

PR - NOMAN CREEK 69(1)A

~~9309~~
OPEN FILE

BRAMEDA RESOURCES LIMITED

1969 SUMMARY REPORT

PINE PASS COAL PROJECT

(NOMAN CREEK)

L. S. Trenholme

December 1, 1969.

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

00 560

BRAMEDA RESOURCES LIMITED

SUMMARY REPORT

COAL EXPLORATION RE: PINE PASS COAL COMPANY LIMITED

General:

Under an agreement dated June 6, 1969, Brameda Resources Limited undertook to spend a minimum of \$75,000.00 before June 1, 1970 on certain coal properties on which rights had been granted to Pine Pass Coal Company Limited by the Provincial Government.

By Order-in-Council No. 2270 dated July 15, 1969, these areas were released from the Crown Reserve.

On September 18, 1969, Pine Pass Coal Company Limited applied for 18 coal licences which had been staked within the released area as follows:

- 10 licences in the Noman Creek Coal Basin
- 5 licences in the Willow Creek Coal Basin
- 3 licences in the Hasler Creek Coal Basin

During the period June 1 - October 31, 1969 Brameda expended the sum of \$257,708.36 in exploration work as follows:

- (a) Hasler Creek - rehabilitation of 8 miles of access road from the Hasler Creek crossing, near the John Hart Highway, to the vicinity of the old coal workings; plus general reconnaissance
- (b) In the Willow Creek area, general study and reconnaissance, and
- (c) In the Noman Creek Area, extensive road work, trenching,

diamond drilling, topographic mapping and coal testing.

Work in the Noman Creek Area (1969)

1. A topographic map on the scale of 1 inch to 400 feet with contour interval of 10 feet was prepared from existing government photography by Co-ordinated Aerial Surveys Ltd. of Burnaby, B.C. Ground control surveys for this project were conducted by David H. Burnett & Associates of Burnaby. This map covers an area of 10 square miles co-incident with the Noman Creek coal licence staking. This mapping was supplemented by extensive chain and transit surveys, mainly for precise location of drill holes.
2. Approximately 6 miles of bulldozer roads were made for diamond drill access as well as numerous trenches for coal exposure.
3. Diamond drilling was contracted to Connors Drilling Ltd. using NQ wireline equipment. Six drill sections at approximate 1500 foot intervals cover a strike length of about 9000 feet. Total drilling amounted to 15,691 feet.

Copies of all drill logs, plans and sections accompany this report together with results of analyses of various intersections and a list of tonnage calculations.

Summary

Twenty-three diamond drill holes indicate reserves in place, of seams 5 feet or more in thickness, to be 11,618,600 tons.

Analyses indicate good quality coking coal believed to be acceptable to the Japanese market.

Separate mining feasibility studies are being made by Foundation Company of Canada Engineering Limited, of Montreal, and by Paul Weir Company of Chicago. Reports from these consultants are expected shortly.



L. S. TRENHOLME

Exploration Manager.

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PINE PASS PROJECT

Summary of Work to August 27, 1969.

- a) Preliminary examination by Brameda staff, representatives of Nissho (Canada) Ltd. and various coal consultants.
- b) Reconnaissance of coal areas beyond the limits of the withdrawal area.
- c) Establishment of trailer camp at Hasler, re-opening of old roads, trenching.
- d) Contract Diamond Drilling - Noman Creek Section

Two rigs have completed 3 holes, are drilling holes 4 and 5, for a total footage to date of 2,100 feet.

Minimum contract is for 10,000 feet.
- e) Staking 8 coal licences, Noman Creek Area.
Contracted to Burnett Engineering to commence August 28, 1969.
- f) Approximate Expenditure to Date:

Property Payment \$ 35,000.00

Property Work:

Camps	\$6,000.00	
Drilling	18,000.00	
Brameda Staff	6,000.00	
Surveys	6,000.00	
Aircraft	4,000.00	
Consultants	4,000.00	
Bulldozers	6,000.00	50,000.00
	<hr/>	<hr/>

Total \$ 85,000.00

paid 27.8.69

BRAMEDA RESOURCES LIMITED

7th Floor, Board of Trade Building
1177 West Hastings Street, Vancouver 1, B.C. Phone: 681-1392

20-1

14170

December 9, 1969
BR 136

Department of Mines and Petroleum Resources,
VICTORIA, B.C.

Dear Sirs:

Re: Order in Council No. 2270
Pine Pass Coal Company Ltd. - Hasler Creek Coalfield

Reference is made to the bond which has been deposited with the British Columbia Government in regard to the above-mentioned Order in Council. We now wish to report that our field costs of the project exceed \$150,000 and accordingly we are requesting the return of the performance bond in the amount of \$50,000. Attached herewith is a statement of field costs to October 31, 1969, totalling \$257,708.36 duly notarized.

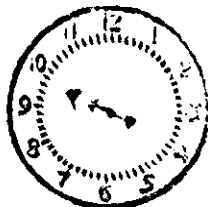
We trust you will find the above in order but should you require further information we would be pleased to supply it to you upon your request.

Yours very truly,
BRAMEDA RESOURCES LIMITED

D. Ross Fitzpatrick
Vice President & Secretary

DRF:srs
Enc.

DEC 15 '69 AM



DEPT. OF MINES
AND PETROLEUM RESOURCES

RECEIVED TO	DATE	INITIAL
C.G.C.		
R.C.		
D.C.G.C.		
D.C.C.		
AGCTS.		
AM.B.		
C.I.		
C.A.		
R. T.		
C.P.E.		

20-1

December 16, 1969

Brameda Resources Limited,
7th Floor, Board of Trade Bldg.,
1177 West Hastings St.,
Vancouver 1, B. C.

Attention: Mr. D. Ross Fitzpatrick
Vice President & Secretary

Dear Mr. Fitzpatrick:

Re: Order in Council No. 2270
Pine Pass Coal Company Ltd.
- Hasler Creek Coalfield - BR 136

This will acknowledge your letter of December 9th enclosing statement of field costs to October 31st, 1969, totalling \$257,708.36, and requesting return of the performance bond in the amount of \$50,000.

Please be advised that before the performance bond may be returned, the requirements under (2)(c)(i) of the conditions and terms as set out in Order in Council No. 2270, dated July 15th, 1969, must be met.

Yours very truly,

R. H. McCrimmon
for
Deputy Minister

RHM/C/ef

BRAMEDA RESOURCES LIMITED

7th Floor, Board of Trade Building
1177 West Hastings Street, Vancouver 1, B.C. Phone: 681-1392

REFERRED TO	DATE	INITIAL
D.M.		
C.G.C.	✓	20-7
C.C.		
D.C.C.C.		
D.C.C.		
AC. I.		
AC. II.		
C.A.		
R. L.		
C.P.E.		
FILING		

December 22, 1969
BR 136

Mr. R.H. McCrimmon,
Department of Mines and
Petroleum Resources,
Parliament Buildings,
Victoria, B.C.

Dear Sir:

Re: Order in Council No. 2270 Pine Pass Coal
Company Ltd. - Hasler Creek Coalfield

We thank you for your letter of December 16, 1969. We
are sending you under separate cover the following:

- ENV. 2* — *Geology & Location Plan - 2 sheets*
- 2* — 1. Drill Hole Plan
- 2* — 2. Plan of Topography — *2 sheets*
- 2* — 3. Sections 1 to 6 incl.
- 4. Drill Logs, Hole B-1 to B-23 incl.
- 5. Summary and Tonnage Calculations
- ENV. 1* — 6. Test results and sample locations
- 7. Plan showing location of coal licences
- 8. Summary Report of Mr. L. Trenholme

We hereby apply again for the release of the performance
bond, and trust that you will send it to us at your earliest convenience.

Yours truly,

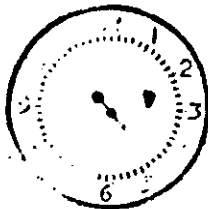
BRAMEDA RESOURCES LIMITED

D. Ross Fitzpatrick
D. Ross Fitzpatrick,
Vice-President & Secretary

14516

DEC 23 '69 PM

DRF/nm



DEPT. OF MINES
AND PETROLEUM RESOURCES

CANADA
PROVINCE OF BRITISH COLUMBIA

TO ALL TO WHOM THESE PRESENTS MAY COME
BE SEEN OR KNOWN:

Un Dit:

I, James L. A. Wallace, Esq., a Notary Public
by Royal authority duly appointed, residing at the City of Vancouver in the
Province of British Columbia, do certify and attest that the paper writing hereto annexed, marked
with my Notarial Seal, is a true copy of xxxxxxxxxxxxxxxxxxxx an original document produced
to me by Mr. G. Ovens, purporting to be a

Statement of Field Costs

prepared

signed by

Mr. G. Ovens

and

dated the

31st day of October

A.D. 1969 . The said copy having

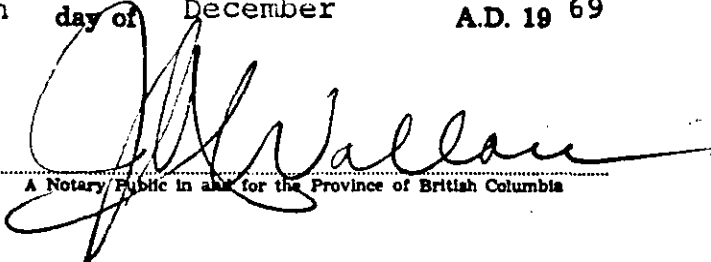
been compared by me with the said original document, an act whereof being requested I have
granted under Notarial form and seal of office to serve and avail as occasion may require.

Dated at Vancouver

B.C., this 11th day of December

A.D. 19 69

(SEAL)


A Notary Public in and for the Province of British Columbia

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BRAMEDA RESOURCES LIMITED

PINE PASS COAL PROJECT COSTS TO OCTOBER 31, 1969

Camp expenses	\$ 7,447.54
Consulting fees	8,739.35
Drilling	142,069.43
Equipment rental	27,980.28
Licences and taxes	6,250.50
Repairs and maintenance - equipment	888.72
Road construction	26,099.23
Supplies	3,484.22
Survey fees	29,679.98
Travel expenses	5,069.11
	<hr/>
Total field costs	\$257,708.36
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PR-NOMAN CREEK 69(2)A

MAPS & CROSS SECTIONS OF
1969 SUMMARY REPORT OF
THE PINE PASS COAL PROJECT

L. S. TRENHOLME

Dec. 12th 1969



WARNOCK HERSEY,
INTERNATIONAL LIMITED

125 East 4th Ave., Vancouver 10, B.C. Phone 876-4111 — Telex 02450353

PR-NORMAN CREEK 69(8)A
OPEN FILE
PROFESSIONAL SERVICES DIVISION

REPORT OF: **Chemical Analysis**
AT **Vancouver Laboratory**
PROJECT: **Coal**
REPORTED TO: **Brameda Resources Ltd.,
7th Floor - 1177 West Hastings Street
Vancouver, B.C.**

FILE NO: **460-Q-9556**
DATE **December 4, 1969**
REPORT NO:
ORDER NO:

ATTENTION: Mr. L.S. Tyenholme

We have tested 13 samples of Coal submitted by you and report as hereunder:

RESULTS

See the attached report.

20-3

WARNOCK HERSEY

G. Cochrane
SUPERVISOR, GENERAL LABORATORY

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TEST RESULTS

Sample No.	As Received		Air Dry Basis						Free Swelling Index	Phosphorus (P ₂ O ₅)
	Total Moisture	Surface Moisture	Inherent Moisture	Ash	Volatile Matter	Fixed Carbon	B.T.U.'s per lb.	Sulphur		
N-011✓	2.78 %	1.75 %	1.05 %	47.37 %	17.91 %	33.67 %	7,485	0.38 %	1 - 1/2	-
N-012✓	2.56 %	1.45 %	1.13 %	37.54 %	15.08 %	46.25 %	9,406	0.49 %	1 - 1/2	-
N-013✓	4.00 %	3.05 %	0.98 %	45.52 %	14.91 %	38.59 %	8,209	0.49 %	1 - 1/2	-
N-014✓	3.17 %	2.09 %	1.10 %	6.13 %	16.82 %	75.95 %	14,671	0.64 %	1 - 1/2	-
N-021✓	3.18 %	2.00 %	1.20 %	7.80 %	20.57 %	70.43 %	14,271	0.38 %	1 - 1/2	-
N-031✓	3.76 %	2.72 %	1.07 %	7.57 %	24.69 %	66.67 %	14,296	0.32 %	1	-
N-041✓	3.84 %	2.85 %	1.02 %	17.06 %	22.72 %	59.20 %	12,849	0.45 %	6	-
N-042✓	4.59 %	3.46 %	1.17 %	2.96 %	23.53 %	72.34 %	15,294	0.41 %	2	0.04 %
N-051✓	3.92 %	2.80 %	1.15 %	5.82 %	21.30 %	71.73 %	14,845	0.45 %	2	-
N-052✓	1.44 %	0.60 %	0.85 %	48.62 %	13.38 %	37.15 %	7,485	0.27 %	1	-
N-053✓	6.65 %	5.86 %	0.84 %	10.40 %	17.52 %	71.24 %	13,922	0.69 %	1 - 1/2	-
N-061✓	5.41 %	4.55 %	0.90 %	10.77 %	21.02 %	67.31 %	13,747	0.44 %	2 - 1/2	-
N-062✓	2.04 %	1.25 %	0.80 %	33.41 %	16.02 %	49.77 %	10,105	0.58 %	1 - 1/2	-
N-071✓	1.93 %	1.15 %	0.79 %	18.31 %	26.80 %	54.10 %	12,076	0.43 %	1 - 1/2	-
N-081✓	1.97 %	0.93 %	1.05 %	59.06 %	14.35 %	25.54 %	5,514	0.19 %	1 - 1/2	-
N-082✓	2.93 %	2.07 %	0.88 %	15.10 %	21.16 %	62.86 %	13,199	0.41 %	3 - 1/2	0.06 %
N-091✓	3.21 %	2.00 %	1.23 %	16.22 %	23.26 %	59.29 %	12,774	0.49 %	4 - 1/2	-
N-092✓	3.39 %	2.00 %	1.42 %	11.09 %	22.24 %	65.25 %	13,772	0.63 %	4	-
N-093✓	6.47 %	5.80 %	0.71 %	33.71 %	18.11 %	47.47 %	10,080	0.78 %	3	-
N-094✓	1.81 %	0.70 %	1.12 %	22.56 %	20.31 %	56.01 %	12,000	0.74 %	5 - 1/2	-
N-095✓	1.62 %	0.85 %	0.78 %	29.52 %	18.45 %	51.25 %	10,878	0.59 %	5	0.10 %
N-096✓	2.03 %	1.14 %	0.90 %	14.97 %	17.80 %	66.33 %	13,149	0.52 %	1 - 1/2	0.04 %
N-111✓	4.56 %	3.60 %	1.00 %	11.43 %	27.33 %	60.24 %	13,548	0.55 %	7	-
N-121✓	3.20 %	2.02 %	1.20 %	8.96 %	23.36 %	66.48 %	14,197	0.82 %	6	-

WARNOCK HERSEY INTERNATIONAL LIMITED
PROFESSIONAL SERVICES DIVISION

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Sample No.	AS RECEIVED BASIS		AIR DRY BASIS							
	Total Moisture	Surface Moisture	Inherent Moisture	Ash	Volatile Matter	Fixed Carbon	B.T.U.'s per lb.	Sulphur (S)	Free Swelling Index	Phosphorus (P_2O_5)
N-161	2.37 %	1.60 %	0.78 %	11.83 %	26.99 %	60.40 %	13,648	0.45 %	6 - 1/2	-
N-162	2.89 %	2.30 %	0.60 %	8.70 %	24.12 %	66.58 %	14,197	0.54 %	2 - 1/2	-
N-181	4.49 %	3.70 %	0.82 %	2.70 %	27.44 %	69.04 %	15,344	0.78 %	7 - 1/2	-
N-182	2.71 %	2.00 %	0.72 %	18.70 %	28.25 %	52.33 %	12,226	1.36 %	7 - 1/2	-
N-191	8.78 %	8.00 %	0.85 %	14.75 %	18.01 %	66.39 %	13,423	0.52 %	1 - 1/2	-
N-192	5.49 %	4.90 %	0.62 %	26.05 %	18.56 %	54.77 %	11,452	0.74 %	2 - 1/2	-
N-193	5.14 %	4.40 %	0.77 %	4.20 %	19.85 %	75.18 %	14,895	0.63 %	1 - 1/2	-
N-194	3.90 %	3.06 %	0.87 %	11.55 %	17.58 %	70.00 %	13,922	0.74 %	1 - 1/2	-
N-201	3.83 %	2.96 %	0.90 %	11.18 %	24.02 %	63.90 %	13,847	0.66 %	5	-
N-211	4.31 %	3.60 %	0.74 %	17.40 %	18.44 %	63.42 %	13,997	0.64 %	4	-
N-212	2.92 %	2.00 %	0.94 %	46.45 %	17.19 %	35.42 %	7,909	0.29 %	5	-
N-213	4.09 %	3.30 %	0.82 %	5.85 %	24.88 %	68.45 %	14,646	0.85 %	8	0.04 %
N-214	7.26 %	6.40 %	0.92 %	5.50 %	22.02 %	71.56 %	14,745	0.44 %	3	0.10 %

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TEST RESULTS - Cont'd

Sample No.	As Received		Air Dry Basis						Free Swelling Index	Phosphorus (P ₂ O ₅)
	Total Moisture	Surface Moisture	Inherent Moisture	Ash	Volatile Matter	Fixed Carbon	B.T.U.'s per lb.	Sulphur		
N-122 ✓	4.07 %	3.39 %	0.70 %	14.49 %	22.48 %	62.33 %	13,248	0.63 %	6 - 1/2	-
N-123 ✓	4.02 %	3.00 %	1.05 %	15.34 %	17.93 %	65.68 %	13,049	0.46 %	1 - 1/2	-
N-131 ✓	5.15 %	4.00 %	1.20 %	10.73 %	18.78 %	69.29 %	13,797	0.49 %	1 - 1/2	-
N-132 ✓	3.75 %	3.06 %	0.71 %	52.43 %	13.31 %	33.55 %	6,761	0.34 %	1	-
N-133 ✓	4.74 %	4.00 %	0.77 %	6.05 %	24.58 %	68.60 %	14,745	0.96 %	8	-
N-134 ✓	4.84 %	3.80 %	1.08 %	10.15 %	17.60 %	71.17 %	14,072	0.65 %	2	-
N-141 ✓	4.65 %	4.00 %	0.68 %	7.38 %	20.60 %	71.34 %	14,371	0.81 %	2	-
N-142 ✓	6.42 %	5.65 %	0.82 %	21.15 %	18.98 %	59.05 %	13,223	0.49 %	1 - 1/2	-
N-143 ✓	3.75 %	2.70 %	1.08 %	22.40 %	16.79 %	59.73 %	12,176	0.57 %	1 - 1/2	-
N-144 ✓	3.33 %	2.40 %	0.95 %	20.60 %	20.02 %	58.43 %	14,222	0.73 %	6 - 1/2	-
N-151 ✓	2.60 %	1.75 %	0.87 %	36.65 %	17.83 %	44.65 %	9,581	0.41 %	3 - 1/2	-
N-152 ✓	1.44 %	0.85 %	0.60 %	39.70 %	16.57 %	43.13 %	8,907	0.49 %	2 - 1/2	-
N-153 ✓	3.25 %	2.45 %	0.82 %	20.45 %	20.96 %	57.77 %	14,446	0.43 %	1 - 1/2	-
N-154 ✓	3.55 %	2.80 %	0.77 %	15.30 %	18.60 %	65.33 %	13,099	0.45 %	1 - 1/2	-
D.D.H. B-4 107.1-115.0	3.89 %	3.00 %	0.92 %	12.80 %	26.60 %	59.68 %	13,523	0.17 %	6 - 1/2	-

BRAMEDA RESOURCES LTD.

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— SAMPLE & TEST REPORT — PINE PASS COAL PROJECT

SEAM #78

DATE:

HOLE NO.	FOOTAGE	SAMPLE NO.	A S S A Y S										
			TOTAL MOISTURE	INHERENT MOISTURE	VOLATILE MATTER	FIXED CARBON	ASH	BTU	SULPHUR	FSI	PHOSPHEROUS		
B - 1	155.7 - 167.9	N-011 ✓											
B - 4	337.5 - 348.0	N-041 ✓											
B - 8	190.0 - 201.5	N-081 ✓											
B - 9	475.2 - 488.0	N-093 ✓											
B - 12	316.0 - 322.7	N-122 ✓											
B - 14	488.5 - 499.0	N-142 ✓											
B - 15	569.5 - 577.0	N-153 ✓											

2013



WARNOCK HERSEY
INTERNATIONAL LIMITED

Mr. Menzies
PROFESSIONAL SERVICES DIVISION

125 East 4th Ave., Vancouver 10, B. C. Phone 876-4111 — Telex 04-50353

REPORT OF: **Coal Analysis**
AT: **Vancouver Laboratory**
PROJECT: **Coal Samples**
REPORTED TO: **Brameda Resources Ltd.,
7th Floor - 1177 West Hastings Street
Vancouver 1, B.C.**

FILE NO: **460-Q-9097**
DATE: **November 21, 1969**
REPORT NO:
ORDER NO:

ATTENTION: Mr. L.S. Trenholme

We have tested the samples of Coal submitted by you and report as hereunder:

RESULTS

As per attached.

203

WARNOCK HERSEY
G. Cochrane
G. Cochrane
SUPERVISOR, GENERAL LABORATORY

*Location and Seam ~~Hole~~
Identification to follow.
L.S.T.*

560

560

BRAMEDA RESOURCES LIMITED

20-3

PROPERTY

PINE PASS COAL

SHEET No. 1 of 4

D. D. H. No. B - 1

Logged By.....

Lat.....

Dip. - 47°

Elev. 2300.7'

Start August 1969

Dep.....

Bearing S 50° W

Depth 511 ft.

End August 1969

FOOT	XXXX	CORE RECV	ROCK	MINERALIZATION	№	XXXX	REMARKS
0 - 10	10'	0	Casing	No core - casing enters ground at 3'.			
10.0 - 12.8	2.8'	0	Casing	Overburden - boulder material.			
12.8 - 21.6	8.8'	8.3	Siltstone	Medium to dark grey, well bedded, highly contorted and irregular @ 70° - 90°, calcareous, lighter bands slightly coarser than darker ones, micaceous, coalified plant remains along some bedding planes. Section becomes finer grained downward and grades into claystone.			
21.6 - 30.0	8.4	7.5	Claystone	Medium grained, slightly silty, carbonaceous streaks along bedding, calcareous, becomes increasing carbonaceous downward coalified plant remains along bedding, some with pyrite, slightly silty zone 19.6 - 20.6'.			
30.0 - 30.3	0.3	0.3	Coal	Badly broken, no mineral bands evident.			
30.3 - 31.1	0.8	0.5	Shale	Coaly, black, carbonaceous, thin up to 1/8" coal lenses and stringers. Core badly broken first 4".			
31.1 - 49.9	18.8	18.8	Claystone	Slightly silty, hard; dense, calcareous, micaceous, coalified plant remains on occasional bedding plane. Some sections slightly coarser, approaching siltstone.			
49.9 - 51.4	1.5	1.5	Claystone	As above, but silty.			
51.4 - 56.3	4.9	4.8	Shale	Very dark grey, carbonaceous, some pyrite on fractures, not calcareous, plant fossils on bedding.			
56.3 - 57.8	1.5	1.0	Shale	Black, carbonaceous, coaly in part, many coal lenses and streaks, pyrrhotite and plant fossils on bedding, thin calcite veinlets. Bottom 3" coaly shale to bony coal. Bedding @ 70°; core badly broken.			
57.8 - 71.5	13.7	13.7	Sandstone	Dark and light grey salt and pepper texture, coalified plant remains on bedding, calcareous. Coal stringers < 1/2" on bedding. Calcite veins at high angle to bedding, pyrite associated with thin coal lenses, well bedded, some cross-bedding. Calcite filled vugs in veinlets up to 1/2" at bottom foot.			

PROPERTY _____

SHEET No. 2 of 4

D. D. H. No. B-1

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start. _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADE	CORE RECVY	ROCK	MINERALIZATION	NR.	DIRECTION		REMARKS
71.5 - 74.0	2.5	2.5	Sandstone	Gradational to claystone bedding @ 80°, minor fractures.				minor calcite on
74.0 - 101.0	27.0	25.5	Claystone	Dark grey-brown, silty bands @ 75°, calcareous, coalified plant remains on bedding. From 92.3 - 94.0' - sandstone bands @ 70°. Possible coaly seams 96.7, 99.0, 101 - grinding.				sandstone bands
101.0 - 101.5	0.5	0.4	Coal	Top 3" bright vitrain, remainder fine coal in claystone.				
101.5 - 111.3	9.8	9.5	Claystone	Silty, some bands approaching sandstone. At 102.5 - 1" coal, 103.0 - 103.5' - coaly shale, pyrite on fractures.				
111.3 - 118.0	6.7	6.7	Siltstone	With sandstone beds - similar to above but more sandy beds. Bedding @ 70° - 80°.				
118.0 - 123.5	5.5	5.0	Claystone	Coalified plant remains on bedding, calcareous, some pyrite, grades into carbonaceous shale.				
123.5 - 126.5	3.0	3.0	Carbonaceous shale	Dark, non-calcareous, coalified plant remains, fine coal bands 125 - 126.5'.				
126.5 - 145.2	18.7	18.7	Siltstone	Coalified plant remains on bedding @ 70°, calcareous, fine calcite stringers, pyrite on some beds.				
145.2 - 147.5	2.3	2.3	Sandstone	Fine grained, well bedded @ 70° - 75°, grey. Coal seams ½" wide 145.2 - 146.0'. Calcite veinlets along bedding.				
147.5 - 149.3	1.8	1.2	Siltstone	Similar to above but carbonaceous, non-calcareous. Several thin coaly seams.				
149.3 - 155.7	6.4	6.4	Claystone	Carbonaceous, dark brown-grey, locally calcareous, approaching shale. Some coalified plant remains.				
				Coal Seam - No. 78				
155.7 - 159.5	3.8	1.5	Coal	Bright, abundant pyrite on fractures, large core loss.				
159.5 - 161.0	1.5	0.5	Shale	Carbonaceous, fine coaly seams, poor recovery.				
161.0 - 163.5	2.5	2.0	Coal	Normal bright banded, poor recovery.				
163.5 - 165.0	1.5	0.5	Shale	Carbonaceous, some narrow coal seams.				
165.0 - 167.9	2.9	2.0	Coal	With carbonaceous shale. 165.5 - 166.0' - shale, rest bright coal.				
167.9 - 170.6	2.7	2.7	Claystone	Silty, carbonaceous, coalified plant remains.				

12.2'

PROPERTY _____

SHEET No. 3 of 4

D. D. H. No. B-1

Logged By. _____

Lat. _____ Dip. _____ Elev. _____ Start. _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADE	CORE RECY	ROCK	MINERALIZATION	No.	LENGTH		REMARKS
170.6 - 201.0	30.4	30.4	Siltstone	Banded @ 70°-80° with claystone sections, calcareous dense, poorly fractured. From 190 - 192, 195 - 196.5 - approaching sandstone. Lower contact gradational.				
201.0 - 206.0	5.0	4.3	Claystone	Carbonaceous plant remains, locally calcareous ensided fracture @ 20°. Narrow coaly bands on 80° fractures 202.3 - 206.0. Lost core ground coal.				202.0 - slick-
206.0 - 207.0	1.0	0.5	Coal	Normal bright banded, badly broken, width estimated.				
207.0 - 209.5	2.5	2.5	Claystone	Dark, carbonaceous, massive. Last two inches coaly seams.				
209.5 - 221.0	11.5	6.0	Coal	Badly broken. Good coal except from 215.2 - 216', 216 - 216.8', 217.5 - 219.5. These sections coaly shales and carbonaceous claystone. Poor recovery.				
221.0 - 325.1	104.1	104.1	Siltstone	Bedding @ 70° - 80°, coalified plant remains, coal and coaly shale 225 - 226. Coaly fractures to 225. Calcareous, minor pyrite on fractures. At 226 - 2" coaly shale. Local section approaching claystone. From 235.5 to 245 - carbonaceous, dark 1/16" coal seams 240 - 241. From 241 - 245.5 - sandy. At 293 - 1/2" coal seam @ 20°, carbonaceous for 6". At 302.5-303 carbonaceous, fractured @ 20°, pyrite. From 319 - 325.1 - grading to carbonaceous claystone.				
			Coal Seam					
(325.1 - 326.0	0.9	0.5	Coal	Bright, broken				
(326.0 - 327.9	1.9	1.3	Shale	Carbonaceous, with 1/16" - 1/8" coaly seams				
(327.9 - 331.0	3.1	1.7	Coal	Bright banded				
331.0 - 352.2	21.2	21.2	Claystone	With siltstone sections, abundant coalified plant fossils on bedding, dense, many fine calcite veinlets. Carbonaceous 350 - 352.2.				
352.2 - 356.0	3.8	3.6	Coal Seam	Bright banded except shaly 355 - 356. Good recovery.				
356.0 - 360.5	4.5	4.5	Claystone	Carbonaceous				
360.5 - 361.5	1.0	0.7	Coal Seam	Bright banded.				
361.5 - 370.6	9.1	9.1	Claystone	Carbonaceous, from 364.5 - 366.2 - approaching sandstone.				

5.9'

PROPERTY _____

SHEET No. 4 of 4

D. D. H. No. B-1

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start. _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADE	CORE REC'Y	ROCK	MINERALIZATION	No.	LENGTH			REMARKS
370.6 - 372.0	1.4	1.2	Coal Seam	Bright coal.					
372.0 - 376.0	4.0	3.2	Claystone	Carbonaceous - few thin coal seams.					
376.0 - 388.5	12.5	12.5	Claystone	Coalified plant fossils. Coaly shale at 380 and 382, calcareous. Lower contact gradational.					
388.5 - 415.5	27.0	27.0	Siltstone	Calcareous, coalified plant fossils on bedding, occasional 1/8" coal seams. Fine calcite and gypsum fractures.					
415.5 - 417.0	1.5	0.4	Coal Seam	Appreciable pyrite. Shale 415.5 - 416 with minor coal.					
417.0 - 483.0	66.0	66.0	Siltstone	From 451 - 483 - very fine grained, approaching claystone.					
483.0 - 484.5	1.5	1.0	Shale	Carbonaceous, black, dense.					
484.5 - 492.0	7.5	4.0	Coal Seam	Bright banded. May be one foot carbonaceous shale at end.					
492.0 - 505.5	13.5	13.5	Siltstone	Carbonaceous at top and bottom.					
505.5 - 507.3	1.8	1.7	Coal Seam	Bright banded.					
507.3 - 511.0	3.7	3.7	Siltstone	Grades to carbonaceous claystone.					
END OF HOLE = 511.0 FEET.									

W

560

BRAMEDA RESOURCES LIMITED

20-3

PROPERTY

PINE PASS COAL CO.

SHEET No. 1 of 5

D. D. H. No. B - 2

Logged By

Lat. ³99° 173.03

Dip. -90° (vert.)

Elev. 2282 ft.

Start Aug. 11/69

Dep. 109, 242.71

Bearing

Depth 752 ft.

End Aug. 18/69

FOOT	SDR	CORE REC'Y	ROCK	DESCRIPTION	FR.	DEPTH	REMARKS
0 - 87.0	87.0	0	CASING	No core - overburden			
87.0 - 142.0	55.0	55.0	SILTSTONE	Poorly bedded at 25 - 30°, well fractured, many of them slickensided at low angles - 0°, 15° or 25°. From 107 - 119' carbonaceous, more like claystone. 107 - 109 - many slickensided coaly fractures @ 20°, also fine calcite fractures. At 117' - 1/2" coal seam @ 20°. At 124' - bedding @ 40°, contorted. From 130 - 138' - mostly claystone, many slickensided fractures @ 15° - 20° - fine coal on frs. Numerous calcite fractures 140 - 144. At 129' bedding @ 30°.			
142.0 - 193.0	51.0	50.0	CARBONACEOUS CLAYSTONE	- gradational contact - would weather to a crumbly shale. Weak bedding @ 30°. Numerous fractures @ 30° - 45°. From 162 - 163 and 164.5 - 166.0 - many fractures @ 0° and low angles. At 172 - sandy bed @ 25°, also 179 - 181.5. Section with coalified plant fossils 190 - 191, 193 - probable bedding plane faults - core slickensided, broken.			
193.0 - 208.8	15.8	15.8	CARBONACEOUS SILTSTONE	- gradational from above. Poorly bedded @ 30°.			
208.8 - 212.0	3.2	2.0	COAL SEAM	Bright coal, badly broken. Fine pyrite on frs.			
212.0 - 216.6	4.6	4.1	VERY CARBONACEOUS SILTSTONE	- many coalified fine fractures and/or fossils.			
216.6 - 251.6	35.0	35.0	SILTSTONE	Carbonaceous but much less than above. Bedding @ 5 - 10°. Very finely grained, almost claystone. Fairly massive, poorly fractured. Several calcite veinlets.			
251.6 - 255	3.4	1.8	COAL SEAM	Mixed coal and carbonaceous claystone. Fine loss probably 50% coal. Badly broken @ 40°.			
255.0 - 262.0	7.0	6.5	CARBONACEOUS SHALE	- Very dark, finely banded with coal. In part bony coal 260 - 262.			
262.0 - 275.0	13.0	13.0	SILTSTONE	Carbonaceous, grades in and out of carbonaceous claystone.			
275.0 - 279.0	4.0	4.0	SILTSTONE	Much lighter, less carbon - fine interbeds coal and siltstone.			
279.0 - 288.0	9.0	9.0	CARBONACEOUS SILTSTONE	- very dark, very fine grained. Scattering of fine calcite stringers.			

PROPERTY _____

SHEET No. 2 of 5

D. D. H. No. B-2

Logged By _____

Lat. _____

Dip _____

Elev. _____

Start _____

Dep. _____

Bearing _____

Depth _____

End _____

FOOT	GRADE	CORE REC'Y	ROCK	MINERALIZATION	NO.	LENGTH	REMARKS
288.0 - 297.0	9.0	8.5	CARBONACEOUS CLAYSTONE OR SHALE	massive, dense, black. many slickensided frs. @ 20°.			At 296 - 297 -
297.0 - 308.0	11.0	11.0	CARBONACEOUS SILTSTONE	as above but silty in part. Several fine coal and calcite veinlets @ 25°. Coal 306.8 - 307.3.			
308.0 - 313	5.0	3.5	COALY SHALE	Coal veinlets up to 1/2" @ 30° dense black shale (?). Badly broken 308 - 312, many slickensided fractures @ 20° - 30°.			
313.0 - 328.5	15.5	13.9	COAL SEAM	Good coal, good recovery			
328.5 - 353.0	24.5	24.5	SILTSTONE	Bedded @ 25°. Grades into carbonaceous siltstone @ 338. At 346 markedly carbonaceous with coalified plant remains. Calcite veinlets at 30°. At 350 thin (6") sandstone bed with salt and pepper texture. 350 - 353 rock becomes siltier.			
353.0 - 355.0	2.0	2.0	CLAYSTONE	Very carbonaceous, very fine. Dark black. Few slickensided fractures at 40°.			
355.0 - 356.5	1.5	1.0	COALY SHALE	Crumbly with few thin coal seamlets (< 1/4") at 30°.			
356.5 - 361.0	4.5	4.5	CARBONACEOUS CLAYSTONE	Fine grained, fine bedded rock. A very few coal nodules. Rock becomes less carbonaceous and more silty at 360. Throughout, a few calcite veinlets at low angles.			
361.0 - 362.0	1.0	1.0	CARBONACEOUS SHALE	Soft rock, tends to be flaky when broken. Many coal nodules and veinlets (latter at low angles)			
362.0 - 367.0	5.0	5.0	SILTSTONE	Fine grained; fine bedded (30°) with veinlets of calcite at 90° to this bedding.			
367.0 - 377.8	9.8	9.8	CLAYSTONE	Boundary between this and last named siltstone indistinct. Very fine grain; dark black - grey; veinlets of calcite (40°). At 372.0' becomes carbonaceous: a few coaly nodules here.			
377.8 - 396.1	18.3	18.3	SILTSTONE	Fine grained, poor bedding, abundant calcite veins (60°), with increasing depth becomes siltier and coarser, fractures at 60°.			
396.1 - 422.5	26.4	26.4	SANDSTONE	Boundary between this and last named siltstone gradational, fairly well bedded, salt and pepper texture, calcite veins and calcite filled vugs at 420.2', coaly nodules and veinlets			

PROPERTY _____

SHEET No. 3 of 5

D. D. H. No. B2

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADE	CORE RECY	ROCK	MINERALIZATION	No.	LENGTH			REMARKS
				fairly abundant,					at this stage rock becomes silty and carbonaceous.
422.5 - 438.7	16.2	16.2	SILTSTONE	Fine grained, light grey, weak bedded, at 424.0					rock becomes much finer grained (nearly a claystone), a fine grained band also occurs at 429.6' and again at 430.5', abundant fracturing (30°), at 438.7' becomes coarser, tending to sandstone.
438.7 - 440.7	2.0	1.0	COAL	Good coal, badly broken, abundant plant remains (poor recovery					
440.7 - 444.0	4.7	3.7	MUDSTONE	Very carbonaceous, coaly nodules and veinlets, coalified					plant remains.
444.0 - 472.0	28.0	28.0	SILTSTONE	Fine grained, light grey, poor bedding, few calcite veinlets (30°), some fracturing at 30°, at 470.0' coaly veinlets.					
472.0 - 478.2	6.2	6.2	CLAYSTONE	Very fine grained dark grey, some fracturing at 30°, at 476.3'					thin coal veinlet (less than 1/2") occurring along fracture, pyrite also seen here.
478.2 - 487.0	8.8	8.8	SILTSTONE	Light grey, fine grained, bedding distinct, calcite veins crossing bedding at 90°, a few coaly veinlets; at 484.6'					rock much finer grained (tending to claystone) (persists only for .5')
487.0 - 480	3.0	3.0	CLAYSTONE	Very fine grained very dark black, few calcite veinlets at 60°.					
490.0 - 494.6	4.6	4.6	SILTSTONE	Tends to be carbonaceous, at 492.5' thin coal seam (approx. 1/2")					other coaly veinlets from 492.5 to 493.5, coalified plant remains abundant, a few calcite veinlets occurring along fractures.
494.6 - 496.0	1.4	1.4	CLAYSTONE	Very fine grained, dark black					
496.0 - 497.8	1.8	1.8	SILTSTONE	Fairly well bedded, light grey, fine grained coaly nodules present but not in abundance, calcite veins at 60°.					
497.8 - 506.3	8.5	8.5	CARBONACEOUS CLAYSTONE	Distinct contact with previous siltstone. Slickensided fractures at 20°. At 503.0 coaly veinlets. Coalified plant remains throughout section. Fine grained band					

PROPERTY _____

SHEET No. 4 of 5

D. D. H. No. B-2

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start. _____

Dep. _____ Bearing _____ Depth _____ End. _____

FOOT	GRADE	CORE REC'D	ROCK	MINERALIZATION	No.	LENGTH		REMARKS
				at 503.0. Calcite along fractures (at 20°).				
506.3 - 509.0	2.7	2.7	SILTSTONE	Sharp boundary with latter claystone. Weak bedding at 20° Would weather easily (soft). At 506.8 fine grained band (tendency to claystone). From 508.0' to 509.0, bedding contorted and wavy. Along bedding here coaly lenses and nodules occur, along with thin veins of calcite at low and high angles. Some fracturing discordant to bedding of rock; here some pyrite present. Rock becomes more indurated gradin downwards.				
509.0- 510.0	1.0	1.0	CLAYSTONE	Dark black with negligible bedding, some calcite along slickensided fractures at 30°.				
510.0- 514.0	4.0	4.0	SILTSTONE	Fine grained grey rock; hard; weak bedded at 30° or lower; calcite veins at low and high angles; coaly lenses along bedding at 510.0 to 512 and again at 513.0 - 514.0				
514.0 - 516.3	2.3	2.3	CLAYSTONE	Distinct boundary with latter siltstone; weak bedding (nearly vertical); calcite veins at 60° - 70° a few slickensided fractures at low angles; non-carbonaceous.				
516.3 - 528.0	11.7	11.7	SILTSTONE	Fine grained; hard; weak bedded at 20°; coaly lenses and calcite veinlets along bedding; lot of fracturing along bedding; very broken.				
528.0 - 538.0	10.0	10.0	CLAYSTONE	Fine grained rock with silty bands throughout (bedding of latter at 30°): texture variable; calcite veins at 30° and higher angles.				
538.0 - 576.8	38.8	38.8	SILTSTONE	A rock of variable texture, from silty to fine (nearly claystone). The bedding, best seen in the silty sections is at very low angles, nearly at 0° in places. Fractures are abundant, both along the bedding and at right angles to the bedding; along these fractures calcite occurs. In many places coaly lenses and veinlets are seen, especially at 539.0'. Fine band (nearly claystone) at 552 - 554 and again at 571.5 to 573.0'.				

PROPERTY _____

SHEET No. 5 of 5

D. D. H. No. B-2

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADE	CORE RECVY	ROCK	MINERALIZATION	No.	LENGTH			REMARKS
576.8 - 597.0	21.8	21.8	CLAYSTONE	Very fine grain; bedding (poor) at 50°					Some fracturing; calcite present along fractures.
597.0 - 602.5	5.5	5.5	SILTSTONE	Bedding at 50°; grades into claystone downwards.					
602.5 - 615.5	13.5	13.5	CLAYSTONE	Weak bedding at 60°; very broken at 610.0 to 612.0: Carbonaceous in latter section; at 613.5 (bedding at 30° - 40°) calcite present.					
615.5 - 635.0	14.5	14.5	SILTSTONE	Bedding at 30°; texture variable; some slickensided fractures; distinct bedding.					
633.0 - 650.0	17.0	15.0	CLAYSTONE	Fine grained, dark black, weakly bedded, very broken, at 642.0 thin (< 1/2") coal seam; at this stage rock becomes carbonaceous, slickensided fractures are numerous.					
650.0 - 687.0	37.0	37.0	SILTSTONE	Well bedded at 40°; moderately fractures; abundant calcite veins at low and high angles, some coaly lenses along fractures, slickensided fractures.					
687.0 - 695.2	8.2	3.2	CLAYSTONE	Carbonaceous; very broken, poor recovery; very fractured.					
695.2 - 711.5	16.3	16.3	SILTSTONE	Fairly well bedded (at 40°), grades into finer material downwards, at 701.5 - silty band (2"): turns darker at approx. 704.0; at 709.0 and 711.0 light grey silty bands; bedding at 50°.					
711.5 - 714.0	2.5	2.5	CLAYSTONE	Carbonaceous; very dark black indurated.					
714.0 - 721.5	7.5	.5	COAL SEAM	Good coal, shiny; very poor recovery.					
721.5 - 732	11.5	8.5	CARBONACEOUS SHALE	Badly broken, coaly seamlets.					
732.0 - 743.0	11.0	11.0	CLAYSTONE	Fine grained: grades to siltstone below					
743.0 - 752.0	9.0	9.0	SILTSTONE	Bedding at 40°; variable texture.					
END OF HOLE B-2 AT 752.0'									

560

BRAMEDA RESOURCES LIMITED

203

PROPERTY PINE PASS COAL PROJECT

SHEET No. 1 of 4

D. D. H. No. B-3

Logged By H. Jones &
C. Grant

Lat. 93,773

Dip. -46°30'

Elev. 2282'

Start Aug. 18, 1969

Dep. 104,242

Bearing N. 60° E

Depth 751'

End Aug. 27, 1969

FOOT	INDEX	CORE REC'Y	ROCK	MINERALIZATION	XXX	XXXXX		REMARKS
0 - 129.0	129.0	0	OVERBURDEN	No core				
129.0 - 153.0	24.0	21.0	CLAYSTONE	Dark carbonaceous, fine 45°; widely scattered 1/8"-1/4" calcite veinlets. slickensided fractures at 0° - 10°, broken core 146-153'. Lower section, not seen, broken core.				coaly fractures at 0° 20° - 30°, From 129-133' Badly broken
153.0-175.7	22.7	22.5	SANDSTONE	Fine grained, dark grey, bedded 65-70°, massive. bedding at 80°. Fine coaly seams throughout, some with pyrite. From 175-176, gradational contact, becomes carbonaceous.				At 165'
175.7 - 178.5	2.8	2.2	COAL SEAM	Bright banded. End of section broken, may be mixed black carbonaceous shale and coal over last foot.				
178.5 - 296.0	117.5	117	CLAYSTONE	Strongly carbonaceous to 184. Occasional fine coaly fr. on bedding at 80° (to 210' then coaly fractures numerous). Silty in parts. Fossil plant remains throughout. Section massive. From 250 - 290 predominantly claystone - carbon- aceous.				
296.0-299.5	3.5	3.5	CARBONACEOUS CLAYSTONE (SHALE)	Massive dark. Many very fine coaly fractures and coalified plant remains. At 298.5-299.5 badly broken. Coal frs. increase to bottom of section.				
299.5-302.7	3.2	3.2	CLAYSTONE	Very fine grained: brownish.				
302.7-305.9	3.2	3.0	COAL SEAM	Good shiny coal. Bedding at 30°. Good recovery.				
305.9-310.8	4.9	3.5	CARBONACEOUS CLAYSTONE.	Fine grained; black; very broken; part, coaly seamlets along fractures at low and high angles, from 309.5 - 310.8.				In lower
310.8-312.3	1.5	0.5	COAL SEAM	Good coal. Badly broken, very poor recovery.				
312.3-323.0	10.7	10.7	SILTSTONE	Fine grained, grey rock. Poor bedding at 60° - 70°. Texture variable throughout. Some very carbonaceous lenses some fracturing at 30°.				

PROPERTY _____

SHEET No. 2 of 4

D. D. H. No. B-3

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADE	CORE REC'Y	ROCK	MINERALIZATION	No.	LENGTH		REMARKS
323.0-330.6	7.6	7.6	CARBONACEOUS SHALE.	Badly broken with coal seamlets along fractures; Some pyrrhotite along fractures. At 330.1, 2" coal seam. Fractures at variable angles, but mostly 30°.				
330.6-335.6	5.0	5.0	SILTSTONE	Very fine grained grey rock. Bedding indistinct, but approx. 60° - 70°. Texture variable (grades to nearly claystone in places).				
335.6-359.0	23.4	22.4	CLAYSTONE	Fine grained; black. At 340.0, 1.0' coal seam. At 343.0 to 347.0 approx., carbonaceous shale band. Grades to siltstone downwards.				
359.0-384.8	25.8	25.8	SILTSTONE	Bedding at approx 30°. At 367.0 to 369.1, carbonaceous shale band; sheared. Siltstone below this to 384.8'.				
384.8-387.0	3.2	2.7	CARBONACEOUS SHALE.	Dark black; fine grained.				
387.0-398.0	12.0	6.0	COAL SEAM	Good coal. Badly broken. Bedding indistinct. Fractured approx. 30° (?). Good recovery in part - some solid sections.				
398.0-403.0	5.0	2.5	BLACK CARBONACEOUS SHALE.	1/8" to 1/4" coal seams to 402.0				
403.0-406.0	3.0	3.0	CLAYSTONE-SILTSTONE.	Banded - sharp gradation from above, claystone carbonaceous (shale?). Bedded @ 80°.				
406.0-416.3	10.3	10.3	SANDSTONE	To 408', gradation from siltstone.				
416.3-420.0	3.7	2.0	CARBONACEOUS SHALE (Claystone?).	Massive, but many fine fractures. A few very fine coaly fractures.				
420.0-434.0	14.0	14.0	CARBONACEOUS CLAYSTONE-SILTSTONE BANDED.	Predominantly claystone, some sections shaley. Bedding irregular 70° - 80°. From 430-431.5 fine coaly seams, some calcite on fractures.				
434.0-436.5	2.5	2.5	SILTSTONE	Transition zone.				
436.5-453.0	16.5	16.0	SANDSTONE.	Fine grained, salt and pepper texture. Bedded @ 75° to 80°. From 445 - 453' - finer grained, approaching siltstone, fractured @ 70°, 15°, many with coal up to 1/2" wide with fine calcite veinlets bordering coal.				
453.0-502.0	49.0	49.0	CARBONACEOUS SILTSTONE -	Some claystone sections. Coal 454 - 455. Widely scattered fine coaly fractures, 462' - 1/2" calcite				

PROPERTY _____

SHEET No. 3 of 4

D. D. H. No. B-3

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADE	CORE RECVY	ROCK	MINERALIZATION	No.	LENGTH			REMARKS
				fr: @ 20°. Fine calcite veinlets beside coaly fractures.					
				At 492 - coal fr. @ 5°.					
502.0-509.0	7.0	7.0	TRANSITION ZONE	Above siltstone to sandstone.					
509.0-512.0	3.0	3.0	SANDSTONE	Similar to 406-416.3'. From 510.4-512' - coaly veinlets.					
512.0-514.2	2.2	2.2	SANDSTONE-CARBONACEOUS SHALE	(claystone?) TRANSITION ZONE - interbedded @ 80°.					
514.2-552.0	37.8	35.0	CARBONACEOUS SHALE (claystone)	- Massive, but many fine frs. healed. Becomes coaly 536-543 - badly broken but appears to be coal seams from ½" to 2", most between 536' - 540'. Small seamlets of coal at 349.6'.					
552.0-590.5	38.5	38.0	SILTSTONE	Bedding indistinct (high angle). Some fine calcite veinlets Variable texture. At 574.9, 1.0' coal seam, and again at 576.0'. At 569.0 to 571.0, band of claystone. At 580.0 to 585.0, texture becomes finer (nearly claystone). At 587.0, 0.5' of coal. At 588.0, 0.8' of coal. At 590.0, 2" coal seam.					
590.5-592.0	1.5	1.3	COAL SEAM	Good coal, shiny, hard.					
592.0-637.0	45.0	44.5	CARBONACEOUS CLAYSTONE (shale?)	Very fine grained with many coal seamlets; at 601.5' coal seam of 1.0'. Some fine calcite veinlets. Texture variable; at 606.0 approaches that of siltstone (bedding at 90°). At 607.0 texture again like that of siltstone. At 617.6 2" coal seam. At 625.2, thin (1") coal stringers and calcite along fractures at 60°. At 627.8, 5" of siltstone. From approx. 627.0 abundant coalified plant fossils.					
637.0-641.0	4.0	3.0	COAL SEAM	Good; shiny, hard.					
641.0-649.0	7.5	7.5	COALY SHALE	Very coaly. At 641.2, 2" of coal. At 642.6, 9" of coal. At 648.5, 1'2" coal.					
649.0-656.6	7.6	7.6	CARBONACEOUS SHALE	Dark grey rock. Abundant coalified plant remains. Some fracturing at 30°.					

560

BRAMEDA RESOURCES LIMITED

203

PROPERTY

PINE PASS COAL PROJECT

SHEET No. 1 of 4

D. D. H. No. B-4

Logged By H. Jones &
C. Grant

Lat. 103,481.27E

Dip. -90°

Elev. 2734.3'

Start Aug. 27, 1969

Dep. 95,161.22N

Bearing -

Depth 726 feet

End Sept. 4, 1969

FOOT	START	CORE REC'D	ROCK	MINERALIZATION	FR	FR	FR	FR	FR
0-20.0	20.0	0	OVERBURDEN	No core.					
20.0-36.4	16.4	14.4	SANDSTONE	Grey, speckled; fairly coarse in places. Bedding indistinct, but approx. 30°. Well fractured; coaly and shaly stringers along fractures (30°) and also along bedding. Brown iron staining throughout. At 35.0' pyrite scattered in iron-stained vug.					
36.4-48.7	12.3	10.3	CLAYSTONE	Very broken. Extensive iron staining. Fractured at 30°. At 43.0', becomes shaly. A few coaly seamlets here.					
48.7-85.0	36.3	35.0	SILTSTONE	Fine grained, grey rock; weak bedded at 30°. Extensive iron staining from 54.0' to 55.0'. At 55.0' - slickensided fr. @ 0°. Very fine grained 57 to 61.5' - approaching claystone. At 65' - bedding angle 50° - well bedded. Well fractured throughout along bedding. 79-80 and 82-85' - iron stained siltstone, fr's @ 0° & 30°					
85.0-105.0	20.0	19.5	BLACK CARBONACEOUS CLAYSTONE	With siltstone and shale sections. 99.7'-105.0' - massive car. shale, coal seams up to 1/8" common @ 40°.					
105.0-123.0	18.0	14.5	CARBONACEOUS SILTSTONE	Fine grained, dark. Badly broken 109-115' with large core loss. Coaly carbonaceous shale 114-115.2' - most of coal lost. 109-113' - brecciated, cemented with calcite. Bedded @ 50°.					
123.0-130.0	7.0	7.0	SILTSTONE	As above, but much less carbon. Bedded @ 50°.					
130.0-142.5	12.5	12.5	CARBONACEOUS SILTSTONE	Similar to 105-123. Carbonaceous shale 131-133					
142.5-156.5	14.0	10.7	CARBONACEOUS SHALE	Coaly in part. At 152' - slickensided frs. @ low angles. Large core loss. 144-152' - Fault zone to coal					
156.5-165.0	8.5	8.0	CARBONACEOUS SILTSTONE	Bedded @ 35°, dark carbonaceous. At 162.5-163.5' badly broken, slickensided low angled frs., gypsum fracture coatings - fault(?). At 165' - limonite frs. @ 40°.					
165.0-188.5	22.5	22.5	SILTSTONE	Bedded @ 25° - 35°, weakly carbonaceous, well bedded. Sandy 177-178', 180-188.5'. At 180', 180.5' - coal frs.					

PROPERTY _____

SHEET No. 2 of 4

D. D. H. No. B-4

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	FRAME	CORE REC'Y	ROCK	MINERALIZATION	MD.	REMARKS				REMARKS
188.5-204.5	16.0	15.0	SANDSTONE	Fine grained, well bedded, numerous coaly fractures along bedding @ 35°. Fractures often slickensided. Texture variable at 214.0, 3" very fine grained siltstone. Small stringers calcite along bedding planes.						
204.5-218.0	13.5	13.5	SILTSTONE	Distinct contact with preceding sandstone. Weak bedded, at 40°. From 213-216' - sandstone. 217-218' - gradational contact to sandstone.						
218.0-233.6	15.6	15.6	SANDSTONE	Well bedded @ 40°. Fine coal fractures and inclusions of carbonaceous material. Lower contact sharp @ 70°.						
233.6-286.5	52.9	52.9	SILTSTONE	Becomes carbonaceous 249-286.5' At 266.5, 268 - limonite fr. and stained rock. Fr. @ 0° - 10°. At 276 - limonite fr. @ 40°. From 280-281' - sandstone, rusty at 281'. Becomes increasingly carbonaceous at end.						
286.5-316.7	30.2	28.8	CARBONACEOUS CLAYSTONE (SHALE?)	Some limonite staining along slickensided fractures. Badly broken at 289.0 to 290.5. Coaly seamlet at 294.0'. Band of siltstone at 290.5 (1'). Coaly seamlets begin to appear at 311.0, Along with some calcite; bedding here at 40°.						
316.7-317.8	1.1	0.8	COAL SEAM	Not particularly good, rather shaly.						
317.8-337.5	19.7		CLAYSTONE	Bedding at 40°. Badly broken from 320.3 to 322.3: Some coaly seamlets here (< 1/2"). At 325.3, silty band (0.5'). At 326.8', 1.2' of siltstone, at 323.2', 1.3' of siltstone.						
337.5-348.0	10.5	7.1	COAL SEAM	Good coal; shiny, hard, badly broken from 338.8 to 348.0. Slickensided fractures in parts. Slightly shaly in places. Pyrite along some fractures (at 40°).						
348.0-359.8	11.8	5.7	CARBONACEOUS CLAYSTONE.	Badly broken, slickensided fractures at low angles						
359.8-368.0	8.2	7.4	SANDSTONE	Bedding at 30°. Badly broken. Slickensided fractures at low and high angles. Some calcite throughout section.						
368.0-369.0	1.0	0.8	COAL SEAM	Good coal, shiny, hard.						
369.0-371.0	2.0	1.8	CARBONACEOUS SHALE.	Coaly at 369.0.						

PROPERTY _____

SHEET No. 3 of 4

D. D. H. No. B-4

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADE	CORE REC'D	ROCK	MINERALIZATION	No.	LENGTH			REMARKS
371.0-390.0	19.0	18.5	SILTSTONE	Fairly well bedded at 50° - 60°. Texture variable, at 387.0, 1.5' of claystone (silty).					
390.0-393.0	3.0	3.0	CARBONACEOUS SHALE (CLAYSTONE)	Fine grained; brownish. Some limonite stains along fractures at low angles (< 20°).					
393.0-414.2	21.2	20.6	SILTSTONE	Bedding at 40°. At 401.5, 1.0' of carbonaceous shale. Coarse texture of siltstone at 403.0 to 404.0'.					
414.2-432.0	17.8	14.5	CARBONACEOUS CLAYSTONE (SHALE?)	Coaly seamlets (< 2") at 418.0. to 418.0. Badly broken from 419.5 to 420.0'. At 420.0, 5" remaining of good coal, possibly once a seam of 1.5'; bounded on either side by badly broken shale (coaly).					
432.0-460.2	28.2	28.2	SILTSTONE	Bedding at 40°. In places fractures at 20°. Pyrite along fractures, along with some calcite. Rather fine grained from 440.0 to 441.0. In deeper parts very well bedded; cross bedding very noticeable in places.					
460.2-481.0	20.8	20.8	CLAYSTONE	Distinct boundary with preceding siltstone. At 465.5 - slickensided fracture and calcite veinlet @ 70° - minor fault. At 467-476.5 - silty, bedded @ 60°. Lower contact gradational.					
481.0-511.5	30.5	30.5	CARBONACEOUS SILTSTONE, with carbonaceous claystone	- very fine grained, bedded @ 40°. Coal seam 488-488.5' @ 40°, abundant pyrite in ½" band in coal, also calcite stringers.					
511.5-517.0	5.5	4.3	CARBONACEOUS SHALE	Lower contact broken.					
517.0-535.0	18.0	11.0	COAL SEAM	Good coal, hard shiny; some good parts preserved. Bedding at 50°.					
535.0-538.8	4.8	4.8	CARBONACEOUS SHALE.	Bedding at 50°. Coal seamlets on bedding.					
538.8-561.3	22.5	22.5	SILTSTONE	Bedding at 60°. Some calcite along bedding. Grades to near claystone in places.					
561.3-564.5	3.2	3.2	CLAYSTONE	Grades to siltstone below. Fractures in places at 30°.					
564.5-605.0	41.5	40.0	SILTSTONE	Bedding at 30°; appears to flatten out to 60-70° near 595.0. At 594.0, possible minor fault. Calcite along fractures at					

PROPERTY _____

SHEET No. 4 of 4

D. D. H. No. B-4

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADE	CORE REC'D	ROCK	MINERALIZATION	No.	LENGTH		REMARKS
				low and high angles. From 580.0 to 586.0, band of carbonaceous shale. Grades to claystone below				
605.0-617.0	12.0	11.5	CLAYSTONE	Silty in places. At 606.2', abundant calcite along fractures at 50°.				
617.0-642.2	35.2	35.2	SILTSTONE	Mainly siltstone, but grades to claystone in places. Bedding at 60°. Calcite along frs. at 30°.				
652.2-668.0	15.8	15.8	SANDSTONE	Well bedded at 70°. Fractured in places with calcite. Coaly lenses and pyrite along fractures.				
668.0-683.0	15.0	15.0	SILTSTONE	Bedding at 70°; cross bedding seen in places, fractures at 30° with calcite.				
683.0-717.0	34.0	32.8	CLAYSTONE	Grades to siltstone in places. Fractured at 20°-30°, with pyrite along fractures. Bedding at 70°-80°. Broken in places. Some coalified plant remains. Badly broken around 705.0 - 706.0. Some coaly seamlets here.				
717.0-723.0	6.0	6.0	SILTSTONE	Bedding at 80°. Distinct boundary with preceding claystone.				
723.0-726.0	3.0	3.0	CLAYSTONE					
				END OF HOLE B-4 - 726.0'				

560

BRAMEDA RESOURCES LIMITED

20-3

PROPERTY PINE PASS COAL PROJECT

SHEET No. 1 of 4

H. Jones &

Logged By C. Grant

D. D. H. No. B - 5

Lat. 93,773.03 N

Dip. -56°00'

Elev. 2197.4 ft.

Start August 27 1969

Dep. 104,242.71 S

Bearing S 60° W

Depth 772'

End Sept. 4, 1969

FOOT	GRADE	CORE RECY	ROCK	MINERALIZATION	No.	LENGTH			REMARKS
0 - 103.0	103.0	0	OVERBURDEN	No recovery					
103.0 - 107.1	4.1	3.6	CARBONACEOUS SHALE	Coaly at 106.6'					
107.1 - 115.0	8.1	6.0	COAL SEAM	Good coal, badly broken.					
115.0 - 118.4	3.4	3.4	SILTSTONE	Weak bedding at -50°. Grades to claystone below.					
118.4 - 140.0	21.6	21.0	CLAYSTONE	Some coaly seamlets and stringers. At 125.0 becomes silty and again at 129.0. Some plant fossils. Some calcite. At 132.7 - 135.6, band of carbonaceous shale, badly broken around 135'. Grades into siltstone below.					
140.0 - 150.0	10.0	10.0	SILTSTONE	Weak bedded at 50°. Becomes coarser at 148.0 with some coaly seamlets.					
150.0 - 171.8	21.8	21.0	CARBONACEOUS SHALE	Dark black; broken from 150.0 to 157.0'; a few coaly seamlets (< 1") here. Grades into carbonaceous claystone below, but still well sheared and fractured.					
171.8 - 175.4	3.6	3.6	SILTSTONE	Fairly well bedded at 65°. Grades into claystone below.					
175.4 - 193.0	17.6	17.0	CARBONACEOUS CLAYSTONE (SHALE?)	Grades to definite shale downwards. Some coaly seamlets in lower part, 191-193. Some silty bands.					
193.0 - 204.0	11.0	7.0	COAL SEAM	Good coal; shiny, hard. Badly broken at bottom few feet.					
204.0 - 206.5	2.5	2.5	COALY, CARBONACEOUS SHALE	Many 1/8" coal seams @ 45°					
206.5 - 213.0	6.5	6.5	CARBONACEOUS SHALE.	Black, bedded @ 60°. Some silty beds. Lower contact gradational. At 212' - 4" with numerous calcite filled fractures - brecciated zone, contacts @ 70°. Many hairlike calcite frs. throughout entire section.					
213.0 - 218.0	5.0	4.7	SILTSTONE	Well bedded @ 70°. Lower contact broken, slickensided fractures along bedding.					
218.0 - 230.0	12.0	11.7	SANDSTONE	Well bedded @ 50°; many slickensided carbonaceous beds 1/8" wide to 221', much less and finer beds and grain size from here to end.					
230.0 - 238.0	8.0	8.0	BANDED SILTSTONE (CARBONACEOUS) AND CARBONACEOUS CLAYSTONE.	Bedded @ 60°					
238.0 - 239.0	1.0	1.0	BLACK CARBONACEOUS SHALE						
239.0 - 240.0	1.0	0.75	COAL	Normal bright banded, broken.					

PROPERTY _____

SHEET No. 2 of 4

D. D. H. No. B-5

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start. _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADE	CORE RECY	ROCK	MINERALIZATION	No.	LENGTH		REMARKS
240.0 - 246.0	6.0	6.0	CARBONACEOUS CLAYSTONE	- Very dark.				
246.0 - 266.5	20.5	20.5	CARBONACEOUS CLAYSTONE WITH SILTSTONE SECTIONS	- Well bedded 60° - 70° fine coaly fractures.				
266.5 - 279.5	13.0	13.0	SANDSTONE	Fine grained, fine coal on bedding planes @ 60° 268.5' - transition from siltstone to sandstone contact sharp @ 40°.				From 266.5 - Lower
279.5 - 287.0	7.5	7.5	SILTSTONE-CARBONACEOUS CLAYSTONE.	Interbanded, bedded @ 50°.				
282.0 - 297.0	10.0	10.0	BLACK CARBONACEOUS SHALE.	At 294.5 - inclusion with pyrite blebs.				
297.0 - 306.0	9.0	9.0	CARBONACEOUS CLAYSTONE OR SHALE WITH SILTSTONE SECTIONS.	Shaley, fracturing in part @ 60° - cross cut bedding	301 - 306'			a few fine calcite fractures
306.0 - 321.0	15.0	13.5	CARBONACEOUS SHALE - Shaley fractures @ 60°.	Narrow coal seams; core loss in this area.				314 - 319
321.0 - 330.0	9.0	8.0	SILTSTONE	Carbonaceous in part. Well bedded @ 60°.				
330.0 - 338.0	8.0	5.7	CARBONACEOUS SHALE.	Badly broken, some breccia @ 335.5'. section 2" of irregular fine calcite veining.				At end of
338.0 - 361.0	23.0	20.5	CARBONACEOUS SHALE, CLAYSTONE AND SILTSTONE.	Finely bedded @ 55°. Badly broken 348 - 352', especially 350-351 - fault zone(?)				
361.0 - 375.7	14.7	8.7	CARBONACEOUS SHALE, with coal sections.	Probably coal seam 78. Coal sections badly broken. Coal sections very low recovery, can only estimate that most of lost core is coal. Coal from 362 - 365.5 (?), 366.5-369 (?); 373-374(?)				
375.7 - 386.0	10.3	10.3	SILTSTONE	Carbonaceous to 383. Well bedded 70° - 75°. gradational.				Lower contact
386.0 - 403.8	17.8	17.8	SANDSTONE	Very fine grained. At 391 - 4" of carbonaceous fragments - looks like breccia.				
403.8 - 419.0	15.2	15.0	CARBONACEOUS SHALE.	Upper contact sharp but irregular 50°-60°. Very minor coaly fractures to 413', then coal veinlets up to ½" - 2" - 4" apart to 415' @ 60°-70°. At 417' - several ½" coal veins @ 45-50°.				

PROPERTY

SHEET No. 3 of 4

D. D. H. No. B-5

Logged By.....

Lat..... Dip..... Elev..... Start.....

Dep..... Bearing..... Depth..... End.....

FOOT	GRADE	CORE RECY	ROCK	MINERALIZATION	No.	LENGTH			REMARKS
419.0 - 430.5	11.5	3.5	COAL SEAM	Very poor recovery, can only assume lost sections as mostly coal. Shale 423-423.2, 424 - 425, 428-429(?). Rest of section coal fragments. From 430-430.5' - carbonaceous shale.					
430.5 - 436.7	6.2	5.5	CARBONACEOUS SILTSTONE.	Bedded @ 40°					
436.7 - 440.0	3.3	2.2	CARBONACEOUS SHALE.	One foot core loss at 439'-440', few fragments coal may be 1 foot coal seam.					
440.0 - 537.2	97.2	97.0	SILTSTONE	Claystone interbedded. All carbonaceous, predominantly siltstone, scattering of fine calcite fractures, well bedded @ 65°-70°. Occasional fracture with pyrite. From 448.5-454' - carb. shale (?) At 461 - slickensided fr. @ 45° At 487.7' - 1 inch coaly shale and fine calcite veinlets. At 495 - bedded @ 50°. Lower contact gradational.					
537.2 - 543.0	5.8	5.8	SANDSTONE	Some included bands and fragments of carbonaceous claystone Bedding @ 50°. Lower contact gradational.					
543.0 - 556.0	13.0	13.0	SILTSTONE	WITH CLAYSTONE, ALL CARBONACEOUS. Similar to 440-537.2, abundant frs. @ 45-60°; many cross-cutting bedding.					
556.0 - 589.5	33.5	32.0	CARBONACEOUS CLAYSTONE (SHALE?)	Several minor coal sections. Coal 565.2-566.0'; 567-568.5' - coal fragments, mostly lost.					
589.5 - 593.5	4.0	1.2	COAL SEAM	Very poor recovery. Recovered section good coal					
593.5 - 631.5	38.0	33.5	CARBONACEOUS CLAYSTONE (SHALE?)	Slightly silty in part. At 598.3 - 1 inch coal on 60° slickensided fracture. Bedded @ 60°. From 614-622.5' - shaley, broken, minor coal fractures.					
631.5 - 637.7	6.2	6.2	BLACK CARBONACEOUS SHALE (CLAYSTONE?)	At 633.7 - 637.7' - coal veinlets up to ½" wide.					
637.7 - 646.0	8.3	8.3	CARBONACEOUS SILTSTONE	Claystone - shale - similar to 543.0-556.0.					
646.0 - 648.7	2.7	2.7	CARBONACEOUS SHALE	- Fine coaly fractures throughout.					
648.7 - 650.8	2.1	0.7	COAL SEAM	Poor recovery.					

PROPERTY _____

SHEET No. 4 of 4

D. D. H. No. B-5

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start. _____

Dep. _____ Bearing. _____ Depth. _____ End. _____

FOOT	GRADE	CORE REC'D	ROCK	MINERALIZATION	No.	LENGTH	REMARKS
650.8 - 725.5	74.7	74.7	CARBONACEOUS SILTSTONE-CLAYSTONE-SHALE.				Similar to 682.2-646. Beginning of section has fine coaly fractures $\frac{1}{2}$ ' to 1' apart, beds @ 60° . At 666' - $\frac{1}{2}$ " calcite veinlets @ 50° . 675-679' sandy siltstone, quartz and calcite fractures @ 45° , pyrite on frs. Very minor coal from 685 to end. 690-692' - carbonaceous shale, coaly slips @ 45° . 692-702' - predominantly siltstone, numerous calcite frs. @ 45° . At 702' - slickensided frs. @ 60° with $\frac{1}{2}$ " calcite veins. 706-714' - carbonaceous shale (claystone). 720-725.5' - carbonaceous shale, bedding @ 50° .
725.5 - 733.8	8.3	4.0	COAL SEAM				Badly broken, recovered coal normal, good.
733.8 - 752.5	18.7	18.2	CARBONACEOUS SILTSTONE.				Bedded @ 65° . Coal - $\frac{1}{2}$ " @ 55° at 747', 748-749 - coaly veinlets @ 55° .
752.5 - 755.5	3.0	1.3	COAL SEAM				Good coal, broken.
755.5 - 772.0	16.5	16.0	CARBONACEOUS SHALE -				Coaly veinlets to 757, then carbonaceous siltstone to 759'. 759-761' - coaly shale. 761-762' - coal. 763.5-764.5- coaly shale. Grades to carbonaceous siltstone at bottom of section. Bedding @ 60° .
							END OF HOLE 772 FEET

560

PROPERTY PINE PASS COAL PROJECT

SHEET No. 1 of 4

SECTION 3.

D. D. H. No. B-6

Logged By H. Jones

Lat. 96,244.41N

Dip. -45°

Elev. 3072.0'

Start Sept. 4/69

Dep. 102,401.76S

Bearing S.60°W

Depth 701

End Sept. 12/69

FOOT	GRADE	CORE RECY	ROCK	MINERALIZATION	FR.	REMARKS				REMARKS
0 - 15.0	15.0	0	CASING	No core						
15.0 - 17.0	2.0	2.0	SILTSTONE	Well bedded @ 85-90°						
17.0 - 88.6	71.6	64.5	CARBONACEOUS SHALE.	Very broken to 24'. From 24' on, core solid, massive (claystone), occasional coaly veinlet @ 80°. At 45.4' - 2 inches coal @ 50° sheared @ 5° and 20°. Some included siltstone 63-67, bedding 80-90°. At 78' - 4" good coal @ 90°. Lower contact @ 90°.						
88.6 - 96.0	7.4	7.4	SILTSTONE	Carbonaceous to 93'. From 93-95 - grades to sandstone						
96.0 - 126.5	30.5	30.5	CARBONACEOUS SILTSTONE, WITH CARBONACEOUS SHALE SECTIONS.	All very dark and fine grained.						
126.5 - 131.0	4.5	3.0	COAL	Bright banded coal, 6" bony coal	128.5 - 129'					
131.5 - 147.0	15.5	15.0	CARBONACEOUS COALY SHALE - numerous coaly fractures.	Coal sections 132.2 - 133, 136 - 137. Much of section between coal bands very coaly. At 142 - 1/4" coaly band, slickensided, curves around piece of core 3" long core ^{fract} Coal veinlets decrease 142 - 147.						
147.0 - 155.5	8.5	8.5	SILTSTONE	Upper contact gradational, mixture of siltstone, and carbonaceous shale.						
155.0 - 167.0	12.0	12.0	CARBONACEOUS SHALE.	With coaly sections. 159 - 162 - mostly coaly shale. At 164.5 - 2" coal. Bedding 80°-90°. Grades to carbonaceous siltstone.						
167.0 - 146.0	79.0	79.0	CARBONACEOUS SILTSTONE.	Bedding 75°-80°. From 173-176.5' - well fractured @ 75°, 0 - 10°. Possible low angle faulting near 175-176.5' At 101.5 - cross-bedded, calcite filled frs. @ 30°. At 205-206 - many frs. cemented with calcite. Possible fault zone @ 50° (no slickenside) Very fine grained 205-246'. At 214 - 20° slickensided fr., at 221 - 10° slickensided fr. At 195 - bedding contorted, but seems to average 45°. At 220 - bedding irregular near 0°, continues to 231'. At 231' changes to 45°. At 234-235 - broken cemented with calcite,						

D. D. H. No. B-6

Logged By.....

Lat..... Dip..... Elev..... Start.....

Dep..... Bearing..... Depth..... End.....

FOOT	GRADE	CORE REC'D	ROCK	MINERALIZATION	No.	LENGTH	REMARKS
				coarse breccia.	Probable	low angle faults	at 235.5'.
				At 232 - approaching carbonaceous shale.		Vague bedding @ 30°	
				40°.			
246.0 - 255.0	9.0	9.0	SILTSTONE	Only weakly carbonaceous,		bedding @ 40°.	Brecciation 250 and
				254.5' - calcite cement.		Faults @ 40°.	
255.0 - 302.0	47.0	46.5	BLACK CARBONACEOUS CLAYSTONE	WITH SOME SILTSTONE AND SHALE			At 256 -
				shears @ 50°, at 261 - coaly slips @ 30°, also at 267.5',			
				bedding at 40°. Calcite veins @ 277 @ 30°		283 @ 40°, 288' @	
				60°, also brecciated 1", 293' @ 50°, 294.5 @ 50°. These vein			
				are slickensided. Lower contact broken and estimated.			
302.0 - 320.0	18.0	12.0	COALY SHALE	Section broken, some core loss, possibly coal sections.			
				From 302.0-305.5 - loss 2' - remainder very coaly			305.5-308.0
				black carbonaceous shale, fine coaly fractures			308.0-317.0 -
				core loss 3'.			
				308-310' - estimate very coaly shale over this length.			
				310-312' - black shale			
				312-315 - coal and coaly shale - estimate length			
				315-319 - shale, minor coaly seams - 1' core loss.			
				319-320 - coal			
				Bedding @ 30°-40°?			
320.0 - 340.0	20.0	20.0	BLACK CARBONACEOUS CLAYSTONE (SHALE?)	(SHALE?)		With some silty sections - many	
				'fine calcite stringers @ 70°-90°. Some coaly frs. slicken-			
				sided @ 70°-80°.			
340.0-344.8	4.8	4.8	CARBONACEOUS SILTSTONE.	Well bedded @ 80°-90°.			
344.8-348.0	3.2	3.2	SANDSTONE	- Fine grained, grey, many coaly frs. and fine veinlets @ 70°			
				paralleling bedding. Lower contact slickensided @ 80°			
348.0-355.5	7.5	7.5	BLACK CARBONACEOUS SHALE (CLAYSTONE?)	Fractures 60°-70°, slickensided.			
355.5-375.0	19.5	16.5	SILTSTONE	Grades to carbonaceous shale at bottom of hole. Bedding @ 70°			
				From 363-364 and 366-367 - carbonaceous shale. At 366' 1" coe			
				on slickensided fr. @ 70°			

PROPERTY _____

SHEET No. 3 of 4

D. D. H. No. B-6

Logged By _____

Lat. _____

Dip. _____

Elev. _____

Start _____

Dep. _____

Bearing _____

Depth _____

End _____

FOOT	AGTHICK	CORE REC'D	ROCK	MINERALIZATION	No.	LENGTH			REMARKS
375.0 - 387.0	12.0	5.0	COAL SEAM	Badly broken, poor recovery.					Bright banded coal. Lower contact sharp @ 80°
387.0 - 388.0	1.0	1.0	CARBONACEOUS SHALE						
388.0 - 501.5	113.5	110	SILTSTONE - CLAYSTONE - SHALE	All carbonaceous and interbanded, bedding @ 53-70° / At 399' - 2" coal seam @ 70°. From 405 - 3" coal, with calcite veining. From 410' - 412' - coaly shale. Bright coal bands @ 80° (1' core loss) 420.5-423.0' - 1.8' core loss - coal(?) - remainder coaly shale. From 431.0-434.0' - approaching sandstone, bedding 70°-75°. At 441' - 1" coal. At 477' - bedded @ 65°. Much of above section very carbonaceous, probably about half could be called carbonaceous shale.					
501.5 - 504.3	2.8	1.8	COAL	Bright banded, badly broken.					
504.3 - 514.8	10.5	10.5	CARBONACEOUS SILTSTONE	grades from shale through siltstone to sandstone at bottom.					
514.8 - 531.0	16.2	16.2	SANDSTONE	Light grey, salt and pepper texture. Starting at 726' many coaly fractures and veinlets along bedding @ 60°. Bottom contact sharp @ 70° - brecciated with calcite veining					
531.0 - 580.0	49.0	49.0	CARBONACEOUS SILTSTONE	With some shale and claystone, all carbonaceous Well bedded, top of section @ 60°. At 532' - 1" coal. From 533.2-534.7' - coaly shale. Coal frs. 739 - ½" @ 60°; 742' - ½" @ 50°; 545.4-546.2 - many coal veinlets @ 50°; other minor veinlets. Bedding 562 @ 70°.					
580.0 - 582.0	2.0	2.0	COAL	Bright banded coal, 3" included siltstone, bedded @ 65-70°					
582.0 - 587.1	5.1	5.0	CARBONACEOUS SHALE	Siltstone at top, bedded @ 70°.					
587.1 - 591.5	4.4	3.0	COAL	Good coal, broken at bottom.					
591.5 - 595.0	3.5	3.5	CARBONACEOUS SHALE	Minor fine coal veinlets.					
595.0 - 598.0	3.0	2.0	COAL	Bright banded, bottom footage estimated.					
598.0 - 600.0	2.0	1.7	COAL AND COALY SHALE	Parts of section good coal.					
600.0 - 604.5	4.5	4.5	CARBONACEOUS CLAYSTONE & CARBONACEOUS SILTSTONE	Interbedded - bedding @ 70°.					

PROPERTY _____

SHEET No. 4 of 4

D. D. H. No. B-6

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start. _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GROSS	CORE RECY	ROCK	MINERALIZATION	No.	LENGTH			REMARKS
604.5 - 607.0	2.5	1.5	COAL	Good coal.					
607.0 - 647.0	40.0	37.0	SILTSTONE	CARBONACEOUS CLAYSTONE. Broken cemented with calcite @ 30°.		632-634, at 644			brecciated,
647.0 - 652.0	5.0	2.0	COAL SEAM	Might start at 645(?) (2" core broken, poor recovery. Only several inches of shale recovered		loss 647-647).			Section badly
652.0 - 656.0	4.0	2.0	COAL AND COALY SHALE	Could be coal seam with 1 foot shale of section.					near bottom
656.0 - 684.0	28.0	28.0	CARBONACEOUS SILTSTONE-CLAYSTONE	Bedded at 70°, except from 15° to 45°. At 663.5 - coal fr. @ 0°.					663.5-668 - grade
684.0 - 686.0	2.0	0.8	COAL SEAM	2" shale at top and bottom.					
686.0 - 693.0	7.0	7.0	CARBONACEOUS SHALE AND CLAYSTONE	Coaly 690-691, bedded @ 75°.					
693.0 - 698.5	5.5	3.0	COAL, COALY SHALE AND SHALE	Some good coal.					
698.5 - 701.0	2.5	2.5	CARBONACEOUS SHALE	Coaly bands.					
				END OF HOLE 701.0 FEET					

560

BRAMEDA RESOURCES LIMITED

20-3

PROPERTY

PINE PASS COAL PROJECT

SHEET No. 1 of 4

D. D. H. No. B-7

Logged By C. Grant

Lat. 97,721.29N

Dip. -50°

Elev. 3340.0 ft.

Start Sept. 4, 1969

Dep. 101,073.41S

Bearing S.60°W

Depth 587.0'

End Sept. 12, 1969

FOOT	GRADE	CORE RECV	ROCK	MINERALIZATION	ISS.	LENGTH	REMARKS
0 - 11.0	11.0	0	OVERBURDEN	No recovery			
11.0 - 21.5	10.5	5.3	SILTSTONE	AND CLAYSTONE. Broken throughout section. Bedding (weak) at 60°. Coaly shale towards bottom. 11.0 to 17.0, 1.5' recovery, rock lost in casing.			
21.5 - 29.0	7.5	5.0	COAL SEAM	Mixed with coaly shale band. Badly broken.			
29.0 - 58.0	29.0	27.5	SILTSTONE	AND CLAYSTONE (CARBONACEOUS). Becomes shaly in lower sections is dominantly claystone (shale?) here. At 36.6, 0.4' of silty material (bedding at 60°). At 41.6, 1.0' of good coal, possibly representing only half of original coal. Well fractured throughout section. From 47.0, claystone dominant - good recovery from here. Silty around 53.0, bedding at 50°-60°; non-coaly.			
58.0 - 62.0	4.0	4.0	SILTSTONE	With some sandy bands. Bedding at 60°-70°. Texture variable.			
62.0 - 66.4	4.4	4.4	CLAYSTONE	Shaly in lower part of section. Coalified plant remains.			
66.4 - 68.9	3.5	3.5	SILTSTONE	- or fine grained sandstone. Well-bedded at 60°. Some calcite veinlets.			
68.9 - 83.5	14.6	14.0	CLAYSTONE	(CARBONACEOUS). Very fine grained, with coalified plant remains. Shaly from 75.0-77.0' and again from 80.0 to 82.0'.			
83.5 - 86.6	3.1	3.0	SILTSTONE	, or fine grained sandstone, bedding at 60°. Fractured at 30°			
86.6 - 133.7	47.1	43.6	CARBONACEOUS SHALE (CLAYSTONE?)	Some coaly seamlets (< 1') slickensided frs. at 40° in places. At 104.4' 11" band of siltstone, bedding at 60°, and at 106.8, 1.2' of siltstone.			
133.7 - 140.1	6.4	6.4	SILTSTONE	- CLAYSTONE INTERBEDDED. Well-bedded at 60°. At 135.5, 1.0' of claystone.			
140.1 - 145.0	4.9	4.9	CLAYSTONE	. Very fine grained. Some slickensided fracturing at 30°.			
145.0 - 148.5	3.5	2.5	CARBONACEOUS SHALE	. Very broken.			
148.5 - 149.8	1.3	0.8	COAL SEAM	. Good coal, shiny, hard.			
149.8 - 170.7	20.9	20.9	SANDSTONE	Fine grained. Bedding indistinct, but 60°-70°. Some pyrite along fractures at high angles (80°). Calcite also present.			

PROPERTY

SHEET No. 2 of 4

D. D. H. No. B-7

Logged By

Lat. Dip. Elev. Start

Dep. Bearing. Depth End

FOOT	CHISEL	CORE RECY	ROCK	MINERALIZATION	No.	LENGTH			REMARKS
170.7 - 194.6	23.9	23.9	SANDSTONE	Well bedded at 60°. At 180.6', 3'1" of a coarse, granular sediment, (possibly breccia?) with abundant pyrite throughout. From 183.0, coaly seamlets along bedding. Throughout section, calcite veinlets along fractures at 30°, and also at other angles.					
194.6 - 226.0	31.4	31.4	SILTSTONE - CARBONACEOUS.	Bedding at 60°. No coaly seamlets as in preceding sandstone. Some fracturing at 30°. Variable texturing grading to claystone in places. Cross-bedding abundant. A few sandstone bands.					
226.0 - 228.8	2.8	2.8	CLAYSTONE	Very fine grained, black.					
228.8 - 232.9	4.1	3.6	CARBONACEOUS SHALE.	Coaly; broken. From 232.0' to 233.0', silty band.					
232.9 - 235.5	2.6	1.5	COAL BEAM	Good coal, badly broken.					
235.5 - 239.0	4.5	4.2	CARBONACEOUS SHALE.	Coaly. Grades into claystone downwards.					
239.0 - 245.8	6.8	6.6	SILTSTONE	With some sandstone. Bedding at 50°-60°. Cross-bedding seen. Some calcite stringers along bedding.					
245.8 - 255.5	9.7	9.5	CLAYSTONE (OR SHALE?)	At 252.6', coal seam - 6' remaining. Slightly shaly. Very coaly shale below this coal for 1.5'.					
255.5 - 258.0	2.5	2.5	SILTSTONE	Fine Grained, bedding at 60°.					
258.0 - 262.5	4.5	4.0	CARBONACEOUS SHALE.	At 259.0, 8" coal remaining. Shale contains coaly stringers throughout section.					
262.5 - 277.8	15.3	15.0	SILTSTONE - CLAYSTONE - CARBONACEOUS.	Very fine grained. Bedding 60°.					
277.8 - 282.8	5.0	4.8	CARBONACEOUS SHALE.	Well fractured at 40°.					
282.8 - 285.0	2.2	2.2	COAL SEAM	Good coal and good recovery. Bedding at 50°. Badly broken from 284.0 to 285.0' (i.e. at contact with lower shale).					
285.0 - 289.8	4.8	4.8	CARBONACEOUS SHALE						
289.8 - 309.6	19.8	19.8	SANDSTONE	Bedding at 60°. Some calcite present.					
309.6 - 317.0	7.4	6.6	CARBONACEOUS SHALE.	Coaly in places, silty in places. Well fractured. Broken from 313.0 - 317.0'.					
317.0 - 321.6	4.6	2.1	COAL BEAM	Good coal, but broken; slightly shaly at 326.0'					

PROPERTY _____

SHEET No. 3 of 4

D. D. H. No. B-7

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADE	CORE RECVY	ROCK	MINERALIZATION	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS
321.6 - 331.5	9.9	8.4	CARBONACEOUS SHALE.	Fractured, broken, coaly in places, small coal seamlets (< 2").	At 330.0, 1.5' of good coal; good recovery.					
331.5- 349.8	18.3	17.8	SILTSTONE	With sandy beds, carbonaceous in parts, approaching sandstone. Bedding at 70°. At 332.3', 4" of good coal.	Cross bedding seen in places throughout section. Some calcite along bedding; also some coaly stringers, with pyrite along bedding.					
349.8- 353.0	13.2	12.7	CARBONACEOUS SHALE.	Small coal stringers (<1") in lower part of section.	Slickensided fractures at high angles seen in places.					
353.0- 357.0	4.0	2.5	COAL SEAM	Good coal, but badly broken. Fractures at high angles.						
357.0 - 359.2	2.2	1.5	CARBONACEOUS SHALE.							
359.2- 362.0	2.8	2.6	COAL SEAM	Good coal. Good recovery.						
362.0- 365.0	3.0	2.5	CARBONACEOUS SHALE.	Only a few coaly stringers.						
365.0- 387.0	22.0	22.0	SILTSTONE	- Claystone interbedded. Bedding at 80-90°.	Grades to near claystone in places.					
387.0-398.5	11.5	11.0	CLAYSTONE	Coaly in places						
398.5- 399.7	1.5	1.3	COAL SEAM	Good coal, good recovery.						
399.7- 423.0	23.3	23.3	SILTSTONE	Silty in places, with coaly stringers. Bedding at 90°.	Grades to carbonaceous shale at 420.3'.					
423.0- 427.5	4.5	2.6	COAL SEAM	Good coal: poor recovery, broken badly throughout.						
427.5- 432.2	4.7	4.5	CARBONACEOUS SHALE							
432.2- 439.0	6.8	6.8	SILTSTONE	Bedding at 80°-90°. Only a few coaly stringers.						
439.0- 446.7	5.7	5.5	CLAYSTONE	- SILTSTONE. Bedded, carbonaceous. Silty in places. Grades into carbonaceous shale as 445.0.						
446.7- 449.1	2.4	1.7	COAL SEAM	Good coal, badly broken.						
449.1- 468.0	18.9	16.7	CARBONACEOUS CLAYSTONE (SHALE).	At 451.0' - 5" good coal. At 453.1' - 8" good coal remaining (? lost here). Abundant calcite along bedding.						
468.0- 495.0	27.0	27.0	SILTSTONE	- CLAYSTONE with sandy beds. Very fine grained, irregular bedding but approx. 70°-80°. Calcite along fractures at low and high angles. At 486.0' abundant calcite in thick (3/4") stringers.						

D. D. H. No. B-7

Logged By

Lat. Dip. Elev. Start.

Dep. Bearing. Depth. End.

FOOT	GRADE	CORE RECY	ROCK	MINERALIZATION	EST.	THROUGH		REMARKS
				Fault here? From	487.0'	Fine grained	band	of siltstone
				(nearly claystone).	At 492.5',	abundant calcite	-	evidence of
				possible fault? Coalified	plant	remains scattered	throughout	
				section. Grades into claystone	downwards.	493-494' -	healed	
				fault @ 80° + brecciation,	cemented with calcite.			
495.0 - 527.4	32.4	32.4	CARBONACEOUS SILTSTONE, WITH CLAYSTONE	SECTIONS.	Bedded @ 70°.			Section
				very similar to above.				
527.4 - 532.3	4.9	3.5	COAL SEAM	Bright banded coal, broken.				
532.3 - 551.2	18.9	18.9	SILTSTONE,	MODERATELY CARBONACEOUS -	Bedded @ 70°-80°.			Sandy 545-549'.
551.2 - 552.5	1.3	1.0	COAL SEAM					
552.5 - 557.0	4.5	4.5	SILTSTONE - CLAYSTONE - SHALE.	Moderately carbonaceous.				
557.0 - 567.0	10.0	9.0	CARBONACEOUS SILTSTONE AND CLAYSTONE.	With minor coaly fractures				
				557.0-557.5' - coal.				
567.0- 572.0	5.0	5.0	SANDY SILTSTONE OR SANDSTONE.	Non-carbonaceous,	bedded @ 70°.			
572.0- 587.0	15.0	15.0	CARBONACEOUS SILTSTONE. Claystone -	bedded @ 70°.				
				END OF HOLE 587.0 FEET				

560

BRAMEDA RESOURCES LIMITED

20-3

PROPERTY PINE PASS COAL PROJECT

SHEET No. 1 of 3

D. D. H. No. B-8

Logged By H. Jones

Lat. 96,244.41 N

Dip. -90°

Elev. 3072 ft.

Start. Sept. 12/69

Dep. 102,401.76 S

Bearing -

Depth 465'

End. Sept. 15/69

FOOT	DEPTH	CORE RECVY	ROCK	MINERALIZATION	FRS	REMARKS
0 - 16.0	16.0	0	CASING	No core.		
16.0 - 56.0	40.0	34.0	CARBONACEOUS SHALE AND CLAYSTONE.	Badly broken to 20', limonite along frs		
				From 20'-21.5' well bedded @ 60°, limonite along frs. @ 65-70		
				From 27-27.6' - well bedded non-carbonaceous siltstone @ 55°.		
				From 27.6-31.0' - sheared carbonaceous shale and claystone -		
				shearing @ 30° and 60°, minor coaly fractures. At 37.0' -		
				several inches ground coal. From 38-45' - mostly carb.		
				claystone. From 45-47' - large core loss - 1' - probably coal		
				shale. Hint of bedding @ 45°.		
				Core loss - 5 feet to 38' - near surface, broken.		
56.0- 78.0	22.0	19.0	CARBONACEOUS CLAYSTONE AND SHALE, SLIGHTLY SILTY IN PARTS.	as above		
				but numerous coal veinlets @ 38°-40°. At 65.5-67.5' core loss,		
				slickensides @ 30° & 0°, core broken - faulting.		
78.0- 104.6	26.6	26.0	CARBONACEOUS SILTSTONE.	Very dark, fine grained, silty form of above.		
				Numerous coaly fractures @ 45°. At 88' - bedding irregular		
				@ 10°. At 95' - bedding @ 45°.		
104.6-110.0	5.4	5.4	SANDSTONE - OR SANDY SILTSTONE.	Well bedded @ 45° with many cross-beds.		
110.0- 143.0	33.0	33.0	CARBONACEOUS CLAYSTONE - SHALE.	Slightly silty, many fine calcite		
				stringers along bedding @ 45°. All rock black. Sheared @ 30°		
				@ 142.5-143.0'		
143.0- 152.5	9.5	9.5	FINE GRAINED SANDSTONE.	Well bedded @ 45°. Lower contact gradational,		
				bedding irregular.		
152.5- 169.0	16.5	16.0	CARBONACEOUS CLAYSTONE.	Well bedded at 45-50°. Grades to carbonaceous		
				shale 162-169'. Low angle coal veinlet @ 163', at 166' - 45°		
				coaly fractures. Lower contact gradational.		
169.0- 185.5	16.5	16.5	CARBONACEOUS CLAYSTONE With carbonaceous and non-carbonaceous siltstone	bands. Bedding @ 40° - 181.5-183.5' - sandy.		
185.5-190.0	4.5	4.5	CARBONACEOUS SHALE.	Bedding 45-50°.		
190.0- 201.5	11.5	4.8	COAL SEAM	Badly broken.		
				190-194' - estimate - coal. Recovery 1.3'		

PROPERTY _____

SHEET No. 2 of 3

D. D. H. No. B-8

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADE	CORE RECY	ROCK	MINERALIZATION	RECOVERY	LENGTH	REMARKS
				194-196' - shale with bands of coal - probably mostly coal.			
				Recovery 2'.			
201.5 - 234.0	32.5	32.0	CARBONACEOUS CLAYSTONE WITH SHALY SECTIONS.	196-201.5' - poor recovery - coal with shaly bands. Rec'y 1.5'			Scattered coaly fractures.
				From 208.7-211' - numerous fine coaly fractures @ 45°.			
				From 226-227' - coarse grained (sandy shale) bedding @ ?			
				lower contact gradational, but grades into carbonaceous strongly			
234.0 - 242.0	8.0	7.5	CARBONACEOUS SHALE WITH COAL BANDS.	Well bedded @ 45°. At 234.5', coal			
				seam (5") badly broken; at 240.5' - coal seam (7") good			
				recovery, bright coal.			
242.0 - 255.5	13.5	13.5	CARBONACEOUS SILTSTONE WITH SANDSTONE BAND.	Weakly bedded @ 50°. From			
				243.5 - 247.4, 249.5-250.0 - very fine grained sandstone, well			
				bedded @ 50°, calcite veinlets cross beddings.			
255.5 - 280.5	25.0	25.0	SANDSTONE	Very fine grained. Well bedded @ 50-60° but cross-bedding			
				throughout section. Lower contact distinct.			
280.5 - 308.2	27.7	27.7	CARBONACEOUS SILTSTONE WITH COALY SECTIONS.	Weakly bedded @ 45-55°,			
				coaly sections throughout, grades into coaly lower part.			
308.2 - 310.0	1.8	1.5	COAL SEAM	Good recovery, bright coal.			
310.0 - 322.5	12.5	12.5	CARBONACEOUS SILTSTONE.	Weakly bedded @ 50°. 317.5 - 318.5' - very fine			
				grained sandstone bedding @ 45-50°; lower part grades into			
				shale.			
322.5 - 325.0	2.5	2.5	CARBONACEOUS SHALE AND COALY SHALE.	Well bedded @ 50°. Bright coal			
				section along fractures @ 30°.			
325.0 - 346.5	21.5	18.0	COAL SEAM	Good recovery, bright coal @ 50°			
				325-329' - badly broken, 1 foot core loss, includes thin coal			
				shale. 329-345' - good recovery (more than 90%) bright low			
				ash coal. 345-346.5' - dull coal, includes coaly shale.			
346.5 - 379.0	32.5	32.5	CARBONACEOUS SILTSTONE WITH CARBONACEOUS SECTIONS.	Bedding @ 55°.			
				At 351', 353', 355', 358.5' - coaly shale (< ½"). 370-372.5			
				very fine grained sandstone. At 372.0, 373.0 - thin coaly sha			

PROPERTY _____

SHEET No. 3 of 3

D. D. H. No. B-8 _____

Logged By _____

Lat. _____

Dip _____

Elev. _____

Start _____

Dep. _____

Bearing _____

Depth _____

End _____

FOOT	GRADE	CORE RECVY	ROCK	MINERALIZATION	IS.	DESCRIPTION	REMARKS
379.0 - 388.5	9.5	9.0	CARBONACEOUS SHALE WITH COAL SEAM.			Well bedded @ 50°.	From 376-378' -
				dull coal seam with		coaly shale.	
388.5- 395.0	6.5	2.0	COAL SEAM	Badly broken, poor recovery,		includes coaly shale	bands. Mostl
				high ash (?) dull coal.			
395.0 - 421.0	26.0	26.0	CARBONACEOUS SILTSTONE WITH	CARBONACEOUS CLAYSTONE AND SANDSTONE BANDS.			
				Upper part and lower part (near coal seams)		very coaly.	
				Weakly bedded @ 45-50°.		From 400.0-405.5', 406.0-408.0' - very	
				fine grained sandstones.			
421.0 - 455.0	34.0	32.0	CARBONACEOUS SHALE WITH COALY SHALE;	AND CARBONACEOUS SILTSTONE SECTIONS.			
				421.0-424.0' - coaly shale,		badly broken, dull coal bands.	
				425.0-427.5' - " " " "		" " " "	
				452.5-454.0 - bright coal seam with coaly shale bands.			
				454.0 - 455.5 - carbonaceous shale, coaly shale mixed, bedding @ 45°.			
455.0 - 466.0	11.0	10.5	CARBONACEOUS SILTSTONE WITH COALY SHALE SECTIONS.			Weakly bedding @ 45° -	
				50°, bright coaly section along beddings.			
				END OF HOLE NO. B-8 466.0 FEET			

560

BRAMEDA RESOURCES LIMITED

PROPERTY PINE PASS COAL PROJECT

SHEET No. 1 of 3

D. D. H. No. B-9

Logged By N. Nanbu

Lat. 97,721.29 N

Dip. -90°

Elev. 3340.0'

Start Sept. 12/69

Dep. 101,073.41 S

Bearing -

Depth 448'

End Sept. 15/69

FOOT	GRADE	CORE REC'Y	ROCK	MINERALIZATION	No.	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS
0 - 11.0	11.0	0	CASING	No Core.						
11.0 - 23.8	12.8	12.8	SANDSTONE	Fine grained. Well bedded @ 20-30°.						
23.8 - 28.0	4.2	4.0	CARBONACEOUS SHALE.	Badly broken - black. Calcite veinlets throughout section. At 18.5' limonite along fr						
28.0 - 39.0	11.0		CARBONACEOUS SILTSTONE WITH BANDED CARBONACEOUS SHALE	Weakly bedded @ 20-30°. At 35.0' limonite along fractures @ 60-70°. Lower contact distinct.						
39.0 - 45.3	6.3	6.3	SANDSTONE	Fine grained. Well bedded @ 25-30°. Calcite veinlets through						
45.3 - 48.5	3.2	3.0	COAL SEAM	Good recovery. Bright coal with dull coal bands.						
48.5 - 60.5	12.0	11.0	CARBONACEOUS SHALE.	Top to 54.0' badly broken bedded @ 20-25°. From 53.0-58.0' coarse grain (sandy shale?)						
60.5 - 78.0	17.5	14.0	COAL SEAM	Good recovery. 60.5-62.5' - bright coal, badly broken. 62.5 - 63.0 - - coaly shale 63.0-78.0' - bedding @ 20°. Bright coal and dull coal mixed. Lower part grades into carbonaceous shale.						
78.0 - 103.0	25.0	20.0	CARBONACEOUS SHALE AND CARBONACEOUS SILTSTONE.	From 78-83' - broken carbonaceous shale bedded @ 15-20°. Frs. @ 30°, 83'-86' carbonaceous siltstone, weakly bedded @ 20° (?). Frs. @ 65°, 86'-88' - coaly shale with bright coal bands (< 1/4"). 88'-103' - carbonaceous shale, badly broken in parts, bedded @ 15-20°. 91'-93' - coaly shale, also 96.5'-98' - coaly shale.						
103.0 - 104.8	1.8	1.2	COAL SEAM	Dull coal, looks like coaly shale. Badly broken.						
104.8 - 107.0	2.2	2.0	COALY SHALE.	Well bedded @ 25°. Frs @ 30°.						
107.0 - 117.0	10.0	9.0	COAL SEAM	Good recovery. Lower part badly broken. Bedded @ 25°. Abundant scattered pyrite along frs. @ 45°. Mostly dull coal.						

PROPERTY _____

SHEET No. 2 of 3

D. D. H. No. B-9 _____

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADE	CORE REC'Y	ROCK	MINERALIZATION	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS	REMARKS
117.0 - 123.0	5.0	4.5	CARBONACEOUS SHALE AND COALY SHALE.		Badly broken in part of coaly shale, bedded @ 20°. Bottom of section grades into sandstone.					
123.0 - 155.0	22.0	21.0	SANDSTONE WITH SILTSTONE BAND		Mostly sandstone cross bedding @ 20-25°. At 131.5' - coal seamlets. From 137' to 139' siltstone.					
155.0 - 163.0	8.0	8.0	SILTSTONE AND CLAYSTONE.		Massive, bedded weakly @ 20° (?) Grades into sandstone in lower part.					
163.0 - 171.5	8.5	8.5	SANDSTONE		Very fine grained, bedded @ 30°.					
171.5 - 186.0	14.5	14.5	SILTSTONE WITH SOME CARBONACEOUS SILTSTONE.		Bedded weakly @ 25°. Grades into sandstone in lower part.					
186.0 - 205.0	19.0	18.0	SANDSTONE AND CARBONACEOUS SILTSTONE.		From 186-188, 196-198' - sandstone well bedded @ 25°, very fine grained. 191-193' - coaly shale bedded @ 20°, bright coal seamlets.					
205.0 - 206.5	1.5	0.5	COAL SEAM		Poor recovery, mostly bright coal, badly broken.					
206.5 - 211.0	4.5	4.5	CARBONACEOUS SHALE.		Broken near to coaly shale. Well bedded @ 25°. Scattered pyrite along frs. @ 30°.					
211.0 - 234.0	23.0	23.0	CARBONACEOUS SILTSTONE WITH SANDSTONE BANDS.		Massive, very weakly bedded @ 20-25°. At 215-218', 221-223', sandstone, calcite intrusion @ 80-90°. At bottom of section gradational.					
234.0 - 247.0	13.0	11.5	CARBONACEOUS SHALE AND COALY SHALE.		Well bedded @ 20-30°. 237-238', 239-240', 241-244', 246-247' - coaly shale, badly broken, bright coaly seamlets, gradational lower contact.					
247.0 - 288.0	33.0	33.0	SILTSTONE		Weakly bedded @ 15-20°. At 268' very thin calcite network. Grades into carbonaceous.					
288.0 - 297.5	19.5	19.0	CARBONACEOUS SILTSTONE.		Bedding @ 30°. Lower contact indistinct.					
297.5 - 318.0	20.5	18.0	CARBONACEOUS SHALE - COALY SHALE -		Well bedded @ 35°. At 298-305', 311-312.5' - coaly shale. Badly broken, looks like dull coal, but too heavy to be coal. (High ash coal?) 309-311' - carbonaceous silty shale. At 317' - abundant scattered pyrite along frs. @ 40°.					

PROPERTY _____

SHEET No. 3 of 3

D. D. H. No. B-9 _____

Logged By _____

Lat. _____ Dip. _____ Elev. _____ Start _____

Dep. _____ Bearing _____ Depth _____ End _____

FOOT	GRADES	CORE REC'Y	ROCK	MINERALIZATION	Max	LENGTH		REMARKS
318.0- 332.0	14.0	14.0	CARBONACEOUS SILTSTONE WITH SANDSTONE BAND.	Weakly bedded @ 40°. Many thin calcite veinlets along bedding at 322'. At 327'-329' - very fine sandstone well bedded @ 30-35°.				
332.0 - 338.0	6.0	5.5	SANDSTONE	Very fine grained, hard, well bedded @ 30°. At 336-339' - broken, many small calcite intrusions.				
338.0 - 350.0	12.0	12.0	CARBONACEOUS SILTSTONE - CARBONACEOUS CLAYSTONE.	Weakly bedded @ 30° (?). Grades into carbonaceous shale.				
350.0 - 361.5	11.5	9.0	CARBONACEOUS SHALE AND COALY SHALE.	Well bedded @ 30°. Many thin calcite veins along beddings. 356-358.5' - coaly shale, badly broken, with many bright coaly seamlets.				
361.5 - 365.0	3.5	3.5	CALCALIOUS SILTSTONE AND SANDSTONE BANDS.	Weakly bedded @ 25-30°. Many calcite veinlets along beddings and fractures @ 80°.				
365.0 - 388.0	23.0	23.0	SANDSTONE.	Weakly bedded @ 25-30°, coarse grained, very hard, looks like brecciated tuff, many coal and calcite stringers throughout section. Lower part grades into fine sandstone, but contact gradational.				
388.0 - 400.0	12.0	12.0	SANDSTONE	Very fine grained. Well bedded @ 25°. Crossbedding throughout section. Many calcite veins along fractures @ 80°. Lower contact distinct.				
400.0 - 409.0	9.0	9.0	CARBONACEOUS SILTSTONE.	Weakly bedded @ 25-30°. Coal seamlets along beddings (fractures?)				
409.0 - 444.0	35.0	35.0	SANDSTONE AND CARBONACEOUS SILTSTONE WITH CARBONACEOUS SHALE.	Well bedded @ 20°, sandstone - very fine grained, contact face indistinct.				
				END OF HOLE NO. B-9 444 FEET				

560

PROPERTY

PINE PASS COAL PROJECT

SHEET NO. _____

Co-ordinates: _____

D.D.H. No. B-9 DEEPENED
457 - 727'

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
457.0	475.2	18.7	18.2	CARBONACEOUS SILTSTONE.	Bedded @ 30°
475.2	476.6	1.4	1.4	COAL	Bright banded, broken.
476.6	488.0	11.4	7.5	COAL AND SHALE.	Large core loss. 477.2 - 479.2(?) - coal - length estimated. 481 - 482' - coal - length estimated. From 483-486 - coal (484-486 - 2' coal loss). From 487-488 - coal, lower contact sharp @ 20°.
488.0	535.0	47.0	46.5	SILTSTONE	Sandy in part, bedded at 30°, carbonaceous. At 520' crumbly, several inches lost. 522.5-528' - sandy, bedded @ 20°. Grades to carbonaceous claystone.
535.0	550.0	15.0	15.0	CARBONACEOUS	CLAYSTONE. Some silty sections, scattered coaly frs., bedded 20-30°.
550.0	560.0	10.0	10.0	COAL SEAM.	550.0-553.5' - coal, good, bright banded. 553.5-555.0' - coaly shale. 555.0-556.5' - good coal @ 15°. 556.5-567.5' - mostly carbonaceous shale, low angle coal frs. 567.5-560.0' - coal
560.0	615.2	55.0	55.2	CARBONACEOUS	CLAYSTONE-SILTSTONE. Calcite veins scattered throughout, Some silty bands. From 566.5-591.5' - sandy @ 35°. Brecciated at 566.5' with calcite veining. Grades to finer grained, becomes carbonaceous shale.
615.2	624.6	9.4	9.4	CARBONACEOUS	SHALE OR CLAYSTONE. Fine hair-like calcite veinlets.
624.6	638.0	13.4	4.0	COAL SEAM.	624.6-627.5' - coal and shale - recovery 2'. 627.5-638' - coal - large loss - fell out of core tube, recovery 2'. Bedding may be 35°(?)
638.0	642.5	4.5	4.0	CARBONACEOUS	SHALE. Badly fractured.
642.5	645.0	2.5	1.0	COAL & SHALE.	Recovery too poor to estimate length of coal.
645.0	655.0	10.0	10.0	SANDSTONE	Coarse grained, well bedded @ 28°, dark bands, grades to finer grained at 655'.
655.0	679.0	24.0	24.0	SILTSTONE,	OR FINE GRAINED SANDSTONE. Carbonaceous, bedded @ 20°, cross bedding at 661 - 1" massive pyrite and ½" coal seam. Grades to carbonaceous shale.
679.0	694.5	15.5	12.0	COAL SEAM	679.0-685.5' - coal, banded @ 25° - 5.5' recovery 685.5-688.0' - black shale 688.0-694.5' - coal, badly broken - recovery 4'.
694.5	702.0	7.5	7.5	BLACK CARBONACEOUS	CLAYSTONE. Broken 694.5 - 697.
702.0	727.0	25.0	24.0	SILTSTONE,	OR FINE GRAINED SANDSTONE. Well bedded @ 25°, grades to very fine grained at end, partially carbonaceous throughout.

END OF HOLE 727 FEET

560

Co-ordinates: 96,244.41 N Dip -45° D.D.H. No. B-10 Logged by H. Jones
102,401.76 E Bearing N 60° E Elev. 3072.0' Start Sept.15/69
Depth 597.0' End Sept.20/69

From	To	Width	Core Rec'y	Rock	Description
0	12.0	12.0	0	CASING	No core.
12.0	89.0	77.0	75.0	CARBONACEOUS SILTSTONE	Bedding at very low angle 5°, wavy at 23', 30° @ 31'. At 30' - limonite frs. @ 0° & 40° - fault (?). Bedding indistinct over most of section, fine grained but slightly silty. From 72.5-81.0' - frs. @ 0°, some with 1/8" - 1/4" coal veinlets - claystone in part. Bedding at 0°.
89.0	184.0	95.0	90.4	CARBONACEOUS CLAYSTONE	Differs from above only in being finer grained. From 89-102' - shaly in part, 1/8" coal seam on frs. @ 0°, coalified plant remains. At 172' - 1/4" coal fr. cuts core twice at 30°.
184.0	200.0	16.0	16.0	SANDY SILTSTONE	Carbonaceous - just as dark as above but sandy, bedded @ 0°. Irregular, wavy bedding.
200.0	205.0	5.5	5.5	SANDSTONE	Upper contact irregular - lower contact gradational @ 10°, several calcite veinlets @ 80°.
205.0	212.0	6.5	6.5	SANDY SILTSTONE	Same as 184-200'
212.0	369.0	157.0	153.0	CARBONACEOUS CLAYSTONE - SHALE?	Scattering hairlike calcite stringers @ 0°. From 238.5-240.5' - coaly fr. @ 0°, abundant pyrite. 254-256' - 1/2" band fine calcite frs. and coal @ 10°, similar band at 267' @ 30°, also at 273' @ 10° and 275-277' @ 0° - up to 1/2" coal. 275-298' - frs. @ 0° - same ore - result core broken, some fine coal on frs. - 2' core loss. 298-302' - many fine calcite stringers, bands @ 30°, then 0° - probably same ones. 317-337' - many frs. @ -30° with several fine calcite veinlets plus coal veinlets - <u>not much coal</u> . This length badly broken. Some frs. show slickensides, also apprec. pyrite. 337-369' - solid, unfractured, lack of calcite.
369.0	384.5	15.5	13.5	COALY SHALE	Coaly veinlets up to 1/4" along calcite zone - several inches wide with numerous 1/8" or less with calcite veinlets, badly broken.
384.5	432.0	157.5	157.5	BLACK CLAYSTONE	Carbonaceous, massive. Section finely silty in part from 407'. Vague bedding @ 25°. From 384.5-387.0' - many calcite veinlets parallel core.
432.0	443.3	11.3	11.3	CARBONACEOUS SANDSTONE OR SILTSTONE	Fine grained, dark grey, cross-bedding at upper contact. Bedding irregular but averages 10-15°.
443.3	455.0	11.7	11.2	CARBONACEOUS CLAYSTONE	Coaly veinlet on upper contact @ 30°, section broken 450-454' - calcite and coal veinlets @ 0°.

PROPERTY _____

SHEET NO. 2 of 2Co-ordinates: _____
_____D.D.H. No. B - 10

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
455.0	569.5	114.5	114.5	SANDSTONE	Carbonaceous, very fine grained, bedding very irregular wavy, etc., average 20°. Grades to carbonaceous silty claystone 483-494.5'. 493-494.5 - calcite veinlets, coaly frs. 536-551' - sandy silty claystone - finer grained form of above, just as dark. 557.5-560' - many calcite frs. 10°-30°, vuggy, 1/16"-1/8" wide, some brecciation.
569.5	587.0	17.5	17.5	SANDSTONE	Coarser grained, well bedded @ 25°, salt and pepper texture Last foot gradational, bedded @ 20°.
587.0	597.0	10.0	10.0	CARBONACEOUS SILTY CLAYSTONE.	
END OF HOLE 597.0 FEET.					

560

PROPERTY PINE PASS COAL PROJECT

SHEET NO. 1 of 3

D.D.H. No. B-11

Logged by N. Nambu &
H. Jones

Co-ordinates:

97,721.29 N

Dip -45°

Elev. 3340.0'

Start Sept. 15/69

101,173.41 E

Bearing N 60° E

Depth 723 ft.

End Sept. 20/69

From	To	Width	Core Rec'y	Rock	Description
0	17.0	17.0	0	CASING	No core.
17.0	17.3	0.3	0.3	SANDSTONE	Coarse grained, no bedding, scattered limonite.
17.3	25.0	7.7	6.0	SILTSTONE AND SANDSTONE	Broken, especially siltstone, well bedded in sandstone @ 25°-30°. Scattered limonite along fractures @ 60°-80°.
25.0	40.0	15.0	15.0	SANDSTONE	Very fine grained, mixed siltstone bands throughout section, well bedded @ 30°. 35.5'-40.0' - broken, and scattered limonite along fractures @ 60°-70°, lower section grades into siltstone.
40.0	44.5	4.5	3.5	SILTSTONE	Badly broken, weakly bedded @ 30°-35°. Scattered limonite throughout section.
44.5	46.0	1.5	1.5	SANDSTONE	Very fine grained, well bedded @ 30°, mixed siltstone section. Scattered limonite, and calcite veins along fractures @ 80°.
46.0	71.5	25.5	24.0	SILTSTONE WITH CLAYSTONE SECTIONS	Bedding @ 35°, black. 46.0-47.5' sandy siltstone. From 50.0-53.0, 54.5-55.0', 65-66.0' - badly broken, limonite along fractures, lower contact gradational but grades into carbonaceous.
71.5	81.0	9.5	9.5	CARBONACEOUS SILTSTONE	With sandy siltstone bands. Weakly bedded @ 25-30°. 73.5-74.5', 77.5-79.5' - sandy siltstone bands, well bedded @ 30°.
81.0	88.0	7.0	4.5	CARBONACEOUS SHALE	Well bedded @ 35°, badly broken, limonite along bedding. Lower section, very coaly. 86.0-88.0, 2' core lost, probably coaly shale.
88.0	93.5	5.5	5.0	CARBONACEOUS CLAYSTONE	Very fine grained (mudstone?). Fractures @ 70° 91.0-91.5 - carbonaceous shale, badly broken.
93.5	99.5	6.0	6.0	CARBONACEOUS SILTSTONE	Weakly bedded @ 30°. From 94.0-94.5' - sandy siltstone.
99.5	120.5	21.0	21.0	SILTSTONE WITH SANDSTONE BANDS	Weakly bedded @ 30°. 107.0-108.0' - sandstone, at 105.5' bright coal seamlets along frs. @ 30°. Lower contact gradational but grades into carbonaceous.
120.5	126.0	5.5	5.5	CARBONACEOUS CLAYSTONE	No bedding but many fractures at low angle. Lower contact distinct.
126.0	133.5	7.5	7.5	SANDSTONE	Coarse grained. From 126.0 to 129.5' - very coarse grained looks like brecciated tuff. Well bedded @ 30°-35°. Coal-stringers throughout section. Lower contact distinct.
133.5	148.0	14.5	12.0	COALY SHALE	Very coaly, well bedded @ 30°, broken throughout. 133.0-134.0', 137.5-138.5', 143-144.5', 146.5-147.0' - coal seam with coaly shale bands,

PROPERTY _____

SHEET NO. 2 of 3

Co-ordinates: _____

D.D.H. No. B-11

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
148.0	149.5	1.5	0.8	COAL SEAM.	Poor recovery, bright coal, badly broken.
149.5	165.0	15.5	12.0	COALY SHALE	Badly broken throughout section. Very coaly. 152.0-153.0' - coal seam with coaly shale bands. 162.5-163.0' - coal seam with coaly shale bands. 158.0-161.5' - carbonaceous siltstone, weakly bedded @ 30°. Especially lower contact very coaly, gradational.
165.0	179.0	14.0	12.5	COAL SEAM	Good recovery, bright coal, not include refuse. Well bedded @ 30°-35°. Lower contact distinct.
179.0	196.0	17.0	17.0	SILTSTONE	
196.0	220.0	24.0	22.0	CARBONACEOUS CLAYSTONE.	Very dark, several low angle slickensided coaly fractures to 200', broken 201-210' - very slightly silty, weak bedding @ 20°. At 210' - slickensides @ 20°. Lower contact sharp @ 25°. From 212-218' core badly broken 2' core loss - appears to be a very low angle coal seam approx 6" wide.
220.0	277.8	57.8	57.8	SILTY CLAYSTONE.	Or very fine grained siltstone - very dark, carbonaceous, bedding weak. From 220-237' - very little bedding, dense. From 237 to 265' - fairly good bedding @ 20° - wavy.
277.8	305.0	27.2	27.2	CARBONACEOUS CLAYSTONE.	Badly broken to 283' - may be several fine coal fractures. Very slightly silty in part.
305.0	307.5	2.5	1.5	COAL SEAM	6" shale at top, section badly broken.
307.5	342.0	34.5	34.5	BLACK CARBONACEOUS SHALE OR CLAYSTONE -	Bedded @ 30°. 315.7-318.5' - silty; from 321.5-325' - fine calcite veinlets at low angles. At 331' - bedding 25°, at 342' - 1/2" coal veinlet @ 30°.
342.0	363.0	21.0	20.5	COALY SHALE.	Fine coaly veinlets @ 20°, some 1/4" wide, some at 0°. Section broken. At 358' - several inches coal. Minor calcite veinlets throughout, also low angle slickensided fractures.
363.0	391.5	28.5	28.5	CARBONACEOUS CLAYSTONE.	Slightly silty in part, bedding 20-30°. From 371.5-373' - sandy band @ 20°, several 1/8" calcite fractures @ 60°.
391.5	407.5	16.0	15.5	CARBONACEOUS CLAYSTONE OR SHALE.	Weakly coaly, occasional coal seam up to 1/2" wide @ 30-45°. Weak bedding @ 30°. From 306.5-307.5' - coal and shale - poor recovery.
407.5	446.0	38.5	36.5	CARBONACEOUS CLAYSTONE.	- Many fine hairlike calcite stringers @ 45° throughout. Low angle frs. 411'-413'. Coal veinlets @ 423' - 1 inch and 424' - 1 inch @ 30° - this section broke. At 437' - ground coal, may be 1 foot seam @ 30°, also same at 445' - possibly 1 ft. ground coal.

PROPERTY _____

SHEET NO. 3 of 3

Co-ordinates: _____

D.D.H. No. B-11

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
446.0	451.0	5.0	3.5	COAL SEAM	446.0-448' - recovery 1' - coal and coaly shale. 448-451' - recovery 2.5' - good coal, contacts @ 30°(?)
451.0	517.2	66.2	64.0	BLACK CARBONACEOUS CLAYSTONE.	Becomes slightly silty 466-484'. From 480.5-483.5' - light coloured band. At 494.5' - 1" brecciated calcite cement, zone @ 30°. Broken 495-500' - 1' lost, some coaly shale. From 501.5-505' - slightly silty, bedded @ 50°. 506.0-512.0' - many hairlike, calcite stringers. From 512-517.2' - slightly silty.
517.2	545.2	28.0	27.0	SHALE OR CLAYSTONE.	Partly coaly. Scattered coaly fractures @ 20°-30°. From 517.2-519', 529-536.5', 544-545' - coaly fractures zones, many slickensided @ 20-40°.
545.2	590.5	45.3	45.3	CARBONACEOUS CLAYSTONE OR SHALE.	Black, dense, very minor coal 564-565' - several ½" coaly veinlets @ 30°, slickensided. 585-590.5' - slightly silty.
590.5	617.2	26.7	23.7	COALY SHALE.	Black dense shale with coaly sections as noted below. From 590.5-593.0' - coal seam, may be parallel to core, Badly broken - loss 1.5'; 596.8' - coal fr. at low angle; 599-603.5' - very coaly, possibly 1' coal @ 601-602'; 607-609.5' - many coal frs. @ 20°; 609.5-612' - badly broken, appreciable coal, may be coal from 610-612(?); 612-615' - very coaly shale, seams @ 30°; 615-617.2' - coal, good, bright banded, badly broken.
617.2	723.0	105.8	105.8	BLACK CARBONACEOUS SHALE OR CLAYSTONE.	Massive, no coal or shearing, slightly silty in part. Weak bedding 15-20°.
END OF HOLE 723.0 FEET					

560

Coordinates:

D.D.H. No. B-12Logged by H. Jones99,430.13NDip -45°Elev. 3466.7'Start Sept. 13/6999,983.83 EBearing S 60° WDepth 636'End Sept. 27/69

From	To	Width	Core Rec'y	Rock	Description
0	10.0	10.0	0	CASING	No core.
10.0	20.6	10.6	10.0	SANDSTONE.	Fine grained, broken, well bedded @ 75°, lower contact gradational.
20.6	28.7	8.1	8.0	SANDSTONE.	Coarse grained, well bedded @ 70°, many coaly fractures along bedding.
28.7	55.0	26.3	24.3	SILTSTONE.	Weakly carbonaceous, fairly well bedded @ 70°. 48.6-54.0' - many low angle limonitic fractures.
55.0	57.0	2.1	1.2	COAL AND COALY SHALE.	6" coal at upper contact, remainder fine coaly stringers in shale.
57.0	84.2	27.2	27.2	SILTSTONE WITH CLAYSTONE SECTIONS.	Well bedded 75-90° to core. Occasional 1/4" coal veinlets, approaching sandstone 65.7 - 67.7', 67.7-73.1' - carbonaceous shale with numerous hairlike calcite stringers. 79.0-82.0' - carbonaceous shale as above. 82.0-84.2' - sandstone; cross bedded.
84.2	94.0	9.8	5.6	CARBONACEOUS GOALY SHALE	86.0-87.0' - possibly coal; 88.5-89.5' - possibly coal; Remainder of section fine coal veinlets on bedding
94.0	98.0	4.0	4.0	SANDSTONE	Coarse grained. Coal veinlets on bedding at 60°.
98.0	109.0	11.0	11.0	CARBONACEOUS SHALE OR CLAYSTONE.	Slightly coaly near section bottom
109.0	127.3	18.3	18.3	SILTSTONE-CLAYSTONE.	Carbonaceous; interbanded; cross-bedding in siltstone; bedding 70-80°.
127.3	133.0	5.7	4.8	COALY SHALE.	127.3-129.3' - mostly brightly banded coal; badly broken; poor recovery. 129.3- ? mostly fine coaly veinlets.
133.0	158.0	24.5	25.0	CLAYSTONE-SILTSTONE	133.0-136.0' - dominantly claystone, carbonaceous 136.0-140.0' - fine grained sandstone with minor claystone bands. 140.0-144.5' - claystone, carbonaceous 144.5-152.0' - siltstone with interbedded claystone; bedding 80°. 152.0-155.0' - carbonaceous shale; minor coal. 155.0-158.0' - siltstone
158.0	169.0	11.0	11.0	SANDSTONE	Fine grained; well bedded at 75°; lower contact gradational.

PROPERTY _____

SHEET NO. 2 of 4

Co-ordinates: _____

D.D.H. No. B-12

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
169.0	181.5	12.5	12.3	SANDSTONE	Coarse grained, coaly fractures; 169.0-181.5' gradational 177.5-181.5' - much coarser with a flooding of calcite. 176' - badly broken; calcite veining. Lower contact sharp at 75°.
181.5	214.3	32.8	32.8	SILTSTONE	Well bedded; 75°-80°; weakly carbonaceous.
214.3	220.1	5.8	5.8	COAL SEAM	214.3-217.3' - good bright coal. 217.3-220.1' - coaly shale 220.1' - 50% pyrite
220.1	248.0	27.9	27.5	SILTSTONE-CLAYSTONE	Interbedded; numerous fine calcite veinlets. 241.0-248.0' - claystone dominantly.
248.0	260.0	12.0	11.0	CARBONACEOUS SHALE	Slightly coaly.
260.0	280.0	20.0	19.0	SILTSTONE-CLAYSTONE	Interbedded; numerous fine calcite veinlets bedding 70-80°; several short sandy sections. 279.0-280.0' - possible coal seam; core lost.
280.0	295.0	15.0	15.0	CLAYSTONE	Shaly in part. 287.0-289.0' - silty. 293.0 - several inches coal.
295.0	299.5	4.5	2.0	COAL.	Bright banded; large core loss.
299.5	316.0	16.5	16.0	CLAYSTONE	With minor shaly and silty sections.
316.0	322.7	6.7	3.7	COAL SEAM	Bright, banded; poor recovery; very minor shale.
322.7	326.7	4.0	3.0	SHALE	Slightly coaly.
326.7	332.2	5.5	5.5	CARBONACEOUS SILTSTONE	Approaching claystone.
332.2	335.5	3.3	1.3	COALY SHALE	
		1.8	0.8		332.2-334.0 - coal
		1.0	large		334.5-335.0 - coal?
335.5	370.0	34.5	34.0	SILTSTONE	Claystone; interbedded; 70-80°; numerous fine calcite veinlets; 368.0-370.0' - largely sandstone.
370.0	379.0	9.0	6.0	COAL SEAM.	Good coal to 377.7' 377.7-379.0' - coal and coaly shale; large loss.
379.0	382.5	3.5	3.3	SHALE AND CARBONACEOUS CLAYSTONE.	
382.5	418.0	35.5	35.0	CLAYSTONE AND SILTSTONE	Dominantly claystone., interbedded, bedding 70°.
		4.0	3.5		401.0-405.0' - coaly shale.
418.0	426.3	8.3	8.3	CLAYSTONE, CARBONACEOUS.	White calcite veinlets.
426.3	429.2	2.9	2.5	COAL SEAM	Good.

PROPERTY _____

SHEET NO. 3 of 4

Co-ordinates: _____

D.D.H. No. B-12

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
429.2	436.0	6.8	6.8	SHALE	Carbonaceous; with scattered coal seamlets.
436.0	460.0	24.0	23.5	CLAYSTONE & SILTSTONE	Interbedded; bedding 70-90°. 447.0-460.0' - dominantly siltstone. 458.0-459.0' - 3/8" calcite vein, sub-parallel to core on slickensided fracture.
460.0	477.0	17.0	12.3	COAL SEAM	460.0-461.0' - carbonaceous shale. 461.0-462.5' - bright banded coal. 462.5-465.0' - carbonaceous shale (claystone) 465.0-469.0' - good, bright banded coal, some included shale; 469.0-471.0' - coaly shale. 471.0-474.5' - carbonaceous claystone. 474.5-477.0' - coal.
		4.0	2.0		
		3.5			
		2.5	0.7		
477.0	490.0	13.0	13.0	CLAYSTONE	Carbonaceous; several coaly seamlets at lower end 479.0-480.0' - possibly coal; large loss. 485.0' - clam fossils.
490.0	525.0	35.0	34.0	SILTSTONE	Gradational with above; lightly veined with calcite threads. Bedding 70°-90°; cross-bedding. 496.0' - brecciated, calcite veined; 496.2 - minor slip 30° to core; 497.5' - brecciated, calcite filled; 506.0' - brecciated, calcite filled. Possible fault at 40°. 510.0' - calcite filled fracture zone with slight displacement. 513.0-516.0' - carbonaceous claystone; coalified plant remains, gradational upper contact. 518.5-525.0' - coarse grained sandstone, transitional with above. 521' - coarsely brecciated, calcite filling
525.0	528.5	3.5	3.5	CARBONACEOUS CLAYSTONE	Fairly well broken.
528.5	544.0	15.5	12.0	CARBONACEOUS SILTSTONE	Strongly fractured, at low angles to core to 533.5'. Grades to claystone 541.5-544.0'.
544.0	546.0	2.0	0.7	COAL	Badly broken, length estimated.
546.0	549.0	3.0	3.0	CARBONACEOUS SILTSTONE	Sandy in part. Well bedded at 80°.
549.0	554.2	5.2	3.7	COALY SHALE	With some coal sections.
554.2	570.0	15.8	15.8	SANDSTONE	Coarse grained, well bedded 70-80°, scattered calcite throughout. 506.5' - 1" calcite; some brecciation; locally minor displacement. 570.0' - 3" coaly shale, 90° to core.

PROPERTY _____

SHEET NO. 4 of 4Co-ordinates:

_____D.D.H. No. B-12

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
570.0	589.5	19.5	19.5	SILTSTONE	Claystone; carbonaceous; abundant cross-bedding at 80°.
589.5	593.8	4.3	4.3	CARBONACEOUS CLAYSTONE.	
593.8	596.5	2.7	1.8	COAL SEAM.	Bright banded.
596.5	624.9	28.4	28.0	SILTSTONE.	Well bedded, 65° to core.
624.9	632.0	7.1	7.0	SANDSTONE	Coarse grained; some coalified plant fragments, irregular bedding.
632.0	636.0	4.0	4.0	CARBONACEOUS CLAYSTONE-SILTSTONE.	
END OF HOLE 636.0 FEET					

560

PROPERTY

PINE PASS COAL PROJECT

SHEET NO. 1 of 3

Co-ordinates:

100,760.52 N

99,131.30 E

Dip -45° Bearing $S 60^{\circ} W$

D.D.H. No. B-13

Elev. 3502.6

Depth 700'

Logged by B. Taylor

Start Sept. 26 1969

End Oct. 7, 1969

From	To	Width	Core Rec'y	Rock	Description
0	33.0	33.0	-	CASING	
33.0	45.0	12.0	12.0	SILTSTONE	Grading towards claystone, carbonaceous, bedding 40° to core; some calcite threads.
45.0	50.5	5.5	2.5	CLAYSTONE	Carbonaceous; calcite threads.
50.0	74.8	24.3	8.5	COAL	Broken; very poor recovery.
74.8	79.5	4.7	4.2	SHALE	Very carbonaceous.
		1.0	.7		75.5-76.5' - coal
79.5	116.0	36.5	36.5	SILTSTONE-CLAYSTONE	Rather massive core; moderate bedding, 35° ; Some calcite threads. 87.0-95.0' - shaly.
116.0	146.0	30.0	29.5	SHALE & CLAYSTONE	Carbonaceous; a few coalified plants.
146.0	157.0	11.0	11.0	CLAYSTONE & SILTSTONE	Bedding 30° to core.
157.0	163.0	4.0	1.5	COAL	Bright banded.
163.0	179.0	16.0	15.5	CLAYSTONE & SHALE	170.0 & 175.0' - shearing, low angle to core; trace of coal.
179.0	184.0	5.0	5.0	SANDSTONE	Fine grained, bedding 45° .
184.0	192.0	8.0	7.0	CLAYSTONE	
192.0	237.5	45.5	42.0	CLAYSTONE & SILTSTONE	Poor bedding, at 65° . 229.0 - fractures, some calcite 233.0-237.5' - coalified plants.
237.5	254.0	17.5	11.0	COAL SEAM	
		7.5	5.0		237.5-245.0' - coal, bright bands, badly broken, some included shale.
		1.2	1.2		245.0-246.2' - shale
		3.8	2.0		246.2-250.0' - coal
		4.0	3.0		250.0-254.0' - shale, heavily carbonaceous. 252.0-253.0' - possible coal.
254.0	272.0	18.0	17.0	SHALE-CLAYSTONE	Massive, carbonaceous, lightly threaded calcite 270.5' - fracture, calcite stringers.
272.0	292.0	20.0	19.0	SILTSTONE	Grading occasionally to claystone; some cross-bedding 55° 279.0-282.0' - claystone. 287.0-292.0' - alternating one foot bands fine grained sandstone and claystone. 70°
292.0	305.5	13.5	13.0	SHALE	Massive, some coalified plants, calcite threads; heavily carbonaceous 299.0-300.0' - possible coal. 302.0-303.0' - silt

PROPERTY _____

SHEET NO. 2 of 3

Co-ordinates: _____

D.D.H. No. B-13

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
305.5	313.8	8.3	7.0	COAL	Bright banded.
313.8	319.0	5.2	5.2	SILTSTONE-CLAYSTONE	Carbonaceous; bedding 70°.
319.0	321.0	2.0	.8	COAL	
321.0	323.0	2.0	1.5	SHALE	Heavily carbonaceous and coalified.
323.0	330.0	7.0	7.0	SILTSTONE, CLAYSTONE.	
330.0	339.0	9.0	9.0	CLAYSTONE.	Massive, some calcite threads; gradational to below.
339.0	348.5	9.5	9.5	SANDSTONE	Fine grained; cross-bedding 75° to core.
348.5	368.5	20.0	20.0	SHALE	Heavily carbonaceous; massive. 355.5-357.0' - sandstone
368.5	372.0	3.5	3.0	COAL	Bright, banded..
372.0	381.0	9.0	8.0	SHALE	Heavily carbonaceous, coaly.
381.0	408.0	27.0	27.0	SILT-CLAYSTONE.	Fine, cross-bedding, 65°; moderately carbonaceous.
408.0	416.0	8.0	8.0	SHALY CLAYSTONE.	Massive, well carbonaceous
416.0	421.5	5.5	5.0	COAL	Bright banded 75° to core.
421.5	431.0	9.5	9.5	SHALY-CLAYSTONE.	Heavily carbonaceous. 424.0-425.5' - coaly
431.0	433.3	2.3	2.0	COAL	Bright banded.
433.3	438.5	5.2	5.0	SHALY CLAYSTONE.	Heavily carbonaceous. 436.5-437.2' - coaly
438.5	456.0	15.5		SILTSTONE-CLAYSTONE.	Fine cross-bedding 80°.
456.0	472.5	16.5	15.5	CLAYSTONE	Shaly, heavily carbonaceous; bedding 70° 458.5-459.0' - coal 460.0-469.0' - heavily coalified. 462.5-465.0' - coal, somewhat dull.
472.5	480.5	8.0	1.5		
480.5	499.5	19.0	8.0	SILTSTONE-CLAYSTONE.	
499.5	505.5	6.0	19.0	CLAYSTONE	Carbonaceous, minor siltstone beds, minor coalified plants
505.5	510.5	6.0	6.0	SANDSTONE	Fine grained, to minor claystone.
510.5	517.5	5.0	3.5	CLAYSTONE	Carbonaceous.
517.5	524.0	2.0	.5		508.0-510.0' - coal
524.0	535.0	7.0	7.0	SILTSTONE	Finely bedded 80° to core.
535.0	540.0	6.5	6.5	CLAYSTONE	Carbonaceous.
		11.0	11.0	SILTSTONE	Carbonaceous.
		5.0	5.0	SANDSTONE	Fine grained; carbonaceous.

PROPERTY _____

SHEET NO. 3 of 3

Co-ordinates: _____

D.D.H. No. B-13 _____

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
540.0	562.0	22.0 3.5	21.0 3.0	CLAYSTONE	Carbonaceous. 550.5-554.0' - coal and shale, interbedded.
562.0	613.0	25.0	25.0	SILTSTONE-CLAYSTONE	Wavy, bedding @ 80°, lightly carbonaceous. 587.0' Light brown (limonitic) rounded patches up to 2" diameter throughout core, possibly concretionary.
613.0	629.0	16.0	16.0	CLAYSTONE-SILTSTONE	Carbonaceous, dark grey, moderate bedding in silty layers @ 70°.
629.0	638.0	9.0 .8 2.5 1.9	5.5 .3 .7 .9	CLAYSTONE	Carbonaceous, coaly. 630.0-630.8' - coal, dull 632.0-634.5' - coal, bright with shale sections 635.1-637.0' - coal, bright banded
638.0	648.5	10.5	10.5	SILTSTONE-CLAYSTONE	Carbonaceous.
648.5	657.0	2.5	2.0	COAL	Bright, a little shale.
651.0	671.0	20.0 1.0 1.0 1.5	18.5 .5 .8 1.0	CLAYSTONE	Minor siltstone, carbonaceous, occasionally coaly. 660.0-661.0' - coal 661.5-662.5' - coal, dull 668.5-670.0' - coal, bright banded
671.0	700.0	29.0 1.0	29.0 1.0	SILTSTONE-CLAYSTONE	Moderately carbonaceous, bedding @ 75°-85°. 682.0-683.0' - coal, bright banded mainly 698.5-700.0' - calcite filled fractures parallel to bedding.

END OF HOLE 700 FEET

560

BRAMEDA RESOURCES LIMITED

PROPERTY PINE PASS COAL PROJECTSHEET NO. 1 of 3

Co-ordinates:

99,430 N99,983 EDip -90°

Bearing _____

D.D.H. No. B-14Elev. 3,466'Depth 724'Logged by B. TaylorStart Sept. 27/69End Sept. 30/69

From	To	Width	Core Rec'y	Rock	Description
0.0	10.0	10.0	0	CASING	
10.0	16.0	6.0	5.5	SILTSTONE-CLAYSTONE.	Broken.
16.0	17.0	1.0	.5	FAULT	Mud
17.0	51.0	34.0	33.0	SANDSTONE	Fine grained; grading to siltstone at top contact. Moderately well bedded 35°; minor cross-bedding. 46.0 - 51.0' - weakly carbonaceous and silty.
51.0	67.0	16.0	15.5	SANDSTONE	Coarse grained, moderate bedding; some coalified plants; minor calcite threads; broken, especially 53.0 - 66.0'
67.0	71.0	4.0	4.0	SILTSTONE	Carbonaceous; sharp contact with above, 20°.
71.0	100.8	30.8	30.5	SANDSTONE	Coarse grained; very well and finely bedded 20°; very minor siltstone beds; increasing silt 98.0-100.8'
100.8	102.8	2.0	.8	COAL AND COALY SHALE.	Badly broken.
102.8	104.2	1.4	1.0	CLAYSTONE.	Broken.
104.2	115.0	10.8	10.5	SILTSTONE	Occasionally grading to claystone; poorly bedded 45°; a little calcite in short hairlike threads (fossil shells?) 104.0' - minor fault with calcite, 45°.
115.0	117.0	2.0	2.0	SANDSTONE	Fine grained; cross-bedded; 45° to core.
117.0	125.5	8.5	8.5	CLAYSTONE-SILTSTONE.	Weakly carbonaceous; calcite threads; 120.5-121.5' - fine grained sandstone
125.5	129.0	3.5	3.5	SANDSTONE.	Fine grained. Well bedded with cross-bedding 45°.
129.0	142.0	13.0	13.0	SILTSTONE	With claystone sections; weakly carbonaceous. 131.8' - 6" fractured with calcite filling;
142.0	148.0	6.0	6.0	SILTSTONE	With carbonaceous beds, 35°; grey.
148.0	157.5	9.5	9.0	SILTSTONE-CLAYSTONE.	Carbonaceous, with minor coal at 154.0'
157.5	165.5	8.0	6.8	CARBONACEOUS COALY SHALE (or claystone)	158.0' - 5" coal. 164.0-165.0' - coal (possibly)
165.5	178.0	12.5	12.5	SILTSTONE	Grey; bedded 35°, beds short and wavy.
178.0	189.0	11.0	10.8	CLAYSTONE	With coaly bands; carbonaceous; pyrite noted. 186.0' - .2" coal.
189.0	216.5	27.5	27.3	SILTSTONE	Weakly bedded; wavy; weakly carbonaceous; occasionally approaching claystone.
216.5	219.5	3.0	1.5	COAL AND COALY SHALE.	Badly broken.

PROPERTY _____

SHEET NO. 2 of 3

Co-ordinates: _____

D.D.H. No. B-14

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
219.5	233.0	13.5	13.0	CLAYSTONE	(shale?). Carbonaceous; coalified plant remains
233.0	239.0	6.0	6.0	SILTSTONE	Wavy bedding 35° to core.
239.0	245.0	6.0	6.0	CLAYSTONE	Carbonaceous; coalified plants.
245.0	257.0	12.0	11.0	SILTSTONE-CLAYSTONE	Some coalified plants.
257.0	266.0	9.0	6.5	CLAYSTONE	With coal seams; carbonaceous coal 258.2-259'; 261.5 - 262.5'; 263.5 - 264.5'; broken; poor recovery.
266.0	284.0	18.0	18.0	SILTSTONE	Weakly carbonaceous; bedding 30° to core.
284.0	302.0	18.0	17.5	SANDSTONE	Fine grained; finely bedded 40°, some cross-bedding. Carbonaceous; some coalified plant remains especially beyond 297.0'.
302.0	316.5	14.5	14.5	SANDSTONE	Coarse grained; varies occasionally to very coarse grained. Numerous coalified plant remains; poorly bedded; pyrite noted; a few thin calcite seams.
316.5	321.0	4.5	4.5	SANDSTONE	Fine grained; finely bedded 40°; lightly carbonaceous.
321.0	343.1	22.1	22.0	SANDSTONE	Coarse grained; massive; lightly carbonaceous. Scattered coalified plants, somewhat broken. 342.5 - 343.1 - shale gradational.
343.1	351.0	7.9 4.9 3.0	6.3 3.8 2.5	COAL SEAM	343.1 - 348.0' - coal, bright bands, pyrite noted. 348.0 - 351.0' - claystone with coaly sections.
351.0	395.0	44.0	44.0	SILTSTONE	With claystone sections; gradational. Fragments of coalified plants; carbonaceous; poorly bedded 50° to core minor calcite threads, quite massive.
395.0	410.5	15.5	14.5	CLAYSTONE AND SHALE	Broken; heavily carbonaceous; minor coalified plants.
410.5	428.0	17.5	17.5	SILTSTONE	Moderately carbonaceous; well banded, wavy 45°.
428.0	433.0	5.0	5.0	SANDSTONE	Fine grained; grey; lightly carbonaceous; well bedded 30°.
433.0	437.5	4.5	4.5	CLAYSTONE-SILTSTONE	Carbonaceous, massive; 1" coal @ 433.5'.
437.5	440.0	2.5	1.5	COAL	Badly broken; bright banded.
440.0	443.6	3.6	3.0	CLAYSTONE AND SHALE	With a number of thin coal seams; heavily carbonaceous.
443.6	458.5	14.9	14.3	CLAYSTONE-SILTSTONE	Gradational with above; carbonaceous, bedding 45° to core; lightly threaded with calcite, 453.0 - 1" coal. 450.0 - 458.5 - claystone becoming progressively finer and more carbonaceous.
458.5	462.8	4.3	2.5	COAL	Bright banded; broken; poor recovery.
462.8	488.5	25.7	25.0	SILTSTONE-CLAYSTONE	Well carbonaceous, bedding 45°. 480.0-488.5' - claystone with calcite threads; heavily carbonated.

PROPERTY _____

SHEET NO. 3 of 3

Co-ordinates: _____

D.D.H. No. B-14

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
488.5	499.0	9.5	7.3	COAL SEAM	Bright banded; some firm, other parts broken.
499.0	508.5	9.5	6.0	CLAYSTONE-SHALE	With coaly sections; heavily carbonaceous.
		1.1	.2		505.7-506.8' - possibly coal.
508.5	514.9	6.4	6.3	SILTSTONE	Carbonaceous; bedding 45°.
514.9	517.0	2.1	1.8	COAL SEAM	Bright banded, but includes a little "bone".
517.0	549.3	32.3	32.0	SILTSTONE-CLAYSTONE	Carbonaceous; a little calcite threads on bedding. Bedding 45°; very minor coal seams; 533.0' - calcite filling fracture
549.3	561.2	11.9	9.0	COAL	Bright banded, slickensides observed; broken; 50°.
561.2	588.0	16.8	16.8	CLAYSTONE-SILTSTONE	Well carbonaceous; at times conchoidal fracture poorly bedded 50°; massive; very minor coal.
588.0	596.0	6.0	5.8	CLAYSTONE	Heavily carbonaceous; broken; massive appearance; several minor coal seams.
596.0	597.5	1.5	1.3	COAL	Bright banded.
597.5	628.0	30.5	30.3	SILTSTONE-CLAYSTONE	Moderately carbonaceous; fairly well bedded 55° Some cross-bedding; occasional coalified plant remains; scattered calcite threads.
628.0	634.5	6.5	6.5	SANDSTONE	Fine grained; well bedded 45°.
634.5	642.0	8.5	8.3	CLAYSTONE-SHALE	Massive; at times silty; well carbonaceous.
642.0	643.5	1.5	1.0	COAL	Bright, broken.
643.5	654.0	10.5	9.6	CLAYSTONE-SILTSTONE	Well carbonaceous; several minor coal seams for the most part non-calcareous.
654.0	672.5	18.5	18.0	SILTSTONE	Well banded, 45°; light carbonaceous; few coalified plants Some calcite threads.
672.5	695.5	23.0	19.1	COAL SEAM	
		2.5	2.0		672.5-675.0' - coal
		2.7	2.2		675.0-677.7' - shale
		2.3	2.0		677.7-680.0' - coal
		.6	.6		680.0-680.6' - shale
		2.6	1.8		680.6-683.2' - coal
		4.3	3.6		683.2-687.5' - shale
		2.9	2.9		687.5-690.4' - siltstone, banded
		.9	.9		690.4-691.3' - shale
		1.2	.5		691.3-692.5' - coal
		2.5	2.3		692.5-695.0' - silt, very heavily impregnated with coal.
		.5	.3		695.0-695.5' - coal
695.5	724.0	28.5	28.2	SILTSTONE	Occasional lapses to claystone; poorly bedded 45°. Moderately carbonaceous.
END OF HOLE B-14 724.0 FEET					

560

PROPERTY

PINE PASS COAL PROJECT

SHEET NO. 1 of 3

Co-ordinates:

99,656.5 N

100,410.7 E

Dip

-60°

Bearing

S 60°W

D.D.H. No.

B-15

Elev.

3369.3'

Depth

753'

Logged by B. Taylor

Start Oct. 1/69

End Oct. 5/69

From	To	Width	Core Rec'y	Rock	Description
0.0	25.0			CASING	
25.0	36.0	11.0	10.4	SHALE	Fine cleavage; very loose, normal to core; carbonaceous
36.0	53.0	17.0	16.8	SILTSTONE	Cross-bedded, bedding 75°.
53.0	101.0	48.0	46.0	SHALE & CLAYSTONE	Carbonaceous, locally loose. 93.0-96.5' - siltstone 96.5-101.0' - increasingly carbonaceous
101.0	104.7	3.7	2.3	COAL	Bright bands; poor recovery.
104.7	122.0	17.3	15.5	CLAYSTONE AND SHALE	Occasionally grades to silt for short sections. 108.0-119.0' - some coalified plant remains, tiny calcite threads.
		11.0	10.5		112.0-114.0' - coal with coaly shale.
		2.0	1.0		
122.0	200.5	78.5	74.0	CLAYSTONE, SHALE & SILTSTONE	Well carbonaceous; massive appearance. 133.5' - calcite filled fracture. 135.0-137.0' coalified plants 160.0-161.0' possible coal 164.0-164.5' possible coal 183.0-185.5' lost
200.5	210.0	9.5	9.5	SANDSTONE	Fine grained, cross-bedded, 55°.
210.0	266.0	56.0	53.0	CLAYSTONE (SHALE) & SILT	Poorly bedded; moderately carbonaceous; some calcite threads. 218.0-220.5' - coaly 224.0-227.0' - coaly 256.0-258.0' - broken 260.0-262.0' - broken
		2.5	2.0		
		3.0	2.3		
266.0	272.0	6.0	4.8	COAL SEAM	266.0-270.5' - coal 270.5-271.3' - shale 271.3-272.0' - coal
		4.5	3.5		
		.8	.8		
		.7	.5		
272.0	282.0	10.0	10.0	CLAYSTONE, SHALE & OCCASIONAL SILT	
282.0	296.5	14.5	14.0	SHALE.	Heavily carbonaceous. 20% coalified plants. 285.0 - 6" coal.
296.5	303.0	6.5	6.5	SHALE	Heavily carbonaceous, locally some silt.
303.0	308.0	5.0	4.5	SHALE	Heavily carbonaceous; included coal. 303.5-304.2' - coal 306.0-306.5' - coal
		.7	.5		
308.0	332.5	24.5	24.0	CLAYSTONE-SHALE	Massive; faint bedding 65°.
332.5	334.4	1.9	1.7	COAL	Bright banded.

PROPERTY _____

SHEET NO. 2 of 3

Co-ordinates: _____

D.D.H. No. B-15

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
334.4	344.0	9.6	9.6	SHALE-SILTSTONE	Massive; carbonaceous.
344.0	349.5	5.5	3.5	COAL	Bright banded.
349.5	360.0	10.5	9.5	SHALE-SILTSTONE	Massive, carbonaceous. 356.0-357.0' - open fracture.
360.0	377.0	17.0	17.0	SILTSTONE	Massive; lower portion bedded 65°.
377.0	386.5	9.5	9.5	SANDSTONE	Fine grained, numerous coalified plant remains.
386.5	395.5	9.0	9.0	SHALY SILTSTONE	Carbonaceous;
395.5	405.5	10.0	10.0	SANDSTONE	Fine grained; well bedded 60°, cross-bedded.
405.5	407.5	2.0	1.5	COAL	Bright banded.
407.5	415.0	7.5	7.0	SHALE	Carbonaceous.
415.0	421.0	6.0	6.0	SILTSTONE	Bedding 70°.
421.0	442.0	21.0	20.5	SHALY CLAYSTONE AND SILTSTONE	Fairly massive, carbonaceous, calcite threads.
442.0	448.5	6.5	6.5	SILTSTONE	
448.5	453.5	5.0	4.0	SHALE	Loose, Carbonaceous.
453.5	481.0	28.5	28.0	SILTSTONE AND CLAYSTONE	
		1.0	.6		463.0-464.0' - coal 464.0-466.0' - shale
481.0	502.0	21.0	20.0	CARBONACEOUS SHALE	Well coalified.
		2.0	1.5		483.5-485.5' - coal, some shale. 495.0' - 9" coal
502.0	513.0	11.0	10.0	SILTSTONE AND SHALY CLAYSTONE	
		2.0	1.0		508.0-510.0' - coal 512.0-513.0' - fracturing fault?
513.0	523.0	10.0	10.0	SILTSTONE	Massive, lightly carbonaceous.
523.0	531.0	8.0	8.0	SANDSTONE	Fine grained, bedding 65°.
531.0	538.0	7.0	7.0	SANDSTONE	Coarse grained; coalified plant fragments.
538.0	562.0	34.0	34.0	SILTSTONE	Finely bedded with claystone; 65°. Cross-bedding.
562.0	569.5	7.5	7.5	SHALY CLAYSTONE	Carbonaceous.
569.5	577.0	7.5	7.0	COAL	Bright banded, some included shale.
577.0	594.0	17.0	17.0	SILTSTONE	Occasionally grading to claystone. Finely cross-bedded 70°.
594.0	620.5	26.5	26.5	SHALE-CLAYSTONE	Heavily carbonaceous. Fairly massive. 608.0-614.0' - moderate amounts of coalified plants.

PROPERTY _____

SHEET NO. 3 of 3

Co-ordinates: _____

D.D.H. No. B-15

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
620.5	631.5	11.0	11.0	SANDSTONE	Fine grained; some coalified plants; bedding 70°.
631.5	648.5	17.0	15.5	SHALE	Heavily carbonaceous, small amounts of calcite threads.
		1.1	1.0		631.9-633.0' - coal
		2.0	1.0		645.0-647.0' - coal
648.5	668.0	19.5	19.5	SILTSTONE-CLAYSTONE	Wavy banding.
668.0	680.5	12.5	12.0	SHALE	Heavily carbonaceous, some loosening on cleavage planes.
680.5	687.5	7.0	6.5	COAL	Bright, banded.
687.5	694.0	6.5	6.3	SHALE	Heavily carbonaceous.
		.6	.6		689.0-689.6' - coal, hard.
694.0	704.0	10.0		SILTSTONE	Bedding 70°.
704.0	719.0	15.0	14.5	CLAYSTONE	Calcite strs.
719.0	726.0	7.0	7.0	SILTSTONE-CLAYSTONE	Bedding 75°.
726.0	737.0	11.0	7.5	COAL	Bright banded.
737.0	741.0	4.0	3.5	CLAYSTONE	Heavily carbonaceous.
					738.5-740.0' - coaly
741.0	750.0	9.0	9.0	SILTSTONE	Finely bedded 75°.
750.0	753.0	3.0	2.5	CLAYSTONE	Carbonaceous.

END OF HOLE 753.0 FEET

560

PROPERTY PINE PASS COAL PROJECTSHEET NO. 1 of 4

Co-ordinates:

D.D.H. No. B-16Logged by B. Taylor &
N. Nambu98,002.8 NDip -75°Elev. 3157.2Start Oct. 6/1969101,657.4 EBearing S 60° WDepth 818'End Oct. 13/1969

From	To	Width	Core Rec'y	Rock	Description
0	34.0	34.0	-	CASING	
34.0	35.0	1.0	1.0	SANDSTONE	Fine grained, bedding @ 50°
35.0	57.0	22.0	21.0	SHALE	With occasional bands of siltstone @ 35°.
		1.3	1.0		40.5-41.8' - coal, bright; shaly bands.
57.0	65.0	8.0	8.0	SANDSTONE	coarse grained, bedding @ 30°
65.0	68.0	3.0	2.0	COAL	Bright banded, some shale bands @ 35°
68.0	72.5	4.5	4.0	SHALE	Heavily carbonaceous, 35° bright banded coal in thin seam
72.5	89.5	17.0	16.5	SHALE	Heavily carbonaceous, massive.
		1.5	1.2		83.0-84.5' - coal, some bright bands, a little pyrite, a little sand.
					84.5-87.0' - coaly
89.5	98.0	8.5	8.5	SILTSTONE	Bedded @ 50°
98.0	114.0	16.0	16.0	SHALE	Massive, contains a number of non-calcareous, hard, silty light brown "concretions" approx. 3/4" diameter; gradational to shale.
					112.0-114.0' - bedded, harder than normal.
114.0	117.0	3.0	1.2	COAL	Bright banded, poor recovery.
117.0	121.0	4.0	4.0	SANDSTONE	Fine grained, heavily coalified.
121.0	123.2	2.2	1.7	COAL	Bright, with dull bands.
123.2	140.0	16.8	16.5	SHALE TO SILTSTONE BEDS.	Carbonaceous, and locally coaly.
140.0	163.0	23.0	23.0	SILTSTONE	Dark, fairly massive.
163.0	173.0	10.0	10.0	SANDSTONE	Fine grained, well bedded @ 35° with a little cross-bedding.
173.0	206.0	33.0	33.0	SILTSTONE-CLAYSTONE.	Slip contact with above, parallel to bedding. Cross-bedding near bottom of section; bedding @ 45°; gradational contact.
					183.0-188.0' - shale, carbonaceous.
					185.5-186.0' - coal
206.0	227.0	21.0	20.5	SHALE	Carbonaceous, cleavage 45° to core; central portion coaly.
		2.0	1.2		212.0-214.0' - coal, dull lustre.
					224.0' - 6" coal
					226.0' - 6" coal
227.0	248.0	21.0	21.0	CLAYSTONE-SILTSTONE.	Minor bedding 75° to core; brownish hard patches.
					235.0' - 6" coal
248.0	256.0	8.0	7.5	SHALE	Carbonaceous
					248.0-253.0' - coaly
256.0	286.0	30.0	29.5	CLAYSTONE-SILTSTONE.	Fairly massive, poorly bedded @ 50°. Weakly carbonaceous, rounded brownish hard patches.
					283.0-286.0' - broken with slickensides. 273-286' - non-calcareous.

PROPERTY _____

SHEET NO. 2 of 4

Co-ordinates: _____

D.D.R. No. B-16

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
286.0	292.5	6.5	6.5	SILTSTONE	Massive; light grey (as a whetstone) shaly fractures, non-calcareous.
292.5	312.0	11.5	11.5	SANDSTONE	Fine grained, finely bedded @ 45°, with minor cross-bedding. Dark grey; moderately carbonaceous. Calcareous; calcite filled fractures at bottom contact.
312.0	327.0	15.0	14.5	SANDSTONE	Coarse grained; generally massive and even grained, calcareous, bedding @ 55°; occasional patches of angular shale fragments.
327.0	339.0	12.0	12.0	SILTSTONE	Poorly bedded, fairly massive.
339.0	356.0	17.0	15.0	SHALY CLAYSTONE	Minor beds siltstone, carbonaceous, coaly. Non-calcareous.
		1.5	1.3		354.0-355.5' - coal, dull.
356.0	374.0	18.0	17.5	SILTSTONE-CLAYSTONE	Interlayered in 1'-3' beds, bedding 45°, coaly.
374.0	418.0	44.0	43.5	SILTSTONE-CLAYSTONE	Massive, bedding @ 55°; carbonaceous.
418.0	420.0	2.0	1.4	COAL	With some shale.
420.0	424.0	4.0	2.0	CLAYSTONE	Coaly.
424.0	440.0	16.0	15.0	SILTSTONE	Carbonaceous.
440.0	490.0	50.0	48.5	SILTY CLAYSTONE	4" breccia @ 462' - cemented with calcite, section carbonaceous. From 471-490' - coaly, minor coal.
490.0	538.0	48.0	47.5	CLAYSTONE	Carbonaceous, massive. 505-508' - lighter coloured, harder claystone. 517-519.2' - shale, badly broken, coaly fractures. 525.5-526.5' - coaly shale 533.0' - sandy section (5")
538.0	547.5	9.5	9.5	SANDSTONE	With siltstone sections. Fine grained and coarse grained mixture. Well bedded @ 55°.
547.5	570.3	22.8	22.5	CARBONACEOUS CLAYSTONE WITH COALY SHALE SECTIONS	Massive. At 553.0' sandy grained, bedding @ 50°. 557.0, 559.0-560.0' - coaly shale. Lower part grades into coaly, lower contact distinct.
570.3	579.0	8.7	7.2	COAL	Bright coal, good recovery, bedding @ 50°-55°. 570.3-576.0' - bright coal, lower part badly broken. 576.0-578.0' - mostly coaly shale, but includes bright coal bands. 578.0-579.0' - bright coal.
579.0	590.5	11.5	11.0	CARBONACEOUS CLAYSTONE	Coaly shale. 582.0-587.0' - coaly shale, at 585.0' coal (5"), badly broken. 588.0-590.0' - coaly shale, broken, bedding @ 45-50°, bright coal bands.

PROPERTY _____

SHEET NO. 3 of 4

Co-ordinates: _____

D.D.H. No. B-16

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
590.5	617.5	27.0	27.0	SANDSTONE	Upper part fine grained, lower part coarse grained. 595.0-597.0' - coal sections along fractures and bedding 601.0-602.0' - porous
617.5	624.5	7.0	7.0	CARBONACEOUS SILTSTONE & CARBONACEOUS CLAYSTONE.	Massive, lower part grades into coaly.
624.5	631.5	7.0	5.5	COALY SHALE - CARBONACEOUS SHALE.	Many bright coaly sections in coaly shale, broken. Lower part gradational.
631.5	667.5	36.0	36.0	CARBONACEOUS CLAYSTONE-CARBONACEOUS SILTSTONE.	653.0-658.0' - very fine grained sandy siltstone.
667.5	671.0	3.5	3.0	COAL	Bright coal, not includes refuse, good recovery.
671.0	696.0	25.0	25.0	SANDSTONE WITH SILTY SECTIONS.	Well bedded @ 50-55°.
696.0	700.8	4.8	4.8	CARBONACEOUS CLAYSTONE.	Lower part grades into coaly, lower contact distinct.
700.8	712.5	11.7	9.0	COAL	Badly broken, partly, but good recovery. 700.8-708.5' - bright coal, no refuse (low ash coal) 708.5-709.0' - coaly shale 709.0-711.0' - bright coal, badly broken. 711.0-712.5' - coaly shale, bright coal mixture
712.5	714.5	2.0	1.5	COALY SHALE-	CARBONACEOUS SILTSTONE. Lower part very coaly.
714.5	719.5	5.0	4.5	COAL	Good recovery, bright, no refuse. This section maybe same seam to above coal seam (700.8-712.5')
719.5	721.5	2.0	1.5	COALY SHALE	Badly broken, well bedded @ 45-50°.
721.5	733.0	11.5	11.5	CARBONACEOUS SILTSTONE-SANDSTONE.	Well bedded @ 40-45°, many calcite veins along fractures @ 70-80.
733.0	738.0	5.0	5.0	CARBONACEOUS CLAYSTONE.	Massive. At 735.5 - coal stringer.
738.0	757.0	19.0	19.0	SANDSTONE-SILTSTONE.	Mostly fine grained sandstone. Well bedded @ 45-50°. Calcite veins along fractures at high angle.
757.0	772.5	15.5	15.5	CARBONACEOUS CLAYSTONE.	With sandy sections - 766.5-768.3' - sandstone, well bedded @ 30-40°, lower contact gradational but grades into coaly.
772.5	775.0	2.5	2.0	COALY SHALE WITH COAL BANDS.	Weakly bedded @ 45°. 773.0-773.5' - coal, bright.
775.0	777.0	2.0	1.5	COAL	Badly broken, includes coaly shale.
777.0	799.0	22.0	22.0	CARBONACEOUS SILTSTONE-CARBONACEOUS CLAYSTONE.	With sandy section. Bedding @ 40-45°. Lower contact grades into coaly.
799.0	801.5	2.5	2.5	COALY SHALE.	Carbonaceous claystone. Broken in coaly shale sections.

PROPERTY _____

SHEET NO. 4 of 4

Co-ordinates:

D.D.H. No. B-16

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
799.0	818.0	19.0	19.0	CARBONACEOUS CLAYSTONE WITH SANDSTONE BAND	- very small calcite veinlets along bedding and fractures, bedding @ 40°. 813.0-814.0' - very fine grained sandstone. END OF HOLE 818 FEET

560

BRAMEDA RESOURCES LIMITED

PROPERTY PINE PASS COAL PROJECT

SHEET NO. 1 of 2

Co-ordinates:

100,760.5 N

D.D.H. No. B-17

Logged by H. Jones

Dip -90°

Elev. 3502.6'

Start Oct. 7, 1969

99,131.3 E

Bearing -

Depth -

End Oct. 15, 1969

From	To	Width	Core Rec'y	Rock	Description
0	25.0	25.0	-	CASING	No core.
25.0	38.0	13.0	6.0	CARBONACEOUS CLAYSTONE	Some siltstone bands, badly broken, weathered
38.0	54.0	16.0	5.5	COAL SEAM	Badly broken, bedded @ 45°, bright banded. 38.0-51.0' - bright banded coal; recovery 5'. 51.0-54.0' - coaly shale, recovery 0.5'
54.0	58.5	4.5	2.5	CARBONACEOUS CLAYSTONE	Narrow seam at 55' - may be 1 ft.
58.5	63.0	4.5	4.5	CARBONACEOUS SILTSTONE	With some claystone, bedded @ 45°.
63.0	67.5	4.5	4.5	CLAYSTONE-CARBONACEOUS	With some siltstone, fine hairlike calcite stringers.
67.5	92.0	24.5	22.0	BANDED SILTSTONE-CARBONACEOUS CLAYSTONE	@ 45°; some bands sandy; bottom of section carbonaceous shale.
92.0	92.8	0.8	0.6	COAL SEAM	Bright banded
92.8	116.0	24.0	23.0	CLAYSTONE-SILTSTONE	Predominantly carbonaceous claystone. Coaly in part, 109-112' - slickensided, coaly fractures 20°-45°. Loss 1'.
116.0	120.0	4.0	1.8	COAL SEAM	Bright banded.
120.0	131.0	11.0	9.0	CARBONACEOUS CLAYSTONE	Coaly fossilized plant remains and coaly fractures - minor coal. Lower contact sharp @ 45°.
131.0	141.5	10.5	10.5	FINE GRAINED SANDSTONE	Well bedded @ 45-60°. At 136.5' - short section @ 30°.
141.5	191.7	50.2	50.0	SILTSTONE	With some claystone bands - gradational from above. Cross-bedded, wavy bedding, sandy in part. From 156' - increase in carbon, also finer grained. Bedding tends to flatten slightly - 30°-45°. Grades to carbonaceous claystone at end of section.
191.7	204.0	12.3	4.7	COAL SEAM	191.7-195.0' - bright banded coal, recovery 0.9. 195.0-196.2' - carbonaceous claystone or shale, recovery 1. 196.2-198.0' - coal, recovery 0.8' 198.0-204.0' - distance estimated - very poor rec'y 1.8' coal and very coaly shale, banded @ 60°.
204.0	242.0	38.0	31.5	CARBONACEOUS CLAYSTONE	Shaly with coal fractures to 219'. Rest massive. At 214' - 6" coal, this section has core loss of 3', may be some coal lost.
242.0	269.0	27.0	27.0	SILTSTONE	With sandy bands, in part near carbonaceous claystone. Bedding @ 35°, some cross-bedding. From 250.5' - 252.5, 263-265' - sandstone.
269.0	281.5	12.5	12.5	VERY FINE GRAINED CARBONACEOUS SILTSTONE WITH CLAYSTONE	Most of section like claystone but slightly gritty.

PROPERTY _____

SHEET NO. 2 of 2

Co-ordinates: _____

D. D. H. No. B-17 _____

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
281.5	286.0	4.5	4.5	SILTSTONE-CLAYSTONE-SANDSTONE.	Sandy cross-bedded bands in dark fine grained siltstone and claystone. Bedded @ 40°.
286.0	299.2	13.2	12.0	CARBONACEOUS CLAYSTONE, WITH SOME SHALE AND SANDY BANDS.	Predominantly carb. claystone. At 291-294' - shale, coaly slickensided fractures, broken. 494.5-495.5' - sandy band @ 45°.
299.2	306.0	6.8	1.0	COAL SEAM	Large core loss, only bright banded coal left, assume mostly coal ??
306.0	313.0	7.0	4.0	CARBONACEOUS SILTSTONE WITH SOME CLAYSTONE.	Bedded @ 40°. Coaly to 307', low angle fractures at end.
313.0	318.0	5.0	2.3	COALY SHALE	Badly broken, large loss. Few inches of good coal. Fractures at 30° and 40° - slickensided.
318.0	320.0?	2.0	0.3	COAL SEAM	Recovery nil, can only assume width.
320.0?	324.0	4.0	2.6	COALY SHALE.	Bright bands of coal ½" wide in carbonaceous shale. Some of loss may be coal.
324.0	339.3	15.3	15.3	CARBONACEOUS SILTSTONE.	Bedded @ 45°, some of section carbonaceous claystone with numerous fine calcite stringers.
339.3	342.8	3.5	3.5	CARBONACEOUS CLAYSTONE OR SHALE.	Fine calcite stringers.
342.8	375.0	32.2	32.0	CARBONACEOUS SILTSTONE-CLAYSTONE.	Alternating bands, claystone. Slightly silty, beds @ 50°.
375.0	397.0	22.0		CARBONACEOUS CLAYSTONE.	Strongly fractured @ 60°-80°.
HOLE ABANDONED AT 397 FEET - EXCESSIVE CAVE PLUS BINDING RODS.					

560

BRAMEDA RESOURCES LIMITED

PROPERTY PINE PASS COAL PROJECTSHEET NO. 1 of 4

Co-ordinates:

98,002.8 ND.D.H. No. B-18Logged by N. Nambu101,657.4 SDip -60°Elev. 3157.2 feetStart Oct. 13/69Bearing N.60° EDepth 818 feetEnd Oct. 18/69

From	To	Width	Core Rec'y	Rock	Description
0	20.0	20.0	0	CASING	No core.
20.0	33.0	13.0	13.0	SANDSTONE-SILTSTONE	Weakly bedded. Limonite scattered along frs. at high angle.
33.0	165.5	133.5	133.0	CLAYSTONE	With silty sections - not carbonaceous, weakly bedded. Lower contact distinct.
165.5	174.5	9.0	9.0	SANDSTONE	Well bedded @ 20-30°. Medium grained calcite veins along beddings.
174.5	186.0	11.5	11.5	CLAYSTONE	Massive, no bedding.
186.0	217.5	31.5	31.5	SANDSTONE	With silty sections - well bedded @ 10-15°. Calcite veins along bedding and fractures @ 30-40°. Bottom contact gradational.
217.5	233.0	15.5	15.5	CLAYSTONE	Massive, lower contact distinct.
233.0	249.5	16.5	16.5	SANDSTONE	Well bedded At low angle @ 5 - 10°. At 233.5' cross-bedding.
249.5	265.0	15.5	15.5	SANDY SILTSTONE-CLAYSTONE.	258.5-261.0' - sandstone, cross-bedding @ 5-10°.
265.0	282.0	17.0	17.0	CLAYSTONE	Massive, non-carbonaceous.
282.0	323.0	41.0	41.0	SANDY SILTSTONE - CLAYSTONE.	Non carbonaceous. Well bedded @ 5-10°. Lower contact indistinct.
323.0	348.5	25.5	25.5	CLAYSTONE	Very similar to 265.0-282.0'.
348.5	377.0	28.5	28.5	CARBONACEOUS SILTSTONE.	Carbonaceous claystone. Well bedded @ 10-15°. Lower contact distinct.
377.0	392.0	15.0	9.0	COAL	Bright coal. Bedding 10-20°. 377.0-377.5' - coaly shale 379.0-379.3' - coaly shale 388.0-392.0' - bright coal, badly broken, 2' core loss.
392.0	406.0	14.0	11.0	COALY SHALE.	Badly broken, includes some bright coal bands. Bedding @ 15-20°.
406.0	419.0	13.0	12.5	CARBONACEOUS SHALE	with claystone bands - bedding @ 15-20°.
419.0	422.0	3.0	2.0	COALY SHALE.	Badly broken, many bright coal bands.
422.0	424.0	2.0	2.0	CARBONACEOUS SHALE.	Well bedded @ 20-25°. Fine calcite veinlets along beddings.
424.0	428.5	4.5	4.5	SANDY SILTSTONE.	Very fine grained. Well bedded @ 20-25°.
428.5	452.5	24.0	24.0	CARBONACEOUS CLAYSTONE WITH SILTY SECTIONS	Massive. At 450.0-452.0' - very fine calcite veinlets along beddings. @ 25°. Fine bright coal bands throughout section.

PROPERTY _____

SHEET NO. 2 of 4

Co-ordinates: _____

D.D.H. No. B-18

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
452.5	469.0	16.5	16.5	CARBONACEOUS SILTSTONE.	With fine grained sandy sections - well bedded @ 20-25°.
469.0	470.0	1.0	0.8	COALY SHALE.	Broken, bright coal bands.
470.0	477.0	7.0	7.0	SANDY SILTSTONE.	Well bedded @ 20-25°.
477.0	485.0	8.0	8.0	SANDSTONE.	Fine grained. Fine coaly seamlets along beddings throughout section. Well bedded @ 20°.
485.0	504.0	19.0	19.0	SILTSTONE-CLAYSTONE.	Calcite veins along fractures @ 60-70°. Well bedded @ 20-25°. At 495' - cross bedding. 503.0-504.0' - sandstone.
504.0	510.0	6.0	5.5	COALY SHALE.	Carbonaceous shale. 508.0-510.0' - very coaly, bedding @ 20-25°.
510.0	520.0	10.0	10.0	CARBONACEOUS SHALE.	With claystone sections - bedding @ 20-25°. Slickensided fracture at low angle
520.0	522.5	2.5	2.5	SANDY SILTSTONE	
522.5	523.5	1.0	1.0	SANDSTONE	Well bedded @ 20-25°. Top and bottom contacts distinct. Calcite veins along bedding.
523.5	532.0	8.5	8.5	CARBONACEOUS SHALE	with claystone sections - very similar to 510.0-520.0'.
532.0	534.5	2.5	2.5	SANDSTONE	Well bedded @ 20°. Fine coal seamlets along beddings. Lower contact irregular @ 40°.
534.5	538.0	3.5	3.5	CARBONACEOUS CLAYSTONE	Massive, lower contact gradational.
538.0	548.0	10.0	9.0	CARBONACEOUS SHALE.	Coaly shale - lower part very coaly and badly broken. Low angle slickensides 340-341' and 347-348'.
548.0	568.0	20.0	12.0 (estimated)	COAL	Bright coal. Poor recovery in parts. 548.0-549.0' - badly broken, bright coal. 549.0-554.0' - bright coal, good recovery, scattered pyrites. 554.5-556.5' - core loss (2 ft) Coal? 557.5-558.0' - coaly shale 558.0-562.0' - bright coal, contains coaly shale, badly broken. 562.0-567.0' - core lost (5 ft) Coal 567.0-568.0' - bright coal, badly broken.
568.0	569.5	1.5	1.0	COALY SHALE.	Broken.
569.5	591.5	22.0	22.0	CARBONACEOUS CLAYSTONE	With sandy siltstone bands - weakly bedded @ 60°.

PROPERTY _____

SHEET NO. 3 of 4

Co-ordinates: _____

D.D.H. No. B-18

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
591.5	597.0	5.5	4.0	COALY SHALE.	Badly broken throughout section. Looks like dull coal (high ash coal)
597.0	603.5	6.5	6.5	CARBONACEOUS SILTSTONE.	Well bedded @ 65°
603.5	606.0	2.5	1.0	COAL	Bright coal, badly broken, poor recovery.
606.0	611.0	5.0	5.0	CARBONACEOUS SHALE.	Bedding @ 60°.
611.0	624.0	13.0	12.5	CARBONACEOUS SILTSTONE	With coaly sections - bedding @ 60°. 619.0-623.0' - coaly shale. 623.5-624.0' - brecciated with calcite veining @ 60° fault (?)
624.0	643.0	19.0	19.0	SANDSTONE	Well bedded @ 60°. Calcite veins along bedding and fractures @ 60°, lower part coarse grained.
643.0	654.0	11.0	10.5	CARBONACEOUS SILTSTONE AND CARBONACEOUS CLAYSTONE.	643.0-643.1' - calcite vein @ 60°. 650.0-651.0' - calcite veins along bedding @ 60°. Lower part broken, scattered calcite veins, slickensides.
654.0	658.0	4.0	4.0	SANDSTONE	Very fine grained. Well bedded @ 60°. Coal seamlets along beddings, calcite veins along frs. @ 30-40°.
658.0	668.0	10.0	10.0	CARBONACEOUS CLAYSTONE.	Calcite veins @ 60-70°. Lower part very coaly and slickensided bedding @ 60°
668.0	670.0	2.0	1.5	COAL	Bright coal, bedding @ 60°. 668.0-668.5' - coaly shale.
670.0	676.0	6.0	5.5	COALY SHALE WITH CLAYSTONE BANDS.	Bedding @ 45-50°
676.0	678.0	2.0	2.0	SILTSTONE	Hard, scattered calcite veinlets.
678.0	683.0	5.0	5.0	COALY SHALE.	Carbonaceous shale. Upper part coaly, bedding @ 45-50°
683.0	706.0	13.5	13.0	CARBONACEOUS CLAYSTONE	With coaly sections - bedding @ 45° 693.0-693.5' - coaly shale. Bright coaly bands. 700.0-701.0' - broken
706.5	709.5	3.0	2.0	COALY SHALE.	Bright coaly bands, badly broken, slickensided fractures.
709.5	720.0	10.5	9.0	CARBONACEOUS SHALE.	Carbonaceous claystone. Bedding @ 45°. 713-714.5' - coaly shale. Slickensided fractures, very broken.
720.0	728.0	8.0	8.0	CARBONACEOUS CLAYSTONE.	Massive, weakly bedding @ 35-45° (?)
728.0	737.5	9.5	9.5	SILTSTONE	Bedding 45-50°. Calcite veins along fractures @ 45°.
737.5	753.0	15.5	15.5	SANDSTONE	Well bedded, light gray colour. 748.0 - bedding @ 60°. 752.0' - bedding @ 40° 750.0-753.0' - coarse grained, coal stringers: 750.5-751.0' - bright coal bands Calcite veins along beddings, and fractures throughout section.

PROPERTY _____

SHEET NO 4 of 4

Co-ordinates: _____

D.D.H. No. B-18

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
753.0	768.5	15.5	15.5	CLAYSTONE	(CARBONACEOUS) Bedding @ 45° 757.0-758.0' - coaly shale. 761.0-762.0' - coaly shale. Contains coaly sections throughout sections
768.5	779.0	10.5	10.5	SANDY SILTSTONE	Very fine grained, well bedded @ 35-40°. 774.0-774.5' - coaly shale, slickensides. Calcite veins along beddings and fractures.
779.0	810.0	31.0	31.0	SANDSTONE	Well bedded, upper part very fine grained, lower part grades into coarse grained. At 784' - bedding @ 25-30°. At 794' - 40-45°. At 803' - @ 45°. 786' - calcite veins (½") cross bedding @ 45°. 796-800' - coal stringers, From 796' - coarse grained Calcite veins throughout section.
810.0	811.0	1.0	0.5	COALY SHALE	Badly broken.
811.0	818.0	7.0	7.0	CARBONACEOUS CLAYSTONE AND SILTSTONE	Bedding @ 40-45°.

END OF HOLE 818 FEET

560

BRAMEDA RESOURCES LIMITED

PROPERTY PINE PASS COAL PROJECT

SHEET NO. 1 of 4

Co-ordinates:

101,128.8 N

99,707.7 E

Dip -60°

Bearing S 60°W

D.D.H. No. B-19

Elev. 3388.9'

Depth 719.0'

Logged by H. Jones

Start Oct. 15/69

End Nov. 1/69

From	To	Width	Core Rec'y	Rock	Description
0	7.0	7.0	0	CASING	No core.
7.0	29.0	22.0	12.0	CARBONACEOUS SILTSTONE WITH SOME CLAYSTONE	Badly broken, limonite on fractures @ 0°; 45°; 80°. At 25' - carbonaceous shale, with minor fine coal bands. Section poorly bedded @ 65°. Lower contact gradational.
29.0	82.0	53.0	52.0	FINE GRAINED SANDSTONE	Well bedded at 70°, increasing to 80° at 35'. Occasional fine calcite vein cross-cutting bedding. At 48 feet - fractures at 25° with gypsum - possible fault. 53.0-54.5') - coarse grained sandstone with coaly fracture 57.0-65.0') @ 55° at 58'. At 64' bedding at 80°. Cross bedded. At 76' - well cross bedded, averages 65-70°.
82.0	84.5	2.5	0.5	COAL SEAM	Large core loss (?) Assume length.
84.5	89.0	4.5	4.5	COALY SHALE WITH CARBONACEOUS CLAYSTONE (SHALE)	Very minor coal.
89.0	103.0	14.0	12.0	SILTSTONE	Approaching fine grained sandstone, well bedded at 55°, scattered 1/8" coal veinlets. At 89' - fault @ 20° - slickensides and calcite veining. From 97.5-102.0' - badly broken at low angles to 30°, calcite veining, fracture or fault zone at low angle.
103.0	117.0	14.0	14.0	CARBONACEOUS SILTSTONE	Some claystone sections, finer grained and darker than above. Minor pyrite on fractures.
117.0	124.5	7.5	7.5	CARBONACEOUS CLAYSTONE	Strongly fractured 120-122' @ 0°.
124.5	130.5	6.0	6.0	CARBONACEOUS SILTSTONE	Bedded @ 60°.
130.5	173.0	42.5	37.5	CARBONACEOUS CLAYSTONE	With local sections of siltstone. At 136' - several fine coaly stringers. Bedding 70-75°. Silty sections 137-139, 157-158 and 167'.
173.0	181.0	8.0	8.0	SILTSTONE	Dark and light bands, cross bedded @ 80°, dark bands carbonaceous. Lower contact gradational.
181.0	198.0	17.0	17.0	COARSE GRAINED SANDSTONE	Scattering of fine coaly seamlets @ 65-80°.
198.0	199.0	1.0	1.0	CARBONACEOUS SILTSTONE	
199.0	203.0	4.0	2.5	CARBONACEOUS CLAYSTONE	Slightly silty.
203.0	208.0	5.0	0.1	COAL SEAM (??)	Only fine coaly grindings and bits of carbonaceous shale.
208.0	215.0	7.0	6.5	CARBONACEOUS CLAYSTONE	Slightly silty.
215.0	216.5	1.5	1.1	COAL SEAM	Badly broken, some included shale.
216.5	217.8	1.3	1.3	BLACK CARBONACEOUS SHALE	Bedding @ 80°.

PROPERTY _____

SHEET NO. 2 of 4

Co-ordinates: _____

D. D. H. No. B-19 _____

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
217.8	218.2	0.4	0.4	COAL SEAM	
218.2	258.0	39.8	39.8	SILTSTONE	Banded with carbonaceous claystone. Some cross-bedded sandy bands, bedding @ 80° to 238, then reduced to 70-80 Lower contact gradational to carbonaceous shale.
258.0	269.0	11.0	4.0	COAL SEAM	Very poor recovery. 258.0-268.5' - bright banded coal. 268.5-269.0' - coaly shale.
269.0	289.5	20.5	20.5	SILTSTONE	With claystone, similar to 218.3-258.0'. 269.0-271.0' - carbonaceous shale, minor coal. Sandy band @ 75°.
289.5	295.5	6.0	4.0	CARBONACEOUS SHALE	With coal seam 293.5-294.5'.
295.5	306.0	10.5	10.0	SILTSTONE	Similar to 269.0-289.5' 304.0-306.0' - Coarsely fractured, calcite veining.
306.0	317.3	11.3	10.8	CARBONACEOUS SILTSTONE OR CLAYSTONE	Very fine grained, looks like claystone but slightly coarser grained, bedded @ 70°.
317.3	322.0	4.7	1.8	COAL SEAM	Bright banded coal, badly broken.
322.0	326.0	4.0	4.0	CARBONACEOUS SHALE	Fine scattered coal seams.
326.0	333.0	7.0	7.0	CARBONACEOUS SILTSTONE	Bedded @ 70°.
333.0	337.0	4.0	4.0	FINE GRAINED SANDSTONE	Well bedded @ 70°. At lower contact, bedding changes sharply to 45°.
337.0	355.0	18.0	18.0	CARBONACEOUS CLAYSTONE-SILTSTONE	Bedding @ 60-70°.
355.0	356.0	1.0	1.0	CARBONACEOUS SHALE	
356.0	364.0	8.0	3.5	COAL SEAM	Poor recovery, mostly bright banded coal.
364.0	368.1	4.1	4.0	COALY SHALE	
368.1	370.1	2.0	1.0	COAL SEAM	Width estimated, bright banded coal.
370.1	372.0	1.9	1.5	COALY SHALE	
372.0	373.0	1.0	0.8	COAL SEAM	Bright banded @ 45°(?)
373.0	387.0	14.0	14.0	CARBONACEOUS CLAYSTONE	- Coaly plant remains
387.0	428.0	41.0	41.0	CARBONACEOUS SILTSTONE	- Light sandy bands with dark finer grained bands, some included claystone. 402.0-417.0' - sandy siltstone, well bedded @ 70°.
428.0	431.0	3.0	3.0	CARBONACEOUS CLAYSTONE OR SHALE	
431.0	441.7	10.7	7.0	COAL SEAM	Bright banded
441.7	444.5	2.8	2.8	CARBONACEOUS CLAYSTONE	

PROPERTY _____

SHEET NO. 3 of 4

Co-ordinates: _____

D.D.H. No. B-19

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
444.5	449.5	5.0	2.5	COALY SHALE.	Some short sections of bright banded coal.
449.5	470.5	21.0	21.0	CARBONACEOUS SILTSTONE.	Bedded @ 65-70°. 454-457' - carbonaceous claystone, coaly fractures 454-455'. 467-470' - sandy, cross-bedded, average 70-75°. At 469.5' - large inclusions of dark siltstone. Calcite filled fr. @ 30° @ 470' - possible fault.
470.5	488.0	17.5	15.5	CARBONACEOUS CLAYSTONE,	Shaly in part. 474.7-476.7' - coaly frs. @ 70°, also 484-485'.
488.0	526.0	38.0	37.0	CARBONACEOUS SILTSTONE.	Very fine grained, very minor bedding to 499.0 - similar to above section but slightly coarser grained. Well bedded from 499.0 @ 70-80°. 506.5-5.7.5' - coaly frs. @ 45-60°. Section banded with darker, finer grained siltstone or claystone, some cross bedding. 522.0' - calcite filled brecciated ½" vein @ 60° - fault (?) 522.0-526.0' - increase in sand, approaching fine grained sandstone.
526.0	536.5	10.5	10.5	FINE GRAINED SANDSTONE.	Well bedded @ 65°, cross-bedded. At 529' - contorted bedding. Occasional calcite veinlet cross-cutting bedding.
536.5	561.8	15.3	15.0	CARBONACEOUS SILTSTONE.	With claystone or carbonaceous shale sections 536.5 - 538.5' - carbonaceous claystone. 538.5 - 552.0' - dark, fine grained, not well bedded siltstone @ 65°. 552.0 - 555.0' - carbonaceous shale, few coaly frs. 65° - 70°. 555.0 - 561.8' - dark, fine grained, poorly bedded @ 60°.
561.5	567.0	5.5	4.0	COAL SEAM	561.5 - 561.8' - carbonaceous shale, recovery 0.3'. 561.8 - 565.0' - bright banded coal - good rec'y 2.7'. 565.0 - 567.0' - poor recovery, appears to be mostly coal, ending in carbonaceous shale. Recovery 1.0'.
567.0	570.0	3.0	2.7	CARBONACEOUS CLAYSTONE	568.0-568.8' - coaly shale
570.0	573.0	3.0	3.0	CARBONACEOUS SILTSTONE.	Weak bedding @ 70-75°.
573.0	575.0	2.0	0.2	COAL SEAM	Very poor recovery.
575.0	607.0	32.0	27.0	CARBONACEOUS SILTSTONE.	From 589.5-594' - core lost. Bits of coal and shale - possible coal seam (?) At 589.3' - slickensides at many angles - 10°, 60° etc., fine calcite veinlets - probable fault zone.

BRAMEDA RESOURCES LIMITED

PROPERTY _____

SHEET NO. 4 of 4

Co-ordinates: _____

D.D.H. No. B-19

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
575.0	607.0	Cont.			597.0-597.5' - coal veinlets @ 70°. 602' - brecciated fracture @ 40° - filled with calcite - fault @ 40°(?)
607.0	618.0	11.0	11.0	WELL BEDDED	SANDY SILTSTONE OR FINE GRAINED SANDSTONE. Interbedded with narrow carbonaceous beds. Bedding @ 70°.
618.0	621.0	3.0	2.5	CARBONACEOUS	CLAYSTONE
621.0	623.0	2.0	0.8	COAL SEAM	Poor recovery.
623.0	624.2	1.2	1.2	CARBONACEOUS	CLAYSTONE OR SHALE.
624.2	633.5	9.3	6.4	COALY SHALE	Some core loss, maybe coal. From 624.2-627.0' - loss 1.2 From 627-633.5' - loss 1.6' - may be coal. 631.5-633.0. Coaly seams @ 45°.
633.5	654.6	21.1	21.1	SILTSTONE	Bedded @ 50°, with sandy beds and dark carbonaceous ones. 642.5-645.0' - fine grained sandstone.
654.6	663.6	9.0	9.0	COARSE GRAINED	SANDSTONE. Coaly fractures @ 60°.
663.6	669.5	5.9	5.9	SILTSTONE	Dark, fine grained, weak bedding @ 55-60°, carbonaceous.
669.5	678.0	8.5	8.5	FINE GRAINED	SANDSTONE. Bedded @ 60°, cross bedding.
678.0	680.0	2.0	1.0	COALY SHALE	Badly broken.
680.0	689.0	9.0	9.0	SILTSTONE	Bedded with fine grained carbonaceous beds @ 55°; grades to carbonaceous claystone 680-682.0.
689.0	700.0	11.0	11.0	SANDSTONE	Medium grained, crossbedded @ 60°.
700.0	705.0	5.0	5.0	CARBONACEOUS	SILTSTONE. Grades to carbonaceous claystone.
705.0	708.5	3.5	3.5	COALY SHALE	Coal seam 706-707.7'
708.5	719.0	10.5	9.5	CARBONACEOUS	SILTSTONE. Bedded @ 45°, claystone in part.
					END OF HOLE - 719.0 FEET

560

BRAMEDA RESOURCES LIMITED

PROPERTY

PINE PASS COAL PROJECT

SHEET NO. 1 of 4

Co-ordinates:

D.D.H. No. B-20

Logged by N. Nambu & H. Jones.

98,002.8 N

Dip -83°

Elev. 3157.2 feet

Start Oct. 13/69

101,657.4 E

Bearing N 60° E

Depth 957.0 feet

End Oct. 14/69

From	To	Width	Core Rec'y	Rock	Description
0	20.0	20.0	0	CASING	No core.
20.0	36.0	16.0	14.5	CLAYSTONE	(Carbonaceous) with silty section - bedding @ 25° . Lower contact grades into coaly.
36.0	41.5	5.5	4.0	COAL	Bright banded coal. Bedding @ 25° .
41.5	49.5	8.0	7.0	CARBONACEOUS COALY SHALE.	With claystone sections - bedding @ $25-30^{\circ}$. 46.5-47.0' - coaly shale.
49.5	58.5	9.0	9.0	CARBONACEOUS CLAYSTONE.	Bright coaly sections throughout section, fine calcite veinlets along bedding @ $20-25^{\circ}$.
58.5	63.0	4.5	3.5	CARBONACEOUS SHALE.	With claystone bands - bedding @ $25-30^{\circ}$.
63.0	67.5	4.5	4.5	SANDSTONE	Fine grained. Well bedded @ $20-25^{\circ}$.
67.5	84.5	17.0	17.0	CARBONACEOUS SHALE -	73.0-74.0' - broken, fine coal seams. 81.0-82.5' - coal, pyrite along frs. bedding @ 20° .
84.5	89.0	4.5	4.5	CARBONACEOUS SILTSTONE.	With sandy bands. 86.0' - 1" coal seam at 20° .
89.0	101.0	12.0	12.0	CARBONACEOUS CLAYSTONE.	Weak bedding @ 20° .
101.0	128.0	27.0	27.0	SILTSTONE	Bedding @ 25° . Lower contact grades into shale. 110.5' - calcite veinlets in brecciation @ 60° . Possible fault.
128.0	133.5	5.5	3.3	COAL	Bright banded, some shale bands. Badly broken, poor rec'y
133.5	139.0	5.5	4.2	COALY SHALE.	Bright coal band 3" at 138.0'. Well bedded @ 20° .
139.0	147.5	8.5	8.5	CLAYSTONE (CARBONACEOUS)	No bedding, massive, lower contact gradation
147.5	154.0	6.5	6.5	SILTSTONE	With sandstone band. 147.5-149.0' - sandstone band, bedding @ 25° .
154.0	158.4	4.4	4.4	CARBONACEOUS SHALE.	Upper part claystone. Bedding @ 28° .
158.4	161.5	3.1	2.2	COAL	Bright banded coal, poor recovery. Lower part badly broken.
161.5	164.5	3.0	2.2	CARBONACEOUS SHALE.	Bedding @ 28°
164.5	173.0	8.5	8.5	CARBONACEOUS CLAYSTONE.	Lower contact sharp at 28° . Weak bedding @ 30°
173.0	181.5	8.5	8.5	CARBONACEOUS SILTSTONE.	Poor bedding @ 20° . Sharp contact @ 30° .
181.5	187.0	5.5	5.5	SANDSTONE	Fine grained, well bedded @ 28° . Bedding contorted (185.0 - 186.5'). Lower contact sharp at 35° .
187.0	219.8	32.8	32.8	CARBONACEOUS CLAYSTONE.	Massive. 204-205' - coarse grained sandstone, well bedded @ 20° . Fine coaly seams on bedding. Very sharp contact @ 20° .

PROPERTY _____

SHEET NO. 2 of 4

Co-ordinates: _____

D.D.H. No. B-20

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
219.8	223.6	3.8	3.0	COAL	Bright banded coal. 222 - 223' - light grey medium grained soft rock, looks like sandstone.
223.6	235.5	11.9	10.9	COALY SHALE	Bedding @ 20°. Many slickensided frs. along bedding.
235.5	238.3	2.8	2.5	COAL	Bright banded, fine pyrite along beddings.
238.3	244.0	5.7	5.7	CLAYSTONE (CARBONACEOUS)	Weakly bedded @ 30°. At 239.3' - light grey coarse grained soft rock (1")
244.0	258.0	14.0	14.0	SANDSTONE	Fine grained. Bedding @ 20°. Cross bedding in parts.
258.0	298.0	40.0	40.0	SANDSTONE	Coarse grained. Well bedded @ 30°. Coal stringers on bedding.
298.0	304.5	6.5	6.5	CARBONACEOUS SILTSTONE	Bedding @ 30°. Lower contact grades into coaly.
304.5	308.5	4.0	3.8	CARBONACEOUS SHALE	Some bright coal seams along beddings. @ 30°. 306.5' - calcite veins, possible fault @ 30°.
308.5	315.0	6.5	6.5	CARBONACEOUS SILTSTONE	Weakly bedded @ 30-35°.
315.0	321.5	6.5	6.5	CARBONACEOUS CLAYSTONE	319-320' - coaly shale, bedding @ 30°.
321.5	349.0	27.5	27.5	SILTSTONE	With sandy section - well bedded @ 30°, bottom contact gradational.
349.0	355.5	6.5	6.5	CALCAREOUS CLAYSTONE	- light grey. Sharp contact @ 35°. No bedding, calcite veins at 352-353'. Frs @ 65°.
355.0	361.5	6.5	6.5	CARBONACEOUS CLAYSTONE	Lower half foot light grey soft medium grained rocks, looks like sandstone. Bedding @ 30°.
361.5	364.0	2.5	1.5	COAL	Bright banded coal.
364.0	368.0	4.0	3.0	CARBONACEOUS CLAYSTONE	Grades into shale, several coal frs. @ 30°.
368.0	391.3	23.3	21.0	CARBONACEOUS SHALE	Coal in parts, fine coal seams @ 30°. Badly broken from 377.0 to 382'.
391.3	493.3	102.0	101.0	CARBONACEOUS SILTSTONE	- carbonaceous claystone. Poor bedding @ 20-30°. 408-413.0' - coaly sections 412.5' - possible half foot of coal 476-477' - coaly shale, broken. Bottom contact sharp @ 400
493.3	538.0	44.7	44.7	SANDSTONE	Coarse grained - coal fracture along bedding @ 30°. 526-527' - coaly fracture 527-528', 539' - brecciated calcite veins. 534-538' - calcite frs. parallel core, possible fault.
538.0	549.0	11.0	11.0	CARBONACEOUS CLAYSTONE	Brown inclusion. At 543' massive, no bedding. Slickensided frs. 548 @ 10°. Lower contact gradational.

PROPERTY _____

SHEET NO. 3 of 4

Co-ordinates: _____

D.D.H. No. B-20

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
549.0	598.0	49.0	49.0	CARBONACEOUS SILTSTONE.	Poor bedding @ 30°.
598.0	608.0	10.0	10.0	SANDSTONE.	Fine grained, bedding variable @ 0 - 30°, lower contact distinct @ 20°.
608.0	629.0	21.0	17.5	CARBONACEOUS CLAYSTONE.	Coaly frs. 608-610'. 613.0-616.0' - coaly frs. 616-629.0' - coaly frs.
629.0	749.5	120.5	118.5	CARBONACEOUS SILTSTONE.	Claystone. Bedding @ 30° 650.5-651.0' - coaly frs. @ 30°. 656.5- pyrite veins contorted bedding. Scattered coaly frs. 656-663'. Bedding @ 30°. At 678.0' - bedding @ 30-40°. At 674.0' - cross bedding. 679-688' - carbonaceous claystone. 685' - calcite frs. @ 20°. 705' - calcite veins @ 20°. 702-739' - mostly carbonaceous claystone. Lower contact grades into coaly.
749.5	758.0	8.5	4.5	COALY SHALE.	Badly broken throughout section. 749.5-751.0' - coal, bright banded, includes coaly shale. Bedding @ 30°. Slickensided fractures.
758.0	763.5	5.5	5.5	CARBONACEOUS CLAYSTONE.	Calcite fractures. Coaly plant fossils.
763.5	770.5	7.0	6.5	COALY SHALE	Bedding @ 15°.
770.5	793.0	22.5	22.5	CARBONACEOUS SILTSTONE.	Very contorted bedding.
793.0	820.0	35.0	35.0	CARBONACEOUS CLAYSTONE.	Upper contact gradational, fine hairlike calcite veining. Coaly shale 803-804'. 818-819' - coaly fr. @ 10° From 818-828' - scattered coal seams @ 20°.
828.0	838.0	10.0	10.0	CARBONACEOUS SILTSTONE.	Very slightly silty.
838.0	849.0	11.0	11.0	SILTSTONE	Grading downward to fine grained sandstone - bedded @ 30°.
849.0	859.0	10.0	10.0	CARBONACEOUS CLAYSTONE	- slightly silty - at 852-853' - fractured and brecciated, at 0°, calcite veining - fault at low angle or 40°(?)
859.0	864.5	5.5	5.5	SILTSTONE	Very fine grained, well bedded @ 30°, lower contact gradational.
864.5	876.0	11.5	11.5	SANDSTONE	Medium grained. Well bedded @ 25-30°. Crystallized calcite veins along fractures @ 70-80° and bedding. 869.0-870' - coal seams and calcite veins along slickensided frs. @ 60-70°. At 873.0' - calcite vein (.05") probably fault (?), Lower contact distinct.

PROPERTY _____

SHEET NO. 4 of 4

Co-ordinates: _____

D.D.H. No. B-20

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
876.0	886.0	10.0	10.0	CARBONACEOUS CLAYSTONE.	Massive. At 877.5, 884.0' - fine coal bands along slickensided fractures @ 30-40°.
886.0	893.0	7.0	7.0	SILTSTONE	With carbonaceous claystone sections - weakly bedded @ 30-35°. At 889.5' - calcite vein (0.5") along fracture @ 80°.
893.0	900.0	7.0	7.0	CARBONACEOUS CLAYSTONE.	Very similar to 876.0 to 886.0'. 896.0 - 896.5' - coal seams and calcite veins mixture along fracture @ 25-30°.
900.0	908.0	8.0	8.0	CARBONACEOUS SILTSTONE.	Very fine grained, well bedded @ 35-40°, lower contact gradational.
908.0	957.0	49.0	48.5	CARBONACEOUS CLAYSTONE with siltstone sections.	At 918.0' - coaly section with calcite veins @ 25°. At 923.0' - coaly section with calcite veins at 25°. 956.0-957.0' - coaly shale, with calcite veins bedding @ 30°. At 924.5' - calcite vein (0.5") along fracture @ 45°. At 929.5' - well bedded @ 30-35°, cross bedding.
END OF HOLE 957.0 FEET					

560

BRAMEDA RESOURCES LIMITED

PROPERTY PINE PASS COAL PROJECT

SHEET NO. 1 of 2

Co-ordinates:

96,444.3 N

Dip -76°

Elev. 2879.7'

102,810.9 E

Bearing $S 60^{\circ}W$

Depth 748 feet

D.D.H. No. B-21

Logged by H. Jones

Start Oct. 25, 1969

End Nov. 4, 1969

From	To	Width	Core Rec'y	Rock	Description
0	121.0	121.0	0	CASING	No core.
121.0	139.7	18.7	17.0	CARBONACEOUS SILTSTONE.	Bedded at 45° , minor claystone sections.
139.7	152.0	12.3	8.5	CARBONACEOUS CLAYSTONE.	140-146' - badly broken, gougy, large core loss, probable fault zone; 148-152' - shaly in part.
152.0	183.0	31.0	31.0	CARBONACEOUS SILTSTONE.	Bedded @ 45° , 157-159' - coaly shale, very minor fault - 163-167', approaching fine grain sandstone
183.0	189.3	6.3	6.3	CARBONACEOUS CLAYSTONE.	Massive, 187-189.3', coaly shale.
189.3	197.0	7.7	7.7	CARBONACEOUS SILTSTONE.	Poorly bedded @ 45° .
197.0	203.0	6.0	6.0	COARSE GRAIN SANDSTONE.	well bedded @ 45° , fine coaly fractures along bedding.
203.0	213.7	10.7	10.7	SILTSTONE	Grading to fine grain sandstone - cross bedding, bedding changes to 30° at bottom.
213.7	215.5	1.8	1.8	CARBONACEOUS SHALE.	With coaly fractures @ 45° .
215.5	285.0	69.5	69.5	CARBONACEOUS SILTSTONE.	Poorly bedded to 221.0'; 221-229' - mostly fine grain sandstone; 226' brecciated and calcite veining @ 35° , 229-285' - carbonaceous siltstone with some shaly sections, section dark and fairly poor bedding @ 35° . 253-254.5' - carbonaceous shale, also @ 263.3-265.0' coaly shale with bedding @ 45° , also @ 267-272', fine grain sandstone bedded @ 45° . 272-275' - coaly shale. 282-284.5' - fine grain sandstone with cross bedding @ 45°
285.0	312.0	27.0	25.5	CARBONACEOUS CLAYSTONE WITH MINOR COALY SHALY SECTIONS.	306.9-309.5' - coal seam, b.b. coal, recovery of 1.5' of coal.
312.0	318.0	6.0	6.0	CARBONACEOUS SILTSTONE OR FINE GRAINED SANDSTONE.	Massive.
318.0	329.7	11.7	11.7	FINE GRAINED SANDSTONE.	Grading to coarse grain sandstone. Fine grain to 322', bedding from $30-45^{\circ}$, many coal and calcite veinlets in coarse grain sandstone, lower contact sharp @ 60° .
329.7	452.7	123.0	123.0	CARBONACEOUS SILTSTONE AND CLAYSTONE.	Interbedded @ 45° . 322' - brecciated and calcite veining, probable fault @ 80° 356-368' - mostly carbonaceous claystone, occasional coaly fracture @ 45° . 428-44' - mostly carbonaceous claystone. 448' - bedding @ 30° .
452.7	459.5	6.8	6.8	CARBONACEOUS CLAYSTONE.	457-459' - slickensided @ 0° .
459.5	468.0	8.5	8.5	CARBONACEOUS SILTSTONE.	Poorly bedded @ 30° .

PROPERTY _____

SHEET NO. 2 of 2

Co-ordinates: _____

D.D.H. No. B-21

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
468.0	478.0	10.0	10.0	CARBONACEOUS CLAYSTONE	472-472.5' and 475.5'-477.0', coaly seams @ 30-45°.
478.0	486.1	8.1	8.1	CARBONACEOUS SILTSTONE WITH SANDY SECTIONS	Well bedded @ 35°.
486.1	526.0	40.1	40.1	CARBONACEOUS CLAYSTONE	Slightly silty in part, poorly bedded @ 30° 506-507' - several ½ - 1" coal seams @ 40°. 506-513' - carbonaceous shale with scattered fine coal seams.
526.0	550.0	24.0	18.7	COAL SEAM	526-533.3' - bright banded coal. 533.3-536.5' - coaly shale. 536.5-540.0(?) - bright banded coal 540.0-542.0' - carbonaceous claystone 542-547' - bright banded coal with minor included shale, bedding @ 30-35°. 547-550' - coaly shale.
550.0	559.9	9.0	9.0	CARBONACEOUS CLAYSTONE	Occasional coaly fractures, lower contact gradational.
559.0	571.0	12.0	12.0	CARBONACEOUS SILTSTONE	Bedded @ 35°.
571.0	587.0	16.0	15.0	CARBONACEOUS CLAYSTONE	Coaly from 577-583.5', coaly fractures @ 30°
587.0	627.5	40.5	40.5	SILTSTONE	Weakly carbonaceous, bedding @ 35° but contorted. 601-610' - approach fine grain sandstone 617-623' - mostly carbonaceous claystone.
627.5	629.0	1.5	1.5	CARBONACEOUS CLAYSTONE	to 629, grades to carbonaceous shale.
629.0	633.0	4.0	2.5	COAL SEAM	Bright banded coal, seam bedded @ 40°.
633.0	654.0	21.0	21.0	CINE GRAIN SANDSTONE	Well bedded and cross bedded @ 30-35°, lower contact gradational.
654.0	671.0	17.0	17.0	CARBONACEOUS SILTSTONE	Bedding contorted, averages 35°.
671.0	676.0	5.0	5.0	CARBONACEOUS CLAYSTONE	
676.0	708.0	32.0	28.5	COAL SEAM	676-677' - coaly shale, recovery 1.0'. 677-698' - good coal, recovery 18.5'. 698-700' - coaly shale, recovery 2.0'. 700-708' - carbonaceous shale, recovery 7.0'.
708.0	748.0	40.0	40.0	CARBONACEOUS SILTSTONE	Grades to carbonaceous claystone at the end.

END OF HOLE 748 FEET

560

BRAMEDA RESOURCES LIMITED

PROPERTY PINE PASS COAL PROJECT

SHEET NO. 1 of 3

Co-ordinates:

100,898.5 N

Dip -70°

Elev. 3432.1'

Logged by H. J. & N. N.

Start Nov. 1, 1969

99,382.8 E

Bearing $S.60^{\circ}W$

Depth 623'

End Nov. 12, 1969

From	To	Width	Core Rec'y	Rock	Description
0	22.0	22.0	0	CASING	No core.
22.0	41.0	19.0	19.0	CARBONACEOUS CLAYSTONE	WITH SILTY SECTIONS. Fine calcite veins along fractures at $30-45^{\circ}$, well bedded at 60° .
41.0	55.5	14.5	11.0	COAL SEAM	Bright banded coal, no impurities, good recovery, bedding at 60° .
55.5	58.0	2.5	1.0	COAL SEAM	Bright banded coal, bedded at 45° , recovery of a foot.
58.0	99.0	41.0	38.0	CARBONACEOUS SILTSTONE & CLAYSTONE	Bedding at 60° , badly broken from 86-89', possibly some coal in this section.
99.0	117.0	18.0	14.5	CARBONACEOUS CLAYSTONE	WITH COALY SECTIONS - 109.5-110.5' - is coal, coaly fractures at 114.5'.
117.0	164.5	47.5	45.5	CARBONACEOUS SILTSTONE	Bedded at 50° , cross bedding, some claystone sections.
164.5	176.0	11.5	4.4	COAL & SHALE	164.5-168.0' - badly broken, mixed coal and shale, recovery $1\frac{1}{2}'$. 168.0-170.0'(estimated) - carbonaceous shale, recovery 0.9'. 170.0-176.0' - badly broken, mostly coal (?), recovery 2.0'.
176.0	177.0	1.0	0.6	CARBONACEOUS CLAYSTONE	
177.0	179.0	2.0	2.0	CARBONACEOUS SILTSTONE	- bedded at 60° .
179.0	184.0	5.0	2.5	COAL SEAM	179-180' - carbonaceous shale 180-184' - coal (estimated)
184.0	203.0	19.0	19.0	CARBONACEOUS CLAYSTONE	
203.0	256.1	53.1	53.1	CARBONACEOUS SILTSTONE	Bedded at $50-50^{\circ}$, some short claystone sections 245-249.5' - carbonaceous shale, coaly fractures, calcite veining, grades to carbonaceous claystone at end.
256.1	270.0	13.9	4.0	COAL SEAM	Very badly broken, bright banded coal, bedding at 50° .
270.0	277.1	7.1	6.6	CARBONACEOUS CLAYSTONE	Slightly silty.
277.1	284.5	7.4	5.2	COALY SHALE	277.1-280.0' - very poor recovery, 0.7' recovery. 280.5-281.5' - coal bedded at 50° , 1.0' recovery.
284.5	314.6	30.1	30.1	CARBONACEOUS SILTSTONE	Some claystone sections, bedding at 50° ; 307-309' - fine grain sandstone, bedded at 50° .
314.6	328.5	13.9	13.4	CARBONACEOUS CLAYSTONE	Coaly fractures from 325-327'.
328.5	333.0	4.5	4.5	CARBONACEOUS SILTSTONE	Bedding at 50° .
333.0	337.0	4.0	1.5	COAL SEAM	Bright banded coal, badly broken, scattered pyrite around the fractures, recovery 1.5'.

PROPERTY _____

SHEET NO. 2 of 3

Co-ordinates: _____

D.D.H. No. B-22

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
337.0	348.0	11.0	11.0	CARBONACEOUS CLAYSTONE	Massive, no bedding, calcite vein along the fracture.
348.0	383.5	35.5	35.5	CARBONACEOUS SILTSTONE & CARBONACEOUS CLAYSTONE	Bedding at 48°, calcite vein along bedding fractures, fractures at high angle; 358.5-360.0' - carbonaceous shale.
383.5	387.5	4.0	4.0	CARBONACEOUS CLAYSTONE	- 387', slickensided, lower contacts grade to coaly.
387.5	389.0	1.5	1.5	COALY SHALE	Bedded at 45°.
389.0	396.0	7.0	7.0	CARBONACEOUS CLAYSTONE	Bedded at 45°, find calcite veins around bedding.
396.0	403.5	7.5	7.5	CARBONACEOUS SILTSTONE WITH CLAYSTONE SECTIONS	Well bedded at 45°, lower contact distinct.
403.5	411.5	8.0	5.0	COAL SEAM	403.5-405.0' - coaly shale, contains bright coaly band. 405.0-409.0' - bright banded coal, badly broken. 409.0-410.0' - coaly shale 410.0-411.5' - bright banded coal, good recovery, pyrite around bedding.
411.5	427.0	15.5	15.5	CARBONACEOUS CLAYSTONE	Massive, no bedding, 414' - calcite around fractures at 45°, 419-421' - coaly shale, lower contact is gradational.
427.0	430.5	3.5	3.5	CARBONACEOUS SILTSTONE	Well bedded at 35-40°.
430.5	438.5	8.0	8.0	CARBONACEOUS CLAYSTONE WITH SILTY SECTIONS	Bedding from 20-25°, lower contact grades to coaly.
438.5	456.0	17.5	7.5	COALY SHALE WITH COALY SECTIONS	
456.0	467.0	11.0	11.0	CARBONACEOUS CLAYSTONE	
467.0	469.5	2.5	2.0	COALY SHALE WITH COAL MIXTURE	
469.5	476.5	7.0	6.5	CARBONACEOUS CLAYSTONE & SILTSTONE MIXTURE	
476.5	483.5	7.0	5.0	COAL SEAM	476.5-478.0' - coaly shale 478.0-482.0' - good coal, scattered pyrite around bedding bedded at 20°, recovery of 2.0'. 482.0-483.5' - coaly shale
483.5	496.0	12.5	12.5	CARBONACEOUS CLAYSTONE WITH SILTY BAND	Weakly bedded at 30°
496.0	504.0	8.0	8.0	SILTSTONE	Well bedded at 45°, cross bedding.
504.0	507.5	3.5	3.5	FINE GRAIN SANDSTONE	Well bedded at 50°, calcite vein along the bedding.
507.5	511.0	3.5	2.5	CARBONACEOUS CLAYSTONE	Lower part has slickensided fractures, possible fault (?)
511.0	518.0	7.0	7.0	SILTSTONE	511.0' - bedded at 10°; 517.0' - sandy siltstone, well bedded at 60°, 514.0' - calcite vein, slickensided frs., possible fault zone (?)

PROPERTY _____

SHEET NO. 3 of 3

Co-ordinates: _____

D.D.H. No. B-22

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
518.0	541.0	23.0	23.0	CARBONACEOUS CLAYSTONE	WITH SILTY SECTIONS. Bedding @ 40-50°, 520-526' - siltstone, well bedded at 40°.
541.0	550.0	9.0	5.5	COAL SEAM	541.0-542.0' - bright coal. 542.0-543.0' - coaly shale 543.0-545.5' - bright coal, badly broken. 545.5-547.0' - coaly shale. 547.0-550.0' - coal, bright banded, good recovery.
550.0	557.0	7.0	5.0	COALY SHALE	Some bright coal bands contained. Badly broken partly. Bedding @ 40°.
557.0	567.0	10.0	9.5	CARBONACEOUS CLAYSTONE	Massive. No bedding.
567.0	577.0	10.0	10.0	SILTSTONE	Well bedded @ 60°. Lower contact grades into sandy.
577.0	598.0	21.0	21.0	SANDSTONE	577.0-580.0' - fine grained, well bedded @ 50°. 580.0-598.0' - medium grained, well bedded @ 60-70°.
598.0	610.0	12.0	12.0	CARBONACEOUS CLAYSTONE	Very weakly bedded @ 60°. At 602', 603' - coaly section (< 1")
610.0	623.0	13.0	13.0	SILTSTONE	WITH CLAYSTONE SECTION. Well bedded @ 70°.
END OF HOLE - 623.0 FEET					

560

BRAMEDA RESOURCES LIMITED

PROPERTY PINE PASS COAL PROJECT

SHEET NO. 1 of 2

Co-ordinates:

96,444.3N

102,810.9E

D.D.H. No. B-23

Dip $-45^{\circ}30'$ Bearing $S 60^{\circ}W$

Elev. 2879.8'

Depth 495 feet

Logged by H.J. & N.N.

Start Nov. 4, 1969

End Nov. 12, 1969

From	To	Width	Core Rec'y	Rock	Description
0	113.0	113.0	0	CASING	No core.
113.0	117.5	4.5	2.5	CARBONACEOUS CLAYSTONE	- coaly fractures at 117.0'.
117.5	213.0	95.5	91.5	CARBONACEOUS SILTSTONE.	Bedding at 70° . 138.6-139.6' - coaly shale. 197-202' - fine grain sandstone, bedded at 80° , cross-bedding. 201' has a one inch calcite vein at 60° . 204-207.5' - carbonaceous shale with coaly fractures.
213.0	229.0	16.0	15.0	CARBONACEOUS CLAYSTONE WITH COALY FRACTURES.	225' has a 3/4" pyrite zone.
229.0	341.5	112.5	112.5	CARBONACEOUS SILTSTONE & CLAYSTONE.	Bedded at 80° , with occasional coaly fractures. 247.5-272' - mostly claystone, massive. 272.5' has a large pyrite inclusion, 290' - bedding @ 65° .
341.5	357.0	15.5	13.5	CARBONACEOUS CLAYSTONE WITH MINOR COALY FRACTURES.	345' has large brown inclusions.
357.0	367.5	10.5	8.0	COAL SEAM	Bright banded coal. 357.9-360.0' - bright banded coal) 360.0-361.0' - carbonaceous shale) 361.0-362.0' - coal) SEAM 78 362.0-363.5' - shale) 363.5-365.0' - coaly shale) 365.0-367.5' - bright banded coal)
367.5	377.0	9.5	9.5	CARBONACEOUS CLAYSTONE	
377.0	387.0	10.0	10.0	CARBONACEOUS SILTSTONE	- bedded at 60° .
387.0	396.0	9.0	9.0	CARBONACEOUS CLAYSTONE	- shaly sections, minor coal fractures 391-392' - several 3" coal seams.
396.0	422.0	26.0	26.0	CARBONACEOUS SILTSTONE.	Bedded at 60° , some claystone sections, well bedded at $65-70^{\circ}$. 410' - cross bedding.
422.0	436.0	14.0	14.0	SANDSTONE.	Light grey in colour, medium grained, calcite vein along fracture at 45° , well bedded at 70° .
436.0	436.5	0.5	0.5	CARBONACEOUS CLAYSTONE.	Lower contact sharp.
436.5	438.0	1.5	1.5	COAL SEAM	Upper part includes coaly shale, bright banded coal, lower part is badly broken.
438.0	441.0	3.0	3.0	CARBONACEOUS CLAYSTONE WITH SILTY BANDS.	Weakly bedded at 70° (?). 440' - coaly section.
441.0	454.0	13.0	13.0	CARBONACEOUS SILTSTONE.	Well bedded at 55° .
454.0	456.8	2.8	2.8	CARBONACEOUS SHALE AND COALY SHALE.	Bedding at 70° .

PROPERTY _____

SHEET NO. 2 of 2

Co-ordinates:

_____D.D.H. No. B-23

Logged by _____

Dip _____

Elev. _____

Start _____

Bearing _____

Depth _____

End _____

From	To	Width	Core Rec'y	Rock	Description
456.8	474.0	17.2	10.0 (estimated)	COAL SEAM	Bright banded coal. 458-458.5' - coaly shale - SEAM 76
474.0	475.0	1.0	1.0	CARBONACEOUS CLAYSTONE.	
475.0	495.0	20.0	20.0	CARBONACEOUS SILTSTONE WITH CARBONACEOUS CLAYSTONE SECTION.	Bedding at 70°, calcite vein along fracture at 60°.
					END OF HOLE - 495 FEET

PR-NOMAN CREEK 69(3)A

COAL ANALYSIS & DRILL HOLE DATA
1969 SUMMARY REPORT OF
THE PINEPASS COAL PROJECT

L.S. TRENHOLME

Dec 12th 1969

BRAMEDA RESOURCES LIMITED

PINE PASS COAL PROJECT

NOMAN CREEK SECTION

2022
OPEN FILE

Summary of Coal Intersections in Noman Creek Syncline and Tonnage Calculations

Section No.	Hole No.	True Width Seams				Short Tons Indicated			
		# 76	# 78	Other		# 76	#78	Other	
1	B-1	11.5	12.2	7.5					
	B-5	11.0	12.7	8.3					
	B-2	10.0	3.0	5.5					
	B-3	12.0	-	4.0					
	PR-10	8.0	16.0	-					
			10.5	10.9	6.4	Average Thickness			
		1500	800	1500	Dip Length				
		650	360	396	Tons/Strike Foot				
		800'	800'	800'	Strike Length	520,000	288,000	317,000	
2	PR-21	15.0	-	-					
	B-4	14.0	6.2	-					
	PR-22	10.0	10.0	-					
			13.0	8.1	-	Average Thickness			
			1900	900	-	Dip Length			
			1020	301	-	Tons/Strike Foot			
		1550	1550	-	Strike Length	1,581,000	466,550	-	
3	B-6	12.0	-	-					
	B-8	18.0	10.0	-					
	B-23	16.0	9.0	-					
	B-21	16.0	10.0	-					
			15.5	9.7	-	Average Thickness			
			1400	800	-	Dip Length			
		896	320	-	Tons/Strike Foot				
		1800	1800	-	Strike Length	1,612,800	576,000	-	
4	B-9	7.0	-	5.0					
	B-16	13.0	8.0	-					
			10.0	8.0	5.0	Average Thickness			
			1000	400	500	Dip Length			
			413	20	103	Tons/Strike Foot			
			2000	2000	2000	Strike Length	862,000	40,000	206,000
5	B-12	9.0	5.0	17.0					
	B-14	10.0	9.0	20.0					
	B-15	10.0	7.0	-					
			9.7	7.0	18.5	Average Thickness			
			1150	1050	1050	Dip Length			
			460	303	802	Tons/Strike Foot			
		1850	1850	1850	Strike Length	851,000	560,550	1,483,700	
6	B-13	8.0	16.5	5.5					
	B-17	5.0	10.0	-					
	B-22	14.0	5.0	8.0					
	B-19	10.5	8.0	5.5					
			9.4	9.8	6.3	Average Thickness			
			1300	1350	1380	Dip Length			
		504	546	359	Tons/Strike Foot				
		1600	1600	1600	Strike Length	806,400	873,600	574,400	
						6,233,200	2,804,700	2,580,700	
TOTAL STRIKE LENGTH = 9,600'						TOTAL TONS = 11,618,600			

560

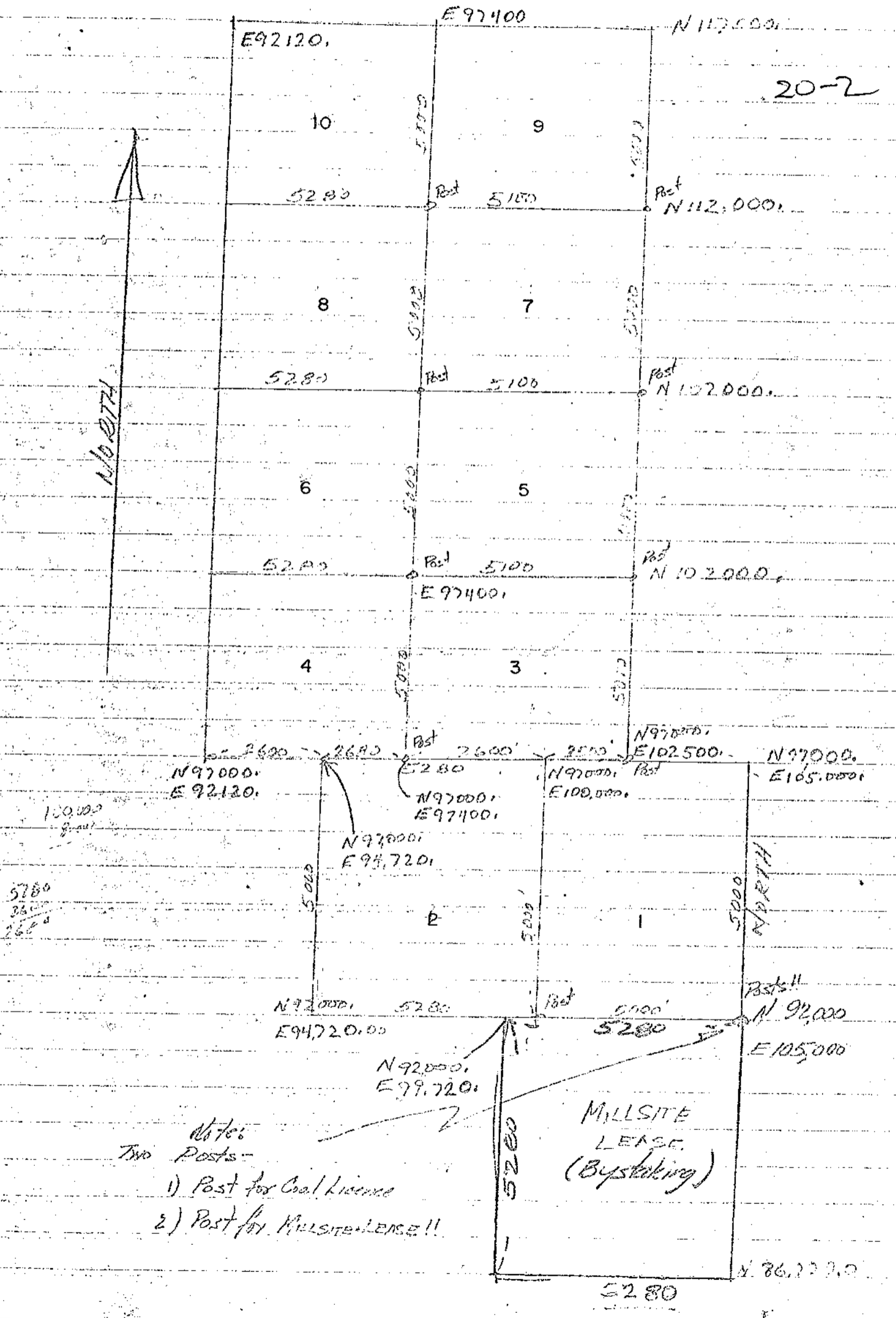
PR- Norman Creek 69(2)A

N# 69-1

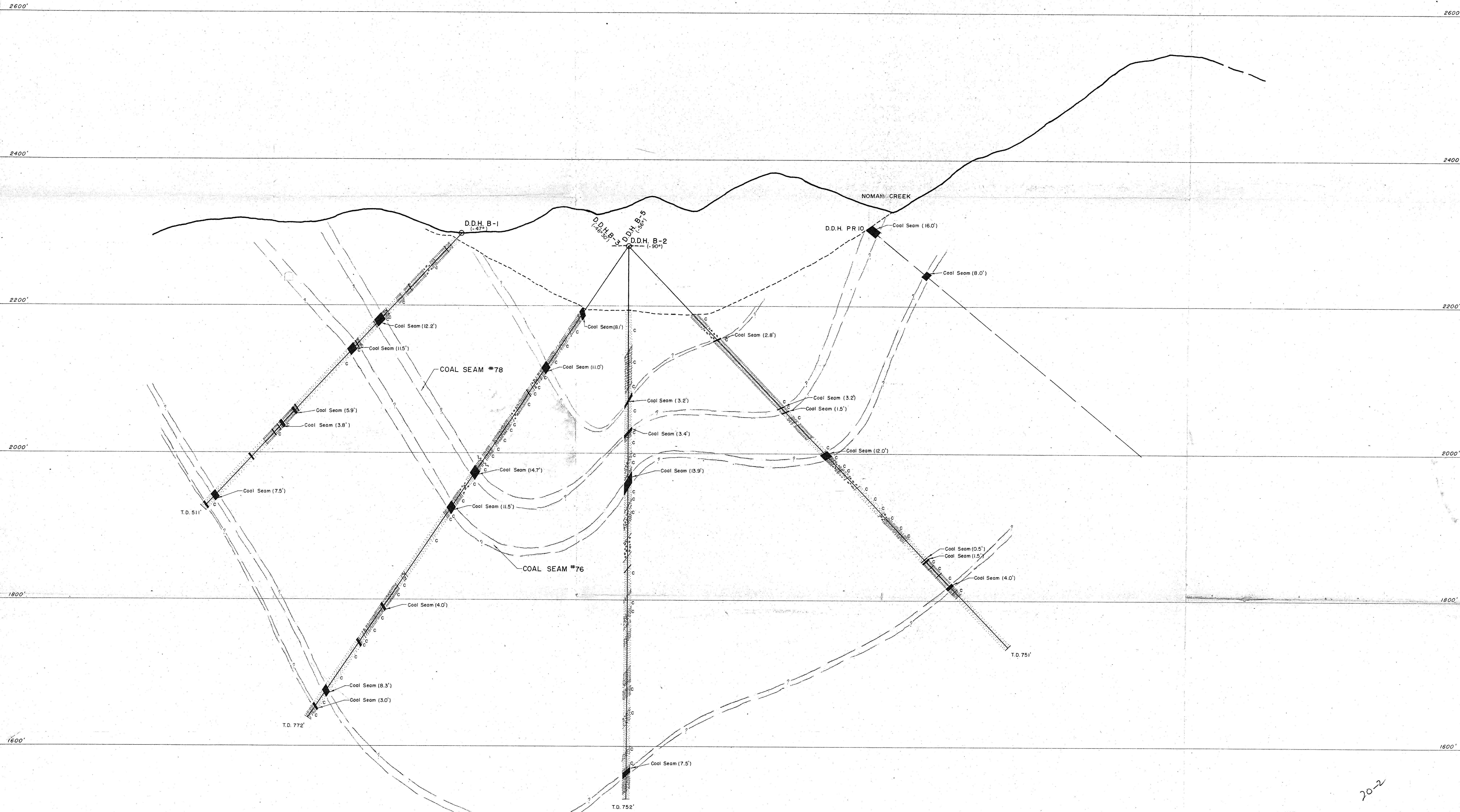
LAYOUT OF COAL LICENSES

(COMPASS & CHAIN)

(Posts are laid off N. & S. - East/West)



- Notes:
Two Posts -
- 1) Post for Coal License
 - 2) Post for MILLSITE LEASE !!



NOTE:
D.D. Holes B-2, B-3, B-5 are projected
80' SE from the section.

LEGEND

- COAL SEAM
- CLAYSTONE
- SANDSTONE
- SHALE
- SILTSTONE
- c - Carbonaceous Rocks

20-2

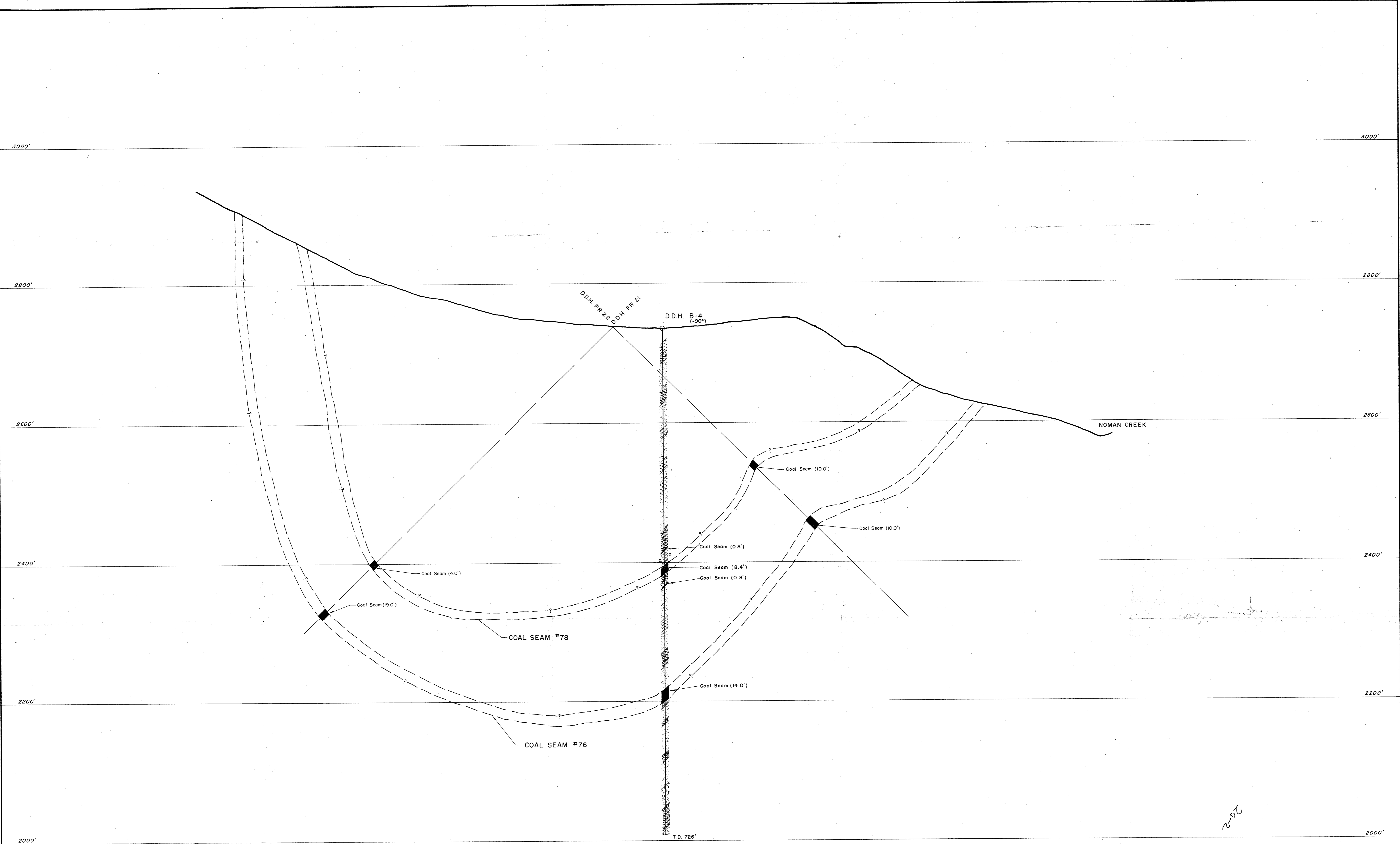
SECTION LOOKING N 40° W **560**

BRAMEDA RESOURCES LTD.

— SECTION N^o 1 —

PINE PASS COAL PROJECT
NOMAN CREEK AREA
LIARD MINING DIV., B.C.

DATE	SCALE	N.T.S.
OCT, 1969	1" = 50'	93 0 / 9
DRAWN BY:	MAPPED BY:	JOB NO
L.B. & O.C.	H.M.J.	DRW'G NO / E-103

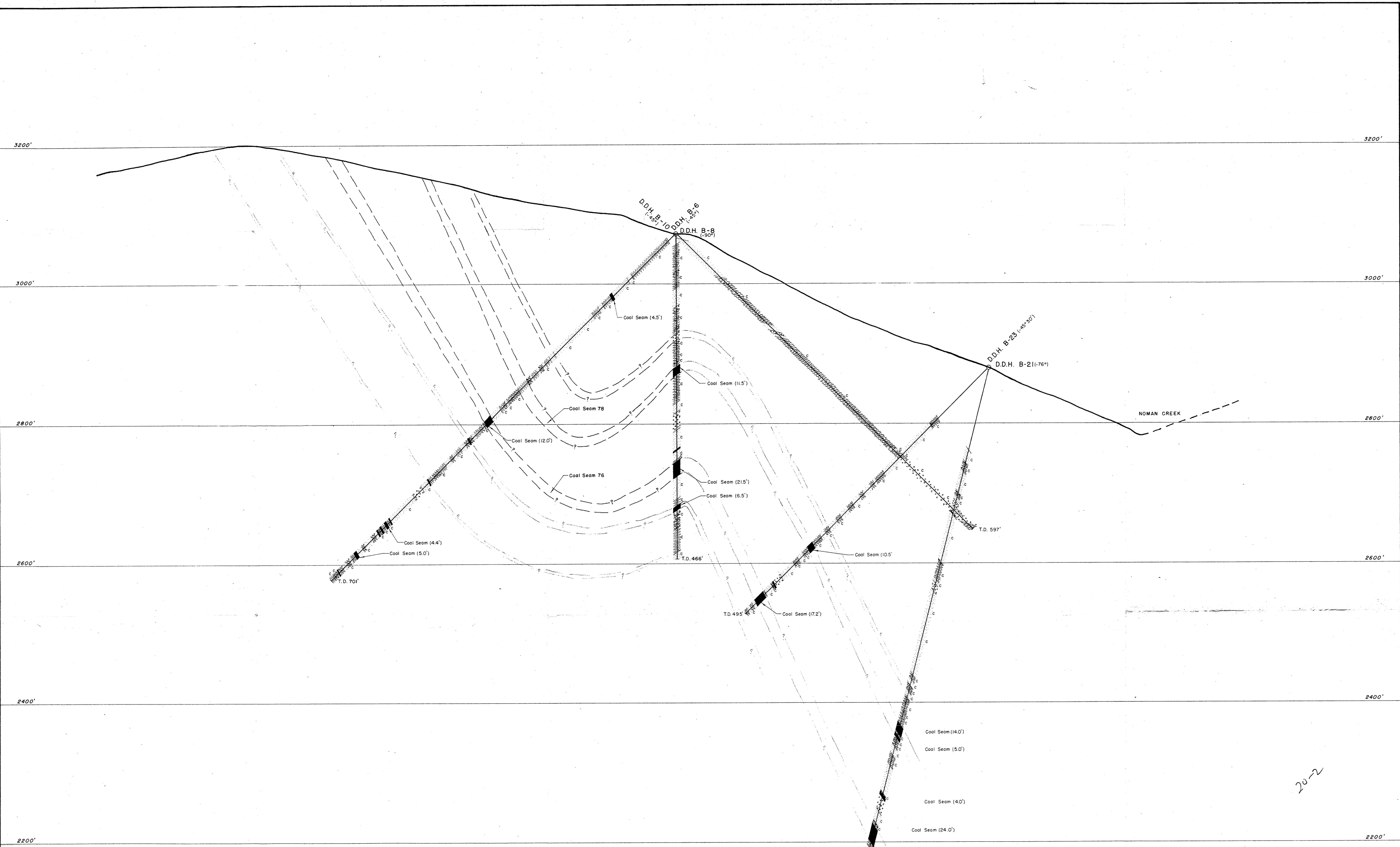


LEGEND

- COAL SEAM
- CLAYSTONE
- SANDSTONE
- SHALE
- SILTSTONE
- c - Carbonaceous Rocks

SECTION LOOKING N 30° W **560**

BRAMEDA RESOURCES LTD.		
— SECTION N° 2 —		
PINE PASS COAL PROJECT		
NOMAN CREEK AREA		
LIARD MINING DIV., B.C.		
DATE	SCALE	N.T.S.
SEPT, 1969	1" = 50'	93 0/9
DRAWN BY	MAPPED BY	JOB N° DRAW'G N°
L.B.	H.M.J.	/E-104



LEGEND

- COAL SEAM
- SANDSTONE
- CLAYSTONE
- SHALE
- SILTSTONE
- c - Carbonaceous Rocks

SECTION LOOKING N 30° W **560**

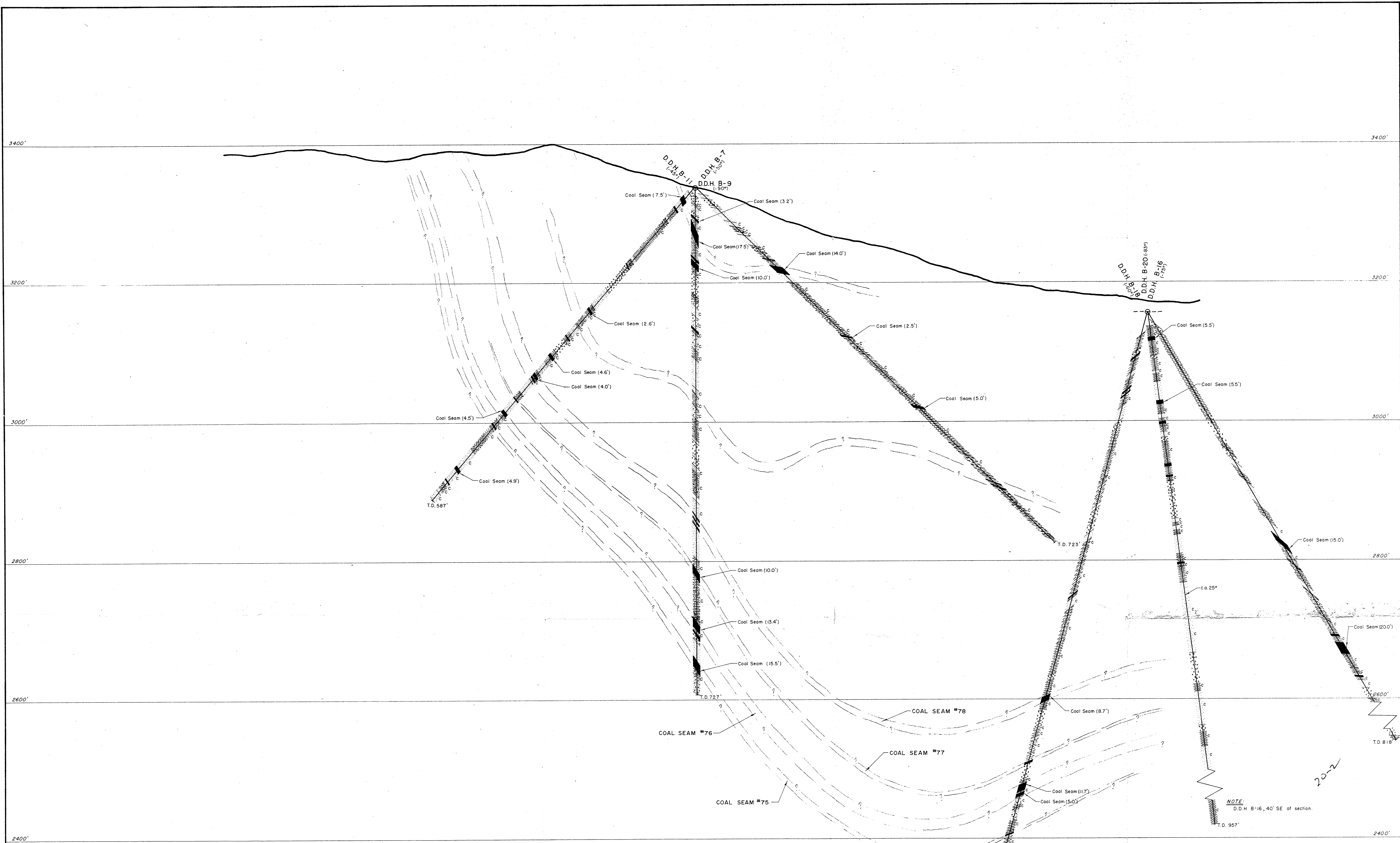
BRAMEDA RESOURCES LTD.

— SECTION N° 3 —

PINE PASS COAL PROJECT
NOMAN CREEK AREA
 LIARD MINING DIV., B.C.

C	D.D.H.s B-21 & B-23 added.	1/18/69	L.B.
B	Geology added on B-6, 8, & 10	10/16/68	L.B.
A	D.D.H. B-10 Added	OCT, '69	L.B.
Rev. N°	Revision	Date	By

DATE	SCALE	N.T.S.
SEPT, 1969	1" = 50'	930/9
DRAWN BY	MAPPED BY	JOB N°
L.B.	H.M.J.	DRAW'G N°
		/E-105



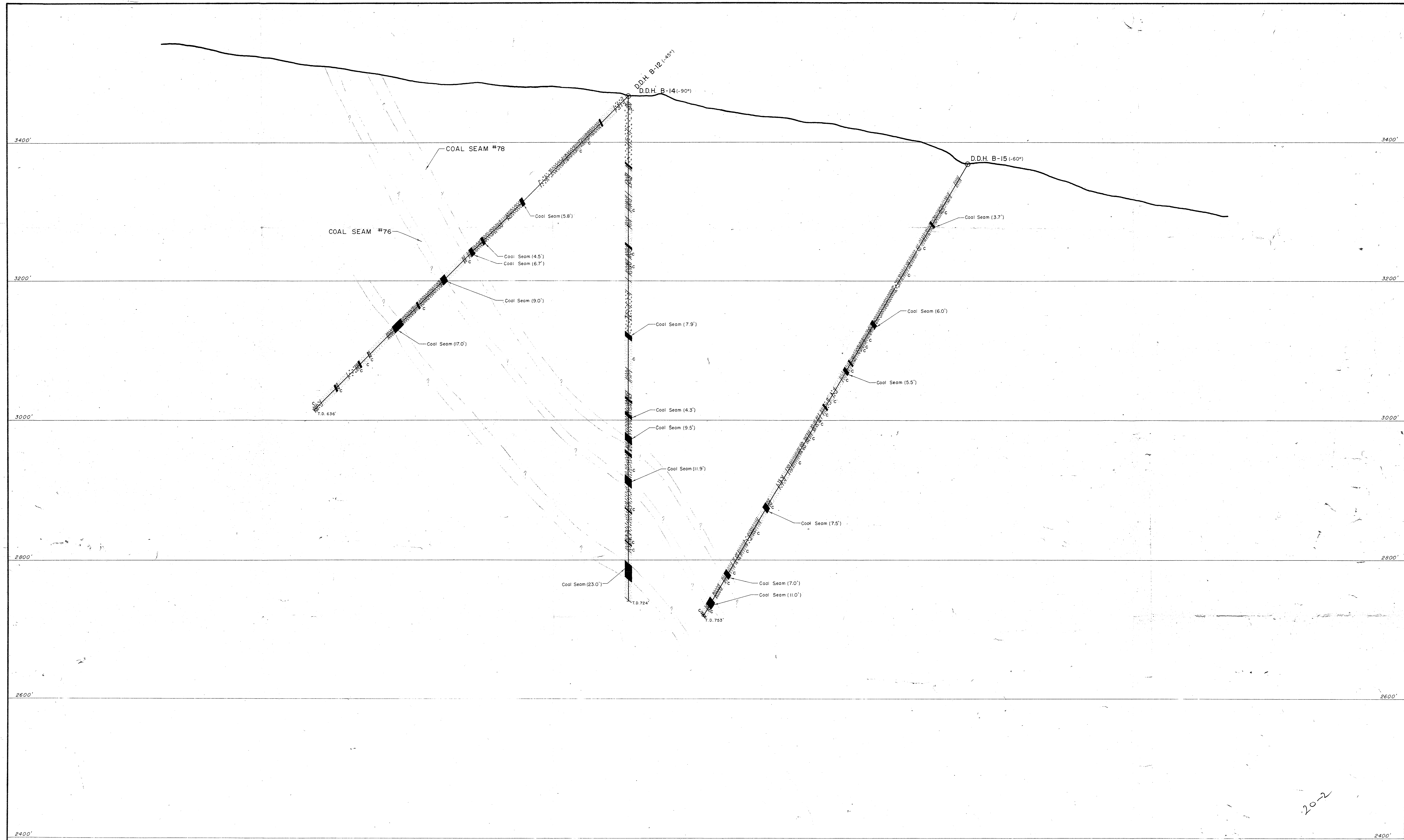
LEGEND

- COAL SEAM
- SHALE
- CLAYSTONE
- SILTSTONE
- SANDSTONE
- c - Carbonaceous Rocks

SECTION LOOKING N 30° W **560**

BRAMEDA RESOURCES LTD.
 — SECTION N° 4 —
 PINE PASS COAL PROJECT
 NOMAN CREEK AREA
 LIARD MINING DIV., B.C.

Rev. No.	Revision	Date	By	DATE	SCALE	N.T.S.
C	Geology shown on D.D.H.s B-16, B-18, B-20	1/21/69	L.B.	OCT, 1969	1" = 50'	93 0/9
B	D.D.H. B-18 Added.	10/21/69	L.B.			
A	D.D.H. B-16 Added.	10/16/69	L.B.			
				DRAWN BY	MAPPED BY	JOB NO
				L.B.	H.M.J.	DRAW'G NO
						/E-106



LEGEND

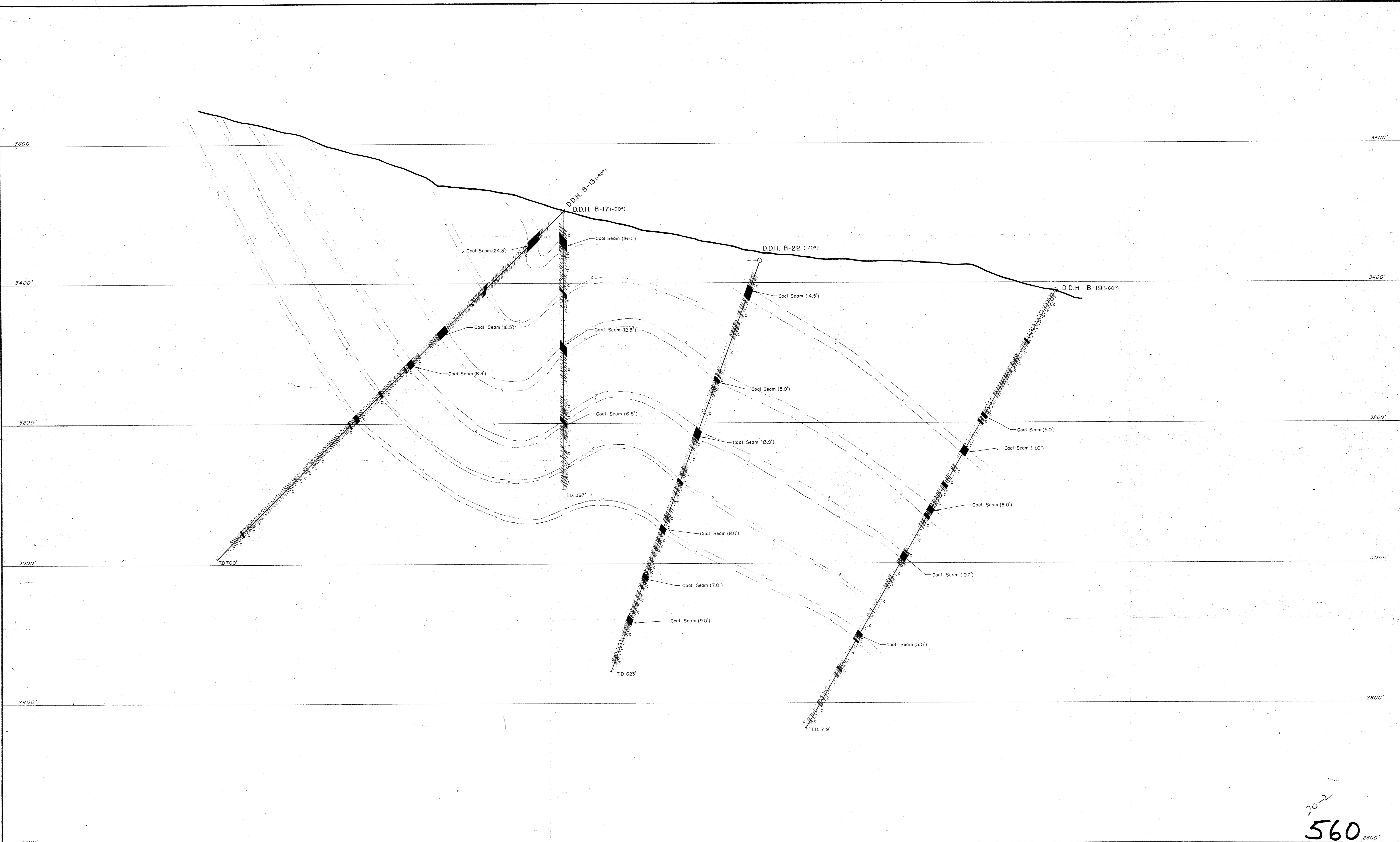
	COAL SEAM		SHALE
	CLAYSTONE		SILTSTONE
	SANDSTONE		c Carbonaceous Rocks

BRAMEDA RESOURCES LTD.
 — SECTION No 5 —
 PINE PASS COAL PROJECT
 NOMAN CREEK AREA
 LIARD MINING DIV., B.C.

DATE	SCALE	N.T.S.
OCT, 1969	1" = 50'	93 0/
DRAWN BY	MAPPED BY	JOB NO
L.B.	H.M.J., & B.T.	DRAWING NO
		/E-107

560

202



SECTION LOOKING N 30° W

LEGEND

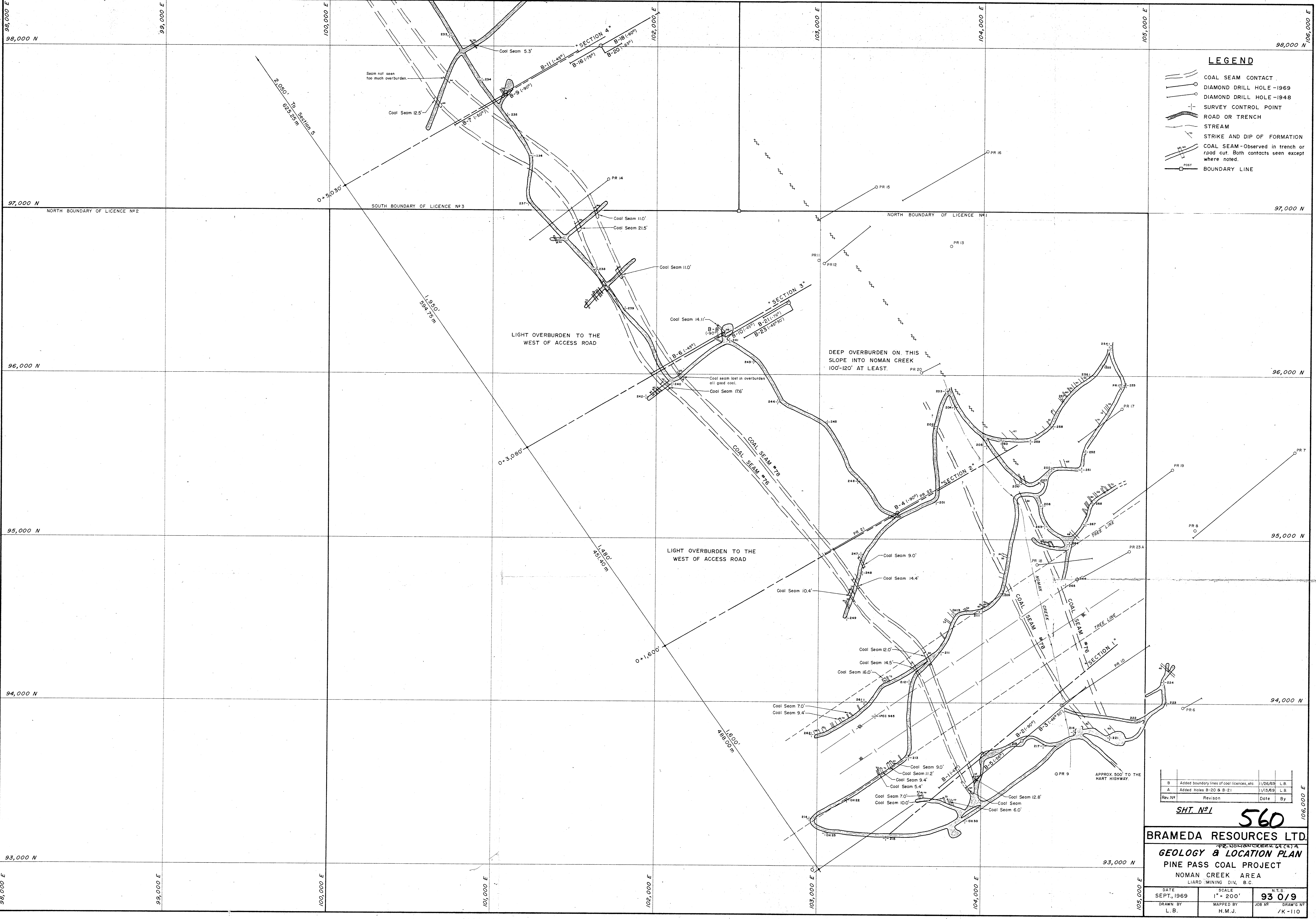
	COAL SEAM		SILTSTONE
	CLAYSTONE		SHALE
	SANDSTONE		c Carbonaceous Rocks

Rev. No.	Revision	Date	By
C	Added D.D.H. B-22	11/26/69	L.B.
B	Geology shown on D.D.H. B-19	11/24/69	L.B.
A	Geology shown on D.D.H.s B-13 & B-17	11/2/69	L.B.

BRAMEDA RESOURCES LTD.
P.O. BOX 1000 CRESTDALE, B.C.
SECTION No 6
PINE PASS COAL PROJECT
 NOMAN CREEK AREA
LIARD MINING DIV., B.C.

DATE	SCALE	N.T.S.
OCT., 1969	1" = 50'	93 0/9
DRAWN BY	MAPPED BY	JOB NO
L.B.	H.M.J.	93 0/9
		DRAWN BY
		E-108

20-2
560



LEGEND

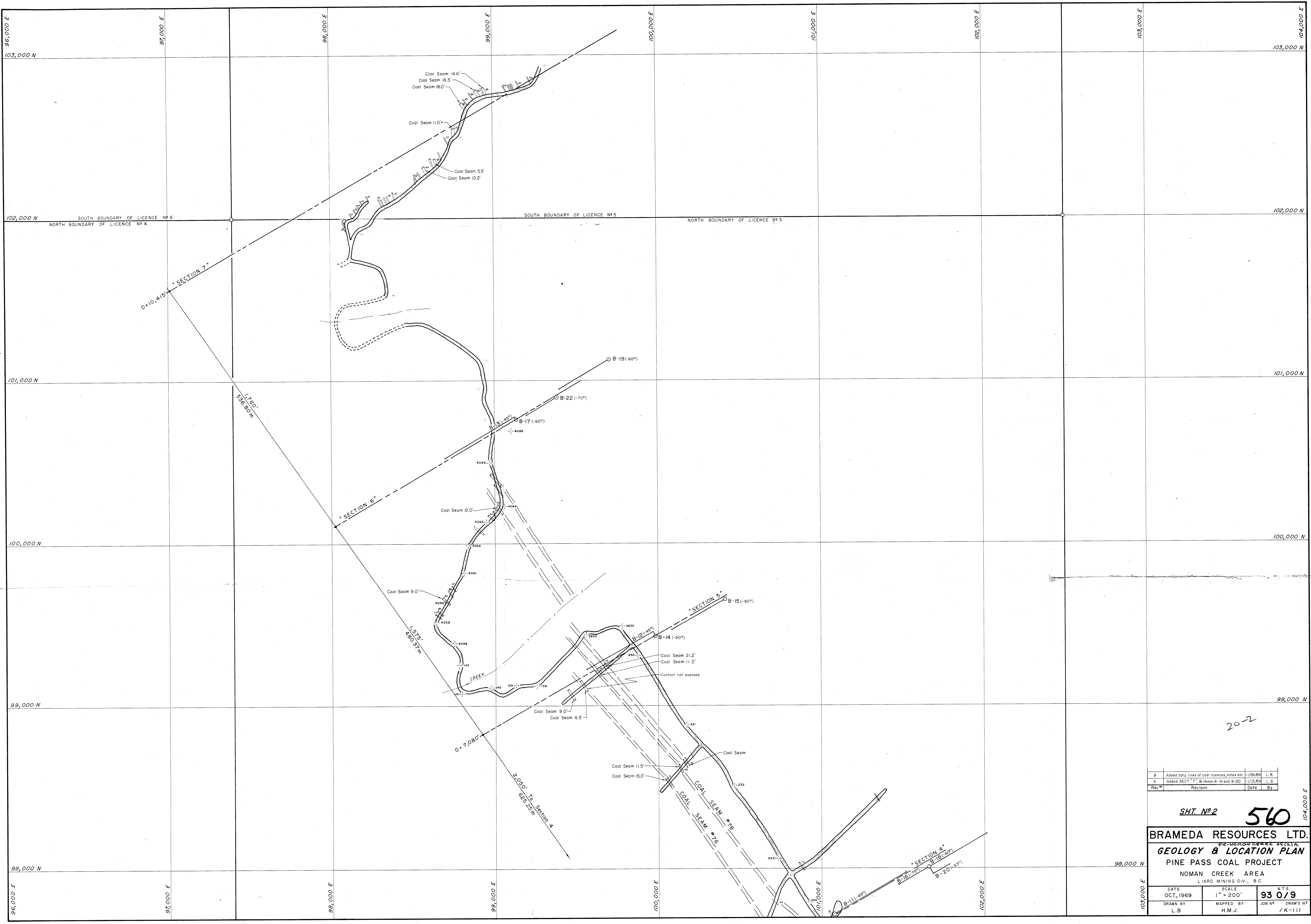
- COAL SEAM CONTACT
- DIAMOND DRILL HOLE - 1969
- DIAMOND DRILL HOLE - 1948
- SURVEY CONTROL POINT
- ROAD OR TRENCH
- STREAM
- STRIKE AND DIP OF FORMATION
- COAL SEAM - Observed in trench or road cut. Both contacts seen except where noted.
- BOUNDARY LINE

Rev. No.	Revision	Date	By
B	Added boundary lines of coal licences, etc.	1/26/69	L.B.
A	Added Holes B-20 & B-21	1/13/69	L.B.

SHT. N°1 560

BRAMEDA RESOURCES LTD.
GEOLOGY & LOCATION PLAN
PINE PASS COAL PROJECT
NOMAN CREEK AREA
 LIARD MINING DIV., B.C.

DATE	SCALE	N.T.S.
SEPT, 1969	1" = 200'	93 0/9
DRAWN BY	MAPPED BY	JOB NO.
L.B.	H.M.J.	7K-110



B	Added bdy. lines of coal licences, notes etc	1/26/69	L.B.
A	Added SECT "7", B Holes B-19 and B-20	1/12/69	L.B.
Rev. #	Revision	Date	By

SHT. N^o 2 **560**

BRAMEDA RESOURCES LTD.

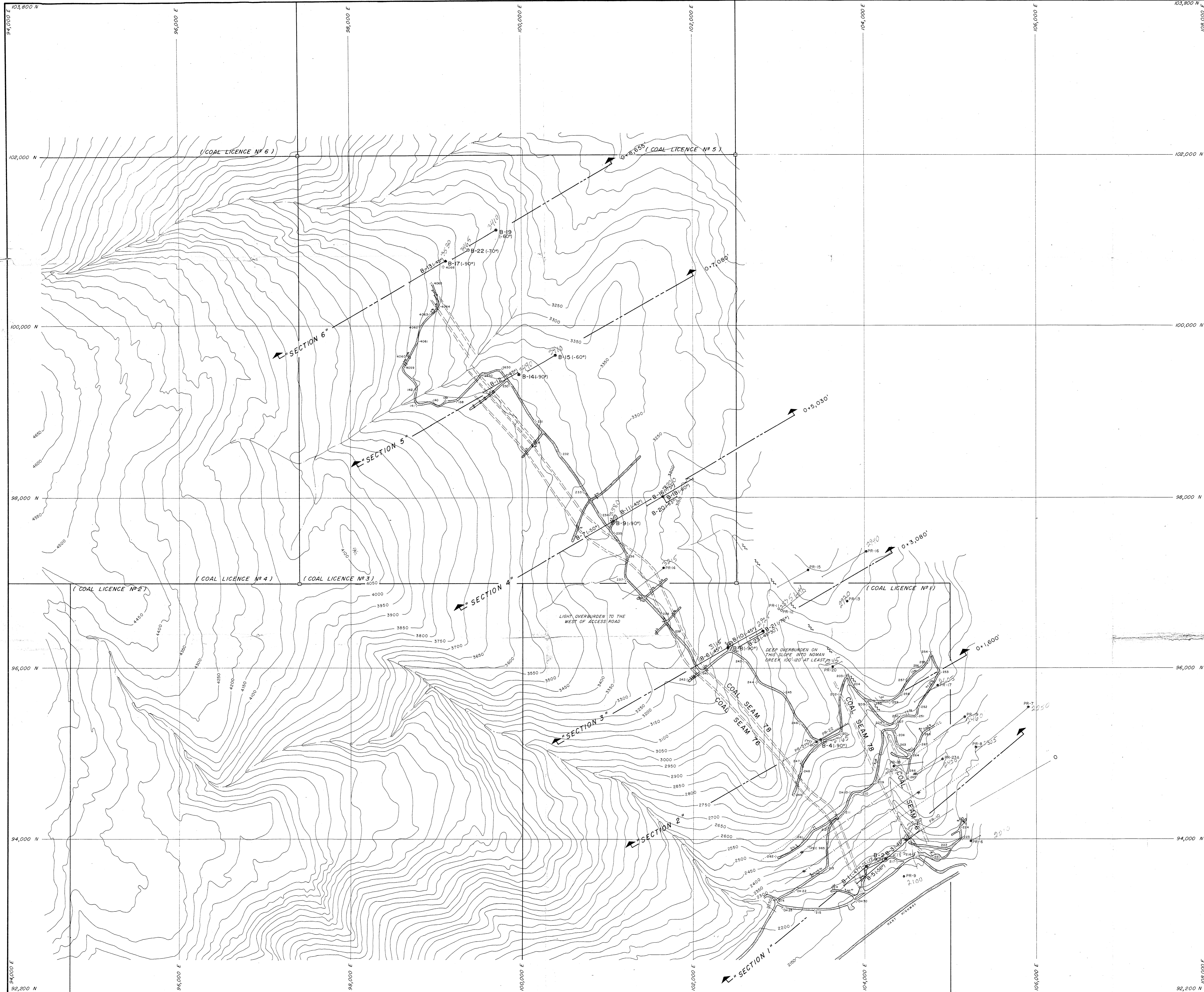
GEOLOGY & LOCATION PLAN

PINE PASS COAL PROJECT

NOMAN CREEK AREA
LIARD MINING DIV., B.C.

DATE	SCALE	N.T.S.
OCT, 1969	1" = 200'	93 0/9
DRAWN BY	MAPPED BY	JOB N ^o
L.B.	H.M.J.	DRAW'G N ^o
		/K-111

20-2

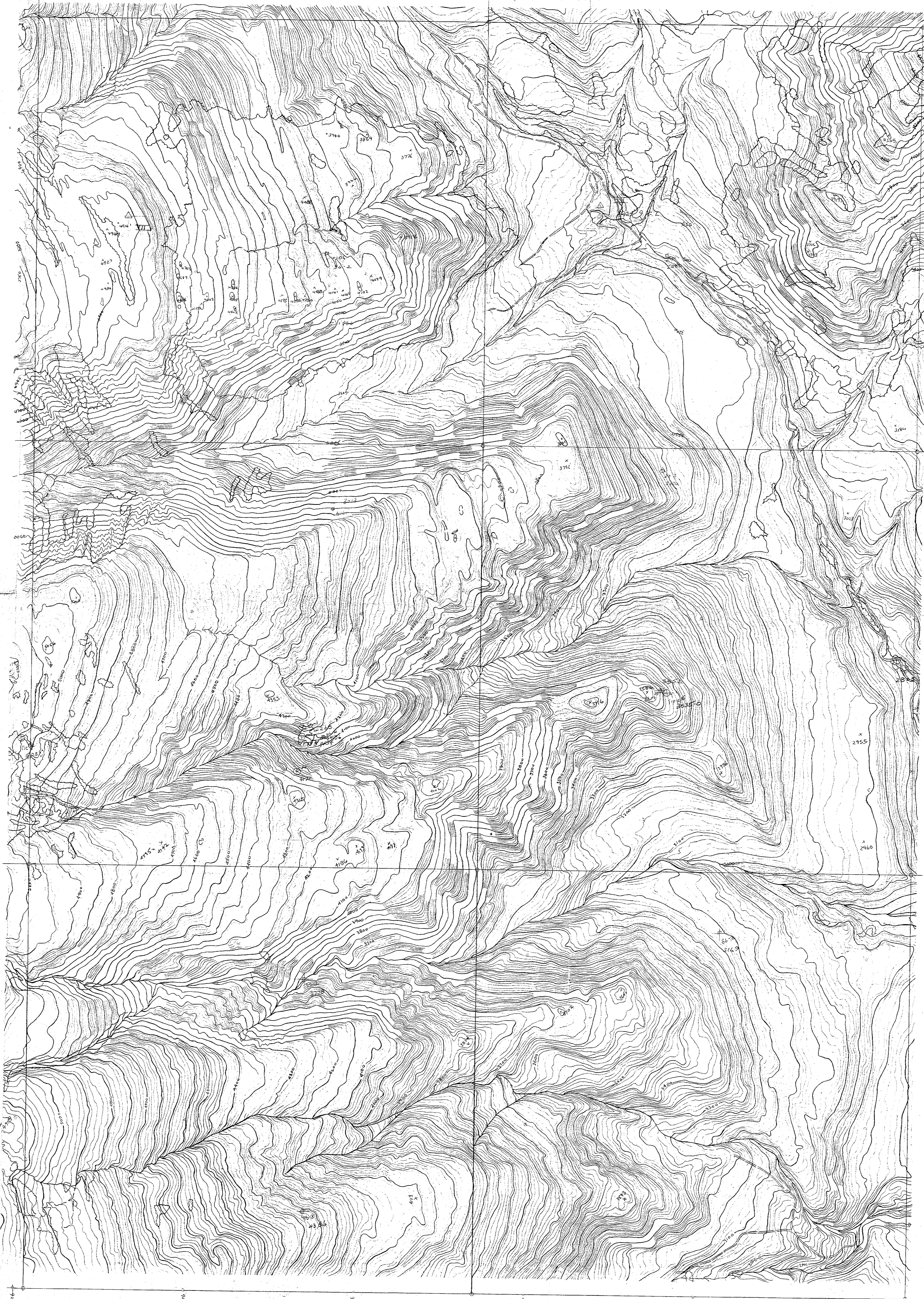


LEGEND

- COAL SEAM
- B-12 DIAMOND DRILL HOLE - 1969
- PR-14 DIAMOND DRILL HOLE - 1948
- ROAD OR TRENCH
- SURVEY CONTROL POINT
- STREAM
- TREE LINE
- BOUNDARY LINE

202
560

A Added D.D.H.s B-22 & B-23, new location of coal seam, etc. NOV 27/69 L.B.	
REV	DETAILS OF REVISION DATE BY
BRAMEDA RESOURCES LTD.	
— DRILLING PLAN —	
PINE PASS COAL PROJECT	
NOMAN CREEK AREA	
LIARD MINING DIV., B.C.	
DATE NOV, 1969	SCALE 1" = 400'
DRAWN BY L.B.	MAPPED BY H.M.J.
JOB NO 930/9	DRWG NO /K-112



BRAMEDA RESOURCES LTD.	
PINE PASS	
CONTRACT NO. 100-NORMAN CREEK ET AL.	
CO-ORDINATE AERIAL SURVEYS LTD.	
SCALE: 1 INCH TO 400 FEET	
CONTOUR INTERVAL: 10 FEET	
DATE: NOV. 1948	Sheet No.
DATE OF PHOTOGRAPHY: 1948	2 of 2
C.A.S. 108 NE CO-1089	

20-2