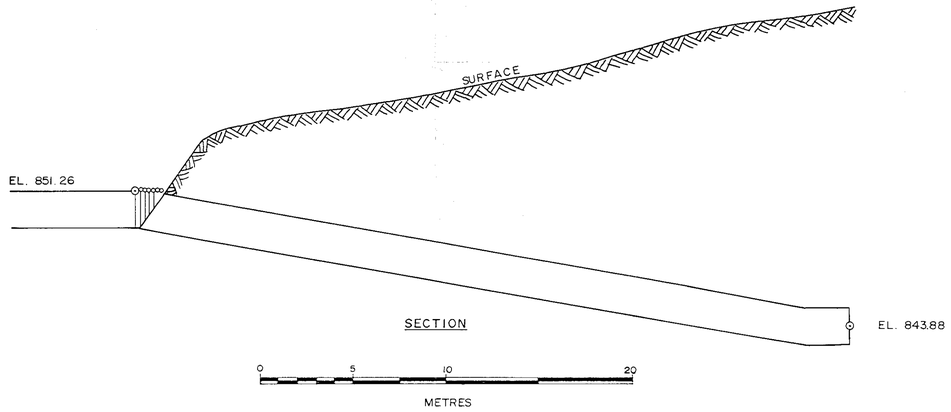
VERTICAL SCALE ONLY - 1:20

LEGEND

- SHALE
- SANDY SHALE (SILTSTONE)
- COALY SHALE
- GREY SHALE
- DARK SHALE
- DARK GREY SHALE
- CA COAL 0-10% ASH
- CB COAL 11-20% ASH
- CC COAL 21-30% ASH
- CD COAL 30% ASH
- TOPOGRAPHY



PLAN VIEW



SECTION

Rev.	D	M	Y	Revision Description	Drn.	Des.	App.
0	16	02	88	ORIGINAL DRAFT	DKL	NH	DJ

QUINTETTE COAL LIMITED

Project Manager

DENISON MINES LIMITED

COAL DIVISION

Area GRIZZLY | Category ADITS

Drawing Title

GRIZZLY ADIT QHA 8703 F SEAM

739

Scale	Drawing No.	Rev.
AS SHOWN	88-905-25-003	0

BCL 7740-0C1

Appendix T.4

Correlation Charts

Appendix T.4.1

Transfer Stratigraphic Correlation

TRANSFER AREA

QHD 85002

QHD 87005

QHD 87006

QHD 86003

Hulcross

Gates

B SEAM

QHD 85001

QHD 86005

QHD 87004

QHD 86008

QHD 87008

D SEAM

QHD 86007

QHD 87010

QHD 87007

QHD 87009

QHD 86006

E3 SEAM

F SEAM

G SEAM

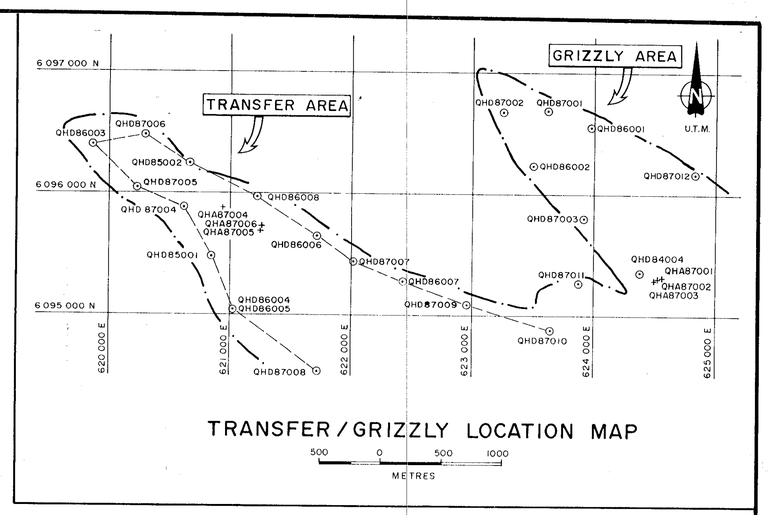
J SEAM

K1 SEAM

K2 SEAM

FAULT

NORMAL FAULT



TRANSFER / GRIZZLY LOCATION MAP

500 0 500 1000

METRES

LITHOLOGIC SYMBOLS

CONGLOMERATE	CGL
COARSE SANDSTONE	CS
MEDIUM SANDSTONE	MS
FINE SANDSTONE	FS
VERY FINE SANDSTONE	VFS
SANDY SHALE	SSH (SILTSTONE)
COARSE SHALE	CRSH (SILTY CLAYSTONE)
SHALE	SH (CLAYSTONE)
DARK GREY SHALE	DKGRSH (CARBONACEOUS > 60% ASH)
DARK SHALE	DKSH (50 - 60 % ASH)
COALY SHALE	CSH (40 - 50 % ASH)
COAL / ROCK	CD (30 - 40 % ASH)
COAL	CC (20 - 30 % ASH)
COAL	CB (10 - 20 % ASH)
COAL	CA (<10 % ASH)

LEGEND

COAL THICKNESS (m)

0.99 / 1.14 — 12.25 ASH%

TOTAL SEAM THICKNESS (m)

5 0 5 10

METRES (VERTICAL)

Rev	D	M	Y	Revision Description	Drn.	Des.	App.
0	17	03	88	ORIGINAL DRAFT	KJV	NH	DJ

QUINTETTE COAL LIMITED

Project Manager

DENISON MINES LIMITED

COAL DIVISION

Area TRANSFER | Category CORRELATION

Drawing Title

TRANSFER AREA

GATES CORRELATION

739

Scale	Drawing No.	Rev.
1:200	88 - 903 - 26 - 001	0

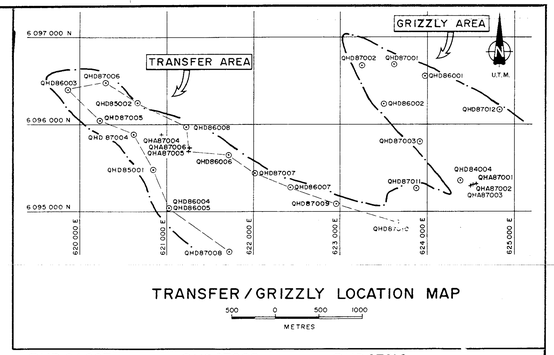
Appendix T.4.2

Transfer Seam Correlation

(2 Sheets)


TRANSFER AREA
TRANSFER / GRIZZLY LOCATION MAP
TRANSFER AREA
GRIZZLY AREA
METRES
LITHOLOGIC SYMBOLS
MISSING ROCK MR
CONGLOMERATE CGL
COARSE SANDSTONE CS
MEDIUM SANDSTONE MS
FINE SANDSTONE FS
VERY FINE SANDSTONE VFS
SANDY SHALE SSH (SILTSTONE)
COARSE SHALE CRSH (SILTY CLAYSTONE)
SHALE SH (CLAYSTONE)
DARK GREY SHALE DKGRSH (CARBONACEOUS > 60 % ASH)
DARK SHALE DKSH (50 - 60 % ASH)
COALY SHALE CSH (40 - 50 % ASH)
COAL / ROCK CD (30 - 40 % ASH)
COAL CC (20 - 30 % ASH)
COAL CB (10 - 20 % ASH)
COAL CA (< 10 % ASH)
MISSING COAL MC
LEGEND
ROCK THICKNESS (m) AND LITHOLOGY
COAL THICKNESS (m) AND DESIGNATION
COAL THICKNESS (m)
ASH %
TOTAL SEAM THICKNESS (m)
METRES (vertical)
D SEAM
E 1 AND 2 SEAMS
E3 SEAM
F SEAM
QHD86005
QHD85001
QHD87004
QHD87005
QHD86003
QHD87006
QHD85002
QHD86008
QHD87010
QHD 87008
QHA87004 (ADIT)
QHD86006
QHD87007
QHD86007
QHD87009
FAULT
0 | 04 | 04 | 88 | ORIGINAL DRAFT | ET | NH | DJ
Rev. | D | M | Y | Revision Description | Drn. | Des. | App.
QUINTETTE COAL LIMITED
Project Manager
DENISON MINES LIMITED
COAL DIVISION
Area TRANSFER
Category CORRELATION
739
Drawing Title
TRANSFER AREA
DETAILED SEAM CORRELATION
D, E AND F SEAMS
Scale 1: 50 (vert)
Drawing No. 88-903-26-002
Rev. 0

TRANSFER AREA

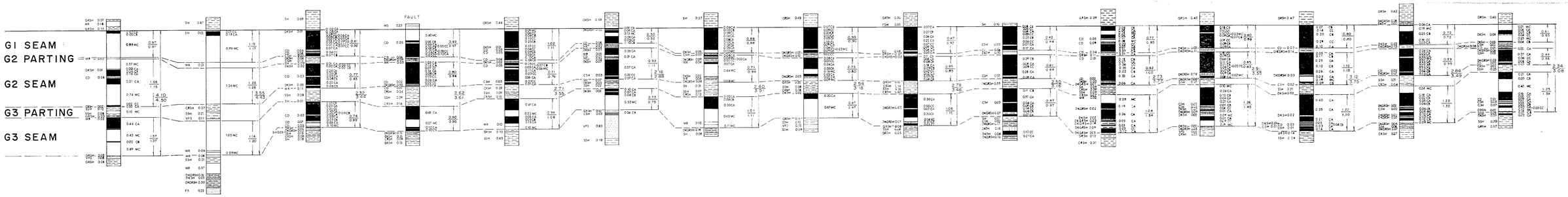


TRANSFER / GRIZZLY LOCATION MAP

500 0 500 1000
METRES

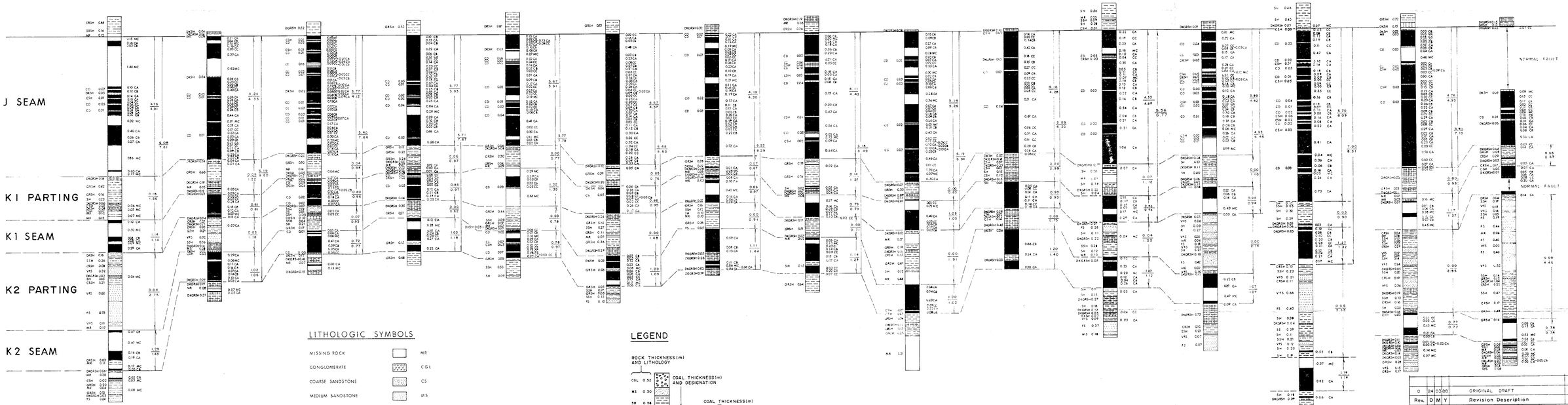
QHD 87008 | QHD 86005 | QHD85001 | QHD 87004 | QHD87005 | QHD86003 | QHD87006 | QHD85002 | QHD86008 | QHA87006 (ADIT) | QHD 86006 | QHD87007 | QHD 86007 | QHD87009 | QHD87010

G1 SEAM
G2 PARTING
G2 SEAM
G3 PARTING
G3 SEAM



QHD 87008 | QHD 86005 | QHD85001 | QHD 87004 | QHD87005 | QHD86003 | QHD87006 | QHD 85002 | QHD86008 | QHA 87005 | QHD 86006 | QHD87007 | QHD 86007 | QHD87009 | QHD87010

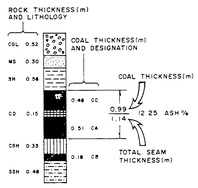
J SEAM
K1 PARTING
K1 SEAM
K2 PARTING
K2 SEAM



LITHOLOGIC SYMBOLS

MISSING ROCK		MR
CONGLOMERATE		CGL
COARSE SANDSTONE		CS
MEDIUM SANDSTONE		MS
FINE SANDSTONE		FS
VERY FINE SANDSTONE		VFS
SANDY SHALE		SSH (SILTSTONE)
COARSE SHALE		CRSH (SILTY CLAYSTONE)
SHALE		SH (CLAYSTONE)
DARK GREY SHALE		DKGRSH (CARBONACEOUS > 60% ASH)
DARK SHALE		DKSH (50 - 60% ASH)
COALY SHALE		CSH (40 - 50% ASH)
COAL / ROCK		CD (30 - 40% ASH)
COAL		CC (20 - 30% ASH)
COAL		CB (10 - 20% ASH)
COAL		CA (<10% ASH)
MISSING COAL		MC

LEGEND



1 0 1 2
METRES (VERTICAL)

Rev.	D	M	Y	Revision Description	Drn.	Des.	App.
0	24	03	86	ORIGINAL DRAFT	ET	DJ	DJ

QUINTETTE COAL LIMITED
Project Manager
DENISON MINES LIMITED
COAL DIVISION

Area TRANSFER | Category CORRELATION

Drawing Title
TRANSFER AREA
DETAILED SEAM CORRELATION
G, J AND K SEAMS

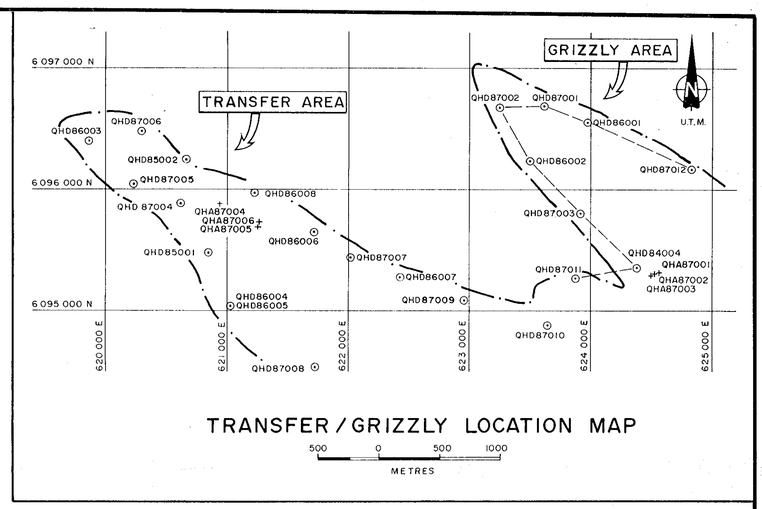
739

Scale	Drawing No.	Rev.
1:50 (vert.)	88-903-26-003	0

Appendix T.4.3

Grizzly Stratigraphic Correlation

GRIZZLY AREA

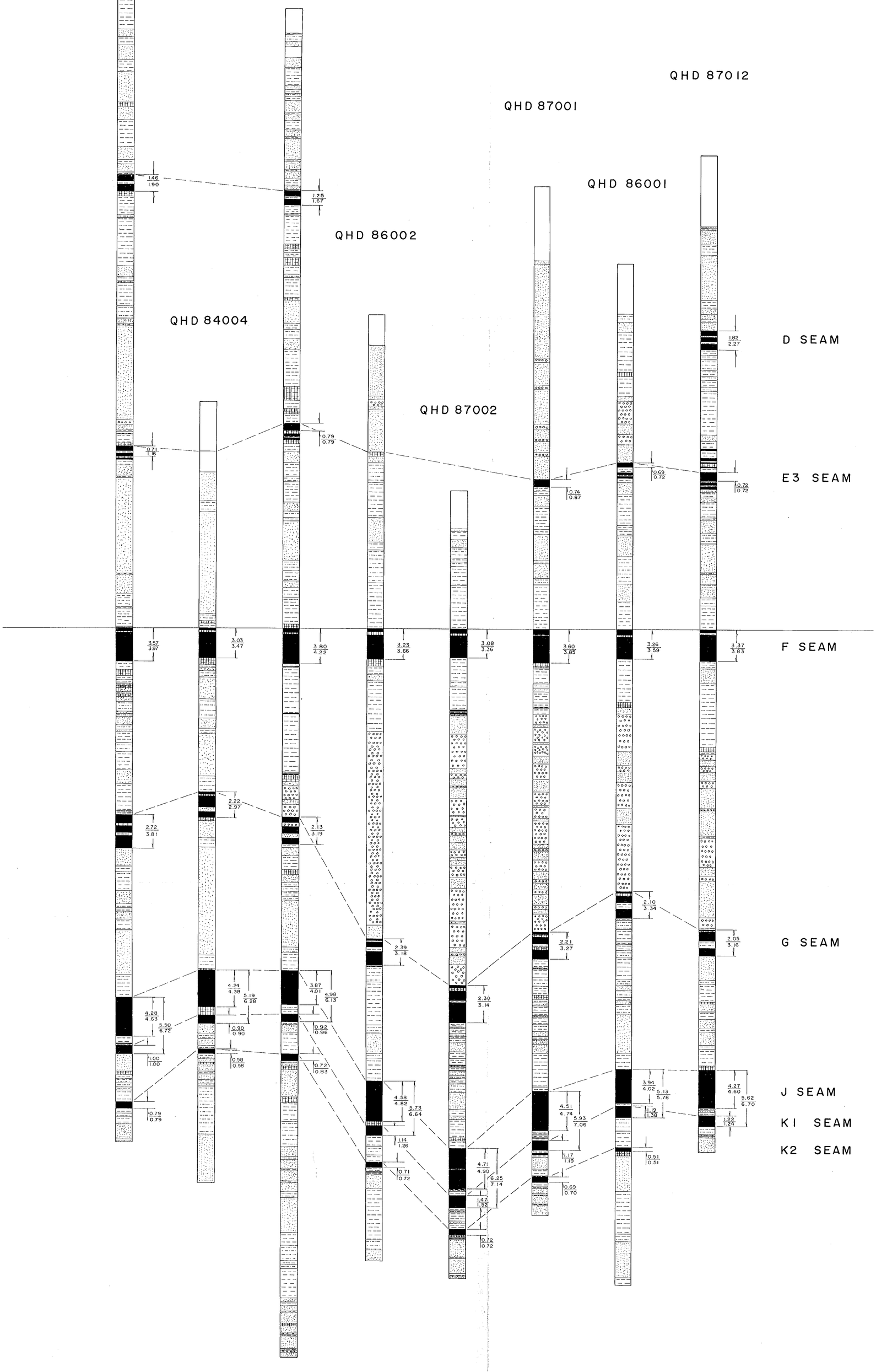


TRANSFER / GRIZZLY LOCATION MAP

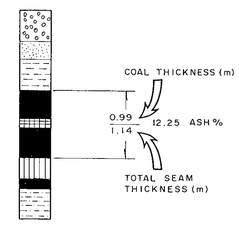
500 0 500 1000
METRES

LITHOLOGIC SYMBOLS

CONGLOMERATE	CGL
COARSE SANDSTONE	CS
MEDIUM SANDSTONE	MS
FINE SANDSTONE	FS
VERY FINE SANDSTONE	VFS
SANDY SHALE	SSH (SILTSTONE)
COARSE SHALE	CRSH (SILTY CLAYSTONE)
SHALE	SH (CLAYSTONE)
DARK GREY SHALE	DKGRSH (CARBONACEOUS > 60% ASH)
DARK SHALE	DKSH (50 - 60 % ASH)
COALY SHALE	CSH (40 - 50 % ASH)
COAL / ROCK	CD (30 - 40 % ASH)
COAL	CC (20 - 30 % ASH)
COAL	CB (10 - 20 % ASH)
COAL	CA (<10 % ASH)



LEGEND



5 0 5 10
METRES (VERTICAL)

Rev	D	M	Y	Revision Description	Drn.	Des.	App.
0	18	03	88	ORIGINAL DRAFT	KJV	NH	DJ

QUINTETTE COAL LIMITED

Project Manager

DENISON MINES LIMITED

COAL DIVISION

Area GRIZZLY | Category CORRELATION

Drawing Title

GRIZZLY AREA

GATES CORRELATION

739

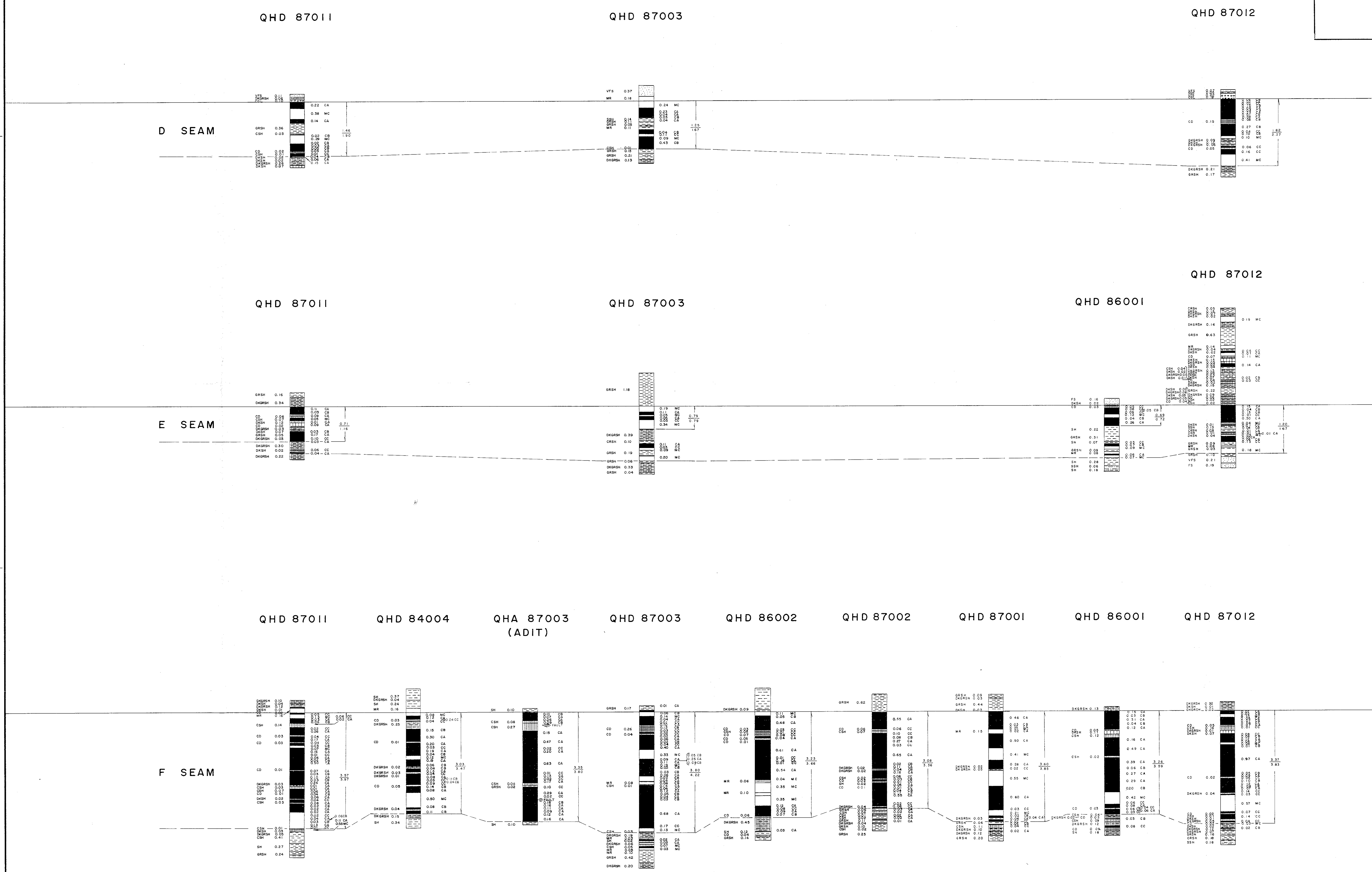
Scale	Drawing No.	Rev.
1:200	88-905-26-001	0

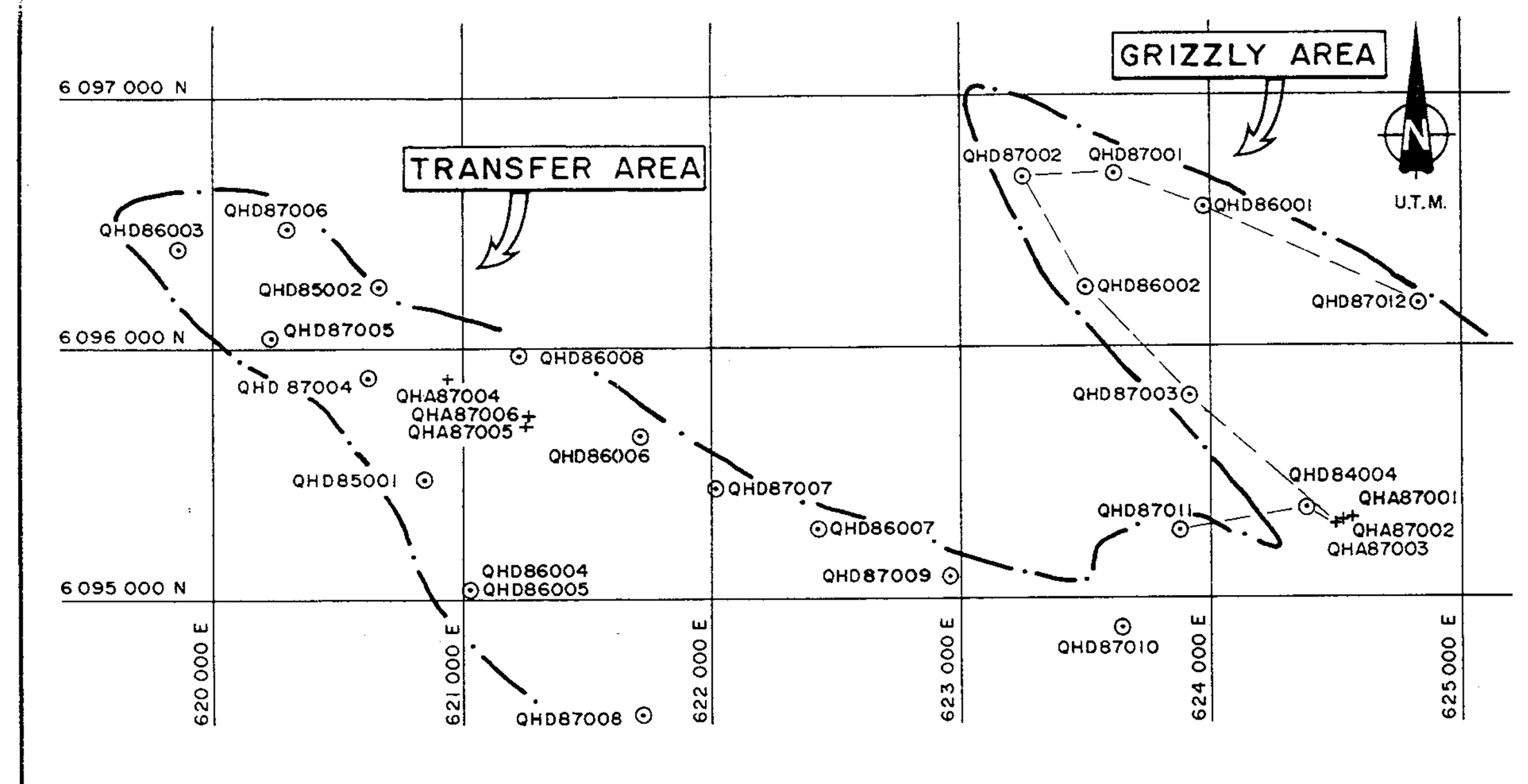
Appendix T.4.4

Grizzly Seam Correlation

(2 sheets)

GRIZZLY AREA





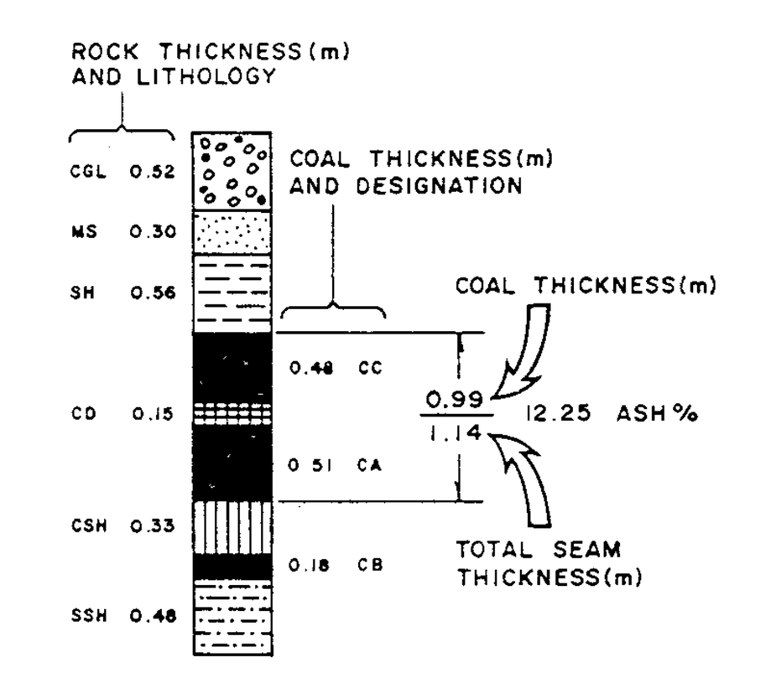
TRANSFER / GRIZZLY LOCATION MAP

500 0 500 1000 METRES

LITHOLOGIC SYMBOLS

CONGLOMERATE	CGL
COARSE SANDSTONE	CS
MEDIUM SANDSTONE	MS
FINE SANDSTONE	FS
VERY FINE SANDSTONE	VFS
SANDY SHALE	SSH (SILTSTONE)
COARSE SHALE	CRSH (SILTY CLAYSTONE)
SHALE	SH (CLAYSTONE)
DARK GREY SHALE	DKGRSH (CARBONACEOUS > 60% ASH)
DARK SHALE	DKSH (50 - 60 % ASH)
COALY SHALE	CSH (40 - 50 % ASH)
COAL / ROCK	CD (30 - 40 % ASH)
COAL	CC (20 - 30 % ASH)
COAL	CB (10 - 20 % ASH)
COAL	CA (<10 % ASH)

LEGEND



1 0 1 2
METRES (VERTICAL)

Rev.	D	M	Y	Revision Description	Drn.	Des.	App.
0	29	03	88	ORIGINAL DRAFT	RLR	NH	DJ

QUINTETTE COAL LIMITED

Project Manager

DENISON MINES LIMITED

COAL DIVISION

Area GRIZZLY | Category CORRELATION

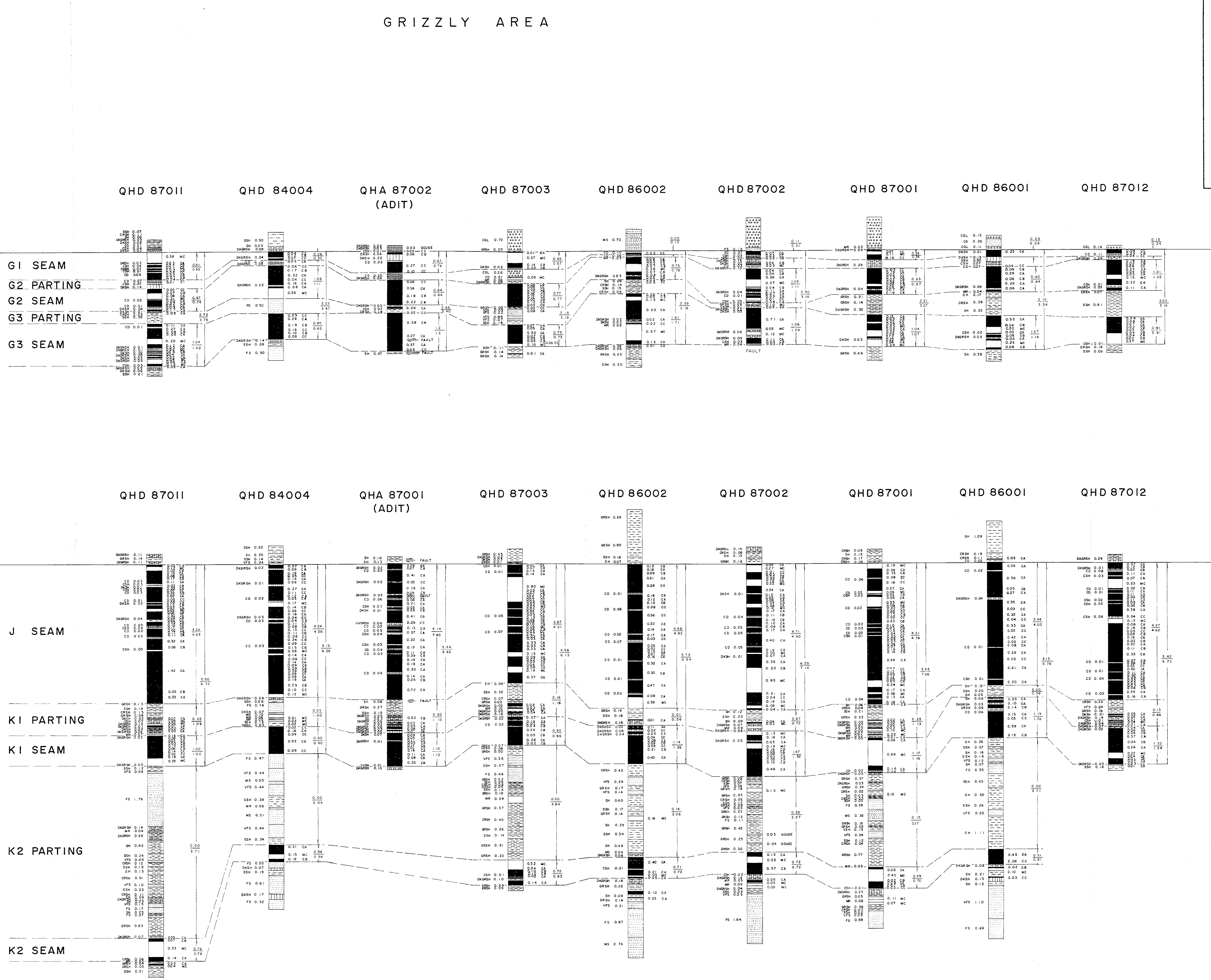
Drawing Title

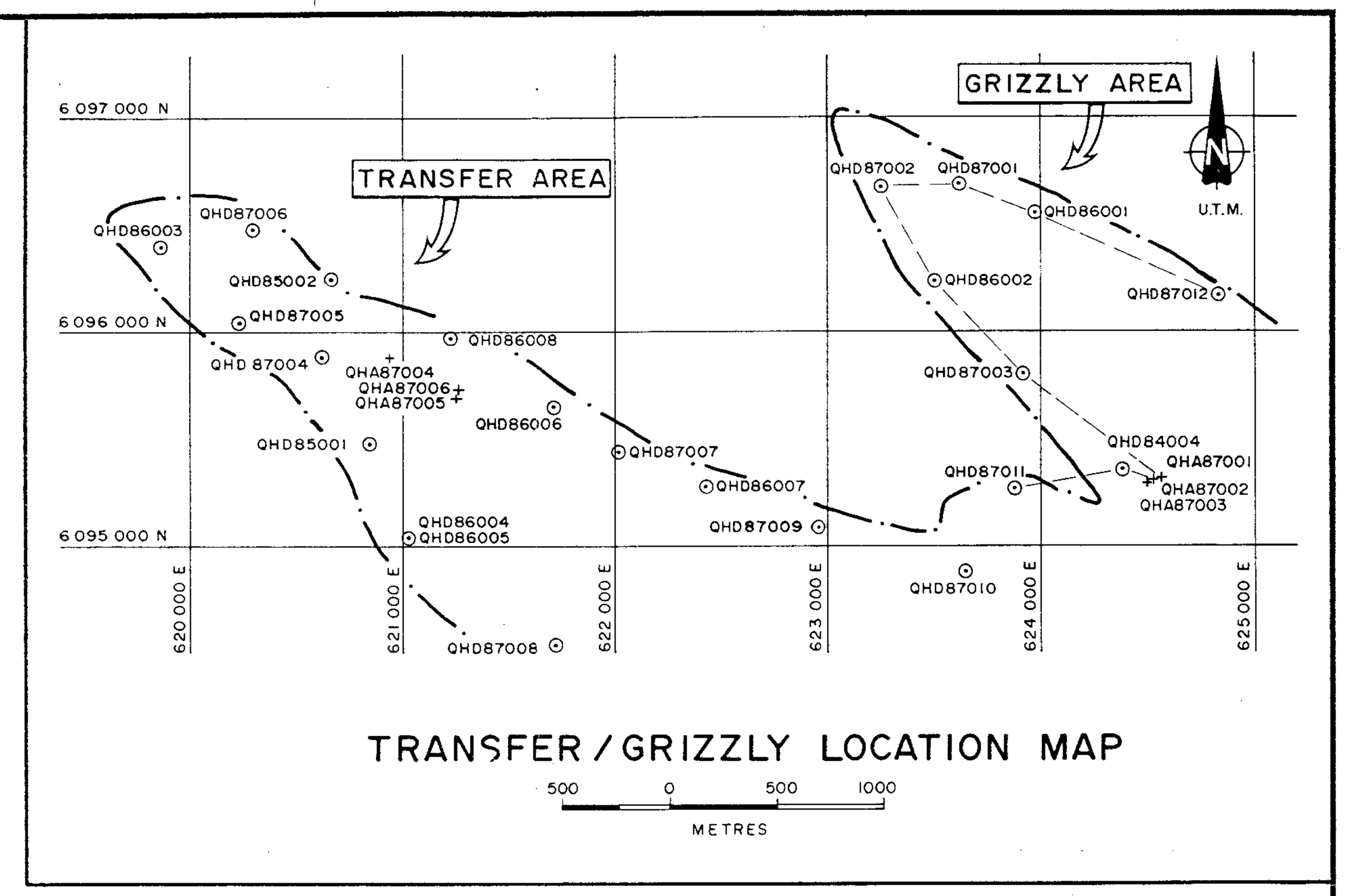
739

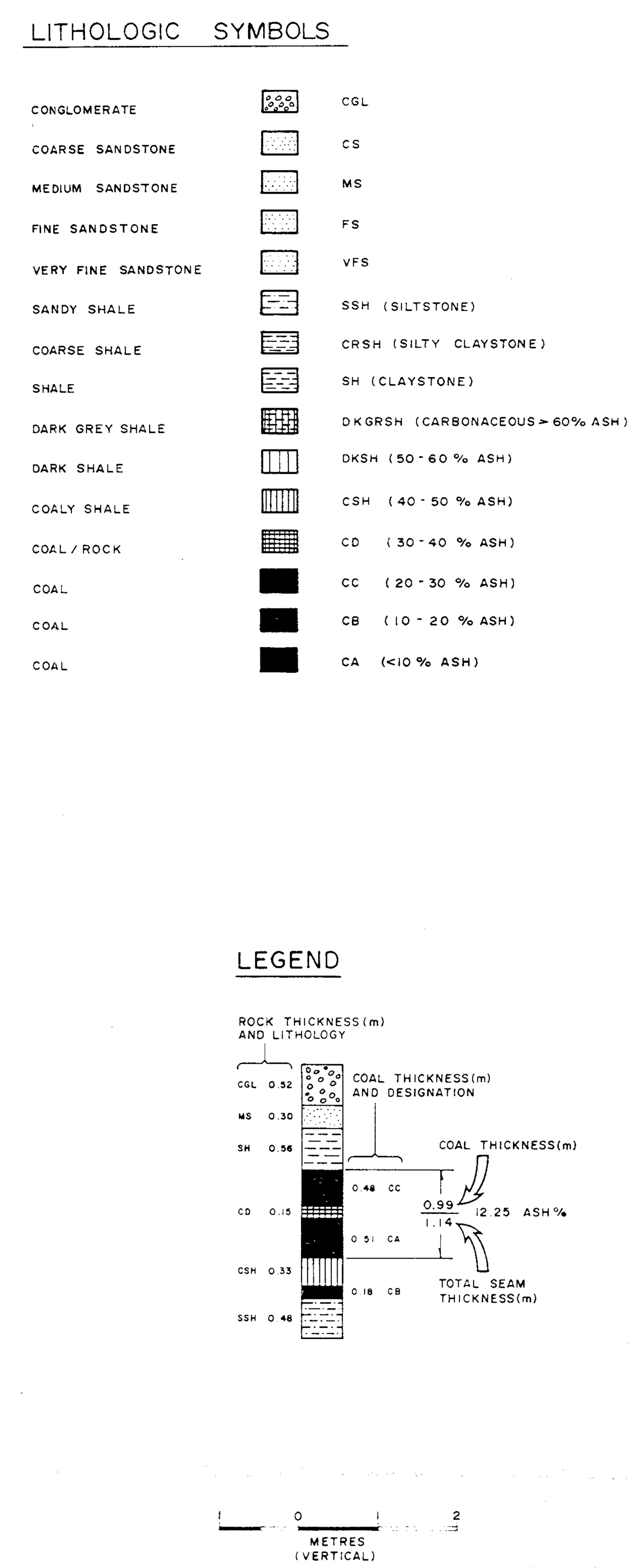
GRIZZLY AREA

DETAILED SEAM CORRELATION
D, E AND F SEAMS

Scale	Drawing No.	Rev.
1:50 (vert.)	88-905-26-002	0


GRIZZLY AREA
QHD 87011
QHD 84004
QHA 87002 (ADIT)
QHD 87003
QHD 86002
QHD 87002
QHD 87001
QHD 86001
QHD 87012
G1 SEAM
G2 PARTING
G2 SEAM
G3 PARTING
G3 SEAM
QHD 87011
QHD 84004
QHA 87001 (ADIT)
QHD 87003
QHD 86002
QHD 87002
QHD 87001
QHD 86001
QHD 87012
J SEAM
K1 PARTING
K1 SEAM
K2 PARTING
K2 SEAM




LITHOLOGIC SYMBOLS
CONGLOMERATE
COARSE SANDSTONE
MEDIUM SANDSTONE
FINE SANDSTONE
VERY FINE SANDSTONE
SANDY SHALE
COARSE SHALE
SHALE
DARK GREY SHALE
DARK SHALE
COALY SHALE
COAL / ROCK
COAL
COAL
COAL
CGL
CS
MS
FS
VFS
SSH (SILTSTONE)
CRSH (SILTY CLAYSTONE)
SH (CLAYSTONE)
DKGRSH (CARBONACEOUS > 60% ASH)
DKSH (50-60 % ASH)
CSH (40-50 % ASH)
CD (30-40 % ASH)
CC (20-30 % ASH)
CB (10-20 % ASH)
CA (<10 % ASH)
LEGEND
ROCK THICKNESS(m) AND LITHOLOGY
COAL THICKNESS(m) AND DESIGNATION
COAL THICKNESS(m)
ASH %
TOTAL SEAM THICKNESS(m)
METRES (VERTICAL)

Rev.	D	M	Y	Revision Description	Drn.	Des.	App.
0	24	03	88	ORIGINAL DRAFT	DKL	NH	DJ

QUINTETTE COAL LIMITED

Project Manager

DENISON MINES LIMITED

COAL DIVISION

Area GRIZZLY — Category CORRELATION

Drawing Title

GRIZZLY AREA 739

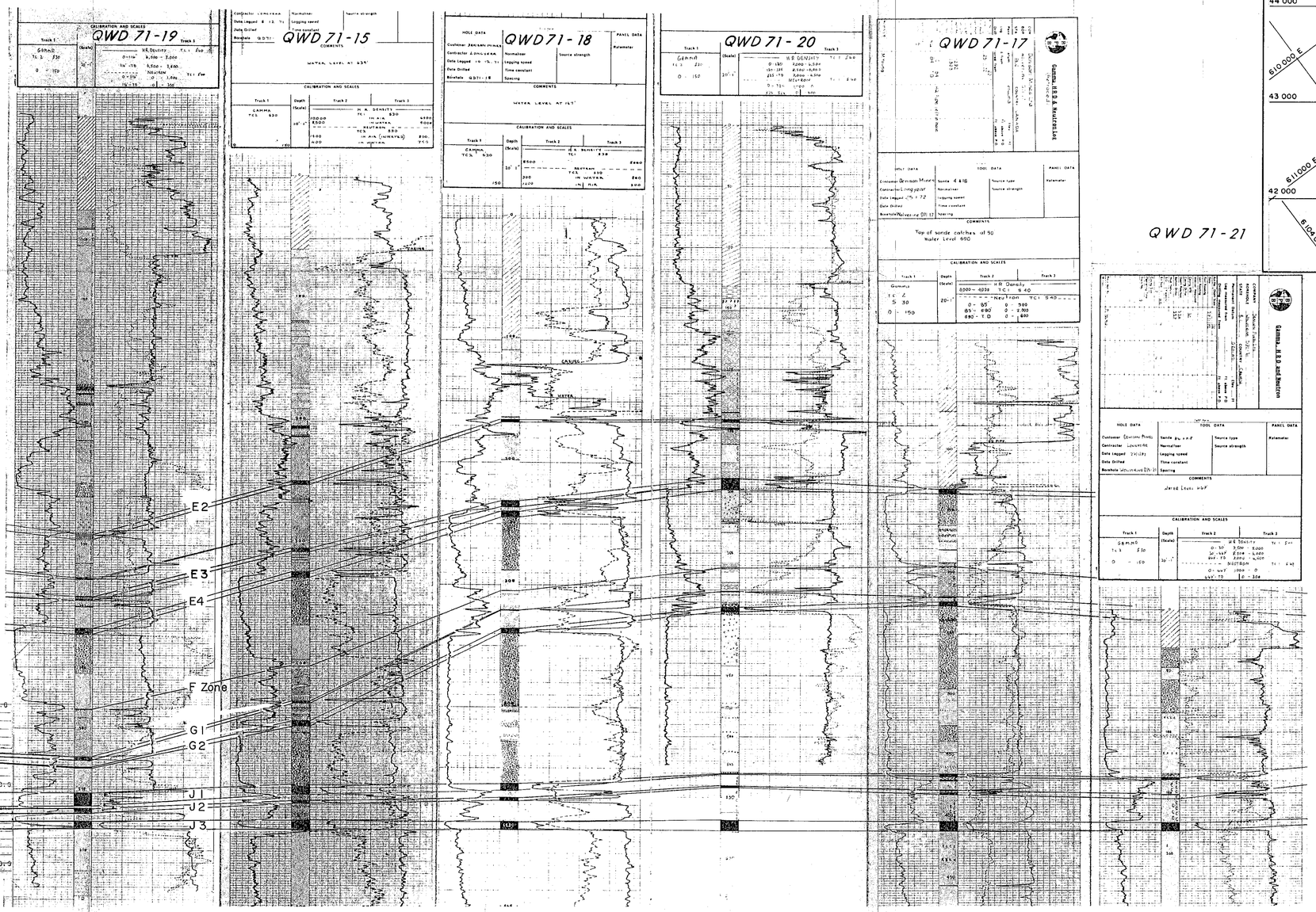
DETAILED SEAM CORRELATION

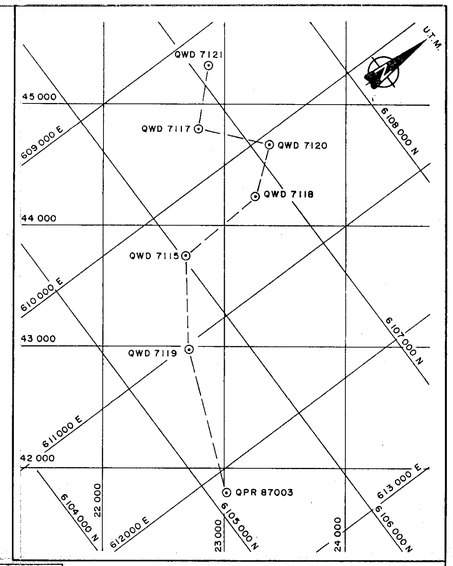
G, J AND K SEAMS

Scale	Drawing No.	Rev.
1:50 (vert.)	88-905-26-003	0

Appendix T.4.5

Perry Creek Stratigraphic Correlation





PERRY CREEK LOCATION MAP

500 0 500 1000
METRES

20 0 40 80 FEET (vert.)

10 0 10 20 METRES (vert.) (QPR 87003 only)

739

Rev.	D	M	Y	Revision Description	Drn.	Des.	App.
0	29	03	88	ORIGINAL DRAFT	KJV	T W	D J

QUINTETTE COAL LIMITED
Project Manager
DENISON MINES LIMITED
COAL DIVISION

Area PERRY CREEK | Category CORRELATION

Drawing Title

PERRY CREEK AREA STRATIGRAPHIC CORRELATION

Scale	Drawing No.	Rev.
AS SHOWN	88-906-26-001	0