Appendix 2 Open Pit Coal Resource Calculations

¶ Note: The low ratio calculations exclude B1 and B3 Seams

MOKEKAN COAL PROJECT DOKKEN SYNCLINE PROSPECT
COAL RESOURCES (IN-PLACE) FILE: DOKRES
VX\V\ENERGY\MOKEKAN
RESERVES

SECTION	COAL SEAM	COAL (M)	LENGTH (M)	WIDTH (M)	(KILOTONNES)
3500N	B1	2.8	550	330	737
	B3	2.3	450	290	435
	B4	5.0	350	120	305
	B7	7.0	0	0	0
	B9	6.0	0	0	0
4000N	B1	2.8	500	740	1502
	B3	2.3	500	610	1017
	B4	5.0	500	440	1595
	B7	7.0	500	220	1117
	B9	6.0	500	80	348
4500N	B1	2.8	500	760	1543
	B3	2.3	500	740	1234
	B4	5.0	500	470	1704
	B7	7.0	500	230	1167
	B9	6.0	500	0	0
5000N	B1	2.8	500	630	1279
	B3	2.3	500	470	784
	B4	5.0	500	310	1124
	B7	7.0	500	190	964
	B9	6.0	500	0	0
5500N	B1	2.8	350	1070	1520
	B3	2.3	350	940	1097
	B4	5.0	300	760	1653
	B7	7.0	250	510	1294
	B9	6.0	350	290	883
					23302
	LESS: 20% FOR LOW CONFIDENCE				18641

ROCK QUANTITIES

SECTION	FOOTWALL	HIGHWALL	LENGTH	TOTAL OB+I	RATIO
3500	150	180.0	450	6075	
				0	
4000	190	290.0	500	13775	
	275	190.0	500	13063	
				0	
4500	245	330.0	500	20213	
	240	170.0	500	10200	
				0	
5000	250	305.0	500	19063	
				0	
5500	190	240.0	300	6840	
	490	350.0	300	25725	
				114953	
LESS COAL VOLUME REMOVED				16070	
				98882	
				12856	
OVERALL IN-SITU RATIO				UNDISCOUNT	4.24
				20% DISCOUNT	5.48

NOTES:
ASSUMED COAL SEAM THICKNESSES ARE UNCONFIRMED
STRUCTURAL THICKENING IN FOLD AXES MAY IMPROVE RATIOS

Monkman Coal Project
Duke Mt. Block
1988 Reconnaissance
Mapping Program

FINAL

744

CONFIDENTIAL

Petro-Canada Inc.
Mo[illegible] Coal Project

DUKE MOUNTAIN BLOCK
1988 RECONNAISSANCE MAPPING PROGRAM

A Report

October, 1988

Prepared for Petro-Canada Inc.
Prepared by LAS Energy Associates Ltd.

744

B.C. Government Title Page

Monkman Coal Project

Petro-Canada Inc. as Operator

DUKE MOUNTAIN BLOCK
1988 RECONNAISSANCE MAPPING PROGRAM

Property Ownership: Petro-Canada Inc.
Smoky River Holdings Ltd.
Mobil Oil Ltd.
Sumitomo Canada Ltd.

Peace River Land District
NTS 93I/15
Lat. 54 43'N
Long. 120 41'W

Coal Licences 3195, 3196, 3197, 3198, 3199, 3200, 3201, 3202, 3942, 3943, 3950, 3951, 3952, 4522, 4523.

Work completed in September, 1988
Report submitted in October, 1988

Original author (1988): L. A. Smith, P. Geol.

October, 1988

Prepared for Petro-Canada Inc.
Prepared by LAS Energy Associates Ltd.

File: VX\W\ENERGY\MONKMAN\BCTITLE

MONKMAN COAL PROJECT
DUKE MOUNTAIN BLOCK
1988 RECONNAISANCE MAPPING PROGRAM

TABLE OF CONTENTS

MONKMAN COAL PROJECT
DUKE MOUNTAIN BLOCK
1988 RECONNAISSANCE MAPPING PROGRAM

File: DMB1988

1. Introduction

This report provides the results of a review mapping program on the Dokken Ridge and west Duchess Mountain areas of the Duke Mountain Block, Monkman coal Project. This represents the first field activity since 1985 on this project, and was originated to provide additional information on potentially open pit mineable coal deposits on Dokken Ridge and the west portion of Duchess Mountain. Given knowledge of areas with interest for mineable deposits, a decision on what lands need be retained and what lands could be dropped will be recommended.

2. Work Objectives

The work objectives and scope of work as set out by the project manager, Petro-Canada Inc., are as follows:

Contractor shall carry out a Geological Mapping program with a view to determine the mining potential of the existing leases and to help make decisions in regards to dropping unproductive coal leases. Also required is the Geological information on the open pit mining prospects namely, Dokken Ridge and Dokken Basin (hereinafter called Dokken Creek) . The work shall comprise of, but not necessarily be limited to, the following tasks:

a. Map the Dokken South trend to determine whether licences 3940, 3941 and 3193 should be retained.

b. Map licences 3198 and 4522 on the west part of Dokken Ridge to determine whether these licences have mining potential.

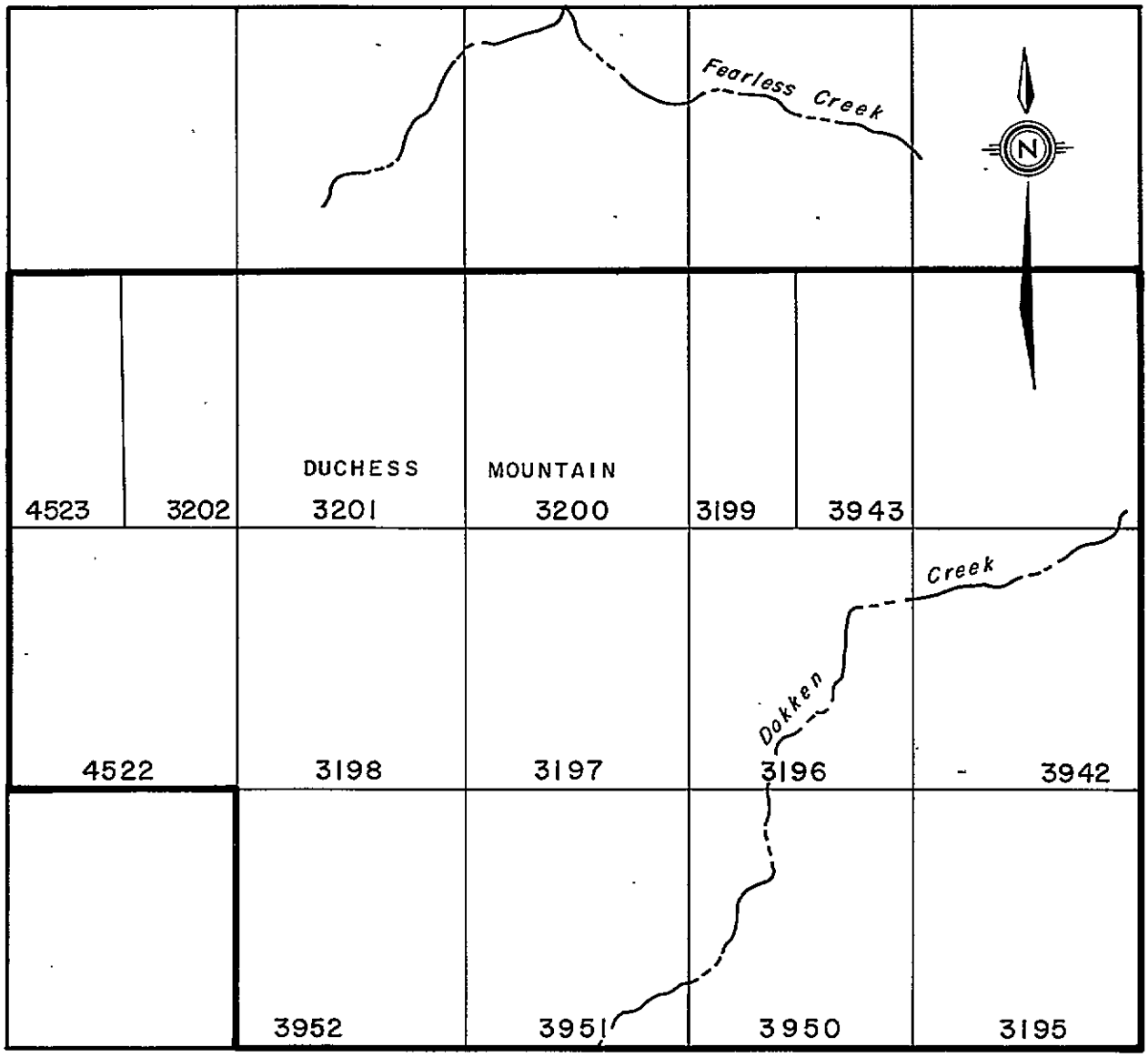
c. While in the area complete reconnaissance mapping over the Dokken Ridge and Dokken Creek Prospects to confirm their potential.

d. Prepare a detailed Report.

3. 1988 Mapping Program

This 1988 mapping program on Dokken Ridge and the southwest flank of Duchess Mountain was carried out between August 24th, 1988 and August 30, 1988. The field party comprised Mr. Leslie Smith, P. Geol., and Mr. Daniel Besserer, Geology Student as assistant.

INDEX MAP OF DUKE MOUNTAIN BLOCK



1988 STUDY AREA

NTS 93 I/10

0 1000 2000

meters

1:50,000

August 24th and 25th were spent travelling, picking up last minute gear and setting up camp. Field mapping was carried out on Dokken Ridge on the 26th and the morning of the 27th. The afternoon of the 27th and the 28th and 29th were spent on Duchess Mountain. August 30th was spent in Tumbler replenishing food and equipment.

4. Program Costs

The total cost of this program is about $12,300. This is broken down as follows:

Consulting	$8,265.00
Rentals	$1,100.00
Expenses	$733.79
Report Prep	$2,200.00
Total:	$12,298.79

5. Results

5.1 Review of Previous Map Interpretation

Dokken Ridge

The map information review of the Dokken Ridge area involved 1.5 days of traversing the ridge tops and east flank of the mountain. In all areas, we found that the map information collected between 1979 and 1981 to be largely correct and the mapping parties were diligent in covering the major outcrop areas. The interpretation of most areas appears valid with several minor exceptions discussed below.

The steeply dipping strata in sections 500S to 2500N can be expected to shallow at depth. This is somewhat incidental because it does not improve or create any additional mining potential.

In the northwest plunging syncline-anticline pair called Duchess Syncline and Duchess Anticline, the Cadomin outcrop marks the southeast limit of the syncline on the property. To the northwest it is a major structure on Duchess Mountain; on Dokken Ridge, it has almost disappeared. It is obvious this structure plunges fairly steeply to the northwest. The structural interpretation in the area between 3000N and 4000N where mining potential occurs indicates a plunge over this region of 11.5 degrees to the northwest. This seems high, however plunges of up to 8 degrees are not inordinate for this area. This could not be confirmed with the EXCESSIVE

limited mapping completed in this program. If such a plunge does occur, the open pit mineable resources listed in Section 5.2 for Dokken Ridge will be as large or larger than indicated. If the plunge is less, the resource base will be lower.

All other areas of Dokken Ridge were found to have correct interpretations. The only open pit mining potential on Dokken Ridge occurs just to the west of 4000E on sections 3500N, 4000N, 4500N, 5000N and 5500N.

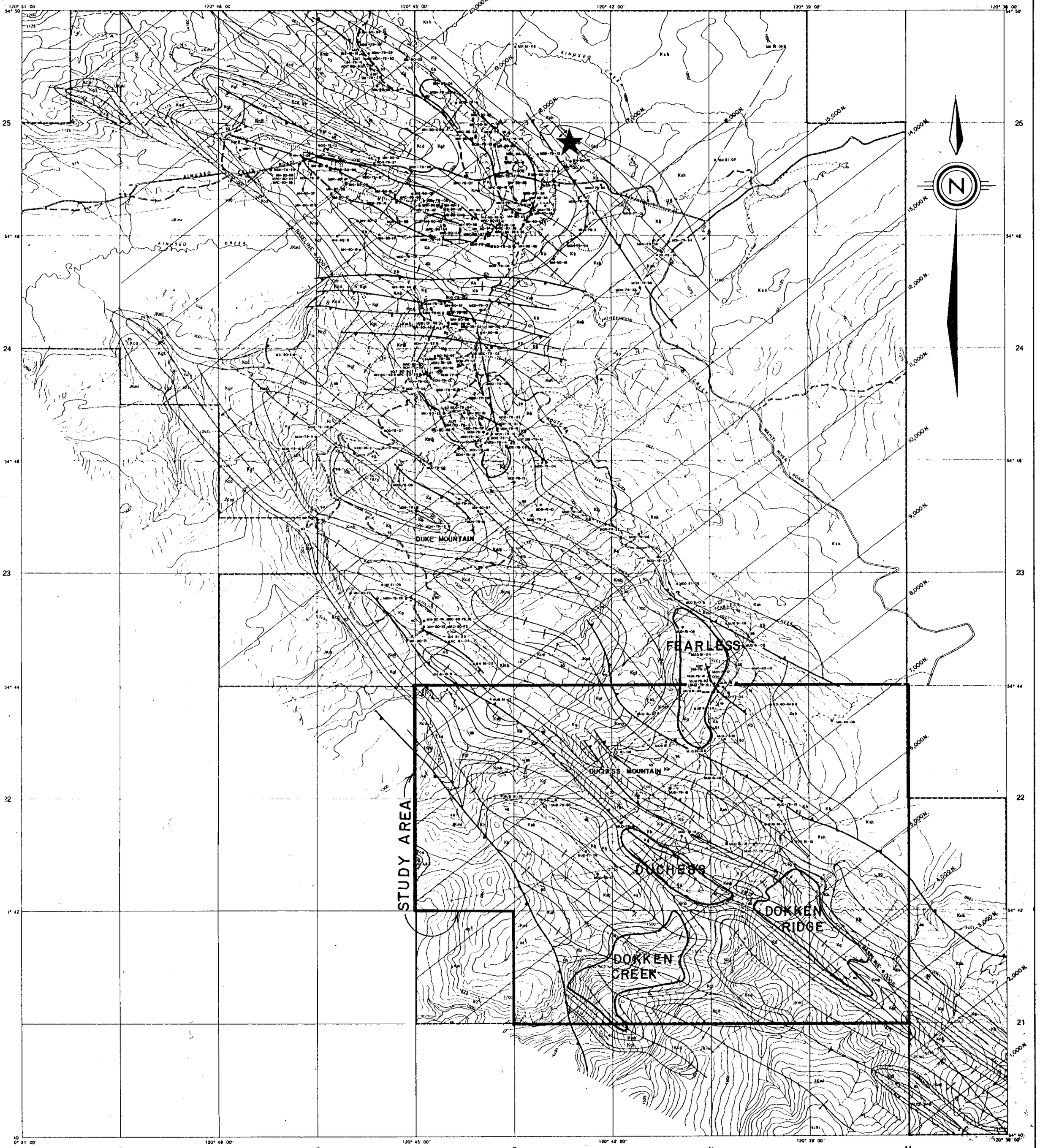
Duchess Mountain

The mapping on Duchess Mountain was found to be essentially correct with one major questionable interpretation. This occurs on the last major syncline on the west side of Duchess Mountain. On Section 6000N, this syncline is mapped, with considerable outcrop in the area to support the interpretation, as being a shallow open syncline with an amplitude of 50 metres. Two kilometres to the northwest, this same syncline has an amplitude of over 500 metres. Another two kilometres to the northwest, the amplitude is only 200 metres. The mapping data also suggests this syncline is incorrectly interpreted at the north end on Cross Section 10;000N. This affects the potential of some Gates strata with nominal mining potential in this area. This particular prospect, however, has been reviewed for mining potential and is found to have an excessively high mining ratio. Therefore an immediate resolution of this problem is unwarranted.

5.2 Potential Open Pit Mineable Coal Deposits

The mapping review resulted in a reconnaissance examination of those areas in the Duchess Mountain and Dokken Ridge region with mining potential. After those areas were selected based upon structural considerations and general open pit mining potential, the coal seam data for the region was reviewed. Table 1 below provides the coal seam data used for the resource calculation analysis. All drill data was reviewed, and the summary seam data for the major areas is as shown. This was necessary because although there is a considerable amount of drilling in the Duchess Mountain area, no drill holes were put into any of the potential pit areas.

Coal resources were calculated on an in-situ basis assuming a specific gravity of 1.45 and for two alternate pit scenarios using B1 Seam as the pit floor, and alternately choosing a low ratio situation with B4 Seam as the pit floor. A reduction of 20% in the estimated in-situ reserve is also assumed.



TOPOGRAPHIC LEGEND

- MAIN ACCESS ROAD — DRY WEATHER
- EXPLORATION ROAD
- EXPLORATION TRAIL
- AIR STRIP
- SEISMIC LINE, CUT LINE
- POWER TRANSMISSION LINE
- RIVER
- STREAM
- LAKE
- SWAMP
- CONTOURS
- DEPRESSION CONTOUR

GEOLOGICAL LEGEND

LOWER CRETACEOUS

- Ksh — SHAFTESBURY FORMATION
- Kb — BOULDER CREEK FORMATION
- Kh — HULCROSS FORMATION
- Kg — GATES FORMATION
- Kmb — MOOSEBAR FORMATION
- Kgt — GETHING FORMATION
- Kcd — CADOMIN FORMATION

FORT ST. JOHN GROUP

BULLHEAD GROUP

JURASSIC — CRETACEOUS

- JKmi — MINNES GROUP

SYMBOLS

- PROPERTY BOUNDARY
- GEOLOGICAL CONTACT
- DIP AND STRIKE: REGULAR
- VERTICAL
- HORIZONTAL
- OVERTURNED
- THRUST: FLAGS SHOW DIP DIRECTION
- AREA OF 20m+ OVERBURDEN
- ANTICLINE, SYNCLINE
- DRILL HOLE COLLAR
- ADIT
- PIT AREAS
- OPEN PIT DEPOSIT

KEY MAP

SURVEY NOTE

Control Survey was carried out for Photogrammetric Mapping to cover MONKMAN COAL PROJECT COAL LEASES. Mapping outside of the Coal Leases was taken from existing N.T.S. maps, and 20 metre contour intervals were interpolated.

CONTOUR INTERVAL 25m

R.M. HARDY & ASSOCIATES LTD.

1976

500 0 500 1000 1500 2000

SCALE METERS

PETRO CANADA
COAL DIVISION

DATE	SEPT., 1989
REVISED	
AUTHOR	
DRAFTED	B.R.T., B.K.
SCALE	1 : 50,000

MONKMAN COAL PROJECT

DOKKEN RIDGE ON DUKE MOUNTAIN BLOCK

GEOLOGY & OPEN PIT COAL DEPOSITS

MAP 2

NTS 93 I/15

744

Table 1
MONKMAN COAL PROJECT FILE: DUCHCOAL
DUCHESS MOUNTAIN COAL DEVELOPMENT
VX\W\ENERGY\MONKMAN

COAL SEAM	DOKKEN EAST SEAM THICKNESS (EST) (M)	DOKKEN WEST SEAM THICKNESS (EST) (M)
B9	6.00	3.50
B6/B7/B8	7.00	3.50
B5	0.00	0.00
B4	5.00	5.60
B3	2.30	2.30
B1	2.80	2.80
TOTAL	23.10	17.70

Dokken Ridge

The coal deposit on Dokken Ridge, based upon the 1982 map interpretation, lies from Section 3500N to Section 5500N. It is terminated to the southeast by erosion and the northwest by Dokken Creek. The prospect consists of a northwest plunging syncline with plunges of up to 11.5 degrees. Coal apparently lies in a mineable situation within this syncline and also on the adjoining anticline to the northeast. This structure has been confirmed in the field and is known to occur. The resource data, all on an in-situ basis, is presented in Appendix 2. Coal resources for Dokken Ridge are:

18.6 megatonnes at 5.5 bcm/t using B1 Seam as pit floor,
9.7 megatonnes at 3.9 bcm/t using B4 Seam as pit floor.

Dokken Creek

Dokken Creek consists of a series of shallow folds with low (less than 200 metre) amplitude that occur near the creek bottom in Dokken Creek valley. This area is very inaccessible except by helicopter, thus was not visited during the mapping program. However the outcrops to both the northwest and the southeast were examined, and the air photographs of the prospect area were used to confirm the prospect. It is certain that additional mapping of this prospect could be completed usefully, and drilling in the prospect area will be really necessary prior to delineation of reserves. At present, the term resource adequately describes the level of confidence in this prospect. Because so few cross sections actually cross the prospect area (only 2), the cross section

method is inadequate for resource measurements. This method was used, however, for consistence and expediency. Accordingly, neither the resource number nor the mining ratio can be considered to be accurate by less that +-50%. The estimated resource is:

13.7 megatonnes at 9.9 bcm/t using B1 Seam as pit floor
7.1 megatonnes at 7.5 bcm/t using B4 Seam as pit floor

The high ratio is not a matter of concern. Due to the structural complexity, any resultant pit shape will be much more complex than assumed, resulting in exclusion of high ratio areas.

Duchess

The Duchess Mountain Coal Prospect overlies what is interpreted as a small box anticline similar to the structure of the box anticline on the north face of Duke Mountain. The map information does not specifically support this interpretation with several fold axes (see Geology Map N21), however the data does indicate that the strata does contain more than a simple anticline. Several days mapping would be necessary to resolve this. This prospect is estimated to occur from near Dokken Creek (south of Section 6000N) to just south of Section 8000N. The resource potential is:

12.1 megatonnes at 4.1 bcm/t if B1 Seam is the footwall
9.3 megatonnes at 4.0 bcm/t if B4 Seam is the footwall

Fearless Prospect

While in the area, the Fearless Prospect was briefly reviewed. The resource assessment of this Prospect is included herein so that the resource assessment of all potential prospects south of Fearless Creek could be included in the assessment. Fearless Prospect contains numerous drill holes as well as a single adit in a fault repeated section of B9 Seam. The prospect occurs from just north of 8000N to Fearless Creek to the north of 10000N. It lies on the north flank of Duchess Mountain. The resource potential of this prospect is:

16.0 megatonnes at 10 bcm/t if B1 Seam is the footwall
11.1 megatonnes at 5.5 bcm/t if B4 Seam is the footwall

Duchess - Dokken Open Pit Resource Base

The total open pit resource base in all areas of Duchess Mountain and Dokken Ridge and all south of Fearless Creek is as follows:

Table 2
Duchess - Dokken Mineable Resource Base

Prospect	In-situ Resource (Megatonnes)
Dokken Ridge	9.7
Dokken creek	7.1
Duchess Mountain	9.3
Fearless	11.1
Total Potential	37.2

5.3 Licence Review

One of the major objectives of this mapping exercise was to identify coal licences that can be released. This section addresses this objective.

Dokken South Licences (3940, 3941 and 3193)

Steeply dipping (at dips of 65 to 85 degrees) Gates Formation coal bearing strata occurs in a strike trend of about 125 degrees through these three coal licences. There is no obvious open pit mining potential. For open pit mining potential or even underground mining potential to exist, there would be the need for considerable structural thickening beyond the known stratigraphic coal seam thicknesses to occur. No data suggests this, however a drill program would be required to prove or disprove the existence of structural thickening.

With the general lack of mining potential, if these lands were released, only Denison Mines or Gulf Oil (Belcourt Coal) would have the knowledge and possibly the desire to acquire these lands. The opportunity for development is not great, therefore even if they did acquire the lands, it is unlikely they would find open pit mining potential. Therefore in all likelihood, these lands could be dropped and re-acquired when coal prices increase to the point where development could be considered.

Accordingly, licences 3940, 3941 and 3193 can be released at a small risk that other coal developers could acquire them.

Duchess Mountain Licences (3198 and 4522)

The map data indicates there is no open pit mining potential on either licence 3198 or 4522, however Gates strata outcrops in both licences. In addition, the gates strata underlies nearly all of licence 3198 and the northeast quarter of Licence 4522.

With the position of the major fault through licence 4522, and the fact that very little Gates strata underlies Licence 4522, this licence can safely be released.

Licence 3198 lies near to both Dokken Creek and Duchess Prospects. Because either minor mapping errors and/or structural thickening of the coal could affect their positions and size, Licence 3198 should be retained.

6. Conclusions

I. Open Pit Mining Prospects

There are four open pit mining prospects south of Fearless Creek on Duke Mountain Block. They are as follows:

Table 3
Duchess - Dokken Mineable Resource Base

Prospect	In-situ Resource (Megatonnes)	Rating
Dokken Ridge	9.7	50%
Dokken Creek	7.1	40%
Duchess Mountain	9.3	50%
Fearless	11.1	75%
Total Potential	37.2	

Only Fearless Prospect has been subjected to drilling, therefore the level of reserve confidence is Resource category for the other three prospects. The rating above provides the author's confidence that a major pit with low ratio coal does exist. The resources and indicated mining ratios will vary considerably when detail mapping and drilling has been completed to confirm the reserves. In addition, Geological mapping of the prospect areas will provide useful information.

II. Licence Review

Dokken Ridge Licences 3940, 3941 and 3193.

In the Dokken Ridge area, licences 3940, 3941 and 3193 contain Gates Formation coal seams at surface. These coal seams dip to the northeast at 70 degrees or greater and do not contain any open pit mining potential. These licences can be released if the Monkman partners wish to entertain the small risk that another mining company such as Belcourt Coal Ltd. could acquire these licences.

Duchess Mountain Licences 3198 and 4522

Licence 3198 lies near to both Dokken Creek and Duchess Prospects and should be retained. Licence 4522 lies farther to the west and contains only a very nominal amount of Gates strata at surface along the north boundary of the licence. This licence can be dropped with almost no risk of another operator acquiring anything of value. It is recommended to drop Licence 4522.

III. Future Work Programs

Because sufficient work has been completed to identify those areas with actual open pit mining potential, all future work should be directed toward the defined prospect areas. No work should be expended on any areas outside of the mining prospects. Engineering studies are not warranted until such time as the pits are at the inferred or indicated reserve stage. Additional exploration is required to bring the deposits to this stage.

The next work programs on the coal deposits south of Fearless Creek should commence with a detailed mapping exercise over each of the defined pit prospects to confirm the structure and stratigraphy. This needs to be followed with a modest rotary drilling program in each potential pit to confirm the structure and the coal seam development in the deposits. Given positive results in any of these pits (low ratio coal deposits are confirmed), a pre-feasibility study can be carried out to determine if the deposits warrant inclusion in either the short term or long term development plans. If the potential is deemed sufficient for inclusion in the immediate development plans, additional drilling and bulk sample collection and analysis would be necessary.

SELECTED BIBLIOGRAPHY

1. Pacific Petroleums Ltd., Monkman Coal Project 1976 Exploration Report, 1977

2. Pacific Petroleums Ltd., Monkman Coal Project Technical Report March, 1979.

3. Petro Canada Inc., Monkman Technical Report, March, 1980.

4. Petro Canada Inc., Monkman Coal Project Technical Report, February, 1981.

APPENDICES

Appendix 1 Duchess Mountain Core Drill Hole Data

KONKMAN COAL PROJECT
DUCHESS MOUNTAIN COAL DEVELOPMENT

FILE: DUCHCOAL
VX\V\ENERGY\KONKMAN

COAL SEAM (ROCK INT)	CORE DRILL HOLES INTERSECTING GATES COAL																
	7609	7705	7815	7816	7817	7919	7820	7821	8010	8106	8108	8109	8111	8113	8114	8115	8116
B12		1.08					1.02		1.53		2.07						1.14
ROCK INT		40					18		69		53						44
B9		6.02			3.43	6.05	5.01	5.76	6.74	5.92	5.66	3.79	5.72	6.49		5.57	3.13
ROCK INT		12			44		49	9	14	31	31	87					46
B8		2.25	2.63	1.78				1.39	1.62								
ROCK INT		17	39	77				17	19								
B7		3.14	3.42	2.49	2.81		2.27	1.47	1.44			3.29					3.21
ROCK INT		16	55	116			34	60	29			29					24
B6		1.86								1.37	1.76	3.23			3.16		2.64
ROCK INT										15		22			16		
B5	1.49						2.91		3.78	3.94		1.31			1.09		
ROCK INT	32						86		29	31		14			65		
B4	3.14		2.29	5.57			3.39	5.76	5.57	8.90		2.43			7.80		
ROCK INT	3		20	56			30	10	52	14		35			33		
B3	1.41		3.04	1.29			3.50	2.51	2.06	2.10		2.00			2.10		
ROCK INT	14			17			10	38	41	32		7					
B1	1.58			1.03			1.74	5.57	5.80	3.90		2.69					

COAL SEAM	DOKKEN EAST SEAM THICKNESS (EST) (M)	DOKKEN WEST SEAM THICKNESS (EST) (M)
B9	6.00	3.50
B6/B7/B8	7.00	3.50
B5	0.00	0.00
B4	5.00	5.60
B3	2.30	2.30
B1	2.80	2.80
TOTAL	23.10	17.70

MONKMAN COAL PROJECT DOKKEN SYNCLINE PROSPECT
COAL RESOURCES (IN-PLACE) FILE: DOKRESB4
VX\W\ENERGY\MONKMAN
RESERVES

SECTION	COAL SEAM	COAL (M)	LENGTH (M)	WIDTH (M)	(KILOTONNES)
3500	B4	5.0	350	120	305
	B7	7.0	0	0	0
	B9	6.0	0	0	0
4000	B4	5.0	500	440	1595
	B7	7.0	500	220	1117
	B9	6.0	500	80	348
4500	B4	5.0	500	470	1704
	B7	7.0	500	230	1167
	B9	6.0	500	0	0
5000	B4	5.0	500	310	1124
	B7	7.0	500	190	964
	B9	6.0	500	0	0
5500	B4	5.0	300	760	1653
	B7	7.0	250	510	1294
	B9	6.0	350	290	883
					12153
	LESS: 20% FOR LOW CONFIDENCE				9723

ROCK QUANTITIES

SECTION	FOOTWALL	HIGHWALL	LENGTH	TOTAL OB+I	RATIO
3500	55	60.0	450	743	
				0	
4000	100	170.0	500	4250	
	160	140.0	500	5600	
				0	
4500	130	200.0	500	6500	
	140	60.0	500	2100	
				0	
5000	150	165.0	500	6188	
				0	
5500	90	120.0	300	1620	
	490	310.0	300	22785	
				49785	
LESS COAL VOLUME REMOVED				12153	
				37632	
OVERALL IN-SITU RATIO UNDISCOUNT					3.10
20.00% DISCOUNT					3.87

NOTES:
ASSUMED COAL SEAM THICKNESSES ARE UNCONFIRMED
STRUCTURAL THICKENING IN FOLD AXES MAY IMPROVE RATIOS

MONKMAN COAL PROJECT
DOKKEN CREEK WEST PROSPECT

FILE:DOKCKRES
VX\W\ENERGY\MONKMAN

COAL RESERVES

TOTAL PIT ROCK UNIT

SECTION	COAL SEAM	THICKNESS	LENGTH	WIDTH	IN-SITU RESERVES	LENGTH	WIDTH	THICKNESS	TRI OR SQ	BURDEN	RATIO
5,500	B1	2.8	550	250	558	500	200	60	TRI	3,000	
		2.8	500	590	1,198	500.00	305.00	90.00	TRI	6,863	
	B3	2.3	500	130	217	500.00	295.00	90.00	TRI	6,638	
		2.3	450	470	705					16,500.00	
	B4	5.0	350	180	457						
					3,135						4.57
			ASSUME 20% LOSS		2,508						5.89
6,000.00	B1	2.80	2,280.00	500.00	4,628	1,820.00	500.00	170.00	SQ	154,700	
	B3	2.30	2,180.00	500.00	3,635						
	B4	5.00	1,870.00	400.00	5,423						
	B7	7.00	490.00	500.00	2,487						
		7.00	190.00	500.00	964						
	B9	6.00	260.00	250.00	566						
					17,138				RATIO		8.34
			ASSUME 20% LOSS		13,710				ASSUMING 20% LOSS		10.59
									OVERALL RATIO		7.76
											9.87

MONKMAN COAL PROJECT
DOKKEN CREEK WEST PROSPECT

FILE:DOKCK84
VX\W\ENERGY\MONKMAN

COAL RESERVES

SECTION	COAL SEAM	THICKNESS	LENGTH	WIDTH	IN-SITU RESERVES
5,500	B1	2.8			0
		2.8			0
	B3	2.3			0
		2.3			0
	B4	5.0	350	180	457
					457
			ASSUME 20% LOSS		365
6,000.00	B1	2.80	0.00	0.00	0
	B3	2.30	0.00	0.00	0
	B4	5.00	1,870.00	400.00	5,423
	B7	7.00	490.00	500.00	2,487
		7.00	190.00	500.00	964
	B9	6.00	260.00	250.00	566
					8,874
			ASSUME 20% LOSS		7,099

TOTAL PIT ROCK UNIT

LENGTH	WIDTH	THICKNESS	TRI OR SQ	BURDEN	RATIO
500	90	25	TRI	563	
500.00	90.00	25.00	TRI	563	
500.00					
				1,125	
					1.77
					2.39
1,020.00	500.00	80.00	SQ	40,800	
380.00	500.00	120.00	TRI	11,400	
120.00	500.00	260.00	TRI	7,800	
				60,000	

RATIO	6.07
ASSUMING 20% LOSS	7.76
OVERALL RATIO	5.86
(ASSUMES 20% LOSS)	7.50

MONKMAN COAL PROJECT
DUCHESS MOUNTAIN COAL PROSPECT

FILE:DUCHRES
VX\W\ENERGY\MONKMAN

COAL RESERVES

SECTION	COAL SEAM	THICKNESS	LENGTH	WIDTH	IN-SITU RESERVES
6,000.00	B1	2.80	520.00	350.00	739
	B3	2.30	410.00	350.00	479
	B4	5.60	210.00	300.00	512
	B7	3.50	530.00	250.00	672
	B9	3.50	290.00	250.00	368
					2,769
			ASSUME 20% LOSS		2,216
6,500.00	B1	2.80	650.00	500.00	1,320
	B3	2.30	560.00	500.00	934
	B4	5.60	370.00	500.00	1,502
	B7	3.50	230.00	500.00	584
	B9	3.50	50.00	500.00	127
					4,466
			ASSUME 20% LOSS		3,573
7,000.00	B4	5.60	565.00	300.00	1,376
	B7	3.50	595.00	400.00	1,208
	B9	3.50	390.00	500.00	990
					3,574
			ASSUME 20% LOSS		2,859
7,500.00	B4	5.60	420.00	500.00	1,705
	B7	3.50	490.00	500.00	1,243
	B9	3.50	540.00	500.00	1,370
					4,319
			ASSUME 20% LOSS		3,455
			TOTAL COAL:		15,128
			ASSUME 20% LOSS		12,102

TOTAL PIT ROCK UNIT

LENGTH	WIDTH	THICKNESS	TRI OR SQ	BURDEN	RATIO
280.00	350.00	250.00	TRI	12,250	
			RATIO		3.73
			ASSUMING 20% LOSS		4.84
300.00	500.00	360.00	TRI	27,000	
			RATIO		5.36
			ASSUMING 20% LOSS		6.87
85.00	500.00	95.00	TRI	2,019	
95.00	500.00	60.00	TRI	1,425	
90.00	500.00	460.00	TRI	10,350	
				13,794	
			RATIO		3.17
			ASSUMING 20% LOSS		4.13
130.00	500.00	105.00	TRI	3,412.50	
150.00	500.00	140.00		5,250.00	
125.00	500.00	355.00		11,093.75	
				19,756.25	
			RATIO		3.88
			ASSUMING 20% LOSS		5.03
			TOTAL OVERBURDEN		72,800.00
			OVERALL RATIO		4.12
			ASSUMING 20% LOSS		5.33

MONKMAN COAL PROJECT
DUCHESS MOUNTAIN COAL PROSPECT FILE:DUCHRES4
V:\V\ENERGY\MONKMAN

LOW RATIO COAL RESERVES

SECTION	COAL SEAM	THICKNESS	LENGTH	WIDTH	IN-SITU RESERVES	TOTAL PIT ROCK UNIT LENGTH	WIDTH	THICKNESS	TRI OR SQ	BURDEN	RATIO
6,000.00	B1	2.80	520.00	0.00	0	130.00	300.00	90.00	TRI	1,755	
	B3	2.30	410.00	0.00	0						
	B4	5.60	210.00	300.00	512						
	B7	3.50	530.00	250.00	672						
	B9	3.50	290.00	250.00	368						
					1,552				RATIO		0.44
			ASSUME 20% LOSS		1,242				ASSUMING 20% LOSS		0.72
6,500.00	B1	2.80	650.00	0.00	0	180.00	500.00	195.00	TRI	8,775	
	B3	2.30	560.00	0.00	0						
	B4	5.60	370.00	500.00	1,502						
	B7	3.50	230.00	500.00	584						
	B9	3.50	50.00	500.00	127						
					2,213				RATIO		3.28
			ASSUME 20% LOSS		1,770				ASSUMING 20% LOSS		4.27
7,000.00	B4	5.60	565.00	300.00	1,376	85.00	500.00	95.00	TRI	2,019	
	B7	3.50	595.00	400.00	1,208	95.00	500.00	60.00	TRI	1,425	
	B9	3.50	390.00	500.00	990	90.00	500.00	460.00	TRI	10,350	
					3,574					13,794	
			ASSUME 20% LOSS		2,859				RATIO		3.17
									ASSUMING 20% LOSS		4.13
7,500.00	B4	5.60	420.00	500.00	1,705	130.00	500.00	105.00	TRI	3,412.50	
	B7	3.50	490.00	500.00	1,243	150.00	500.00	140.00		5,250.00	
	B9	3.50	540.00	500.00	1,370	125.00	500.00	355.00		11,093.75	
					4,319					19,756.25	
			ASSUME 20% LOSS		3,455				RATIO		3.88
									ASSUMING 20% LOSS		5.03
			TOTAL COAL:		11,657						
			ASSUME 20% LOSS		9,326				TOTAL OVERBURDEN		44,080.00
									OVERALL RATIO		3.09
									ASSUMING 20% LOSS		4.04

MONKMAN COAL PROJECT
FEARLESS CREEK COAL PROSPECT

FILE:FEARRES
V:\W\ENERGY\MONKMAN

COAL RESERVES

SECTION	COAL SEAM	THICKNESS	LENGTH	WIDTH	IN-SITU RESERVES
8,500	B1	2.50	300.00	330.00	359
	B3	2.40	300.00	385.00	402
	B4	7.20	300.00	430.00	1,347
	B5&B7	5.00	300.00	150.00	326
	B9	5.70	300.00	80.00	198
					2,632
			ASSUME 20% LOSS		2,106
9,000	B1	2.50	500.00	840.00	1,523
	B3	2.40	500.00	770.00	1,340
	B4	7.20	500.00	740.00	3,863
	B7	5.00	500.00	550.00	1,994
	B9	5.70	500.00	550.00	2,273
					10,992
			ASSUME 20% LOSS		8,793
9,500	B1	2.50	500.00	440.00	798
	B3	2.40	500.00	330.00	574
	B4	7.20	500.00	290.00	1,514
	B7	5.00	500.00	145.00	526
	B9	5.70	500.00	100.00	413
					3,824
			ASSUME 20% LOSS		3,060
10,000	B1	2.50	500.00	220.00	399
	B3	2.40	500.00	185.00	322
	B4	7.20	500.00	140.00	731
	B7	5.00	500.00	60.00	218
	B9	5.70	500.00	0.00	0
					1,669
			ASSUME 20% LOSS		1,335
10,500	B1	2.50	300.00	230.00	250
	B3	2.40	300.00	195.00	204
	B4	7.20	300.00	165.00	517
	B7	5.00	300.00	0.00	0
	B9	5.70	300.00	0.00	0
					970
			ASSUME 20% LOSS		776
			TOTAL COAL:		20,088
			ASSUME 20% LOSS		16,070

TOTAL PIT ROCK UNIT

LENGTH	WIDTH	THICKNESS TRI OR SQ	BURDEN
300.00	140.00	130.00 TRI	2,730
300.00	130.00	275.00 TRI	5,363
300.00	275.00	240.00 TRI	9,900
			17,992.50
		RATIO	6.15
		ASSUMING 20% LOSS	7.85
500.00	840.00	740.00 TRI	155,400
		RATIO	13.45
		ASSUMING 20% LOSS	16.98
500.00	440.00	290.00 TRI	31,900
			31,900
		RATIO	7.65
		ASSUMING 20% LOSS	9.74
500.00	220.00	155.00 TRI	8,525.00
			8,525.00
		RATIO	4.42
		ASSUMING 20% LOSS	5.70
300.00	230.00	105.00 TRI	3,622.50
		RATIO	3.04
		ASSUMING 2	3.98
		TOTAL OVERBURDEN	213,818
		OVERALL RATIO	9.95
		ASSUMING 20% LOSS	12.62

MONKMAN COAL PROJECT
FEARLESS CREEK COAL PROSPECT FILE:YEARB4
LOW RATIO VX\W\ENERGY\MONKMAN
COAL RESERVES

SECTION	COAL SEAM	THICKNESS	LENGTH	WIDTH	IN-SITU RESERVES	TOTAL PIT ROCK UNIT LENGTH	WIDTH	THICKNESS TRI OR SQ	BURDEN
8,500	B1	2.50	0	330	0	300	520	125 TRI	9,750.00
	B3	2.40	0	385	0				
	B4	7.20	300	430	1,347				
	B5&B7	5.00	300	150	326				
	B9	5.70	300	80	198				
					1,871			RATIO	4.52
			ASSUME 20% LOSS		1,497			ASSUMING 20% LOSS	5.82
9,000	B1	2.50	0	840	0	500	740	290 TRI	53,650.00
	B3	2.40	0	770	0				
	B4	7.20	500	740	3,863				
	B7	5.00	500	550	1,994				
	B9	5.70	500	550	2,273				
					8,129			RATIO	5.91
			ASSUME 20% LOSS		6,504			ASSUMING 20% LOSS	7.56
9,500	B1	2.50	0	440	0				
	B3	2.40	0	330	0				
	B4	7.20	500	290	1,514				
	B7	5.00	500	145	526	500	240	180 TRI	10,800.00
	B9	5.70	500	100	413				
					2,453				10,800.00
			ASSUME 20% LOSS		1,962			RATIO	3.71
								ASSUMING 20% LOSS	4.81
10,000	B1	2.50	0	220	0				
	B3	2.40	0	185	0				
	B4	7.20	500	140	731	500	145	90 TRI	3,262.50
	B7	5.00	500	60	218				
	B9	5.70	500	0	0				
					948				3,262.50
			ASSUME 20% LOSS		759			RATIO	2.75
								ASSUMING 20% LOSS	3.61
10,500	B1	2.50	0	230	0	300	165	40 TRI	990.00
	B3	2.40	0	195	0				
	B4	7.20	300	165	517				
	B7	5.00	300	0	0				
	B9	5.70	300	0	0				
					517			RATIO	1.23
			ASSUME 20% LOSS		413			ASSUMING 20% LOSS	1.70
			TOTAL COAL:		13,919				
			ASSUME 20% LOSS		11,135			TOTAL OVERBURDEN	68,702.50
								OVERALL RATIO	4.25
								ASSUMING 20% LOSS	5.48