

PR-SUKUNKA - ~~REDACTED~~ 9(9) 7
NATIONAL TRUST CO. LTD. (AS TRUSTEE)

COALITION MINING LIMITED
SUKUNKA COAL PROJECT

GEOLOGY
VOLUME I

00641

APPENDIX F

DRILL HOLE DATA

DIAMOND DRILL HOLES S-1 TO S-50

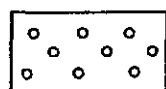
Reference for Graphic
Sections of Drill Hole Data

See reverse side

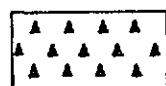
Prepared by CLIFFORD McELROY & ASSOCIATES PTY. LIMITED

DETAIL OF GETHING FORMATION

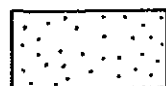
Scale 1" = 50'



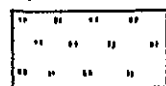
CONGLOMERATE
pebble to granule



BRECCIA



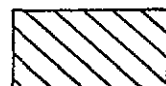
SANDSTONE



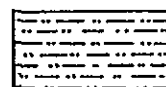
SILTSTONE



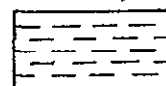
CLAYSTONE



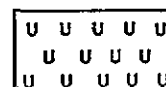
STONE COALY or
CLAYSTONE
CARBONACEOUS



MUDSTONE



SHALE, SILTSHALE,
CLAYSHALE



SOIL, WEATHERED and
UNCONSOLIDATED
MATERIAL



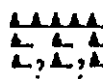
INTERBEDDED



LAMINITE



45° INCLINED STRATA

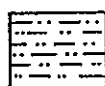


FAULT

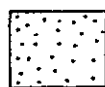
established
probable
possible

TOTAL DRILL HOLE SECTIONS

Scale 1" = 200'

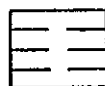


HULLCROSS MEMBER



COMMOTION
FORMATION

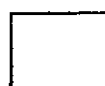
GATES MEMBER



SUKUNKA MEMBER



MOOSEBAR
FORMATION

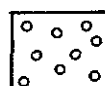


UPPER GETHING
SEQUENCE



GETHING
FORMATION

LOWER GETHING
SEQUENCE



CADOMIN
FORMATION

COAL SEAMS

Scale 1" = 2'



COAL BRIGHT or UNDIFFERENTIATED

COAL MAINLY BRIGHT with MINOR DULL
BANDS

COAL DULL and BRIGHT

COAL MAINLY DULL with MINOR BRIGHT
BANDS

COAL DULL

COAL INTERLAYED with NON-COAL

NON-COAL INTERLAYED with COAL

COAL STONY

STONE COALY

COAL WEATHERED

REFERENCE FOR GRAPHIC SECTIONS

of

DRILL HOLE DATA

PREPARED BY CLIFFORD McELROY & ASSOCIATES PTY LIMITED

COALITION MINING LIMITED

SUKUNKA COAL PROJECT

January 1972

NOTES TO ACCOMPANY APPENDIX F

This appendix includes logs for all drill holes sunk on behalf of Coalition Mining Limited during the 1971 field season and for most of the drill holes completed during the two previous field seasons by Brameda Resources Ltd. The drill hole data are included in the following volumes:

<u>Volume No.</u>	<u>Drill Hole No.*</u>
6	D.D.H.'s C-1 to C-8
7	D.D.H.'s C-9 to C-22
8	D.D.H.'s C-23 to C-35
9	D.D.H.'s C-36 to C-41; CS-1 to CS-7.
10	D.D.H.'s CM-1 to CM-9; RDH R-1 to R-15
11	D.D.H. S-1 to S-50

*D.D.H. - Diamond Drill Hole; R.D.H. Rotary Drill Hole.

Data for the following drill holes are not included;

D.D.H. S-2 and D.D.H. S-29 - the core of these holes was not available for logging as it is stored by the Alberta Study Group of the Canadian Geological Survey in Calgary, Alberta:

D.D.H. S-3 - This hole is outside the area of immediate interest and was collared below the level of the Chamberlain Seam.

R.D.H. R-7 - This hole was abandoned in the overburden.

The data included for each drill hole, drilled on behalf of Coalition Mining Limited, are included in the following order:

Graphic section - Stratigraphic Log of Drill Hole.

Graphic section - Detail of Gething Formation.

Graphic section - Seam sections of Chamberlain and Skeeter Seams.

Analytical Data.

Written Stratigraphic Log.

Written Log of Gething Formation.

Accompanying each of Volume 6 to 11 is a Reference relating to the graphic sections.

Stratigraphic Logs are included for all drill holes, at a scale of 200 feet to 1 inch. The footages quoted in these logs are based on the drillers depth markers and are not corrected for core loss. The footages quoted are considered to be accurate to within 0.5 feet.

Detailed Logs of the Gething Formation for the interval from about 50 feet below to about 50 feet above the Chamberlain/Skeeter Seams have been corrected for core loss and are accurate to 0.01 feet. Observations of the coal and the adjacent strata, recovered in a stationary split inner tube, have enabled corrections for core loss to be applied to that part or parts of the core which were broken, disturbed and obviously not fully recovered during drilling. Graphic logs, at a scale of 50 feet to 1 inch have been constructed for this interval of the Gething Formation.

Graphic Sections of the Chamberlain and Skeeter Seams have been prepared at a scale of 2 feet to 1 inch. These logs and sections give details of the coal and the stone bands within the seams. Some analytical data has been included on the graphic sections.

The S-Series drill holes were completed during the 1969 and 1970 field seasons by Connors Drilling Limited for Brameda Resources Limited. Stratigraphic sections and logs of these drill holes are accompanied by analytical data provided by Brameda Resources Limited.

The R-Series drill holes were completed during the 1971 field season by Big Indian Drilling Ltd, using a reverse circulation method of rotary drilling. A graphic, stratigraphic log of each of these drill holes at a scale of 50 feet to 1 inch is included.

The C, CS and CM-Series diamond drill holes were completed during the 1971 field season by Connors Drilling Limited and Canadian Longyear Limited for Coalition Mining Limited.

In addition, D.D.H.'s S-14, S-17 and S-41 were deepened during the 1971 programme. A complete set of graphic sections, written logs and analytical data is included for these drill holes.

BORE NUMBER S-1

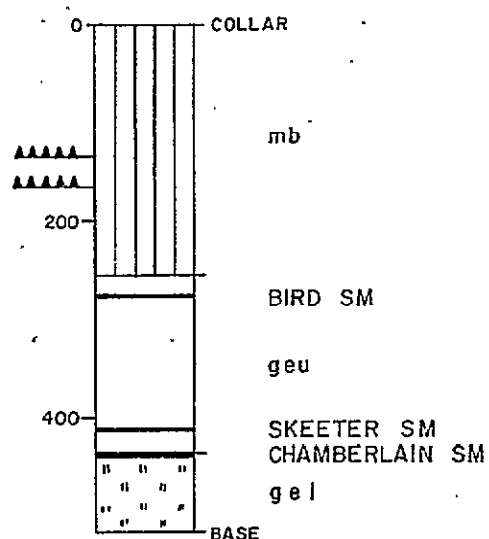
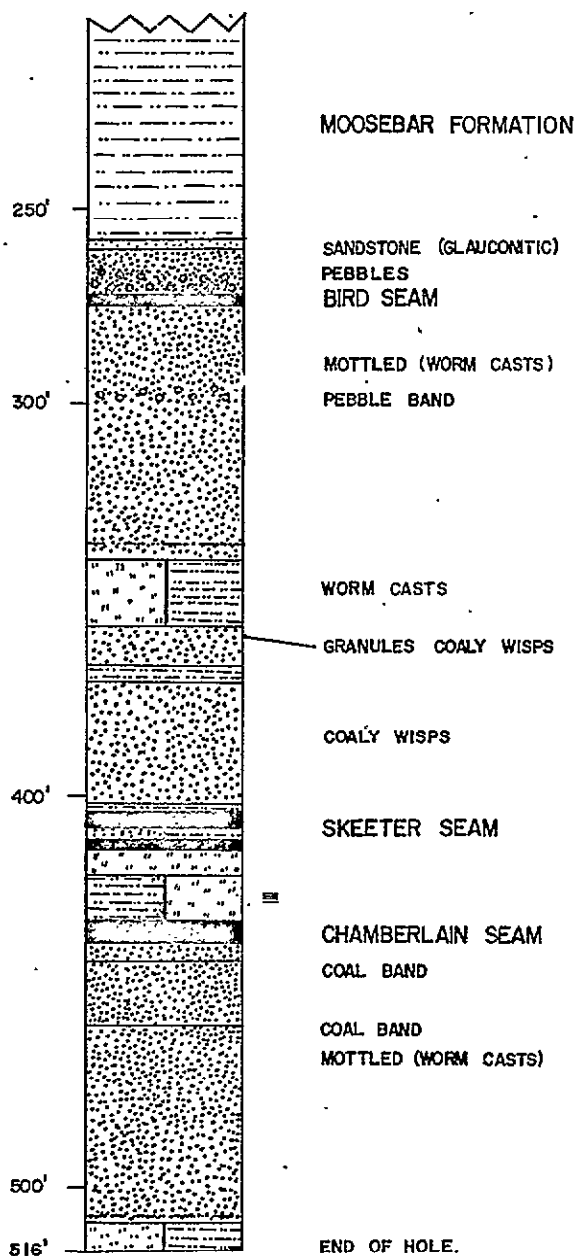
Grid Reference 48639.42 N 78477.80 E
Exploration Grid Reference A/1 + 1000

Date Commenced 1st Nov., 1969 Completed 6th Nov., 1969

Collar R.L. 4147.3 ft. Standard Datum
Total Depth 516 ft. Electrically Logged ~~Yes~~/No
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3734	7.0	100%	Coal sampled 4.7'
Chamberlain	3710	4.50	100%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-1

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-1

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
Fault, probable	No core to 32.0 ft.		
	MUDSTONE, 136-138', slickensides and ash bands, 164-167'.	MOOSEBAR	258.0
	SANDSTONE, glauconitic.		260.0
	SANDSTONE, coarse, pebbles at base and 270'.	GETHING	273.0
	<u>COAL</u> .	BIRD SEAM	274.5
	SANDSTONE, coarse becoming fine, mottled (worm casts) 290', pebbles 299', mudstone band 335'.		339.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granular base.		356.0
	SANDSTONE, coaly wisps and partings.		367.0
	MUDSTONE.		370.0
	SANDSTONE, coaly wisps.		403.0
	MUDSTONE.		407.0
	COAL, split of sandstone and mudstone 407.5'-410.5'.		412.5
	SILTSTONE, mudstone phases.		420.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	LAMINITE, siltstone and mudstone.		432.0
	<u>COAL</u> .	CHAMB. SM.	436.5
	SANDSTONE, coarse grained.		442.0
	COAL, $\frac{1}{2}$ ".		442.5
	SANDSTONE, coarse grained.		458.5
	COAL.		459.0
	SANDSTONE, mottled (worm casts) 464'. Mudstone band 507'.		508.5
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases.		516.0
			<u>Base of Hole</u>

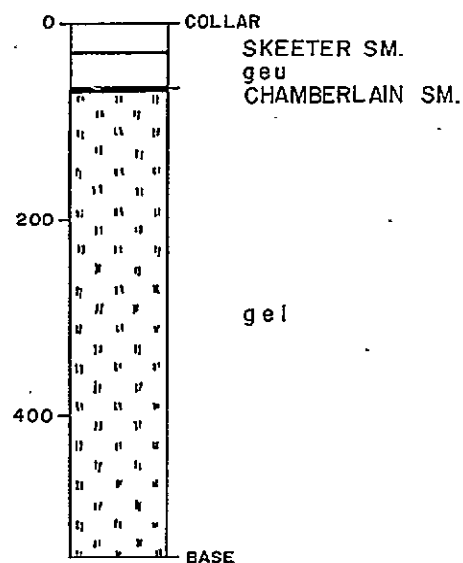
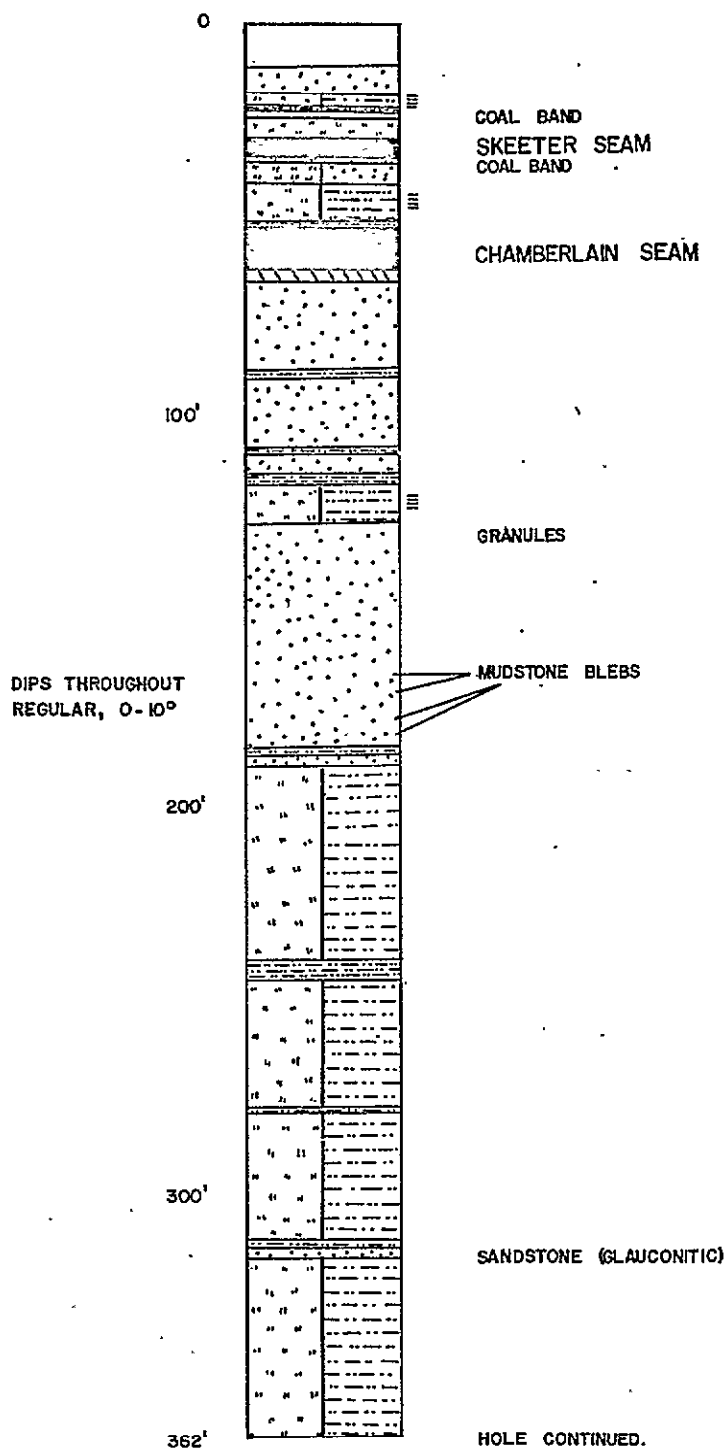
Grid Reference 39138.17 N 86456.21 E
Exploration Grid Reference H + 1600'/2

Date Commenced 27th Nov., 1969 Completed 1st Dec., 1969

Collar R.L. 3592.2 ft. Standard Datum
Total Depth 545 ft. Electrically Logged *Yes/No*
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G. R. Jordan.

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3558	4.0	37.5%	Not Sampled
Chamberlain	3529	8.83	73.6%	

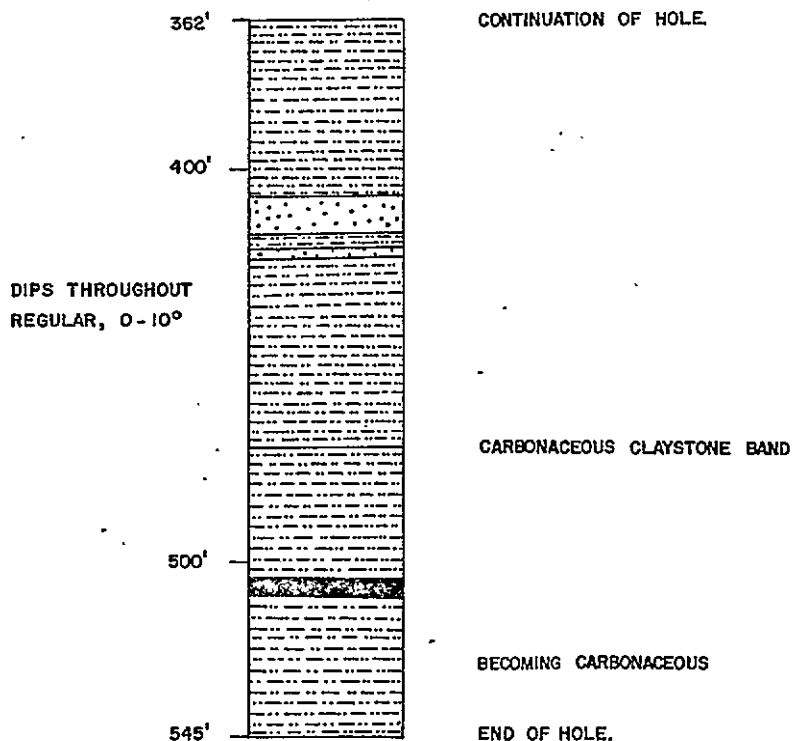


DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-4



Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-4

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-4

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 11.0 ft.		
	SANDSTONE.	GETHING FM.	18.0
	LAMINITE, siltstone and mudstone, mudstone at base.		23.0
	<u>COAL</u> , band 0.5'.		24.0
	SILTSTONE-MUDSTONE INTERBEDS, mudstone at base.		30.0
	<u>COAL</u> .	SKEETER SM.	34.0
	CLAYSTONE, coal band at base.		35.0
	SANDSTONE, silty interbeds.		41.0
	LAMINITE, siltstone and mudstone, mudstone at base.		54.0
	<u>COAL</u> .	CHAMB. SM.	63.0
	CLAYSTONE, carbonaceous.		66.0
	SANDSTONE, mudstone bands at 90', 110' and 117'. Course at top, fine at base.		119.0
	SILTSTONE AND MUDSTONE INTERBEDDED, granule conglomerate at base.		128.0
	SANDSTONE, mudstone breccia 167', 180'		

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	182', mudstone band at 185', 187'.		190.0
	SILTSTONE AND MUDSTONE INTERBEDDED, mudstone band at 240', and at base.		314.0
	SANDSTONE, glauconitic.		316.0
	SILTSTONE, mudstone interbeds.		362.0
	MUDSTONE, silty interbeds.		407.0
	SANDSTONE, mudstone phases at base.		424.0
	MUDSTONE, carbonaceous claystone, silty phases, sand at 471'.		505.0
	COAL.		509.0
	MUDSTONE, carbonaceous phases towards base.		545.0
			<u>Base of Hole</u>

BORE NUMBER S-5

Grid Reference 46406.04 N 85663.51 E

Exploration Grid Reference D/3 + 1600

Date Commenced 27th Nov., 1969 Completed 8th Dec., 1969

Collar R.L. 4125.2 ft. Standard Datum

Total Depth 938 ft. Electrically Logged Yes/No

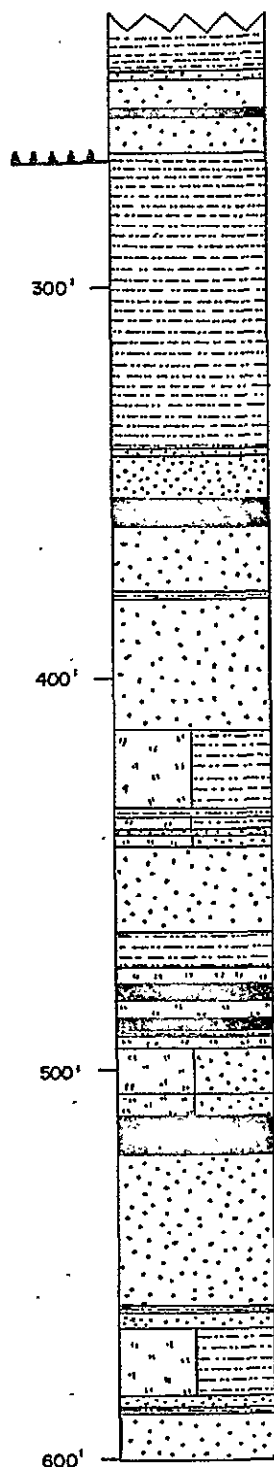
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3636	11.20	35.7%	Not Sampled
Chamberlain	3604	9.39	85.1%	



MOOSEBAR FORMATION
SANDSTONE (GLAUCONITIC)
COALY WISPS
BIRD SEAM
MOTTLED (WORM CASTS)

MOOSEBAR FORMATION

SANDSTONE (GLAUCONITIC)
PEBBLES
BIRD SEAM
MOTTLED WORM CASTS

WORM CASTS

SILTY BAND
COALY WISPS
SANDY BLEBS

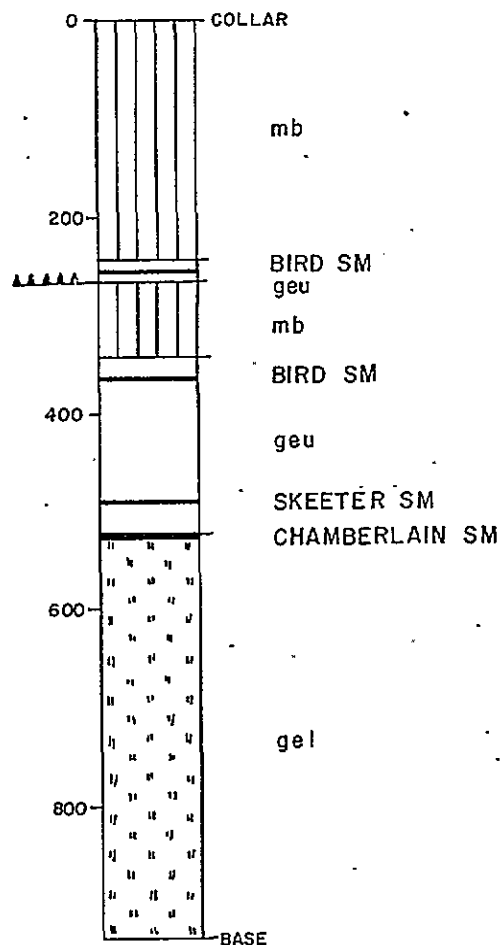
SKEETER SEAM

CHAMBERLAIN SEAM

SANDTONE PHASES

GRANULES

HOLE CONTINUED.



COLLAR

mb

BIRD SM
geu

mb

BIRD SM

geu

SKEETER SM
CHAMBERLAIN SM

geu

BASE

DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

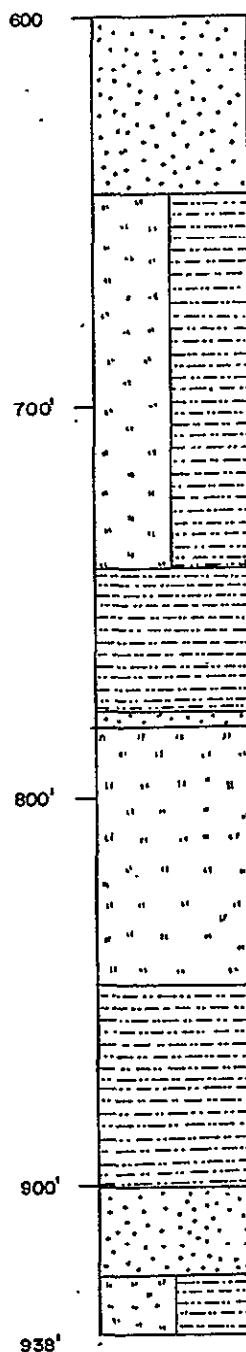
Prepared by:
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-5

DRAWN BY S.A.

DATE: October '71

PAGE 1 of 2



CONTINUATION OF HOLE.

MUDSTONE BLEBS

SANDSTONE (GLAUCONITIC)
SILTSTONE (SANDSTONE PHASES)

SILTSTONE (SANDSTONE PHASES)

SANDSTONE PHASES
END OF HOLE.

DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

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for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-5

DRAWN BY S.A.

DATE: October '71

PAGE 2 of 2

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-5

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 18.0 ft.		
	MUDSTONE.	MOOSEBAR	245.0
	SANDSTONE, glauconitic.	GETHING	247.0
	SANDSTONE, carbonaceous in centre.		255.0
	<u>COAL.</u>	BIRD SEAM	256.0
Fault, established	SANDSTONE, mottled (worm casts) at 264'.		266.0
	MUDSTONE.	MOOSEBAR	342.0
	SANDSTONE, glauconitic.	GETHING	344.0
	SANDSTONE.		354.0
	<u>COAL.</u>	BIRD SEAM	361.0
	SANDSTONE, coarse at top, fine at base, mottled (worm casts) at 367', mudstone band at 279'.		414.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, mudstone at 434'.		438.0
	SANDSTONE.		440.0
	LAMINITE, siltstone and mudstone, mudstone interbeds.		443.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	SANDSTONE WITH COALY WISPS, silty band at 447', sandy blebs at 461'.		464.5
	MUDSTONE, coaly bands near base.		474.0
	SILTSTONE.		478.0
	<u>COAL.</u>)		482.0
)		
	SILTSTONE, mudstone interbeds)	SKEETER SM.	487.5
)		
	<u>COAL.</u>)		489.5
	SILTSTONE, mudstone phases, mudstone at top.		494.5
	SANDSTONE AND SILTSTONE INTERBEDS.		506.0
	LAMINITE, siltstone and mudstone, mudstone interbeds.		512.5
	<u>COAL.</u>	CHAMB. SM.	521.5
	SANDSTONE, mudstone band at 562'.		566.0
	SILTSTONE AND MUDSTONE INTERBEDDED, granules at base, sandy phases in top half.		583.0
	SANDSTONE, sedimentary mud blebs at 632' and 637'.		645.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		743.0
	MUDSTONE.		777.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	SANDSTONE, glauconitic.		781.0
	SILTSTONE, sandy phase, mudstone in centre.		848.0
	MUDSTONE, some silty phases.		902.0
	SANDSTONE.		923.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases throughout.		938.0
			<u>Base of Hole</u>

Grid Reference 50463.96 N 86724.64 E
Exploration Grid Reference C + 900' / 5 + 800'

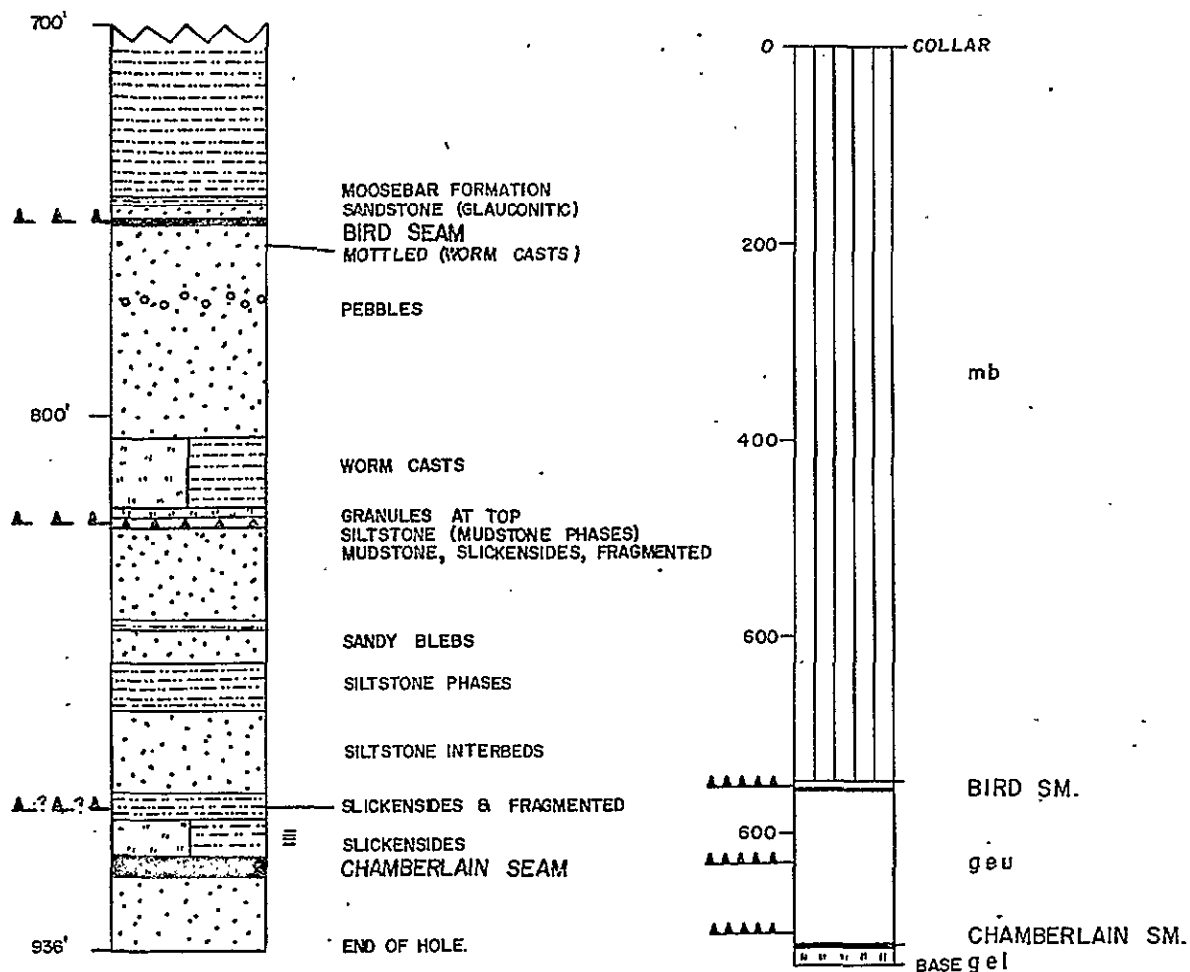
Date Commenced 2nd Dec., 1969 Completed 10th Dec., 1969

Collar R.L. 4020.0 ft. Standard Datum
Total Depth 936 ft. Electrically Logged Yes/No

Drilled by Connors Drilling Ltd.
For Brameda Resources Limited.
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	3103	3.67	49.8%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-6

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:

CH Sample No. ~~SK~~-6, Hole S-6 *Chamberlain Seam*
912.7 - 917.4
Cored - 4.7
Recovered 2.0

Report No. 67-0057

% Total Moisture 2.43

AIR DRY BASIS

% Moisture	0.66
% Ash	4.63
% Volatile	22.26
% Fixed Carbon	72.45
	<u>100.00</u>

Btu	14741
% Sulfur	0.31

FREE SWELLING INDEX (CBI) 5-1/2

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-6

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 39.0 ft.		
Fault, possible	MUDSTONE, brecciated ash bed.	MOOSEBAR	746.0
	SANDSTONE, glauconitic.	GETHING	750.0
Fault, probable	<u>COALY</u> FRAGMENTS.	BIRD SEAM	750.5
	SANDSTONE, coarse at top becoming finer, mottled (worm casts) 757', pebbles 771'.		806.0
	SILTSTONE AND MUDSTONE INTERBEDDED. granules at base, worm casts.		824.0
	SILTSTONE, mudstone phases.		826.0
Fault, probable	MUDSTONE, slickensides, fragmented.		827.0
	SANDSTONE, coaly wisps, mudstone band 854', sandy blebs 855'.		864.0
	MUDSTONE, silty phases.		875.0
	SANDSTONE, silty interbeds.		897.0
Fault, possible	MUDSTONE, some silty interbeds, slickensided zones throughout.		903.0
	LAMINITE, siltstone and mudstone, mudstone base. Slickensided zones.		913.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	<u>COAL.</u> SANDSTONE, coarse becoming finer.	CHAMB. SM.	917.0 936.0 <u>Base of Hole</u>

Grid Reference 43737.98 N 79042.49 E

Exploration Grid Reference D + 1600' / 1 - 1300'

Date Commenced 3rd Dec., 1969 Completed

Collar R.L. 3644.8 ft. Standard Datum

Total Depth 836 ft. Electrically Logged Yes/No

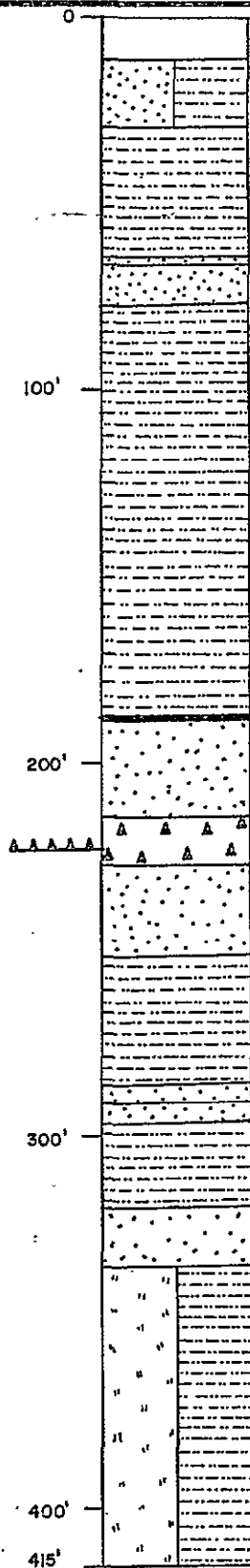
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
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SANDSTONE (GLAUCONITIC)
MUDSTONE PHASES

SILTSTONE PHASES

COAL BAND

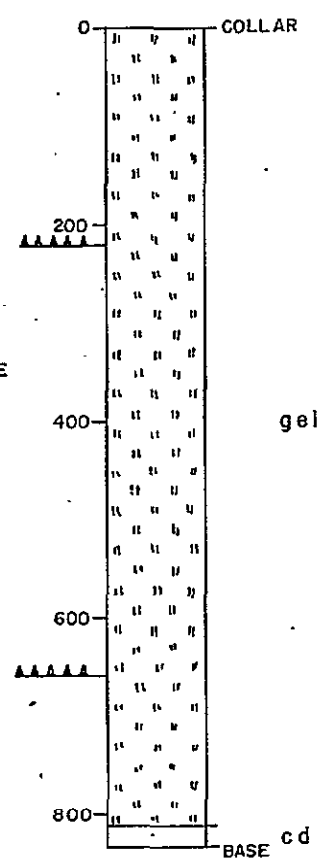
BRECCIATED SANDSTONE & MUDSTONE

MUDSTONE PHASES

SANDSTONE (GLAUCONITIC)

SILTSTONE INTERBEDS

HOLE CONTINUED



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-7

415'

CONTINUATION OF HOLE.

500'

COAL BAND

SILTSTONE

600'

COAL WITH CLAYSTONE BANDS

"MIDDLE COAL"

SILTSTONE (CARBONACEOUS PHASES)

BRECCIATED SILTSTONE

700'

SILTSTONE (CARBONACEOUS PHASES)

SILTSTONE

SILTSTONE (CARBONACEOUS PHASES)

COAL

SILTSTONE (CARBONACEOUS)

800'

SILTSTONE

836'

CONGLOMERATE- SANDY AT THE TOP
CADOMIN FORMATION
END OF HOLE.DETAIL OF GETTING
FORMATION

SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :

CLIFFORD McELROY & ASSOCIATES PTY. LTD.

for

COALITION MINING LIMITED

STRATIGRAPHIC LOGS

DDH S-7

DRAWN BY S.A.

DATE: October '71

PAGE 2 of 2

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-7

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 12.0 ft.		
	SANDSTONE, mudstone interbeds.	GETHING	30.0
	MUDSTONE.		65.0
	SANDSTONE, glauconitic.		
	SANDSTONE, mudstone phases.		79.0
	MUDSTONE, silty phases at top and base.		189.0
	COAL, mudstone at base.		191.0
	SANDSTONE, some silty interbeds.		215.0
Fault, established	SANDSTONE AND MUDSTONE, breccia.		227.0
	SANDSTONE, mudstone phases.		251.0
	MUDSTONE.		287.0
Fault, possible	SANDSTONE, glauconitic, fault in centre, sandy layer.		292.0
	SANDSTONE.		295.0
	MUDSTONE.		319.0
	SANDSTONE, silty interbeds.		336.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, possible	SILTSTONE AND MUDSTONE INTERBEDDED.		415.5
	MUDSTONE, pebble band at 449'.		457.0
	SANDSTONE, mudstone phases at base.		497.0
	MUDSTONE, silty interbeds.		533.0
	COAL.		534.0
	SILTSTONE, mudstone at top.		552.0
	COAL.		559.0
	MUDSTONE.		583.0
	SANDSTONE.		588.0
	COAL AND CLAYSTONE.		607.0
	COAL.		630.0
	SILTSTONE, carbonaceous phases and coaly bands.		662.0
	SILTSTONE, breccia.		667.0
	COAL.		681.0
	SILTSTONE, carbonaceous phase.		711.0
	SILTSTONE.		740.0
	SILTSTONE, carbonaceous phases, coal (1') 757' and 763' (4').		767.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	SILTSTONE.		812.0
	CONGLOMERATE, sandy at top.	? CADOMIN	836.0 <u>Base of Hole</u>

BORE NUMBER S-8

Grid Reference 50073.0 N 78043.1 E

Exploration Grid Reference A + 1400' / 1 + 1400'

Date Commenced 11th Dec., 1969 Completed

Collar R.L. 3908.3 ft. Standard Datum

Total Depth 872 ft. Electrically Logged *Yes/No*

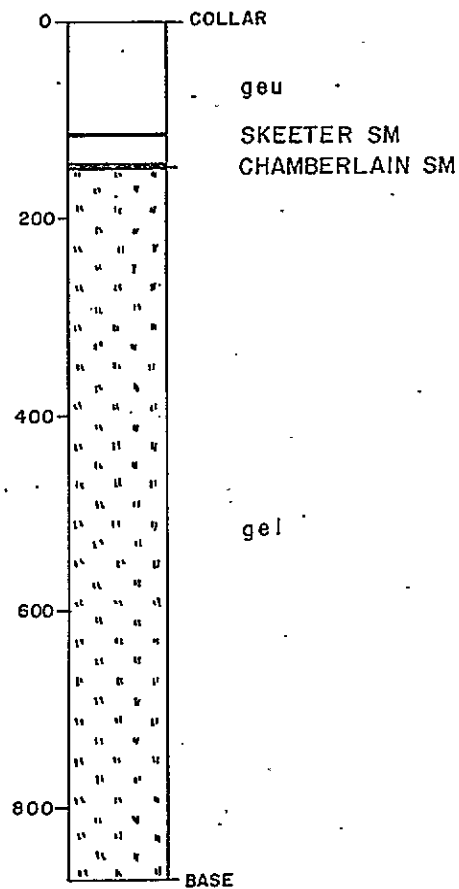
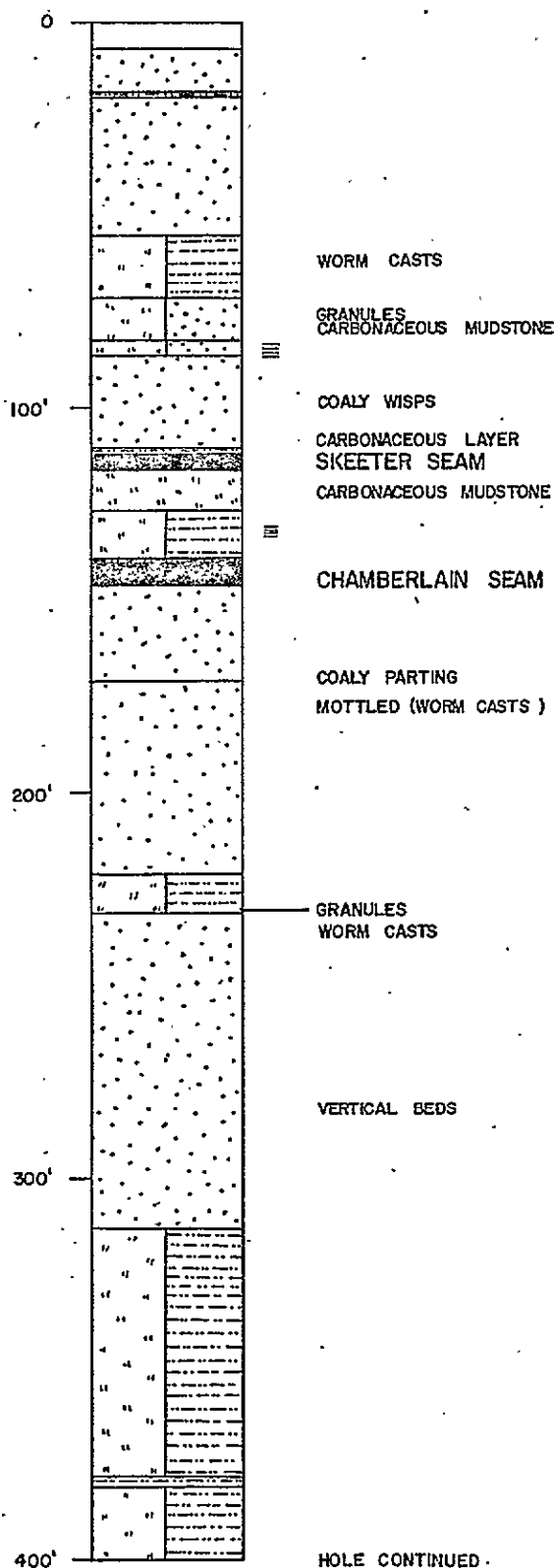
Drilled by Connors Drilling Limited

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3791	3.55	73.2%	
Chamberlain	3762	4.58	98.2%	

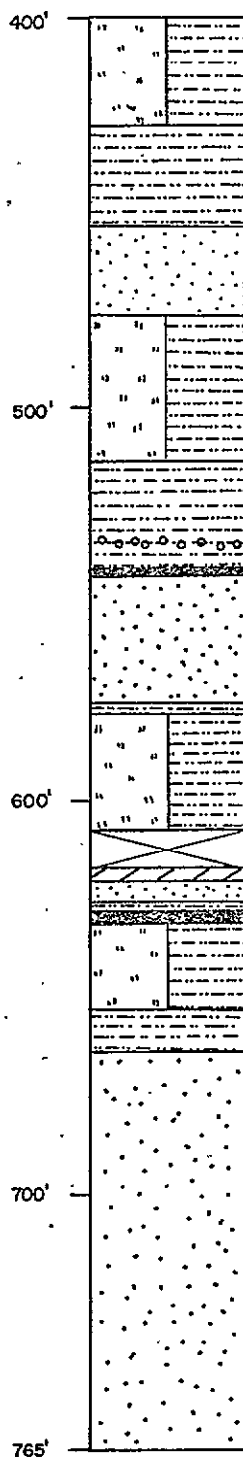


DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by:
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-8



CONTINUATION OF HOLE.

CARBONACEOUS PHASES

PEBBLES

COAL

CORE LOST BUT FOR 1' COAL
CARBONACEOUS CLAYSTONE
MUDSTONE PHASES
'MIDDLE COAL'

COALY WISPS

MUDSTONE PHASES & WISPS

HOLE CONTINUED.

DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

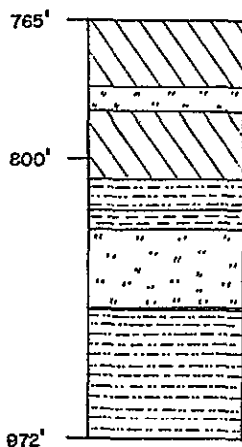
Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-8

DRAWN BY S.A.

DATE: November '71

PAGE 2 of 3



CONTINUATION OF HOLE.

CARBONACEOUS CLAYSTONE (COALY BANDS)

CARBONACEOUS CLAYSTONE (COALY BANDS)

COALY WISPS

CLAYSTONE (SIDERITIC?)

CLAYSTONE PHASES

COAL BAND

SILTSTONE PHASES

END OF HOLE.

DETAIL OF GETHING
FORMATION

SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by:

CLIFFORD McELROY & ASSOCIATES PTY. LTD.

for

COALITION MINING LIMITED

STRATIGRAPHIC LOGS

DDH S-8

DRAWN BY S.A.

DATE: November '71

PAGE 3 of 3

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *SKEETER*
Sample No. SK-8, Hole S-8
113.7 - 117.0 *A.S.V.*
Cored - 3.3
Recovered - 3.0

Report No. 67-0058

% Total Moisture 1.42

AIR DRY BASIS

% Moisture	0.71
% Ash	4.11
% Volatile	24.61
% Fixed Carbon	70.57
	<u>100.00</u>

Btu	14817
% Sulfur	0.32

FREE SWELLING INDEX (CBI) 9

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager

RAH/rh





WARNOCK HERSEY
INTERNATIONAL LIMITED

PROFESSIONAL SERVICES DIVISION

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

REPORT OF: Chemical Analysis

FILE NO: 460-Q-10075

AT Vancouver Laboratory

DATE December 30, 1969

PROJECT: Coal Analysis

REPORT NO:

REPORTED TO: Brameda Resources Ltd.
7th Floor - 1177 W. Hastings
Vancouver, B. C.

ORDER NO:

Att: L. S. Trenholme

We have tested two Samples of Coal submitted by you on
December 23 and report as hereunder:

RESULTS:

<u>HOLE</u>	<u>FROM</u>	<u>TO</u>	<u>Sample Identification</u>	<u>Free Swelling Index</u>
S-7	526.5	533.6	S - 071	1 - 1/2
-8	141.3	146.0	S - 081	7 - 1/2

WARNOCK HERSEY

G. Cochrane
SUPERVISOR, GENERAL LABORATORY

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-8

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 7.0 ft.		
	SANDSTONE, mudband at 19'. Coarse at top, fine at base.	GETHING.	56.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granular layer at base.		73.0
	SANDSTONE AND SILTSTONE INTERBEDDED, coarse sandstone at top. Carbonaceous mudstone layer at 76'.		83.0
	LAMINITE, siltstone and mudstone.		87.0
	SANDSTONE, coaly wisps and partings.		112.0
	<u>COAL</u> , mudstone and siltstone at top.	SKEETER SM.	117.0
	SANDSTONE AND SILTSTONE INTERBEDDED, with carbonaceous mudstone base.		121.0
	SILTSTONE, with mudstone phases.		128.0
	LAMINITE, siltstone and mudstone, mudstone base.		141.0
	<u>COAL</u> .	CHAMB. SM.	146.0
	SANDSTONE, coarse becoming fine at base. (mottled) worm casts 176',		

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
Fault, possible	coal parting at 172'.		222.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases, granules near base.		242.0
	SANDSTONE, worm casts 243', vertical bedding at 268-278' and brecciation at base.		314.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at top, mudstone phases towards base.		428.0
	MUDSTONE, carbonaceous phases.		454.0
	SANDSTONE, fine grained.		477.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		514.0
	MUDSTONE, pebble band 545'.		552.0
	<u>COAL</u> .		553.0
	SANDSTONE, mud band at 577'.		579.0
	SILTSTONE AND MUDSTONE INTERBEDDED, with mudstone phases.		607.0
	<u>COAL</u> , (1'), core lost.		617.0
	CLAYSTONE, carbonaceous.		620.0
	SILTSTONE, with siltstone phases. Coal, mudstone at top base.		626.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	SILTSTONE, with mudstone phases.		652.0
	MUDSTONE.		664.0
	SANDSTONE, coarse grained, irregular mud blebs and phases, coaly wisps.	GETHING	765.0
	CLAYSTONE, carbonaceous, numerous coaly bands.		782.0
	SILTSTONE.		789.0
	CLAYSTONE, carbonaceous, numerous coaly bands.		806.0
	SANDSTONE, mudstone interbeds, coaly inclusions.		814.0
	CLAYSTONE, sideritic.		817.0
	SILTSTONE, mudstone phases.		839.0
	MUDSTONE, silty phases, coaly at top.		872.0
			<u>Base of Hole</u>

BORE NUMBER S-9

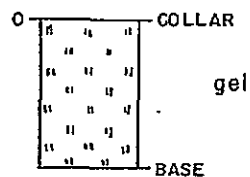
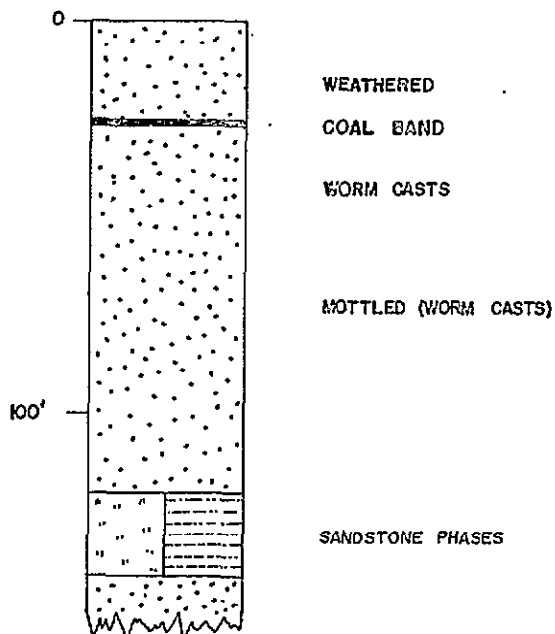
Grid Reference 50380 N 78290 E
Exploration Grid Reference A + 1400 / 1 + 1800

Date Commenced 9th Feb., 1970 Completed 11th Feb., 1970

Collar R.L. 3806 ft. Standard Datum
Total Depth 232 ft. Electrically Logged Yes/No
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
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DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-9

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-9

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 15.0 ft.		
	SANDSTONE, weathered.	GETHING	25.0
	<u>COAL.</u>		26.0
	SANDSTONE, worm casts, 45', mottled (worm casts) 73'.		121.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at top.		142.0
	SANDSTONE, coarse phase at top.		153.0

BORE NUMBER S-10

Grid Reference 36325.1 N 88179.00 E

Exploration Grid Reference I + 300' / 1 + 1900'

Date Commenced

Completed

Collar R.L. 4110.5 ft.

Standard Datum

Total Depth 232 ft.

Electrically Logged ~~Yes~~/No

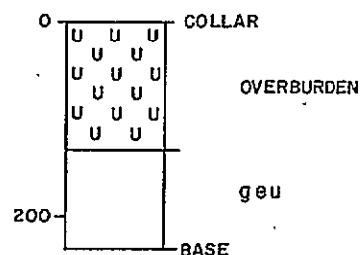
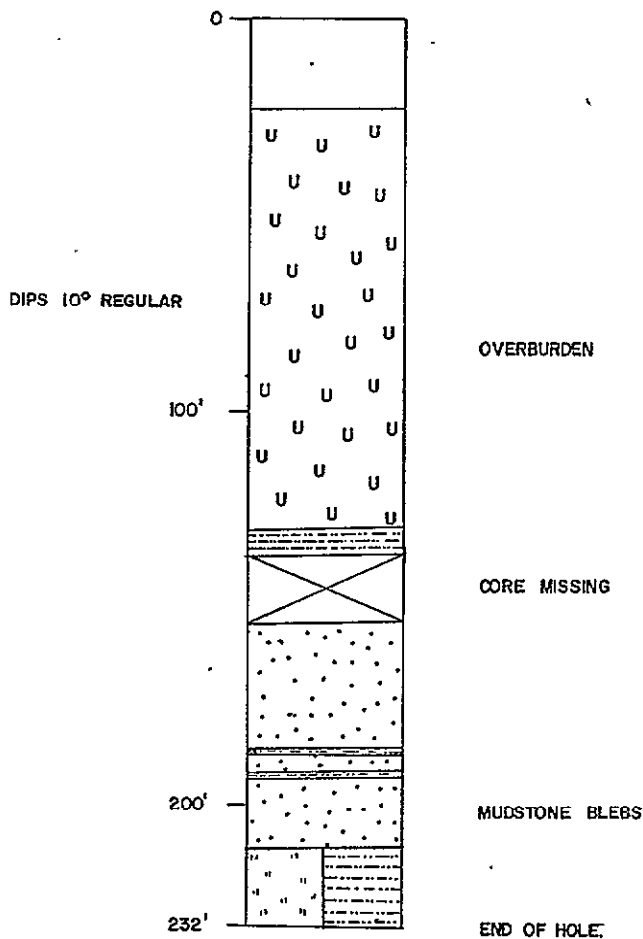
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
------	---------------	--------------------	----------	---------



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-10

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-10

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 17.0 ft.		
	SANDSTONE, conglomerate overburden.	GETHING	130.0
	MUDSTONE.		136.0
	? CORE MISSING.		154.0
	SANDSTONE, mudstone band at 187' and 193', mud breccia, 200'.		212.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		232.0
			<u>Base of Hole</u>

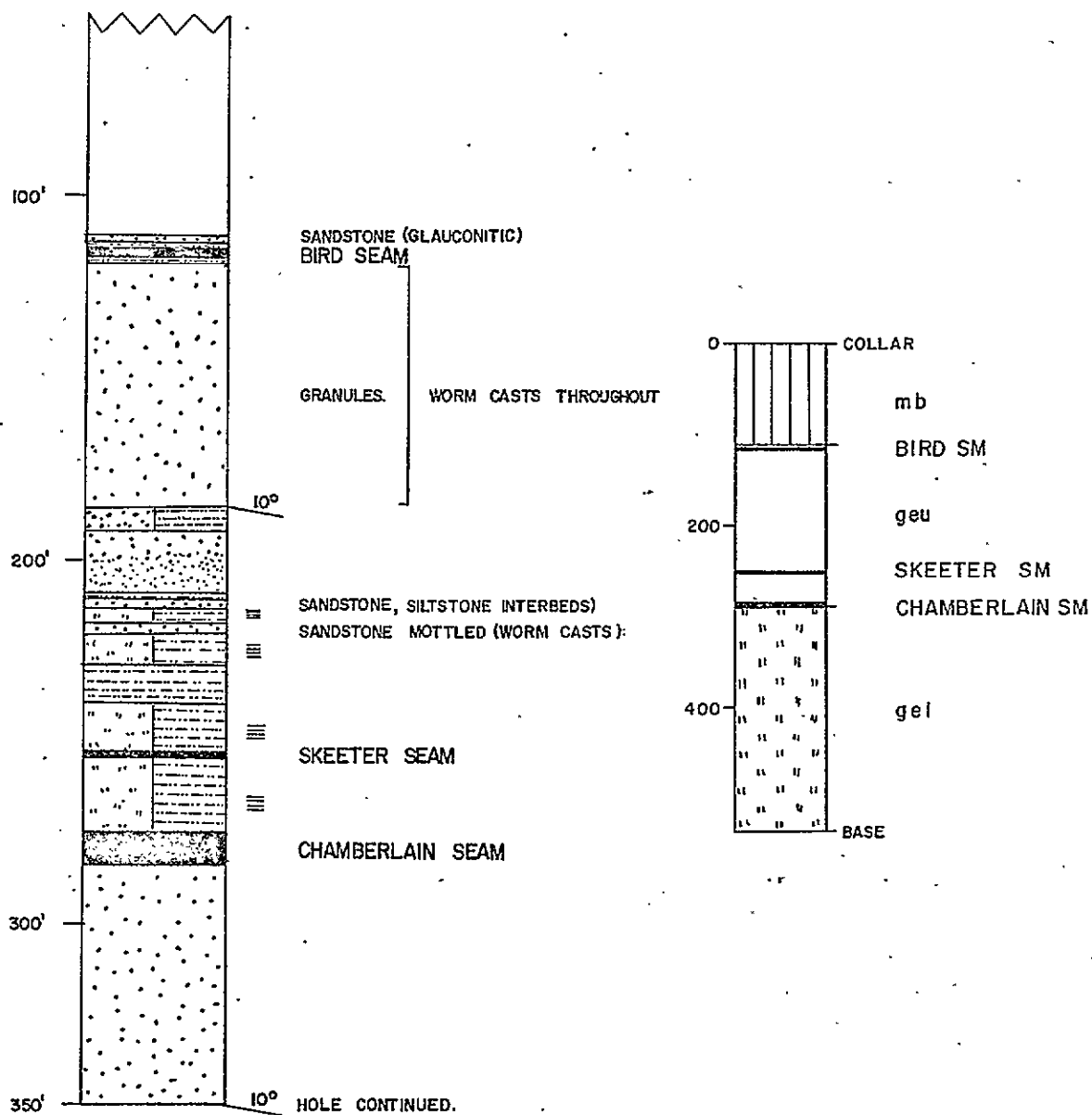
Grid Reference 39091.9N 90509.30E
Exploration Grid Reference I+1200'/3+1300'

Date Commenced 20th February, 1970 Completed 22nd February, 1970

Collar R.L. 4039.1 Standard Datum
Total Depth 539 Electrically Logged ~~Yes~~/No
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	3756.1	8.0	75%	

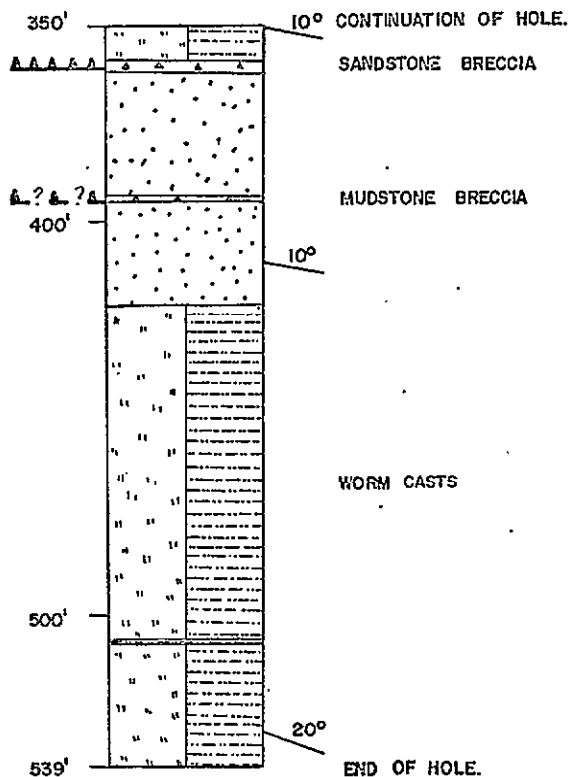


DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-II



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

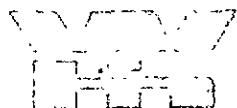
Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-II

DRAWN BY S.A.

DATE: November

PAGE 2 of 2



WARNOCK HERSEY
INTERNATIONAL LIMITED

PROFESSIONAL SERVICES DIVISION

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

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

FILE NO: 460-Q-9898
DATE: December 16, 1969
REPORT NO:
ORDER NO:

ATTENTION: Mr. Tremblaine

We have tested three samples of Coal submitted by you on
December 9, 1969 and report as hereunder:

TEST RESULTS

<u>Sample Identification</u>	<u>Free Swelling Index</u>
S - 011	8 - 1/2
S - 012	8
S - 022	1 - 1/2
S - 022 after floating	1 - 1/2

WARNOCK HERSEY

SUPERVISOR, GENERAL LABORATORY

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-11

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft.)
	No core to 72.0 ft. MUDSTONE.	MOOSEBAR	111.0
	SANDSTONE, glauconitic.	GETHING	112.0
	<u>COAL</u> , mudstone at top and at base.	BIRD SEAM	116.0
	SANDSTONE, coarse at top. Fine at base, worm casts in top half, granule conglomerate 156'. Some mudstone interbeds at 215'.		214.0
	LAMINITE, siltstone and mudstone, mudstone at base.		218.0
	SANDSTONE, mottled (worm casts).		220.0
	LAMINITE, siltstone and mudstone.		238.0
	MUDSTONE.		248.0
	LAMINITE, coal bands at 252'.		275.0
	<u>COAL</u> .	CHAMB. SM.	283.0
	SANDSTONE.		250.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		259.0
Fault, established	SANDSTONE AND SILTSTONE, breccia.		361.0
Fault, possible	SANDSTONE, breccia zones, mudband at 390'.		428.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at top. Mudstone band at 508'.		539.0 <u>Base of Hole</u>

Grid Reference 36035N 88997E .

Exploration Grid Reference J+1600'/2+400'

Date Commenced 25th Feb., 1970 Completed 5th March, 1970

Collar R.L. 4120' Standard Datum

Total Depth 866' Electrically Logged Yes/No .

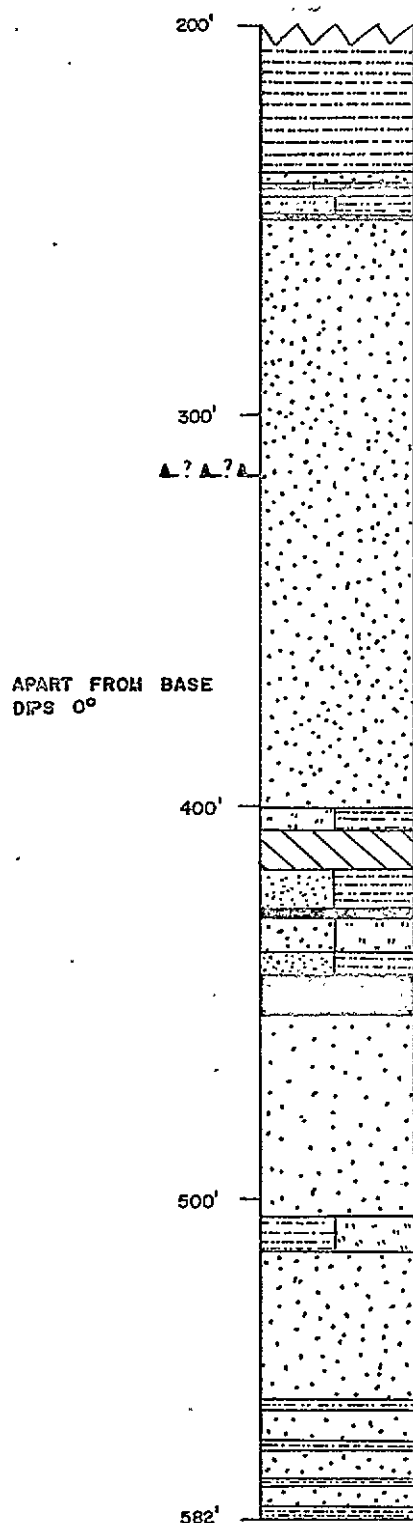
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and J.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	3717.6	8.5	100%	



MOOSEBAR FORMATION

SANDSTONE (GLAUCONITIC)
BIRD SEAM

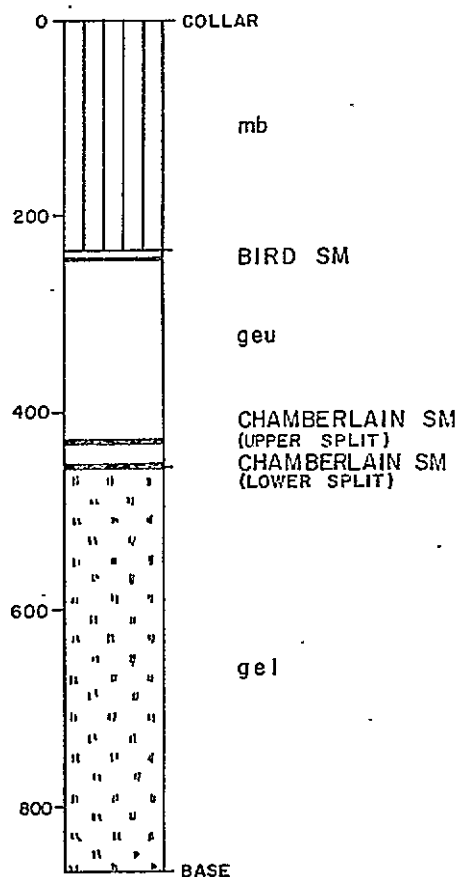
WORM CASTS

BRECCIATED ZONE

CHAMBERLAIN SEAM - UPPER SPLIT

CHAMBERLAIN SEAM - UPPER SPLIT

GRANULES
WORM CASTS



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

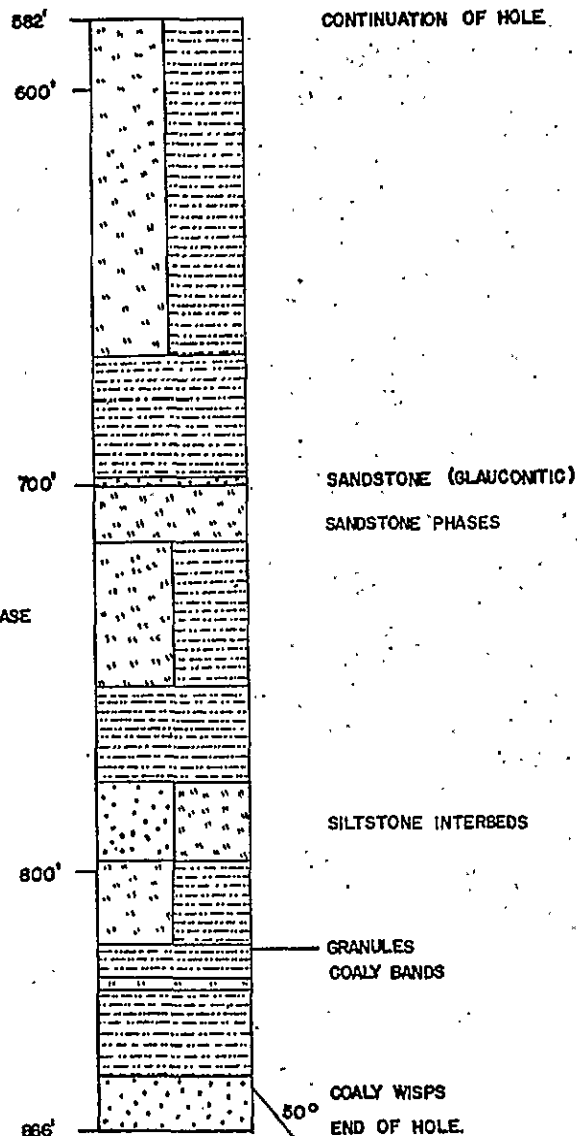
Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-12

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 2



DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS

DDH S-12

DRAWN BY S.A.

DATE: November '71

PAGE 2 of 2

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

REPORT OF: Chemical Analysis

FILE NO: 465 - 11037

AT Vancouver Laboratory

DATE March 20, 1970

PROJECT: Coal Sample

REPORT NO:

REPORTED TO: Brameda Resources Ltd.,
7th Floor - 1177 West Hastings Street
Vancouver, B.C.

ORDER NO:

ATTENTION: Mr. L.S. Trenholme

We have tested four samples of coal submitted by you on
March 18, 1970 and report as hereunder:

TEST RESULTS	CHAMBERLAIN		SEAM	
	4445-453.0	369.5-381.0	246.0-257.0	229.0-237.5
	Sample S12-1	Sample S13-1	Sample S14-1	Sample S15-1
Total Moisture (as received)	1.92 %	1.64 %	3.44 %	1.92 %
Surface Moisture (as received)	1.53 %	1.13 %	3.00 %	1.50 %
Inherent Moisture (air dry)	0.40 %	0.52 %	0.45 %	0.43 %
Ash (air dry)	4.95 %	5.65 %	8.00 %	6.55 %
Volatile Matter (air dry)	23.45 %	24.23 %	24.80 %	22.25 %
Fixed Carbon (air dry)	71.20 %	69.60 %	66.75 %	70.77 %
B.T.U.'s per lb. (air dry)	15,269	15,170	14,696	14,970
Sulphur (air dry)	0.46 %	0.47 %	0.52 %	0.45 %
Free Swelling Index (air dry)	8 - 1/2	7 - 1/2	7	7

Weights of "s" samples as received

S11-1	-	2.75 lbs.
S11-2	-	6.75 lbs.
S12-1	-	13.00 lbs.
S13-1	-	26.50 lbs.
S14-1	-	6.50 lbs.
S15-1	-	9.00 lbs.

WARNOCK HERSEY

T.M. Williams
SUPERVISOR, GENERAL LABORATORY

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-12

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 137.0 ft.		
	MUDSTONE, ash bed at base.	MOOSEBAR FM.	238.0
	SANDSTONE, glauconitic.	GETHING FM.	241.0
	SILTSTONE.		242.0
	<u>COAL</u> .	BIRD SEAM	243.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		248.0
	<u>COAL</u> , (0.5').		248.5
Fault, possible	SANDSTONE, brecciated zones, worm casts 268-288'.		402.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		406.0
	CLAYSTONE, carbonaceous, coaly bands.		416.0
	LAMINITE, siltstone and mudstone.		427.0
	<u>COAL</u> .	CHAMB. SM. upper split	428.5
	SANDSTONE AND SILTSTONE INTERBEDDED, mudstone at base.		437.0
	LAMINITE, siltstone and mudstone, mudstone at base.		444.0
Fault, possible	<u>COAL</u> .	CHAMB. SM. lower split	453.0
	SANDSTONE.		505.0

Structure	Description of Strata	Formation or Member	Depth ± Base of Stratum (ft)
	SILTSTONE AND MUDSTONE INTERBEDDED, granules at base.		513.0
	SANDSTONE, mudstone bands at 553', 563', 573', 580', worm casts 516' and 518'.		582.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		668.0
	MUDSTONE.		669.0
	SANDSTONE, glauconitic.		701.0
	SILTSTONE, sandy phases.		715.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		752.0
	MUDSTONE.		776.0
	SANDSTONE, silty interbeds.		796.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		818.0
	CONGLOMERATE, granule.		819.0
	SHALE, carbonaceous, coaly bands.		826.0
	SILTSTONE, mudstone phases.		829.0
	MUDSTONE.		851.0
	SANDSTONE, coaly wisps and mudstone blebs.		866.0
			<u>Base of Hole</u>

BORE NUMBER S-13

Grid Reference 37997.2N 88578.6E

Exploration Grid Reference I+1400'/2+1200'

Date Commenced 8th March, 1970 Completed 10th March, 1970

Collar R.L. 3965' Standard Datum

Total Depth 408' Electrically Logged Yes/No

Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and J.R. Gordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	3640	11.5	100%	

CHAMBERLAIN SEAM

ASH %
CUMULATIVE
FROM FLOOR

	WT%	ASH%	C. S. No	INCL. BANDS	EXCL. BANDS
364.65				19.8	
11.82	-	19.8	5½		
376.47					

Prepared by:

CLIFFORD McELROY & ASSOCIATES PTY. LTD.

for

COALITION MINING LIMITED

DRAWN BY pm.

DATE Feb '72

SCALE: 1" to 2'

SEAM SECTIONS

DDH S-14

(Extended)

PAGE 1 of 1

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

REPORT OF: Chemical Analysis

FILE NO: 465 - 11037

AT: Vancouver Laboratory

DATE: March 20, 1970

PROJECT: Coal Sample

REPORT NO:

REPORTED TO: Brameda Resources Ltd.,
7th Floor - 1177 West Hastings Street
Vancouver, B.C.

ORDER NO.

ATTENTION: Mr. L.S. Trenholme

We have tested four samples of coal submitted by you on March 18, 1970 and report as hereunder:

TEST RESULTS	CHAMBERLAIN		SEAM	
	44.75 - 453.0	369.5 - 381.0	246.0 - 257.0	229.0 - 237.5
	Sample S12-1	Sample S13-1	Sample S14-1	Sample S15-1
Total Moisture (as received)	1.92 %	1.64 %	3.44 %	1.92 %
Surface Moisture (as received)	1.53 %	1.13 %	3.00 %	1.50 %
Inherent Moisture (air dry)	0.40 %	0.52 %	0.45 %	0.43 %
Ash (air dry)	4.95 %	5.65 %	8.00 %	6.55 %
Volatile Matter (air dry)	23.45 %	24.23 %	24.80 %	22.25 %
Fixed Carbon (air dry)	71.20 %	69.60 %	66.75 %	70.77 %
B.T.U.'s per lb. (air dry)	15,269	15,170	14,696	14,970
Sulphur (air dry)	0.46 %	0.47 %	0.52 %	0.45 %
Free Swelling Index (air dry)	8 - 1/2	7 - 1/2	7	7

Weights of "s" samples as received

S11-1	-	2.75	lbs.
S11-2	-	6.75	lbs.
S12-1	-	13.00	lbs.
S13-1	-	26.50	lbs.
S14-1	-	6.50	lbs.
S15-1	-	9.00	lbs.

WARNOCK HERSEY

T.M. Williams

SUPERVISOR, GENERAL LABORATORY

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-13

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 61.5 ft.		
	MUDSTONE, ash beds at base.	MOOSEBAR	198.5
	SANDSTONE, glauconitic.	GETHING.	199.5
	<u>COAL</u> .	BIRD SEAM	203.0
	MUDSTONE, carbonaceous.		206.0
	CLAY, white, fretted.		206.5
	SILTSTONE AND MUDSTONE INTERBEDDED, coal band at base (1").		208.5
	SANDSTONE, mottled (worm casts), 213'. Granules at 233', worm casts 233- 262', laminite band 275'.		286.0
	SANDSTONE, silty phases.		293.0
	LAMINITE, siltstone and sandstone.		297.0
	SANDSTONE, coaly wisps.		309.0
	SILTSTONE AND MUDSTONE INTERBEDDED, carbonaceous mudstone at base, shell fossils at top of mudstone.		315.0
	LAMINITE, siltstone and mudstone, sandy phase in centre, mudstone at base.		329.0
	CLAYSTONE, carbonaceous.		331.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	LAMINITE, siltstone and mudstone, mudstone phase, 333'. <u>COAL.</u> SANDSTONE, silty phases. LAMINITE, siltstone and mudstone, mudstone at base. <u>COAL.</u> SANDSTONE.	CHAMB. SM.	343.0 344.0 363.0 369.5 381.0 408.0 <u>Base of Hole</u>

Grid Reference 46417.8N 78719.5E

Exploration Grid Reference B/1

Date Commenced 12th March, 1970 Completed 15th March, 1970

Collar R.L. 4169.8 Standard Datum

Total Depth 498 Electrically Logged Y/e/s//No

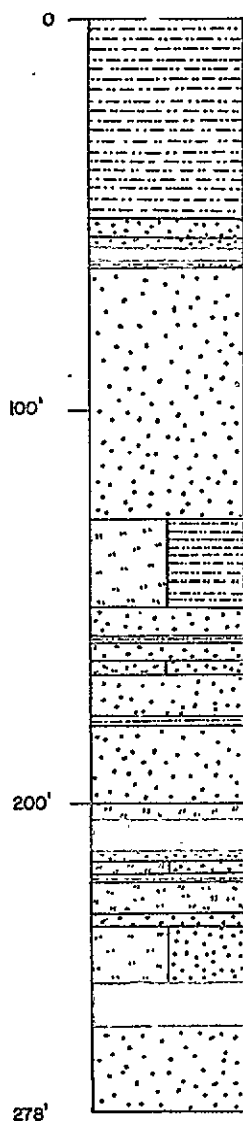
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3958.9	11.6	12%	
Chamberlain Upper Plate	3912.9	9.6	54.5%	
Chamberlain Lower Plate	3792.7	11.7	72%	



MOOSEBAR FORMATION

SANDSTONE (GLAUCONITIC)
PEBBLES
BIRD SEAM
MOTTLED (WORM CASTS)

PEBBLES

WORM CASTS

GRANULES

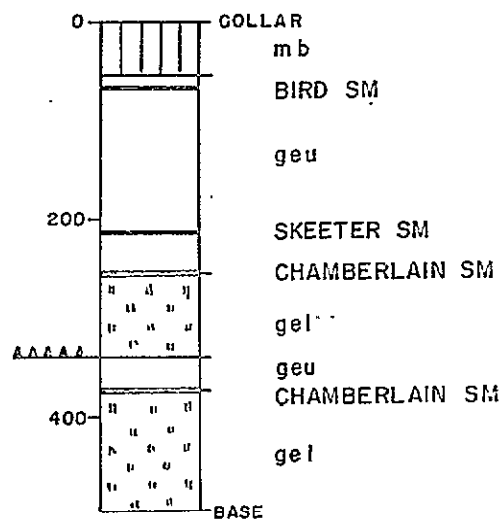
COALY WISPS

SILTSTONE, MUDSTONE BANDS & PHASES
SKEETER SEAM
COALY BANDS

CHAMBERLAIN SEAM

MOTTLED (WORM CASTS)

HOLE CONTINUED



COLLAR

mb

BIRD SM

geu

SKEETER SM

CHAMBERLAIN SM

gel

geu

CHAMBERLAIN SM

gel

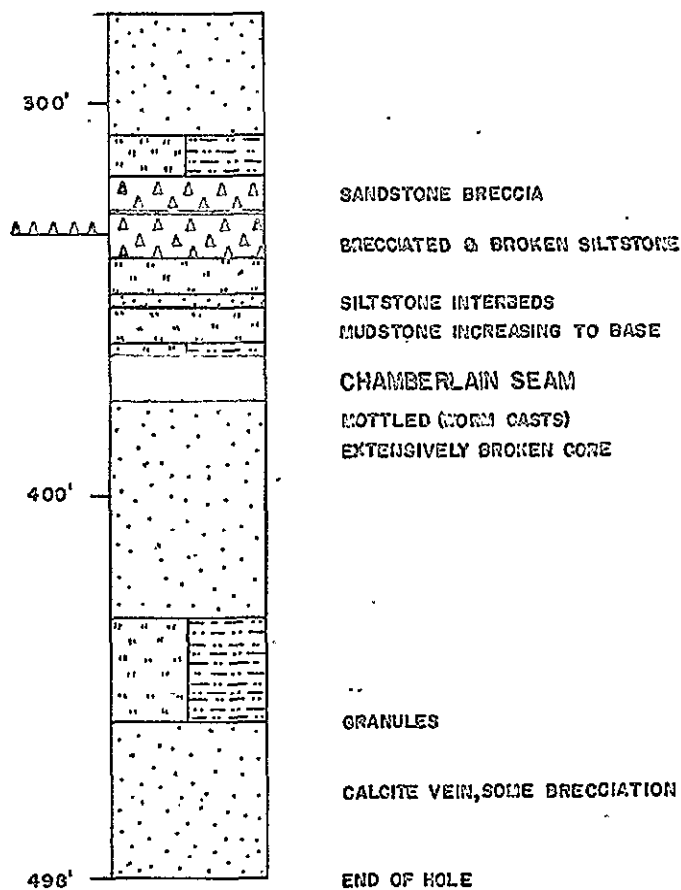
BASE

DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-14



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-14

DRAWN BY S.A.

DATE: November '71

PAGE 2 of 2

CHAMBERLAIN SEAM				ASH % CUMULATIVE FROM FLOOR	
	WT%	ASH%	C. S. No	INCL. BANDS	EXCL. BANDS
364.65				19.8	
11.82	-	19.8	5½		
376.47					

Prepared by:

CLIFFORD McELROY & ASSOCIATES PTY. LTD.

for

COALITION MINING LIMITED

DRAWN BY pm.

DATE Feb '72

SCALE: 1" to 2'

SEAM SECTIONS

DDH S-14

(Extended)

PAGE 1 of 1

Telegrams and Cables:
"Visor", Sydney

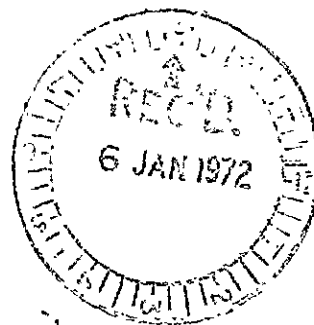
Telephone: 241 1105

CARGO
SUPERINTENDENTS
CO. (A/SIA.) PTY. LTD.

Scottish House,
19 BRIDGE ST.,
SYDNEY, 2000

Certification

This is to Certify



APPLICANT: COALITION MINING

REPORT ON: SUKUNKA SAMPLES NO. 185-187
CORE NO. S14 EXTENDED
CHAMBERLAIN SEAM

REPORT NO. K71-1844

RECEIVED: 17. 11. 1971

REPORTED: 31. 12. 1971



This Laboratory is Registered by the
National Association of Testing Authorities
Australia. The tests reported herein have
been performed in accordance with the
terms of registration.

A. R. A. C. I.
A.R.A.C.I. Chief Chemist.

For
CARGO SUPERINTENDENTS CO. (A/SIA.) PTY. LTD.

L. H. Dwyer

INTRODUCTION:

One (1) Coal Sample designated CORE NO. S14 CHAMBERLAIN SEAM was received on 17. 11. 1971 from Clifford McElroy & Associates.

METHOD:

The Coal Sample No. 185-187 was hand crushed to $\frac{3}{4}$ ", sized at 30 mesh BSS and the +30 mesh BSS fraction washed in organic liquids at 1.30 to 1.60 specific gravity in 0.05 steps.

The float and sink fractions and raw -30 mesh coal fraction were weighed, prepared and analysed for Ash and Crucible Swelling Number and the composite raw coal sample reconstituted and the true specific gravity of the sample determined.

A cumulative Floats 1.60 SG fraction was prepared for Sample No. 185-187 and the analysis is given in this report.

NOTE:

The sample weight has not been adjusted to compensate for core loss.

RESULTS:

TABLE 1 : gives the sizing, washability and analytical data for the sample after hand crushing to $\frac{3}{4}$ " top size.

TABLE 1

WASHABILITY DATA FOR SAMPLE NO. 185,186,187 (after hand crushing to $\frac{3}{4}$ ")

FRACTION	INDIVIDUAL				CUMULATIVE		
	WEIGHT	WT. %	ASH %	C.S.NO.	WT. %	ASH %	C.S.NO.
F1.30 SG	1745	31.8	1.9	9	31.8	1.9	9
S1.30 - F1.35 SG	1210	22.0	3.9	5½	53.8	2.7	7½
S1.35 - F1.40 SG	291	5.3	8.5	3½	59.1	3.2	7
S1.40 - F1.45 SG	121	2.2	14.1	2½	61.3	3.6	7
S1.45 - F1.50 SG	79	1.4	14.8	1½	62.7	3.9	7
S1.50 - F1.55 SG	57	1.0	15.7	1½	63.7	4.1	7
S1.55 - F1.60 SG	40	0.7	19.7	1½	64.4	4.2	7
S1.60 SG	1951	35.6	50.3	1	100.0	20.6	5
-30 Mesh RC	505	8.4	11.4	9			

Total Weight of Sample = 5999 grams

True Specific Gravity = 1.439

Thickness = 11.82'

ANALYSIS OF F1.60 SG FRACTION OF SAMPLE NO. 185-187

Yield %	64.4
Air Dried Moisture %	1.0
Ash %	4.4
Volatile Matter %	24.8
Fixed Carbon %	69.8
Total Sulphur %	0.35
C.S.NO.	7½
Calorific Value	14530 BTU/LB
Phosphorus %	0.015

SYDNEY

31st December 1971

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 25, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-14-1

Report No. 67-0571
67-0572

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
	1.60	83.5	0.97	5.69	25.02	68.32	14447	0.52	7½
1.60		<u>16.5</u>	<u>0.94</u>	<u>28.19</u>				<u>0.42</u>	
		100.0	0.97	9.40				0.50	

% ADM = % Moisture in air dried sample

Weight of as received sample = 1.177 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

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

REPORT OF: Chemical Analysis.

FILE NO: 465 - 11037

AT Vancouver Laboratory

DATE March 20, 1970

PROJECT: Coal Sample

REPORT NO:

REPORTED TO: Brameda Resources Ltd.,
7th Floor - 1177 West Hastings Street
Vancouver, B.C.

ORDER NO:

ATTENTION: Mr. L.S. Trenholme

We have tested four samples of coal submitted by you on March 18, 1970 and report as hereunder:

TEST RESULTS	CHAMBERLAIN		SEAM	
	444.5 - 453.0	369.5 - 381.0	246.0 - 257.0	224.0 - 237.5
	Sample S12-1	Sample S13-1	Sample S14-1	Sample S15-1
Total Moisture (as received)	1.92 %	1.64 %	3.44 %	1.92 %
Surface Moisture (as received)	1.53 %	1.13 %	3.00 %	1.50 %
Inherent Moisture (air dry)	0.40 %	0.52 %	0.45 %	0.43 %
Ash (air dry)	4.95 %	5.65 %	8.00 %	6.55 %
Volatile Matter (air dry)	23.45 %	24.23 %	24.80 %	22.25 %
Fixed Carbon (air dry)	71.20 %	69.60 %	66.75 %	70.77 %
B.T.U.'s per lb. (air dry)	15,269	15,170	14,696	14,970
Sulphur (air dry)	0.46 %	0.47 %	0.52 %	0.45 %
Free Swelling Index (air dry)	8 - 1/2	7 - 1/2	7	7

Weights of "s" samples as received

S11-1	-	2.75 lbs.
S11-2	-	6.75 lbs.
S12-1	-	13.00 lbs.
S13-1	-	26.50 lbs.
S14-1	-	6.50 lbs.
S15-1	-	9.00 lbs.

WARNOCK HERSEY

T.M. Williams

SUPERVISOR, GENERAL LABORATORY

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-14

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 26.0 ft.		26.0
	MUDSTONE, ash bands, pebbles at base.	MOOSEBAR	52.0
	SANDSTONE, glauconitic, pebbles at base.	GETHING	56.0
	SANDSTONE.		59.0
	<u>COAL.</u>	BIRD SEAM	61.0.
	MUDSTONE.		63.0
	SANDSTONE, mottled (worm casts), 69'. Pebbles 85'.		128.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		150.0
	SANDSTONE, mudstone band 15 '.		163.0
	LAMINITE, siltstone and mudstone, mudstone base.		167.0
	SANDSTONE, coaly wisps, mudstone band 179'.		200.0
	SILTSTONE WITH MUDSTONE PHASES, mudstone bands at 203' and 201'.		204.0
	<u>COAL.</u>	SKEETER SM	211.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	SANDSTONE, fine grained.		215.0
	LAMINITE, siltstone and mudstone, mudstone and coal partings at base.		220.0
	SILTSTONE, mudstone phases.		228.0
	SANDSTONE, fine grained.		231.0
	LAMINITE, siltstone and mudstone,		246.0
	<u>COAL.</u>	CHAMB. SM.	257.0
	SANDSTONE, coarse at top, becoming fine, 263' mottled (worm casts).		278.0

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-14
extension

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	Coring recommenced 277.0 ft.		
	SANDSTONE, grey, fine grained, quartz-lithic, dip 40°.		309.0
	SILTSTONE AND MUDSTONE INTERBEDS.		319.0
	SANDSTONE, brecciated, and cracks filled with calcite.		328.0
	SILTSTONE, some sandy interbeds, crushed to 336', sheared (slicken- sides) and calcite veined extensively to 340', becoming less towards base. Bedding angle 35°.		349.0
	SANDSTONE, silty interbeds.		352.0
	SILTSTONE, mudstone interbeds - increasing to base.		361.0
	LAMINITE, siltstone and mudstone, dip 30°.		364.5
	<u>COAL.</u>	CHAMB. SM.	376.5
	SANDSTONE, extensively broken from 385'-387' and 388'-389'. Mottled (worm casts) at 387'. Dip 5°-10° increasing to 40°.		432.0
	SILTSTONE AND MUDSTONE INTERBEDS, granules at base. Dip 25°.		458.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	SANDSTONE, calcite veining about 476' with some brecciation and vertical dips. Above brecciation dip 25° , below 10° .		498.0 <u>Base of Hole</u>

SUKUNKA D.D.H. S-14 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
Refer to log of S-14 for details above 277.00:		277.00		
SANDSTONE, grey, fine grained, quartz-lithic, a few fine calcite veins parallel to bedding. Bedding angle 52° to core axis.	30.90	307.90	30.00	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded, sandstone interbeds and phases, worm casts and mud blebs. Bedding angle 55° to core axis. Oblique curved and slickensided fracture with calcite infilling 3.3' from top.	7.77	315.67	7.27	
SILTSTONE AND MUDSTONE INTERBEDS, as above.	4.20	319.87	3.99	
SANDSTONE, grey, fine grained, quartz-lithic, crushed in top 0.5', brecciated or extensively cracked throughout, with calcite infillings, core broken.	8.59	328.46	8.16	
SILTSTONE AND MUDSTONE, core broken, heavily sheared and weathered. Listric surfaces.	0.77	329.23	0.73	
<u>COAL</u> , broken and surrounded by listric surfaces.	6.23	335.46	0.27) SKEETER SEAM)

SUKUNKA D.D.H. S-14 (extension)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded, one 0.05' coal interbed at top, beds highly disturbed and slickensided, bedding angle 20° to core axis at top and 60° to core axis 1.6' from top with calcite. Immediately below this bedding angle back to 15° to core axis. From 2.5' to base mudstone predominates and this highly disturbed and dislocated.	3.84	339.30	3.78	
SILTSTONE, grey, some mudstone interbeds, slickensided throughout, calcite in small brecciated zone (0.20') 0.25' from base, beds overturned at 1.8' from top and possibly terminate in small breccia zone (0.08') at base.	2.51	341.81	2.47	
CLAYSTONE, carbonaceous.	0.47	342.28	0.47	
SILTSTONE, grey, sandy interbeds and phases mainly towards base. Bedding angle 52° to core axis.	7.52	349.80	7.39	
SANDSTONE, grey, fine grained, silty interbeds, quartz-lithic. Calcite veins en echelon at 25° to core axis. Bedding angle 60° to core axis.	3.87	353.67	3.83	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey, and mudstone dark grey interbedded. At 3.1' from top calcite				

SUKUNKA D.D.H. S-14 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
and some mud, bedding angle 60° to core axis.	4.60	358.27	4.54	
SILTSTONE AND MUDSTONE INTERBEDS, as above, some brecciation and calcite infilling 0.4' from top and at base.	4.08	362.35	4.04	
LAMINITE, siltstone grey and mudstone dark grey. Bedding angle 62° to core axis.	2.30	364.65	2.30	
<u>COAL</u> , coaly type indeterminate, may be stony, core breaks along bedding planes at 60° - 55° to core axis. Listric surfaces. Calcite veins parallel to bedding in top 0.22' and at 0.75' from top. Vertical cleat absent.	2.07	366.72	2.04)
dull to coal stony. Joint plane or bedding planes at 70° to core axis.	0.55	367.27	0.55)
mainly dull with minor bright bands, bedding planes at 70° to core axis.	0.44	367.71	0.44)
bright.	0.08	367.79	0.08)
mainly dull with minor bright bands.	0.39	368.18	0.39)

CHAMBERLAIN
SEAM
lower plate

SUKUNKA D.D.H. S-14 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
COAL, bright.	0.11	368.29	0.11)	
)	
mainly dull with minor bright bands, bedding angle 55° at 0.47' from top.	0.74	369.03	0.73)	
)	
mainly dull with minor bright bands, joints at 0.03' (60° to core axis) from top and at 0.13' (70° to core axis) from top.	0.29	369.32	0.29)	
)	
bright.	0.12	369.44	0.12)	
)	CHAMBERLAIN SEAM
mainly dull with minor bright bands, bedding planes at 55-60° to core axis.	0.56	370.00	0.56)	lower plate
)	
bright.	0.20	370.20	0.15)	
)	
coal type difficult to determine, coal hard and vertical cleat absent or poorly developed. Mostly dull with minor bright bands. Jointing (bedding angle?))	
50° to core axis from 0.3'-1.4' from top.	4.28	374.48	3.19)	
)	
powdered, particles contain some bright coal.	0.24	374.72	0.18)	
)	
mainly dull with minor bright bands.	0.52	375.24	0.39)	

SUKUNKA D.D.H. S-14 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u> , type difficult to distinguish, core badly broken. Mostly dull with minor bright bands. A joint at 0.2' from top slightly slickensided at 55° to core axis. Sandstone/coal junction at base at 35° to core axis.	1.23	376.47	0.92	CHAMBERLAIN SEAM
SANDSTONE, black, fine grained, carbonaceous.	0.54	377.01	0.54	lower plate
<u>COAL</u> , dull.	0.13	377.14	0.10	
SANDSTONE, black, fine grained, carbonaceous, calcite vein at base.	0.28	377.42	0.28	
SANDSTONE, grey, medium grained becoming finer towards base. Mottled (worm casts) from 4.5' to 5.3' from top. Heavy calcite vein at 7.1' from top. At 7.6' from top to 9.4' and from 11.4' to 13.4' core broken and/or crushed. Some calcite veins below base of broken zone. Bedding angle above broken zone 72° to core axis.	16.00	393.42	15.93	
SANDSTONE, grey, fine grained, quartz-lithic, silty bands each with slickensides and calcite, and with calcite veining in sandstone in between are found at 2.8', 4.1' and 5.2' from top. Bedding angle 70° from core axis.	18.37	411.79	18.29	

SUKUNKA D.D.H. S-14 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, grey, fine grained, quartz-lithic, bedding angle 62° to core axis. Calcite veins mostly parallel to bedding from 8.5' to 0.8' from base. In this zone some slickensides and a calcified breccia zone (0.1') at 1.3' from base.	18.49	430.28	18.41	
SANDSTONE, grey, fine grained, quartz-lithic.	1.70	431.98	1.69	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded, sandy interbeds and phases. Worm casts and mud blebs. Bedding angle 72° to core axis. A few calcite veins, mainly parallel to bedding.	16.98	448.96	16.91	
SILTSTONE AND MUDSTONE INTERBEDS, as above.	6.97	455.93	6.94	
SANDSTONE, grey, medium to coarse grained, quartz-lithic, silty interbeds and some calcite veins parallel to bedding.	1.69	457.62	1.68	
SILTSTONE, grey.	0.30	457.92	0.30	
SANDSTONE, grey, fine grained, quartz-lithic, bedding angle 65° to core axis. Heavy calcite veins parallel to bedding at 2.1' and 1.6' from base.	9.96	467.88	9.92	

SUKUNKA D.D.H. S-14 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, grey, fine grained, quartz-lithic, calcite veins mainly along bedding planes mainly from 4.8' to 10.8' from top. In this zone is an overfold or slump involving a flexure of the bedding beyond the vertical and back. Slickensided bedding planes and on some oblique fractures. Bedding angle towards base 86° to core axis.	18.48	486.36	18.40	
SANDSTONE, grey, fine grained, quartz-lithic.	11.64	498.00	11.59	<u>Base of Hole</u>

BORE NUMBER S-15

Grid Reference 38154.2N 85278.7E

Exploration Grid Reference H+1400'/1+600'

Date Commenced 13th March, 1970 Completed 14th March, 1970

Collar R.L. 3983.1' Standard Datum

Total Depth 278' Electrically Logged Yes/No

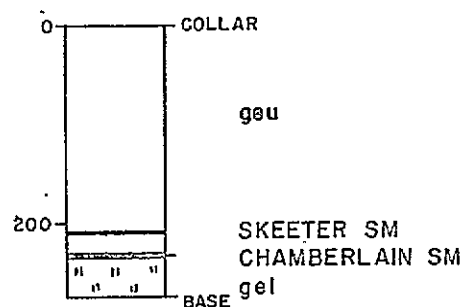
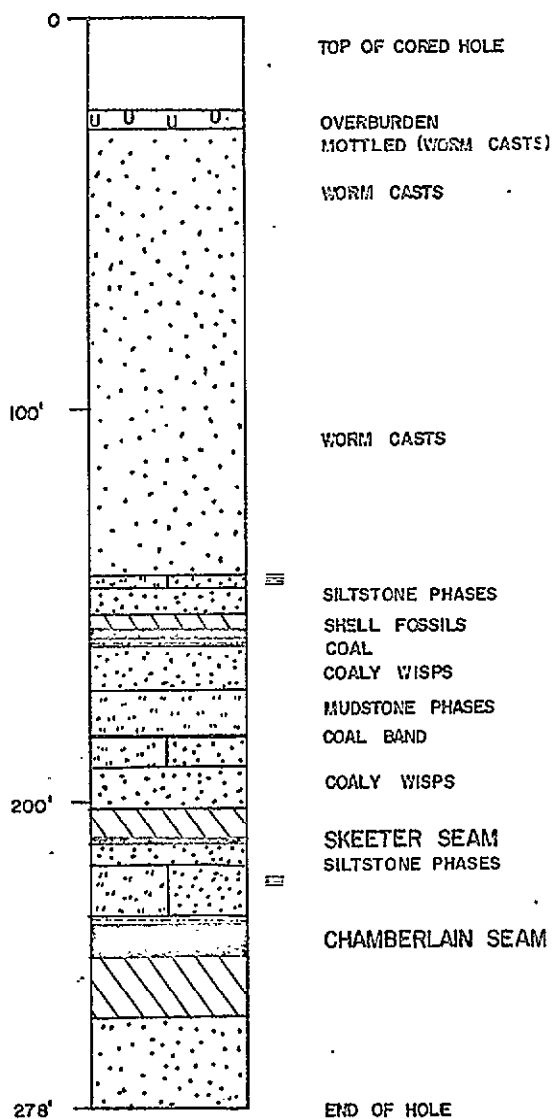
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3773.6	1.0	100%	
Chamberlain	3745.6	8.0	94%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-15

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

REPORT OF: Chemical Analysis.

FILE NO: 465 - 11037

AT Vancouver Laboratory

DATE March 20, 1970

PROJECT: Coal Sample

REPORT NO:

REPORTED TO: Brameda Resources Ltd.,
7th Floor - 1177 West Hastings Street
Vancouver, B.C.

ORDER NO:

ATTENTION: Mr. L.S. Trenholme

We have tested four samples of coal submitted by you on March 18, 1970 and report as hereunder:

TEST RESULTS	CHAMBERLAIN	SEAM		
	444.5 - 453.0	369.5 - 381.0	246.0 - 257.0	224.0 - 237.5
	Sample S12-1	Sample S13-1	Sample S14-1	Sample S15-1
Total Moisture (as received)	1.92 %	1.64 %	3.44 %	1.92 %
Surface Moisture (as received)	1.53 %	1.13 %	3.00 %	1.50 %
Inherent Moisture (air dry)	0.40 %	0.52 %	0.45 %	0.43 %
Ash (air dry)	4.95 %	5.65 %	8.00 %	6.55 %
Volatile Matter (air dry)	23.45 %	24.23 %	24.80 %	22.25 %
Fixed Carbon (air dry)	71.20 %	69.60 %	66.75 %	70.77 %
B.T.U.'s per lb. (air dry)	15,269	15,170	14,696	14,970
Sulphur (air dry)	0.46 %	0.47 %	0.52 %	0.45 %
Free Swelling Index (air dry)	8 - 1/2	7 - 1/2	7	7

Weights of "s" samples as received

S11-1	-	2.75 lbs.
S11-2	-	6.75 lbs.
S12-1	-	13.00 lbs.
S13-1	-	26.50 lbs.
S14-1	-	6.50 lbs.
S15-1	-	9.00 lbs.

WARNOCK HERSEY

T.M. Williams

SUPERVISOR, GENERAL LABORATORY

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-15

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	No core to 24.0 ft.		
	OVERBURDEN.	GETHING FM.	27.0
	SANDSTONE, coarse at top, becoming finer, mottled (worm casts) at 33', worm casts 46', 98', 121', core broken, brecciation 161'-171'. Mudstone band 127'-128' and 130' - 132'.		141.0
	LAMINITE, siltstone and mudstone, mudstone at base, siltstone and mudstone.		144.5
All angles 0°-10°	SANDSTONE, silty phases at base.		152.0
	MUDSTONE, carbonaceous, shell fossils at base.		156.0
	<u>COAL</u> .		156.5
	MUDSTONE.		157.0
	SANDSTONE, coaly wisps.		171.0
	SILTSTONE, mudstone phases, coal band at base.		184.0
	SILTSTONE.		191.0
	SANDSTONE, coaly wisps.		201.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	MUDSTONE, carbonaceous phases.		210.0
	<u>COAL.</u>	SKEETER SM.	211.0
	SANDSTONE, silty interbeds.		215.0
	LAMINITE, siltstone and mudstone, mudstone at base.		231.0
	<u>COAL.</u>	CHAMB. SM.	239.0
	MUDSTONE, carbonaceous.		255.0
	SANDSTONE.		278.0
			<u>Base of Hole</u>

Grid Reference 33111.3N 88970.0E

Exploration Grid Reference K+1100'/1+600'

Date Commenced 18th March, 1970 Completed 1st April, 1970

Collar R.L. 4889.1 Standard Datum

Total Depth 1290 Electrically Logged *Yes/No*

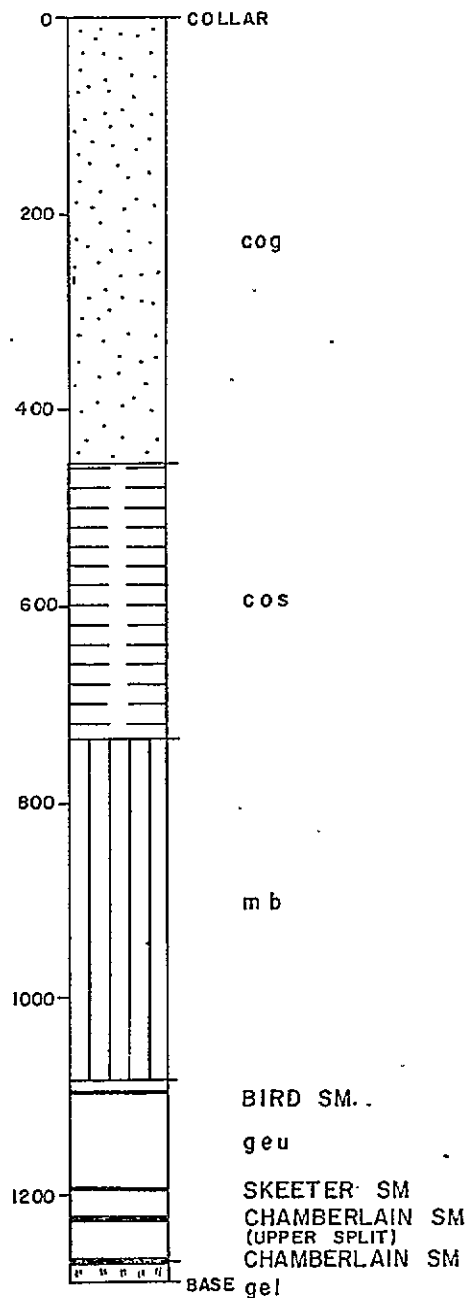
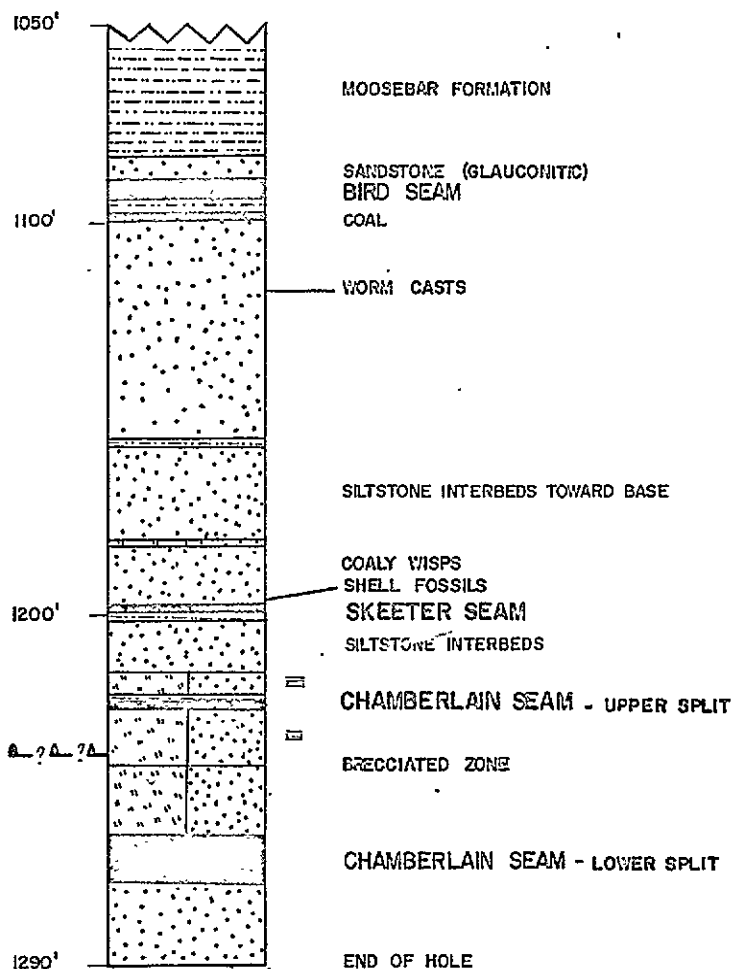
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter		1.3	53%	
Chamberlain Upper Split		1.0	100%	
Chamberlain Lower Split	3616.5	14.6	21%	Seam Faulted



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.

for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS

DDH S-16

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN* Report No. 69-0014
Sukunka Coal Project
Sample No. B-16-1, Hole S-16 1258.0 - 1273.0 (?)
Seam - C 4' recovered. *L.S.V.*
P. O. No. S 0 0 3

% Total Moisture 1.50

Air Dry Basis

% Moisture	0.78
% Ash	10.33
% Volatile	21.40
% Fixed Carbon	67.49
	<u>100.00</u>

Btu	13736
% Sulfur	0.33

FREE SWELLING INDEX (CBI) 6

Weight of sample as received
in laboratory 3.386 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-16

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 20.0 ft.		
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1084.0
	SANDSTONE, glauconitic.	GETHING FM.	1088.0
	<u>COAL.</u>	BIRD SEAM	1094.0
	MUDSTONE, coal band at base.		1098.0
	SANDSTONE, mottled (worm casts) 1103', coarse at top, fine at base, worm casts 1118', silty interbeds at base, mudstone band 1167'.		1181.0
	LAMINITE, siltstone and mudstone.		1183.0
	SANDSTONE, coaly wisps, shelly fossils at base.		1198.0
	<u>COAL.</u>	SKEETER SM.	1199.0
	MUDSTONE.		1200.0
	SANDSTONE, silty interbeds.		1216.0
	LAMINITE, siltstone and mudstone, sandy phases, mudstone base.		1222.0
	<u>COAL.</u>	CHAMB. SM. upper split	1223.0
Fault, possible	LAMINITE, siltstone and mudstone, sandy phases, brecciated base.		1239.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	<p>SANDSTONE, silty interbeds.</p> <p>LAMINITE, siltstone and mudstone, mudstone at base.</p> <p><u>COAL.</u></p> <p>SANDSTONE.</p>	<p>CHAMB. SM. lower split</p>	<p>1252.0</p> <p>1258.0</p> <p>1268.0</p> <p>1290.0</p> <p><u>Base of Hole</u></p>

BORE NUMBER S-17

Grid Reference 44921.5N 79886.9E

Exploration Grid Reference C+200'/1

Date Commenced 21st March, 1970 Completed 24th March, 1970

Collar R.L. 4213.0

Standard Datum

Total Depth 799

Electrically Logged Yes/~~No~~

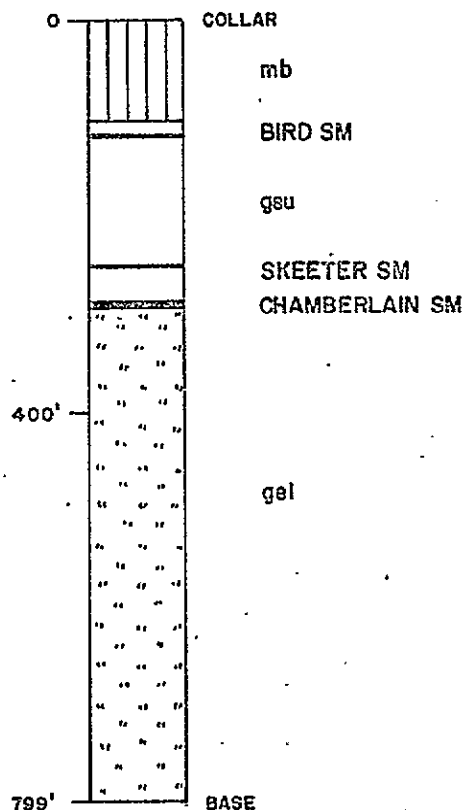
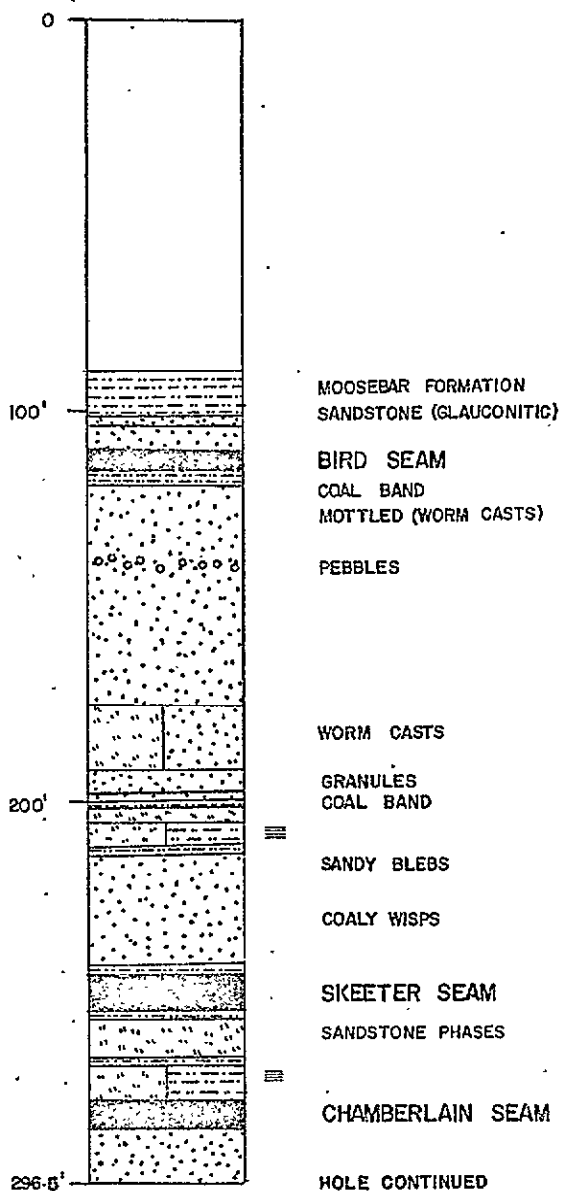
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3960	7.4	36%	
Chamberlain	3929.6	7.4	100%	

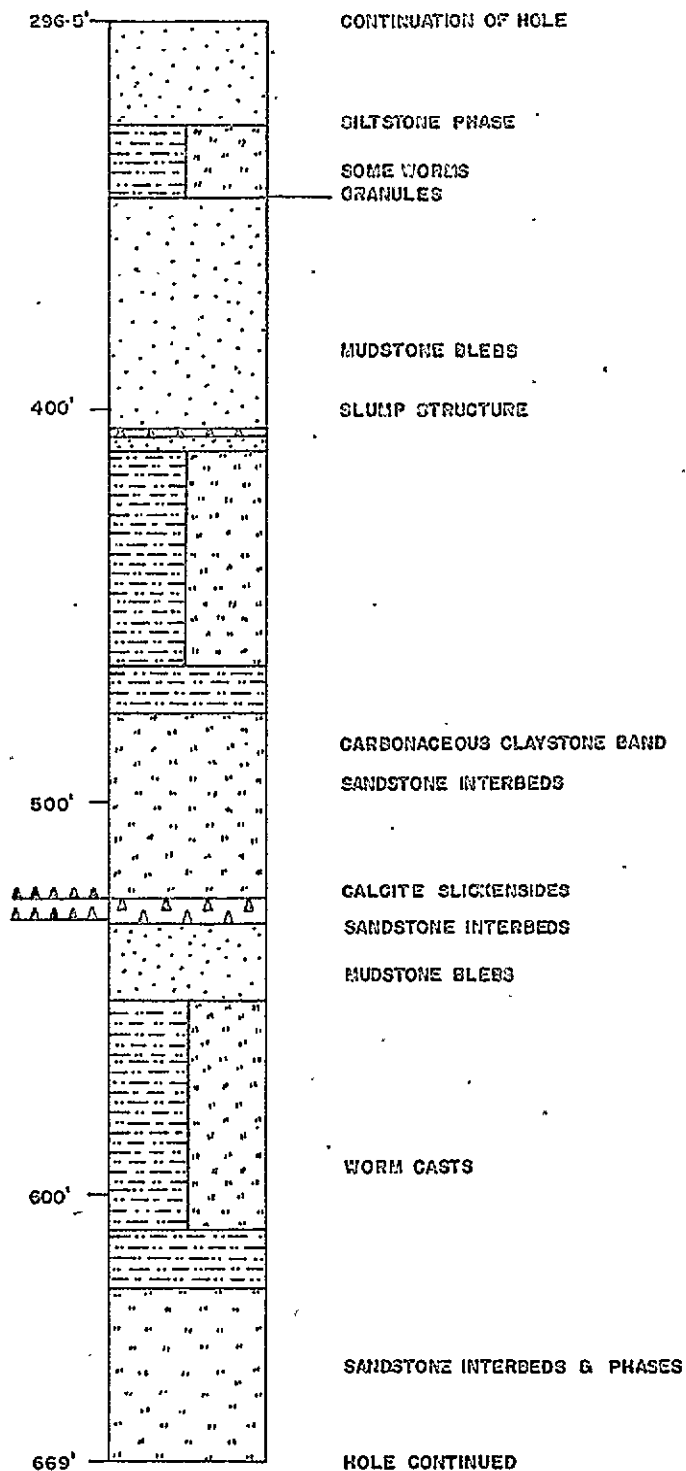


DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-17



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES, PTY. LTD.
for
COALITION MINING LIMITED

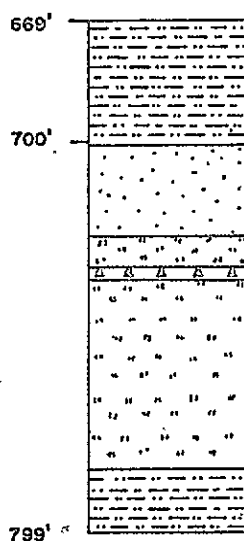
STRATIGRAPHIC LOGS

DDH S-17

DRAWN BY S.A.

DATE: February '72

PAGE 2 of 3



CONTINUATION OF HOLE

GLAUCONITIC SANDSTONE
MUDSTONE BLEBS
COALY WISPS

BRECCIATED

END OF HOLE

DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-17

DRAWN BY S.A.

DATE: February '72

PAGE 3 of 3

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED:
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *SKEETER*
Sukunka Coal Project
Sample No. A-17-2, Hole S-17
Seam - UC
P. O. No. S 0 0 3

Report No. 69-0022

245.2-252.6 A.S.V.

% Total Moisture

0.97

Air Dry Basis

% Moisture

0.97

% Ash

12.57

% Volatile

19.75

% Fixed Carbon

66.71

100.00

Btu

13369

% Sulfur

0.61

FREE SWELLING INDEX (CBI)

7

Weight of sample as received
in laboratory

3.838 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

SK



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 220 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN*
Sukunka Coal Project
Sample No. A-17-1, Hole S-17
Seam - C
P. O. No. S O O 3

Report No. 69-0015

276.0 - 283.0 L.S.T.

% Total Moisture

0.89

Air Dry Basis

% Moisture

0.89

% Ash

4.68

% Volatile

25.25

% Fixed Carbon

69.18

100.00

Btu

14663

% Sulfur

0.34

FREE SWELLING INDEX (CBI)

8-1/2

Weight of sample as received
in laboratory

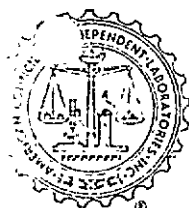
9.524 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-17

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 38.0 ft.		
	MUDSTONE, ash layers at base.	MOOSEBAR FM.	102.0
	SANDSTONE, glauconitic.	GETHING FM.	104.0
	SANDSTONE, medium grained.		111.0
	<u>COAL</u> .	BIRD SEAM	115.0
	MUDSTONE, coal (0.5') at base.		119.0
	SANDSTONE, coarse at top, mottled (worm casts) (123'), pebble band (141').		175.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		192.0
	SANDSTONE, coal parting (198'), mudstone band (200').		205.0
	LAMINITE, siltstone and mudstone, mudstone at base.		213.0
	SANDSTONE, coaly wisps, sand blebs (215').		242.0
	MUDSTONE, sandy phase in centre.		245.0
	<u>COAL</u> , (0.75') split (mudstone) at top.	SKEETER SM.	252.5

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	<p>SANDSTONE AND SILTSTONE INTERBEDDED, mudstone band at top.</p> <p>LAMINITE, siltstone and mudstone, mudstone at base.</p> <p><u>COAL.</u></p> <p>SANDSTONE.</p>	CHAMB. SM.	<p>265.0</p> <p>276.0</p> <p>283.0</p> <p>296.5</p>

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-17 (extension)

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	Coring recommenced at 301.0 ft.		
	SANDSTONE, grey, fine grained, 1' silty zone at 322'.	GETHING FM.	328.0
	SILTSTONE AND MUDSTONE INTERBEDS, sandy phases, a few worm casts, granules at base.		347.0
Dip 5°-15°	SANDSTONE, grey, fine grained bands of mud blebs at 364', two at 388', 393', 395' (.5'), 396', 397', slump structure at 402'.		406.0
Fault, possible	SILTSTONE AND MUDSTONE INTERBEDS, brecciated, calcite filled and slickensided.		407.0
	SANDSTONE, grey, fine grained.		411.0
	SANDSTONE AND MUDSTONE INTERBEDS.		466.0
	MUDSTONE, dark grey.		478.0
	SILTSTONE, grey, sandy interbeds and phases. Carbonaceous claystone band (1') at 487'. Calcite veins and slickensides towards base.		525.0
Fault, possible	SILTSTONE AND MUDSTONE INTERBEDS, severely brecciated and calcite filled at top (2') and bottom (2').		531.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Dip 5°-15°	SANDSTONE, grey, fine grained, mud bleb bands at 543', 2 at 546', 548' (.5'), some oblique calcite filled fractures 446'-551'.		551.0
	SILTSTONE AND MUDSTONE INTERBEDS, sandy interbeds and phases, worm casts.		610.0
	MUDSTONE, dark grey.		625.0
	SILTSTONE, grey, sandy interbeds and phases.		669.0
	MUDSTONE, dark grey.		700.0
	SANDSTONE, glauconitic at top, mudstone blebs at 703', 705', 706', coaly wisps at 714'.		724.0
	SILTSTONE, grey.		731.0
	SANDSTONE, grey, brecciated zone (0.3') at 733', calcite and oblique fractures.		735.0
	SILTSTONE, grey, sandy interbeds and phases, some worm casts.		783.0
	MUDSTONE, dark grey.		799.0
			<u>Base of Hole</u>

SUKUNKA D.D.H. S-17 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
Refer to log of S-17 for details above 301.42'.		301.42		
SANDSTONE, grey, fine grained, quartz-lithic, bedding angle 86° to core axis.	20.92	322.34	20.92	
SILTSTONE AND MUDSTONE INTERBEDS - siltstone grey and mudstone dark grey interbedded, some sandstone interbeds, mudstone phase at base (0.25').	0.84	323.18	0.84	
SANDSTONE, grey, fine grained, quartz-lithic, siltstone interbed (0.05') at 0.72' from top, zone of mud blebs (0.15') 2.64' from top, and another (0.08') at base. Current bedded.	3.68	326.86	3.68	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded.	0.28	327.14	0.28	
SANDSTONE, grey, fine grained, quartz-lithic.	0.40	327.54	0.40	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded. Some sandy interbeds and phases and worm casts.	11.31	338.85	11.31	

SUKUNKA D.D.H. S-17 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SILTSTONE AND MUDSTONE INTERBEDS, as above.	7.52	346.37	7.52	
SANDSTONE, grey, medium to coarse grained, quartz-lithic, some silty interbeds.	0.41	346.78	0.41	
SILTSTONE, grey, calcite vein at base.	0.11	346.89	0.11	
SANDSTONE, grey, fine grained quartz-lithic, band (0.2') mudstone blebs at 0.22' from top.	10.57	357.46	10.57	
SANDSTONE, grey, fine grained, quartz-lithic, band of mud blebs (0.04') 6.43' from top. Bedding angle 83° from core axis.	18.58	376.04	18.58	
SANDSTONE, grey, fine to very fine grained, quartz-lithic, bands of mud blebs as follows - 0.3' thick 5.2' from base, 0.04' at 2.54' from base, 0.45' at 0.35' from base, and 0.05' at base. Bedding angle 75° to core axis.	18.82	394.86	18.82	
SANDSTONE, grey, fine grained, quartz-lithic, phases of silty interbeds, bands of mud blebs (0.05') at 1.25' from top, 0.01' at 1.48' from top, 0.05' at 2.36' from top. At 6.8' from top a slump structure extending for 0.70'.	10.16	405.02	10.16	

SUKUNKA D.D.H. S-17 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded. Some sandstone interbeds. Bottom 0.77' brecciated and filled with calcite, bedding angle 83° to core axis.	1.65	406.67	1.65	
SANDSTONE, grey, fine grained, quartz-lithic, calcite veins between 0.55' and 0.7' from top. At 1.75' from top is a 0.5' band of silty interbeds. At 0.09' from base - a 0.09' siltstone band.	4.57	411.24	4.57	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded, some sandy interbeds.	2.13	413.37	2.13	
SILTSTONE AND MUDSTONE INTERBEDS, as above, with phases of sandstone and siltstone. Worm casts.	18.51	431.88	18.51	
SILTSTONE AND MUDSTONE INTERBEDS, as above, bedding angle 81° to core axis.	18.42	450.30	18.42	
SILTSTONE AND MUDSTONE INTERBEDS, as above.	15.04	465.34	15.04	
MUDSTONE, dark grey.	3.45	468.79	3.45	

SUKUNKA D.D.H. S-17 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
MUDSTONE, as above.	8.61	477.40	8.61	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded. Some sandy interbeds and phases. Worm casts and mud blebs. Bedding angle 90° to core axis.	9.19	486.59	9.19	
MUDSTONE, dark grey, some silty mudstone zones.	1.06	487.65	1.06	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded, some sandy interbeds and phases with current bedding, worm casts and mud blebs. Zone of fractured and slickensided core (0.2') bounded by core cracked and calcite filled in zone 1.2', 1.5' from base.	19.12	506.77	19.12	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded, with sandy interbeds and phases. Occasional calcite veins mostly parallel to bedding. In bottom 4' core slickensided along planes varying without pattern from 55° to 35° to core axis. Some minor displacement and calcite filling tension cracks - this especially centred around 1.1' zone 0.42' from base.	18.05	524.82	18.05	

SUKUNKA D.D.H. S-17 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SILTSTONE AND MUDSTONE, siltstone grey and mudstone dark grey severely brecciated. Slickensided surfaces ranging from 30° to 70° from core axis, but general trend of brecciated laminae at 30° to core axis.	1.95	526.77	1.95	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded. Sandy interbeds and phases. Some displacement (minor) with calcite infillings near top.	2.51	529.28	2.51	
SANDSTONE AND SILTSTONE, sandstone grey and siltstone grey interbedded and brecciated. Calcite infillings and slickensided surfaces at between 50° and 70° to core axis.	1.54	530.82	1.54	
SANDSTONE, grey, fine grained, quartz-lithic, mud bleb band (0.08') 5.53' from top, and (0.05') 7.96' from top. Occasional silty interbeds. Bedding angle 82° to core axis.	12.59	543.41	12.59	
SANDSTONE, grey, fine grained, quartz-lithic, mud bleb band (0.08') at 0.6' from top, (0.05') 2.63' from top, (0.1') at 2.91' from top, (0.25') 4.84' from top.				

SUKUNKA D.D.H. S-17 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
Occasional silty interbeds and phases. Occasional fracture planes (calcite filled) at 11° to core axis. Bedding angle 82° to core axis.	8.38	551.79	8.38	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded, sandy interbeds and phases one phase (2.5') 3.12' from top. Fracture (calcite filled) at 8° to core axis.	10.26	562.05	10.26	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded, sandstone interbeds and phases, worm casts and mud blebs. Bedding angle 86° to core axis.	18.26	580.31	18.26	
SILTSTONE AND MUDSTONE INTERBEDS, siltstone grey and mudstone dark grey interbedded. Sandy interbeds and some small phases.	17.64	597.95	17.64	
SILTSTONE AND MUDSTONE INTERBEDS, as above, some worm casts.	15.35	613.30	15.35	
MUDSTONE, dark grey, a few silty interbeds.	3.16	616.46	3.16	
MUDSTONE, as above, silty interbeds becoming numerous in bottom 3.75'.	9.25	625.71	9.25	

SUKUNKA D.D.H. S-17 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
SANDSTONE, grey, fine grained, quartz-lithic, numerous silty interbeds and phases.	4.42	630.13	4.42	
SILTSTONE, grey, some sandy phases.	4.75	634.88	4.75	<u>Base of Hole</u>

BORE NUMBER S-18

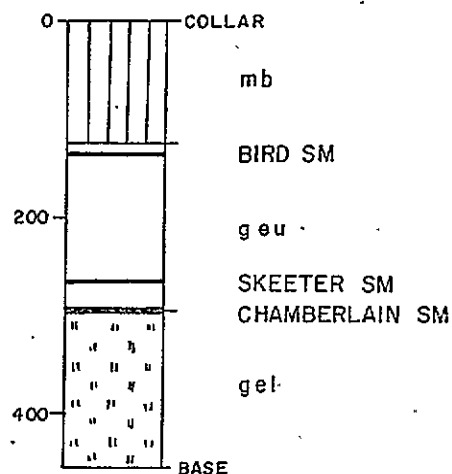
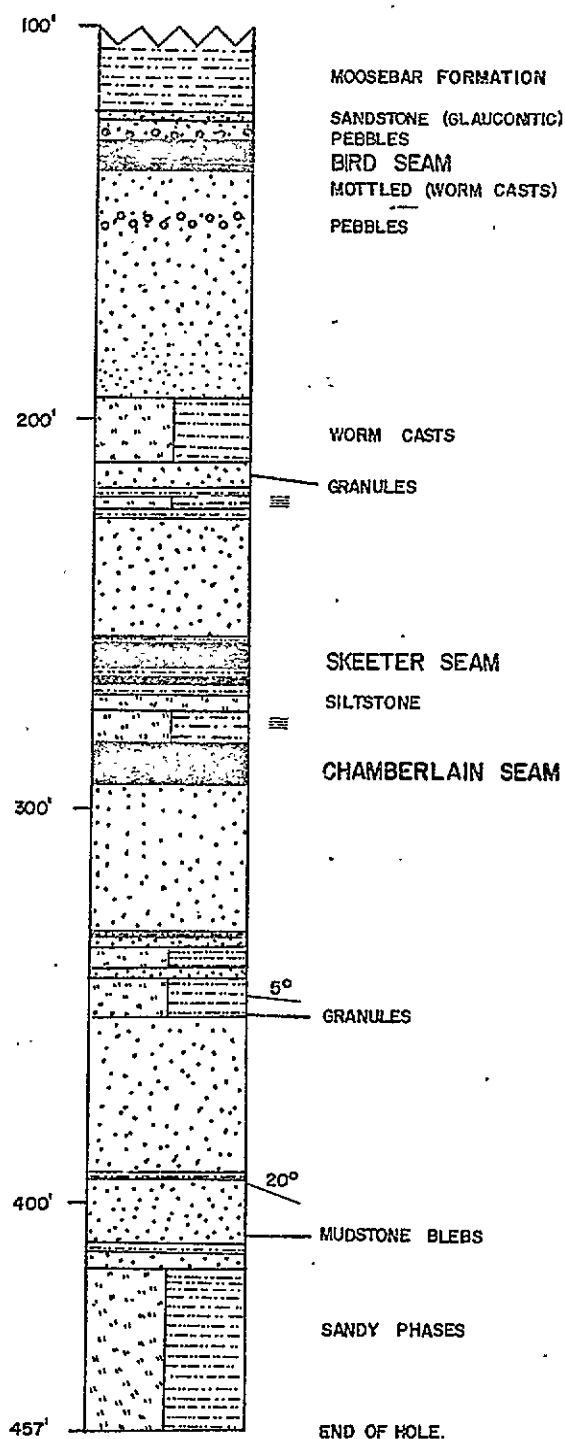
Grid Reference 46830.7N 83298.8E
Exploration Grid Reference D+1700'/2+1900'

Date Commenced 28th March, 1970 Completed 1st April, 1970

Collar R.L. 4054.0 Standard Datum
Total Depth 457 Electrically Logged ~~Yes~~/No
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3786.3	8.5	56%	
Chamberlain	3761.3	9.7	85%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.

for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS

DDH S-18

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *SKEETER*
Sukunka Coal Project
Sample No. A-18-2, Hole S-18
Seam - UC
P. O. No. S O O 3

Report No. 69-0021

258.3-263.6 L.S.F.

% Total Moisture 0.65

Air Dry Basis

% Moisture	0.65
% Ash	7.30
% Volatile	23.33
% Fixed Carbon	68.72
	<u>100.00</u>

Btu	14250
% Sulfur	0.42

FREE SWELLING INDEX (CBI) 8

Weight of sample as received
in laboratory 5.560 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager



RAH/rh

SK

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN* Report No. 69-0019
Sukunka Coal Project
Sample No. A-18-1, Hole S-18 282.5-292.0 L.S.F.
Seam - C
P. O. No. S O O 3

% Total Moisture 0.93

Air Dry Basis

% Moisture	0.75
% Ash	4.73
% Volatile	23.72
% Fixed Carbon	70.80
	<u>100.00</u>

Btu	14668
% Sulfur	0.46

FREE SWELLING INDEX (CBI) 7-1/2

Weight of sample as received
in laboratory 11.764 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-18

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 98.0 ft.		
	MUDSTONE, ash bands at base.	MOOSEBAR FM.	122.0
	SANDSTONE, glauconitic.	GETHING, FM.	124.0
	SANDSTONE, pebbles at base.		130.0
	<u>COAL.</u>	BIRD SEAM	134.0
	MUDSTONE, split.		135.0
	<u>COAL.</u>		136.0
	SANDSTONE, coarse in top half, fine at base. Mottled (worm casts)(140'), pebble band (150'), siltstone and mudstone interbedded, worm casts,, granule conglomerate at base.		195.0
	SANDSTONE, mudstone band (214'), mudstone band at base.		219.0
	LAMINITE, siltstone and mudstone, mudstone at base.		225.0
	SANDSTONE, coaly wisps, mudstone base.		258.0
	<u>COAL.</u>	SKEETER SM.	263.5

Structure	Description of Strata	Formation or Member	Depth Base of Stratum (ft)
	MUDSTONE, band.		266.0
	<u>COAL</u> , (1').		267.0
	MUDSTONE.		268.0
	SILTSTONE, mudstone phases.		273.0
	LAMINITE, siltstone and mudstone. mudstone phases.		283.0
	<u>COAL</u> .	CHAMB. SM.	293.0
	SANDSTONE, mudstone band (332').		335.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		340 ⁰
	SANDSTONE.		43.5
	SILTSTONE AND MUDSTONE INTERBEDDED.		353.0
	CONGLOMERATE, granule.		354.0
	SANDSTONE, mudstone band at 393', sedimentary mudstone blebs 412', 417'.		417.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at top.		457.0
			<u>Base of Hole</u>

Grid Reference 48702.7N 82103.5E

Exploration Grid Reference C+1900'/3

Date Commenced 3rd April, 1970 Completed 5th April, 1970

Collar R.L. 3983.5

Standard Datum

Total Depth 201

Electrically Logged Yes/No

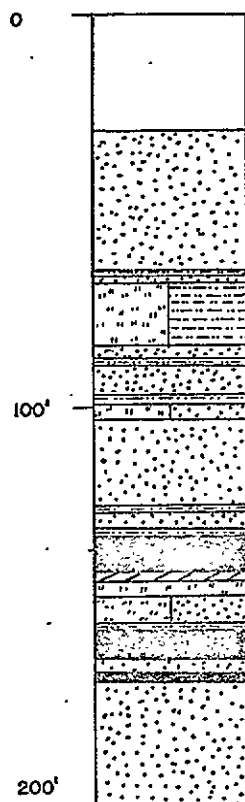
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3912.7 3842	8.0	75%	
Chamberlain	3891.7 3817	6.4	46%	



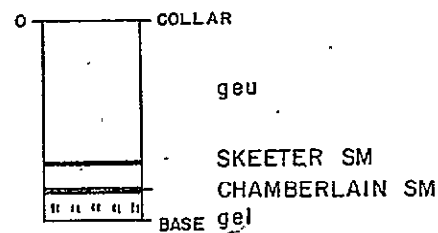
WORM CASTS

SKEETER SEAM
CARBONACEOUS CLAYSTONE

CHAMBERLAIN SEAM

MOTTLED (WORM CASTS)

END OF HOLE.



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 19

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 00801 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: SKEETER
Sukunka Coal Project
Sample No. A-19-3, Hole S-19
Seam - UC
P. O. No. S O O 3

Report No. 69-0018

134.5 - 142.0 L.S.V.

% Total Moisture . 0.87

Air Dry Basis

% Moisture	0.87
% Ash	12.89
% Volatile	21.85
% Fixed Carbon	64.39
	<u>100.00</u>

Btu	13330
% Sulfur	0.45

FREE SWELLING INDEX (CBI) 7

Weight of sample as received
in laboratory 7.372 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

SK.



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: ~~CHAMBERLAIN~~ ^{SWEETER} Report No. 69-0016
Sukunka Coal Project
Sample No. A-19-1, Hole S-19 CHAMBERLAIN TOP BENCH
Seam - C 158.0- 163.0
P. O. No. S O O 3

% Total Moisture 0.74

Air Dry Basis

% Moisture	0.74
% Ash	3.71
% Volatile	21.83
% Fixed Carbon	73.72
	<u>100.00</u>

Btu	14771
% Sulfur	0.46

FREE SWELLING INDEX (CBI) 4-1/2

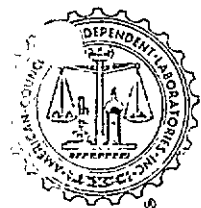
Weight of sample as received
in laboratory 2.491 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: CHAMBERLAIN
Sukunka Coal Project
Sample No. A-19-2, Hole S-19
Seam - C or C/split
P. O. No. S O O 3

Lower Bench 168.0 - 170.0 L.S.T.
Report No. 69-0017

~~168.0 - 168.5~~ L.S.T.

% Total Moisture

1.51

Air Dry Basis

% Moisture

0.74

% Ash

3.68

% Volatile

25.78

% Fixed Carbon

69.80

100.00

Btu

14896

% Sulfur

0.52

FREE SWELLING INDEX (CBI)

9

Weight of sample as received
in laboratory

1.698 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser, District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-19

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft.)
	No core to 30.0 ft.		
	SANDSTONE, mudstone band at 66.0'.	GETHING FM.	68.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		84.0
	SANDSTONE, mudstone band at 88'.		97.0
	LAMINITE, siltstone and mudstone, mudstone at top.		103.0
	SANDSTONE, mudstone band (126').		133.0
	<u>COAL</u> , mudstone at top.	SKEETER SM.	142.0
	CLAYSTONE, carbonaceous.		144.0
	SILTSTONE, with mudstone phases.		148.0
	LAMINITE, siltstone and mudstone, mudstone phase.		157.0
	<u>COAL</u> .	CHAMB. SM.	167.0
	SANDSTONE.		168.0
	<u>COAL</u> , 2' seam.		170.0
	SANDSTONE, coarse at top becoming fine at base, mottled (worm casts) (174').		201.0
			Base of Hole

BORE NUMBER S-20

Grid Reference 44193.5N 82959.7E

Exploration Grid Reference E+1700'/2+200'

Date Commenced 6th April, 1970 Completed 14th April, 1970

Collar R.L. 4863.0

Standard Datum

Total Depth 1267

Electrically Logged ~~Yes~~/No

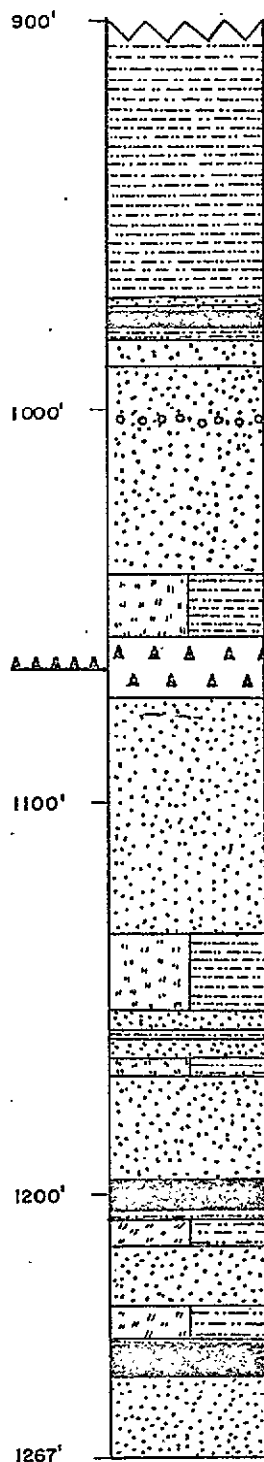
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3660.0	4.53	66%	
Chamberlain	3617.0	7.25	62%	



MOOSEBAR FORMATION

SANDSTONE (GLAUCONITIC)
BIRD SEAM (COAL & CLAYSTONE)

MOTTLED (WORM CASTS)

PEBBLES

30°

WORM CASTS

AAAAA

SANDSTONE & MUDSTONE BRECCIATED & SLICKENSIDED

MOTTLED (WORM CASTS)

WORM CASTS

GRANULES

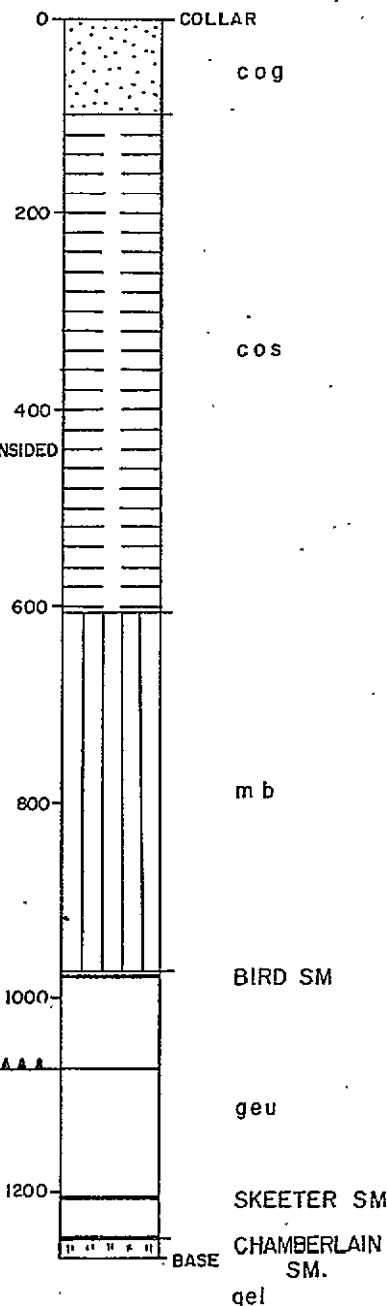
COALY WISPS

SKEETER SEAM

MUDSTONE PHASES

CHAMBERLAIN SEAM

END OF HOLE.



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 20

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. A-20-3, Skeeter
Hole S-20
1197.3 - 1202.9 *L.S.F.*
Cored - 5.6
Recovered - 2.8

Report No. 67-0077

% Total Moisture	1.47
------------------	------

AIR DRY BASIS

% Moisture	0.75
% Ash	13.58
% Volatile	23.25
% Fixed Carbon	62.42
	<u>100.00</u>

Btu	13243
% Sulfur	0.66

FREE SWELLING INDEX (CBI)	6
---------------------------	---

Weight of sample as received in laboratory - 2.696 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN* Report No. 69-0020
Sukunka Coal Project
Sample No. A-20-1, Hole S-20 1238.0 - 1246.0 A.S.F.
Seam - C
P. O. No. S 0 0 3

% Total Moisture 1.88

Air Dry Basis

% Moisture	0.58
% Ash	6.85
% Volatile	24.70
% Fixed Carbon	67.87
	<u>100.00</u>

Btu	14334
% Sulfur	0.50

FREE SWELLING INDEX (CBI) 6-1/2

Weight of sample as received
in laboratory 3.049 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-20

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 10.0 ft.		
	SANDSTONE AND CONGLOMERATE.	GATES MB.	100.0
	SILTSTONE, MUDSTONE AND SANDSTONE, worm casts.	SUKUNKA MB.	608.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	971.0
	SANDSTONE, glauconitic.	GETHING FM.	973.0
	SANDSTONE, pebbles at base.		975.0
	<u>COAL</u> AND CLAYSTONE.	BIRD SEAM	978.0
	MUDSTONE.		980.5
	SANDSTONE, coarse at top, fine at base, mottled (worm casts) 989', pebble band 1003'.		1042.0
	SILTSTONE AND MUDSTONE INTERBEDS, worm casts, granules at base.		1058.0
Fault, established	SANDSTONE AND MUDSTONE, breccia, slickensides.		1073.0
	SANDSTONE, coarse at top, fine at base, mottled (worm casts) 1079'.		1134.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		1153.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	SANDSTONE, mudstone band at 1158'.		1165.0
	LAMINITE, siltstone and mudstone.		1170.0
	SANDSTONE, coaly wisps.		1197.0
	MUDSTONE.		1198.0
	<u>COAL.</u>	SKEETER SM.	1203.0
	LAMINITE, siltstone and mudstone, mudstone at top.		1214.0
	SANDSTONE, mudstone phases.		1228.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1238.0
	<u>COAL.</u>	CHAMB. SM.	1246.0
	SANDSTONE.		1267.0
			<u>Base of Hole</u>

Grid Reference 45570.1N 84430.5E
Exploration Grid Reference D/3

Date Commenced 9th April, 1970 Completed 14th April, 1970

Collar R.L. 4350.2 Standard Datum
Total Depth 658 Electrically Logged ~~Yes~~/No
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3748.3	12.35	58%	
Chamberlain	3716.3	8.4	80%	

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 9, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *SKEETER* Report No. 69-0039
Sample No. A-21-2
P. O. No. S O O 3 *S-21 593.8-602.0 L.S.V.*

% Total Moisture 0.93

Air Dry Basis

% Moisture	0.83
% Ash	9.83
% Volatile	23.11
% Fixed Carbon	66.23
	<u>100.00</u>

Btu	13838
% Sulfur	0.45

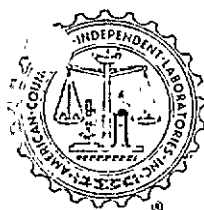
FREE SWELLING INDEX 7

Weight of sample as received
in laboratory 9.526 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser, District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN* Report No. 69-0013
Sukunka Coal Project
Sample No. A-21-1, Hole S-21 625.5-634.0 L.S.F.
Seam - C
P. O. No. S O O 3

% Total Moisture 0.86

Air Dry Basis

% Moisture	0.86
% Ash	5.54
% Volatile	22.66
% Fixed Carbon	70.94
	<u>100.00</u>

Btu	14500
% Sulfur	0.45

FREE SWELLING INDEX (CBI) 7

Weight of sample as received
in laboratory 7.515 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	SANDSTONE, glauconitic.	GETHING FM.	1440.0
	MUDSTONE, crushed.		1440.5
	<u>COAL</u> , crushed.	BIRD SEAM	1441.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1548.0
	SANDSTONE, glauconitic, pebbles at base.	GETHING FM.	1558.0
	SANDSTONE.		1564.0
	MUDSTONE.		1565.0
	<u>COAL</u> .	BIRD SEAM	1565.5
	SANDSTONE, mottled (worm casts) 1569', worm casts 1597' and 1582', mudstone band 1612'.		1614.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		1630.0
	SANDSTONE, worm casts - lower 10'.		1667.0
	SANDSTONE, carbonaceous claystone interbeds, carbonaceous claystone bands at 1669' and 1675'.		1675.0
	<u>COAL</u> .		1677.5
	SANDSTONE, silty interbeds, mudstone at top.		1685.0
	LAMINITE, siltstone and mudstone.		1690.0

Grid Reference 47727.8N 80535.3E

Exploration Grid Reference B/2+200'

Date Commenced 8th June, 1970 Completed 12th June, 1970

Collar R.L. 4497.3 Standard Datum

Total Depth 748 Electrically Logged ~~Yes~~/No

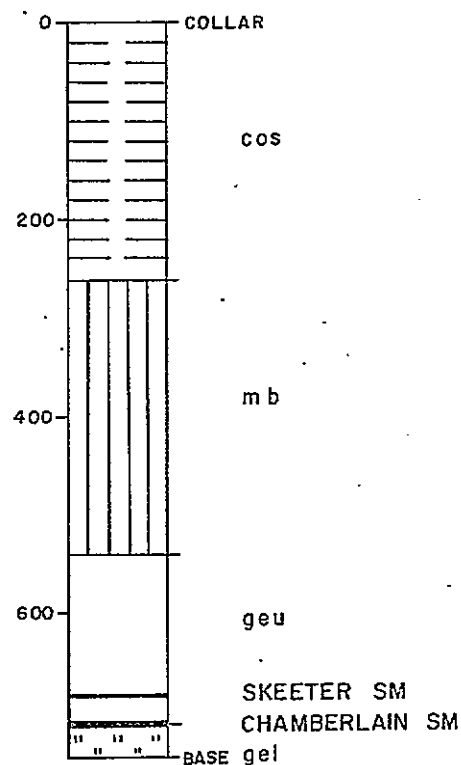
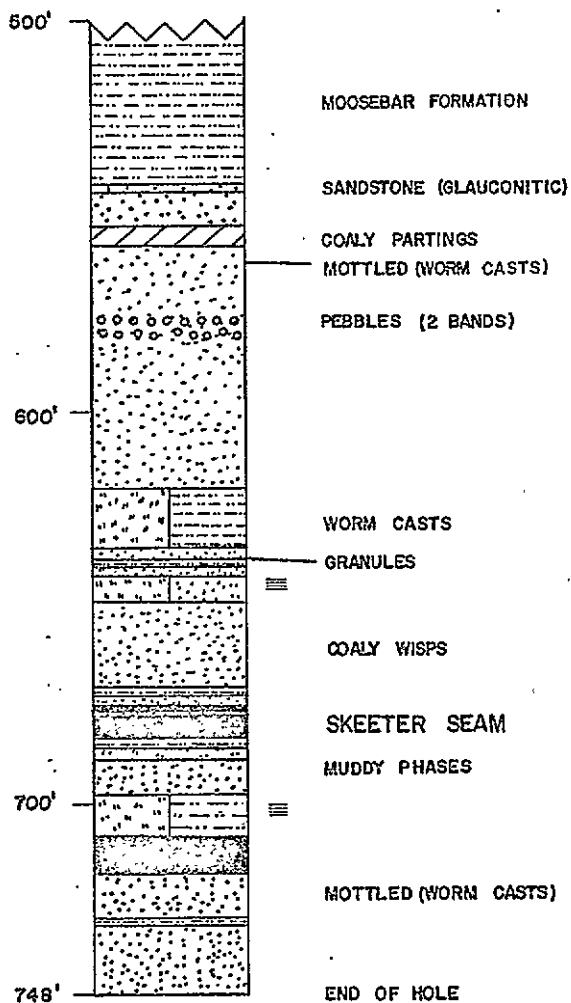
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3814.1	9.11	59%	
Chamberlain	3781.1	7.7	100%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 22

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *SKEETER*
Sample No. SK-22, Hole S-22
675.5 - 682.0
Cored - 6.5
Recovered 6.0

Report No. 67-0067
67-0068

SPECIFIC
GRAVITY

Sink Float	% Wt.	AIR DRY BASIS						
		% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60	74.3	0.88	5.11	23.48	70.53	14593	0.46	8
2 50	<u>25.7</u>	<u>0.93</u>	<u>82.42</u>				<u>0.11</u>	
	100.0	0.89	24.98				0.37	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 8.375 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN* Report No. 69-0012
Sukunka Coal Project
Sample No. A-22-1, Hole S-22 708.5 - 716.2 d. s. f.
Seam - C
P. O. No. S O O 3

% Total Moisture 1.48

Air Dry Basis

% Moisture	0.82
% Ash	6.14
% Volatile	22.98
% Fixed Carbon	70.06
	<u>100.00</u>

Btu	14504
% Sulfur	0.58

FREE SWELLING INDEX (CBI) 9

Weight of sample as received
in laboratory 11.082 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser, District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-22

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 200.0 ft.		
	SILTSTONE AND MUDSTONE INTERBEDDED.	SUKUNKA MB.	261.0
	MUDSTONE, ash bands near base.	MOOSEBAR FM.	541.0
	SANDSTONE, glauconitic.	GETHING FM.	543.0
	SANDSTONE.		552.0
	CLAYSTONE, carbonaceous, coaly partings.		557.0
	SANDSTONE, mottled (worm casts) 562', pebble band 577' and 578'.		618.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		634.0
	SANDSTONE, mudstone band at 637.5'.		642.5
	LAMINITE, siltstone and mudstone, mudstone base.		647.5
	SANDSTONE, coaly wisps and inclusions, mudstone bands at 764' and 673'.		675.0
	<u>COAL</u> , sandy split (0.5') at top.	SKEETER SM.	683.0
	SILTSTONE, mudstone phases, sandy phases.		698.0
	LAMINITE, siltstone and mudstone, mudstone base.		708.5

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	<p><u>COAL.</u></p> <p>SANDSTONE, coarse becoming fine at base, mottled (worm casts) 721', mudstone band 730'.</p>	CHAMB. SM.	<p>716.0</p> <p>748.0</p> <p><u>Base of Hole</u></p>

BORE NUMBER S-23

Grid Reference 43831.1N 85259.3E

Exploration Grid Reference E+200'/2+1800'

Date Commenced 13th June, 1970 Completed 26th June, 1970

Collar R.L. 4960.3 Standard Datum

Total Depth 1457 Electrically Logged Yes/No

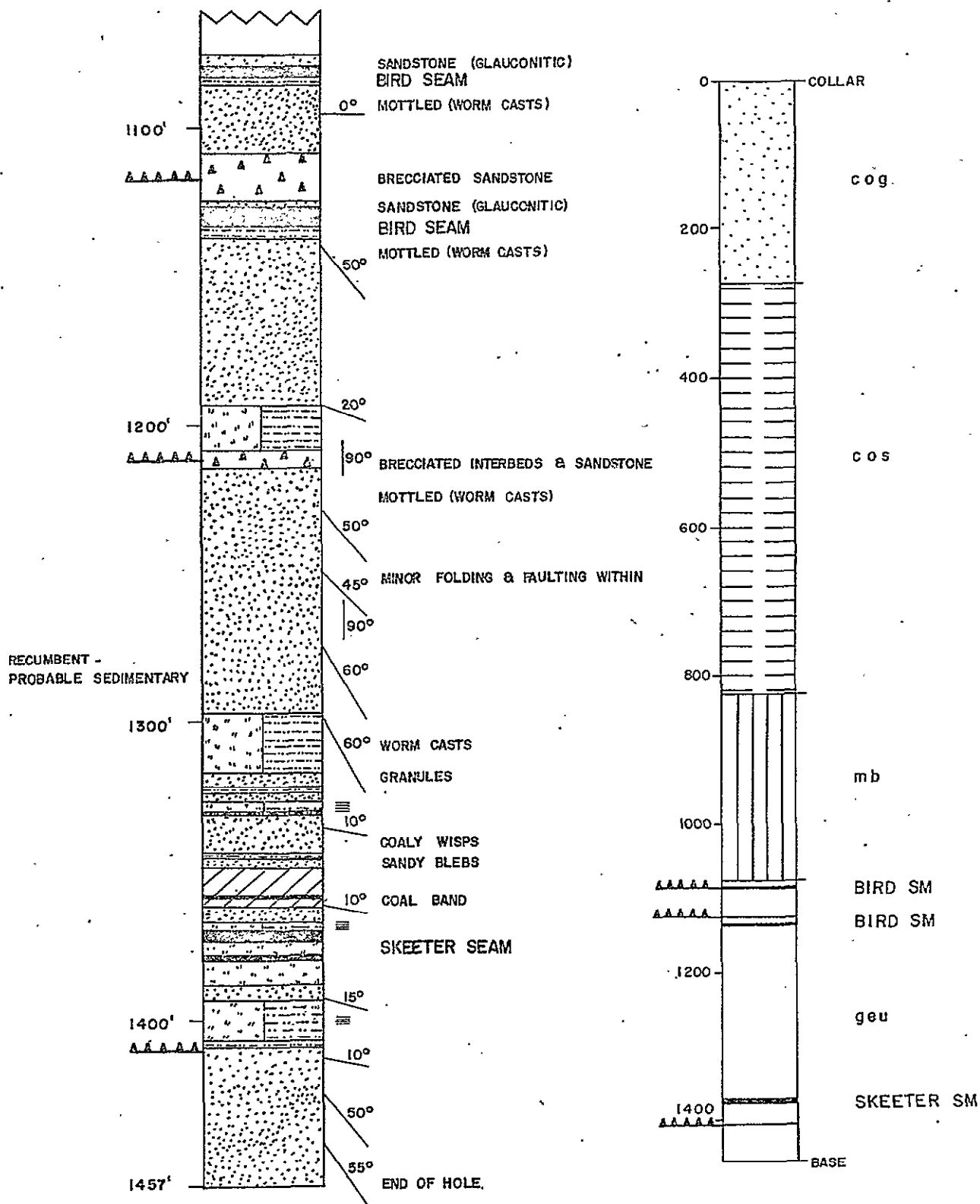
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	4978.8	8.50	4%	



Prepared by :
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.
 for
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS
 DDH S-23

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-23

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
Fault, possible	No core to 12.0 ft. SANDSTONE, coal and mudstone conglomerate, sandstone at base.	GATES MB.	267.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, brecciation 488'-498'.	SUKUNKA MB.	824.0
	MUDSTONE, ash bands at base.	MOOSEBAR FM.	1075.0
	SANDSTONE, glauconitic, pebbles at base.	GETHING FM.	1078.0
Fault, established	<u>COAL.</u>	BIRD SEAM	1082.0
	MUDSTONE, carbonaceous.		1085.0
	SANDSTONE, mottled (worm casts) at 1090'.		1108.0
Fault, established	SANDSTONE, brecciated.		1124.0
	SANDSTONE, glauconitic.		1127.0
	<u>COAL.</u>	BIRD SEAM	1133.0
	MUDSTONE, carbonaceous.		1136.0
	SANDSTONE, coarse at top, fine at base, mottled (worm casts) 1141'.		1193.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		1209.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	SANDSTONE, brecciated and interbeds.		1214.0
	SANDSTONE, mottled (worm casts) 1224', coarse at top becoming fine, minor folding and faulting.		1297.0
	SILTSTONE AND MUDSTONE INTERBEDDED, granules at base, worm casts.		1316.0
	SANDSTONE, mudstone band at 1323'.		1326.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1330.0
	SANDSTONE, coaly wisps, carbonaceous mudstone interbeds at 1345', sand blebs at 1346'.		1349.0
	CLAYSTONE, coaly at base.		1361.0
	SANDSTONE.		1367.0
	LAMINITE, siltstone and mudstone.		1370.0
	<u>COAL.</u>)		1373.0
)		
	SILTSTONE, mudstone phases)	SKEETER SM.	1378.0
)		
	<u>COAL.</u>)		1379.0
	SILTSTONE PHASES.		1388.0
	SANDSTONE, silty interbeds.		1393.0
Fault, established	LAMINITE, siltstone and mudstone, mudstone at base.		1408.0
	SANDSTONE, coarse at top, finer towards base.	Base of Hole	1457.0

BORE NUMBER S-24

Grid Reference 46008.1N 81578.0E

Exploration Grid Reference C/2

Date Commenced 13th June, 1970 Completed 18th June, 1970

Collar R.L. 4659.4

Standard Datum

Total Depth 928.0

Electrically Logged Yes/No

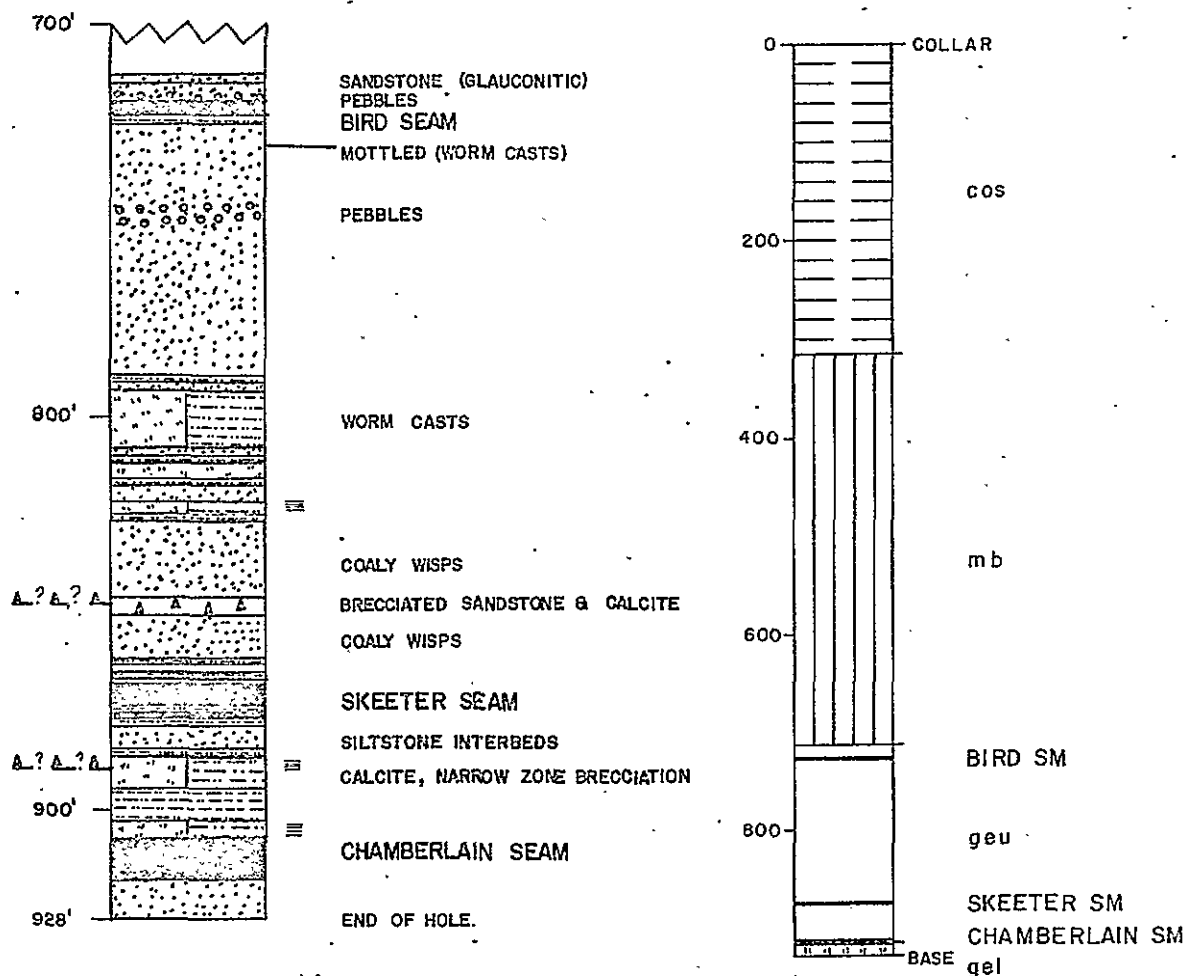
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3782.3	8.91	93%	
Chamberlain	3741.2	8.7	96%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 24

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 9, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *SKEETER*

Report No. 69-0040

Sample No. A-24-2

P. O. No. S O O 3

868.2 - 875.5

S-24

A. S. F.

% Total Moisture

1.13

Air Dry Basis

% Moisture

0.79

% Ash

8.06

% Volatile

22.75

% Fixed Carbon

68.40

100.00

Btu

14170

% Sulfur

0.46

First 1/2

FREE SWELLING INDEX

8

SAUN Cure

Weight of sample as received
in laboratory

4.519 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:

BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.Sample identification: *SKEETER*Report No. 67-0069
67-0070

Sample No. SK-24, Hole S-24

868.1 - 875.5

Cored - 7.4

Recovered - 7.4

*A.S.V.**2nd 1/2 Sawn Core*

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.
1.60		74.5	0.75	5.55	22.00	71.70	14634	0.44
.60		<u>25.5</u>	<u>0.62</u>	<u>82.97</u>				<u>0.12</u>
		100.0	0.72	25.29				0.36

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 5.379 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager

RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 9, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN* Report No. 69-0038
Sample No. A-24-1 *Hole S-24*
P. O. No. S O O 3 *909.5 - 918.0 L. S. F.*

% Total Moisture	1.13
	<u>Air Dry Basis</u>
% Moisture	0.99
% Ash	4.47
% Volatile	23.06
% Fixed Carbon	71.48
	<u>100.00</u>
Btu	14759
% Sulfur	0.37
FREE SWELLING INDEX	8
Weight of sample as received in laboratory	6.188 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-24

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	No core to 14.0 ft.		
	SANDSTONE, glauconitic.		715.0
	SANDSTONE, pebbles at base.		720.0
	<u>COAL</u> .	BIRD SEAM	723.0
	MUDSTONE.		725.0
	SANDSTONE, coarse in top half, fine in lower half, mottled (worm casts) 731', pebble bands 746' and 750', mudstone band 790'.		793.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		809.0
	SANDSTONE, mud bands 811' and 816'.		821.0
	LAMINITE, siltstone and mudstone, mudstone base.		826.0
	SANDSTONE, coaly wisps.		846.0
Fault, possible	SANDSTONE, breccia with calcite.		850.0
	SANDSTONE, coaly wisps, mudstone base, mudstone layers at 862' and 859'.		868.0
	<u>COAL</u> , mudstone band (1') above floor.	SKEETER SM.	877.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, possible	MUDSTONE.		878.0
	SANDSTONE AND SILTSTONE INTERBEDDED, mudstone at base.		887.0
	LAMINITE, siltstone and mudstone, calcite and breccia (890').		895.0
	MUDSTONE.		904.0
	LAMINITE, mudstone and siltstone.		908.0
	MUDSTONE.		909.5
	<u>COAL.</u>	<u>CHAMB. SM.</u>	918.0
	SANDSTONE, coarse grained.		928.0
Sample WC 44 PETROGRAPHIC ANALYSIS SEE : INDEX CARD NO : PR SUKUNKA 71(4)D PR SUKUNKA 71(4)D OR VOL 5, APPENDIX D			<u>Base of Hole</u>

BORE NUMBER S-25

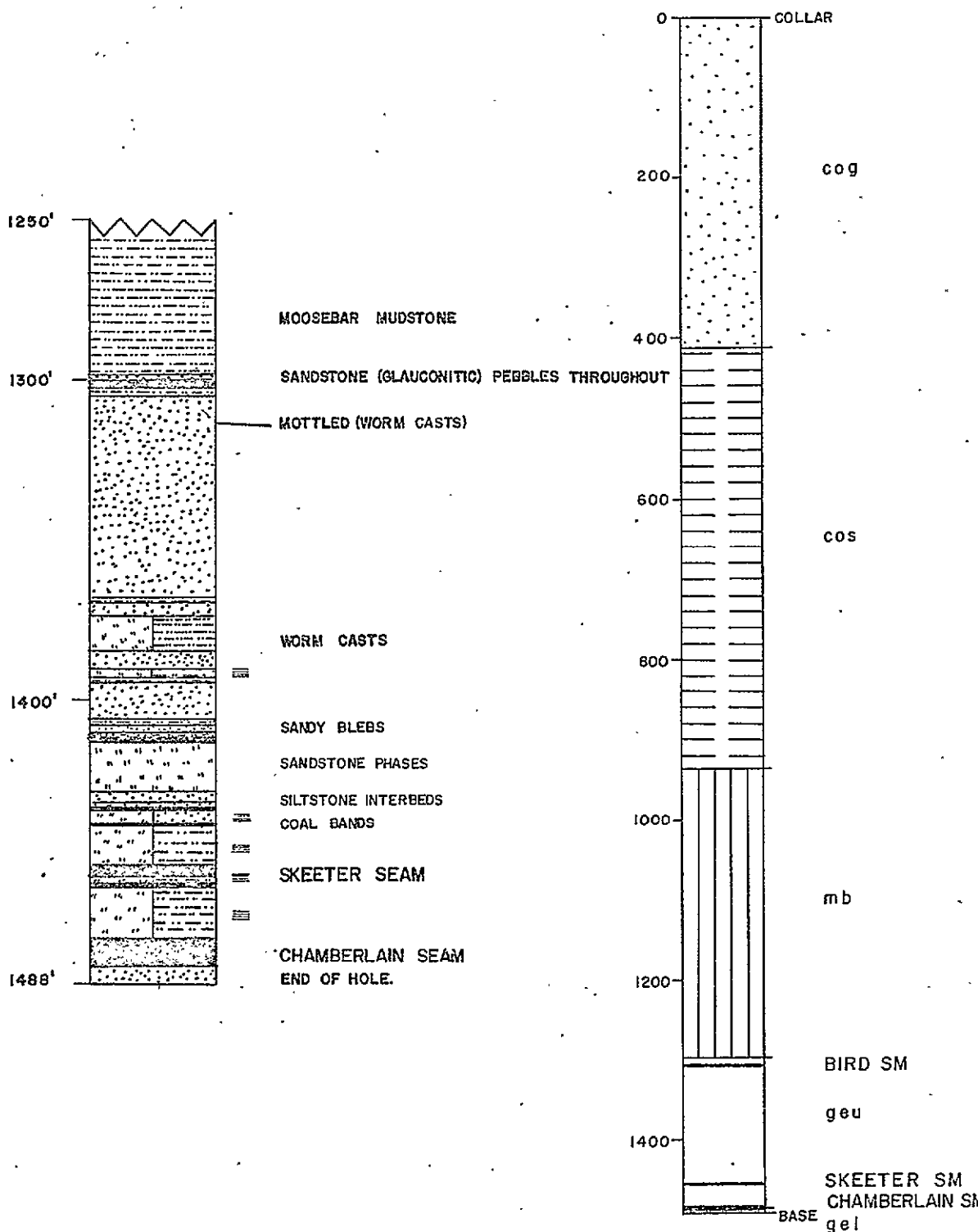
Grid Reference 42613.7N 86679.7
Exploration Grid Reference F+300'/3+300'

Date Commenced 20th June, 1970 Completed 29th June, 1970

Collar R.L. 5001.9 Standard Datum
Total Depth 1488 Electrically Logged Yes/~~No~~
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3545.4	6.69	67%	
Chamberlain	3519.5	8.4	83%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-25

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 - AREA CODE 312 726-8434

July 9, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN* Report No. 69-0037
Sample No. A-25-1
P. O. No. S O O 3 *HOLE S-25 1474.0-1482.0 L.S.F.*

% Total Moisture

0.87

Air Dry Basis

% Moisture

0.74

% Ash

4.11

% Volatile

24.04

% Fixed Carbon

71.11

100.00

Btu
% Sulfur

14845

0.35

FREE SWELLING INDEX

8-1/2

Weight of sample as received
in laboratory

5.090 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh

C 14



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970



P. O. Box 8596

Certificate of analysis for:
 BRAMEDA RESOURCES LIMITED
 7th Floor, Board of Trade Bldg.
 1177 West Hastings Street
 Vancouver 1, B. C.

Sample identification:
 Sample No. CH-25, Hole S-25
 1474.0 - 1482.3
 Cored - 8.3
 Recovered - 7.7

Report No. 67-0059
 67-0060

SPECIFIC
GRAVITY

AIR DRY BASIS

Link Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60	97.1	0.68	4.06	23.46	71.80	14886	0.44	9
1.60	<u>2.9</u>	<u>0.54</u>	<u>41.35</u>				<u>0.56</u>	
	100.0	0.68	5.14				0.44	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 4.436 lbs.

Respectfully submitted,
 COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
 District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-25

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 30.0 ft.		
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1298.0
	CONGLOMERATE, glauconitic.	GETHING FM.	1299.0
	<u>COAL.</u>	BIRD SEAM	1302.0
	MUDSTONE, carbonaceous.		1303.5
	SANDSTONE, coarse at top, fine at base, mottled worm casts 1312', mudstone band 1369'.		1373.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		1384.0
	SANDSTONE.		1390.0
	LAMINITE, siltstone and mudstone, mudstone base.		1394.0
	SANDSTONE, mudstone bands at 1407', 1409' and at base, sandy blebs at 1408'.		1411.0
	SILTSTONE, sandy interbeds 1423', coal 0.25' band and 1428'.		1428.0
	SANDSTONE, sandy interbeds.		1431.0
	LAMINITE, siltstone and mudstone.		1451.0
	<u>COAL.</u>	SKEETER SM	1453.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	LAMINITE, siltstone and mudstone.	SKEETER SM.	1455.0
	<u>COAL.</u>		1456.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1474.0
	<u>COAL.</u>	CHAMB. SM.	1482.0
	SANDSTONE.		1488.0
			<u>Base of Hole</u>

BORE NUMBER S-26

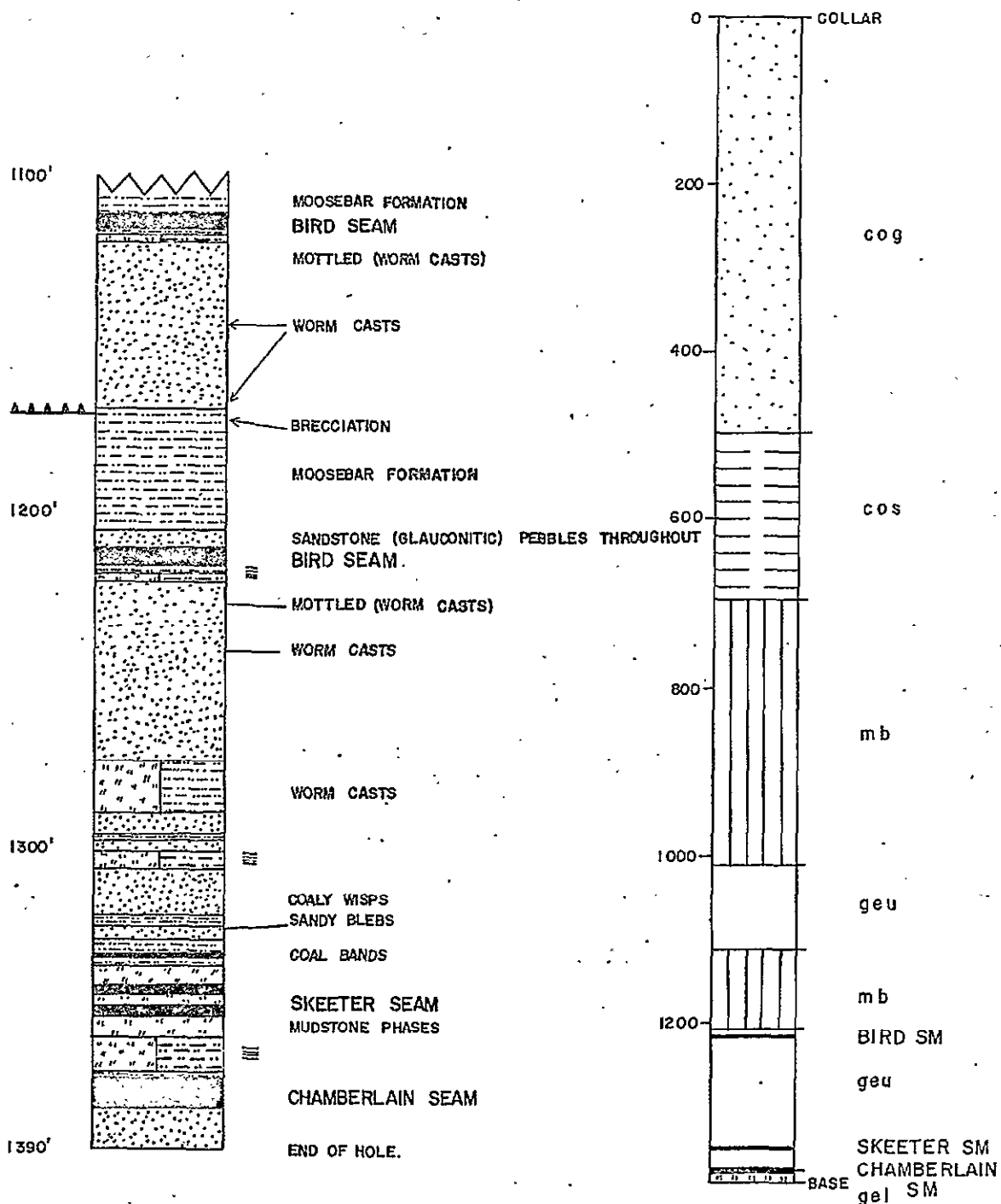
Grid Reference 42570.9N 84012.6E
Exploration Grid Reference F+1800'/2

Date Commenced 29th June, 1970 Completed 17th July, 1970

Collar R.L. 4774 Standard Datum
Total Depth 1390 Electrically Logged ~~Yes~~/No
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3389.1	7.40	85%	
Chamberlain	3361.9	8.0	80%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS

DDH S-26

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 223 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-26, Hole S-26
1369.5 - 1377.5
Cored - 8.0
Recovered - 6.5

Report No. 67-0075
67-C076

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	131
1.60	96.2	0.81	5.13	22.84	71.22	14743	0.46	3
1.60	<u>3.8</u>	<u>0.94</u>	<u>47.60</u>				<u>0.72</u>	
	100.0	0.81	6.74				0.47	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 7.579 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-26

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
Fault, established	No core to 7.0 ft.		
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1012.0
	SANDSTONE, glauconite and pebbles.	GETHING FM.	1012.5
	<u>COAL.</u>	BIRD SEAM	1116.0
	LAMINITE, siltstone and mudstone, mudstone at top 1126'.		1120.0
	SANDSTONE, mottled (worm casts), worm casts 1144' and 1168'.		1168.0
	MUDSTONE, ash beds at base, brecciated at top.	MOOSEBAR FM.	1206.0
	SANDSTONE, glauconitic - pebbles throughout.	GETHING FM.	1211.0
	<u>COAL,</u>	BIRD SEAM	1216.0
	LAMINITE, siltstone and mudstone, mudstone at top.		1220.0
	SANDSTONE, mottled (worm casts) 1226', worm casts 1241', coarse at top, fine at base.		1275.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		1290.0
	SANDSTONE, mudstone band at 1297'.		1302.0
	LAMINITE, siltstone and mudstone.		1307.0

BORE NUMBER S-27 & S-27A

Grid Reference 41092.3N 88145.7E

Exploration Grid Reference G+300'/3+600'

Date Commenced 5th August, 1970 Completed 12th August, 1970

Collar R.L. 4869.0' Standard Datum

Total Depth S-27:1217' S-27A:1264' Electrically Logged ~~Yes~~/No

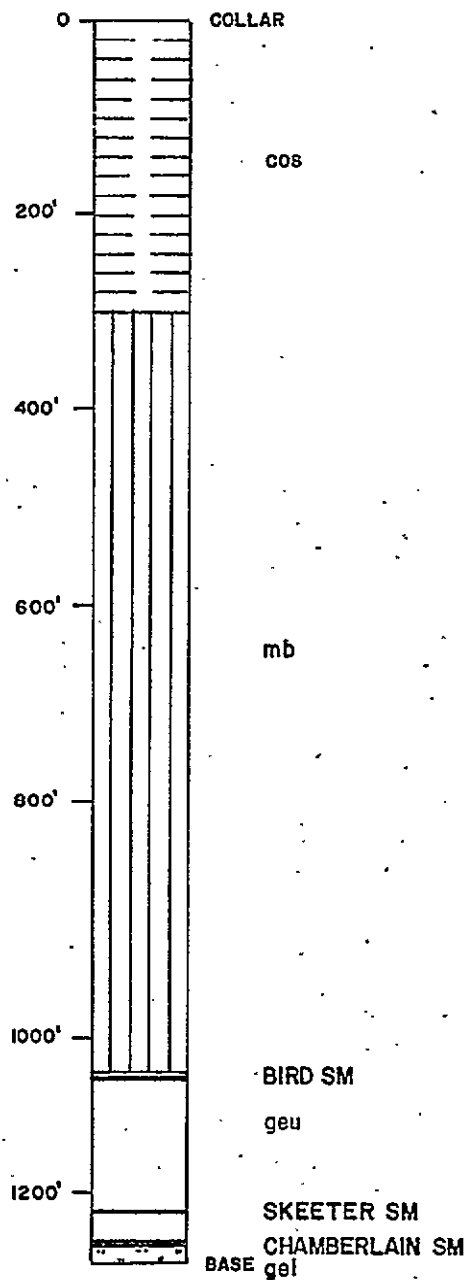
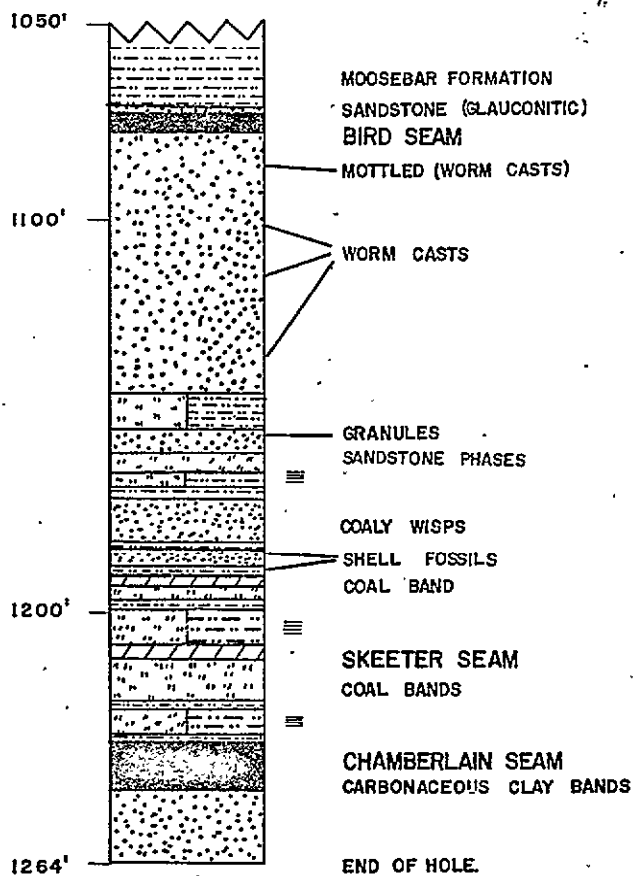
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3680	0.25'	100%	
Chamberlain	3626'	9.0'	100%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-27, 27a

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN*

Report No. 67-0065 ✓
67-0066

Sample No. CH-27, Hole S-27A

1234.0 - 1243.0

1234.0 - 1243.0 L.S.T.

Cored - 9.0

Recovered - 9.0

SINK GRAVITY	AIR DRY BASIS							
	Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
	1.60	96.5	0.82	4.11	22.25	72.82	14911	0.48 9
	1.60	<u>3.5</u>	<u>0.64</u>	<u>44.96</u>				<u>0.49</u>
		100.0	0.81	5.54				0.48

% ADM - % Moisture in air dried sample

Weight of sample as received in laboratory = 13.490 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-27, S-27A

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft.)
	No core to 10.0 ft.		
	MUDSTONE, two white claystone bands at base.	MOOSEBAR FM.	1074.0
	SANDSTONE, glauconitic, pebbles at base.		1075.0
	<u>COAL.</u>	BIRD SEAM	1078.0
	SANDSTONE, grey, quartz-lithic, medium grained, becoming finer to base. Mottled (worm casts) at 1086', worm casts at 1101', 1115', 1123-1134'.		1145.0
	SILTSTONE AND MUDSTONE INTERBEDDED, grey siltstone and mudstone dark grey. Granules at base.		1153.0
	SANDSTONE, grey, medium grained, quartz-lithic, mudstone band at base.		1160.0
	SILTSTONE, grey, sandy interbeds and phases, brownish sandstone to base.		1165.0
	LAMINITE, siltstone brownish grey, and mudstone dark grey.		1171.0
	SANDSTONE, brownish grey, silty and coaly wisps, 1' claystone at 1184', shell fossils at 1185'.		1188.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	CLAYSTONE, dark grey, carbonaceous, shell fossils.		1189.0
	<u>COAL</u> .		1189.25
	CLAYSTONE, dark grey, carbonaceous.		1193.0
	SILTSTONE, brownish grey, sandy interbeds, mudstone band at 1199'.		1200.0
	LAMINITE, siltstone and mudstone grey, carbonaceous at base.		1209.0
	CLAYSTONE, black, carbonaceous with coaly bands.		1212.0
	SILTSTONE, grey, sandy interbeds, mudstone band at base. Coal bands at 1215' (0.5') and 1217' (0.9').		1225.0
	LAMINITE, siltstone and mudstone grey, mudstone band at base.		1234.0
	<u>COAL</u> , carbonaceous claystone bands with coaly partings at 1243' (.6') and at base (0.5').	CHAMB. SM.	1245.0
	SANDSTONE, grey, medium grained, quartz-lithic.		1264.0
			<u>Base of Hole</u>

Grid Reference 40773.8N 85099.9E

Exploration Grid Reference G+1700'/1+1900'

Date Commenced 18th July, 1970 Completed 3rd August, 1970

Collar R.L. 4504.4' Standard Datum

Total Depth 1101' Electrically Logged ~~Yes~~/No

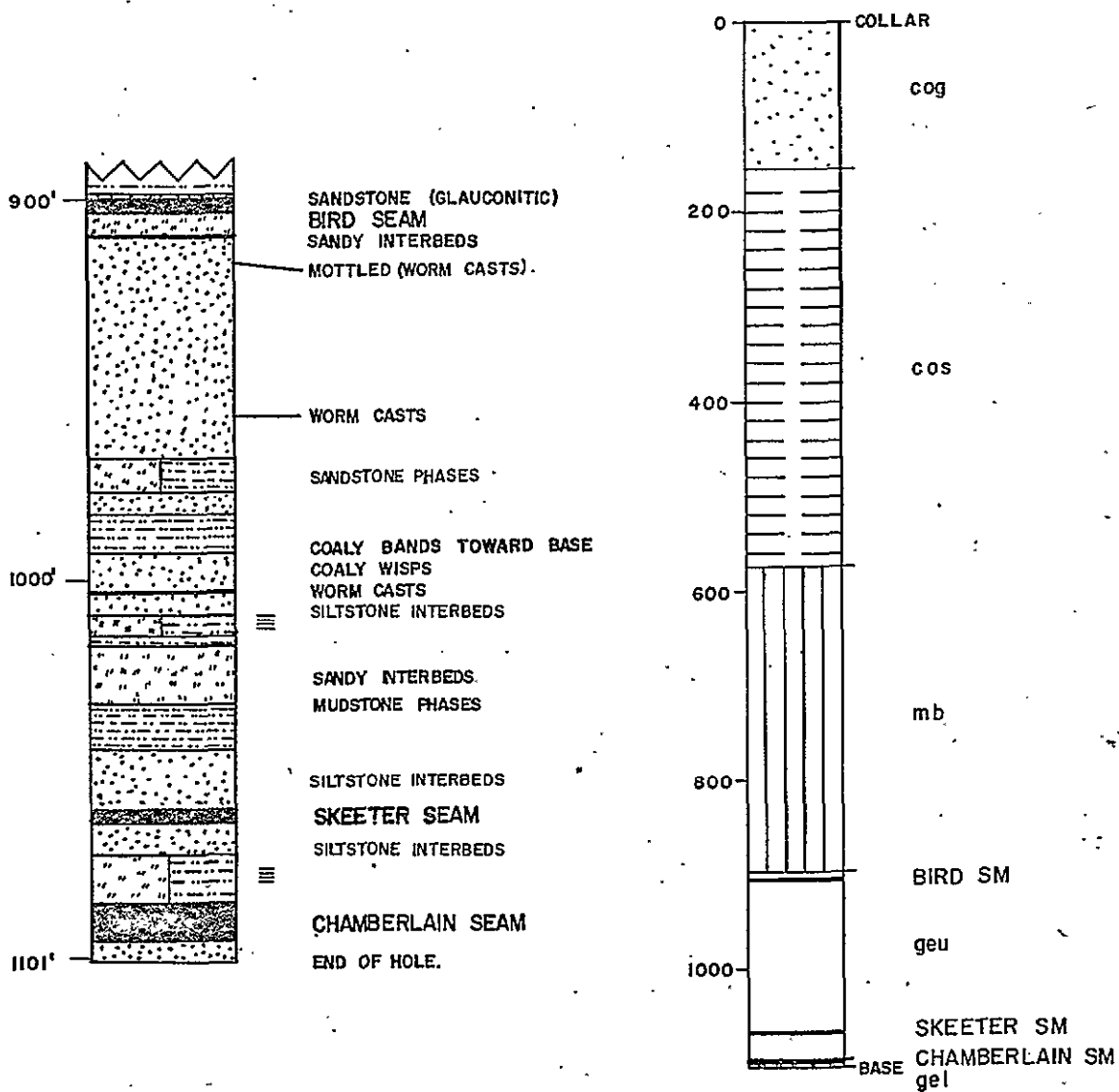
Drilled by Connors Drilling Limited

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3441.8	2.3	100%	
Chamberlain	3409.3'	9.0'	100%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 28

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-28, Hole S-28
1086.0 - 1095.5
Cored - 9.5
Recovered - 9.5

Report No. 67-0063
67-0064

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% ASH	% Vol.	% F. C.	Btu	% SUL.	% S
1.60		97.1	0.78	4.80	22.01	72.41	14793	0.43	8.5
1.60		<u>2.9</u>	<u>0.19</u>	<u>43.17</u>				<u>0.40</u>	
		100.0	0.76	5.91				0.43	

% ADM - % Moisture in air dried sample

Weight of sample as received in laboratory = 12.374 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-28

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 14.0 ft.		
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	899.0
	SANDSTONE, glauconitic.	GETHING FM.	899.5
	<u>COAL</u> .	BIRD SEAM	903.0
	SILTSTONE, sandy interbeds, coal band at base.		909.0
	SANDSTONE, coarse at top, fine towards base, mottled (worm casts) 917', worm casts 953'-960'.		968.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases, worm casts.		977.0
	SANDSTONE.		983.0
	MUDSTONE, coaly bands at base.		992.0
	SANDSTONE, coaly wisps, worm casts 997'.		1003.0
	<u>COAL</u> , band.		1003.5
	SANDSTONE, silty interbeds.		1010.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1017.0
	SILTSTONE, sandy phases and mudstone bands.		1033.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	MUDSTONE, silty phases, carbonaceous at base.		1045.0
	SANDSTONE, silty interbeds.		1061.0
	<u>COAL.</u>	SKEETER SM.	1065.0
	SILTSTONE AND SANDSTONE INTERBEDDED.		1073.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1086.0
	<u>COAL.</u>	CHAMB. SM.	1095.5
	SANDSTONE.		1101.0
			<u>Base of Hole</u>

BORE NUMBER S-30

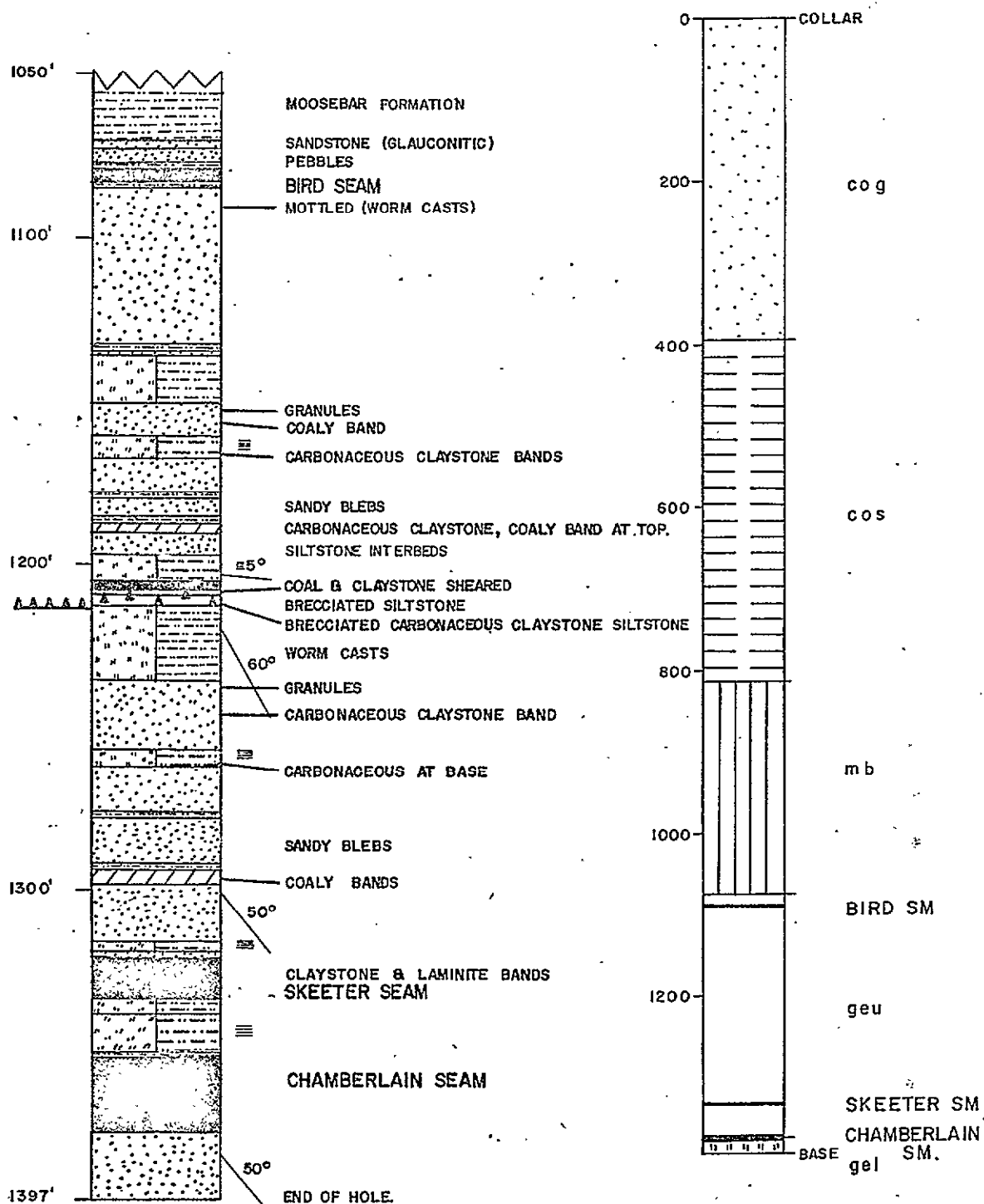
Grid Reference 46221.8N 88963.3E
Exploration Grid Reference E/5+200'

Date Commenced 3rd August, 1970 Completed 13th August, 1970.

Collar R.L. 5105.8' Standard Datum
Total Depth 1397' Electrically Logged */Yes/*No
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	3730.8'	19.9	98%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-30

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-30
Hole S-30
1353.0 - 1375.2
Cored - 22.2
Recovered - 21.0

Report No. 67-0071
67-0072

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Sta	% Sol.	PSI
1.60		98.3	0.90	4.54	22.19	72.37	14813	0.43	8
1.60		<u>1.7</u>	<u>1.01</u>	<u>43.86</u>				<u>0.34</u>	
		100.0	0.90	5.21				0.43	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 24.381 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-30

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 13.0 ft. SILTSTONE.	GATES MB.	92.0
	MUDSTONE, coaly bands		104.0
	CONGLOMERATE.		183.0
	SANDSTONE, mudstone phases.		258.0
	CLAYSTONE, coaly bands, sandy phase in centre.		271.0
	CONGLOMERATE.		295.0
	SANDSTONE, mudstone phases in lower half.		398.0
	SANDSTONE AND SILTSTONE, with mudstone bands.	SUKUNKA MB.	813.0
	MUDSTONE, ash bands at base.	MOOSEBAR FM.	1072.0
	SANDSTONE, glauconitic.	GETHING FM.	1074.0
	SANDSTONE, pebble band at 1078', mudstone band 1079'.		1081.0
	<u>COAL</u> , mudstone (0.5') at base.	BIRD SEAM	1084.0
	SANDSTONE, coarse at top, fine towards base, mottled (worm cast) 1091', mudstone band 1135'.		1137.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base		1153.0
	SANDSTONE, coaly band at 1157'.		1162.0
	LAMINITE, siltstone and mudstone, carbonaceous claystone at 1166' and 1167'.		1168.0
	SANDSTONE, coaly wisps, mudstone band at 1180' and at base, sandy blebs 1183'.		1188.0
	CLAYSTONE, silty interbeds.		1199.0
	LAMINITE, siltstone and mudstone.		1206.0
	<u>COAL</u> , sheared and claystone.		1208.0
	SILTSTONE, brecciated.		1209.0
	CLAYSTONE, carbonaceous, sheared silty band at 1213'.		1214.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		1237.0
	SANDSTONE, carbonaceous claystone band at 1246'.		1247.0
	LAMINITE, siltstone and mudstone, carbonaceous claystone at base.		1263.0
	SANDSTONE, coaly wisps, sand blebs at base, mudstone at base and 1278'.		1295.0
	CLAYSTONE, coaly bands.		1299.0
		Base of Hole	

BORE NUMBER S-31

Grid Reference 47574.6N 87825.4E

Exploration Grid Reference E+1800'/4+1800'

Date Commenced 14th August, 1970 Completed 31st August, 1970

Collar R.L. 4970.7'

Standard Datum

Total Depth 1558'

Electrically Logged ~~Yes~~/No

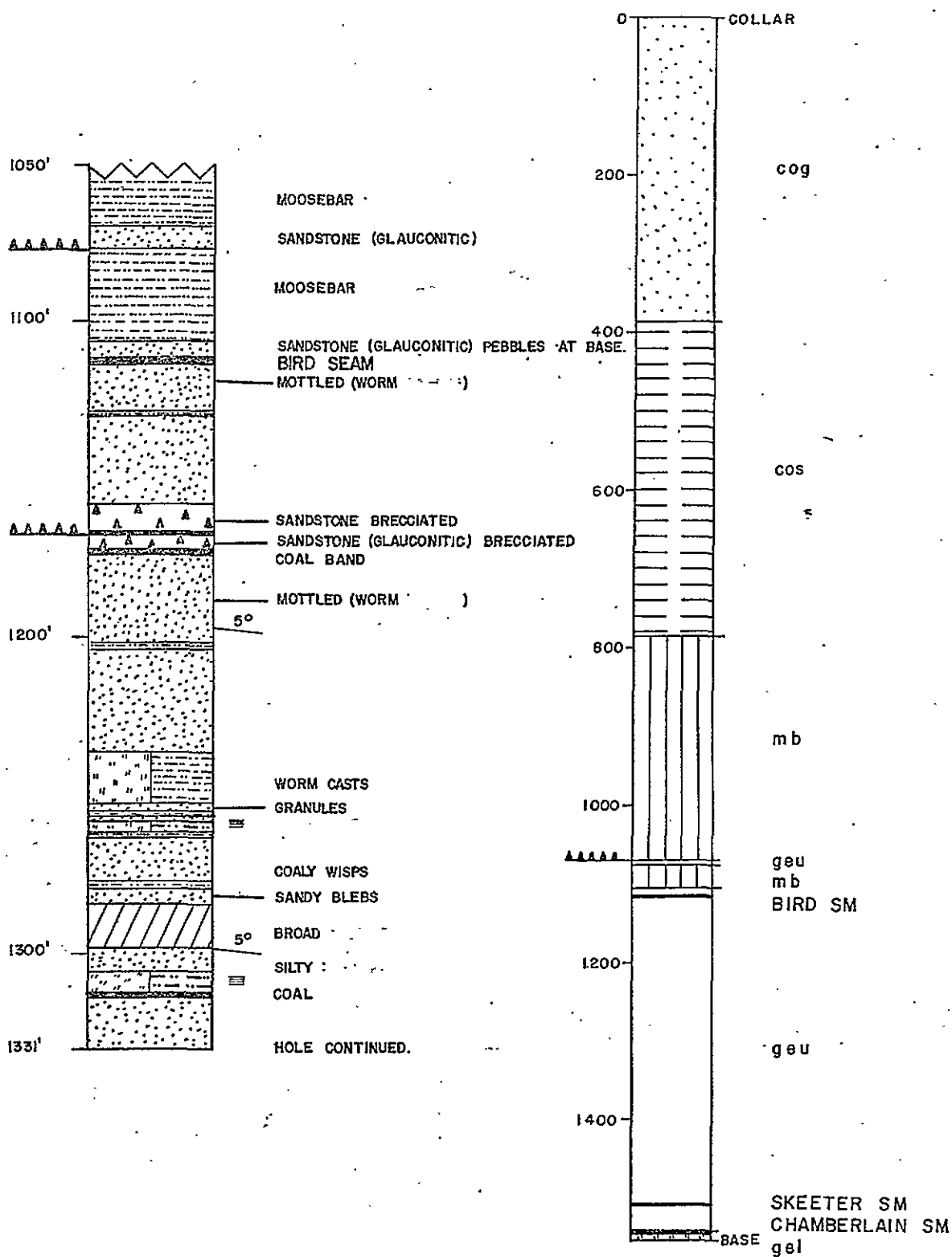
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3459.7	3.5	42.8%	
Chamberlain	3425.7'	13.6'	14.7%	

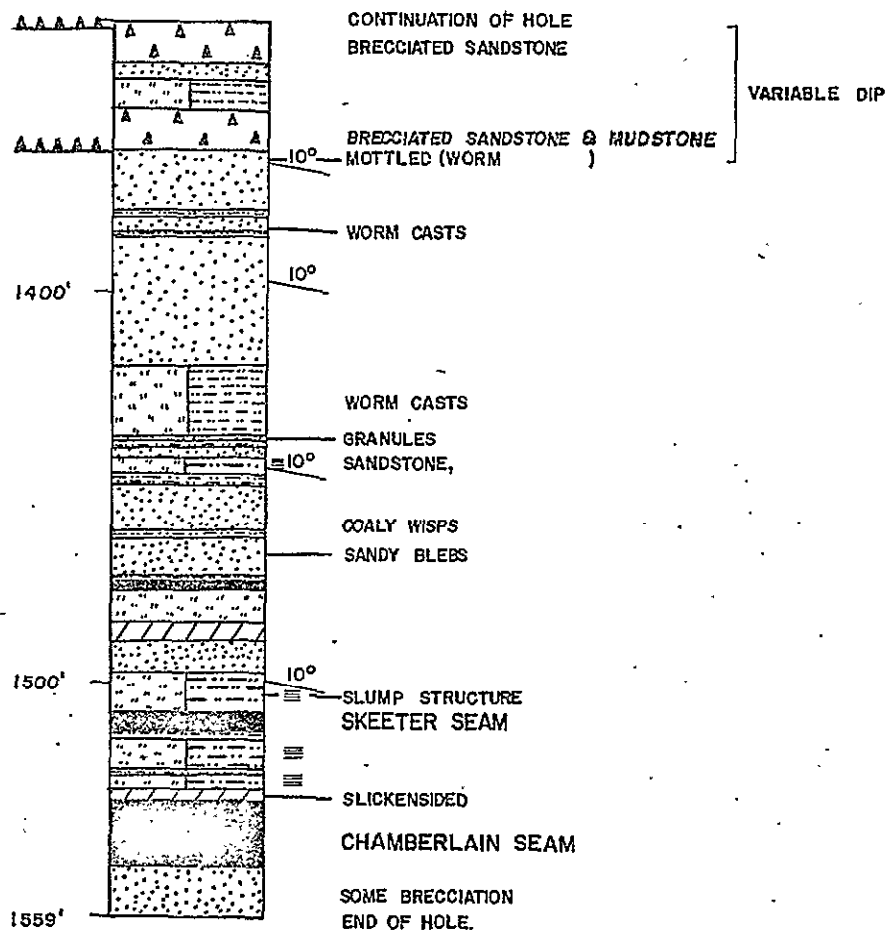


DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-31



DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-31

DRAWN BY S.A.

DATE: November '71

PAGE 2 of 2

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. Sk-31, Hole 31
1507.5 - 1511, Skeeter Seam
Cored 3.5', Recovered 1.5'

Report No. 67-0126

% Total Moisture 1.26

AIR DRY BASIS

% Moisture	1.00
% Ash	12.00
% Volatile	19.23
% Fixed Carbon	67.77
	<u>100.00</u>

Btu	13526
% Sulfur	0.44

FREE SWELLING INDEX (CBI) $2\frac{1}{2}$

Weight of sample as received in laboratory = 2.502 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-3434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-31, Hole No. 31
1530 - 1545, Chamberlain Seam
Cored 15', Recovered 2'

Report No. 67-0127

% Total Moisture 1.53

AIR DRY BASIS

% Moisture	1.02
% Ash	7.04
% Volatile	22.83
% Fixed Carbon	69.11
	<u>100.00</u>

Btu	14272
% Sulfur	0.39

FREE SWELLING INDEX (CBI) 9

Weight of sample as received in laboratory = 2.154 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-31

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 3.0 ft.		
	CONGLOMERATE, mudstone bands.	GATES MB.	38.0
	SILTSTONE.		43.0
	MUDSTONE.		56.0
	CONGLOMERATE.		135.0
	SANDSTONE, mudstone phases.		227.0
	MUDSTONE.		233.0
	CONGLOMERATE.		257.0
	SANDSTONE, mudstone phases.		388.0
	SILTSTONE, sandstone and mudstone worm casts.	SUKUNKA MB.	458.0
	MUDSTONE.		478.0
	SILTSTONE, mudstone phases, predominant at base.		785.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1070.0
Fault, established	SANDSTONE, glauconitic.	GETHING FM.	1076.5
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1106.0
	SANDSTONE, glauconitic.	GETHING FM.	1112.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	<u>COAL.</u>	BIRD SEAM	
	SANDSTONE, mottled (worm casts) 1119'.		1158.0
	SANDSTONE, breccia.		1167.0
	SANDSTONE, glauconitic, brecciated, coarse at top, fine towards base.		1172.0
	SANDSTONE, coarse at top, fine towards base, mottled (worm casts) 1187'.		1237.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		1254.0
	SANDSTONE, silty interbeds, mudstone band at 1257'.		1258.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1264.0
	SANDSTONE, coaly wisps, sandy blebs 1284', mudstone at 1279' and at base.		1285.0
	CLAYSTONE, carbonaceous, coaly bands, broad silty interbed.		1298.0
	SANDSTONE, silty interbeds.		1307.0
	LAMINITE, siltstone and mudstone.		1313.0
	<u>COAL.</u>		1314.0
	SANDSTONE.		1331.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
Fault, established	SANDSTONE, breccia.	GETHING FM.	1341.0
	SANDSTONE, silty interbeds.		1346.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		1353.0
	SANDSTONE, SILTSTONE AND MUDSTONE, breccia.		1364.0
	SANDSTONE, mottled (worm casts) 1366', mudstone band 1380' and 1385', worm casts 1384'.		1418.0
	SILTSTONE, mudstone interbedded, worm casts, granules at base.		1436.0
	SANDSTONE, silty interbeds, mudstone band at 1439'.		1442.0
	LAMINITE, siltstone and mudstone, mudstone at base.	SKEETER SM.	1449.0
	SANDSTONE, coaly wisps, mudstone band 1462' and 1473', sandy blebs 1467'.		1474.0
	<u>COAL.</u>)		1476.0
)		
	SILTSTONE, sandy interbeds.)		1484.0
)		
	CLAYSTONE, carbonaceous.)		1439.0
)		
	SANDSTONE, silty interbeds.)		1497.0
)		
	LAMINITE, siltstone and mudstone, mudstone at base, slump? at 1501'.)		1507.5

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratur. (ft)</i>
	COAL, carbonaceous claystone at base.))	SKEETER SM.	1511.0
	LAMINITE, siltstone phase, mudstone band at 1522'.		1527.0
	CLAYSTONE, carbonaceous, slickensided.		1530.0
	COAL.	CHAMB. SM.	1545.0
	SANDSTONE. brecciate zones.		1559.0
			<u>Base of Hole</u>

BORE NUMBER S-32

Grid Reference 39031.8N 97483.2E

Exploration Grid Reference K+1200'/6+1100'

Date Commenced 16th August, 1970 Completed 23rd August, 1970

Collar R.L. 5651.5'

Standard Datum

Total Depth 1168'

Electrically Logged Y~~es~~/No

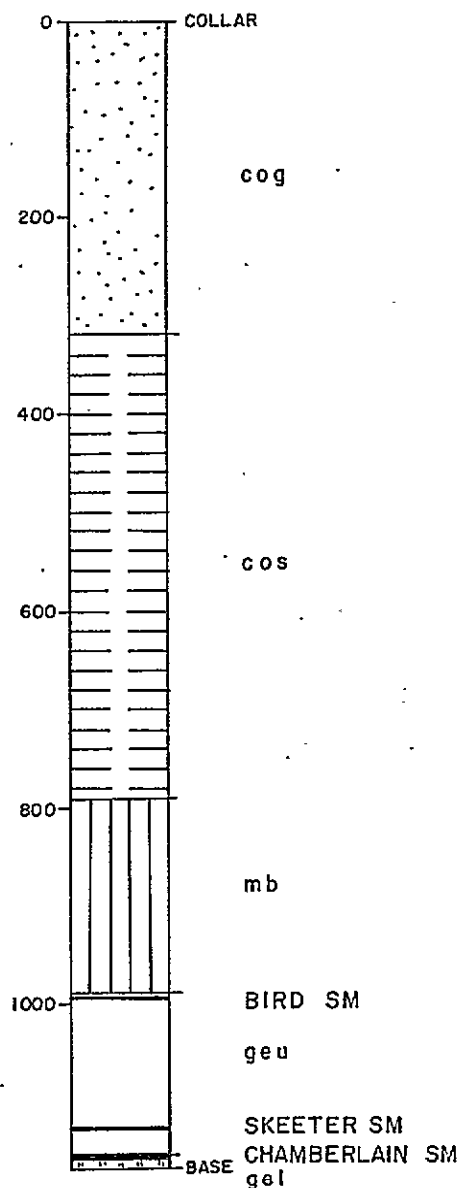
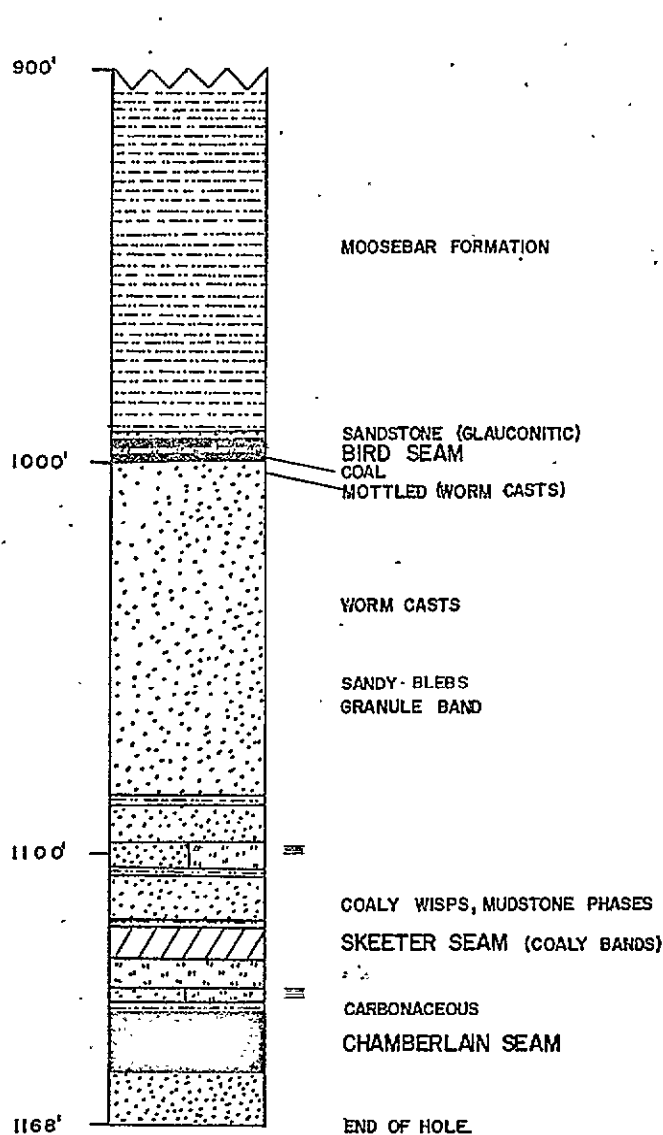
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	4496.5	14.6	59.5%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 32

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-3434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-32-1, Hole S-32
1140.4 - 1145.4 TOP Bench
Cored - 5.0
Recovered - 5.0

Report No. 67-0079
67-0080

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Asn	% Vol.	% F. C.	Btu	% Sul.
	1.60	95.5	0.94	5.12	21.57	72.37	14661	0.31
1.60		<u>4.5</u>	<u>0.72</u>	<u>59.05</u>				<u>0.17</u>
		100.0	0.93	7.55				0.30

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 6.501 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-32-2, Hole S-32
1145.4 - 1155.0 Bottom Bench
Cored - 9.6
Recovered - 8.7

Report No. 67-0073
67-0074

SPECIFIC GRAVITY	AIR DRY BASIS							
	Sink Float	% WT.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.
	1.60	95.3	0.97	5.09	22.14	71.80	14597	0.22
	1.60	<u>4.7</u>	<u>0.81</u>	<u>53.47</u>				<u>0.10</u>
		100.0	0.96	7.36				0.21

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 11.096 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-32

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 22.0 ft.		
	MUDSTONE, siltstone at the base.	GATES MB.	28.0
	<u>COAL.</u>		31.0
	SANDSTONE, coarse grained, (worm casts).		108.0
	SANDSTONE, mudstone interbeds, vertical beds at 171', horizontal below 171'.		203.0
	CONGLOMERATE.		205.0
	<u>COAL.</u>		207.0
	SILTSTONE, mudstone phase at the base.		218.0
	SANDSTONE.		230.0
	SANDSTONE, mudstone phases throughout, predominate in base.		411.0
	MUDSTONE, silty bands,		454.0
	SANDSTONE, silty interbeds, worm casts, mudstone predominate at base.		788.0
	SANDSTONE.		791.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	993.0
	SANDSTONE, glauconitic.	GETHING FM.	994.0
	<u>COAL.</u>)		995.0
)		
	SILTSTONE.)	BIRD SEAM	999.0
)		
	<u>COAL.</u>)		999.5
	SANDSTONE, coarse at top, fine at base, silty interbed towards base 1027', worm casts 1047', mottled (worm casts) 1004', sandy blebs 1056', granular layer 1021', mudstone band 1086'.		1097.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1105.0
	SANDSTONE, coaly wisps, mudstone phases, mudstone at base.		1118.0
	CLAYSTONE, carbonaceous, coaly bands.		1126.0
	SILTSTONE, sandy phases.		1133.0
	LAMINITE, siltstone and mudstone.		1138.0
	MUDSTONE, carbonaceous.		1140.5
	<u>COAL.</u>	CHAMB. SM.	1155.0
	SANDSTONE.		1168.0
			<u>Base of Hole</u>

BORE NUMBER S-34

Grid Reference 42993.3N 81315.9E

Exploration Grid Reference E+1700'/1+200'

Date Commenced 3rd Sept., 1970 Completed 16th Sept., 1970

Collar R.L. 4718.0' Standard Datum

Total Depth 1028' Electrically Logged Yes/No

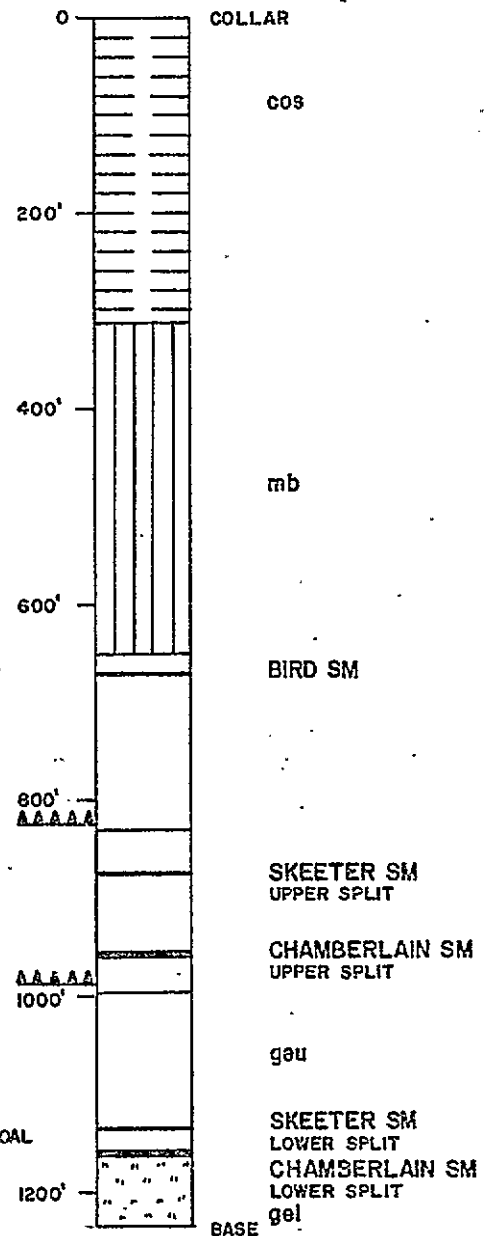
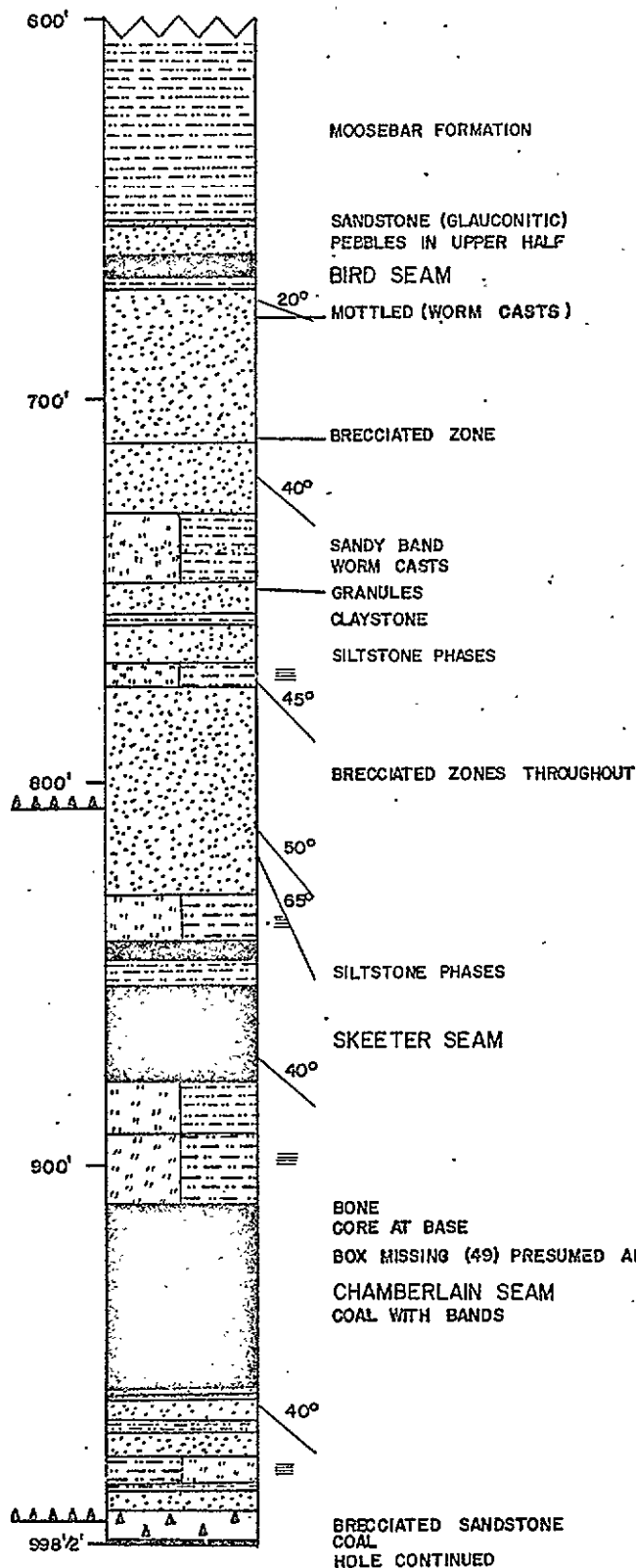
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter Upper Plate	3839.9	23.8	82.4%	
Chamberlain Upper Plate	3767.0	24.4	84.2%	
Skeeter Lower Plate	3585.9	8.4	78.5%	
Chamberlain Lower Plate	3559.6	9.7	94.8%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

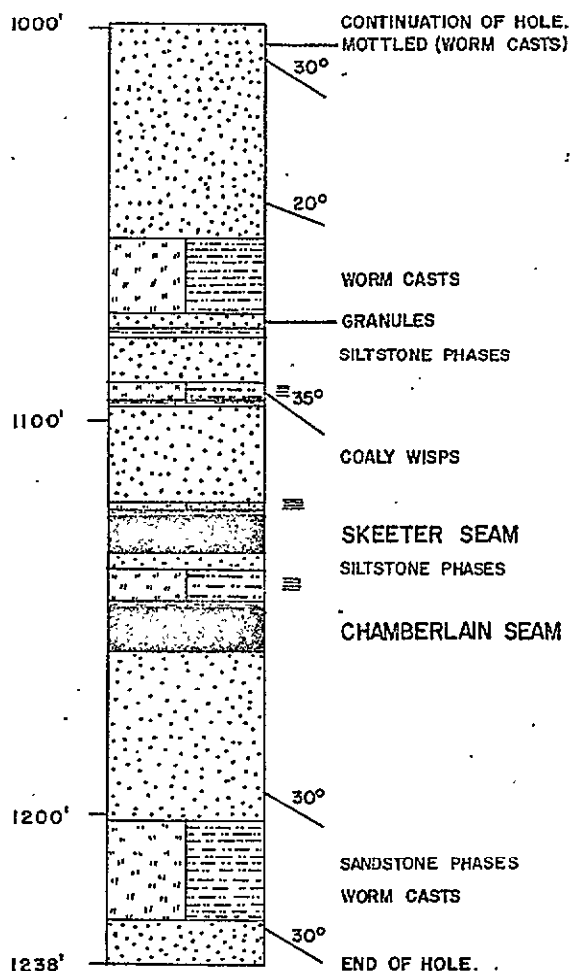
Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 34

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 2



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 34

DRAWN BY S.A.

DATE: November '71

PAGE 2 of 2

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-34, Hole No. S-34
Skeeter Seam
853 - 878
Cored 25', Recovered 20'

Report No. 67-0129.

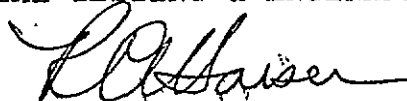
% Total Moisture	1.07
<u>AIR DRY BASIS</u>	
% Moisture	1.07
% Ash	23.52
% Volatile	20.62
% Fixed Carbon	54.79
	<u>100.00</u>
Btu	11593
% Sulfur	0.32

FREE SWELLING INDEX (CBI) $4\frac{1}{2}$

Weight of sample as received in laboratory = 22.363 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.


R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-34, Hole No. S-34
913 - 951, Chamberlain Seam
Cored 38', Recovered 32'

Report No. 67-0128

% Total Moisture 1.10

AIR DRY BASIS

% Moisture	1.10
% Ash	4.88
% Volatile	25.10
% Fixed Carbon	68.92
	<u>100.00</u>

Btu	14661
% Sulfur	0.33

FREE SWELLING INDEX (CBI) 8½

Weight of sample as received in laboratory = 30.295 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-34-2

Report No. 67-0547
67-0548

SPECIFIC GRAVITY	AIR DRY BASIS							
	Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
	1.60	83.5	0.68	6.27	24.29	68.76	14436	0.52 8½
	1.60	<u>16.5</u>	<u>1.02</u>	<u>75.95</u>				<u>0.21</u>
		100.0	0.74	17.77				0.47

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 7.831 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-34-2

Report No. 67-0525
67-0526

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		96.6	0.94	4.08	24.80	70.18	14770	0.35 8
1.60		<u>3.4</u>	<u>0.53</u>	<u>47.46</u>				<u>0.27</u>
		100.0	0.93	5.55				0.35

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 12.820 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-34

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 12.0 ft.		
	SILTSTONE, SANDSTONE AND MUDSTONE INTERBEDDED, worm casts.	SUKUNKA MB.	325.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	653.0
	SANDSTONE, glauconitic.	GETHING FM.	654.5
	SANDSTONE, pebble bands at 658'.		663.0
	<u>COAL</u> .	BIRD SEAM	668.0
	MUDSTONE, silty interbeds.		671.0
	SANDSTONE, mottled (worm casts) 678', brecciated at 711'.		730.0
	SILTSTONE AND MUDSTONE INTERBEDS, worm casts, sandy phase at 739', granules at base.		748.0
	SANDSTONE.		757.0
	CLAYSTONE, carbonaceous, coal at base.		758.0
	SANDSTONE, silty phases.		769.0
	LAMINITE, siltstone and mudstone.		775.0
Fault, established	SANDSTONE, coaly wisps, brecciated zones.		829.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	LAMINITE, siltstone and mudstone.		841.0
	<u>COAL</u> .		845.5
	MUDSTONE, sandy phases.		853.0
	<u>COAL</u> .		878.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		891.0
	LAMINITE, siltstone and mudstone.		910.0
	MUDSTONE, (bone), coal at base. (1 box missing, box 49, presumably all coal).		913.0
	<u>COAL</u> , with a band.		958.0
	SANDSTONE, mudstone and coal bands at 960', 967', 968'.		976.0
	LAMINITE, siltstone and mudstone, mudstone base.		985.0
	SANDSTONE.		990.0
	SANDSTONE, sandstone brecciated.		998.0
	<u>COAL</u> .	CHAMB. SM.	998.5
	SANDSTONE, mottled (worm casts) at 1004', coarse at top, fine at base.		1053.0
	SILTSTONE AND MUDSTONE INTERBEDDED, granules at base, worm casts.		1073.0
	SANDSTONE.		1076.0
	MUDSTONE.		1079.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	SANDSTONE, silty phases.		1090.0
	LAMINITE, siltstone and mudstone, mudstone base.		1096.0
	SANDSTONE, coaly wisps.		1121.0
	LAMINITE, siltstone and mudstone, mudstone base.	GETHING	1124.0
	<u>COAL.</u>		1133.0
	SANDSTONE, silty phases.		1138.0
	LAMINITE, siltstone and mudstone, mudstone base.		1148.0
	<u>COAL.</u>	CHAMB. SM.	1158.0
	SANDSTONE, coarse at top becoming fine.		1202.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at top.		1226.0
	SANDSTONE.		1238.0
			<u>Base of Hole</u>

BORE NUMBER S-35

Grid Reference 45498.1N 91459.3E

Exploration Grid Reference F/5+1800'

Date Commenced 2nd Sept., 1970 Completed 20th Sept., 1970

Collar R.L. 5451.0' Standard Datum.

Total Depth 1754' Electrically Logged ~~Yes~~/No

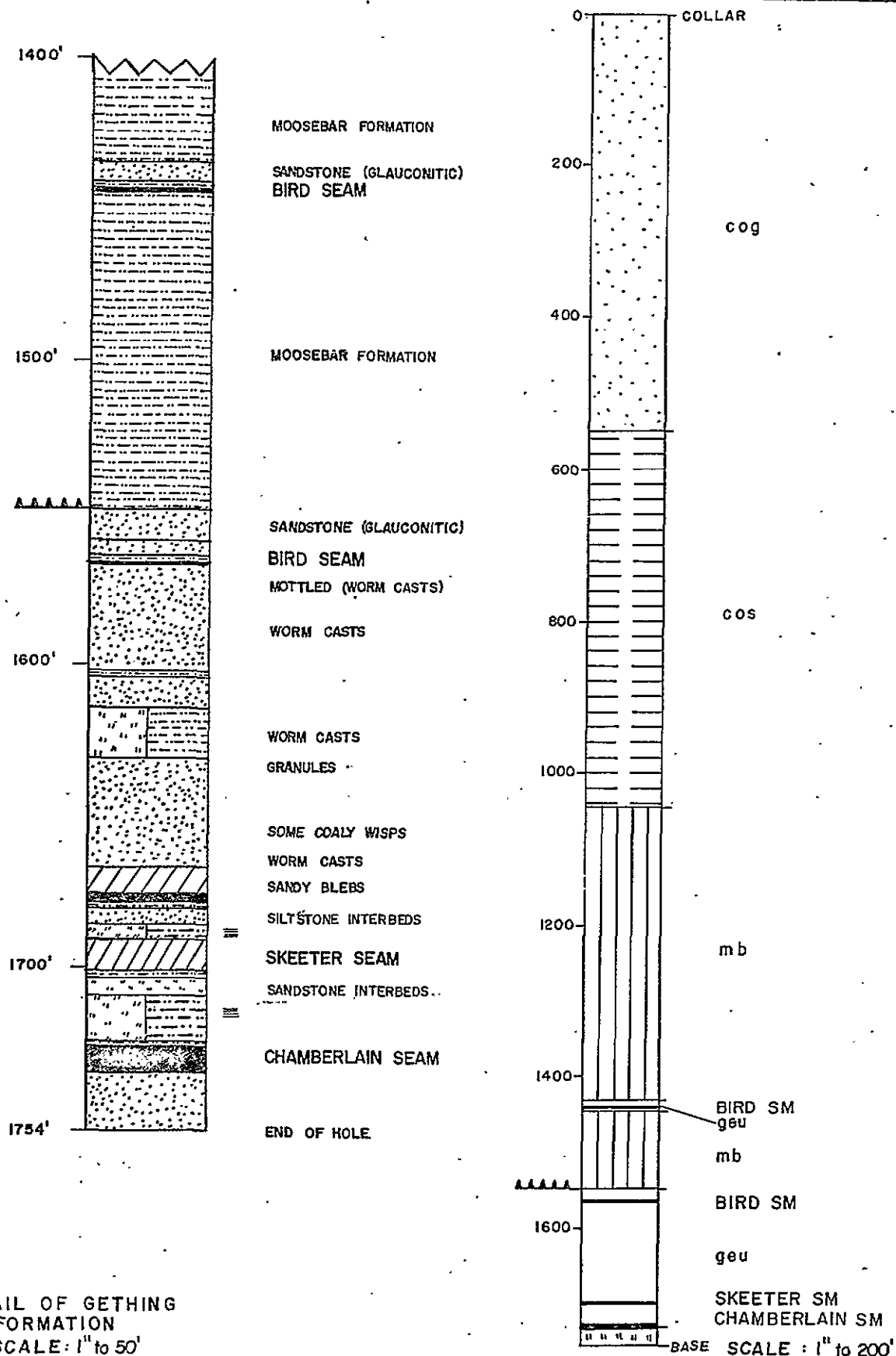
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	3711.6	8.0	87.5%	



Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 35

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-35, Hole No. S-35
1725.5' - 1733.5', Chamberlain Seam
Cored 8.0', Recovered 7.0'

Report No. 67-0114
67-0115


SPECIFIC GRAVITY		AIR DRY BASIS						
Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60	93.1	1.00	5.10	22.32	71.58	14667	0.48	9+
1.60	<u>6.9</u> 100.0	<u>0.76</u> 0.98	<u>51.14</u> 8.28				<u>0.61</u> 0.48	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 8.452 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.


R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-35

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 12.5 ft.		
	SILTSTONE, mudstone interbeds.	GATES MB.	250.0
	<u>COAL.</u>		251.0
	SILTSTONE, mudstone interbeds.		256.0
	MUDSTONE.		266.0
	<u>COAL.</u>		268.0
	CONGLOMERATE.		335.0
	SANDSTONE.		381.0
	SANDSTONE AND MUDSTONE INTERBEDDED.		423.0
	CONGLOMERATE.		456.0
	SANDSTONE.		548.0
Fault, possible	SILTSTONE, SANDSTONE AND MUDSTONE, worm casts. Mudstone predominant in lower half, slickensided and brecciated from 1025'-1041'.	SUKUNKA MB.	1041.0
Fault, probable	MUDSTONE, ash beds, slickensided at 1285' (10'), and brecciated 1389'- (10'), 1403'-1434'.	MOOSEBAR FM.	1434.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	SANDSTONE, glauconitic.	GETHING FM.	1440.0
	MUDSTONE, crushed.	BIRD SEAM	1440.5
	<u>COAL</u> , crushed.		1441.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1548.0
	SANDSTONE, glauconitic, pebbles at base.	GETHING FM.	1558.0
	SANDSTONE.	BIRD SEAM	1564.0
	MUDSTONE.		1565.0
	<u>COAL</u> .		1565.5
	SANDSTONE, mottled (worm casts) 1569', worm casts 1597' and 1582', mudstone band 1612'.		1614.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		1630.0
	SANDSTONE, worm casts - lower 10'.		1667.0
	SANDSTONE, carbonaceous claystone interbeds, carbonaceous claystone bands at 1669' and 1675'.	-	1675.0
	<u>COAL</u> .		1677.5
	SANDSTONE, silty interbeds, mudstone at top..		1685.0
	LAMINITE, siltstone and mudstone.		1690.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	CLAYSTONE, carbonaceous, coaly bands.		1700.0
	CLAYSTONE.		1703.0
	SILTSTONE, sandy interbeds.		1708.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1725.0
	<u>COAL.</u>	CHAMB. SM.	1733.5
	SANDSTONE.		1754.0
			<u>Base of Hole</u>

BORE NUMBER S-36

Grid Reference 42379.4N 93871.3E

Exploration Grid Reference H/6

Date Commenced 2nd Sept., 1970 Completed 10th Sept. 1970

Collar R.L. 5367.7' Standard Datum

Total Depth 1228' Electrically Logged ~~Yes~~/No

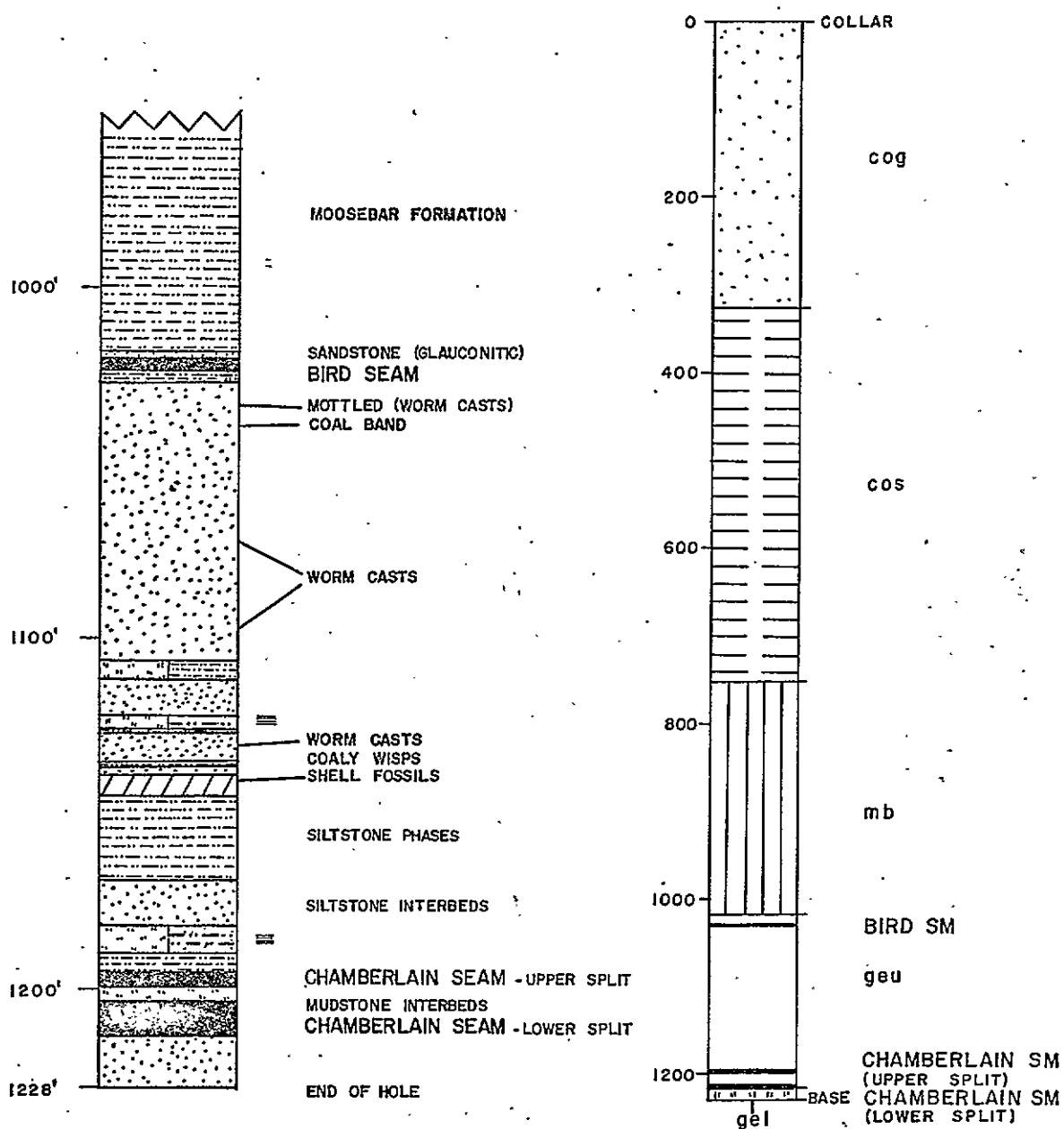
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain Upper Split	4168.7	2.0	100%	
Chamberlain Lower Split	4154.2	10.0	85%	



DETAIL OF GETHING
FORMATION
SCALE : 1" to 50'

SCALE : 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 36

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-36, Hole No. S-36
1203.5' - 1213.5', Chamberlain Seam
Cored 10.0', Recovered 8.5'

Report No. 67-0116
67-0117

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
	1.60	97.0	1.05	5.96	22.57	70.42	14490	0.40	9
1.60		<u>3.0</u>	<u>0.80</u>	<u>60.56</u>				<u>0.21</u>	
		100.0	1.04	7.60				0.39	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 11.314 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-36

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 10.0 ft.		
	CONGLOMERATE.	GATES MB.	42.0
	SANDSTONE AND MUDSTONE PHASES.		68.0
	MUDSTONE, coaly band.		87.0
	SANDSTONE, granules and worm casts.		148.0
	SANDSTONE AND MUDSTONE INTERBEDDED, fault at 176'.		190.0
Fault, established	MUDSTONE, coaly wisps.		205.0
	SANDSTONE, granules and worm casts.		264.0
	SANDSTONE AND MUDSTONE INTERBEDDED.		323.0
	SILTSTONE, sandstone and mudstone, mudstone at base.	SUKUNKA MB.	752.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1018.0
	SANDSTONE, glauconitic.	GETHING FM.	1020.0
	<u>COAL.</u>	BIRD SEAM	1024.0
	MUDSTONE.		1027.0
	SANDSTONE, coarse at top, fine towards base, mottled worm casts.		

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	1048', worm casts 1072-1095'.		1106.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		1112.0
	SANDSTONE.		1122.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1127.0
	SANDSTONE, coaly wisps, mudstone band at 1136', worm casts.		1139.0
	CLAYSTONE, carbonaceous, shelly fossils at top, coaly band 1142'.		1145.0
	MUDSTONE, silty phases.		1169.0
	SANDSTONE, silty interbeds.		1182.0
	LAMINITE, siltstone and mudstone.		1189.5
	MUDSTONE.		1195.0
	<u>COAL.</u>	CHAMB. SM. upper split	1199.0
	SILTSTONE, mudstone interbeds, mudstone at base.		1204.0
	<u>COAL.</u>	CHAMB. SM. lower split	1213.0
	SANDSTONE.		1228.0
			<u>Base of hole</u>

BORE NUMBER S-37

Grid Reference 44083.2N 84155.8E

Exploration Grid Reference E+1000'/2+1000'

Date Commenced 13th Sept., 1970 Completed 21st Sept., 1970

Collar R.L. 4926.8' Standard Datum

Total Depth 1408' Electrically Logged Yes/No

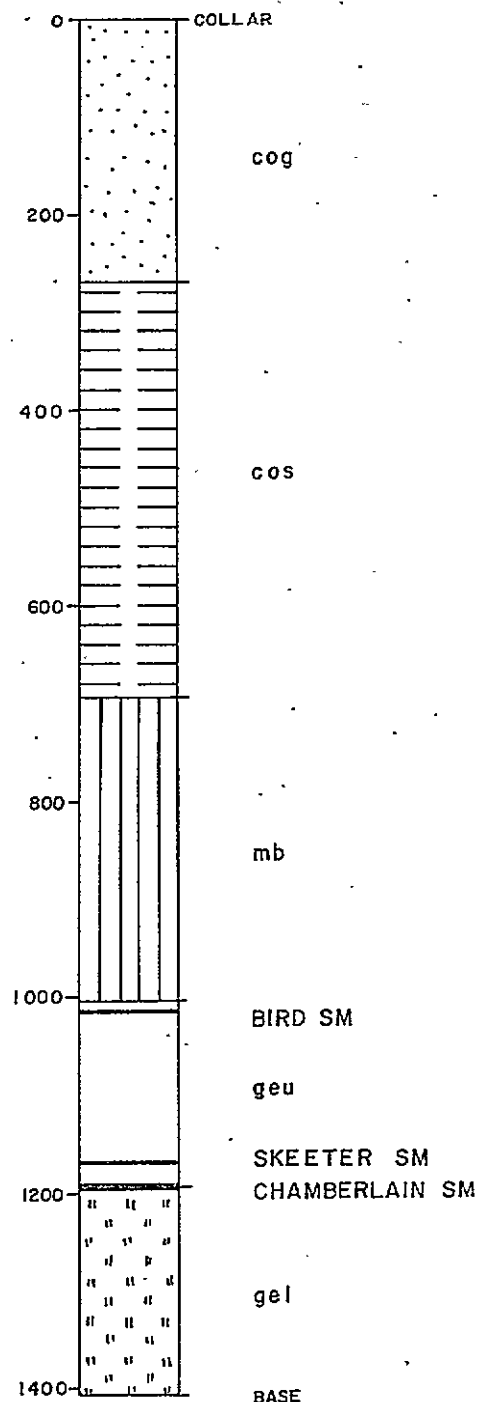
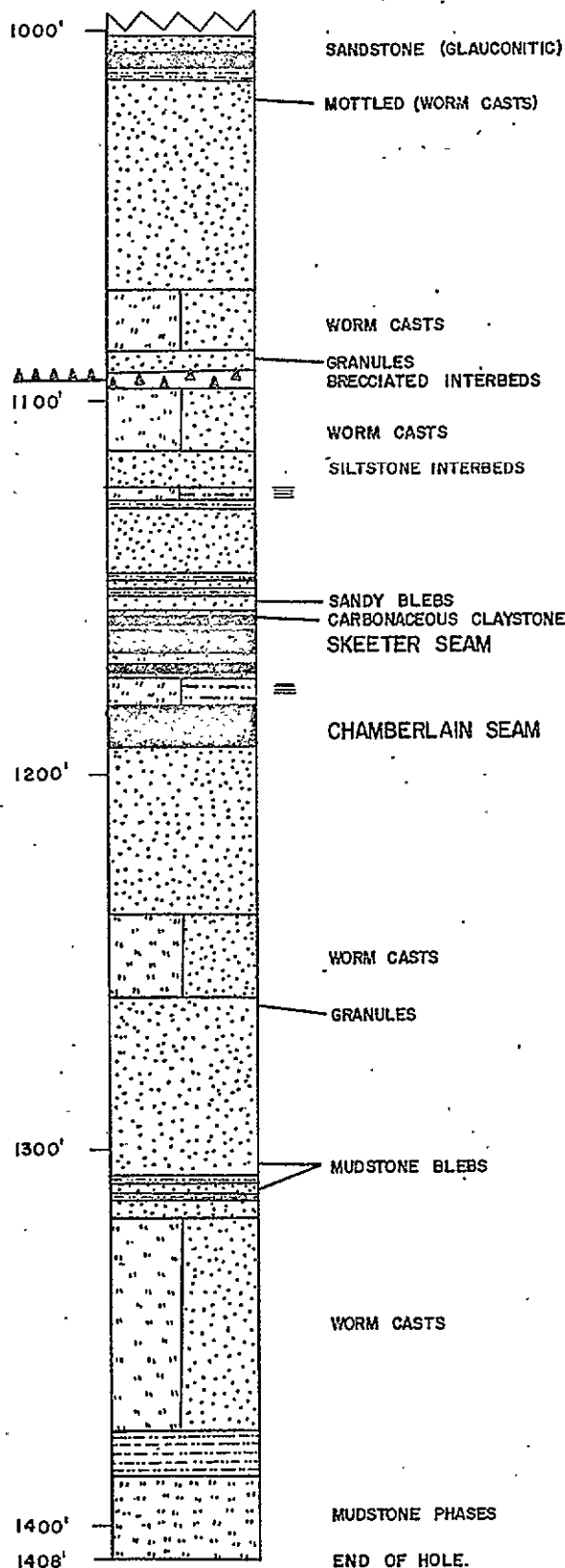
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3754.5	14.1	89.7%	
Chamberlain	3734.5	9.90	94.9%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-37

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 25, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-37-1

Report No. 67-0573
67-0574

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60	97.3	0.82	5.07	22.90	71.21	14778	0.44	8
1.60	<u>2.7</u>	<u>0.81</u>	<u>17.25</u>				<u>0.39</u>	
	100.0	0.82	5.40				0.44	

% ADM = % Moisture in air dried sample

Weight of as received sample = 6.687 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-37, Hole No. S-37
1182.0' - 1192.5',
Cored 10.5'; Recovered 10.0'

Report No. 67-0118
67-0119

SPECIFIC GRAVITY									
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
	1.60	98.4	0.74	4.05	24.32	70.89	14956	0.49	9
1.60		<u>1.6</u>	<u>0.50</u>	<u>37.02</u>				<u>0.35</u>	
		100.0	0.74	4.58				0.49	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 14.559 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-37

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 6.0 ft.		
	SANDSTONE.	GATES MB.	81.0
	SANDSTONE, mudstone interbeds, coal band (1') 98'.		102.0
	MUDSTONE, silty phases.		113.0
	CONGLOMERATE.		145.0
	SANDSTONE.		178.0
	SANDSTONE, mudstone interbeds.		270.0
	SANDSTONE, siltstone and mudstone, worm casts, mudstone predominant in lower half.	SUKUNKA MB.	698.0
	MUDSTONE, ash beds at base.	MOOSEBAR	1001.0
	SANDSTONE, glauconitic.	GETHING	1006.0
	<u>COAL</u> ,	BIRD SEAM	1010.0
	MUDSTONE.		1012.0
	SANDSTONE, coarse at top, fine towards base, mottled (worm casts) 1019'.		1070.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		1086.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	SANDSTONE.		1091.0
	SANDSTONE AND SILTSTONE, breccia.		1096.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		1113.0
	SANDSTONE, silty interbeds.		1123.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1128.0
	SANDSTONE, coaly wisps, mudstone bands at 1447' and 1151', sandy blebs 1151'-1156'.		1156.0
	CLAYSTONE, carbonaceous.		1157.0
	<u>COAL</u> .		1159.0
	SILTSTONE, sandy interbeds.		1162.0
	<u>COAL</u> .	SKEETER SM.	1167.0
	SILTSTONE.		1171.0
	<u>COAL</u> .		1172.0
	SILTSTONE.		1174.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1182.0
	<u>COAL</u> , coarse at top, fine towards base.	CHAMB. SM.	1192.0
	SANDSTONE.		1236.0
	SILTSTONE AND MUDSTONE INTERBEDDED, granules at base.		1258.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	<p>SANDSTONE, mudstone bands at 1308' and 1312', mud blebs 1303' and 1313'.</p> <p>SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases.</p> <p>MUDSTONE.</p> <p>SILTSTONE, mudstone phases.</p>		<p>1318.0</p> <p>1375.0</p> <p>1387.0</p> <p>1408.0</p> <p><u>Base of Hole</u></p>

BORE NUMBER S-38

Grid Reference 41453.1N 82462.0E.
Exploration Grid Reference F+1700'/1+200'

Date Commenced 19th Sept., 1970 Completed 23rd Sept., 1970

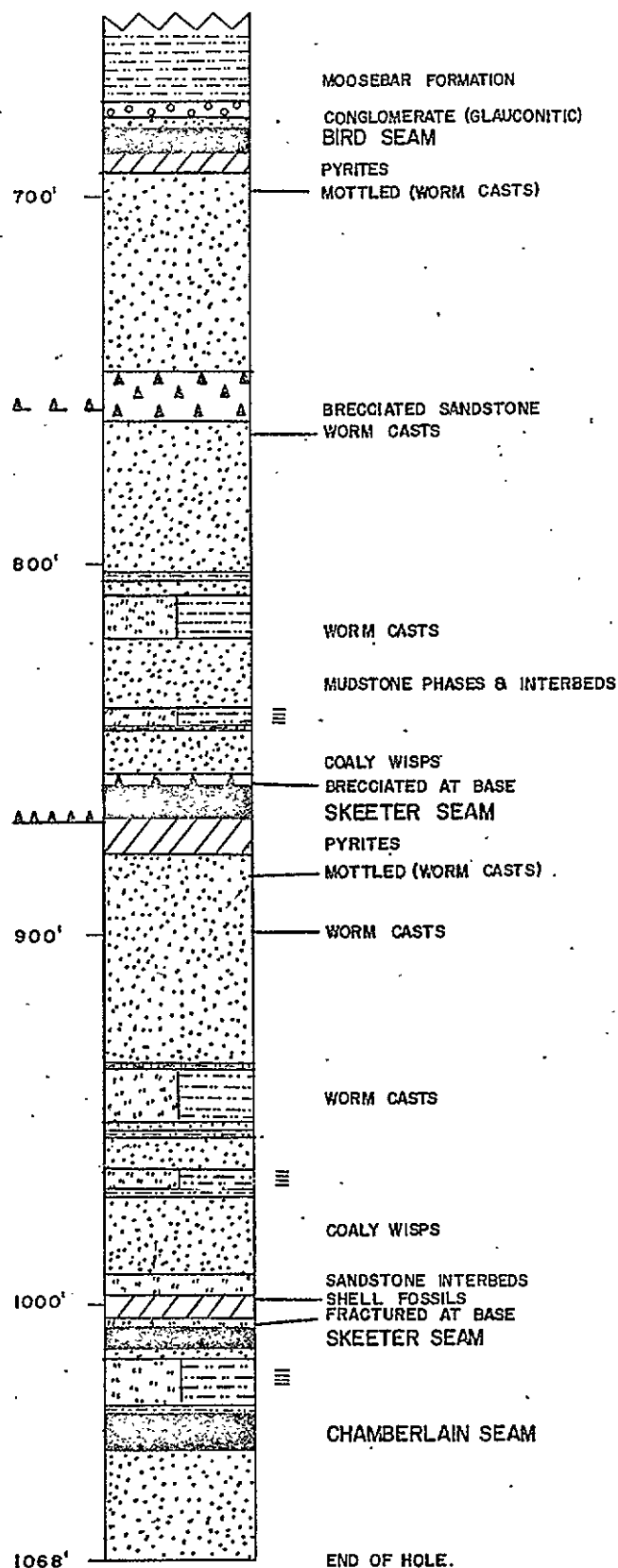
Collar R.L. 4550.7' Standard Datum
Total Depth 1068' Electrically Logged Y~~es~~/No

Drilled by Connors Drilling Ltd.
for Brameda Resources Limited

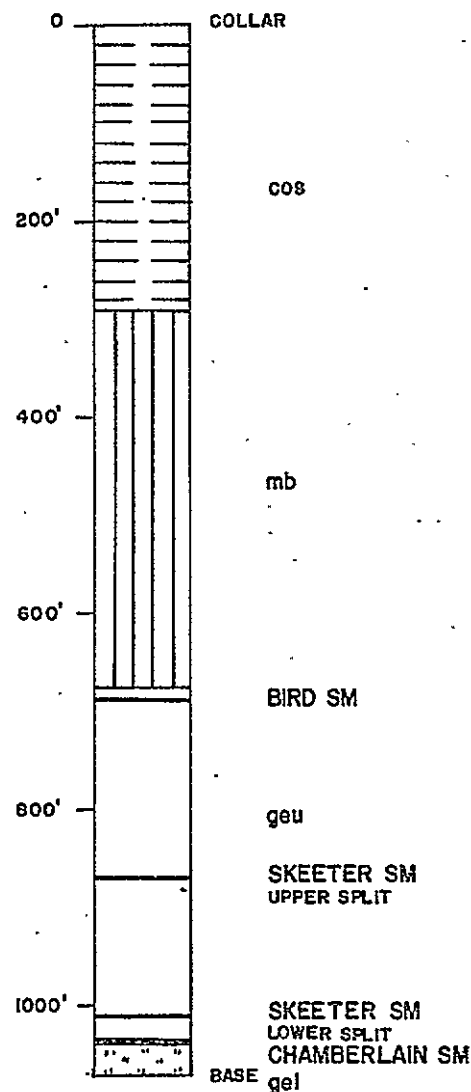
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter Upper Plate	3682.7	5.85	66.6%	
Skeeter Lower Plate	3539.7	5.82	89.3%	
Chamberlain Lower Plate	3512.7	9.40	95.7%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'



SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS

DDH S - 38

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 25, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-38-1

Report No. 67-0567
67-0568

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	PSI
1.60		41.6	0.77	9.31	23.73	66.19	13998	2.78	8½
1.60		<u>58.4</u>	<u>1.19</u>	<u>80.94</u>				<u>2.76</u>	
		100.0	1.02	51.14				2.77	

% ADM = % Moisture in air dried sample

Weight of as received sample = 7.743 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 25, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
 BRAMEDA RESOURCES LIMITED
 7th Floor, Board of Trade Bldg.
 1177 West Hastings Street
 Vancouver 1, B. C.

Sample identification:
 Sample No. Sk-38-2

Report No. 67-0565
 67-0566

SPECIFIC
 GRAVITY

AIR DRY BASIS

Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60		76.1	0.94	6.25	22.53	70.28	14470	0.49	8
1.60		<u>23.9</u>	<u>1.01</u>	<u>80.78</u>				<u>0.13</u>	
		100.0	0.96	24.06				0.40	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 7.866 lbs.

Respectfully submitted,
 COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
 R. A. Houser,
 District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P.O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-38, Hole No. S-38
1028.5' - 1038.0', Chamberlain Seam
Cored 9.5', Recovered 9.0'

Report No. 67-0120
67-0121

SPECIFIC GRAVITY	AIR DRY BASIS							
	Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.
	1.60	97.7	0.92	4.26	23.45	71.37	14913	0.38
	1.60	2.3	0.47	39.68				0.22
		100.0	0.91	5.07				0.38

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 13.291 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-38

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 11.0 ft.		
	SILTSTONE AND SANDSTONE AND MUDSTONE.	SUKUNKA MB.	290.0
	MUDSTONE, slickensided at 458', 482', 433', ash beds at base.	MOOSEBAR FM.	675.0
	CONGLOMERATE, sandy.	GETHING. FM.	678.0
	SANDSTONE.		682.0
	<u>COAL</u> .	BIRD SEAM	686.0
	CLAYSTONE, pyrite, silty interbeds, coal band at base.		693.0
	SANDSTONE, mottled worm casts 697'.		749.0
	SANDSTONE, breccia.		761.0
	SANDSTONE, worm casts at 764'. Mudstone band at 804'.		808.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		820.0
	SANDSTONE, mudstone phases.		838.0
	LAMINITE, siltstone and mudstone, mudstone at base.		844.0
	SANDSTONE, coaly wisps, brecciated at base.		860.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	<u>COAL.</u>	SKEETER SM. upper plate	868.0
	CLAYSTONE, carbonaceous, pyrite.		878.0
	SANDSTONE, mottled (worm casts) 883', worm casts 899', mudstone band 935'.		936.0
	SILTSTONE AND MUDSTONE INTERBEDDED, granules at base, worm casts.		950.0
	SANDSTONE, mudstone band at 953'.		963.0
	LAMINITE, siltstone and mudstone, mudstone at base.		970.0
	SANDSTONE, coaly wisps.		991.0
	SILTSTONE, sandy interbeds.		997.0
	CLAYSTONE, carbonaceous, coaly bands, shell fossils at top.		1003.0
	SILTSTONE, fractured.		1005.0
	<u>COAL.</u>	SKEETER SM. lower plate	1011.0
	LAMINITE, siltstone and mudstone, sandy at top, mudstone at base.		1029.0
	<u>COAL.</u>	CHAMB. SM.	1038.0
	SANDSTONE.		1068.0
			<u>Base of Hole</u>

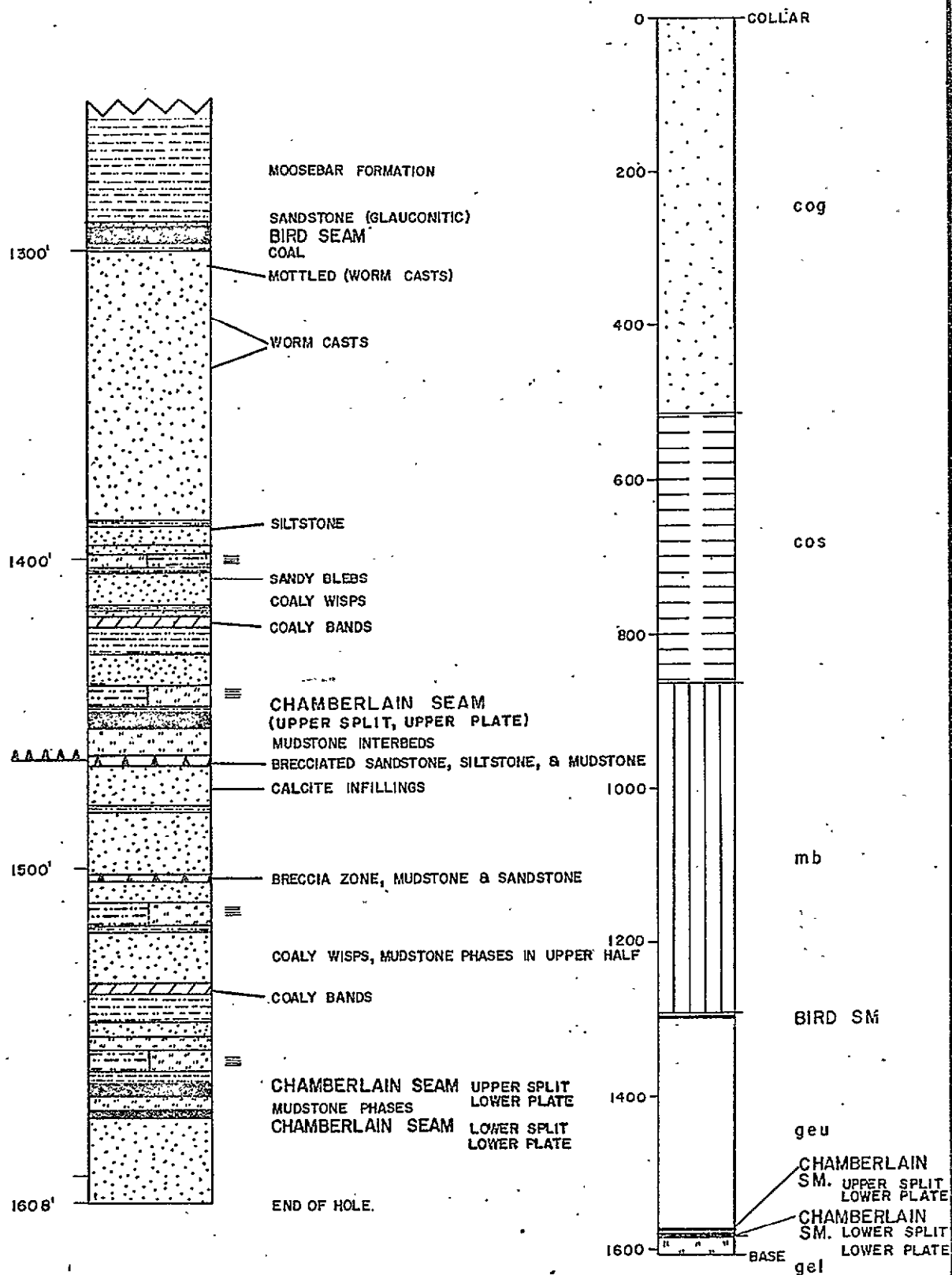
Grid Reference 38839.2N 94350.4E
Exploration Grid Reference J+900'/5+400'

Date Commenced 23rd Sept., 1970 Completed 8th Oct., 1970

Collar R.L. 5391.5' Standard Datum
Total Depth 1608' Electrically Logged Yes/No
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain Upper Split Upper Plate	3931.2	3.0	100%	
Chamberlain Upper Split Lower Plate	3821.6	4.5	66.6%	
Chamberlain Lower Split Lower Plate	3815.2	2.0	85.0%	



DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-39

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
 BRAMEDA RESOURCES LIMITED
 7th Floor, Board of Trade Bldg.
 1177 West Hastings Street
 Vancouver 1, B. C.

Sample identification:
 Sample No. CH-39-1

Report No. 67-0527
 67-0528

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60		95.5	0.75	5.27	20.65	73.33	14732	0.41	7
1.60		4.5	0.63	52.15				0.22	
		100.0	0.74	7.38				0.40	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 4.448 lbs.

Respectfully submitted,
 COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
 R. A. Houser,
 District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-39-2

Report No. 67-0529
67-0530

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		95.3	0.83	4.87	21.96	72.34	14688	0.39 8½
1.60		<u>4.7</u>	<u>0.63</u>	<u>64.02</u>				<u>0.50</u>
		100.0	0.82	7.65				0.40

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 2.447 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-39

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 3.0 ft.		
	COAL AND CLAYSTONE.	GATES	28.0
	SILTSTONE, sandy phases.		53.0
	MUDSTONE, coaly at base.		81.0
	SANDSTONE, pebble bands.		97.0
	CONGLOMERATE.		118.0
	MUDSTONE, silty interbeds.		153.0
	<u>COAL.</u>		156.0
	SANDSTONE, worm casts.		230.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases, coal band (0.5') at base.		257.0
	MUDSTONE, carbonaceous; coaly bands.		288.0
	SANDSTONE, mudstone phases, finer at base.		406.0
Fault, established	SANDSTONE AND MUDSTONE, brecciated.		450.0
	SANDSTONE AND MUDSTONE PHASES, fine grained at base.		518.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	SILTSTONE, SANDSTONE AND MUDSTONE INTERBEDDED, worm casts.	SUKUNKA MB.	579.0
	MUDSTONE, silty interbeds.		605.0
	SILTSTONE, SANDSTONE AND MUDSTONE INTERBEDDED, worm casts.		864.0
	MUDSTONE, ash beds towards base.	MOOSEBAR FM.	1291.0
	SANDSTONE, glauconitic.	GETHING FM.	1292.0
	<u>COAL.</u>	BIRD SEAM	1295.0
	MUDSTONE, carbonaceous.		1299.0
	<u>COAL.</u>		1300.0
	SANDSTONE, coarse at top, fine towards base, (mottled) worm casts 1304', worm casts 1319'-1341', mudstone band at 1388'.		1395.0
	SANDSTONE, silty interbeds.		1398.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1404.0
	SANDSTONE, coaly wisps, mudstone bands 1413', 1417' and at base, sandy blebs at 1405'.		1418.0
	<u>COAL</u> AND CLAYSTONE, carbonaceous.		1422.0
	MUDSTONE.		1430.0
	SANDSTONE, silty interbeds and phases.		1440.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	LAMINITE, siltstone and mudstone.	GETHING FM.	1448.0
	MUDSTONE.		1450.0
	COAL AND CLAYSTONE.		1454.0
	SILTSTONE, mudstone interbeds.		1463.0
	SILTSTONE AND SANDSTONE, breccia.		1465.0
	SANDSTONE, mudstone bands at 1480' and 1472' breccia zone to 1476'.		1501.0
	MUDSTONE AND SANDSTONE, breccia.		1503.0
	SANDSTONE, silty phases.		1510.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1519.0
	SANDSTONE, coaly wisps, mudstone phases in lower half.		1537.0
	CLAYSTONE, carbonaceous, coaly bands		1540.0
	MUDSTONE.		1549.0
	SANDSTONE.		1555.0
	SILTSTONE; sandy phases.		1558.0
	LAMINITE, siltstone and mudstone.		1566.5
	MUDSTONE.		1569.5
	<u>COAL</u> .	SKEETER SM.	1573.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	SILTSTONE, sandstone interbeds.		1578.0
	<u>COAL.</u>	CHAMB. SM.	1580.0
	SANDSTONE.		1608.0
			<u>Base of Hole</u>

BORE NUMBER S-40

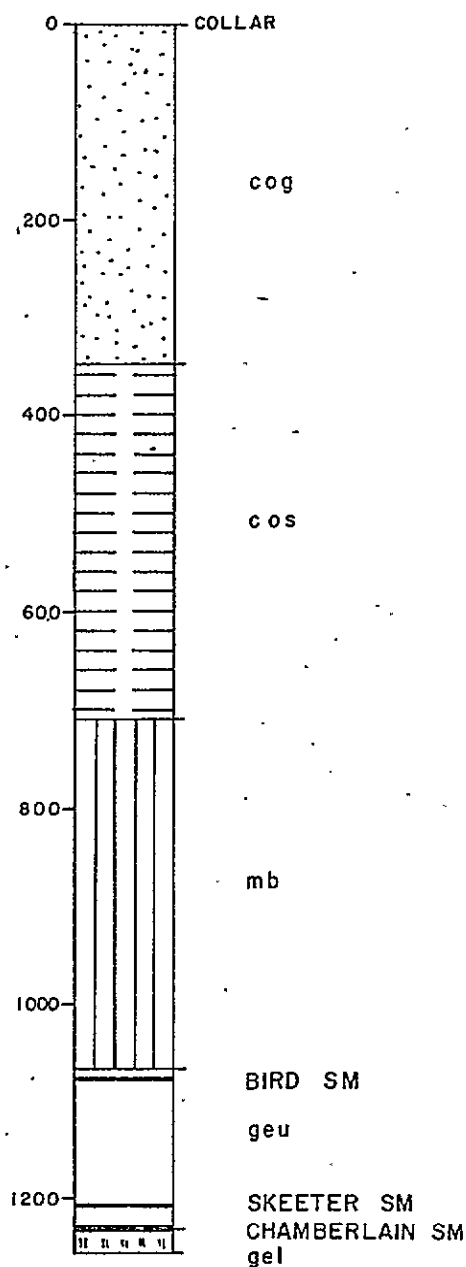
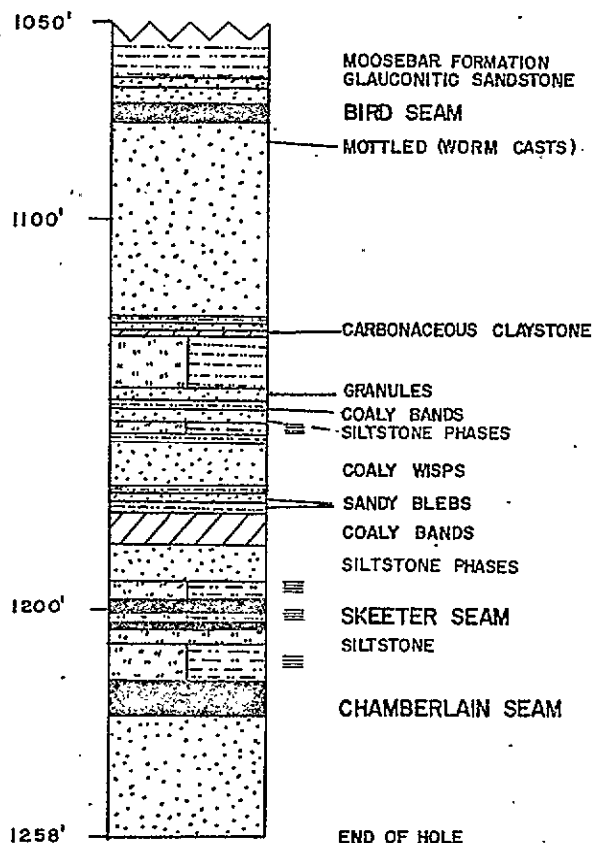
Grid Reference 45371.0N 87020.5E
Exploration Gril Reference E+500'/4+200'

Date Commenced 23rd Sept., 1970 Completed 30th Sept., 1970

Collar R.L. 4929.9' Standard Datum
Total Depth 1258 ' Electrically Logged Y~~es~~/No
Drilled by Connors Drilling Ltd.
for Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3717.2	7.0	100%	
Chamberlain	3702.9	9.0	100%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-40

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 226 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-40, Hole No. S-40
1218' - 1227', Chamberlain Seam
Cored 9.0', Recovered 9.0'

Report No. 67-0122
67-0123

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.
1.60		97.5	1.06	4.06	21.73	73.15	14804	0.46
1.60		2.5	0.56	51.67				0.67
		100.0	1.05	5.25				0.47

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 12.802 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-40

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 12.0 ft.		
	CONGLOMERATE.	GATES MB.	58.0
	SANDSTONE.		117.0
	SANDSTONE, mudstone interbeds.		161.0
	MUDSTONE.		166.0
	CONGLOMERATE.		193.0
	SANDSTONE.		233.0
	SANDSTONE, mudstone interbeds.		348.0
	SILTSTONE, mudstone interbeds and blebs.	SUKUNKA MB.	710.0
	MUDSTONE, (no clay bands at base).	MOOSEBAR FM.	1064.0
	SANDSTONE, glauconitic.		1066.0
	SANDSTONE, some pebbles at base.		1070.0
	<u>COAL.</u>	BIRD SEAM	1075.0
	SANDSTONE, grey, mottled (worm casts) at 1080', mudstone band at 1126'.		1128.0
	CLAYSTONE, carbonaceous.		1129.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	SILTSTONE AND MUDSTONE INTERBEDS, granules at base.		1143.0
	SANDSTONE.		1146.0
	MUDSTONE, a few coaly bands.		1148.0
	SANDSTONE, silty phases.		1151.0
	LAMINITE, siltstone and mudstone, carbonaceous claystone at base.		1156.0
	SANDSTONE, coaly wisps, mudstone bands at 1170', 1173' and at base, sandy blebs at 1172' and 1174'.		1175.0
	CLAYSTONE, carbonaceous, coaly bands.		1183.0
	SANDSTONE, silty phases.		1191.0
	LAMINITE, siltstone and mudstone.		1197.0
	<u>COAL.</u>)		1200.0
)		
	LAMINITE, siltstone and mudstone.)	SKEETER SM.	1203.0
)		
	<u>COAL.</u>)		1204.0
	SILTSTONE, sandy interbeds.		1208.0
	LAMINITE, siltstone and mudstone.		1218.0
	<u>COAL.</u>	CHAMB. SM.	1227.0
	SANDSTONE, grey.		1258.0
			<u>Base of Hole</u>

BORE NUMBER S-41

Grid Reference 47788.4N 84972.9E

Exploration Grid Reference D+1500'/3+1800'

Date Commenced 27th Sept., 1970 Completed 2nd Oct., 1970

Collar R.L. 4132.6' Standard Datum

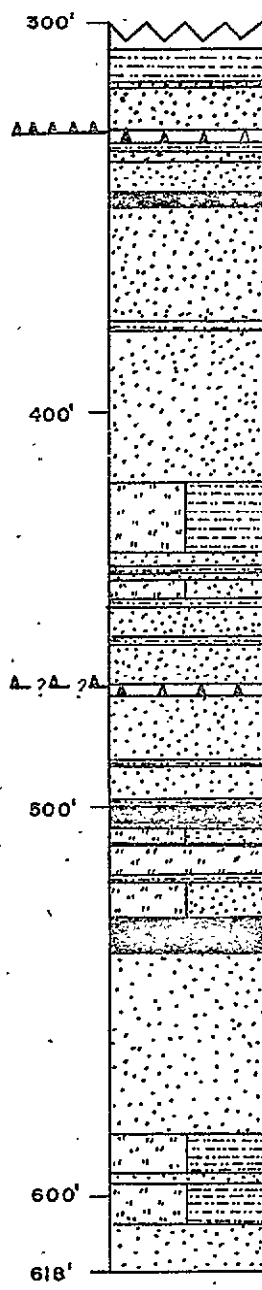
Total Depth 628' Electrically Logged Yes/No

Drilled by Connors Drilling Ltd.
for Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter Upper Plate	3627.15	8.5	91.7%	
Chamberlain Upper Plate	3594.6	8.15	100%	
Chamberlain Lower Plate	3151.2	33.94	50%	



MOOSEBAR FORMATION
GLAUCONITIC SANDSTONE

BRECCIATED SANDSTONE
MOOSEBAR
GLAUCONITIC SANDSTONE
PEBBLES
BIRD SEAM
MOTTLED (WORM CASTS)

WORM CASTS
GRANULES

SILTSTONE INTERBEDS

SANDSTONE BRECCIA

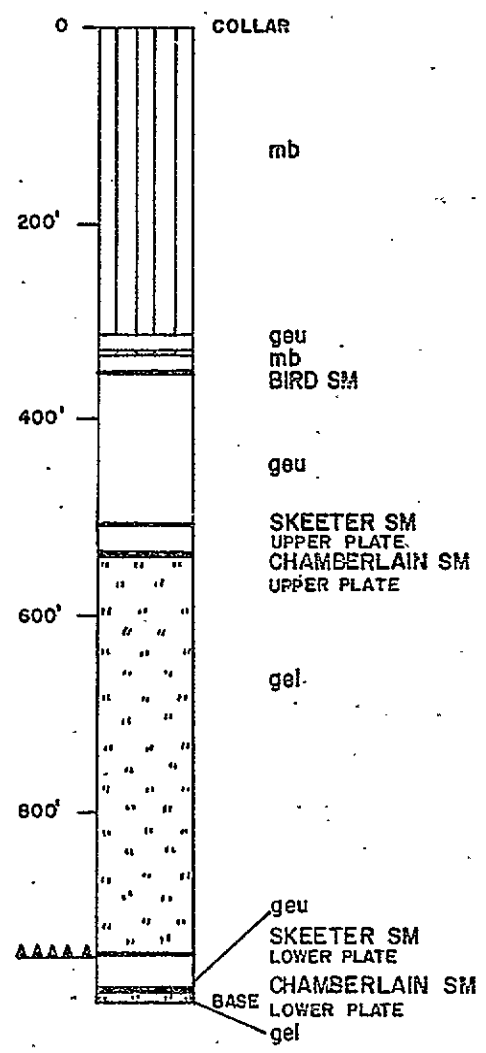
WORM CASTS

SKEETER SEAM
COAL
MUDSTONE INTERBEDS

CHAMBERLAIN SEAM

SANDSTONE PHASE
GRANULES

HOLE CONTINUED

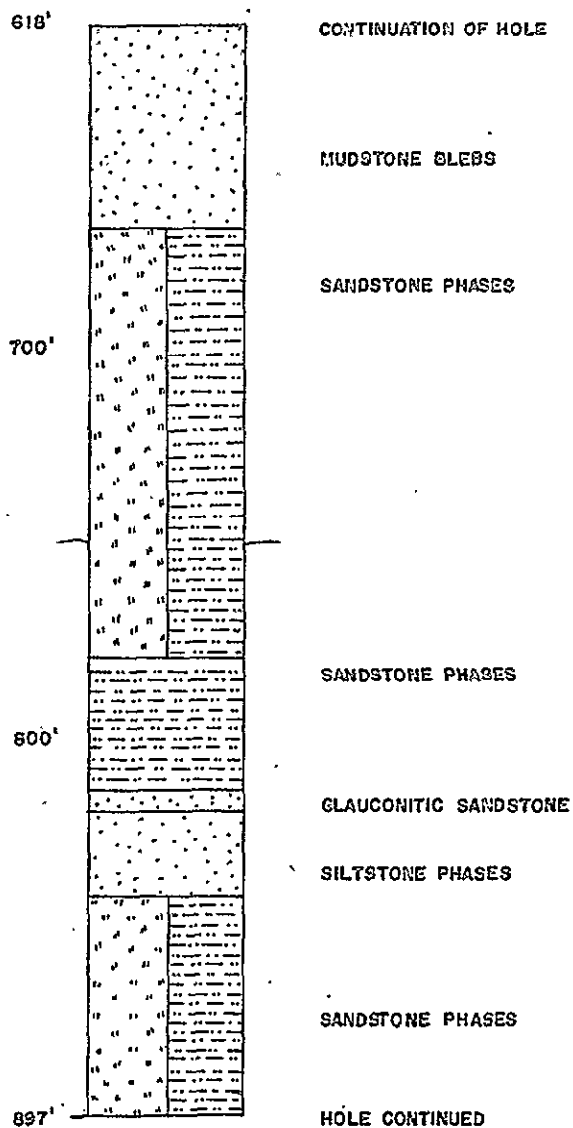


DETAIL OF GETHING
FORMATION
SCALE 1" to 50'

SCALE : 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-4i



DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

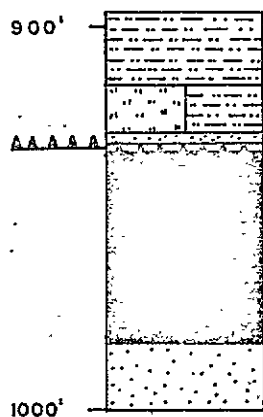
Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
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COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 41

DRAWN BY S.A.

DATE: February '72

PAGE 2 of 3



CONTINUATION OF HOLE

CHAMBERLAIN SEAM

END OF HOLE

DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-41

DRAWN BY S.A.

DATE: February 72

PAGE 3 of 3

Telegrams and Cables:
"Visor", Sydney

Telephone: 241 1105

C A R G O
SUPERINTENDENTS
CO. (A/SIA.) PTY. LTD.

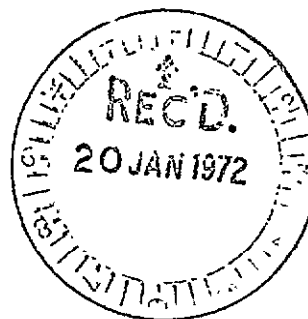
Scottish House,
19 BRIDGE ST.,
SYDNEY, 2000

Certification

This is to Certify

APPLICANT:

COALITION MINING



REPORT ON:

SUKUNKA SAMPLE NO. 264
CORE NO. S41
CHAMBERLAIN SEAM

REPORT NO.

K71-2016

RECEIVED:

16. 12. 1971

REPORTED:

19. 1. 1972



This Laboratory is Registered by the
National Association of Testing Authorities
Australia. The tests reported herein have
been performed in accordance with the
terms of registration.

For

CARGO SUPERINTENDENTS CO. (A/SIA.) PTY. LTD.

S. B. Bralley
A.R.A.C.I. Chief Chemist.

P. M. Brown

INTRODUCTION:

One (1) Coal Sample designated CORE NO. S41 CHAMBERLAIN SEAM was received on 16. 12. 1971 from Clifford McElroy & Associates

METHOD:

The Coal Sample No. 264 was hand crushed to 3/4", sized at 30 mesh BSS and the +30 mesh BSS fraction washed in organic liquids at 1.30 to 1.60 specific gravity in 0.05 steps.

The float and sink fractions and raw -30 mesh coal fraction were weighed, prepared and analysed for Ash and Crucible Swelling Number and the composite raw coal sample reconstituted and the true specific gravity of the sample determined.

A cumulative Floats 1.60 SG fraction was prepared for Sample No. 264 and the analysis is given in this report.

NOTE:

The sample weight has not been adjusted to compensate for core loss

RESULTS:

TABLE 1 : gives the sizing, washability and analytical data for the sample after hand crushing to 3/4" top size.

TABLE 1

WASHABILITY DATA FOR SAMPLE NO. 264 (after hand crushing to 3/4")

<u>FRACTION</u>	<u>INDIVIDUAL</u>				<u>CUMULATIVE</u>		
	<u>WEIGHT</u>	<u>WT.%</u>	<u>ASH%</u>	<u>C.S.NO.</u>	<u>WT. %</u>	<u>ASH%</u>	<u>C.S.NO.</u>
Fl.30 SG	4381	48.5	2.2	9	48.5	2.2	9
S1.30 - Fl.35 SG	3942	43.6	3.7	7½	92.1	2.9	8½
S1.35 - Fl.40 SG	349	3.9	8.9	2½	96.0	3.2	8
S1.40 - Fl.45 SG	108	1.2	13.6	1½	97.2	3.3	8
S1.45 - Fl.50 SG	87	1.0	17.9	1	98.2	3.4	8
S1.50 - Fl.55 SG	41	0.5	18.6	1	98.7	3.5	8
S1.55 - Fl.60 SG	23	0.3	22.0	½	99.0	3.6	8
S1.60 SG	106	1.0	58.5	0	100.0	4.1	8
-30 Mesh RC	1690	15.8	4.9	9			

Total Weight of Sample = 10727 grams

True Specific Gravity = 1.296

Thickness = 33.94'

ANALYSIS OF Fl.60 SG FRACTION OF SAMPLE NO. 264

Yield %	99.0
Air Dried Moisture %	1.0
Ash %	3.7
Volatile Matter %	20.9
Fixed Carbon %	74.4
Total Sulphur %	0.49
C.S.NO.	8½
Calorific Value	14770 BTU/LB

SYDNEY

19th January 1972

7

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:

Sample No. CH-41, Hole No. S-41
529' - 538', Chamberlain Seam
Cored 9.0', Recovered 9.0'

Report No. 67-0124
67-0125

SPECIFIC GRAVITY	AIR DRY BASIS							
	Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.
	1.60	97.0	0.95	4.89	21.67	72.49	14744	0.47
	1.60	3.0	0.46	42.42				0.37
		100.0	0.94	6.02				0.47

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 10.337 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-41

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	No core to 60.0 ft.		
	MUDSTONE, ash beds near base, several slickensided (minor) zones.	MOOSEBAR FM.	315.0
	SANDSTONE, glauconitic.	GETHING FM.	316.0
Fault, established	SANDSTONE, brecciated in lower half.		330.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	332.0
	SANDSTONE, glauconitic.	GETHING FM.	333.0
	SANDSTONE, pebbles at base.		343.0
	<u>COAL</u> .	BIRD SEAM	346.5
	SANDSTONE, mottled (worm casts) 353', mudstone band 377', coarse in top half, finer toward base.		416.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granule conglomerate at base.		435.0
	SANDSTONE, mudstone band 439'.		442.0
	LAMINITE, siltstone and mudstone, mudstone at base.		448.0
Fault, possible	SANDSTONE, silty interbeds at top, coaly phases and wisps, mudstone bands 457', brecciated at base.		470.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	SANDSTONE, coaly wisps, silty interbeds at top, worm casts 491'.		498.0
	<u>COAL</u> , mudstone (1') bands, top and base.	SKEETER SM.	504.0
	LAMINITE, siltstone and mudstone.		509.0
	<u>COAL</u> , (0.5') mudstone base.		512.0
	SILTSTONE, mudstone interbeds.		519.0
	LAMINITE, siltstone and mudstone.		529.0
	<u>COAL</u> .	CHAMB. SM.	536.0
	SANDSTONE, coarse at top, finer in lower half.		503.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at 593'-596', granules at base.		607.0
	SANDSTONE.		618.0

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-41 (extension)

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Dip 15°	Coring recommenced at 628.0 ft.	GETHING FM.	
	SANDSTONE, sedimentary mudstone blebs at 652', interbeds 664'-666'.		670.0
	SILTSTONE AND MUDSTONE INTERBEDDED. sandy phases at top.		779.0
	MUDSTONE.		813.0
	SANDSTONE, glauconitic.		818.0
	SANDSTONE, silty phases.		840.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases.		897.0
	MUDSTONE.		915.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		937.0
	SANDSTONE, medium grained.		939.0
Fault, established	BRECCIA, listric surfaces, calcite veins.	CHAMB SM.	942.0
Dip 0°-10°	<u>COAL</u> .		980.0
	SANDSTONE, medium to fine grained, coarse at top, carbonaceous at top.		997.6
			Base of Hole

SUKUNKA D.D.H. S-41 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
See D.D.H. S-41 for log to this depth.		858.00		
SILTSTONE, grey, massive.	1.50	859.50	1.47	
SANDSTONE, fine grained. Bedding angle 76° to core axis, mudstone phases.	5.28	864.78	5.20	
SILTSTONE AND MUDSTONE INTERBEDDED, grey claystone and light grey siltstone forming graded sequences, bedding planes irregular, load casts and other sole markings present throughout, worm casts present in phases. Bedding angle 80° to core axis, calcite and slickensided surfaces over 0.07', 3.25' from top.	18.21	882.99	17.92	
CLAYSTONE, dark grey, brecciated, calcite veins along irregular fractures, slickensides and listric surfaces.	0.29	883.28	0.29	
SANDSTONE, fine grained, some siltstone interbeds, quartz-lithic, mudstone band (0.40') in centre.	1.80	885.08	1.77	
SILTSTONE AND MUDSTONE INTERBEDDED, grey siltstone and dark grey claystone, sandy phases throughout, bedding planes irregular, sole markings present throughout. Bedding angle 82° to core axis.	16.86	901.94	16.59	

SUKUNKA D.D.H. S-41 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor (ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
CLAYSTONE, dark grey, some siltstone phases near top.	14.56	916.50	14.33	
SILTSTONE AND MUDSTONE INTERBEDDED, grey siltstone and dark grey claystone, graded sequences, (younging upwards), bedding planes irregular, load casts present in phases, sandstone phases throughout, calcite filled joints 22° to core axis. Bedding angle 82° to core axis.	12.95	929.45	13.74	
CLAYSTONE, dark grey, silty phases near top.	6.82	936.27	6.82	
SANDSTONE, medium grained, quartz-lithic, coaly inclusions, calcite veins along irregular fractures throughout, bedding disoriented, listric surfaces on broken surfaces.	4.86	941.13	2.83	
SANDSTONE AND CLAYSTONE, BRECCIATED, sandstone and claystone brecciated with coaly fragments and calcite veins throughout - fault breccia.	6.36	947.49	2.80	
<u>COAL</u> , no bands observable due to effects of fault immediately over the coal, coal occurs as a solid mass, core unbroken, no cleats are present; these are possibly welded by fault action, coal splits along planes of shearing or forms irregular fractures, most surfaces show folding or listric surfaces, core badly broken in lower 7.5 feet.	20.01	967.50	13.46	

SUKUNKA D.D.H. S-41 (extended)

<i>Geological Description of Strata</i>	<i>Estimated Thickness (ft)</i>	<i>Estimated Depth to Stratum Floor(ft)</i>	<i>Footage Recovered (ft)</i>	<i>Remarks</i>
<u>COAL</u> , as above, core generally broken throughout, shear planes 25° to core axis at 970 feet.	11.44	978.94	8.78	
<u>COAL</u> , as above, strongly developed fissile parting, variable direction to core axis.	2.49	981.43	1.90	
SANDSTONE, medium to fine grained, coarser in top, quartz-lithic, carbonaceous in top 2', calcite filled joints 20° to core axis, claystone phases in lower half. Bedding angle 88° to core axis.	16.07	997.50	15.95	<u>Base of Hole</u>

Grid Reference 36956.2N 91956.3E

Exploration Grid Reference J+700'/3+1200'

Date Commenced 3rd Oct., 1970 Completed 19th Oct., 1970

Collar R.L. 5248.5' Standard Datum

Total Depth 1488' Electrically Logged ~~Yes~~/No

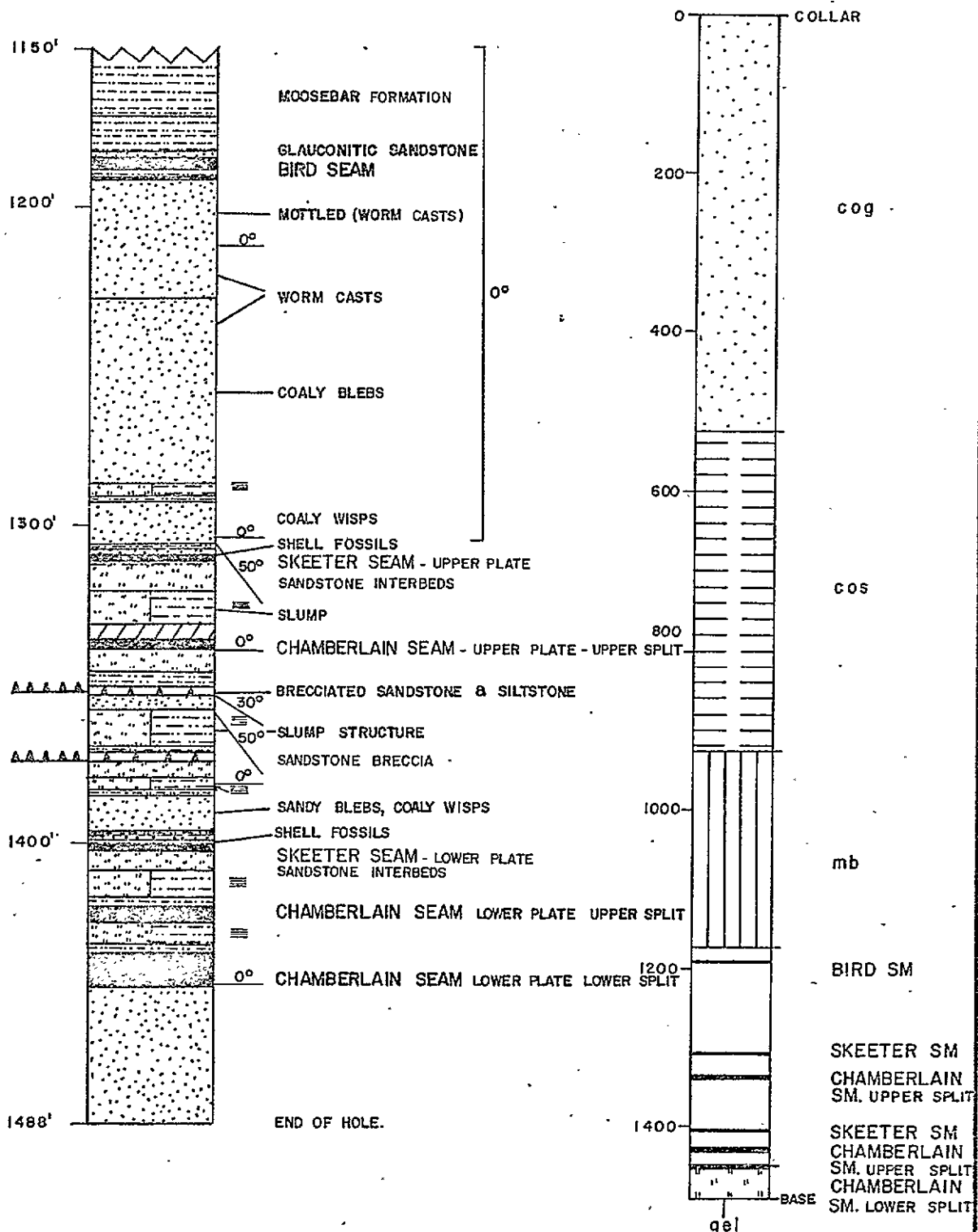
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain Upper Split	3821.5	4.5	93.3%	
Chamberlain Lower Split	3803.7	9.7	100%	



DETAIL OF GETHING
FORMATION
SCALE 1" to 50'

SCALE : 1" to 200'

Prepared by
CLIFFORD McELROY & ASSOCIATES PTY LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-42

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-42

Report No. 67-0549
67-0550

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		83.7	0.69	7.93	20.26	71.12	14168	0.42 4½
1.60		<u>16.3</u>	<u>0.79</u>	<u>58.91</u>				<u>0.18</u>
		100.0	0.71	16.24				0.38

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 4.643 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228. NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-42

Report No. 67-0531
67-0532

SPECIFIC GRAVITY	AIR DRY BASIS							
	Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
	1.60	98.8	0.70	4.02	22.40	72.88	14996	0.40 8½
	1.60	<u>1.2</u>	<u>0.84</u>	<u>47.14</u>				<u>0.26</u>
		100.0	0.70	4.54				0.40

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 11.111 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-42

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 15.0 ft.		
	SANDSTONE AND MUDSTONE, weathered.	GATES MB.	32.0
	MUDSTONE, sandy interbeds, conglomerate at base.		75.0
	<u>COAL.</u>		76.0
	SILTSTONE, mudstone interbeds.		88.0
	SANDSTONE, coaly wisps, mudstone blebs.		125.0
	MUDSTONE, sandy phases.		145.0
	SANDSTONE, silty phases.		192.0
	MUDSTONE, coaly bands.		205.0
	<u>COAL.</u>		209.0
	SILTSTONE, coaly bands.		214.0
	<u>COAL.</u>		216.0
	MUDSTONE, coaly bands, sandy phases.		243.0
	<u>COAL.</u>		246.0
	SANDSTONE.		331.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	SANDSTONE, silty and muddy phases, coal band (1') at 343', mudstone at base.		379.0
	SANDSTONE.		453.0
	SANDSTONE, muddy interbeds, predominant towards base.		523.0
	SILTSTONE, sandstone and mudstone interbedded, worm casts.	SUKUNKA MB.	923.0
	MUDSTONE.	MOOSEBAR FM.	1172.0
	MUDSTONE, ash beds at base.		1183.0
	SANDSTONE, glauconitic.	GETHING FM.	1185.0
	<u>COAL</u> .	BIRD SEAM	1189.0
	CLAYSTONE, coaly bands.		1191.0
	<u>COAL</u> .		1191.5
	SANDSTONE, coarse at top, mottled (worm casts) 200', worm casts 1219'-1226'.		1229.0
	SANDSTONE, worm casts 1236', coaly blebs 1256'-1258'.		1288.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1293.0
	SANDSTONE, coaly wisps, mudstone phases at base and 1308', shell fossils at base.	SKEETER SM. upper split	1311.0
	SILTSTONE, sandy interbeds, mudstone at base.		1321.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	LAMINITE, siltstone and mudstone, slump at 1327'.		1331.0
	CLAYSTONE, carbonaceous.		1336.0
	<u>COAL</u> .	CHAMB. SM. upper plate upper split	1339.0
	SILTSTONE, sandy phases.		1347.0
	MUDSTONE.		1351.0
	SANDSTONE AND SILTSTONE, breccia.		1353.0
	SANDSTONE, silty interbeds.	GETHING FM.	1359.0
Fault, established	LAMINITE, siltstone and mudstone, mudstone at base, breccia at base.		1571.0
	SANDSTONE, brecciated.		1373.0
	SILTSTONE, sandy interbeds.		1379.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1385.0
	SANDSTONE, coaly wisps, mudstone at base and at 1397', shelly fossils at base to sandy blebs 1391'.		1401.0
	<u>COAL</u> , mudstone at base.	SKEETER SM. lower plate	1403.0
	SILTSTONE, sandy phases.		1408.0
	LAMINITE, siltstone and mudstone.		1417.0
	MUDSTONE.		1420.0
	<u>COAL</u> .	CHAMB. SM. lower plate upper split	1425.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	<p>SILTSTONE, sandy interbeds.</p> <p>LAMINITE, siltstone and mudstone, mudstone at base.</p> <p><u>COAL.</u></p> <p>SANDSTONE.</p>	<p>CHAMB. SM. lower plate lower split</p>	<p>1427.0</p> <p>1435.0</p> <p>1445.0</p> <p>1488.0</p> <p><u>Base of Hole</u></p>

BORE NUMBER S-43, S-43A, S-43B

Grid Reference 42687.8N 40304.1E
Exploration Grid Reference D/1-1000'

43: 8th Oct., 1970 13th Oct., 1970
Date Commenced 43A: 25th Oct., 1970 Completed 1st Nov., 1970
43B: 3rd Nov., 1970 7th Nov., 1970

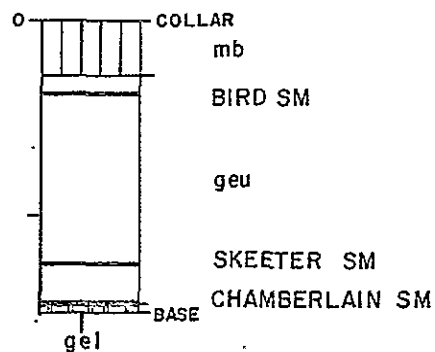
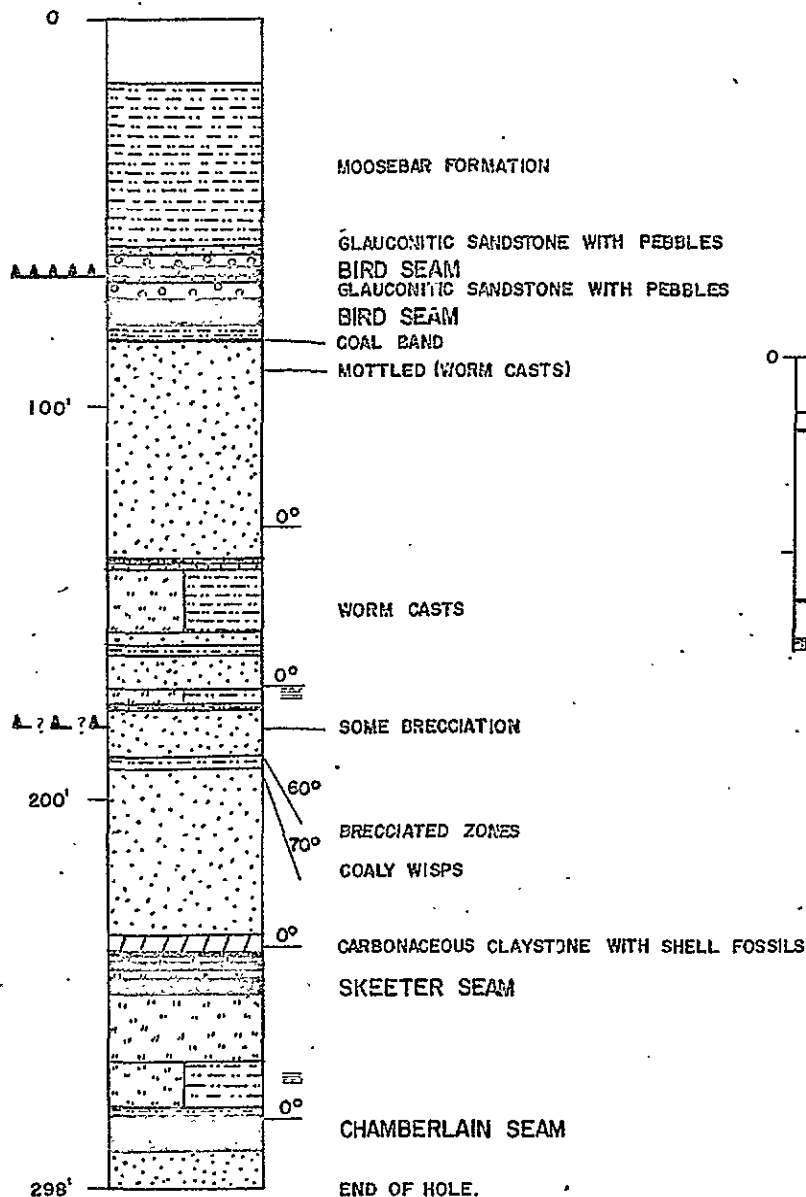
Collar R.L. 4169.9' Standard Datum
Total Depth 618' Electrically Logged Yes/No

Drilled by Connors Drilling Ltd.
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

	Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
S-43	Skeeter	3921.7	8.3	39.7%	
	Chamberlain	3880.6	10.0	93%	
S-43A	Skeeter	3814.4	9.0	100%	
	Chamberlain	3755.9	9.1	87.9%	
S-43B	Skeeter	3912.5	7.6	98.8%	
	Chamberlain	3872.9	9.9	95.4%	

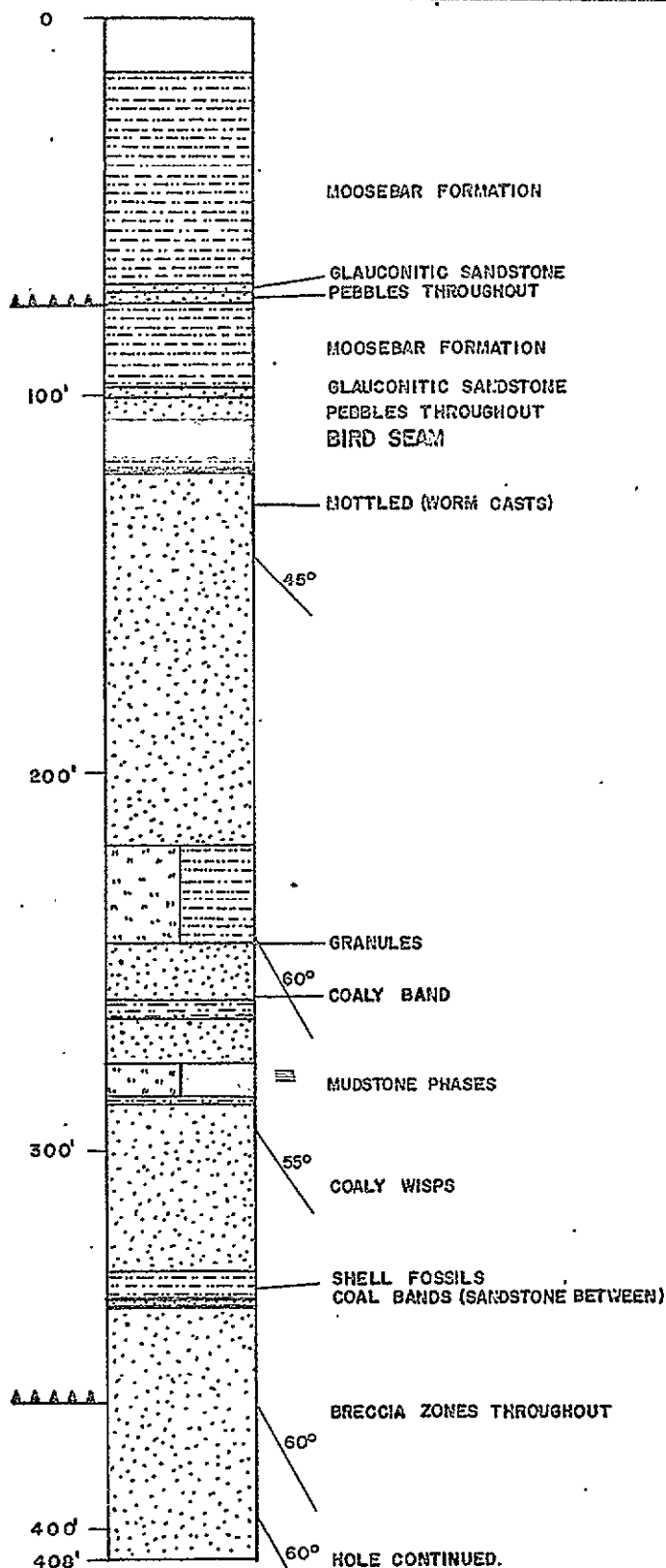


DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

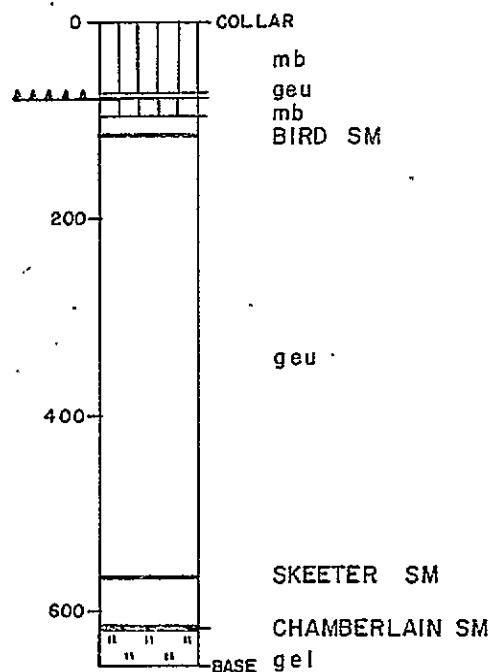
SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-43



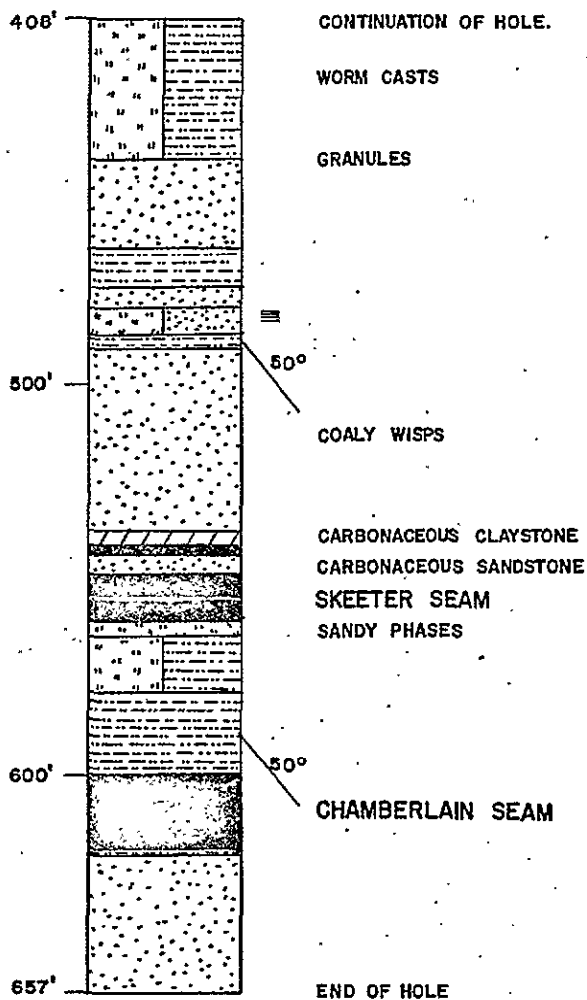
DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'



SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 43 a



DETAIL OF GETTING
FORMATION
SCALE : 1" to 50'

SCALE : 1" to 200'

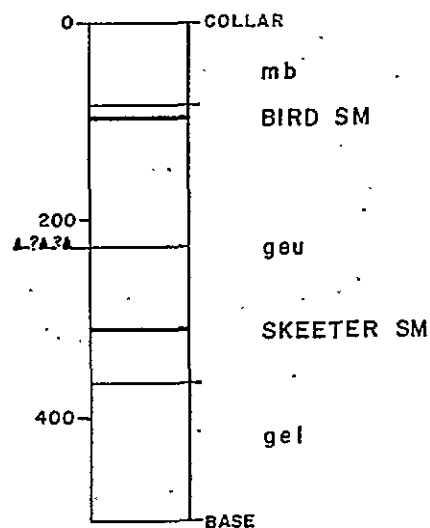
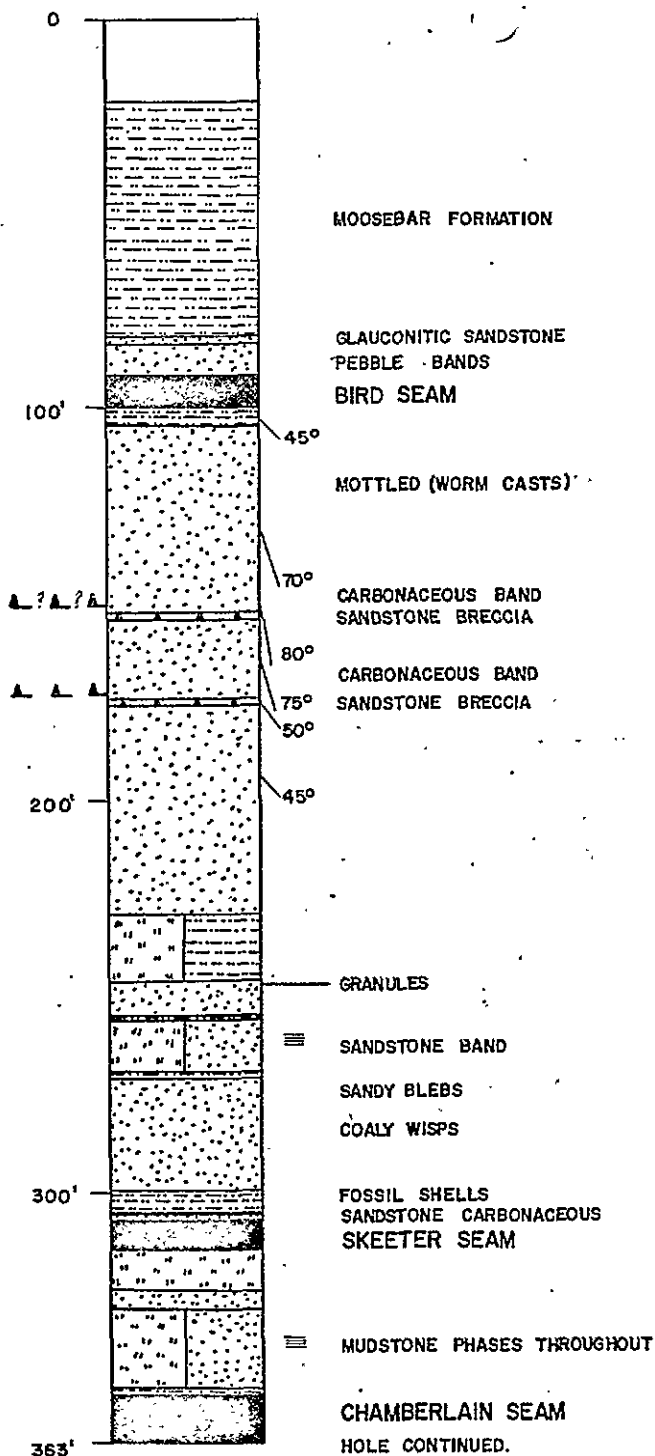
Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 43 a

DRAWN BY S.A.

DATE: November '71

PAGE 2 of 2

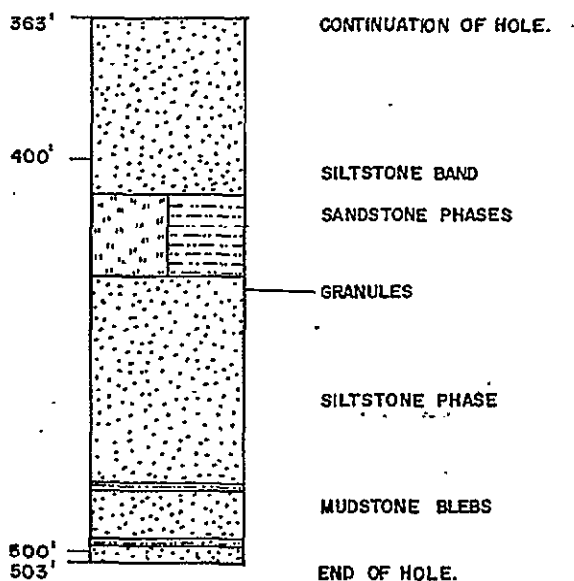


DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-43 b



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-43 b

DRAWN BY S.A.

DATE: November '71

PAGE 2 of 2

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-43-A

Report No. 67-0551
67-0552

SPECIFIC GRAVITY	AIR DRY BASIS							
	Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
	1.60	93.5	0.86	4.52	24.85	69.77	14725	0.55 8
	1.60	6.5	0.94	64.69				0.50
		100.0	0.87	8.43				0.55

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 9.683 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-43-B

Report No. 67-0553
67-0554

SPECIFIC GRAVITY	AIR DRY BASIS							
	Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
	1.60	92.8	0.79	6.60	23.05	69.56	14356	0.54 7½
	1.60	7.2	0.82	53.60				0.43
		100.0	0.79	9.98				0.53

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 5.403 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-43

Report No. 67-0533
67-0534

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		96.6	1.00	3.15	25.09	70.76	14784	0.43 7½
1.60		<u>3.4</u>	<u>0.73</u>	<u>39.19</u>				<u>0.74</u>
		100.0	0.99	4.38				0.44

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 12.972 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596.
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. B-43

Report No. 67-0521
67-0522

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		86.2	0.63	8.17	27.19	64.01	14201	2.36 8
1.60		<u>13.8</u>	<u>0.70</u>	<u>53.28</u>				<u>15.98</u>
		100.0	0.64	14.40				4.24

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 6.854 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-43

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 17.0 ft.		
	MUDSTONE ash beds at base.	MOOSEBAR FM.	17.0
	SANDSTONE, glauconitic, pebble bands.	GETHING FM.	61.0
	CONGLOMERATE, sandstone at base.		64.0
	<u>COAL.</u>	BIRD SEAM	65.5
Fault, established	SANDSTONE, glauconitic, pebble bands.		67.5
	CONGLOMERATE, sandstone at base.		72.0
	<u>COAL,</u>	BIRD SEAM	78.0
	MUDSTONE, coal band (0.5') at base.		82.0
	SANDSTONE, mottled (worm casts) 85', fine at base, coarse at top, mudstone band 138'.		140.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		156.0
	SANDSTONE, mudstone phase from 160' to 163'.		171.0
	LAMINITE, siltstone and mudstone, mudstone at base.		176.0
Fault, possible	SANDSTONE, brecciated zones.		189.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, possible	MUDSTONE, core broken and slicken-sided.		191.0
	SANDSTONE, coaly wisps - core broken, breccia zones.		234.0
	CLAYSTONE, carbonaceous, shell fossils, coal (0.5') at base.		238.0
	SILTSTONE.		239.0
	<u>COAL</u> .	SKEETER SM.	242.0
	MUDSTONE.		245.0
	<u>COAL</u> , core lost.	SKEETER SM.	248.0
	SILTSTONE, mudstone phases, sandy phase, at 259'-262'.		267.0
	LAMINITE, siltstone and mudstone, mudstone at base.		279.0
	<u>COAL</u> .	CHAMB. SM.	289.0
	SANDSTONE.		298.0
			<u>Base of Hole</u>

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-43A

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
Fault, established	No core to 14.0 ft.		
	MUDSTONE, ash bands at base.	MOOSEBAR FM.	71.0
	SANDSTONE, pebble bands, glauconitic.	GETHING FM.	73.0
	SANDSTONE AND CONGLOMERATE.		75.5
	MUDSTONE, ash bands at base.	MOOSEBAR FM.	98.0
	SANDSTONE, pebble bands, glauconitic.	GETHING FM.	100.0
	SANDSTONE, pebble bands.		106.5
	<u>COAL.</u>	BIRD SEAM	116.5
	MUDSTONE, (0.5') coal band at base.		120.5
	SANDSTONE, mottled (worm casts) at 130'. Coarse at top, fine at base.		219.0
	SILTSTONE AND MUDSTONE INTERBEDDED, granules at base, worm casts.		245.0
	SANDSTONE.		259.0
	MUDSTONE.		264.5
	SANDSTONE.		276.0
	LAMINITE, siltstone and mudstone, mudstone phases, mudstone at base.		287.0
	SANDSTONE, coaly wisps.		331.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	MUDSTONE, coal band at base, core broken and slickensided, shell fossils at 338'.		340.0
Fault, established	SANDSTONE, breccia zones, mudstone band at 403'.		408.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		444.0
	SANDSTONE.		466.0
	MUDSTONE.		476.0
	SANDSTONE.		482.0
	LAMINITE, siltstone and mudstone, mudstone at base.		491.0
	SANDSTONE, coaly wisps.		538.0
	CLAYSTONE, carbonaceous.		542.5
	<u>COAL</u> .		545.0
	SANDSTONE, carbonaceous claystone phases.		550.0
	<u>COAL</u> , 1' siltstone band 557'-558.5'.	SKEETER SM.	561.5
	SILTSTONE, mudstone phases.		565.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		579.0
	MUDSTONE.		600.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	<u>COAL.</u> MUDSTONE. SANDSTONE.	CHAMB. SM.	619.0 620.0 657.0 <u>Base of Hole</u>

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-43B

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
Fault, possible	No core to 22.0 ft.		22.0
	MUDSTONE, ash bands at base.	MOOSEBAR	81.5
	SANDSTONE, glauconitic.	GETHING	83.5
	CONGLOMERATE, sandy phases towards base.		91.0
	<u>COAL</u> .	BIRD SEAM	99.0
	MUDSTONE.		104.0
	SANDSTONE, worm casts (mottled) 120', brecciate at 152' and zones at 175', carbonaceous at 159' and 168'.		
	Sub vertical bedding above breccia.		228.0
	SILTSTONE AND MUDSTONE INTERBEDDED, granules at base.		245.0
	SANDSTONE.		254.0
	MUDSTONE.		258.0
	LAMINITE, siltstone and mudstone laminated, mudstone top and base.		270.0
	SANDSTONE, coaly wisps, sand blebs at 275'.		299.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	MUDSTONE, silty interbeds at top, fossil shells towards base, coal band at base.		305.0
	SANDSTONE, carbonaceous.		307.0
	<u>COAL.</u>	SKEETER SM.	313.0
	SILTSTONE, mudstone phases.		324.0
	SANDSTONE, silty interbeds.		329.0
	LAMINITE, siltstone and mudstone, mudstone phases throughout, mudstone at base.		352.0
	<u>COAL.</u>	CHAMB. SM.	363.0
	SANDSTONE, coarse at top, fine towards base, silty band 408'.		410.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at top, granule conglomerate at base.		431.0
	SANDSTONE, silty phases at 465', sedimentary mudstone breccia bands at 489', 495', 494' and 493'.		503.0
			<u>Base of Hole</u>

BORE NUMBER S-44

Grid Reference 42609.8N 90828.2E

Exploration Grid Reference G/4+1700'

Date Commenced 11th October, 1970 Completed 22nd October, 1970

Collar R.L. 5346.5' Standard Datum

Total Depth 1528' Electrically Logged Yes/No

Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	3842.0	8.5	100%	

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-44

Report No. 67-0535
67-0536

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		98.0	0.77	4.02	22.12	73.09	14897	0.36 8½
1.60		<u>2.0</u>	<u>0.77</u>	<u>33.26</u>				<u>0.15</u>
		100.0	0.77	4.60				0.36

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 11.825 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-44

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 9.0 ft.		
	SANDSTONE, mudstone phases predominant towards base.	?HULLCROSS MB.	232.5
	CLAYSTONE, carbonaceous, coal bands.	GATES MB.	256.0
	SANDSTONE, silty phases.		302.0
	CLAYSTONE AND COAL BANDS.		316.0
	SANDSTONE AND CONGLOMERATE.		335.0
	COAL AND CLAYSTONE.		336.0
	MUDSTONE, sandy phases.		373.0
	SANDSTONE, pebble bands.		383.0
	<u>COAL.</u>		384.0
	MUDSTONE, siltstone phases.		411.0
	<u>COAL.</u>		413.0
	MUDSTONE.		422.0
	SANDSTONE.		475.0
	SANDSTONE AND MUDSTONE INTERBEDDED.		506.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	CONGLOMERATE.		508.0
	SANDSTONE, conglomerate phases.		606.0
	SANDSTONE AND MUDSTONE INTERBEDDED.		663.0
	SANDSTONE, SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.	SUKUNKA MB.	1088.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1344.0
	SANDSTONE, glauconitic.	GETHING FM.	1348.0
	<u>COAL</u> .	BIRD SEAM	1351.0
	SILTSTONE.		1352.0
	<u>COAL</u> , band.		1352.5
	SANDSTONE, coarse at top, fine towards base, (mottled) worm casts 1359'.		1413.0
	SILTSTONE AND MUDSTONE INTERBEDDED, mudstone at base.		1421.0
	SANDSTONE.		1432.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1436.0
	SANDSTONE, coaly wisps, mudstone at base.		1451.0
	SANDSTONE, mudstone at base, shelly fossils throughout.		1458.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	<u>COAL</u> , band.		1458.5
	SILTSTONE, sandy interbeds.		1463.0
	LAMINITE, siltstone and mudstone.		1472.0
	MUDSTONE, carbonaceous, coaly bands.		1479.0
	SILTSTONE, mudstone interbeds, mudstone and coal band at base.		1490.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		1504.5
	<u>COAL</u> .	CHAMB. SM.	1513.0
	MUDSTONE.		1514.0
	CLAYSTONE, carbonaceous.		1515.0
	SANDSTONE.		1528.0
			<u>Base of Hole</u>

BORE NUMBER S-45

Grid Reference 43833.3N 81933.9E

Exploration Grid Reference D/1+1100'

Date Commenced 23rd October, 1970 Completed 31st October, 1970

Collar R.L. 4890.8' Standard Datum

Total Depth 1245' Electrically Logged Y~~es~~/No

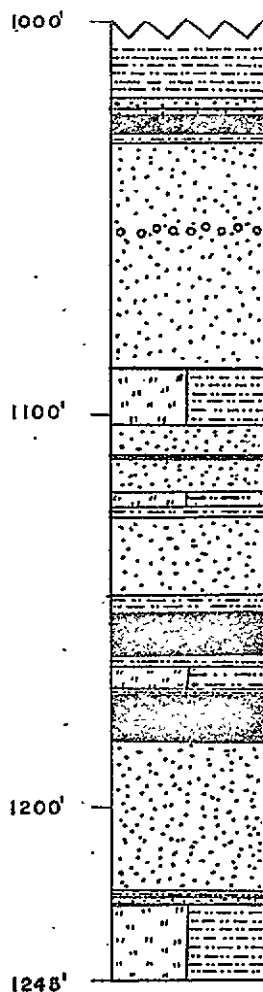
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

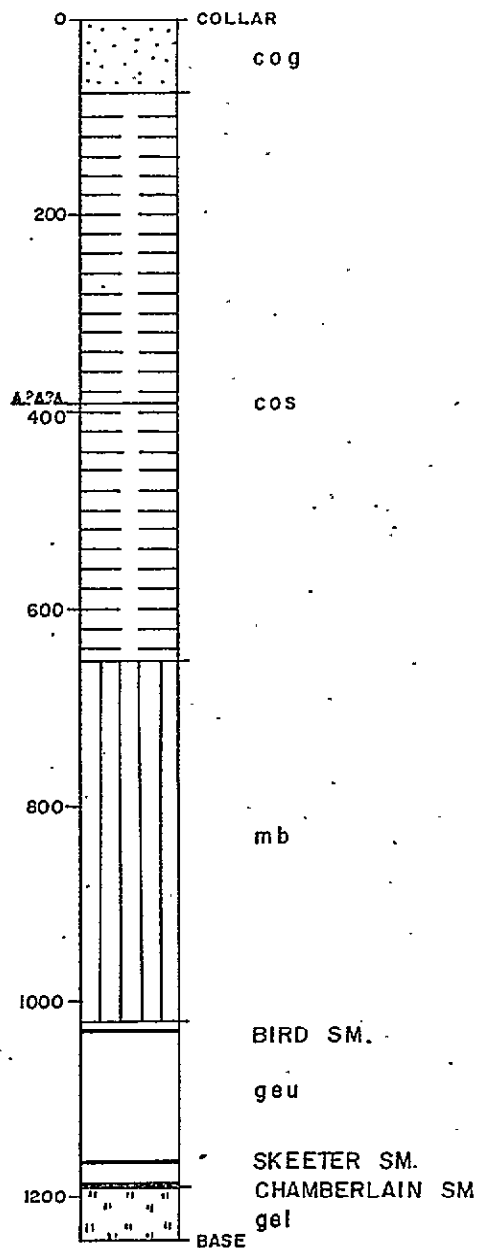
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3732.3	7.7	100%	
Chamberlain	3708.8	7.1	100%	



MOOSEBAR FORMATION
 GLAUCONITIC SANDSTONE
 BIRD SEAM
 MOTTLED (WORM CASTS)
 PEBBLES
 WORM CASTS
 GRANULES
 SILTSTONE PHASES
 COALY WISPS
 SKEETER SEAM
 CHAMBERLAIN SEAM
 WORM CASTS
 GRANULES
 END OF HOLE.



DETAIL OF GETHING
 FORMATION
 SCALE 1" to 50'

SCALE : 1" to 200'

Prepared by
 CLIFFORD McELROY & ASSOCIATES PTY LTD.
 for
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS
 DDH S-45

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-45

Report No. 67-0555
67-0556

SPECIFIC GRAVITY	DRY BASIS							
	Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
	1.60	89.0	0.77	6.71	22.90	69.62	14387	0.50 7½
	1.60	<u>11.0</u>	<u>0.95</u>	<u>54.95</u>				<u>0.69</u>
		100.0	0.79	12.02				0.52

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 10.401 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-45

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
Fault, probable	No core to 10.0 ft.		
	SILTSTONE, MUDSTONE AND SANDSTONE, slickensiding at 391'. Flat at top 391', 30° below 391'.	SUKUNKA MB.	658.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1020.0
	SANDSTONE, glauconitic.	GETHING FM.	1022.0
	SANDSTONE, pebbles at base.		1025.0
	<u>COAL</u> .	BIRD SEAM	1029.0
	MUDSTONE.		1031.0
	<u>COAL</u> .		1032.0
	SANDSTONE, coarse at top, fine at base, pebbles 1053', (mottled) worm casts 1040'.		1089.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		1104.0
	SANDSTONE, mudstone band at 1111', silty phases.		1120.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1126.0
	SANDSTONE, coaly wisps, mudstone bands at base, 1147', 1149'.		1152.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	<u>COAL.</u>	SKEETER SM.	1161.0
	SILTSTONE, mudstone at top, sandy phases.		1164.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1173.0
	<u>COAL.</u>	CHAMB. SM.	1184.0
	SANDSTONE, coarse at top, mudstone band 1223'.		1225.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at top.		1245.0
			<u>Base of Hole</u>

BORE NUMBER S-46

Grid Reference 35797.7N 86287.7E

Exploration Grid Reference I+900'/1

Date Commenced 5th November, 1970 Completed 11th November, 1970 .

Collar R.L. 4567.7' . Standard Datum

Total Depth 898' Electrically Logged Yes/No

Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	3719.2	9.0	100%	

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-46

Report No. 67-0537
67-0538

SPECIFIC GRAVITY	AIR DRY BASIS								
	Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
	1.60	97.1	0.76	3.97	23.60	71.67	14884	0.51	9
	1.60	<u>2.9</u>	<u>0.64</u>	<u>53.70</u>				<u>0.30</u>	
		100.0	0.76	5.41				0.50	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 11.252 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-46

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft.)
	No core to 13.0 ft.		
	SILTSTONE, SANDSTONE AND MUDSTONE INTERBEDDED, worm casts.	SUKUNKA MB.	298.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	661.0
	SANDSTONE, glauconitic.	GETHING FM.	663.0
	<u>COAL.</u>	BIRD SEAM.	666.0
	MUDSTONE, coal band at base.		670.0
	SANDSTONE, and silty interbeds, coarse at top, fine towards base, worm casts 676'-706'.		751.0
	MUDSTONE, pyritic.		755.0
	SANDSTONE, coaly wisps, sandy blebs at 765'-768'.		768.0
Fault, possible	SANDSTONE, breccia.		770.0
	SANDSTONE, coaly wisps.		773.0
	MUDSTONE, silty interbeds.		777.0
Fault, possible	CLAYSTONE, carbonaceous claystone.		779.0
	CLAYSTONE, carbonaceous.		781.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	MUDSTONE, sandy interbeds.		785.0
	SANDSTONE.		789.0
	SANDSTONE, silty interbeds.		793.0
	LAMINITE, siltstone and mudstone, mudstone at base.		797.0
	<u>COAL</u> , band 0.5'.		797.5
	SILTSTONE, mudstone interbeds.		802.0
	LAMINITE, siltstone and mudstone.		816.0
	SANDSTONE, silty interbeds, mudstone band at 825'.		832.0
	LAMINITE, siltstone and mudstone, mudstone at base.		839.5
	<u>COAL</u> .	CHAMB. SM.	848.5
	SANDSTONE.		898.0
			<u>Base of Hole</u>

BORE NUMBER S-47

Grid Reference 49334.7N 79220.1E

Exploration Grid Reference A+200'/2

Date Commenced 12th November, 1970 Completed 21st November, 1970

Collar R.L. 4176.1' Standard Datum

Total Depth 417' Electrically Logged Yes/No

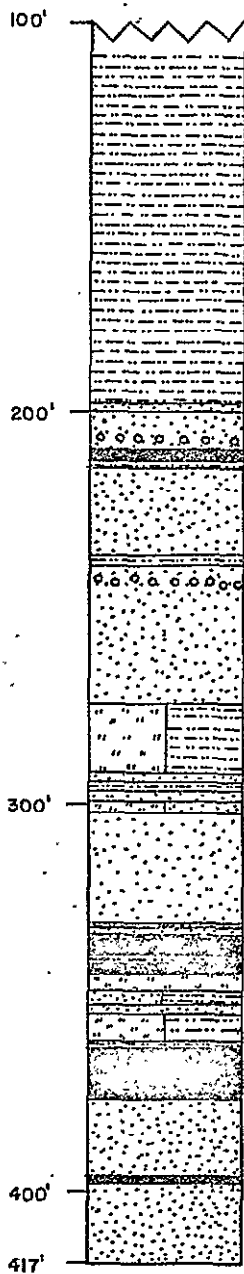
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3832.1	9.5	74.7%	
Chamberlain	3808.7	5.1	96%	



MOOSEBAR FORMATION

SANDSTONE (GLAUCONITIC)
 GRANULES
 MOTTLED (WORM CASTS)

WORM TRACKS
 GRANULES
 COALY WISPS

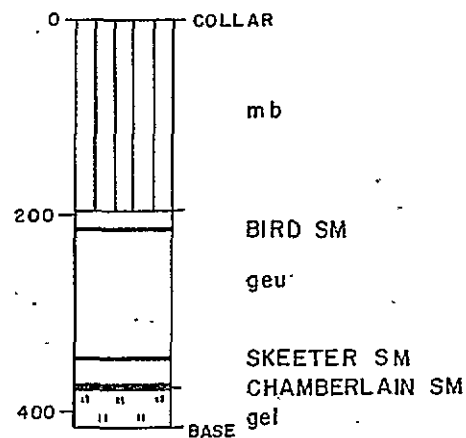
COALY WISPS

SKEETER SEAM
 INTERBEDS

CHAMBERLAIN SEAM

GRANULES
 MOTTLED (WORM CASTS)

END OF HOLE



DETAIL OF GETHING
 FORMATION
 SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
 CLIFFORD McELROY & ASSOCIATES PTY. LTD.
 for
 COALITION MINING LIMITED

STRATIGRAPHIC LOGS
 DDH S - 47

DRAWN BY S.A.

DATE: December '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-47

Report No. 67-0557
67-0558

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		87.5	0.95	4.37	24.40	70.28	14706	0.46 9
1.60		<u>12.5</u>	<u>1.06</u>	<u>67.34</u>				<u>0.22</u>
		100.0	0.96	12.24				0.43

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 7.881 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-47

Report No. 67-0539
67-0540

SPECIFIC GRAVITY		AIR DRIED BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60		99.2	0.66	2.85	25.55	70.94	15052	0.42	8½
1.60		0.8	0.66	57.60				0.62	
		100.0	0.66	3.29				0.42	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 7.017 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-47

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 17.0 ft.		
	MUDSTONE, ash layers towards base.	MOOSEBAR FM.	199.0
	SANDSTONE, glauconitic.	GETHING FM.	202.0
	SANDSTONE, coarse, pebbles 207' and 209'.		211.0
	COAL, mudstone at base.		214.0
	SANDSTONE, coarse becoming finer at base, mottled (worm casts) at 219', mudstone bands at 238', pebbles at 243'.		276.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		293.0
	SANDSTONE, coaly wisps, mudstone band at 297'.		300.0
	LAMINITE, siltstone and mudstone, mudstone base.		303.0
	SANDSTONE, coaly wisps, mudstone band at 332' and at base.		335.0
	<u>COAL</u> , mudstone band at 340'.	SKEETER SM.	343.0
	SILTSTONE, mudstone phases.		348.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	SANDSTONE AND MUDSTONE INTERBEDDED		351.0
	SANDSTONE, medium grained.		354.0
	LAMINITE, mudstone base.		362.0
	<u>COAL</u> .	CHAMB. SM.	375.5
	SANDSTONE, granule conglomerate at 396'.		397.0
	<u>COAL</u> , band, 0.5'.		398.0
	SANDSTONE, coarse becoming medium grained, mottled (worm casts) at 402'.		417.0
			<u>BASE OF HOLE</u>

BORE NUMBER S-48

Grid Reference 41162.0N 81299E
Exploration Grid Reference E+300'/1-1100'

Date Commenced 22nd November, 1970 Completed 28th November, 1970

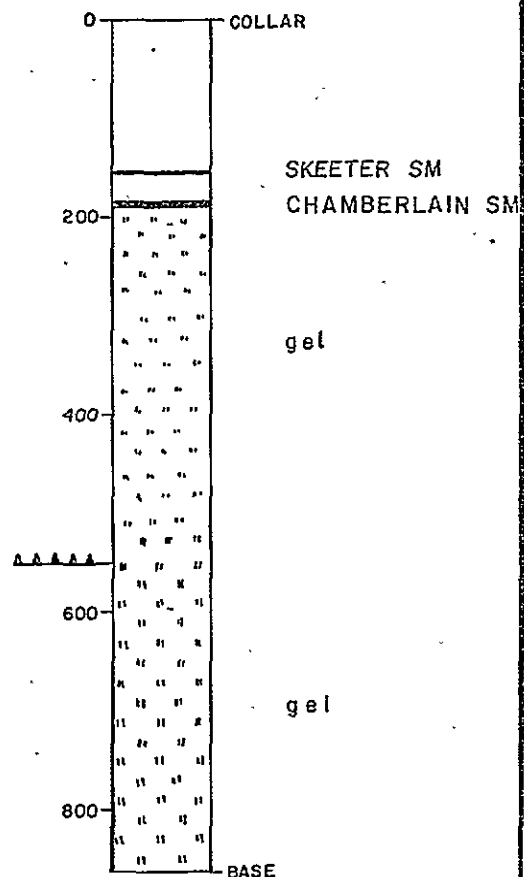
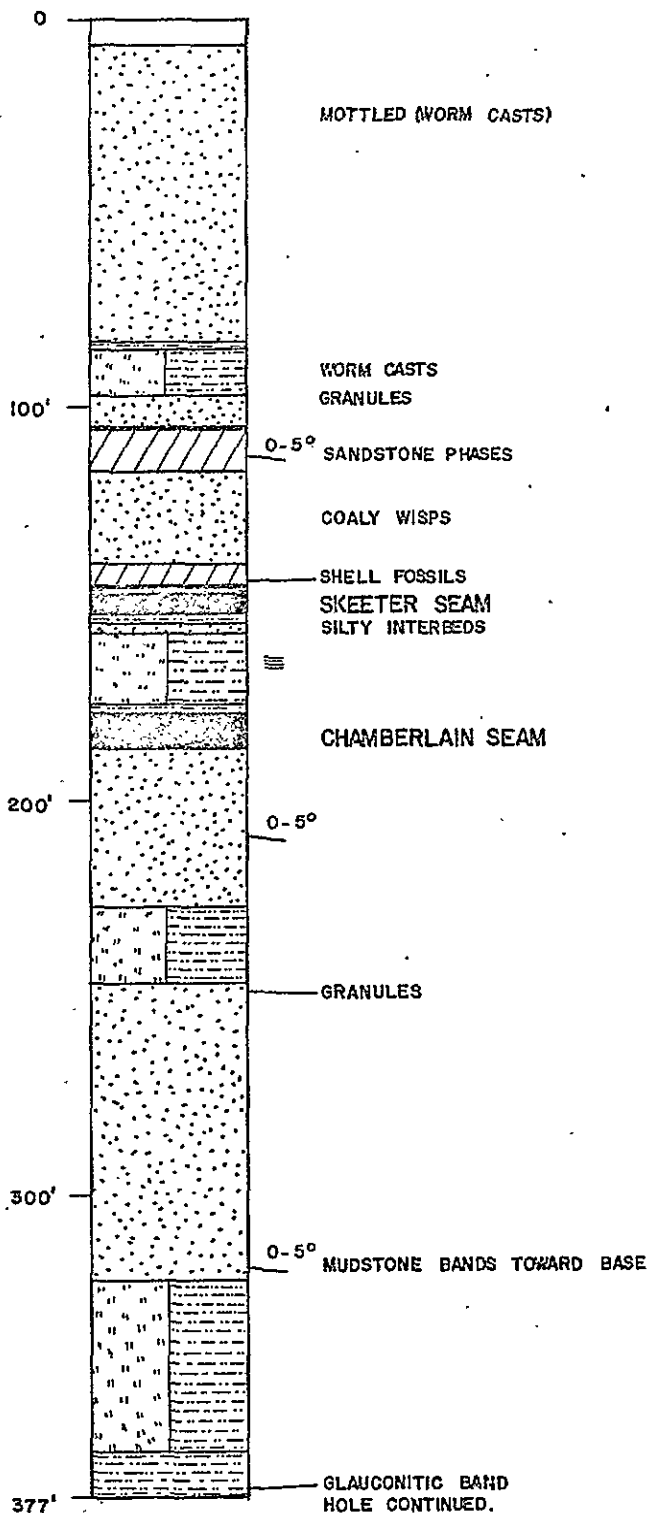
Collar R.L. 4068' Standard Datum
Total Depth 867' Electrically Logged Y/\$/No

Drilled by Connors Drilling Ltd.
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3916.1	8.1	100%	
Chamberlain	3882.8	8.0	100%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.

for
COALITION MINING LIMITED

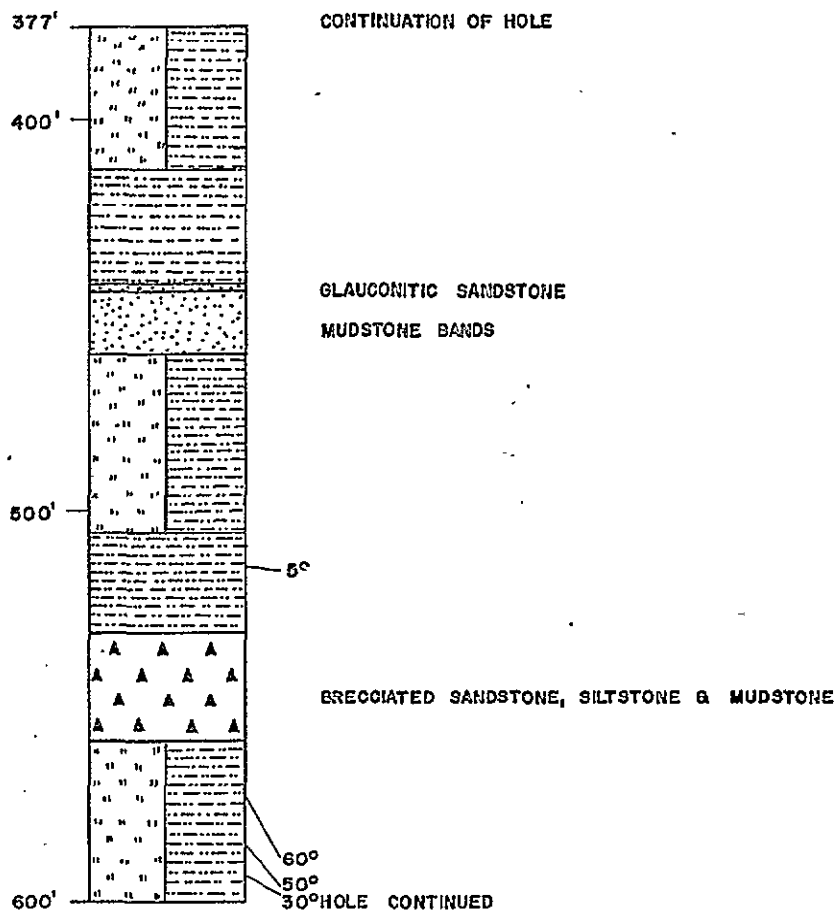
STRATIGRAPHIC LOGS

DDH S - 48

DRAWN BY S.A.

DATE: December '71

PAGE 1 of 3



DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

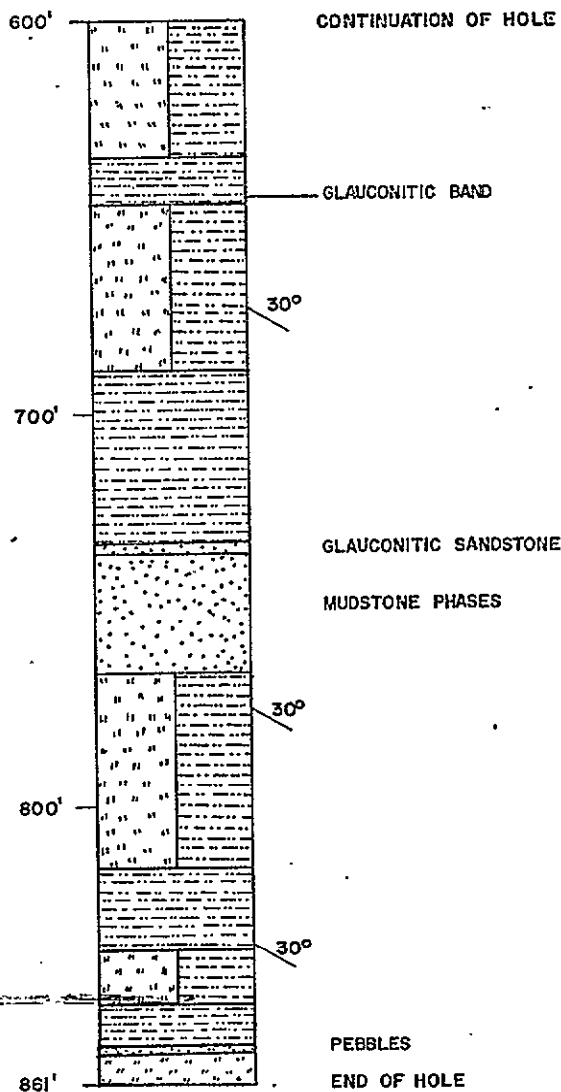
Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-48

DRAWN BY S.A.

DATE: December '71

PAGE 2 of 3



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-48

DRAWN BY S.A.

DATE: December '71

PAGE 3 of 3

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 00601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-48

Report No. 67-0559
67-0560

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		78.4	0.89	7.31	23.53	68.27	14280	0.56 7
1.60		<u>21.6</u>	<u>1.06</u>	<u>65.24</u>				<u>0.29</u>
		100.0	0.93	19.82				0.50

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 5.659 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-48

Report No. 67-0541
-67-0542

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		98.9	0.77	3.63	25.98	69.62	14943	0.43 8
1.60		<u>1.1</u>	<u>0.65</u>	<u>43.28</u>				<u>0.25</u>
		100.0	0.77	4.07				0.43

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 11.440 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-48

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 7.0 ft.		
	SANDSTONE, coarse at top becoming fine at base, mottled (worm casts) 26', mudstone band at 85'.	GETHING FM.	86.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		97.0
	SANDSTONE.		105.0
	<u>COAL</u> .		105.5
	CLAYSTONE, sandy phases, carbonaceous at base.		117.0
	SANDSTONE, coaly wisps.		139.0
	CLAYSTONE, carbonaceous, shelly fossils near base.		145.0
	<u>COAL</u> .		146.0
	SANDSTONE, mudstone at top.		147.5
	<u>COAL</u> .	SKEETER SM.	152.0
	SANDSTONE, silty interbeds, mudstone at top.		156.0
	LAMINITE, siltstone and mudstone, mudstone at base.		177.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	COAL, chamberlain seam, coarse at top, fine near base.	CHAMB. SM.	185.0
	SANDSTONE, coarse at top, fine near base.		226.5
	SILTSTONE AND MUDSTONE INTERBEDDED, granules near base.		245.0
	SANDSTONE, mudstone bands at 301', 300', 299'.		322.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		365.0
	MUDSTONE, glauconitic layer at 376'.		377.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		414.0
	MUDSTONE.		443.0
	SANDSTONE, glauconitic.		444.0
	SANDSTONE, mudstone bands.		460.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		506.0
	MUDSTONE.		531.0
	SANDSTONE, SILTSTONE, MUDSTONE, breccia.		569.0
	SILTSTONE AND MUDSTONE INTERBEDDED, mudstone layer, glauconitic band at base 635'-647'.		690.0
	MUDSTONE.		734.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	SANDSTONE, glauconitic.		736.0
	SANDSTONE, mudstone phases.		767.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		817.0
	MUDSTONE.		837.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		851.0
	MUDSTONE.		862.0
	SANDSTONE, pebbles abundant.		864.0
	SILTSTONE, mudstone phases		871.0
			<u>Base of Hole</u>

BORE NUMBER S-49

Grid Reference 48179.6N 77716.0E

Exploration Grid Reference A/1+200'

Date Commenced 18th November, 1970 Completed 20th November, 1970

Collar R.L. 4117.3' Standard Datum

Total Depth 519' Electrically Logged Yes/No

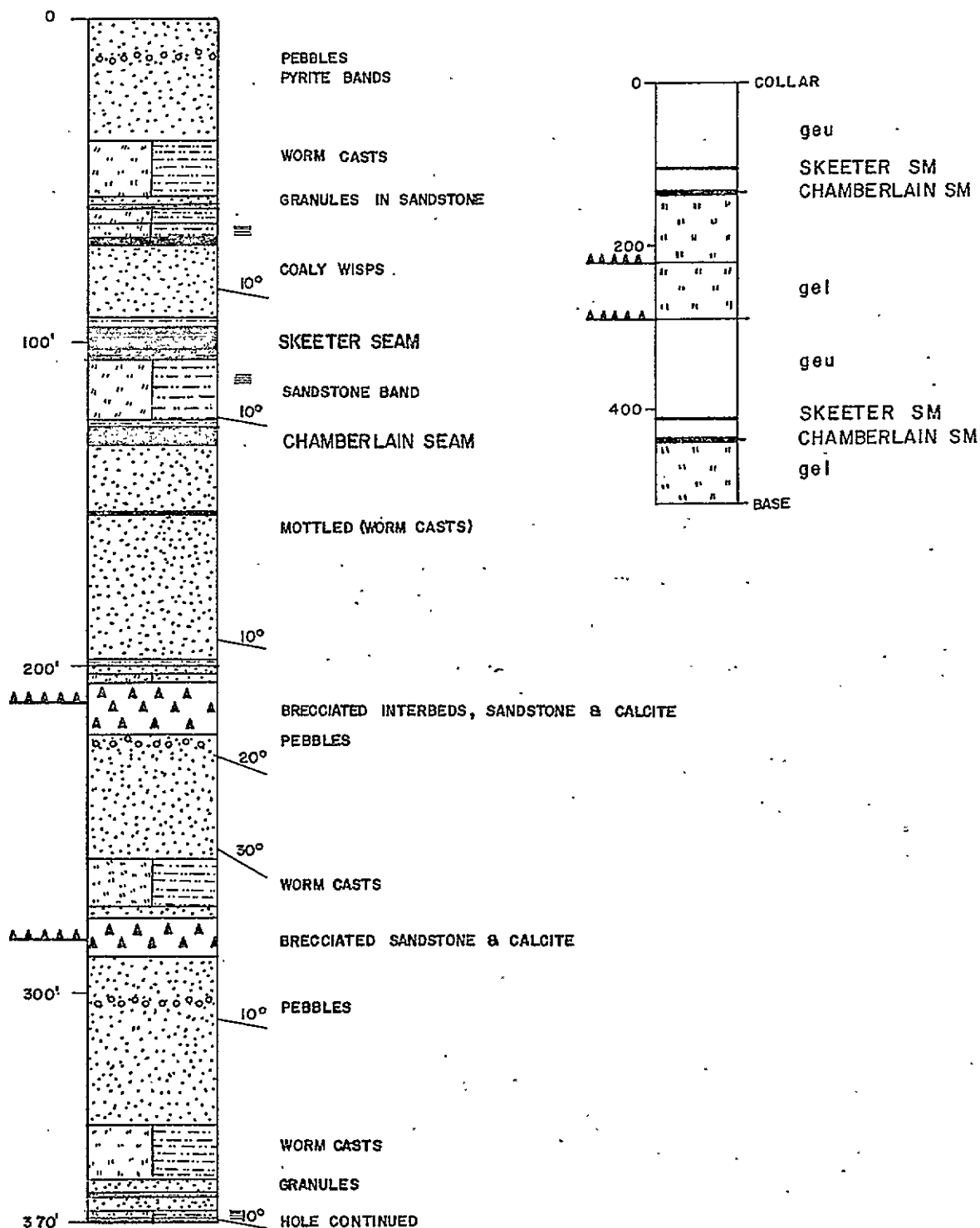
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter Upper Plate	4009.5	13.0	83.8%	
Chamberlain Upper Plate	3986.6	4.3	100%	
Skeeter Lower Plate	3704.9	9.9	88.8%	
Chamberlain Lower Plate	3682.5	6.3	100%	

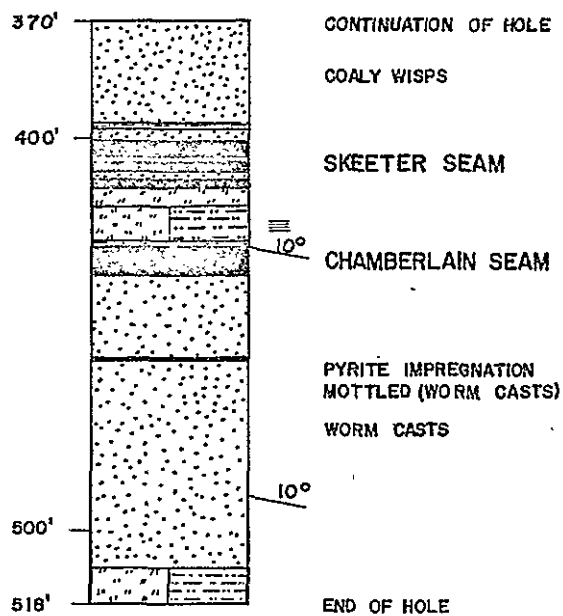


DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-49



DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-49

DRAWN BY S.A.

DATE: December '71

PAGE 2 of 2

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 25, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-49-1

Report No. 67-0569
67-0570

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60		78.1	0.98	7.93	23.69	67.40	14195	0.62	8½
1.60		<u>21.9</u>	<u>0.82</u>	<u>51.25</u>				<u>0.46</u>	
		100.0	0.94	17.42				0.58	

% ADM = % Moisture in air dried sample

Weight of as received sample = 3.891 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 728-8434

January 25, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-49-2

Report No. 67-0563
67-0564

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
	1.60	96.4	1.38	4.13	25.06	69.43	14635	0.49	9
1.60		<u>3.6</u>	<u>1.00</u>	<u>47.81</u>				<u>0.63</u>	
		100.0	1.37	5.70				0.50	

% ADM = % Moisture in air dried sample

Weight of as received sample = 5.977 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-49

Report No. 67-0543
67-0544

SPECIFIC GRAVITY

AIR DRY BASIS

Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60	92.3	0.77	2.57	24.78	71.88	15084	0.44	8½
1.60	7.7	0.77	56.12				1.10	
	100.0	0.77	6.69				0.49	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 6.876 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 25, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-49-2

Report No. 67-0576
67-0575

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60		97.0	0.84	3.09	23.23	72.84	14937	0.43	8½
1.60		<u>3.0</u>	<u>0.60</u>	<u>50.90</u>				<u>0.56</u>	
		100.0	0.83	4.52				0.434	

% ADM = % Moisture in air dried sample

Weight of as received sample = 7.981 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-49

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 6.0 ft.		
	SANDSTONE, medium grained, pebbles at 13'.	GETHING FM.	38.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		55.0
	SANDSTONE, mudstone layer at base.		59.0
	SANDSTONE AND MUDSTONE INTERBEDDED.		64.0
	LAMINITE, mudstone layer at base.		69.0
	SANDSTONE, coaly wisps.		92.0
	MUDSTONE.		95.0
	<u>COAL</u> , mudstone band at top.	SKEETER SM.	101.0
	SILTSTONE AND MUDSTONE INTERBEDDED, mudstone layer at top.		104.0
	LAMINITE, siltstone and mudstone, sandy layer at 116', mudstone at base.		126.0
	<u>COAL</u> .	CHAMB. SM.	131.0
	SANDSTONE, coarse grained.		152.0
	<u>COAL</u> , band, 0.5'.		152.5
	SANDSTONE, coarser at top to fine,		

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	mottled (worm casts) 157', mudstone band at 199'.		201.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		204.0
	SANDSTONE, brecciated.		220.0
	SANDSTONE, pebbles 222'.		258.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		274.0
Fault, established	SANDSTONE, medium grained.		277.0
	SANDSTONE, brecciated.		288.0
	SANDSTONE, pebble band 303', coarse becoming fine.		340.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granule conglomerate at base.		357.0
	SANDSTONE, mudstone band at 362'.		366.0
	LAMINITE, siltstone and mudstone, mudstone base.		370.0
	SANDSTONE, coaly wisps, mudstone layer 399'.		402.0
	<u>COAL</u> , mudstone band at top, sandstone band at 410', mudstone base.	SKEETER SM.	413.0
	SILTSTONE, sandy phases.		418.0

Structure	Description of Strata	Formation or Member	Depth ± Base of Stratur. (ft)
	LAMINITE, siltstone and mudstone, mudst one base.		429.0
	<u>COAL</u> .	CHAMB. SM.	435.0
	SANDSTONE, coarse grained.		457.0
	<u>COAL</u> , band, 1.0'.		458.0
	SANDSTONE, mottled (worm casts) 463', pyrite 459', worm casts at 475'.		510.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		518.0
			<u>Base of Hole</u>

BORE NUMBER S-50

Grid Reference 50298N 80911.8E

Exploration Grid Reference B+1900'/2+1900'

Date Commenced 23rd November, 1970 Completed 23rd November, 1970

Collar R.L. 4059.4'

Standard Datum

Total Depth 218'

Electrically Logged ~~Y~~/No

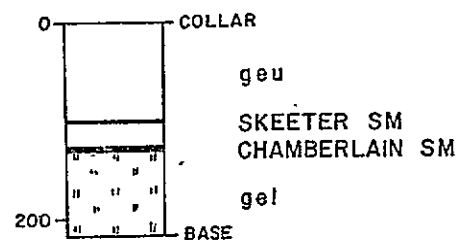
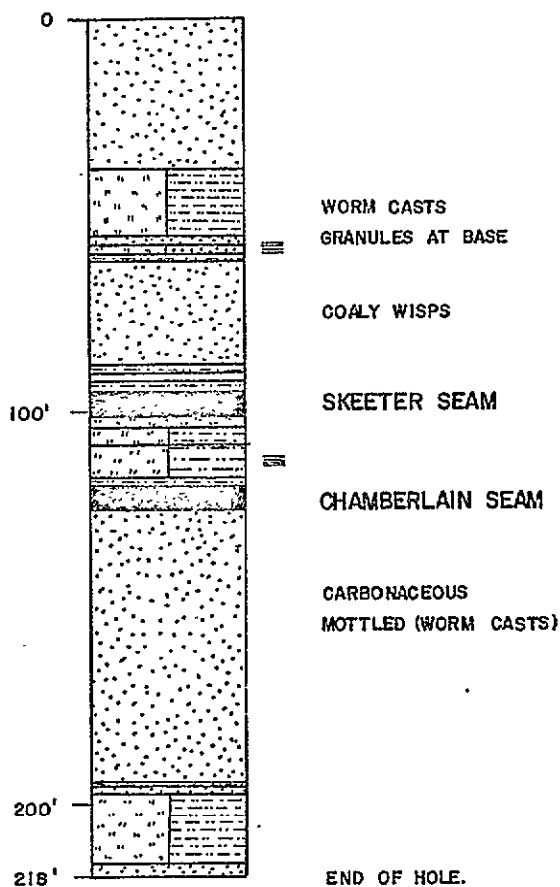
Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3959.7	6.5	89.2%	
Chamberlain	3935.1	4.8	100%	



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-50

DRAWN BY S.A.

DATE: December '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-50

Report No. 67-0561
67-0562

SPECIFIC GRAVITY	AIR DRY BASIS							
	Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
	1.60	84.9	0.68	5.10	23.93	70.29	14662	0.55 8½
	1.60	<u>15.1</u>	<u>1.10</u>	<u>73.62</u>				<u>0.57</u>
		100.0	0.74	15.45				0.55

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 9.264 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-50

Report No. 67-0545
67-0546

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60	96.8	0.69	2.89	24.45	71.97	15068	0.58	9
1.60	<u>3.2</u>	<u>0.57</u>	<u>54.23</u>				<u>0.38</u>	
	100.0	0.69	4.53				0.57	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 6.687 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-50

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 11.0 ft.		
	SANDSTONE, medium grained.	GETHING FM.	38.0
	SILTSTONE AND MUDSTONE INTERBEDDED, pebbles at base, worm casts in lower half.		55.0
	SANDSTONE, medium grained.		57.0
	LAMINITE, siltstone and mudstone, mudstone at base.		60.5
	SANDSTONE, coarse becoming fine, mudstone band at 88', coaly wisps.		92.0
	MUDSTONE.		94.0
	<u>COAL</u> .	SKEETER SM.	100.0
	SILTSTONE, mudstone band at top, sandy phases.		104.0
	SANDSTONE AND MUDSTONE INTERBEDDED.		108.0
	LAMINITE, siltstone and mudstone mudstone band at base.		119.0
	<u>COAL</u> .	CHAMB. SM.	124.0
	SANDSTONE, coarse at top, fine at base, mottled (worm casts) at 153', Mudstone band at 195', carbonaceous at 149'.		197.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	<p>SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at top, granule conglomerate at base.</p> <p>SANDSTONE, medium grained.</p>		<p>215.0</p> <p>218.0</p> <p><u>Base of Hole</u></p>

APPENDIX F

"GEOLOGY - VOLUME 11"

DO NOT COPY
CERTIFICATE OF
ANALYSIS.

DRILL HOLE DATA
DIAMOND DRILL HOLES S-1 TO S-50

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

Reference for Graphic
Sections of Drill Hole Data

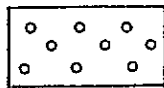
00-646
00-641
See reverse side

Prepared by CLIFFORD McELROY & ASSOCIATES PTY. LIMITED

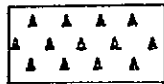
MARCH 10, 1972

DETAIL OF GETHING FORMATION

Scale 1" = 50'



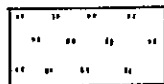
CONGLOMERATE
pebble to granule



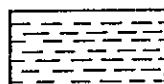
BRECCIA



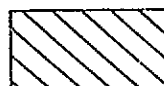
SANDSTONE



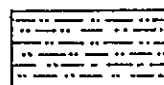
SILTSTONE



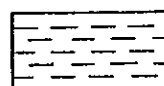
CLAYSTONE



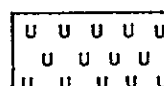
STONE COALY or
CLAYSTONE
CARBONACEOUS



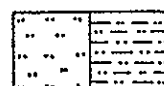
MUDSTONE



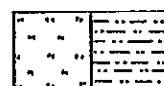
SHALE, SILTSHALE,
CLAYSHALE



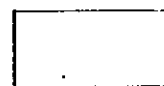
SOIL, WEATHERED and
UNCONSOLIDATED
MATERIAL



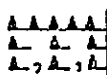
INTERBEDDED



LAMINITE



45° INCLINED STRATA

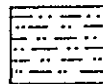


FAULT

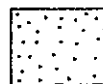
established
probable
possible

TOTAL DRILL HOLE SECTIONS

Scale 1" = 200'

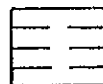


HULLCROSS MEMBER



COMMOTION
FORMATION

GATES MEMBER



SUKUNKA MEMBER



MOOSEBAR
FORMATION

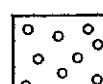


UPPER GETHING
SEQUENCE



GETHING
FORMATION

LOWER GETHING
SEQUENCE



CADOMIN
FORMATION

COAL SEAMS

Scale 1" = 2'



COAL BRIGHT or UNDIFFERENTIATED

COAL MAINLY BRIGHT with MINOR DULL
BANDS

COAL DULL and BRIGHT

COAL MAINLY DULL with MINOR BRIGHT
BANDS

COAL DULL

COAL INTERLAYED with NON-COAL

NON-COAL INTERLAYED with COAL

COAL STONY

STONE COALY

COAL WEATHERED

REFERENCE FOR GRAPHIC SECTIONS

of

DRILL HOLE DATA

PREPARED BY CLIFFORD McELROY & ASSOCIATES PTY LIMITED

COALITION MINING LIMITED

SUKUNKA COAL PROJECT

January 1972

Interval		Recovery	
From	To		
			<u>GETHING FORMATION</u> Box 1
0	12.0		Casing
12.0	22.0	9'0"	Sst. v.f.g. silty, argill. with clasts of sh. Sh clasts flat, lent. max. median diam. $\frac{1}{2}$ ". Core fract. vein, ct: weathered and mottled brown. $\angle 26^{\circ}$ to 33°
		0'5"	Sh. dk. grey.
22.0	27.0	5'2"	Sst. v.f.g. silty, argill. ilam silts; with clasts of sh. to 1" diam. Fract vein, and weathered as 12 to 22'.
27.0	31.0	2'1"	Sst. v.f.g. argill: pass to ilam sst. and silts in lower part. $\angle 60^{\circ}$
		0'4"	Ibed sh. silts, and sst. v.f.g. Sst. with clasts of sh. $\angle 45^{\circ}$
		0'10"	Sh. rubble and broken core.
			Box 2
31.0	39.0	2'6"	Sh. dk. grey; minor ibed silts, and silty sh.
		5'6"	Sst. v.f.g., silty: pass to ssts. with ilam silts, and few thin ibeds sh. Ssts. with layers of sh clasts: weathered and mottled core. $\angle 60^{\circ}$ @ 39'
39.0	48.0	1'5"	Sst. v.f.g. with ibed ilam sh.
		6'0"	Sh. with ibed silts, and ssts: pass to
48.0	57.0	3'2"	Sh. with ibed silts and silty sh; contorted bedding $\angle 66^{\circ}$ to 68°
			Box 3
		6'4"	Ser. etc., ibeds silty sh. silts and few sst. f.g. $\angle 45^{\circ}$ @ 54'
57.0	60.0	3'0"	Ibed and ilam sh. silts and silty sh; pass to sst. with ilam sh in middle part. $\angle 15^{\circ}$ to $\angle 0^{\circ}$ to $\angle 15^{\circ}$, bedding flexured about vertical. Vein ct.
60.0	70.0	9'6"	Sst. ibed and ilam silts and sh. $\angle 0^{\circ}$ @ 61.5' $\angle 70^{\circ}$ @ 68' Contorted, disturbed and injected bedding (sedimentary)
		0'6"	Sst. ibed, ilam silts and sh, as above. Box 4
70.0	77.0	6'10"	Sh. ibed silts, and silty sh: few sst. layers: contorted disturbed bedding; veining. $\angle 70^{\circ}$ @ 77'
77.0	83.5	6'8"	Sh. ibed silts and silty sh: few sst layers
83.5	94.0	5'6"	Sh. ibed silts, silty sh. and sst. v.f.g. $\angle 80^{\circ}$ @ 88.5'
		5'0"	Sh. ibed silts, and silty sh with contorted bedding: pass to sh with few silty partings in lower 2' $\angle 75^{\circ}$ @ 92'
94.0	104.0	4'3"	Sh. with silty sh partings and few layers of silts. pass to
		2'6"	Mudstone, silty; core rubble, vein fract. and slickens.

Interval		Recovery	
From	To		
104.0	127.0	7'8"	Blank : coal fragments in box Coal sampled S021
		12'3"	Sample to Nissho Iwai Co. Ltd. Box 6 Blank: coal fragments in box Coal sampled S021 as above.
127.0	137.0	7'6"	Sst. v.f.g. to f.g.; fine coaly plant debris in upper 4" $\angle 80^{\circ}$) 133 to $\angle 84^{\circ}$) 134' Box 7
137.0	147.5	10'3"	Sst. f.g. passing to sst. v.f.g. with silts. in lower part. (Sh. 2" @ 142' and sh. with ilam sst.) $\angle 82^{\circ}$ @ 143'
147.5	158.0	9'2"	Sst. v.f.g. with ilam silts. $\angle 85^{\circ}$ to 86° Box 8
		1'1"	Sst. v.f.g. as above
158.0	167.0	8'3"	Sst. v.f.g. with ibed silts and silty partings and laminae.
167.0	177.0	7'1"	Sst. v.f.g. as above
		0'7"	Sh. with thin ibed and ilam sst. v.f.g. and silts. $\angle 86^{\circ}$ to 80°
		0'10"	Sst. v.f.g. to f.g.
		1'3"	Sh. thin ibed silts and few sst. layers Box 9
		0'5"	Sh. as 1'3" above.
177.0	184.0	7'1"	Sh. and thin ibed sst. v.f.g. and thin ibed silts and silty sh. Include 1'8" sst. in middle part.
184.0	195.0	10'10"	Sh. with ibed silts and silty sh. $\angle 82^{\circ}$ @ 182'
195.0	205.0	0'2"	Sh. as above
		0'8"	Sst. v.f.g. with ilam silts Box 10
		9'5"	Sst. V.F.G. with silty and shaly laminae. $\angle 85^{\circ}$
205.0	215.0	9'7"	Sst. v.f.g. with silty and shaly laminae.
		0'3"	Sst. v.f.g. with silty & shaly laminae. Box 11
215.0	225.0	10'4"	Sst. v.f.g. with silty and shaly laminae; planar bed, and cross bed. (@ 224' sh. parting $\frac{1}{2}$ " overlain by sst. $1\frac{1}{2}$ ", silty and argill. and with sh. clasts) $\angle 80^{\circ}$
225.0	235.0	8'7"	Sst. v.f.g., silty and sh. laminae Box 12
		0'6"	sst. as above
		0'4"	Sh. dk grey $1\frac{1}{2}$ " pass to $2\frac{1}{2}$ " silty sh. and silts.

Interval		Recovery	
From	To		
235.0	245.0	4'1" 0'1" 0'3" 0'5" 0'6" 4'3"	Siltst. argill: pass to sst. v.f.g. with silty and sh. laminae. Sh. dk. grey: stringers of sst. and silts. Sh (? mudstone) dk. grey, soft, brn str; and core ground to clay. No plant debris. Sst. v.f.g. Thin ibed sst. v.f.g. silts and sh. Sst. v.f.g. with silty sh. and sh. laminae; more argill in lower 10": few layers of sh. clasts.
245.0	255.0	4'1" 0'2" 3'10" 0'3" 0'4"	Sst. v.f.g. silty and sh. laminae Sh. dk. grey, silty partings in lower part. Sst. v.f.g. silty and sh. laminae; sh clasts, and sh. partings disturbed and broken. Sh. dk grey, ilam silts. $\angle 78^{\circ}$ @ 245' $\angle 83^{\circ}$ @ 247' Box 13
255.0	265.0	1'0" 2'0" 3'5" 0'10" 1'6" 2'0"	Sh. dk. grey ilam silts and silty sh; partings and stringers of silts. and sst. Silts. pass to sst. v.f.g. pyritic band 2 to 4" from top. Top - core fragments, sh. soft dk. grey, brn str. no plant debris. Sh. dk. grey: ibeds silty sh. Silts argill. and few thin ssts: contorted bed: pass to Ssts. v.f.g. and ibed sh. silty sh and silts. Sh. dk gry, ibed silty sh and silts. and sst. v.f.g. disturbed and contorted. bed. Sst. v.f.g. ibed sh, silty sh and silts; finely pyritic $\angle 85^{\circ}$ Sh. dk grey, thin ibeds silty sh, silts and sst. v.f.g.: disturbed and contort bed (sst. ibed 8" @ base)
265.0	275.0	7'9" 2'3"	Sh. thin ibeds, silty sh. silts and sst. v.f.g. (sst. ibeds to 9" max). (Sh > 50% dominant) Box 14
275.0	285.0	10'3"	Sh. and thin ibeds silty sh. silts. and sst. v.f.g. graded bed. (Graded bedding sst - silts - silty sh - sh to top, in intervals of 1 to 6"; sst. unit not always present and in its absence silts replaces sst. at base: basal contact sharp and clean cut: in upper part silts. injected into sh: fragments of sh. broken and enclosed as clasts)
285.0	295.0	6'3" 3'11"	Sh, thin ibeds silty sh. silts and sst. etc. as above: finely pyritic and pyrite blebs. $\angle 85^{\circ}$ $\angle 78^{\circ}$ extreme Sh. and thin ibeds, silty sh and sst. v.f.g. as for 10'3" above. Box 15
295.0	305.0	9'11"	Sh. dk. grey and thin ibeds silty sh, silts. and ssts. as for 10'3" above - but more shales: sh = 80% Sh. dk. grey and thin ibed silty sh, silts and sst: sh = 90% $\angle 84^{\circ}$

Interval		Recovery	
From	To		
305.0 505.12	315.0	5'5"	Sh. sk. grey and thin ibed silty sh, silts. and ssts. as above: Sh >90% Box 16.
		2'6"	Sh. dk grey and few thin ibeds, silty sh, silts. and sst. v.f.g.: Sh. 75%
		1'6"	Sh. dk grey, silty, calc. $\angle 84^{\circ}$
315.0	325.0	9'3"	Sh. dk grey, calc: fine pyritic and pyrite blebs.
		0'9"	Sh. dk grey, silty and sandy partings: partings and lenses of glauconite
325.0	335.0	4'11"	(Top $\frac{1}{2}$ " sh. dk grey) Sst. (remainder) v.f.g. with ibed sh. silty sh: bed thin disturbed and contorted. Sh 30% $\angle 85^{\circ}$ Av. $\angle 80^{\circ}$ extreme
		5'7"	Sh. and thin ibed sst. with silts. and silty sh: contorted bed: planar and cross bed in ssts. Sh. 70% Box 17
335.0	345.0	7'6"	Sh. dk grey, as 5'7" above. - Sh.60%
		2'6"	Sst. v.f.g. with lesser thin ibed sh, silty sh and silts. Sst. 66% $\angle 80$ to 84° Box 18
		6'8"	Sst. v.f.g. with lesser thin ibed sh, silty sh. and silts: Sst. 66%
355.0	365.0	5'6"	Sh. dk grey with minor ibeds silty sh. and silts: few blebs pyrite
		4'3"	Sh. dk grey: few stringers of silty sh. minor pyrite: few layers with plant debris $\angle 84^{\circ}$
365.0	375.0	3'10"	Sh. etc as for 4'3" above. Box 19
		5'9"	Sh. etc. as above: no signif. silty sh. or silts: + minor pyrite.
375.0	380.0	5'8"	Sh. dk grey, as for 5'9" above, no silty sh.
380.0	387.0	7'6"	Sh. dk grey as for 5'8" above, but becoming silty to base. 386-387' - fossils; small pelacypods, immature or dwarfed? thin shells, and one fragment: 2 valves linked at umbo: decoration fine preserved: not clear or sufficient for identif.
387.0	397.0	3'4"	Sh. dk. grey Box 20
		1'6"	Sh. dk grey; with silty and sandy partings and sh. with scattered clastic grains qz. and chert (f.m. and c.g.) + glauconite: fine pyritic; fine plant debris.
		1'5"	Sst. v.f.g. to f.g. argill and silty: with f. sh layers and partings; glauconitic; plant debris, fine preservn.
		3'4"	Sst. v.f.g. to f.g. (mostly v.f.g.); sh. and silty laminae; cross and planar bed: slump bed to vertical 394 to 395 (no glauconite) $\angle 82^{\circ}$ to 86°
		0'4"	Sst. with thin partings sh and silty sh: pass to
397.0	407.0	9'8"	Thin ibed sst. v.f.g. silty sh; siltstones, with ibeds of sh. in lower 2': graded bed and occasional disturbed and contorted bed. Ssts. to 50% $\angle 82^{\circ}$ to 86° $\angle 78^{\circ}$ extreme Box 21

Interval		Recovery	
From	To		
		0'5"	Thin ibed sst. silty sh and silts.
407.0	417.0	7'9"	Thin ibed sst. v.f.g. silts. and silty sh. minor pyrite;
		2'5"	Sh 60% - pass to Sh. and thin ibed and lam silty sh. silts. few ssts. v.f.g.; ssts to 10%; graded bed, disturbed, contorted and injected bed.
417.0	427.0	8'6"	Sh. as for 2'5" above. Ssts <10% $\angle 84^{\circ}$ Box 22
		1'6"	Sh. thin ibed silty sh. and silts.
427.0	437.0	10'0"	Sh. thin ibed silty sh. and silts.; few thin ibed ssts. in lower part; graded bed; contorted and disturbed bed.
437.0	450.0	7'2"	Sh. as 10'0" above; few sandy layers $\angle 82^{\circ}$ to 87° ;
		5'9"	mostly 86° , 87° , 88° Box 23 Sh. etc. as for 10'0" above; ibed silty sh. and silts; sst. in few ibeds: sh. 70% $\angle 87^{\circ}$
450.0	470.0	3'3"	Sh. with few ibeds silty sh. and silts. pass to
		10'4"	Sh. dk grey, very few thin ibeds and partings of silty sh. Box 24
		6'3"	Sh. dk grey, very few thin partings silty sh.
470.0	479.0	9'0"	Sh. dk grey; few partings silty sh, and one silts. band; contorted bedding $\angle 87^{\circ}$ Box 25
479.0	489.0	3'10"	Sh. dk grey; very few partings, silty sh.
		0'2"	Sh. dk grey, much plant debris.
		5'3"	Sh. dk grey; pass in lower $1\frac{1}{2}'$ to sh. with silty sh and silts. in thin ibeds
		0'1"	Sh (? mudst) silty dk grey, brn; coarse coalif. plant debris, some cutting across bed; (very fine ct. veining in overlying sh.)
489.0	499.0	10'0"	Sst. v.f.g. with silty and sh. laminae and layers of plant debris; becoming fine grained and silty in lower 6'. $\angle 84^{\circ}$ to 86°
499.0	507.0	3'9"	Sst. v.f.g to silt. grade: silty and sh laminae Box 26
		3'5"	Sst. v.f.g. to silt grade; silty and sh laminae; with thin ibed sh. silty sh. and silts.
		0'5"	Sh. dk grey.
		0'7"	Sst. as for 3'5" above.
507.0	517.0	3'5"	Sst. v.f.g. to silt grade, as for 3'5" above.
		5'0"	Sh. with thin ibed silty sh. and silts; few sst. ibeds; graded and contorted bed; pass to - $\angle 84^{\circ}$ to 86°
		1'9"	Sh. dk grey thin ibed sh. and silty sh. Box 27
517.0	527.0	4'8"	Sh. dk grey, mostly to 60%, few thin ibed, sh. silty sh, sst. and few sst. stringers; bed graded disturbed and contorted.
		5'8"	Sh. dk grey, lesser silty sh. and ibed with silts; few thin sst. stringers as for 4'8" above; sh. 90%.

Interval		Recovery	
From	To		
527.0	537.0	7'2" 2'9"	Sh. dk. grey etc. as above for 5'8" $\angle 86^{\circ}$ Sh. dk grey, carbonaceous (? mudstone); much coarse coalif plant debris; brn strk.
537.0	547.0	3'8" 0'8" 0'4" 0'3" 0'1" 0'6" 0'9" 2'0" 1'6"	Sh. dk grey, brn str, carbon, much coarse coalif. plant debris, with fine plant debris: few lsf. Box 28 Sh (? mudst) as for 3'8" above, soft. Mudst. dk grey, tough; little plant debris. Sh? dk grey, brn grey; coarse coalif. plant debris; lsf. (?mudst) <u>Coal</u> Mudst. dk grey, brn; coalif coarse plant debris; lsf; pass to - Mudst. dk grey, tough; much plant debris, coarse to fine to bed; grade to - Sh. dk grey, with silty sh. in upper part; plant debris, fine and coarse debris (minor coarse debris) Coal parting. Mudst. (Sh?) dk grey, rubbly; fine plant debris; few lsf.
547.0	557.0	3'11" 0'10" 4'5"	<u>Coal</u> : dull, some bright banding; few sh and silty layers to 1/8" thick. Mudst. dk grey, brn, soft; little plant debris, fine; lsf; pass to Mudst. dk grey ; fine plant debris and few coaly stringers (more compact than mudst 0'10" above)
557.0	567.0	2'6" 1'5" 1'6" 1'4" 1'1" 1'1" 0'2" 0'3" 0'3" 0'6"	Mudst. dk grey, brn, soft; plant debris and few coarse coal stringers bedding: lsf in lower 3" <u>Coal</u> : dull, few bright bands. Box 29 <u>Coal</u> : dull, few thin bright bands Mudst. dk grey, brn: much coalif plant debris, coarse and coaly partings. Mudst. dk grey, silty: less plant debris. Sst. v.f.g. to f.g. argill: ilam sh, and silts: coalif. plant debris. Mudst; pass to - Sst. as for 1'1" above $\angle 87^{\circ} 88^{\circ}$ Mudst. dk grey brn, soft, plant debris, and coaly stringers <u>Coal</u> : bright, thin banded, (core broken)
567.0	577.0	0'3" 2'0" 7'0"	<u>Coal</u> : bright, thin banded Mudst. dk grey brn, soft: much plant debris and coarse plant debris; coal partings and stringers; pass to - Mudst. dk grey brn; less plant debris to little plant debris in lower part: increase hard and compact down; few oblique lsf, long.
577.0	582.0	4'11"	Mudst. pass down to sh; little plant debris bed. Box 30

Interval			
From	To		
582.0	589.0	1'3"	Sh. as above, dk grey, little plant debris; few lsf: 86° grade to mudst. (distinct sh, mudst relative, not clear here)
		1'1"	Mudst. dk grey, brn, soft: some plant debris: lsf.
		2'0"	Mudst. dk grey, brn; much coalif plant debris; thin partings and stringers coal.
		0'4"	Mudst. dk grey; plant debris, coarse; silty, tough, pyritic
		0'5"	Mudst, dk grey; plant debris; lsf; grade to silty and sand mudst.
		0'9"	Ssts. v.f.g. with thin ilam sh in lower part; fine plant debris. $\angle 86^{\circ}$
		1'6"	Mudst. dk grey, brn, soft, lsf; much plant debris, and coaly partings and stringers.
589.0	596.0	4'0"	Mudst. as above; plant debris and coaly partings etc. decrease to lower half: pass to -
		3'3"	Mudst. dk grey: very little plant debris; silty in lower part; pass to -
596.0	606.0	4'7"	Mudst. dk grey and silty mudst: and few thin ibeds, silts and ssts. v.f.g. Silts. and ssta. = 10% Box 31
		0'10"	Mudst. as above.
		4'8"	Mudst. dk grey, soft; minor plant debris: few lsf.
606.0	617.0	2'5"	Mudst. dk grey; pass to silty mudst with silts. layers in lower half; pass to -
		5'3"	Silts. argill. few sst. partings; passing to ssts. and ibed and ilam sh. In lower 3" including sh, silts sh. and silts. in thin graded sequences: some disturbed bed. $\angle 87^{\circ}$
		1'6"	Mudst. dk grey: little plant debris: pass to -
		1'4"	Mudst. dk grey, brn, soft, much coalif. plant debris, fine and coarse; coaly stringers.
617.0	621.0	2'10"	Mudst. dk grey, brn, and silty mudst; plant debris, and coaly stringers common in upper part, decrease down; core rubbled and broken. Box 32
		1'3"	Mudst. dk grey brn; little plant debris, lsf.
621.0	627.0	2'3"	Mudst. dk grey brn; much plant debris, coaly partings and stringers, lsf.
		0'6"	Mudst. silty, few silts and sst. stringers; poorly bed; plant debris.
		3'0"	Mudst. dk grey, brn, soft, becoming silty to base: much plant debris and coaly stringers: lsf.
		0'8"	Mudst. silty; pass to silts in lower part.
627.0	632.0	0'4"	Mudst. silty with silts. partings and laminae.
		3'0"	Mudst. dk grey, brn, soft; much plant debris: include several thin coal partings and stringers in middle part: pass to -
		0'9"	Mudst. dk grey; less plant debris
632.0	639.0	6'0"	Mudst. dk grey; some plant debris; lsf.
		0'6"	Silts. argill; rough bed.
		0'1"	Mudst. Box 33

Interval		Recovery	
From	To		
639.0	645.0	0'6"	Silts. argill: pass to silty mudst. at base; v. little plant debris.
		7'0"	Mudst. dk. gry: and mudst with stringers silts; and contorted irreg. bed, 3 to 4½' from top: mudst. dk grey, hard in lower part and with plant debris (include fossil leaf).
645.0	654.5	3'6"	Mudst. as above for lower part of 7'0"
		2'3"	Mudst. dk. grey brn, soft; much plant debris, coarse and fine, and coaly stringers (core broken)
		1'3"	Mudst. grey hard, silicified; no plant debris: pass to mudst. dk grey in lower part.
654.5	665.0	2'0"	Mudst. dk grey, brn, soft, little plant debris: much lsf. (typical uc); pass to -
		2'4"	Mudst. dk grey brn: much plant debris. Box 34
		1'0"	Mudst. dk grey brn, soft: much coarse plant debris, and coaly stringers in upper part: pass to -
		1'3"	Mudst. dk grey, ibed and stringers silty mudst, silts and sandy silts.: increase silty to lower part.
665.0	675.0	2'11"	Interbed mudst. silty mudst. silt and sandy silts. (arenite/shale 50/50); thin ibed and ilam with imperfect graded bed and disturbed bed: little plant debris: pass to - $\angle 80^{\circ} - 85^{\circ}$
		2'6"	Mudst. dk grey.
		3'6"	Mudst. dk grey and mudst, dk grey brn; with plant debris fine and coarse and coaly partings and stringers.
675.0	677.0	1'11"	Mudst, dk grey brn, plant debris.
677.0	687.0	9'10"	Mudst. as above: pass to silty mudst. and few thin silts to 3" beds: with ilam silts: mudst 90 to 95%, $\angle 78^{\circ}$ & 85° cross bed.
687.0	707.0	9'4"	Mudst. and v. few thin ibed silty mudst and ibed silts: disturbed and slump bed in one part: mudst. 95%.
		1'8"	Mudst. as above 9'4": mudst 85%. Box 36
		1'0"	Mudst.
		0'9"	Mudst. dk grey brn, soft: much plant debris and few coaly stringers to 1/8" thick.
		1'6"	Mudst. dk grey.
		2'3"	Mudst. dk grey: pass to -
		2'10"	Mudst. and silty mudst with thin ibed silts: increase silty to base
707.0	717.0	7'4"	Silty mudst. and argill. silts. ilam and thin ibed: pass to lower-
		2'0"	2' silts with ssts. v.f.g. to silt grade and ilam sh. and silts. (include fine plant debris and small scale curr bed and disturbed bed in core 7'4" + 2'0") $\angle 85^{\circ} \angle 80^{\circ}$ Box 37
		1'2"	Sst. v.f.g. to c.g. with sh. laminae
717.0	727.0	7'3"	Sst. v.f.g. sh and carbon laminae; steep cross bed, disturbed bed, with few layers of sh clasts. Sst. passes to m and c.g. ssts. in lower part.
			718' Sh layer, 1 to 2" rubble
			721' Sh layer, 1 to 2" rubble
			723' Pebbly layer, chert and qz. 1/3" av median diam: m to c.g. ma

Interval		Recovery	
From	To		
717.0	727.0	2'6"	Sst. f to m.g. and c.g. in lower part, and v.c.g. in lower 6"; with pebbles, chert and qtzte to $\frac{1}{2}$ " max diam - in lower 6".
727.0	732.0	1'4"	Sst. v.f.g. to m. and c.g. increase c.g. in lower part; lower part with pebbles and granules, $\frac{1}{4}$ to $\frac{1}{2}$ " diam (steep cross bed, as for all adjacent ssts.)
		2'6"	Sst. v.f. to m. and c.g. v.c.g. in lower 6".
		1'9"	Sst. f.g.; pass down to c.g. and v.c.g. - lower 2" sst. v.f. to f.g.
		0'4"	Mudst. and much plant debris: silty parting in middle.
732.0	742.0	2'0"	Mudst. dk gry. Box 38
		4'3"	Mudst. dk grey; some plant debris; pass to
		4'1"	Mudst. and silty mudst; with ibed and ilam silts: steep cross bed, and disturbed irregular bed: mudst. 60%.
742.0	752.0	5'3"	Interbeds, as for 4'1" above (include one thin bed sst. m.g.) $\angle 72^{\circ} \quad \angle 82^{\circ}$
		4'11"	Sst. m. to v.c.g. in ibed: upper 4" carbon with coaly partings and lenses and plant debris: layers of sh. clasts @ 749'+, 750'+ and 751'+.
752.0	762.0	0'6"	Sst., v.c.g. ; with coalif debris coarse; and sh clasts in lower part; base = eroded contact.
			Sh - mudst. parting. Box 39
		3'6"	Mudst. and silty mudst: partings and ibeds silts; cross bed: pass to - $\angle 85^{\circ}$
		3'0"	Sh. dk grey, clean, fissile.
		0'3"	Sh. dk gry, carbon, fissile: thin coaly laminae and partings.
		0'3"	Coal? rubble
		1'6"	Mudst. dk gry, brn, soft; with lsf: pass to lower 1'0" mudst. dk gry, plant debris and coaly stringers.
762.0	773.0	1'0 "	Mudst. dk grey, brn, soft; fine plant debris; lsf.
		0'6"	Mudst. dk gry brn, soft: some fine plant debris, thin coaly partings.
		1'0"	Mudst. pass to -
		0'8"	Sh. dk gry, carbon, fissile; abundant coaly laminae and partings.
		1'6"	Mudst. dk gry; pass to -
		2'0"	Mudst. silty; pass to - siltstone in lower 1'6"
		0'5"	Mudst: plant debris
		1'10"	mudst, dk gry, brn soft; coarse plant debris and coaly stringers; lsf.
		0'11"	Mudst; lsf: pass to -
		1'5"	Mudst; silty and silts. $\angle 86^{\circ} \quad \angle 80^{\circ}$ Box 40
773.0	783.0	3'0"	Mudst. and silty mudst, with less ibed silts: pass to -
		3'11"	Silts with ibed sh. and silts. in thin alternations, and. few sh. stringers: pass to - $\angle 86^{\circ}$
		1'0"	Mudst. silty in upper 3": pass to mudst. dk gry.
		1'0"	Mudst. dk gry, soft; little - very little plant debris: lsf; core rubble.
		0'3"	Sh. with silty partings.

Interval		Recovery	
From	To		
783.0	793.0	1'0" 0'9" 5'0"	Mudst. dk gry brn; some fine plant debris and lsf. Mudst. silty Mudst. and silty mudst. Read detail from top 7" mudst. 16" mudst. with coaly partings 13" mudst. and silty muds 4" mudst, soft lsf - rubble 21" mudst.
		2'2"	Sh. carbon, fissile: much fine coaly laminae and partings: much plant debris.
		0'8"	Coal : thin banded, bright; part rubble. $\angle 87^{\circ}$ $\angle 78^{\circ}$ in clastics
793.0	803.0	0'7" 1'4" 0'6" 0'1" 0'1"	Mudst. dk gry brn, soft; plant debris; lsf; silty to base and grade to - (uc) Silts. argill. rough bed and contorted bed; plant debris; veined. Mudst. Coal: dull, dark; few bright lenses and thin carb. sh. layers; appear tends to subchanneloid; drift. Mudst. dk gry brn, soft, lsf. Mudst (generalized descript) - dk gry, brn. Var. soft and tough and hard; more or less lsf: more or less plant debris With thin ibed and igrade sh. dk gry = sh. dk gry - fissile, much plant debris, much thin coal laminae and lenses, grade to ilam sh and coal. @ 797'8") in 2 to 4" beds igrade @ 800'0") boundaries.
803.0	813.0	1'8" 7'6"	Mudst. dk gry brn, soft; core rubble and pulver to clay. Mudst dk gry brn, soft, pass to mudst. silty, and mudst. with argill. silts stringers One thin ibed carb. shl. with much coaly laminae and stringers, igrade boundaries. @ 807' to 808' $\angle 77^{\circ}$ @ 813'
		0'7"	Mudst. dk gry, hard; with silty mudst ibed and thin silts. stringers @ base: plant debris.
813.0	823.0	0'3" 2'8" 2'2" 1'5" 0'4" 1'4" 2'10"	Mudst. as above 7" Mudst. dk gry, upper third, soft, much plant debris with coaly partings and stringers, and lsf; pass to mudst. and to mudst. with silty stringers in lower third. Interbed mudst. and argill siltst. and sandy silts with sst. layers: irreg. bed, mudst 50. Mudst as above few silty and sandy stringers; grade to mudst. dk gry in lower 8". Sh. carbon, soft with coaly laminae and plant debris. Mudst. with much plant debris and coaly stringers in upper part: grade down to - Ibed and ilam. mudst. silty mudst. silts. ssts. v.f.g. $\angle 80^{\circ}$

Box 41

Box 42

Interval		Recovery	
From	To		
823.0	833.0	9'0"	Ibed and ilam sequence as above 2'10": pass to silts. in lower part and passing to - Box 43
		1'3"	Ibed and ilam sequence continue from above.
833.0	843.0	1'6"	Sst. v.f.g. silty, argill. and with ilam sh. and with carb. layers with plant debris: lower contact sharp (note: small scale current bed. and larger cross bed and ? slump)
		3'0"	Mudst. dk gry, with silty mudst stringers - decrease in lower part: pass down to mudstone with no plant debris; lower 3" grade to sh. with plant debris.
		0'2"	Sh. bl. carb. much fine plant debris and coaly-carbon. laminae. RS
		0'5"	Coal: thin layered, and shaly in upper part: pass to cleaner banded coal downwards.
		0'3"	Sh. carbon, hard: much plant debris.
		0'10"	Sh. and mudstone; soft, much plant debris; core rubbled.
		0'5"	Coal
		3'4"	Sh. mudstone, with coaly laminae and partings: pass down to mudst with plant debris.
843.0	853.0	0'9"	Mudst. dk gry, brn str, soft, plant debris lsf. grade to -
		0'2"	Sh. dk gry: carbon. much plant debris and with thin coaly laminae.
		0'3"	Coal
		1'4"	Mudst. dk gry, touch: much plant debris and coaly stringers in upper part: grade to -
		2'4"	Mudst. dk grey, with thin ibed and ilam silts. and sandy silts. pass to -
		3'5"	Mudst, with few silty mudst: pass to mudst with few thin ibeds silts. and ssts. L Mudst. 95 Box 43
		0'8"	Mudst. ilam and thin ibed silty mudst. and sandy silts. L Mudst 40 to 50 < 85° 82°
		1'10"	Mudst. dk gry, pass down to silty mudst. < 72°
853.0	863.0	9'8"	Mudst. dk gry. @ 857 to 858' soft mudst. with lsf - mudst. pass down to mudst. with lesser ilam and ibed silty mudst. silts and sandy silts. with coal debris. < 87° 88°
863.0	873.0	7'0"	Mudst with ilam and thin ibed silty mudst, and minor siltstones, sandy; with ibed mudst. brn gry soft, lsf and coaly stringers and partings; in 3½ cycles. Bed, imperfect graded; and small scale current bedding; and disturbed bed. < 78°
		3'0"	Mudst. as above. Box -
873.0	883.0	10'0"	Mudst. as for 863 to 873'. ibeds and ilams etc. < 83°
883.0	893.0	2'0"	Mudst. continue from above; pass to mudst. and silty mudstone in lower part.
		2'4"	Mudst. dk gry with soft brn gry muds in middle part: pass down and grade to -
		0'4"	Sh. dk gry, carb. with coaly laminae; much fine plant debris and lsf.
		0'1"	Coal: thin brigh band.

Interval		Recovery	
From	To		
		0'4"	Sh. dk gry, carb, and thin coaly laminae: pass to mudst. sub fissile, with plant debris and with fine to coarse lsf. $\angle 86^\circ$
		0'2"	Siltst. argill. rough bed, coarse plant debris and coalified rootlet. SE
		0'5"	Mudst. ilam and thin ibed silty mudst and silts. Box -
		2'4"	Mudst. dk gry with plant debris.
		0'3"	Mudst. sub fissile; grade down to sh. and carb. sh. with much plant debris and coaly laminae. Include:
			Coal : parting $\frac{1}{4}$ "
		1'0"	Mudst. dk gry; coal stringers at top and much plant debris and in lower 2", carbon sub fissile mudstone, with coaly laminae. RS
			Coal : parting $\frac{1}{8}$ "
893.0	903.0	2'8"	Mudst. dk gry and plant debris, coarse.
		7'0"	Mudst. with lesser ilam and thin ibed, silty mudst, silts. and few sst. v.f.g.: disturbed bed, and small scale current bed, Mudst. 40 and slump bed. $\angle 82^\circ$
903.0	912.0	2'5"	Mudst. and thin ibed and ilam silty mudst. and silts: coarse plant debris: pass to -
		3'0"	Silts with sh. partings and laminae: plant debris: lower contact sharp.
		3'6"	Mudst. dk gry, plant debris. lower part with silty mudst and silts. ilam and thin ibed. Box -
912.0	922.0	3'0"	Mudst. dk gry; hard, concret. in upper part; sub fissile in lower part.
		2'6"	Mudst. dk gry, brn, soft; much lsf: much plant debris in lower part.
		5'6"	Mudst. dk gry; plant debris; few minor silty laminae.
922.0	932.0	4'5"	Mudst. dk gry, brn: plant debris: much lsf, soft; core rubbled.
		0'9"	Sh. dk gry, carb. fissile: fine coaly laminae: in lower 2 to 3" ilam coal 50%, sh. 50%.
		0'5"	Mudst. compart, pass to mudst. with lsf: plant debris.
		0'9"	Mudst. Box 48
		0'7"	Sh. carb. with thin coaly laminae.
		0'3"	Coal: sh and thin bright banded. $\angle 86^\circ$
		2'10"	Mudst. plant debris: lsf in upper part.
932.0	942.0	10'2"	Mudst; few thin partings of silty mudst with silts and few coaly stringers [Mudst. 93
942.0	952.0	4'9"	Mudst; (top 3" soft, with lsf: lowest 3" soft with lsf) Box 49
		5'7"	Mudst; (top 12" soft with lsf)
952.0	962.0	5'0"	Mudst. dk gry, with coarse plant debris: in lower 3" grade to mudst, sub fissile with fine coaly laminae.
		1'3"	Sh. dk gry, plant debris: grade to
		1'0"	Mudst. silty; grade to silts.
		2'0"	Silts. grey, uniform, no plant debris.
		1'0"	Silts. with sh. and sandy laminae with plant debris.
		1'0"	Thin ibed and ilam, mudst. silty mudst. silts and ssts.

Interval		Recovery	
From	To		
962.0	972.0	3'1"	Mudst. and silty mudst and thin ibeds silts; few sandy partings. Mudst. .60 Box 50
		7'1"	Thin ibed and ilam mudst. silty mudst. silts and sst. Mudst 25 $\angle 86^{\circ}$ minim. 76°
972.0	982.0	0'11"	Ibeds etc. as for 7'1" above.
		6'9"	Mudst. dk gry, plant debris. @ 983 to 984'5" band of mudst, soft.
		2'1"	Mudst. and silty mudst. ibed and ilam; pass to mudst in lower part.
982.0	992.0	2'8"	Mudst. dk gry. Box 51
		7'6"	Mudst. dk gry: few soft bands.
992.0	1002.0	1'3"	Mudst. dk gry.
		3'3"	Mudst and thin ibed and ilam, silty mudst. silts. and ssts. Mudst. 70
		2'11"	Mudst.
		2'3"	Mudst. and thin ibed and ilam silty mudst. silts. and ssts. 85°
1002.0	1013.0	0'2"	Sh. dk gry. carb.
		0'4"	Coal: thin bright banded
		1'0"	Mudst. silty, tough, plant debris, lsf: mineraliz qtz: pass to -
		0'6"	Mudst. dk gry, brn, soft and lsf. Box 52
		8'4"	Mudst. and mudst. with ibed and ilam silty mudst. silts. and ssts. $\angle 80^{\circ}$
1013.0	1023.0	10'2"	Mudst. dk gry; few soft bands. Box -
1023.0	1033.0	9'11"	Mudst. dk gry and silty mudsts, with thin ibed silts. in lower part. $\angle 86^{\circ}$
1033.0	1043.0	7'6"	Mudst. and silty mudst; with few thin ibed silts. in 3 cycles pass to mudst. in lower part with incr. plant debris.
		1'5"	Mudst. pass to carb. sh. with thin coaly laminae.
		0'4"	Coal: thin banded. $\angle 85^{\circ}$ 86°
		0'2"	Mudst. soft, lsf. sub fissile and pass to -
		0'4"	Sh. soft, with coaly partings grade to ilam sh. and coal.
		0'5"	Mudst, with coalif. plant debris.
1043.0	1053.0	10'2"	Mudst. dk gry: few soft bands.
1053.0	1063.0	1'0"	Mudst. grad to -
		1'9"	Sh. dk gry carbon; with coaly laminae, inc in lower part.
		0'1"	Coal
		0'6"	Mudst. sh. with coaly laminae - incr. in lower part and pass to coaly shale.
		0'3"	Coal - shaly and dull, with thin bright bands.
		0'1"	Sh. with coaly laminae.
		0'4"	Coal: thin and thick bright bands.
		2'0"	Mudst.
		0'4"	Mudst. silty.
		1'6"	Mudst. and thin ibed silty mudst and silts. $\angle 85^{\circ}$
			END.

Grid Reference 39138.17 N 86456.21 E

Exploration Grid Reference H + 1600/2

Date Commenced 27th Nov., 1969 Completed 1st Dec., 1969

Collar R.L. 3592.2 ft. Standard Datum

Total Depth 545 ft. Electrically Logged *Yes/No*

Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G. R. Jordan.

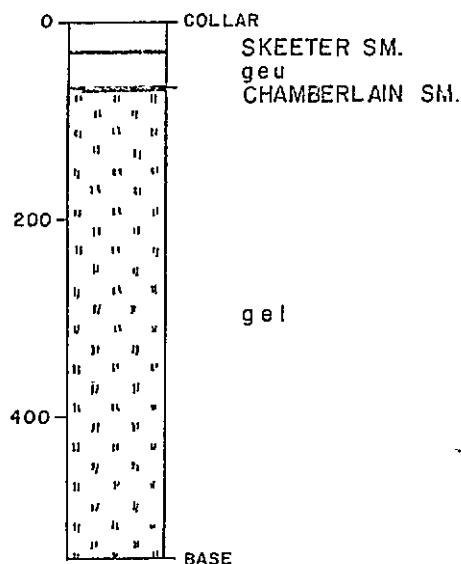
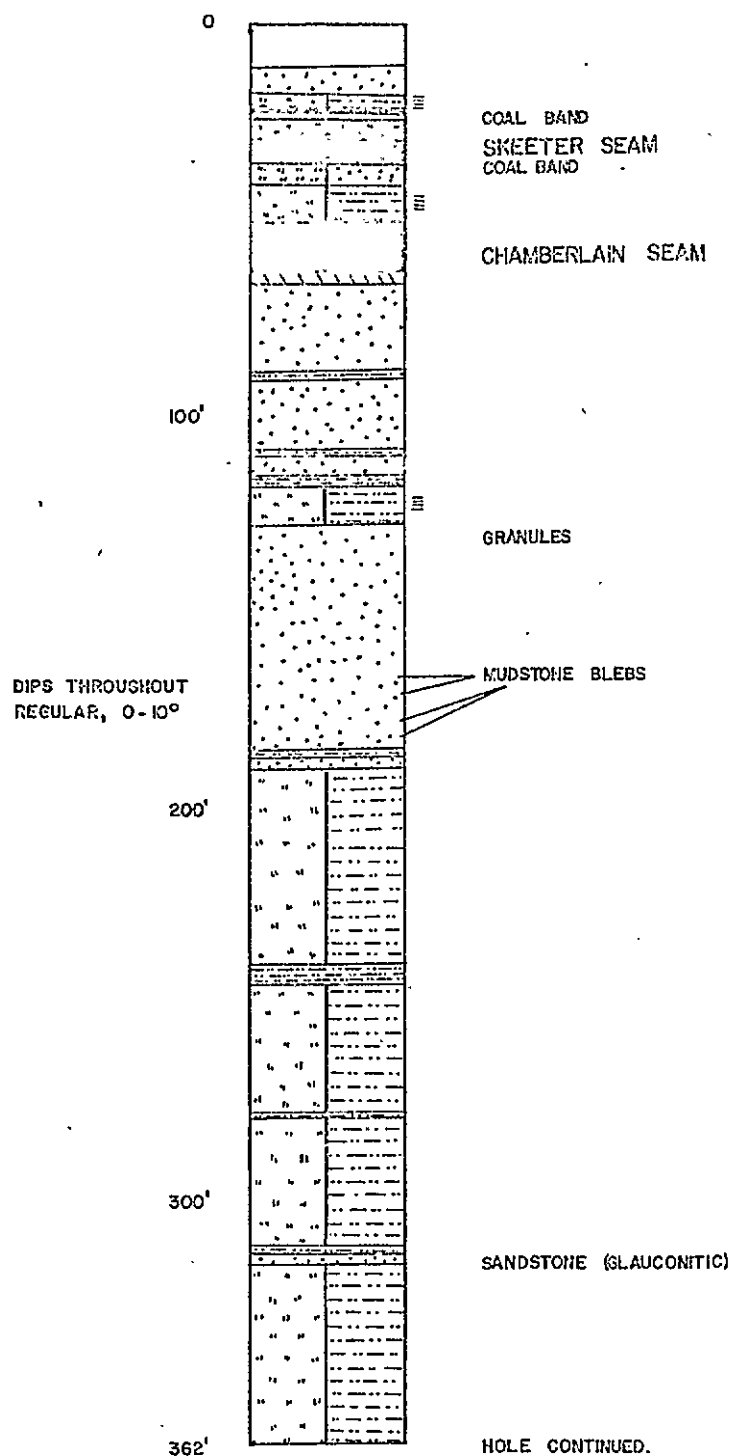
COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3558	4.0	37.5%	Not Sampled
Chamberlain	3529	8.83	73.6%	

**GEOLOGICAL BRANCH
ASSESSMENT REPORT**

~~00 646~~

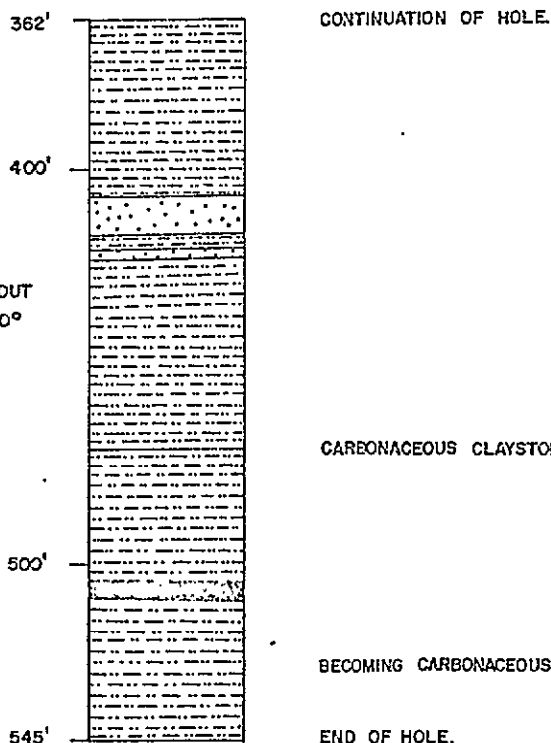
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SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-4



DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-4

DRAWN BY S A

DATE: October '71

PAGE 2 of 2

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-4

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 11.0 ft.		
	SANDSTONE.	GETHING FM.	18.0
	LAMINITE, siltstone and mudstone, mudstone at base.		23.0
	<u>COAL</u> , band 0.5'.		24.0
	SILTSTONE-MUDSTONE INTERBEDS, mudstone at base.		30.0
	<u>COAL</u> .	SKEETER SM.	34.0
	CLAYSTONE, coal band at base.		35.0
	SANDSTONE, silty interbeds.		41.0
	LAMINITE, siltstone and mudstone, mudstone at base.		54.0
	<u>COAL</u> .	CHAMB. SM.	63.0
	CLAYSTONE, carbonaceous.		66.0
	SANDSTONE, mudstone bands at 90', 110' and 117'. Course at top, fine at base.		119.0
	SILTSTONE AND MUDSTONE INTERBEDDED, granule conglomerate at base.		128.0
	SANDSTONE, mudstone breccia 167', 180'		

Structure	Description of Strata	Formation or Member	Depth Base of Stratum (ft)
	182', mudstone band at 185', 187'.		190.0
	SILTSTONE AND MUDSTONE INTERBEDDED, mudstone band at 240', and at base.		314.0
	SANDSTONE, glauconitic.		316.0
	SILTSTONE, mudstone interbeds.		362.0
	MUDSTONE, silty interbeds.		407.0
	SANDSTONE, mudstone phases at base.		424.0
	MUDSTONE, carbonaceous claystone, silty phases, sand at 471'.		505.0
	COAL.	A'	509.0
	MUDSTONE, carbonaceous phases towards base.		545.0
			<u>Base of Hole</u>

BORE NUMBER S-5

Grid Reference 46406.04 N 85663.51 E

Exploration Grid Reference D/3 + 1600

Date Commenced 27th Nov., 1969 Completed 8th Dec., 1969

Collar R.L. 4125.2 ft. Standard Datum

Total Depth 938 ft. Electrically Logged Yes/No

Drilled by Connors Drilling Ltd.

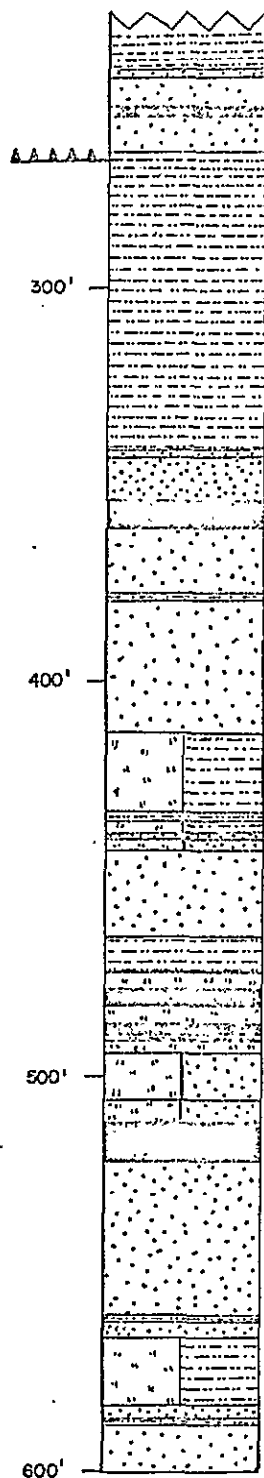
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3636	11.20	35.7%	Not Sampled
Chamberlain	3604	9.39	85.1%	

00641



MOOSEBAR FORMATION
SANDSTONE (GLAUCONITIC)
COALY WISPS
BIRD SEAM
MOTTLED (WORM CASTS)

MOOSEBAR FORMATION

SANDSTONE (GLAUCONITIC)
PEBBLES
BIRD SEAM
MOTTLED WORM CASTS

WORM CASTS

SILTY BAND
COALY WISPS
SANDY BLEBS

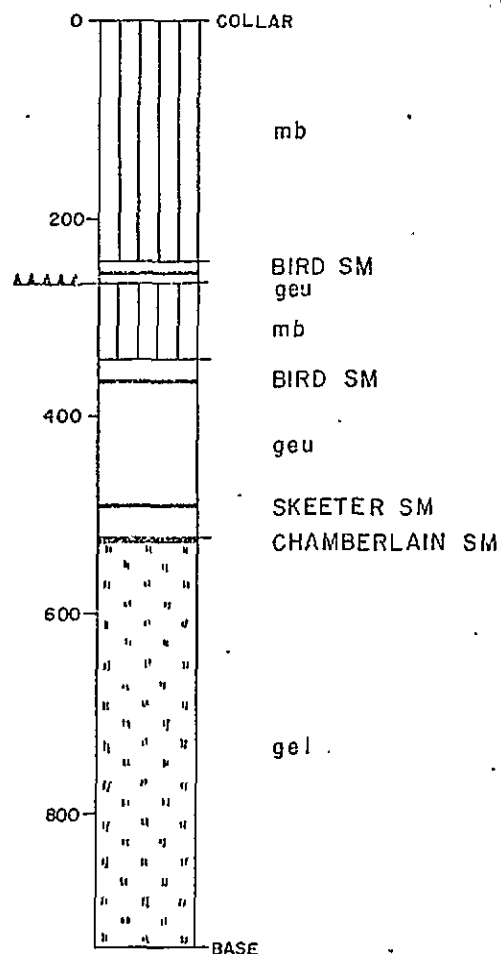
SKEETER SEAM

CHAMBERLAIN SEAM

SANDSTONE PHASES

GRANULES

HOLE CONTINUED:



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by:

CLIFFORD McELROY & ASSOCIATES PTY. LTD.

for

COALITION MINING LIMITED

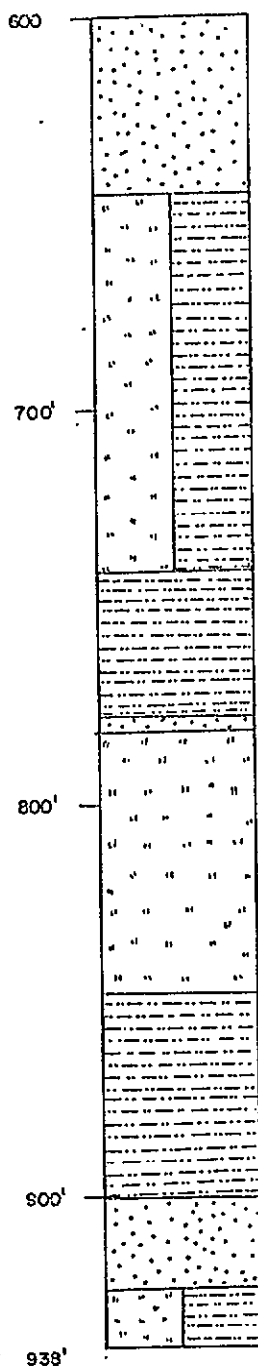
STRATIGRAPHIC LOGS

DDH S-5

DRAWN BY SA

DATE: October '71

PAGE 1 of 2



CONTINUATION OF HOLE.

MUDSTONE BLEBS

SANDSTONE (GLAUCONITIC)
SILTSTONE (SANDSTONE PHASES)

SILTSTONE (SANDSTONE PHASES)

SANDSTONE PHASES
END OF HOLE.

DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by:
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-5

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-5

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth Base of Stratum (ft)</i>
	No core to 18.0 ft.		
	MUDSTONE.	MOOSEBAR	245.0
	SANDSTONE, glauconitic.	GETHING	247.0
	SANDSTONE, carbonaceous in centre.		255.0
	<u>COAL.</u>	BIRD SEAM	256.0
Fault, established	SANDSTONE, mottled (worm casts) at 264'.		266.0
	MUDSTONE.	MOOSEBAR	342.0
	SANDSTONE, glauconitic.	GETHING.	344.0
	SANDSTONE.		354.0
	<u>COAL.</u>	BIRD SEAM	361.0
	SANDSTONE, coarse at top, fine at base, mottled (worm casts) at 367', mudstone band at 279'.		414.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, mudstone at 434'.		438.0
	SANDSTONE.		440.0
	LAMINITE, siltstone and mudstone, mudstone interbeds.		443.0

Structure	Description of Strata	Formation or Member	Depth Base of Stratum (ft)
	SANDSTONE WITH COALY WISPS, silty band at 447', sandy blebs at 461'.		464.5
	MUDSTONE, coaly bands near base.		474.0
	SILTSTONE.		478.0
	<u>COAL.</u>)		482.0
)		
	SILTSTONE, mudstone interbeds)	SKEETER SM.	487.5
)		
	<u>COAL.</u>)		489.5
	SILTSTONE, mudstone phases, mudstone at top.		494.5
	SANDSTONE AND SILTSTONE INTERBEDS.		506.0
	LAMINITE, siltstone and mudstone, mudstone interbeds.		512.5
	<u>COAL.</u>	CHAMB. SM.	521.5
	SANDSTONE, mudstone band at 562'.		566.0
	SILTSTONE AND MUDSTONE INTERBEDDED, granules at base, sandy phases in top half.		583.0
	SANDSTONE, sedimentary mud blebs at 632' and 637'.		645.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		743.0
	MUDSTONE.		777.0

Structure	Description of Strata	Formation or Member	Depth Base of Stratur (ft)
	SANDSTONE, glauconitic.		781.0
	SILTSTONE, sandy phase, mudstone in centre.		848.0
	MUDSTONE, some silty phases.		902.0
	SANDSTONE.		923.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases throughout.		938.0
			<u>Base of Hole</u>

Grid Reference 50380 N 78290 E
Exploration Grid Reference A + 1400' / 1 + 1800'

Date Commenced 9th Feb., 1970 Completed 11th Feb., 1970

Collar R.L. 3806 ft. Standard Datum
Total Depth 232 ft. Electrically Logged Yes/No
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
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00 641

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-9

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth : Base of Stratum (ft)</i>
	No core to 15.0 ft.		
	SANDSTONE, weathered.	GETHING	25.0
	<u>COAL.</u>		26.0
	SANDSTONE, worm casts, 45', mottled (worm casts) 73'.		121.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at top.		142.0
	SANDSTONE, coarse phase at top.		153.0

BORE NUMBER S-10

Grid Reference 36325.1 N 88179.00 E

Exploration Grid Reference I + 300' / 1 + 1900'

Date Commenced

Completed

Collar R.L. 4110.5 ft.

Standard Datum

Total Depth 232 ft.

Electrically Logged ~~Yes~~/No

Drilled by Connors Drilling Ltd.

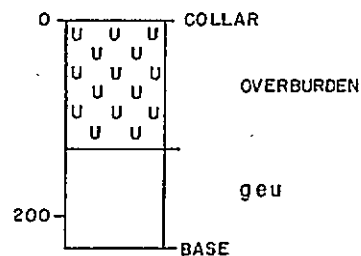
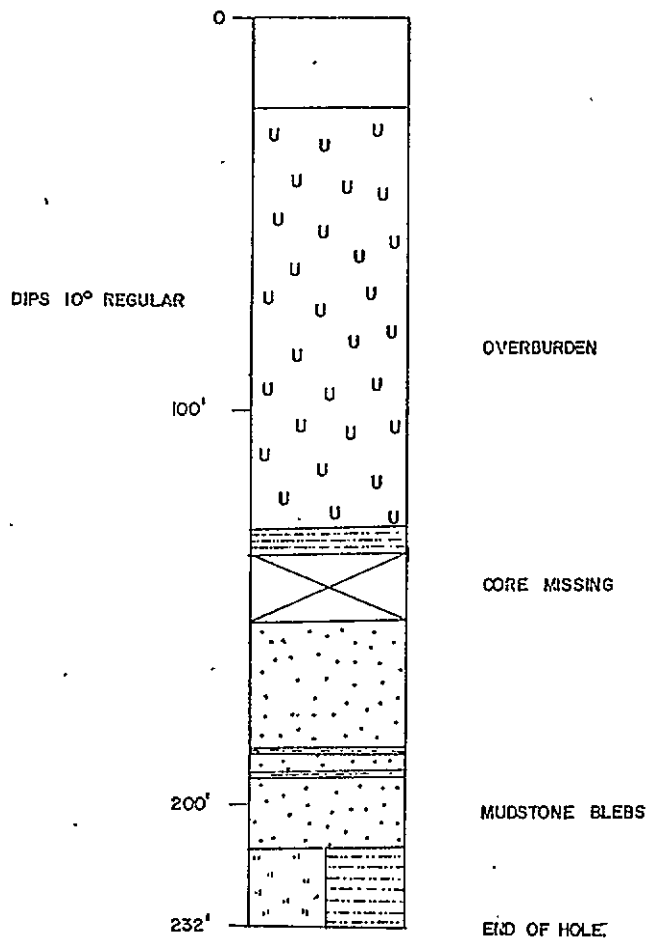
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
------	---------------	--------------------	----------	---------

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-10

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-10

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 17.0 ft.		
	SANDSTONE, conglomerate overburden.	GETHING	130.0
	MUDSTONE.		136.0
	? CORE MISSING.		154.0
	SANDSTONE, mudstone band at 187' and 193', mud breccia, 200'.		212.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		232.0
			<u>Base of Hole</u>

BORE NUMBER S-13

Grid Reference 37997.2N 88578.6E

Exploration Grid Reference I+1400'/2+1200'

Date Commenced 8th March, 1970 Completed 10th March, 1970

Collar R.L. 3965'

Standard Datum

Total Depth 408'

Electrically Logged Y~~es~~/No

Drilled by Connors Drilling Ltd.

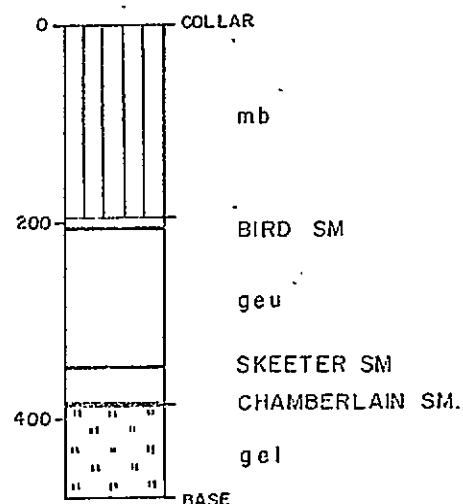
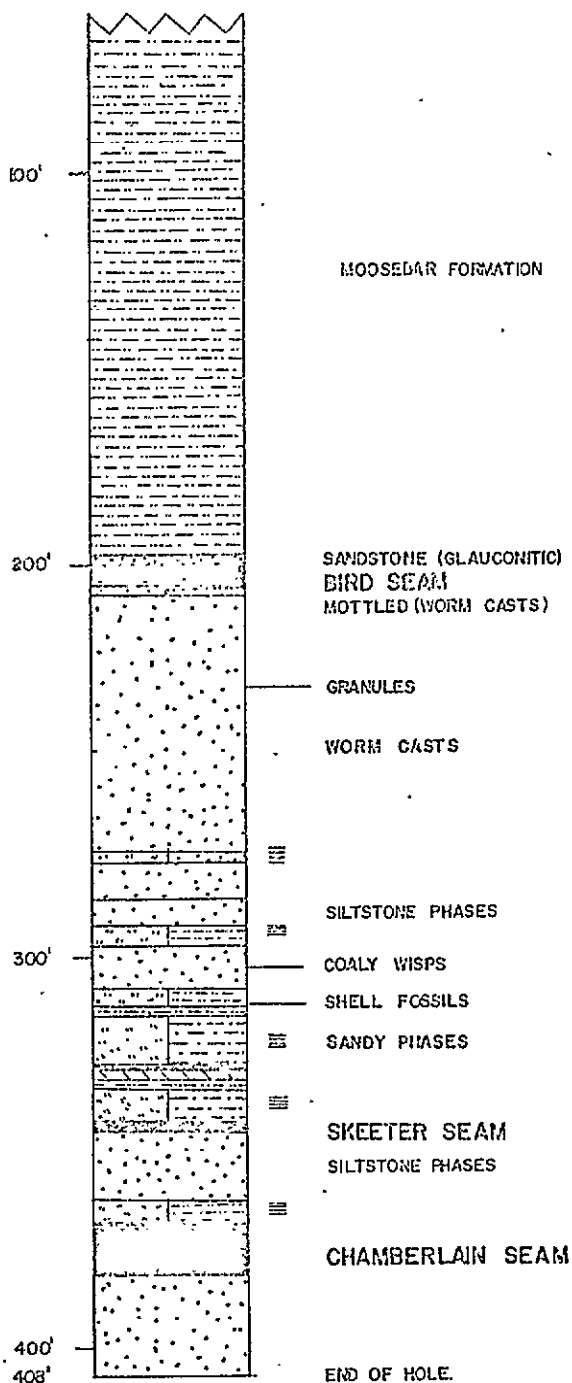
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and J.R. Gordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	3640	11.5	100%	

00641



DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-13

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

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

REPORT OF: Chemical Analysis

FILE NO: 465 - 11037

AT: Vancouver Laboratory

DATE: March 20, 1970

PROJECT: Coal Sample

REPORT NO:

REPORTED TO: Brameda Resources Ltd.,
7th Floor - 1177 West Hastings Street
Vancouver, B.C.

ORDER NO.

ATTENTION: Mr. L.S. Trenholme

We have tested four samples of coal submitted by you on March 18, 1970 and report as hereunder:

TEST RESULTS	CHAMBERLAIN		SEAM	
	4445-453.0	369.5-381.0	246.0-257.0	224.0-237.5
	Sample S12-1	Sample S13-1	Sample S14-1	Sample S15-1
Total Moisture (as received)	1.92 %	1.64 %	3.44 %	1.92 %
Surface Moisture (as received)	1.53 %	1.13 %	3.00 %	1.50 %
Inherent Moisture (air dry)	0.40 %	0.52 %	0.45 %	0.43 %
Ash (air dry)	4.95 %	5.65 %	8.00 %	6.55 %
Volatile Matter (air dry)	23.45 %	24.23 %	24.80 %	22.25 %
Fixed Carbon (air dry)	71.20 %	69.60 %	66.75 %	70.77 %
B.T.U.'s per lb. (air dry)	15,269	15,170	14,696	14,970
Sulphur (air dry)	0.46 %	0.47 %	0.52 %	0.45 %
Free Swelling Index (air dry)	8 - 1/2	7 - 1/2	7	7

Weights of "s" samples as received

S11-1	-	2.75 lbs.
S11-2	-	6.75 lbs.
S12-1	-	13.00 lbs.
S13-1	-	26.50 lbs.
S14-1	-	6.50 lbs.
S15-1	-	9.00 lbs.

WARNOCK HERSEY

T.M. Williams

T.M. Williams
SUPERVISOR, GENERAL LABORATORY

FROM OR RECORDING

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-13

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth Base of Stratum (ft)</i>
	No core to 61.5 ft.		
	MUDSTONE, ash beds at base.	MOOSEBAR	198.5
	SANDSTONE, glauconitic.	GETHING.	199.5
	<u>COAL</u> .	BIRD SEAM	203.0
	MUDSTONE, carbonaceous.		206.0
	CLAY, white, fretted.		206.5
	SILTSTONE AND MUDSTONE INTERBEDDED, coal band at base (1").		208.5
	SANDSTONE, mottled (worm casts), 213'. Granules at 233', worm casts 233- 262', laminite band 275'.		286.0
	SANDSTONE, silty phases.		293.0
	LAMINITE, siltstone and sandstone.		297.0
	SANDSTONE, coaly wisps.		309.0
	SILTSTONE AND MUDSTONE INTERBEDDED, carbonaceous mudstone at base, shell fossils at top of mudstone.		315.0
	LAMINITE, siltstone and mudstone, sandy phase in centre, mudstone at base.		329.0
	CLAYSTONE, carbonaceous.		331.0

Structure	Description of Strata	Formation or Member	Depth Base of Stratum (ft)
	LAMINITE, siltstone and mudstone, mudstone phase, 333'. <u>COAL.</u> SANDSTONE, silty phases. LAMINITE, siltstone and mudstone, mudstone at base. <u>COAL.</u> SANDSTONE.	CHAMB. SM.	343.0 344.0 363.0 369.5 381.0 408.0 Base of <u>Hole</u>

Grid Reference 38154.2N 85278.7E
Exploration Grid Reference H+1400'/1+600'

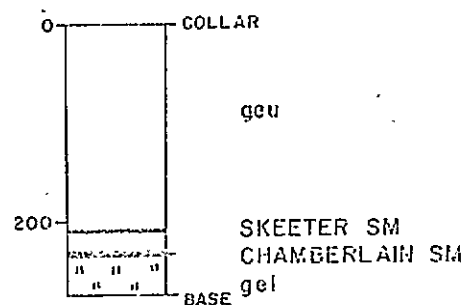
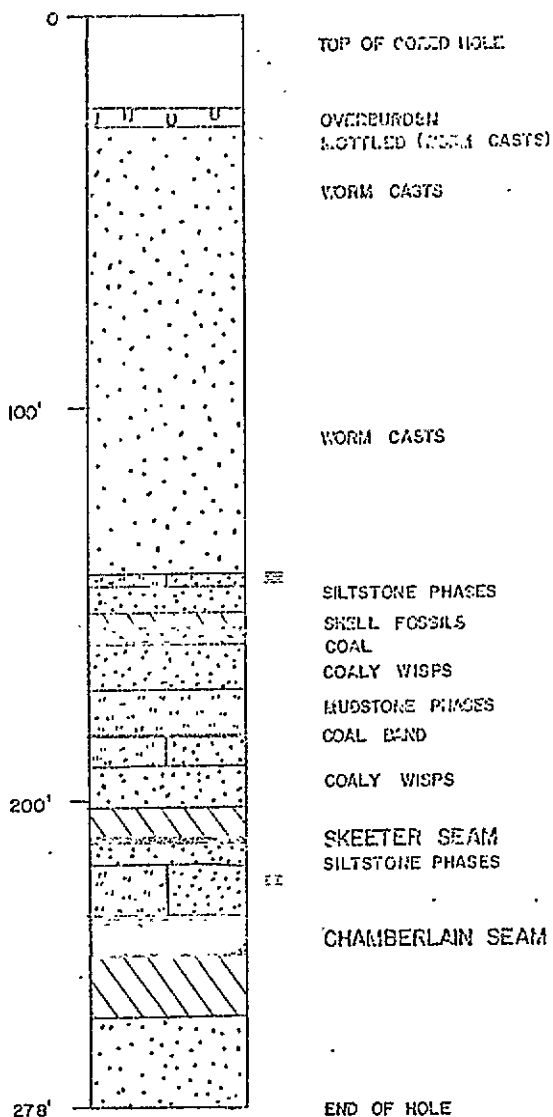
Date Commenced 13th March, 1970 Completed 14th March, 1970

Collar R.L. 3983.1' Standard Datum
Total Depth 278' Electrically Logged Yes/No
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3773.6	1.0	100%	
Chamberlain	3745.6	8.0	94%	

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by:
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-15

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

REPORT OF Chemical Analysis.

FILE NO. 465 - 11037

AT Vancouver Laboratory

DATE March 20, 1970

PROJECT, Coal Sample

REPORT NO:

REPORTED TO: Brameda Resources Ltd.,
7th Floor - 1177 West Hastings Street
Vancouver, B.C.

ORDER NO.

ATTENTION: Mr. L.S. Trenholme

We have tested four samples of coal submitted by you on March 18, 1970 and report as hereunder:

TEST RESULTS	CHAMBERLAIN SEAM			
	444.5 - 453.0	369.5 - 381.0	246.0 - 257.0	224.0 - 237.5
	Sample S12-1	Sample S13-1	Sample S14-1	Sample S15-1
Total Moisture (as received)	1.92 %	1.64 %	3.44 %	1.92 %
Surface Moisture (as received)	1.53 %	1.13 %	3.00 %	1.50 %
Inherent Moisture (air dry)	0.40 %	0.52 %	0.45 %	0.43 %
Ash (air dry)	4.95 %	5.65 %	8.00 %	6.55 %
Volatile Matter (air dry)	23.45 %	24.23 %	24.80 %	22.25 %
Fixed Carbon (air dry)	71.20 %	69.60 %	66.75 %	70.77 %
B.T.U.'s per lb. (air dry)	15,269	15,170	14,696	14,970
Sulphur (air dry)	0.46 %	0.47 %	0.52 %	0.45 %
Free Swelling Index (air dry)	8 - 1/2	7 - 1/2	7	7

Weights of "s" samples as received

S11-1	-	2.75 lbs.
S11-2	-	6.75 lbs.
S12-1	-	13.00 lbs.
S13-1	-	26.50 lbs.
S14-1	-	6.50 lbs.
S15-1	-	9.00 lbs.

WARNOCK HERSEY

T.M. Williams

SUPERVISOR, GENERAL LABORATORY

TELEPHONE FROM OR REGARDING

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-15

Structure	Description of Strata	Formation or Member	Depth Base of Stratum (ft.)
All angles 0°-10°	No core to 24.0 ft.	GETHING FM.	
	OVERBURDEN.		27.0
	SANDSTONE, coarse at top, becoming finer, mottled (worm casts) at 33', worm casts 46', 98', 121', core broken, brecciation 161'-171'. Mudstone band 127'-128' and 130' - 132'.		141.0
	LAMINITE, siltstone and mudstone, mudstone at base, siltstone and mudstone.		144.5
	SANDSTONE, silty phases at base.		152.0
	MUDSTONE, carbonaceous, shell fossils at base.		156.0
	<u>COAL.</u>		156.5
	MUDSTONE.		157.0
	SANDSTONE, coaly wisps.		171.0
	SILTSTONE, mudstone phases, coal band at base.		184.0
	SILTSTONE.		191.0
	SANDSTONE, coaly wisps.		201.0

Structure	Description of Strata	Formation or Member	Section Base Strata (Feet)
	MUDSTONE, carbonaceous phases.		210.0
	<u>COAL.</u>	SKEETER SM.	211.0
	SANDSTONE, silty interbeds.		215.0
	LAMINITE, siltstone and mudstone, mudstone at base.		231.0
	<u>COAL.</u>	CHAMB. SM.	239.0
	MUDSTONE, carbonaceous.		255.0
	SANDSTONE.		278.0
			Base of <u>Hole</u>

BORE NUMBER S-18

Grid Reference 46830.7N 83298.8E
Exploration Grid Reference D+1700'/2+1900'

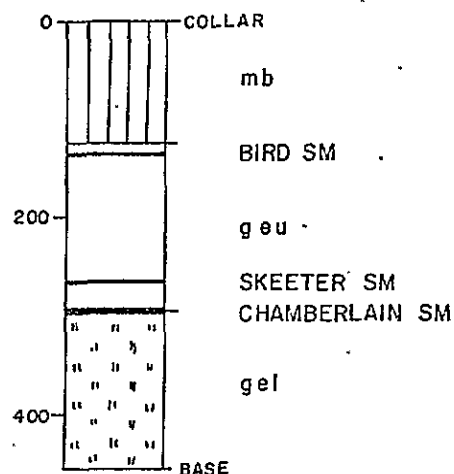
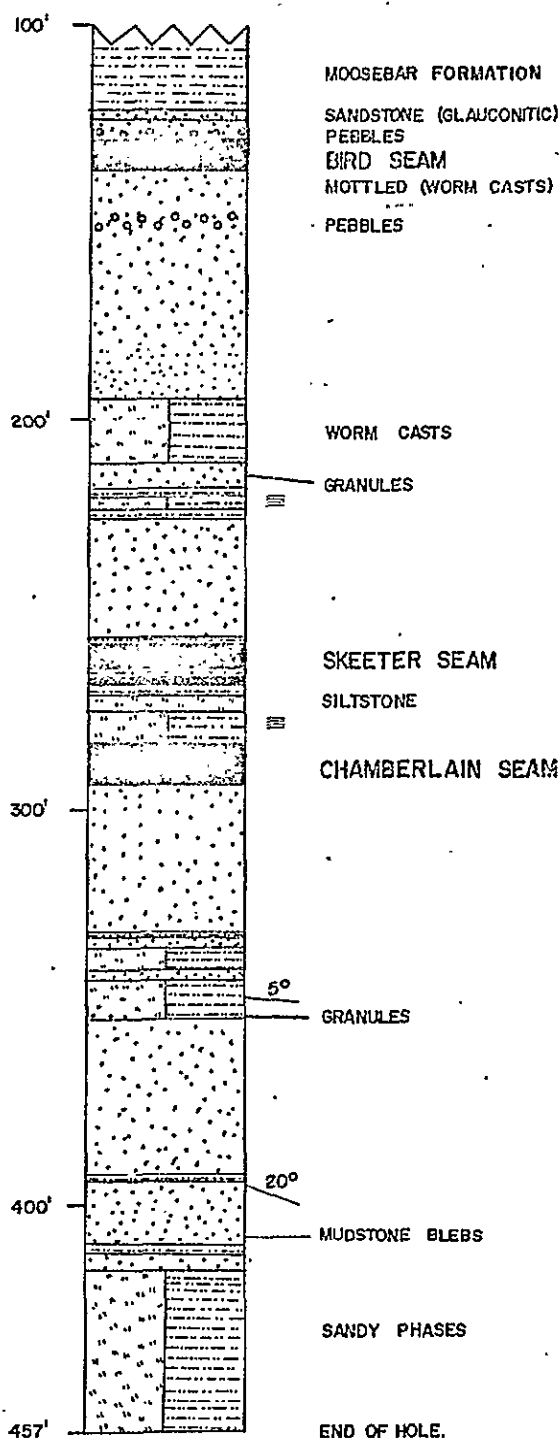
Date Commenced 28th March, 1970 Completed 1st April, 1970

Collar R.L. 4054.0 Standard Datum
Total Depth. 457 Electrically Logged Yes/No
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter.	3786.3	8.5	56%	
Chamberlain	3761.3	9.7	85%	

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-18

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *SKEETER* Report No. 69-0021
Sukunka Coal Project
Sample No. A-18-2, Hole S-18 258.3-263.6 L.S.F.
Seam - UC
P. O. No. S O O 3

% Total Moisture 0.65

Air Dry Basis

% Moisture	0.65
% Ash	7.30
% Volatile	23.33
% Fixed Carbon	68.72
	<u>100.00</u>

Btu	14250
% Sulfur	0.42

FREE SWELLING INDEX (CBI) 8

Weight of sample as received
in laboratory 5.560 lbs.

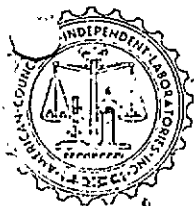
Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

SK

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN* Report No. 69-0019
Sukunka Coal Project
Sample No. A-18-1, Hole S-18 282.5-292.0 L.S.F.
Seam - C
P. O. No. S O O 3

% Total Moisture 0.93

Air Dry Basis

% Moisture	0.75
% Ash	4.73
% Volatile	23.72
% Fixed Carbon	70.80
	<u>100.00</u>

Btu	14668
% Sulfur	0.46

FREE SWELLING INDEX (CBI) 7-1/2

Weight of sample as received
in laboratory 11.764 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-18

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 98.0 ft.		
	MUDSTONE, ash bands at base.	MOOSEBAR FM.	122.0
	SANDSTONE, glauconitic.	GETHING FM.	124.0
	SANDSTONE, pebbles at base.		130.0
	<u>COAL.</u>	BIRD SEAM	134.0
	MUDSTONE, split.		135.0
	<u>COAL.</u>		136.0
	SANDSTONE, coarse in top half, fine at base. Mottled (worm casts) (140'), pebble band (150'), siltstone and mudstone interbedded, worm casts, granule conglomerate at base.		195.0
	SANDSTONE, mudstone band (214'), mudstone band at base.		219.0
	LAMINITE, siltstone and mudstone, mudstone at base.		225.0
	SANDSTONE, coaly wisps, mudstone base.		258.0
	<u>COAL.</u>	SKEETER SM.	263.5

Structure	Description of Strata	Formation or Member	Depth to Base of Stratun. (ft)
	MUDSTONE, band.		266.0
	<u>COAL</u> , (1').		267.0
	MUDSTONE.		268.0
	SILTSTONE, mudstone phases.		273.0
	LAMINITE, siltstone and mudstone. mudstone phases.		283.0
	<u>COAL</u> .	CHAMB. SM.	293.0
	SANDSTONE, mudstone band (332').		335.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		340.5
	SANDSTONE.		343.5
	SILTSTONE AND MUDSTONE INTERBEDDED.		353.0
	CONGLOMERATE, granule.		354.0
	SANDSTONE, mudstone band at 393', sedimentary mudstone blebs 412', 417'.		417.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at top.		457.0
			<u>Base of Hole</u>

BORE NUMBER S-19

Grid Reference 48702.7N 82103.5E

Exploration Grid Reference C+1900'/3

Date Commenced 3rd April, 1970 Completed 5th April, 1970

Collar R.L. 3983.5

Standard Datum

Total Depth 201

Electrically Logged Yes/No

Drilled by Connors Drilling Ltd.

For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3912.7	8.0	75%	
Chamberlain	3891.7	6.4	46%	

00641

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *SKEETER*
Sukunka Coal Project
Sample No. A-19-3, Hole S-19
Seam - UC
P. O. No. S O O 3

Report No. 69-0018

134.5 - 142.0 L.S.V.

% Total Moisture 0.87

Air Dry Basis

% Moisture	0.87
% Ash	12.89
% Volatile	21.85
% Fixed Carbon	64.39
	<u>100.00</u>

Btu	13330
% Sulfur	0.45

FREE SWELLING INDEX (CBI) 7

Weight of sample as received
in laboratory 7.372 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

SK.

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *SKEETER* ~~CHAMBERLAIN~~ Report No. 69-0016
Sukunka Coal Project
Sample No. A-19-1, Hole S-19 *CHAMBERLAIN TOP BENCH*
Seam - C *158.0 - 163.0*
P. O. No. S O O 3

% Total Moisture 0.74

Air Dry Basis

% Moisture	0.74
% Ash	3.71
% Volatile	21.83
% Fixed Carbon	73.72
	<u>100.00</u>

Btu	14771
% Sulfur	0.46

FREE SWELLING INDEX (CBI) 4-1/2

Weight of sample as received
in laboratory 2.491 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN*
Sukunka Coal Project
Sample No. A-19-2, Hole S-19
Seam - C or C/split
P. O. No. S O O 3

Lower Bench 168.0 - 170.0 L.S.F.
Report No. 69-0017

~~168.5~~ *L.S.F.*

% Total Moisture 1.51

Air Dry Basis

% Moisture	0.74
% Ash	3.68
% Volatile	25.78
% Fixed Carbon	69.80
	<u>100.00</u>

Btu	14896
% Sulfur	0.52

FREE SWELLING INDEX (CBI) 9

Weight of sample as received
in laboratory 1.698 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-19

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 30.0 ft.		
	SANDSTONE, mudstone band at 66.0'.	GETHING FM.	68.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		84.0
	SANDSTONE, mudstone band at 88'.		97.0
	LAMINITE, siltstone and mudstone, mudstone at top.		103.0
	SANDSTONE, mudstone band (126').		133.0
	<u>COAL</u> , mudstone at top.	SKEETER SM.	142.0
	CLAYSTONE, carbonaceous.		144.0
	SILTSTONE, with mudstone phases.		148.0
	LAMINITE, siltstone and mudstone, mudstone phase.		157.0
	<u>COAL</u> .	CHAMB. SM.	167.0
	SANDSTONE.		168.0
	<u>COAL</u> , 2' seam.		170.0
	SANDSTONE, coarse at top becoming fine at base, mottled (worm casts) (174').		201.0
			Base of Hole

BORE NUMBER S-20

Grid Reference 44193.3N 82959.7E

Exploration Grid Reference E+1700'/2+200'

Date Commenced 6th April, 1970

Completed 14th April, 1970

Collar R.L. 4863.0

Standard Datum

Total Depth 1267

Electrically Logged Yes/No

Drilled by Connors Drilling Ltd.

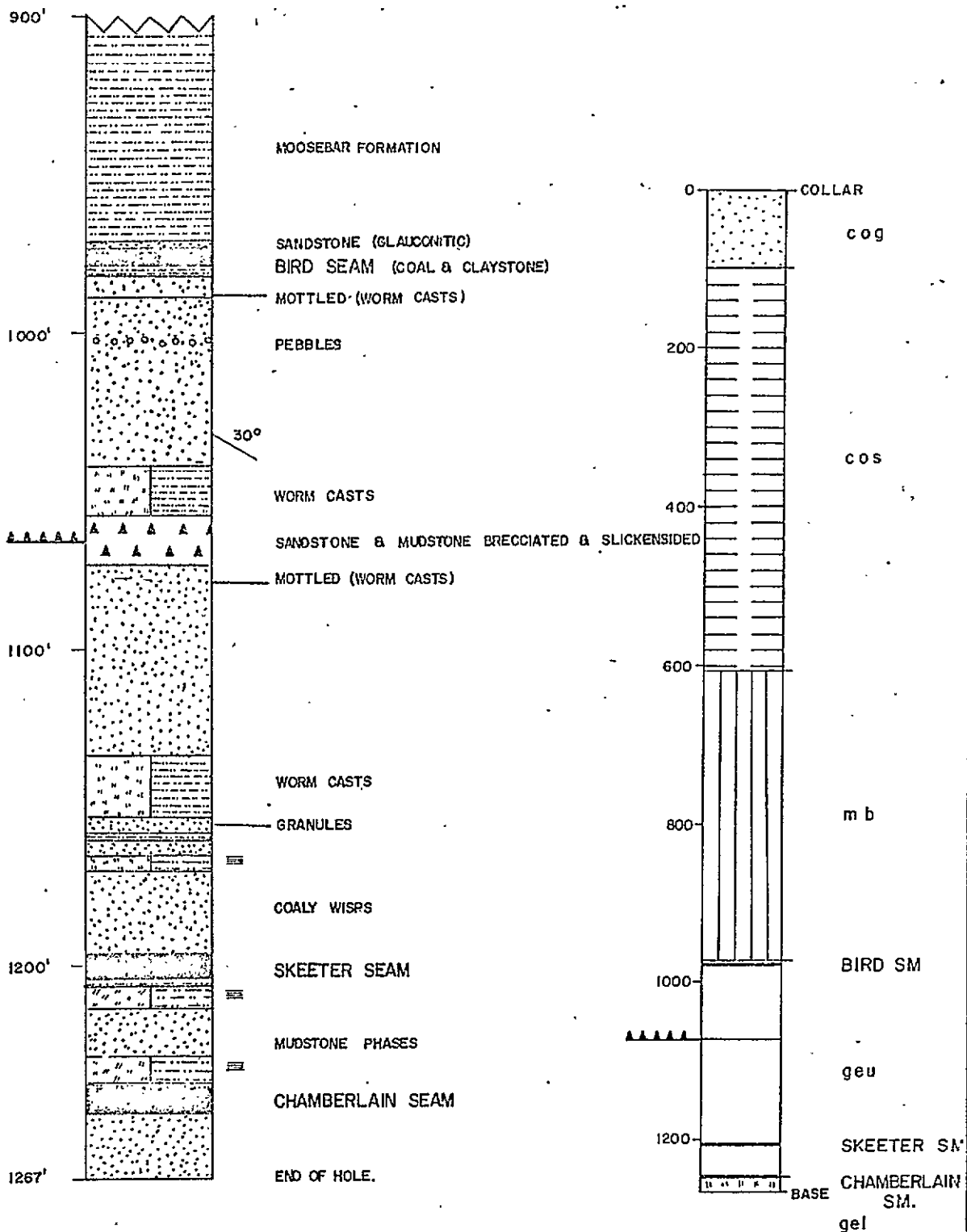
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3660.0	4.53	66%	
Chamberlain	3617.0	7.25	62%	

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 20

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 220 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. A-20-3, Skeeter
Hole S-20
1197.3 - 1202.9 *K.S.F.*
Cored - 5.6
Recovered - 2.8

Report No. 67-0077

% Total Moisture	1.47
------------------	------

AIR DRY BASIS

% Moisture	0.75
% Ash	13.58
% Volatile	23.25
% Fixed Carbon	62.42
	<u>100.00</u>

Btu	13243
% Sulfur	0.66

FREE SWELLING INDEX (CBI)	6
---------------------------	---

Weight of sample as received in laboratory - 2.696 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN* Report No. 69-0020
Sukunka Coal Project
Sample No. A-20-1, Hole S-20 1238.0 - 1246.0 A.S.F.
Seam - C
P. O. No. S O O 3

% Total Moisture 1.88

Air Dry Basis

% Moisture	0.58
% Ash	6.85
% Volatile	24.70
% Fixed Carbon	67.87
	<u>100.00</u>

Btu	14334
% Sulfur	0.50

FREE SWELLING INDEX (CBI) 6-1/2

Weight of sample as received
in laboratory 3.049 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-20

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 10.0 ft.		
	SANDSTONE AND CONGLOMERATE.	GATES MB.	100.0
	SILTSTONE, MUDSTONE AND SANDSTONE, worm casts.	SUKUNKA MB.	608.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	971.0
	SANDSTONE, glauconitic.	GETHING FM.	973.0
	SANDSTONE, pebbles at base.		975.0
	<u>COAL</u> AND CLAYSTONE.	BIRD SEAM	978.0
	MUDSTONE.		980.5
	SANDSTONE, coarse at top, fine at base, mottled (worm casts) 989', pebble band 1003'.		1042.0
	SILTSTONE AND MUDSTONE INTERBEDS, worm casts, granules at base.		1058.0
Fault, established	SANDSTONE AND MUDSTONE, breccia, slickensides.		1073.0
	SANDSTONE, coarse at top, fine at base, mottled (worm casts) 1079'.		1134.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		1153.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	SANDSTONE, mudstone band at 1158'.		1165.0
	LAMINITE, siltstone and mudstone.		1170.0
	SANDSTONE, coaly wisps.		1197.0
	MUDSTONE.		1198.0
	<u>COAL.</u>	SKEETER SM.	1203.0
	LAMINITE, siltstone and mudstone, mudstone at top.		1214.0
	SANDSTONE, mudstone phases.		1228.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1238.0
	<u>COAL.</u>	CHAMB. SM.	1246.0
	SANDSTONE.		1267.0
			<u>Base of Hole</u>

BORE NUMBER

S-21

Grid Reference 45570.1N 84430.5E

Exploration Grid Reference D/3

Date Commenced 9th April, 1970 Completed 14th April, 1970

Collar R.L. 4350.2

Standard Datum

Total Depth 658

Electrically Logged Yes/No

Drilled by Connors Drilling Ltd.

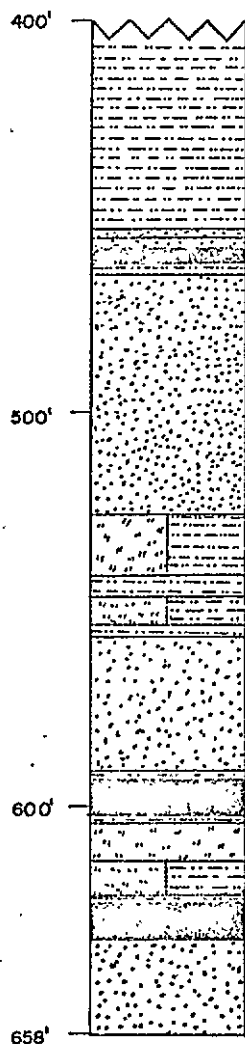
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3748.3	12.35	58%	
Chamberlain	3716.3	8.4	80%	

00641



MOOSEBAR FORMATION

SANDSTONE (GLAUCONITIC)
PEBBLES
BIRD SEAM
MOTTLED (WORM CASTS)

PEBBLES

WORM CASTS

GRANULES

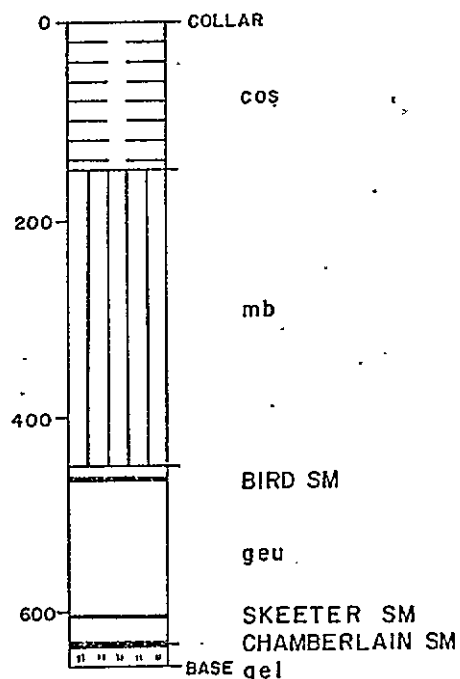
COALY WISPS

SKEETER SEAM

SANDSTONE PHASES

CHAMBERLAIN SEAM

END OF HOLE



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-21

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 9, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *SKEETER* Report No. 69-0039
Sample No. A-21-2
P. O. No. S O O 3 *J-21 593.8-602.0 L.S.V.*

% Total Moisture

0.93

Air Dry Basis

% Moisture

0.83

% Ash

9.83

% Volatile

23.11

% Fixed Carbon

66.23

100.00

Btu

13838

% Sulfur

0.45

FREE SWELLING INDEX

7

Weight of sample as received
in laboratory

9.526 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBER LAIN* Report No. 69-0013
Sukunka Coal Project
Sample No. A-21-1, Hole S-21 625.5 - 634.0 L.S.F.
Seam - C
P. O. No. S O O 3

% Total Moisture 0.86

Air Dry Basis

% Moisture	0.86
% Ash	5.54
% Volatile	22.66
% Fixed Carbon	70.94
	<u>100.00</u>

Btu	14500
% Sulfur	0.45

FREE SWELLING INDEX (CBI) 7

Weight of sample as received
in laboratory 7.515 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-21

Structure	Description of Strata	Formation or Member	Depth Base of Stratum (ft)
	No core to 31.0 ft.		
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	453.0
	SANDSTONE, glauconitic.	GETHING FM.	455.0
	SANDSTONE, pebbles at base,		458.0
	<u>COAL</u> .	BIRD SEAM	462.0
	MUDSTONE.		464.0
	SANDSTONE, coarse at top, fine at base, mottled (worm casts) at 472'.		523.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		540.0
	SANDSTONE, mudstone at base, interbeds at 546'.		549.0
	LAMINITE, siltstone and mudstone, mudstone at base.		556.0
	SANDSTONE, coaly wisps.		592.0
	MUDSTONE.		593.0
	<u>COAL</u> .	SKEETER SM.	602.5
	SILTSTONE, sandy phases, mudstone at top.		614.5
	LAMINITE, siltstone and mudstone, mudstone at base.		625.5
	<u>COAL</u> .	CHAMB. SM.	634.0
	SANDSTONE, coarse at top.	Base of Hole	658.0

BORE NUMBER S-22

Grid Reference 47727.8N 80535.3E

Exploration Grid Reference B/2+200'

Date Commenced 8th June, 1970 Completed 12th June, 1970

Collar R.L. 4497.3 Standard Datum

Total Depth 748 Electrically Logged ~~Yes~~/No

Drilled by Connors Drilling Ltd.

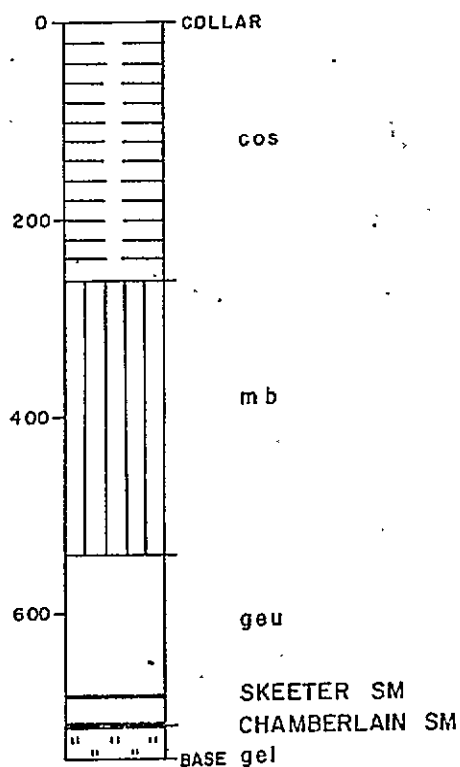
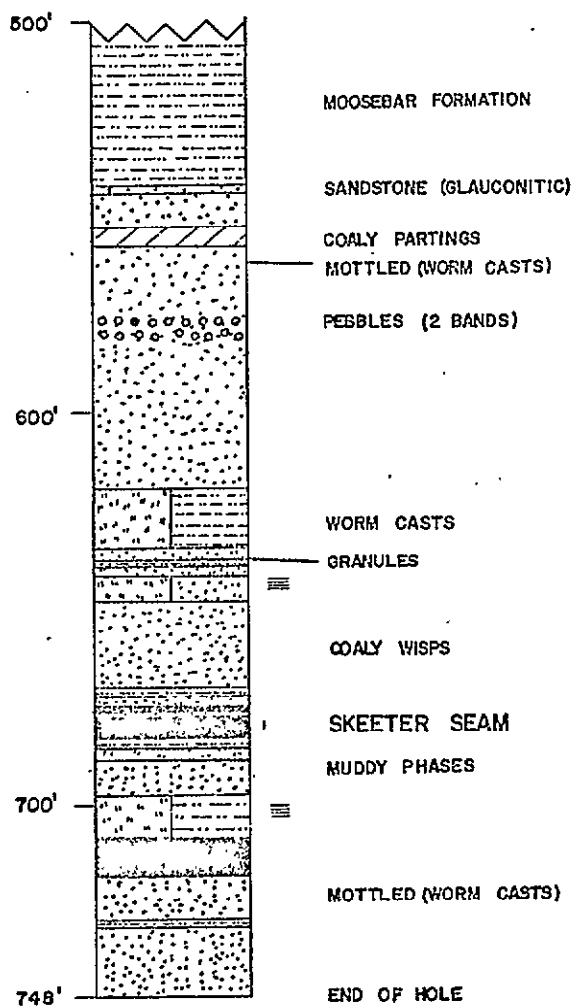
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3814.1	9.11	59%	
Chamberlain	3781.1	7.7	100%	

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by:
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 22

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *SKEETER*
Sample No. SK-22, Hole S-22
675.5 - 682.0
Cored - 6.5 *L.S.V.*
Recovered 6.0

Report No. 67-0067
67-0068

SPECIFIC
GRAVITY

Sink Float	% Wt.	% ADM	% Ash	% Vol.	AIR DRY BASIS		Btu	% Sul.	FSI
					% F. C.				
1.60	74.3	0.88	5.11	23.48	70.53	14593	0.46	8	
1.50	<u>25.7</u>	<u>0.93</u>	<u>82.42</u>				<u>0.11</u>		
	100.0	0.89	24.98				0.37		

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 8.375 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 4, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN*
Sukunka Coal Project
Sample No. A-22-1, Hole S-22
Seam - C
P. O. No. S O O 3

Report No. 69-0012

708.5 - 716.2 *L.S.F.*

% Total Moisture

1.48

Air Dry Basis

% Moisture

0.82

% Ash

6.14

% Volatile

22.98

% Fixed Carbon

70.06

100.00

Btu

14504

% Sulfur

0.58

FREE SWELLING INDEX (CBI)

9

Weight of sample as received
in laboratory

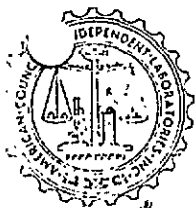
11.082 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-22

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 200.0 ft.		
	SILTSTONE AND MUDSTONE INTERBEDDED.	SUKUNKA MB.	261.0
	MUDSTONE, ash bands near base.	MOOSEBAR FM.	541.0
	SANDSTONE, glauconitic.	GETHING FM.	543.0
	SANDSTONE.		552.0
	CLAYSTONE, carbonaceous, coaly partings.		557.0
	SANDSTONE, mottled (worm casts) 562', pebble band 577' and 578'.		618.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		634.0
	SANDSTONE, mudstone band at 637.5'.		642.5
	LAMINITE, siltstone and mudstone, mudstone base.		647.5
	SANDSTONE, coaly wisps and inclusions mudstone bands at 764' and 673'.		675.0
	<u>COAL</u> , sandy split (0.5') at top.	SKEETER SM.	683.0
	SILTSTONE, mudstone phases, sandy phases.		698.0
	LAMINITE, siltstone and mudstone, mudstone base.		708.5

Structure	Description of Strata	Formation or Member	Depth : Base of Stratum (ft)
	<p><u>COAL.</u></p> <p>SANDSTONE, coarse becoming fine at base, mottled (worm casts) 721', mudstone band 730'.</p>	CHAMB. SM.	<p>716.0</p> <p>748.0</p> <p><u>Base of Hole</u></p>

BORE NUMBER S-23

Grid Reference 43831.1N 85259.3E

Exploration Grid Reference E+200'/2+1800'

Date Commenced 13th June, 1970 Completed 26th June, 1970

Collar R.L. 4960.3 Standard Datum

Total Depth 1457 Electrically Logged Yes/No

Drilled by Connors Drilling Ltd.

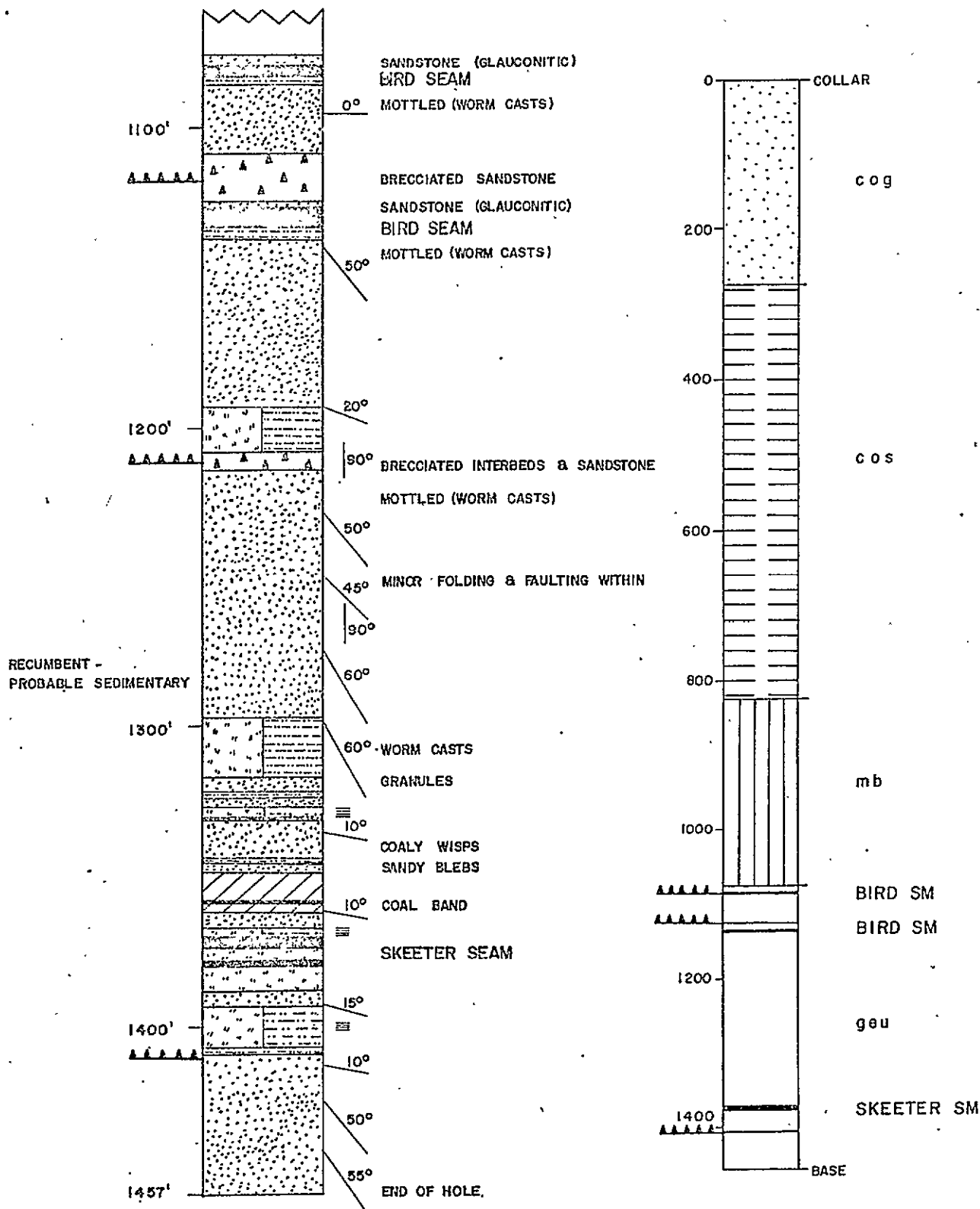
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	4978.8	8.50	4%	

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-23

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-23

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
Fault, possible	No core to 12.0 ft. SANDSTONE, coal and mudstone conglomerate, sandstone at base.	GATES MB.	267.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, brecciation 488'-498'.	SUKUNKA MB.	824.0
	MUDSTONE, ash bands at base.	MOOSEBAR FM.	1075.0
Fault, established	SANDSTONE, glauconitic, pebbles at base.	GETHING FM.	1078.0
	<u>COAL.</u>	BIRD SEAM	1082.0
	MUDSTONE, carbonaceous.		1085.0
Fault, established	SANDSTONE, mottled (worm casts) at 1090'.		1108.0
	SANDSTONE, brecciated.		1124.0
	SANDSTONE, glauconitic.		1127.0
	<u>COAL.</u>	BIRD SEAM	1133.0
	MUDSTONE, carbonaceous.		1136.0
	SANDSTONE, coarse at top, fine at base, mottled (worm casts) 1141'.		1193.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		1209.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	SANDSTONE, brecciated and interbeds.		1214.0
	SANDSTONE, mottled (worm casts) 1224', coarse at top becoming fine, minor folding and faulting.		1297.0
	SILTSTONE AND MUDSTONE INTERBEDDED, granules at base, worm casts.		1316.0
	SANDSTONE, mudstone band at 1323'.		1326.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1330.0
	SANDSTONE, coaly wisps, carbonaceous mudstone interbeds at 1345', sand blebs at 1346'.		1349.0
	CLAYSTONE, coaly at base.		1361.0
	SANDSTONE.		1367.0
	LAMINITE, siltstone and mudstone.		1370.0
	<u>COAL.</u>)		1373.0
)		
	SILTSTONE, mudstone phases)	SKEETER SM.	1378.0
)		
	<u>COAL.</u>)		1379.0
)		
	SILTSTONE PHASES.		1388.0
	SANDSTONE, silty interbeds.		1393.0
Fault, established	LAMINITE, siltstone and mudstone, mudstone at base.		1408.0
	SANDSTONE, coarse at top, finer towards base.	Base of Hole	1457.0

BORE NUMBER S-24

Grid Reference 46008.1N 81578.0E

Exploration Grid Reference C/2

Date Commenced 13th June, 1970 Completed 18th June, 1970

Collar R.L. 4659.4

Standard Datum

Total Depth 928.0

Electrically Logged ~~Yes~~/No

Drilled by Connors Drilling Ltd.

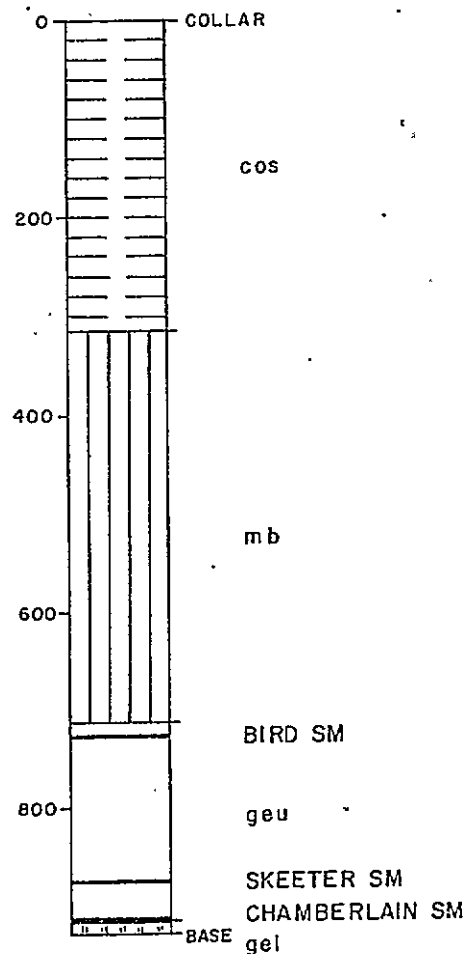
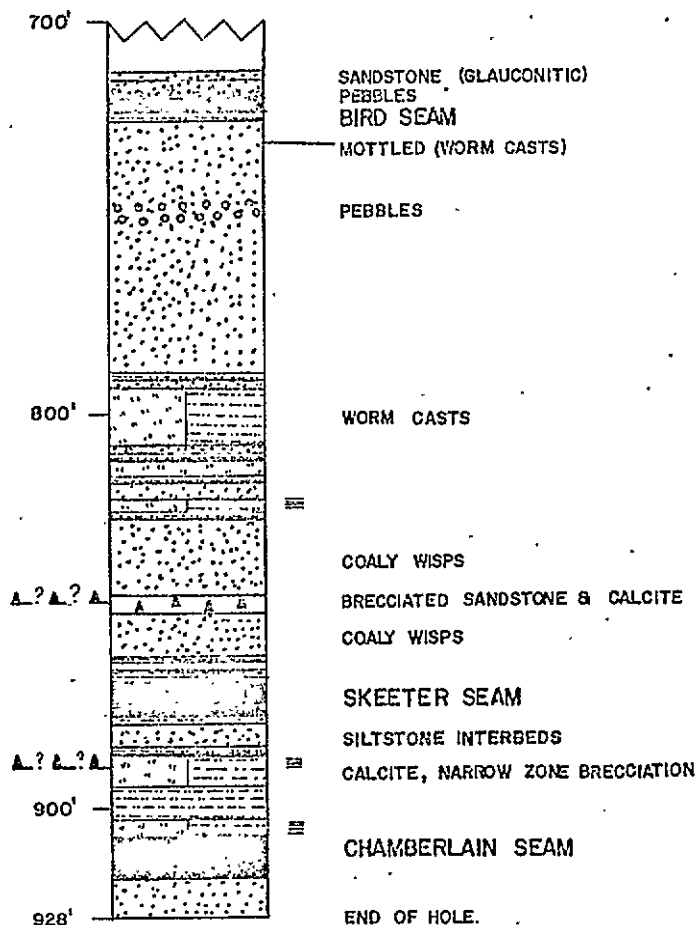
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3782.3	8.91	93%	
Chamberlain	3741.2	8.7	96%	

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 24

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 9, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *SKEETER* Report No. 69-0040
Sample No. A-24-2
P. O. No. S 0 0 3 *868.2 - 875.5*
S-24 *L. S. F.*

% Total Moisture

1.13

Air Dry Basis

% Moisture

0.79

% Ash

8.06

% Volatile

22.75

% Fixed Carbon

68.40

100.00

Btu

14170

% Sulfur

0.46

First 1/2

FREE SWELLING INDEX

8

SAWN Core

Weight of sample as received
in laboratory

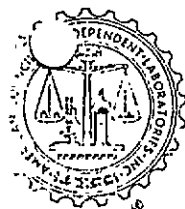
4.519 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *SKEETER*
Sample No. SK-24, Hole S-24
868.1 - 875.5
Cored - 7.4
Recovered - 7.4

Report No. 67-0069
67-0070

2nd 1/2 Sawn Core

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.
1.60		74.5	0.75	5.55	22.00	71.70	14634	0.44
1.60		<u>25.5</u>	<u>0.62</u>	<u>82.97</u>				<u>0.12</u>
		100.0	0.72	25.29				0.36

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 5.379 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 220 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

July 9, 1970



P. O. Box 8596
Station H
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN* Report No. 69-0038
Sample No. A-24-1 *Hok S-24*
P. O. No. S O O 3 *909.5-918.0 L.S.P.*

% Total Moisture 1.13

Air Dry Basis

% Moisture	0.99
% Ash	4.47
% Volatile	23.06
% Fixed Carbon	71.48
	<u>100.00</u>

Btu	14759
% Sulfur	0.37

FREE SWELLING INDEX 8

Weight of sample as received
in laboratory 6.188 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser, District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-24

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	No core to 14.0 ft.		
	SANDSTONE, glauconitic.		715.0
	SANDSTONE, pebbles at base.		720.0
	<u>COAL</u> .	BIRD SEAM	723.0
	MUDSTONE.		725.0
	SANDSTONE, coarse in top half, fine in lower half, mottled (worm casts) 731', pebble bands 746' and 750', mudstone band 790'.		793.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		809.0
	SANDSTONE, mud bands 811' and 816'.		821.0
	LAMINITE, siltstone and mudstone, mudstone base.		826.0
	SANDSTONE, coaly wisps.		846.0
Fault, possible	SANDSTONE, breccia with calcite.		850.0
	SANDSTONE, coaly wisps, mudstone base, mudstone layers at 862' and 859'.		868.0
	<u>COAL</u> , mudstone band (1') above floor.	SKEETER SM.	877.0

Structure	Description of Strata	Formation or Member	Depth of Base of Stratum (ft)
Fault, possible	MUDSTONE.		878.0
	SANDSTONE AND SILTSTONE INTERBEDDED, mudstone at base.		887.0
	LAMINITE, siltstone and mudstone, calcite and breccia (890').		895.0
	MUDSTONE.		904.0
	LAMINITE, mudstone and siltstone.		908.0
	MUDSTONE.		909.5
	<u>COAL.</u> SANDSTONE, coarse grained.	CHAMB. SM.	918.0
			928.0
			<u>Base of Hole</u>

BORE NUMBER S-26

Grid Reference 42570.9N 84012.6E

Exploration Grid Reference F+1800'/2

Date Commenced 29th June, 1970 Completed 17th July, 1970

Collar R.L. 4774 Standard Datum

Total Depth 1390 Electrically Logged Yes/No

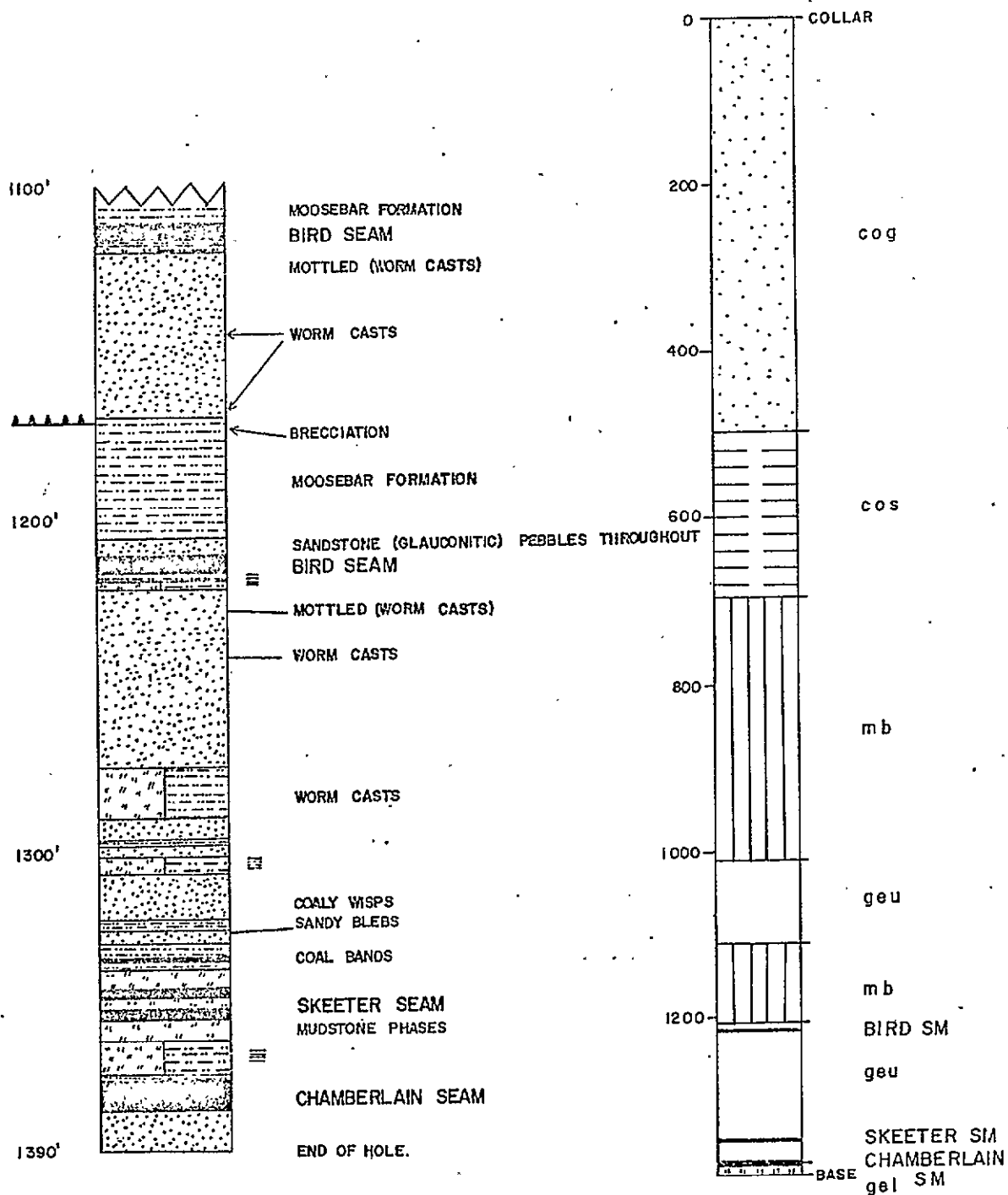
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3389.1	7.40	85%	
Chamberlain	3361.9	8.0	80%	

00 641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-26

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 223 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 723-8434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAKEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-26, Hole S-26
1369.5 - 1377.5
Cored - 8.0
Recovered - 6.5

Report No. 67-0075
67-C076

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	% S.
	1.60	96.2	0.81	5.13	22.84	71.22	14743	0.46	8
1.60		<u>3.8</u>	<u>0.94</u>	<u>47.60</u>				<u>0.72</u>	
		100.0	0.81	6.74				0.47	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 7.579 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser.
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-26

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	No core to 7.0 ft.		
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1012.0
	SANDSTONE, glauconite and pebbles.	GETHING FM.	1012.5
	<u>COAL</u> .	BIRD SEAM	1116.0
	LAMINITE, siltstone and mudstone, mudstone at top 1126'.		1120.0
	SANDSTONE, mottled (worm casts), worm casts 1144' and 1168'.		1168.0
	MUDSTONE, ash beds at base, brecciated at top.	MOOSEBAR FM.	1206.0
	SANDSTONE, glauconitic - pebbles throughout.	GETHING FM.	1211.0
	<u>COAL</u> ,	BIRD SEAM	1216.0
	LAMINITE, siltstone and mudstone, mudstone at top.		1220.0
	SANDSTONE, mottled (worm casts) 1226', worm casts 1241', coarse at top, fine at base.		1275.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		1290.0
	SANDSTONE, mudstone band at 1297'.		1302.0
	LAMINITE, siltstone and mudstone.		1307.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth : Base of Stratum (ft)</i>
	SANDSTONE, coaly wisps, mudstone band at 1324' and 1322', sand blebs.		1327.0
	MUDSTONE.		1332.0
	<u>COAL.</u>		1333.0
	MUDSTONE.		1335.0
	SILTSTONE, sandy phases.		1341.0
	<u>COAL.</u>)		1343.0
)		
	SILTSTONE.)	SKEETER SM.	1348.0
)		
	<u>COAL.</u>)		1350.0
	SILTSTONE, sandy and mudstone phases.		1357.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1369.5
	<u>COAL.</u>	CHAMB. SM.	1377.5
	SANDSTONE.		1390.0
			<u>Base of Hole</u>

BORE NUMBER S-27 & S-27A

Grid Reference 41092.3N 88145.7E

Exploration Grid Reference G+300' / 3+600'

Date Commenced 5th August, 1970 Completed 12th August, 1970

Collar R.L. 4869.0'

Standard Datum

Total Depth S-27:1217' S-27A:1264' Electrically Logged ~~Yes~~/No

Drilled by Connors Drilling Ltd.

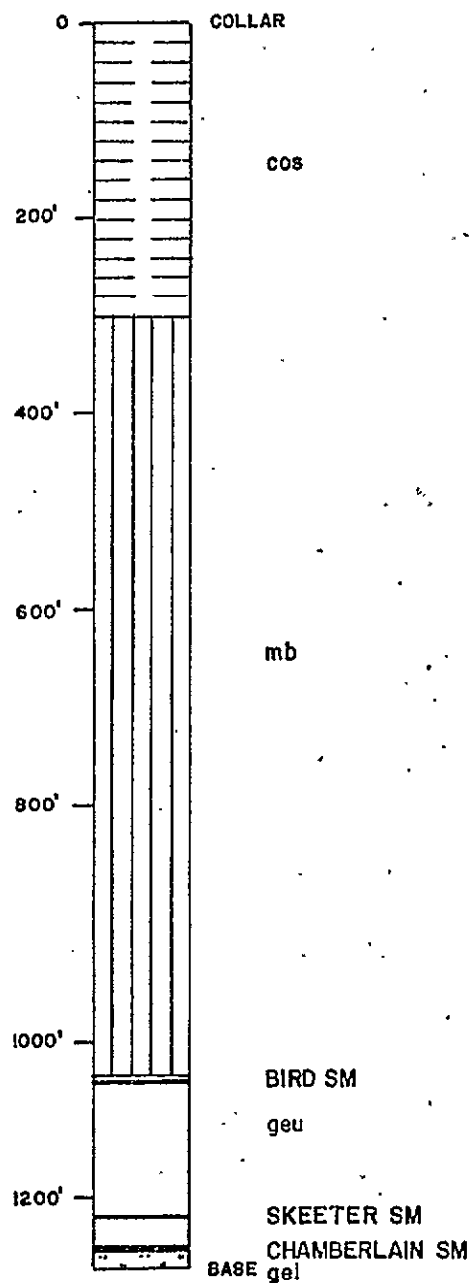
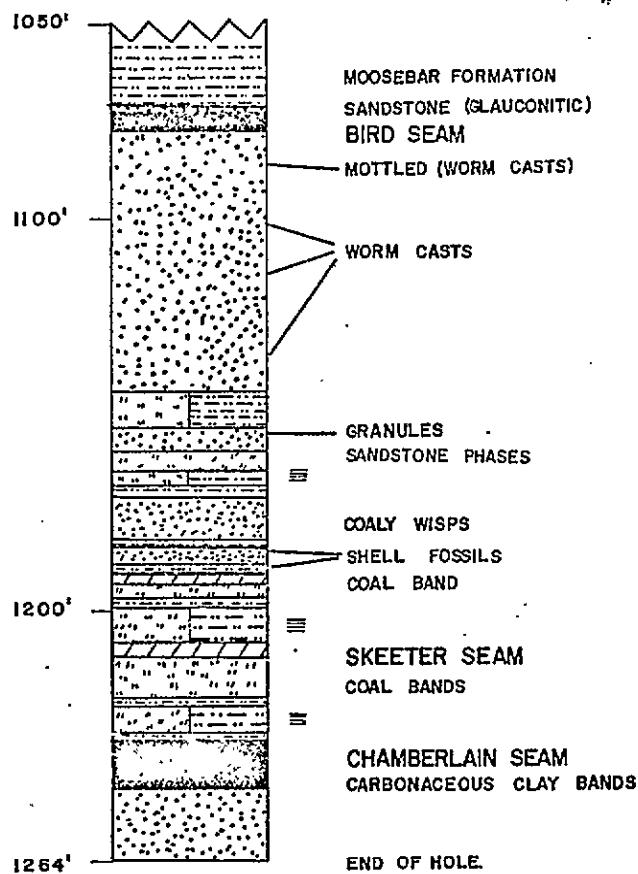
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3680	0.25'	100%	
Chamberlain	3626'	9.0'	100%	

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.

for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS

DDH S-27, 27a

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification: *CHAMBERLAIN*

Report No. 67-0065 ✓
67-0066

Sample No. CH-27, Hole S-27A

1234.0 - 1243.0

1234.0 - 1243.0 L.S.T.

Cored - 9.0

Recovered - 9.0

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		96.5	0.82	4.11	22.25	72.82	14911	0.48 9
1.60		<u>3.5</u>	<u>0.64</u>	<u>44.96</u>				<u>0.49</u>
		100.0	0.81	5.54				0.48

% ADM - % Moisture in air dried sample

Weight of sample as received in laboratory = 13.490 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

✓

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-27, S-27A

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 10.0 ft.		
	MUDSTONE, two white claystone bands at base.	MOOSEBAR FM.	1074.0
	SANDSTONE, glauconitic, pebbles at base.		1075.0
	<u>COAL.</u>	BIRD SEAM	1078.0
	SANDSTONE, grey, quartz-lithic, medium grained, becoming finer to base. Mottled (worm casts) at 1086', worm casts at 1101', 1115', 1123-1134'.		1145.0
	SILTSTONE AND MUDSTONE INTERBEDDED, grey siltstone and mudstone dark grey. Granules at base.		1153.0
	SANDSTONE, grey, medium grained, quartz-lithic, mudstone band at base.		1160.0
	SILTSTONE, grey, sandy interbeds and phases, brownish sandstone to base.		1165.0
	LAMINITE, siltstone brownish grey, and mudstone dark grey.		1171.0
	SANDSTONE, brownish grey, silty and coaly wisps, 1' claystone at 1184', shell fossils at 1185'.		1188.0

Structure	Description of Strata	Formation or Member	Depth - Base of Stratum (ft)
	CLAYSTONE, dark grey, carbonaceous, shell fossils.		1189.0
	<u>COAL</u> .		1189.25
	CLAYSTONE, dark grey, carbonaceous.		1193.0
	SILTSTONE, brownish grey, sandy interbeds, mudstone band at 1199'.		1200.0
	LAMINITE, siltstone and mudstone grey, carbonaceous at base.		1209.0
	CLAYSTONE, black, carbonaceous with coaly bands.		1212.0
	SILTSTONE, grey, sandy interbeds, mudstone band at base. Coal bands at 1215' (0.5') and 1217' (0.9').		1225.0
	LAMINITE, siltstone and mudstone grey, mudstone band at base.		1234.0
	<u>COAL</u> , carbonaceous claystone bands with coaly partings at 1243' (.6') and at base (0.5').	CHAMB. SM.	1245.0
	SANDSTONE, grey, medium grained, quartz-lithic.		1264.0
			<u>Base of Hole</u>

BORE NUMBER S-28

Grid Reference 40773.8N 85099.9E

Exploration Grid Reference G+1700'/1+1900'

Date Commenced 18th July, 1970 Completed 3rd August, 1970

Collar R.L. 4504.4'

Standard Datum

Total Depth 1101'

Electrically Logged ~~Yes~~/No

Drilled by Connors Drilling Limited

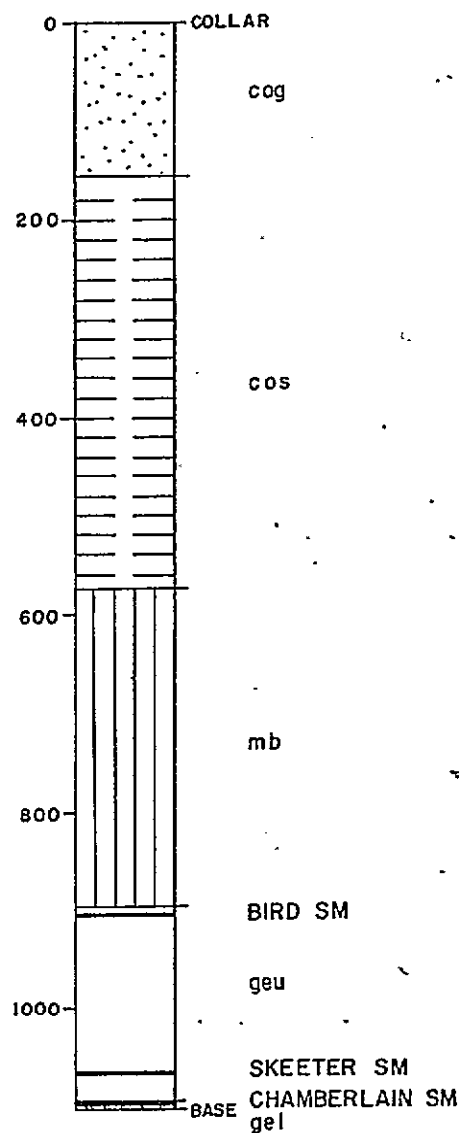
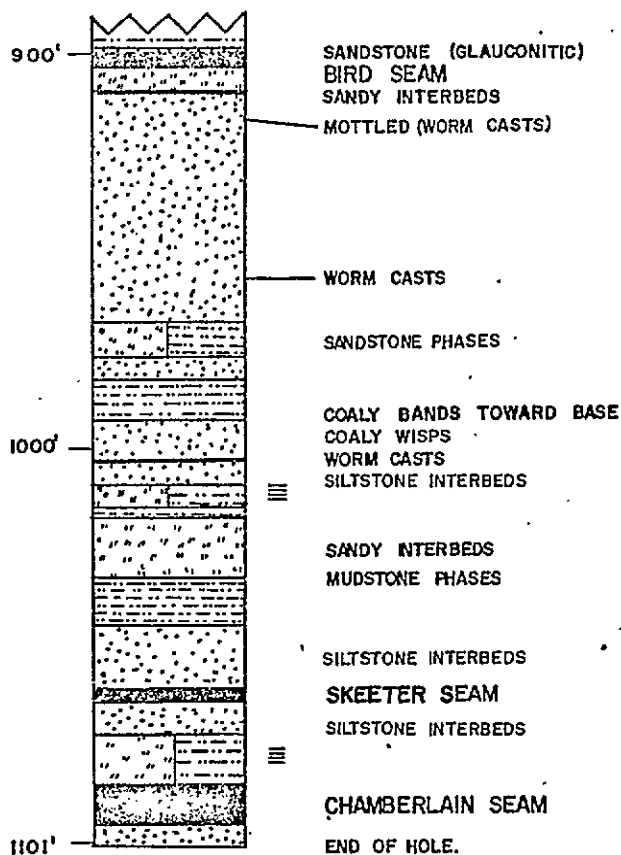
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3441.8	2.3	100%	
Chamberlain	3409.3'	9.0'	100%	

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by:
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS

DDH S - 28

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRANEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-28, Hole S-28
1086.0 - 1095.5
Cored - 9.5
Recovered - 9.5

Report No. 67-0063
67-0064

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% ASH	% Vol.	% F. C.	Btu	% Sul.
1.60		97.1	0.78	4.80	22.01	72.41	14793	0.43
1.60		2.9	0.19	43.17				0.40
		100.0	0.76	5.91				0.43

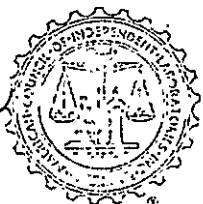
% ADM - % Moisture in air dried sample

Weight of sample as received in laboratory = 12.374 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-28

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 14.0 ft.		
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	899.0
	SANDSTONE, glauconitic.	GETHING FM.	899.5
	<u>COAL</u> .	BIRD SEAM	903.0
	SILTSTONE, sandy interbeds, coal band at base.		909.0
	SANDSTONE, coarse at top, fine towards base, mottled (worm casts) 917', worm casts 953'-960'.		968.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases, worm casts.		977.0
	SANDSTONE.		983.0
	MUDSTONE, coaly bands at base.		992.0
	SANDSTONE, coaly wisps, worm casts 997'.		1003.0
	<u>COAL</u> , band.		1003.5
	SANDSTONE, silty interbeds.		1010.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1017.0
	SILTSTONE, sandy phases and mudstone bands.		1033.0

Structure	Description of Strata	Formation or Member	Depth Base of Stratum (ft)
	MUDSTONE, silty phases, carbonaceous at base.		1045.0
	SANDSTONE, silty interbeds.		1061.0
	<u>COAL.</u>	SKEETER SM.	1065.0
	SILTSTONE AND SANDSTONE INTERBEDDED.		1073.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1086.0
	<u>COAL.</u>	CHAMB. SM.	1095.5
	SANDSTONE.		1101.0
			<u>Base of Hole</u>

SUKUNKA COAL PROJECT

S-29

LOGGED BY J.E. H. Squire

From	To	Rec.	Description
			<u>FORT ST. JOHN GROUP</u>
0	15		Casing
15	78		Ibed sst. sh. and silts
78	88		Mudst. and sh., dk grey/ minor ilam silts and ssts. upper part. @ 88 coal parting.
88	95		Mudst and silty mudst. + lower sh and ibed ssts.
95	164		Ssts. Minor thin ibed sh. 103' 87, 88° @ 111 fossil, shell band.
164	208		Ibed ssts. sh and silts, rough and plane bed. 208' 88°
208	218		Mudst dk grey w. thin ibed silty sh. silts and ssts. lower 3'.
218	243.5		Silts and ssts. v.f.g. to silt grade, argill. disturbed and sh. fl.
243.5	248	2.6	<u>Coal</u> : pyritic. 3.6 / 4.5 BOX 12
243.5	243.5	1.0	Sh. bl. fragm.
248	253	0.7	Sh. bl. fissile: much coaly detritus and laminae: fragm.
253	253	0.7	<u>Coal</u> : include some split coal and coal with sh. lam. BOX 13
253	253	3.5	Mudst and lesser silts and silty muds.
253	258	2.6	Mudst. pass to aren. mudst. in lower half.
258	258	1.6	Thin ibed and ilam sst. silts and sh. pass to sh. include p <u>coal</u> (0.2 from base) 87°
258	263	2.8	Sh. bl. thin coal p and laminae.
263	263	0.2	<u>Coal</u>
263	263	2.3	Sh. bl. fragm. f. lsf.
263	267	0.8	<u>Coal</u> : include middle sh. bank 0.1' lower part sh.
267	267	1.0	Mudst.
267	267	0.7	<u>Coal</u> : dull - altered
267	267	0.9	Muds and sh. fargm. 88°
267	277	0.1	Muds.
277	277	0.7	<u>Coal</u> : splinty in lower part
277	277	1.2	Sh - mudst.
277	277	0.6	<u>Coal</u>
277	277	0.2	Mudst. 3.1 Coal
277	277	0.3	<u>Coal</u> 3.4 mud.
277	277	6.6	Sst. v.f.g. to silt and silts. argill: minor ibed sh

BOX 14

00641

From	To	Rec.	Description
277	287	2.0	Sst. v.f.g. to silts and silts argill. Minor ibed sh.
		2.8	Sst. v.f.g to f.g.
		5.0	Sst. m to v.c.g.
287	297	2.0	Sst. m to v.c.g. BOX 15
		3.0	Sst. m to v.c.g.: grit ibed @ base.
		3.9	Sst. v.f.g. to f.g.
		0.2	Mudst. aren.
297	303	4.4	Mudst. sandy and silty
		1.4	Sh. and ilam silty sh.
303	308	4.9	Sh. and silty sh. and silty partings
308	313	0.9	Sh. dk grey part concret. BOX 16
		2.4	Sh. dk grey: pass to carb sh. @ base.
		0.4	Sh. soft and much coaly attritus and laminae
313	318	0.1	Sh - as above
		1 0	<u>Coal</u> 7.1 82°
		2.9	Mudst
318	328	0.5	Mudst. pass to
		5.0	Sh. bl. fragm in upper part
		0.1	<u>Coal</u> 7.5
		1.9	Sst. v.f. to v.c.g and congl ibeds.
328	338	2.2	Sst. f to v.c.g and ibed conglom.
		0.5	Conglom. BOX 17
		3.8	Conglom fine and coarse in lower part: sst. matrix.
		1.3	Sst. conglom.
		1.8	Conglom fine and coarse in lower part.
338	348	1.0	Conglom, coarse
		1.7	Sst. w. pebbly layers
		3.2	Congl. fine
		4.0	Congl. w. lesser ibed ssts. BOX 18
348	358	2.3	Congl.
		2.0	Congl.
		5.6	Sst. few ibed sh.: conglom @ base.

From	To	Rec.	Description
358	361.5	0.7	Sst. with conglom
		0.1	<u>Coal</u>
		1.5	Sh. bl. fragm.
361.5	368	1.6	Sh. pass down to silty sh.
		5.0	Sh. and silty sh. pass to sh. and silty and silts and ssts.
368	378	1.8	Ssts and thin ibed and ilam sh. BOX 19
		2.3	Ssts. sh layers One sh. ibed
		5.9	Sh; silty in upper part.
378	386		Sh. - mudst. pass to carb sh. @ base 85°
386	396	1.0	<u>Coal</u> : dull
		0.2	Sst. p. - overlying sh. to 0.2'
		0.1	<u>Coal</u>
		0.1	St. - p
		2.0	Conglom. BOX 29
		3.8	Conglom.
396	411		Conglom
411	465		Ssts. 428' 87°
465	477		Sst. + lesser ibed sh.
477	490		Ibed and ilam sh.
490	520		Ibed and ilam sh. 490' 88°
			@ 497 <u>Coal</u> 0.6'
520.5	539		Congl. - av pebble diam. Sst. matrix 0.2"
539	546		Conglom. Av med. diam. ½" sst. matrix.
546	586.5		Sst. m.g. pass to v.f. to f.g.
586.5	607.5		Sst. and ibed sst. and silts.
607.5	615		Sst. f.g.
615	638		Sst. and lesser ibed sh.
638	692		Thin ibed and ilam sst, silts, silty sh. and sh. Some mixed and disturbed bed. Sh. cl and fr. Sh. 40
692	695		Carb. band - concret and sh. ibeds, silty and sand, and traces of sst. b
695	728		Sst. v.f.g grade to silts, silts: argill: disturbed bed, and Sh fl. and cl. Few thin ibed ssts. 96°

From	To	Rec.	Description
728	776		Mudst. s and silts aren. mudst with disturbed bed etc. Some thin ibed ssts. @ 765.5 + 0.4' clayst. soft. swell clay/sandy. + 0.4 to 0.7 mudst. 85° + 0.7 to 1.1 + to 1.2 clayst. as above.
776	890		Sst. v.f.g. grade to silts, and silts: argill, disturbed bed and sh. fl and cl. Few thin ibeds sst v.f.g. @ 888 + 2 include ibed ssts. v.c. to v.f.g. and sh.
890	904		Ssts and lesser ibeds, and sh., silty and arenaceous + silts. Part disturbed bed, with sh. fl and cl. in lower.
904	909		Ssts. etc. as above.
909	1062		Ibed silty sh. and ssts. Minor disturbed bed to 1000'. 910' 88°
1062	1080		Mudst with minor thin silt and ssts ibeds. 85 to 90°
1080	1328		Mudst. @ 1273 + 0.1 clayst. soft. ? swell @ 1288 + 0.1 " " @ 1305 clayst. soft p @ 1307.5 " sst. p 1/2" 1188' 90°
1328	1333		Sst. glauc. Few pebbles.
1333	1338	3.2	<u>Coal</u> : bright banded, interval clean; fusain layers w. coarse and fine divided pyrite. 88 to 90°
		0.5	Mudst. dk grey brn, soft: lsf and plant debris.
		0.2	<u>Coal</u> - rubble. 86°
		0.9	Sst. f to m.g., carb. much fine plant debris.
1338	1348	10.3	Sst. f to m.g. much fine carb. debris in upper part: lower part w. fine mottling.
		0.3	Sst. continue
1348	1358	9.5	Sst. continue, incr. f.g. and with v.f. to f.g. ibeds, few m and c.g. ibeds - pass to f.g. lower part. 90° 1338 + 0.5 Sh 1/4" 1338 + 5.0 Sh 2 ibeds 0.2' 1338 + 7.9 Sh 0.4' with silty and sandy stringers.
1358	1368	9.8	Sst. v.f. to f.g. largely v.f.g.: some coarse mottled texture in lower part. BOX 71
		0.1	Sst.
1368	1378		Sst. v.f. to f.g. largely v.f.g. Sh layers part of lower half, with plant debris. 88, 90°

From	To	Rec.	Description
1378	1388	9.0	Sst. largely v.f.g. some sh. layers with few sh. ibeds $\frac{1}{4}$ " in upper 4.0'. BOX 72
		1.0	Sst. continue.
1388	1398	8.9	Sh. and thin ibed silty sh. and silts and few ssts. v.f.g. to silt grade. Graded seq and include few sst. ibeds to 0.3 in upper third. Lower part with much coarse coaly stringers. Sh 60 in lower 2/3
1398	1408	4.8	Sh and ibed silty sh. and silts, and few sst. v.f. to silt grade. Sh. $\angle 60$ 88°
		3.4	Sst. m to v.f.g. layered; more uniform downward. BOX 73
		1.8	Sst. v.f.g and f.g.
1408	1418	0.5	Sst. with sh. stringers in lower part; pass to -
		1.8	Sh. dk grey and ilam silty sh. minor
		6.0	sst. f and v.f.g. to silt gr: lesser ilam and stringers, sh. silty sh. and silts; small scale current bed in part.
		1.7	Sh and ilam silty sh. and silts, etc. with ilam and ibed ssts. in basal 0.1'.
1418	1428	2.2	Sh. etc. continue. Incr. sh downw. \angle Sh >90 Lower 0.2, Sh grade to silty sh and silts Pass to -
		4.9	Sst - and lesser and minor ibed and ilam sh. silty sh. and silts. etc. \angle Sst >90 ~ 90 $<85, 90^{\circ}$ BOX 74
		2.5	Sst. etc. continue.
1428	1438	1.5	Sst. etc. pass to
		1.2	Sh. dk grey and lesser ibed and ilam sh. silts etc Sh 100 to 80 incr. d
		4.0	Sst. v.f. to f.g. With shells - pelecyp. in upper half. fossil.
		1.9	Sh and thin ibed and ilam silts and ssts. - pass to ssts and sh. in lower half.
		1.3	Sh. dk grey: sandy lenses and stringers, shell fragm and entire shells cut by core: lower part w coaly stringers. Fossil
1438	1448	0.3 -0.4	Coal: sh. ilam and p of sh. sheared.
		0.9	Mudst. dk grey with plant debris: silty and inc. silty down.
		4.0	Silts and sst v.f. to silt grade and middle ibed sh. with silty sh. and silts.
		1.2	Thin ibed and ilam sh. silty sh., silts and ssts. Incr sh. 10 to 60 down. 89° BOX 75
		2.8	Sh. ilam silty sh and few silts v.f. lam.

From	To	Rec.	Description
1448	1458	3.4	Sh. and silty sh. and continue incr. sh downw.
		2.2	Sh. dk grey - rel. clean. Carb near base.
		0.4	Sh with much plant debris & coaly laminae.
		p	Coal: sheared/parting 90°
		0.2	Mudst with ilam coal and coaly str.
		0.8	Mudst. with ilam and ilens and part of coal, fr and sheared.
		0.1	Coal: fragm. Sheared and veined plates.
		2.2	Mudst dk grey brn. etc with plant debris: shear fr below coal. Upper third with coarse coalif. plant debris coarse stringers coal, 'rootlets'. Pass to silty mudst in middle: pass to siltst, argill in lower third.
1458	1468	5.2	Silts/argill silts/sst v.f.g. to silt grade: disturb and mixed bed. most
		1.0	Silts, silty sh. and sh.
		3.5	Thin ibed and ilam sh. silty sh. and silts. 88 to 90°
1468	1470	2.0	Sh and ilam silty sh. few silts: incr. sh. down.
1470	1475	0.5	Coal: Rubble - sheared (Skeeter S)
		1.0	Mudst; dk grey brn, plant debris, silty to base.
1475	1480	1.4	Silty mudst and few siltst ibeds: sheared as in lower interval.
		3.8	Thin ibed and ilam sh. silty sh. and silts + ssts. fine irreg. vein. Shear // bed < 20 Shear // bed < 45
1480	1488	5.7	Sh. and ilam silty sh. and silts. Some shear // bed. Vein breccia and replacement and minor vein te. @ 480 + 1.0' // bed. @ 480 + 2.5' // bed. for main part < bed = 60 to 65.
1488	1494	0.2	Sh and silty sh. BOX 77
		5.9	Sh. dk grey thin ibed and ilam silty sh. 64° & silts - lesser ssts. v.f.g. to silt grade. Sh 65 Few te fract and thin vein and some shear fractures // bed. 64° @ 1488 + 5.75 decr to 68° @ base contact with coal. basal < 82° @ 1488 + 5.7 to 5.9 coarse te fr. and gashed vein.
		0.1	Coal
494	1495.5	0.3	Coal: rubble
		0.8	Silty mudst. dkgray. brn. Some coarse plant debris, and siltst and sst. stringers and ibed.
495.5	1505	1.7	Silty mudst and argill silts. pass to argill silts. w. sst v.f.g. to silt. grade.
		4.8	Sh and ilam and thin ibed silty sh. and silts and lesser sst. v.f.g. to silt grade (see above seq) Shear // bed [Sh 60 < 74° Minor vein.

Structure	Description of Strata	Formation or Member	Depth : Base of Stratum (ft)
	SILTSTONE; sandy interbeds.		1427.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1435.0
	<u>COAL.</u>	CHAMB. SM. lower plate	1445.0
	SANDSTONE.	lower split	1488.0
			<u>Base of Hole</u>

BORE NUMBER S-30

Grid Reference 46221.8N 88963.3E

Exploration Grid Reference E/5+200'

Date Commenced 3rd August, 1970 Completed 13th August, 1970.

Collar R.L. 5105.8' Standard Datum

Total Depth 1397' Electrically Logged *Yes/No*

Drilled by Connors Drilling Ltd.

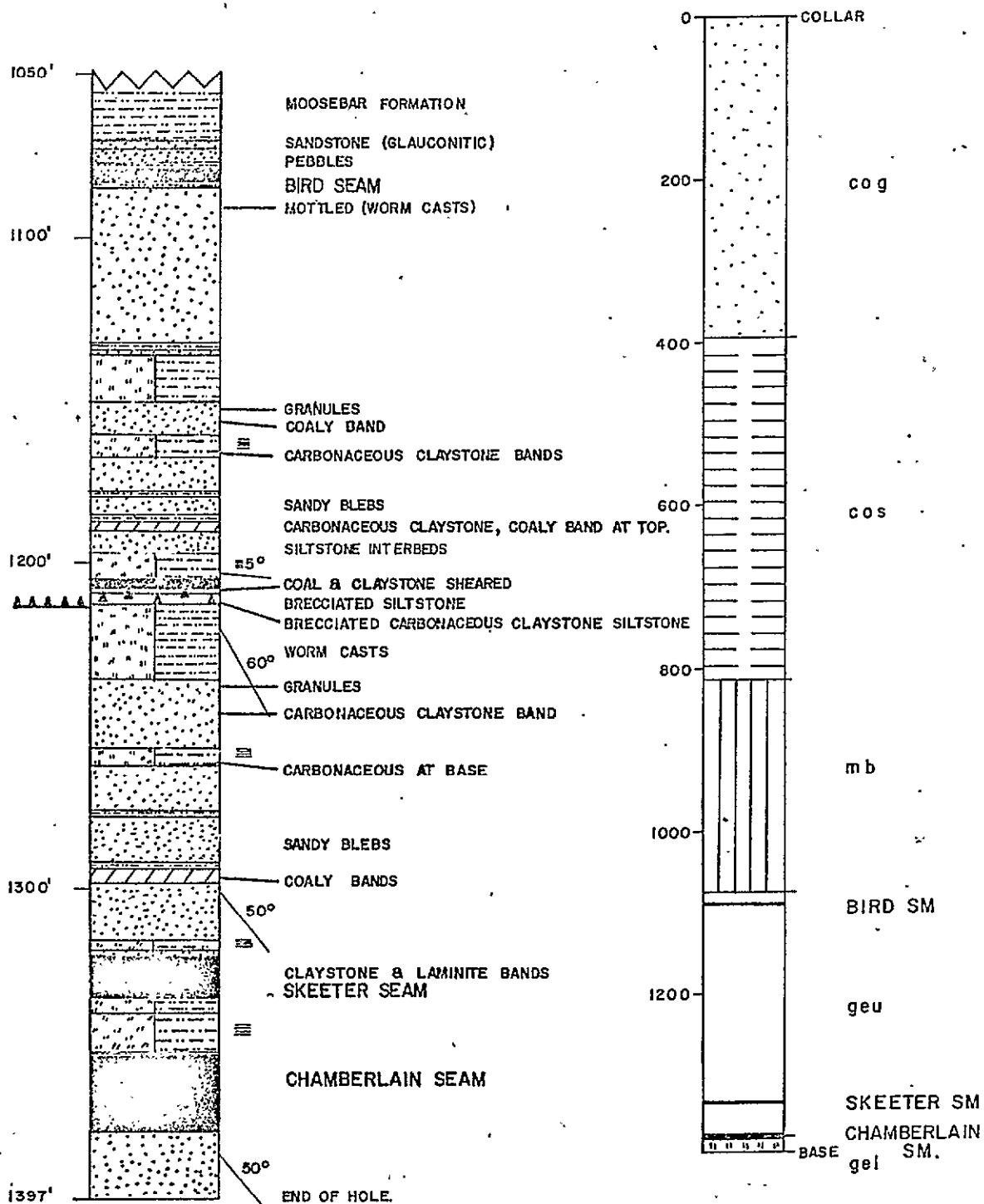
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	3730.8'	19.9	98%	

00641



DETAIL OF GETHING FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-30

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-30
Hole S-30
1353.0 - 1375.2
Cored - 22.2
Recovered - 21.0

Report No. 67-0071
67-0072

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Stu	% Sul.	FC
1.60		98.3	0.90	4.54	22.19	72.37	14813	0.43	2
1.60		<u>1.7</u>	<u>1.01</u>	<u>43.86</u>				<u>0.34</u>	
		100.0	0.90	5.21				0.43	

% ADM = % Moisture in air dried sample

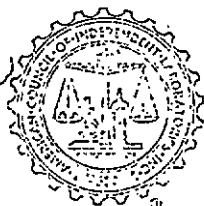
Weight of sample as received in laboratory = 24.381 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-30

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 13.0 ft. SILTSTONE.	GATES MB.	92.0
	MUDSTONE, coaly bands		104.0
	CONGLOMERATE.		183.0
	SANDSTONE, mudstone phases.		258.0
	CLAYSTONE, coaly bands, sandy phase in centre.		271.0
	CONGLOMERATE.		295.0
	SANDSTONE, mudstone phases in lower half.		398.0
	SANDSTONE AND SILTSTONE, with mudstone bands.	SUKUNKA MB.	813.0
	MUDSTONE, ash bands at base.	MOOSEBAR FM.	1072.0
	SANDSTONE, glauconitic.	GETHING FM.	1074.0
	SANDSTONE, pebble band at 1078', mudstone band 1079'.		1081.0
	<u>COAL</u> , mudstone (0.5') at base.	BIRD SEAM	1084.0
	SANDSTONE, coarse at top, fine towards base, mottled (worm cast) 1091', mudstone band 1135'.		1137.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base		1153.0
	SANDSTONE, coaly band at 1157'.		1162.0
	LAMINITE, siltstone and mudstone, carbonaceous claystone at 1166' and 1167'.		1168.0
	SANDSTONE, coaly wisps, mudstone band at 1180' and at base, sandy blebs 1183'.		1188.0
	CLAYSTONE, silty interbeds.		1199.0
	LAMINITE, siltstone and mudstone.		1206.0
	<u>COAL</u> , sheared and claystone.		1208.0
	SILTSTONE, brecciated.		1209.0
	CLAYSTONE, carbonaceous, sheared silty band at 1213'.		1214.0
Fault, established	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		1237.0
	SANDSTONE, carbonaceous claystone band at 1246'.		1247.0
	LAMINITE, siltstone and mudstone, carbonaceous claystone at base.		1263.0
	SANDSTONE, coaly wisps, sand blebs at base, mudstone at base and 1278'.		1295.0
	CLAYSTONE, coaly bands.	Base of Hole	1299.0

BORE NUMBER S-31

Grid Reference 47574.6N 87825.4E

Exploration Grid Reference E+1800'/4+1800'

Date Commenced 14th August, 1970 Completed 31st August, 1970

Collar R.L. 4970.7'

Standard Datum

Total Depth 1558'

Electrically Logged ~~Yes~~/No

Drilled by Connors Drilling Ltd.

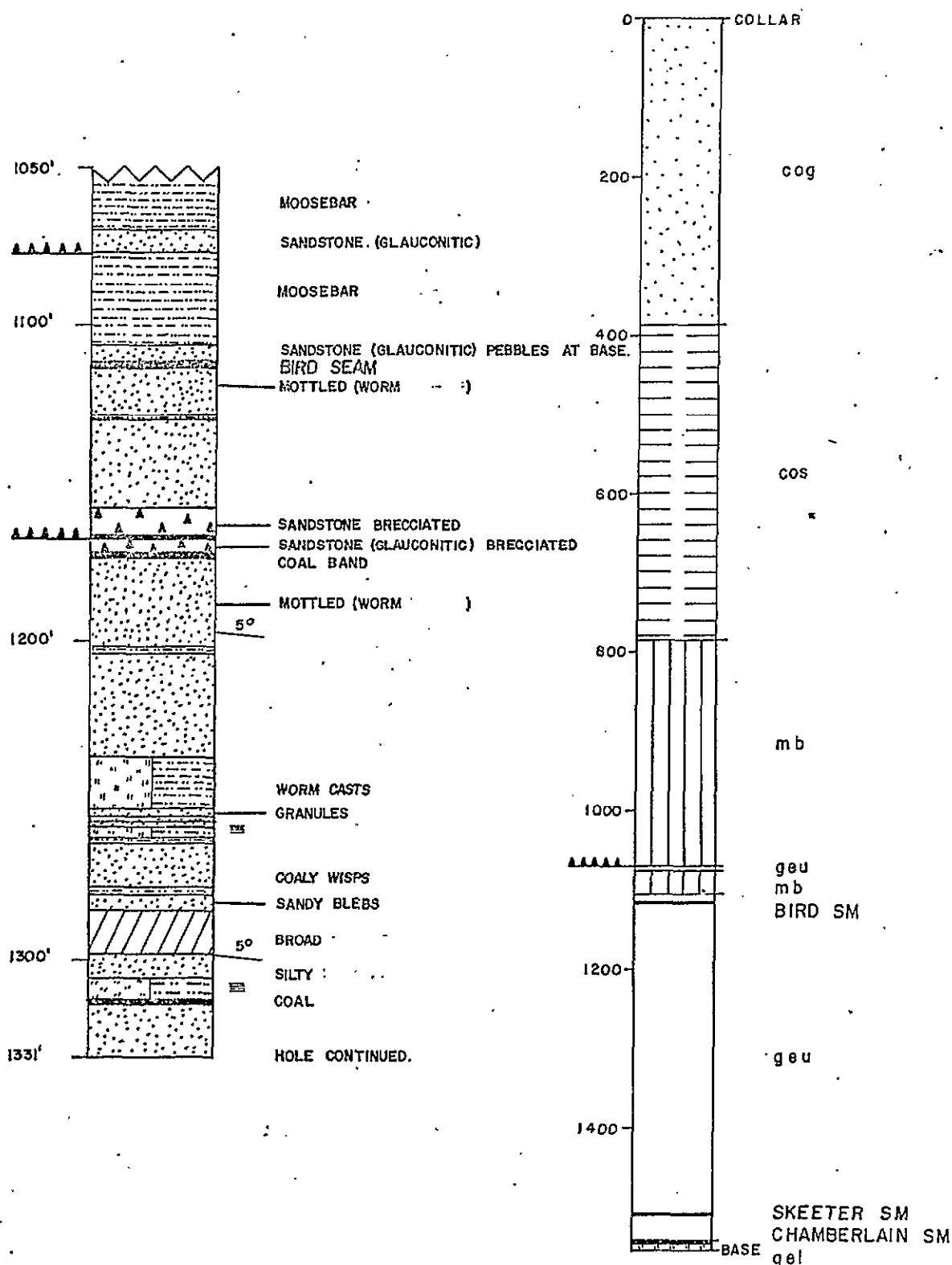
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3459.7	3.5	42.8%	
Chamberlain	3425.7'	13.6'	14.7%	

00641

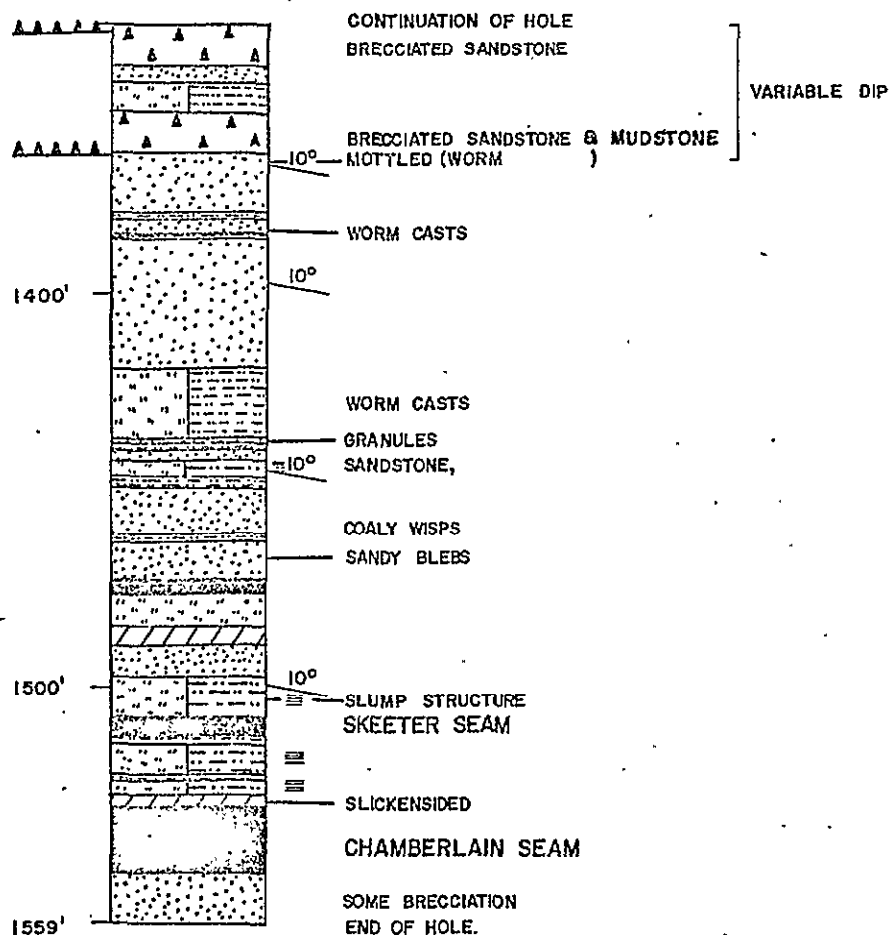


DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-31



DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-31

DRAWN BY S.A.

DATE: November '71

PAGE 2 of 2

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. Sk-31, Hole 31
1507.5 - 1511, Skeeter Seam
Cored 3.5', Recovered 1.5'

Report No. 67-0126

% Total Moisture 1.26

AIR DRY BASIS

% Moisture	1.00
% Ash	12.00
% Volatile	19.23
% Fixed Carbon	67.77
	<u>100.00</u>

Btu	13526
% Sulfur	0.44

FREE SWELLING INDEX (CBI) $2\frac{1}{2}$

Weight of sample as received in laboratory = 2.502 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 225 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 725-8454

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-31, Hole No. 31
1530 - 1545, Chamberlain Seam
Cored 15', Recovered 2'

Report No. 67-0127

% Total Moisture

1.53

AIR DRY BASIS

% Moisture

1.02

% Ash

7.04

% Volatile

22.83

% Fixed Carbon

69.11
100.00

Btu

14272

% Sulfur

0.39

FREE SWELLING INDEX (CBI) 9

Weight of sample as received in laboratory = 2.154 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-31

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 3.0 ft.		
	CONGLOMERATE, mudstone bands.	GATES MB.	38.0
	SILTSTONE.		43.0
	MUDSTONE.		56.0
	CONGLOMERATE.		135.0
	SANDSTONE, mudstone phases.		227.0
	MUDSTONE.		233.0
	CONGLOMERATE.		257.0
	SANDSTONE, mudstone phases.		388.0
	SILTSTONE, sandstone and mudstone worm casts.	SUKUNKA MB.	458.0
	MUDSTONE.		478.0
	SILTSTONE, mudstone phases, predominant at base.		785.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1070.0
Fault, established	SANDSTONE, glauconitic.	GETHING FM.	1076.5
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1106.0
	SANDSTONE, glauconitic.	GETHING FM.	1112.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	<u>COAL.</u>	BIRD SEAM	
	SANDSTONE, mottled (worm casts) 1119'.		1158.0
	SANDSTONE, breccia.		1167.0
	SANDSTONE, glauconitic, brecciated, coarse at top, fine towards base.		1172.0
	SANDSTONE, coarse at top, fine towards base, mottled (worm casts) 1187'.		1237.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		1254.0
	SANDSTONE, silty interbeds, mudstone band at 1257'.		1258.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1264.0
	SANDSTONE, coaly wisps, sandy blebs 1284', mudstone at 1279' and at base.		1285.0
	CLAYSTONE, carbonaceous, coaly bands, broad silty interbed.		1298.0
	SANDSTONE, silty interbeds.		1307.0
	LAMINITE, siltstone and mudstone.		1313.0
	<u>COAL.</u>		1314.0
	SANDSTONE.		1331.0

Structure	Description of Strata	Formation or Member	Depth : Base of Stratum (ft)
Fault, established	SANDSTONE, breccia.		1341.0
	SANDSTONE, silty interbeds.		1346.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		1353.0
	SANDSTONE, SILTSTONE AND MUDSTONE, breccia.	GETHING FM.	1364.0
	SANDSTONE, mottled (worm casts) 1366', mudstone band 1380' and 1385', worm casts 1384'.		1418.0
	SILTSTONE, mudstone interbedded, worm casts, granules at base.		1436.0
	SANDSTONE, silty interbeds, mudstone band at 1439'.		1442.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1449.0
	SANDSTONE, coaly wisps, mudstone band 1462' and 1473', sandy blebs 1467'.		1474.0
	<u>COAL.</u>))		1476.0
	SILTSTONE, sandy interbeds.))		1484.0
	CLAYSTONE, carbonaceous.))	SKEETER SM.	1439.0
	SANDSTONE, silty interbeds.)) LAMINITE, siltstone and mudstone,) mudstone at base, slump? at 1501'.)		1497.0 1507.5

Structure	Description of Strata	Formation or Member	Depth - Base of Stratum (ft) -
	<p>COAL, carbonaceous claystone at base.)</p> <p>LAMINITE, siltstone phase, mudstone band at 1522'.</p> <p>CLAYSTONE, carbonaceous, slickensided</p> <p>COAL.</p> <p>SANDSTONE. brecciate zones.</p>	<p>SKEETER SM.</p> <p></p> <p></p> <p>CHAMB. SM.</p> <p></p>	<p>1511.0</p> <p>1527.0</p> <p>1530.0</p> <p>1545.0</p> <p>1559.0</p> <p>Base of Hole</p>

BORE NUMBER S-32

Grid Reference 39031.8N 97483.2E

Exploration Grid Reference K+1200'/6+1100'

Date Commenced 16th August, 1970 Completed 23rd August, 1970

Collar R.L. 5651.5'

Standard Datum

Total Depth 1168'

Electrically Logged Y~~es~~/No

Drilled by Connors Drilling Ltd.

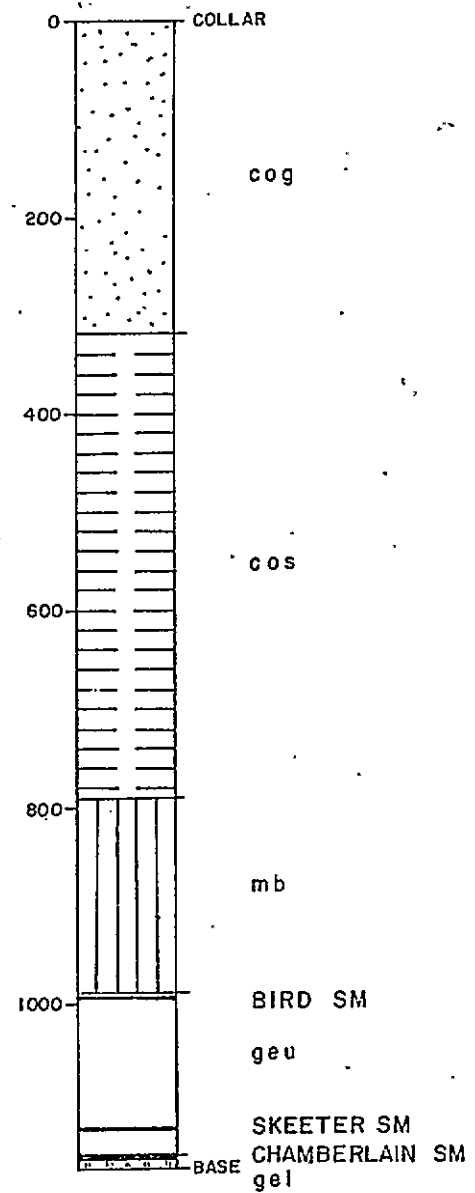
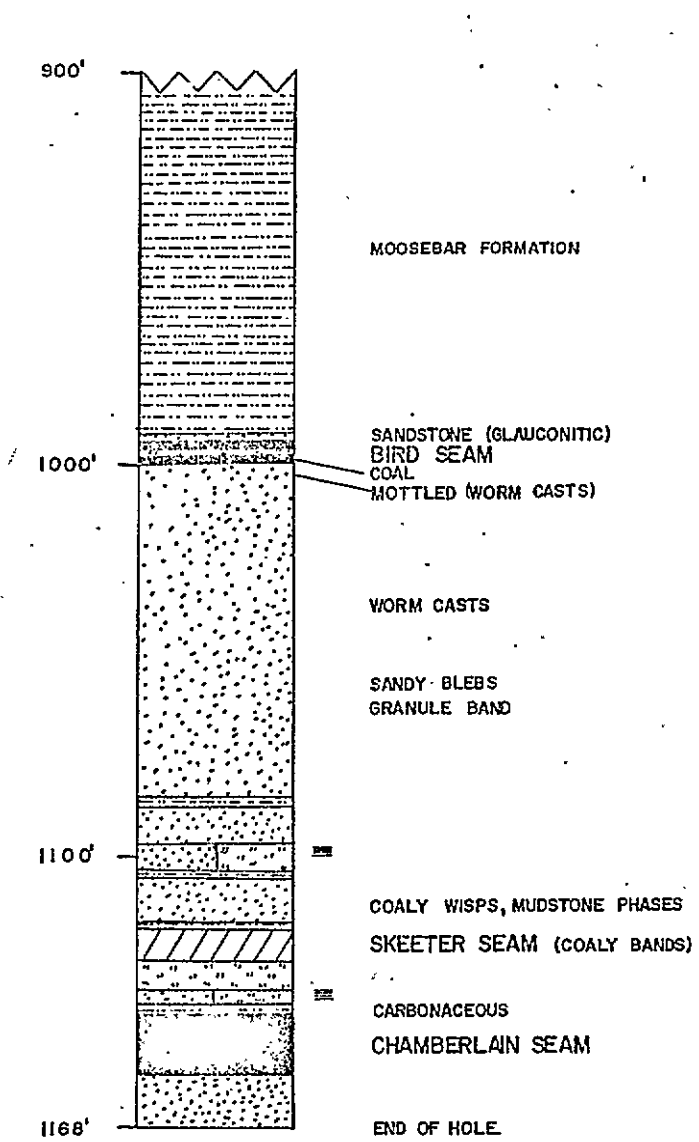
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	4496.5	14.6	59.5%	

00 641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.

for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS

DDH S - 32

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 729-3434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-32-1, Hole S-32
1140.4 - 1145.4 TOP Bench
Cored - 5.0
Recovered - 5.0

Report No. 67-0079
67-0080

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	SS
1.60	95.5	0.94	5.12	21.57	72.37	14661	0.31	4.5
1.60	4.5	0.72	59.05				0.17	
	100.0	0.93	7.55				0.30	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 6.501 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

September 15, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-32-2, Hole S-32
1145.4 - 1155.0 Bonehead Branch
Cored - 9.6
Recovered - 8.7

Report No. 67-0073
67-0074

SPECIFIC GRAVITY	AIR DRY BASIS								
	Sink Float	% WT.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	ISI
	1.60	95.3	0.97	5.09	22.14	71.80	14597	0.22	8.5
	1.60	<u>4.7</u>	<u>0.81</u>	<u>53.47</u>				<u>0.10</u>	
		100.0	0.96	7.36				0.21	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 11.096 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-32

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 22.0 ft.		
	MUDSTONE, siltstone at the base.	GATES MB.	28.0
	<u>COAL.</u>		31.0
	SANDSTONE, coarse grained, (worm casts).		108.0
	SANDSTONE, mudstone interbeds, vertical beds at 171', horizontal below 171'.		203.0
	CONGLOMERATE.		205.0
	<u>COAL.</u>		207.0
	SILTSTONE, mudstone phase at the base.		218.0
	SANDSTONE.		230.0
	SANDSTONE, mudstone phases throughout, predominate in base.		411.0
	MUDSTONE, silty bands,		454.0
	SANDSTONE, silty interbeds, worm casts, mudstone predominate at base.		788.0
	SANDSTONE.		791.0

Structure	Description of Strata	Formation or Member	Depth : Base of Stratum (ft)
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	993.0
	SANDSTONE, glauconitic.	GETHING FM.	994.0
	<u>COAL.</u>)		995.0
)		
	SILTSTONE.)	BIRD SEAM	999.0
)		
	<u>COAL.</u>)		999.5
	SANDSTONE, coarse at top, fine at base, silty interbed towards base 1027', worm casts 1047', mottled (worm casts) 1004', sandy blebs 1056', granular layer 1021', mudstone band 1086'.		1097.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1105.0
	SANDSTONE, coaly wisps, mudstone phases, mudstone at base.		1118.0
	CLAYSTONE, carbonaceous, coaly bands.		1126.0
	SILTSTONE, sandy phases.		1133.0
	LAMINITE, siltstone and mudstone.		1138.0
	MUDSTONE, carbonaceous.		1140.5
	<u>COAL.</u>	CHAMB. SM.	1155.0
	SANDSTONE.		1168.0
			<u>Base of Hole</u>

BORE NUMBER S-34

Grid Reference 42993.3N 81315.9E

Exploration Grid Reference E+1700'/1+200'

Date Commenced 3rd Sept., 1970 Completed 16th Sept., 1970

Collar R.L. 4718.0' Standard Datum

Total Depth 1028' Electrically Logged Yes/No

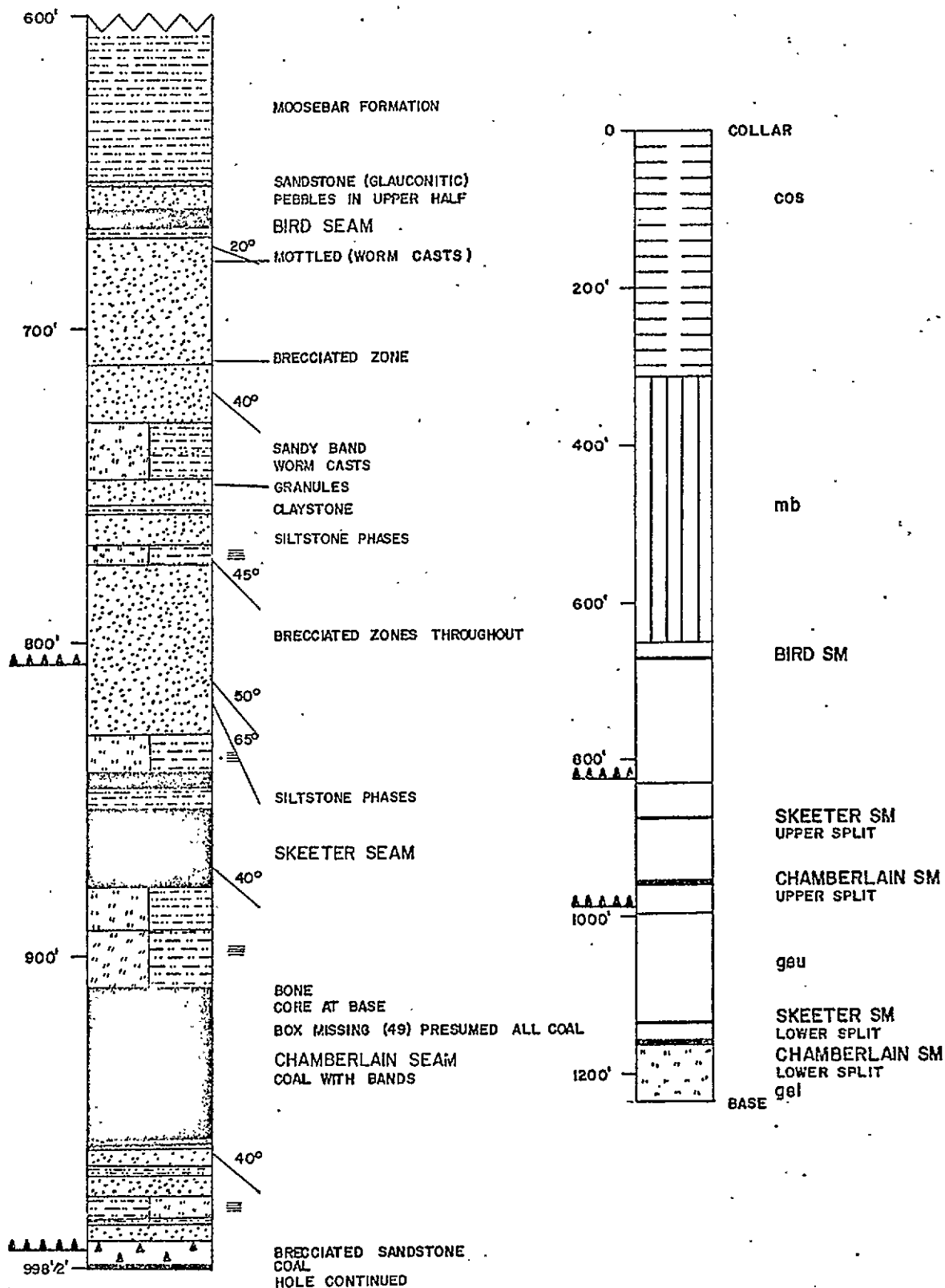
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter Upper Plate	3839.9	23.8	82.4%	
Chamberlain Upper Plate	3767.0	24.4	84.2%	
Skeeter Lower Plate	3585.9	8.4	78.5%	
Chamberlain Lower Plate	3559.6	9.7	94.8%	

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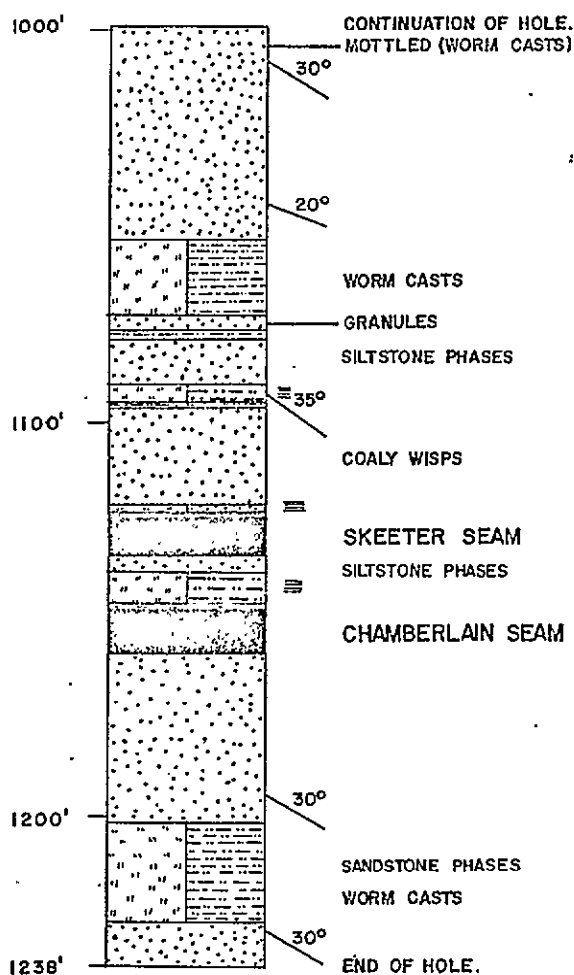


DETAIL OF GETHING FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 34



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 34

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-34, Hole No. S-34
Skeeter Seam
853 - 878
Cored 25', Recovered 20'

Report No. 67-0129

% Total Moisture 1.07

AIR DRY BASIS

% Moisture	1.07
% Ash	23.52
% Volatile	20.62
% Fixed Carbon	54.79
	<u>100.00</u>

Btu	11593
% Sulfur	0.32

FREE SWELLING INDEX (CBI) 4½

Weight of sample as received in laboratory = 22.363 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-34, Hole No. S-34
913 - 951, Chamberlain Seam
Cored 38', Recovered 32'

Report No. 67-0128

% Total Moisture

1.10

AIR DRY BASIS

% Moisture

1.10

% Ash

4.88

% Volatile

25.10

% Fixed Carbon

68.92

100.00

Btu

14661

% Sulfur

0.33

FREE SWELLING INDEX (CBI) 8½

Weight of sample as received in laboratory = 30.295 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-34-2

Report No. 67-0547
67-0548

SPECIFIC GRAVITY

AIR DRY BASIS

Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60	83.5	0.68	6.27	24.29	68.76	14436	0.52	8½
1.60	16.5	1.02	75.95				0.21	
	100.0	0.74	17.77				0.47	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 7.831 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-34-2

Report No. 67-0525
67-0526

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60		96.6	0.94	4.08	24.80	70.18	14770	0.35	8
1.60		<u>3.4</u>	<u>0.53</u>	<u>47.46</u>				<u>0.27</u>	
		100.0	0.93	5.55				0.35	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 12.820 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-34

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 12.0 ft.		
	SILTSTONE, SANDSTONE AND MUDSTONE INTERBEDDED, worm casts.	SUKUNKA MB.	325.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	653.0
	SANDSTONE, glauconitic.	GETHING FM.	654.5
	SANDSTONE, pebble bands at 658'.		663.0
	<u>COAL</u> .	BIRD SEAM	668.0
	MUDSTONE, silty interbeds.		671.0
	SANDSTONE, mottled (worm casts) 678', brecciated at 711'.		730.0
	SILTSTONE AND MUDSTONE INTERBEDS, worm casts, sandy phase at 739', granules at base.		748.0
	SANDSTONE.		757.0
	CLAYSTONE, carbonaceous, coal at base.		758.0
	SANDSTONE, silty phases.		769.0
	LAMINITE, siltstone and mudstone.		775.0
Fault, established	SANDSTONE, coaly wisps, brecciated zones.		829.0

Structure	Description of Strata	Formation or Member	Depth Base of Stratum (ft)
Fault, established	LAMINITE, siltstone and mudstone.		841.0
	<u>COAL</u> .		845.5
	MUDSTONE, sandy phases.		853.0
	<u>COAL</u> .		878.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		891.0
	LAMINITE, siltstone and mudstone.		910.0
	MUDSTONE, (bone), coal at base. (1 box missing, box 49, presumably all coal).		913.0
	<u>COAL</u> , with a band.		958.0
	SANDSTONE, mudstone and coal bands at 960', 967', 968'.		976.0
	LAMINITE, siltstone and mudstone, mudstone base.		985.0
	SANDSTONE.		990.0
	SANDSTONE, sandstone brecciated.		998.0
	<u>COAL</u> .	CHAMB. SM.	998.5
	SANDSTONE, mottled (worm casts) at 1004', coarse at top, fine at base.		1053.0
	SILTSTONE AND MUDSTONE INTERBEDDED; granules at base, worm casts.		1073.0
	SANDSTONE.		1076.0
	MUDSTONE.		1079.0

Structure	Description of Strata	Formation or Member	Depth Base of Stratum (ft)
	SANDSTONE, silty phases.		1090.0
	LAMINITE, siltstone and mudstone, mudstone base.		1096.0
	SANDSTONE, coaly wisps.		1121.0
	LAMINITE, siltstone and mudstone, mudstone base.	GETHING	1124.0
	<u>COAL.</u>		1153.0
	SANDSTONE, silty phases.		1138.0
	LAMINITE, siltstone and mudstone, mudstone base.		1148.0
	<u>COAL.</u>	CHAMB. SM.	1158.0
	SANDSTONE, coarse at top becoming fine.		1202.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at top.		1226.0
	SANDSTONE.		1238.0
			<u>Base of Hole</u>

BORE NUMBER S-35

Grid Reference 45498.1N 91459.3E

Exploration Grid Reference F/5+1800'

Date Commenced 2nd Sept., 1970 Completed 20th Sept., 1970

Collar R.L. 5451.0' Standard Datum

Total Depth 1754' Electrically Logged *Yes*/No :

Drilled by Connors Drilling Ltd.

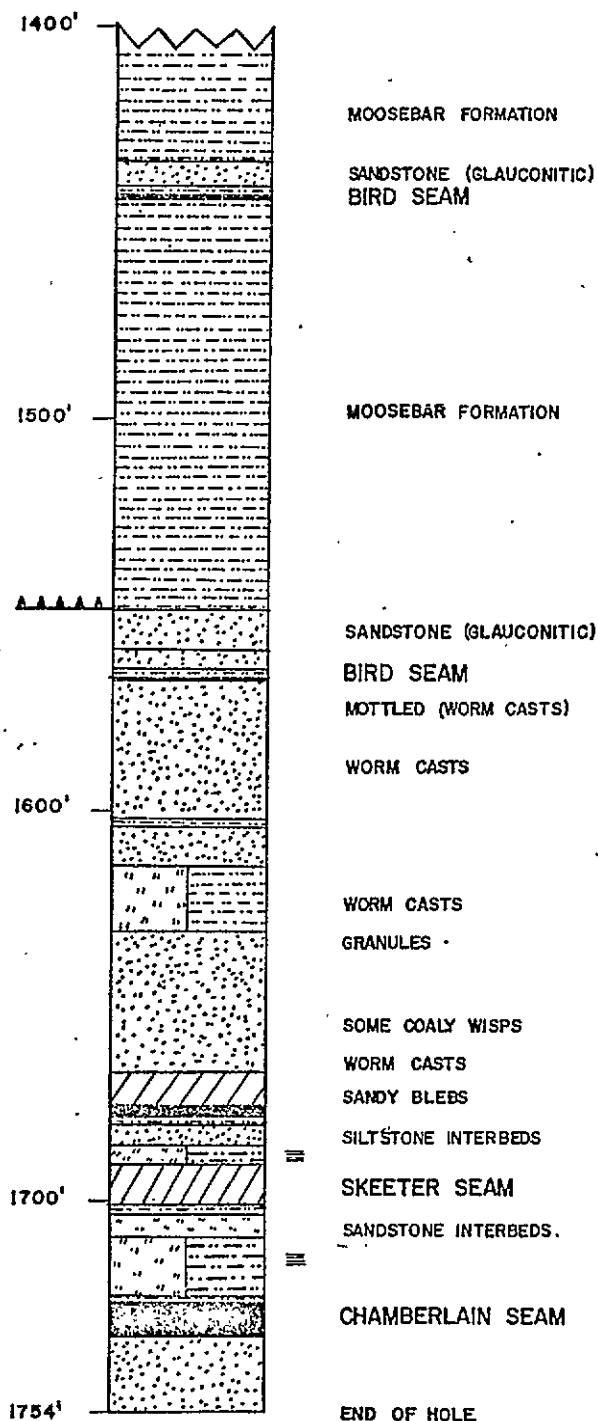
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

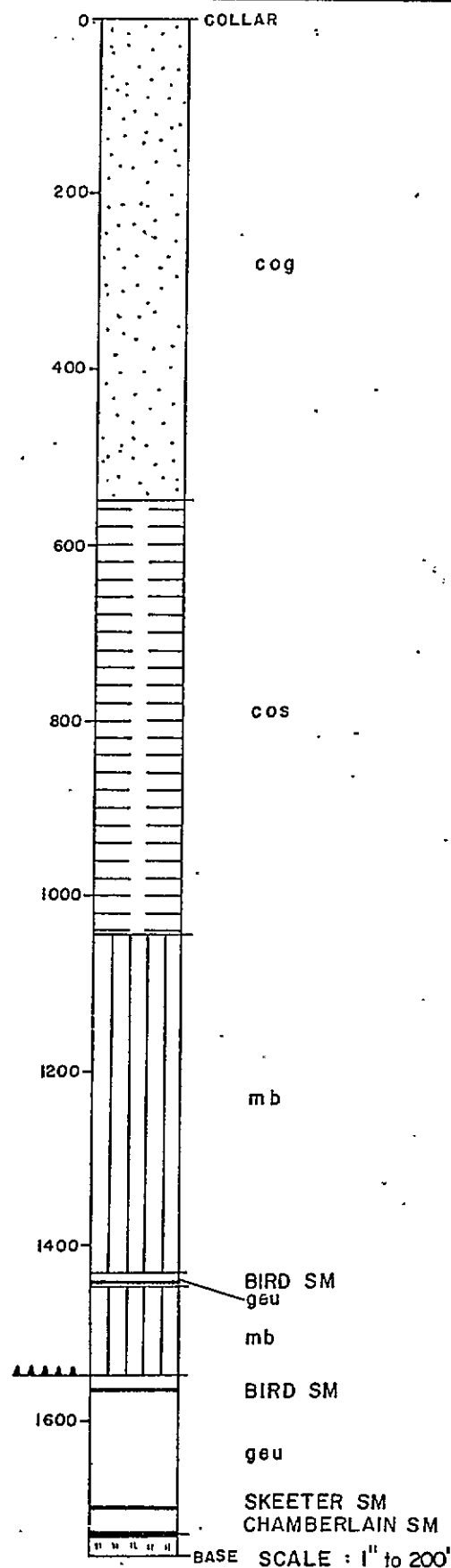
COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	3711.6.	8.0	87.5%	

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'



Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 35

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-35, Hole No. S-35
1725.5' - 1733.5', Chamberlain Seam
Cored 8.0', Recovered 7.0'

Report No. 67-0114
67-0115

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.
1.60		93.1	1.00	5.10	22.32	71.58	14667	0.48
1.60		<u>6.9</u>	<u>0.76</u>	<u>51.14</u>				<u>0.61</u>
		100.0	0.98	8.28				0.48

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 8.452 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-35

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 12.5 ft.		
	SILTSTONE, mudstone interbeds.	GATES MB.	250.0
	<u>COAL.</u>		251.0
	SILTSTONE, mudstone interbeds.		256.0
	MUDSTONE.		266.0
	<u>COAL.</u>		268.0
	CONGLOMERATE.		335.0
	SANDSTONE.		381.0
	SANDSTONE AND MUDSTONE INTERBEDDED.		423.0
	CONGLOMERATE.		456.0
	SANDSTONE.		548.0
Fault, possible	SILTSTONE, SANDSTONE AND MUDSTONE, worm casts. Mudstone predominant in lower half, slickensided and brecciated from 1025'-1041'.	SUKUNKA MB.	1041.0
Fault, probable	MUDSTONE, ash beds, slickensided at 1285' (10'), and brecciated 1389'- (10'), 1403'-1434'.	MOOSEBAR FM.	1434.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
Fault, established	SANDSTONE, glauconitic.	GETHING FM.	1440.0
	MUDSTONE, crushed.	BIRD SEAM	1440.5
	<u>COAL</u> , crushed.		1441.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1548.0
	SANDSTONE, glauconitic, pebbles at base.	GETHING FM.	1558.0
	SANDSTONE.	BIRD SEAM	1564.0
	MUDSTONE.		1565.0
	<u>COAL</u> .		1565.5
	SANDSTONE, mottled (worm casts) 1569', worm casts 1597' and 1582', mudstone band 1612'.		1614.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		1630.0
	SANDSTONE, worm casts - lower 10'.		1667.0
	SANDSTONE, carbonaceous claystone interbeds, carbonaceous claystone bands at 1669' and 1675'.		1675.0
	<u>COAL</u> .		1677.5
	SANDSTONE, silty interbeds, mudstone at top.		1685.0
	LAMINITE, siltstone and mudstone.		1690.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	CLAYSTONE, carbonaceous, coaly bands.		1700.0
	CLAYSTONE.		1703.0
	SILTSTONE, sandy interbeds.		1708.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1725.0
	<u>COAL.</u>	CHAMB. SM.	1733.5
	SANDSTONE.		1754.0
			<u>Base of Hole</u>

BORE NUMBER S-36

Grid Reference 42379.4N 93871.3E

Exploration Grid Reference H/6

Date Commenced 2nd Sept., 1970 Completed 10th Sept. 1970

Collar R.L. 5367.7' Standard Datum

Total Depth 1228' Electrically Logged ~~X/b/s~~/No

Drilled by Connors Drilling Ltd.

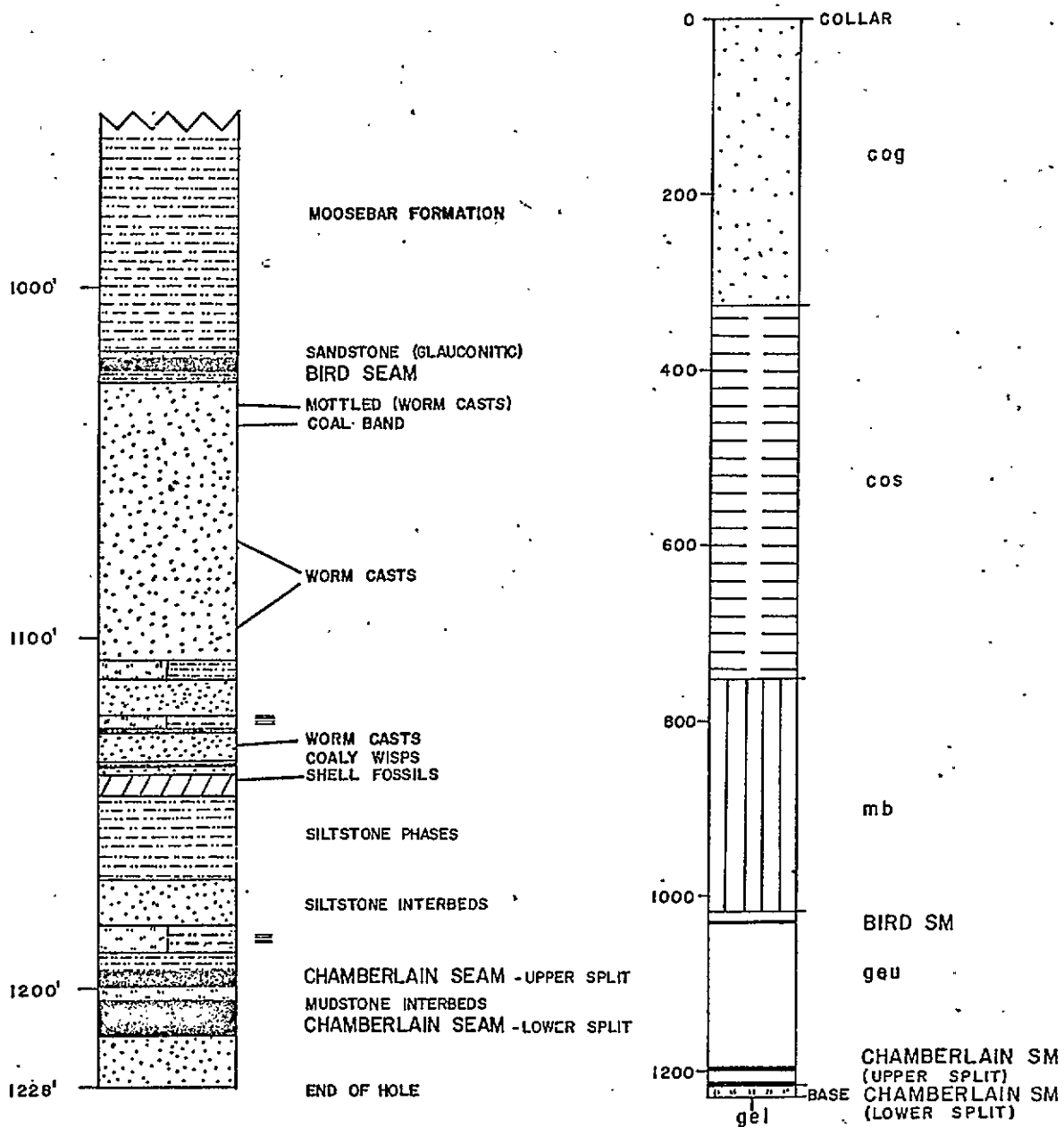
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain Upper Split	4168.7	2.0	100%	
Chamberlain Lower Split	4154.2	10.0	85%	

641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 36

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-36, Hole No. S-36
1203.5' - 1213.5', Chamberlain Seam
Cored 10.0', Recovered 8.5'

Report No. 67-0116
67-0117

SPECIFIC GRAVITY	AIR DRY BASIS							
	Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.
	1.60	97.0	1.05	5.96	22.57	70.42	14490	0.40
	1.60	<u>3.0</u>	<u>0.80</u>	<u>60.56</u>				<u>0.21</u>
		100.0	1.04	7.60				0.39

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 11.314 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-36

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 10.0 ft.		
	CONGLOMERATE.	GATES MB.	42.0
	SANDSTONE AND MUDSTONE PHASES.		68.0
	MUDSTONE, coaly band.		87.0
	SANDSTONE, granules and worm casts.		148.0
	SANDSTONE AND MUDSTONE INTERBEDDED, fault at 176'.		190.0
Fault, established	MUDSTONE, coaly wisps.		205.0
	SANDSTONE, granules and worm casts.		264.0
	SANDSTONE AND MUDSTONE INTERBEDDED.		323.0
	SILTSTONE, sandstone and mudstone, mudstone at base.	SUKUNKA MB.	752.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1018.0
	SANDSTONE, glauconitic.	GETHING FM.	1020.0
	<u>COAL.</u>	BIRD SEAM	1024.0
	MUDSTONE.		1027.0
	SANDSTONE, coarse at top, fine towards base, mottled worm casts.		

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	1048', worm casts 1072-1095'.		1106.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		1112.0
	SANDSTONE.		1122.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1127.0
	SANDSTONE, coaly wisps, mudstone band at 1136', worm casts.		1139.0
	CLAYSTONE, carbonaceous, shelly fossils at top, coaly band 1142'.		1145.0
	MUDSTONE, silty phases.		1169.0
	SANDSTONE, silty interbeds.		1182.0
	LAMINITE, siltstone and mudstone.		1189.5
	MUDSTONE.		1195.0
	<u>COAL.</u>	CHAMB. SM. upper split	1199.0
	SILTSTONE, mudstone interbeds, mudstone at base.		1204.0
	<u>COAL.</u>	CHAMB. SM. lower split	1213.0
	SANDSTONE.		1228.0
			<u>Base of Hole</u>

BORE NUMBER S-37

Grid Reference 44083.2N 84155.8E

Exploration Grid Reference E+1000'/2+1000'

Date Commenced 13th Sept., 1970 Completed 21st Sept., 1970

Collar R.L. 4926.8' Standard Datum

Total Depth 1408' Electrically Logged Yes/~~No~~

Drilled by Connors Drilling Ltd.

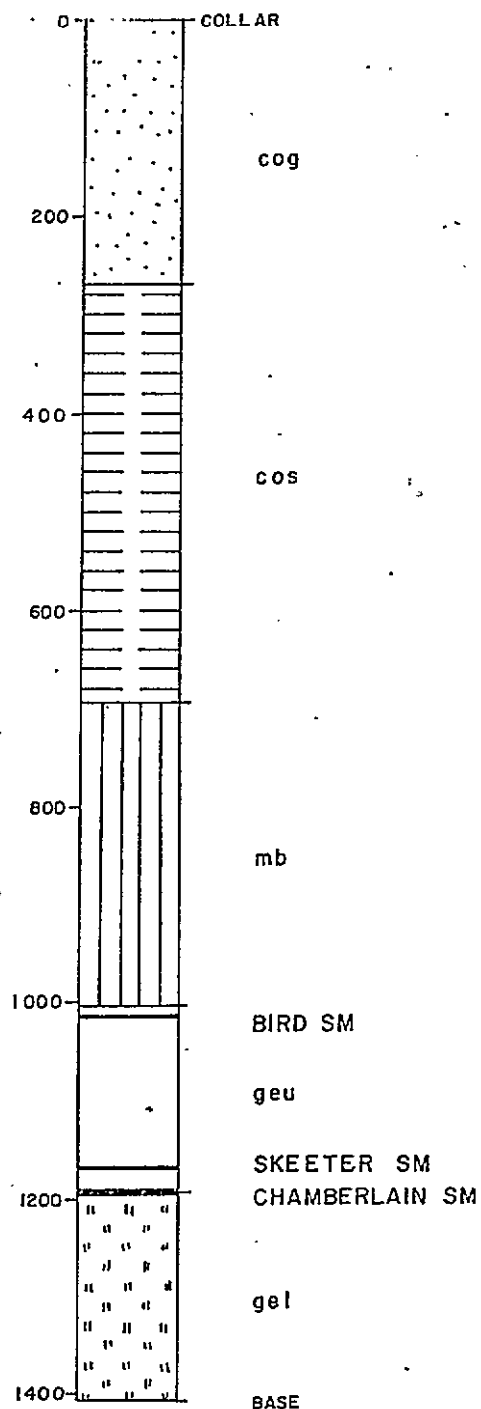
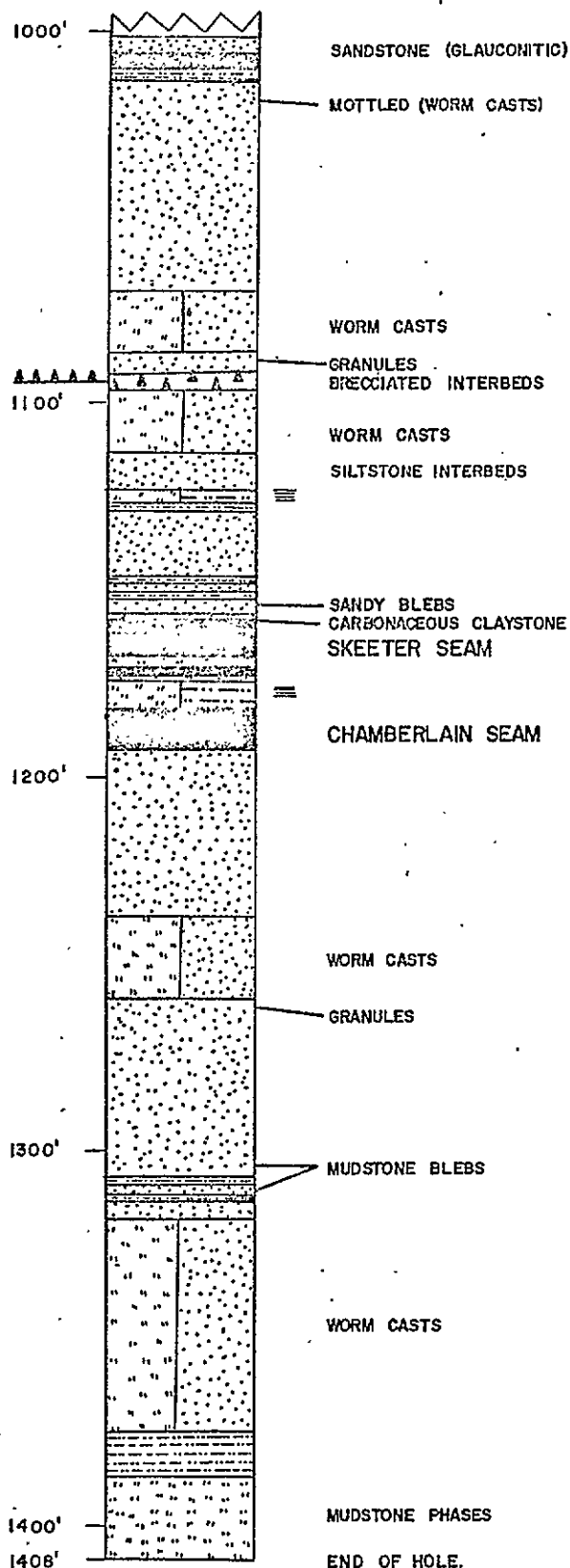
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3754.5	14.1	89.7%	
Chamberlain	3734.5	9.90	94.9%	

00641



DETAIL OF GETHING
FORMATION
SCALE : 1" to 50'

SCALE : 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-37

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 25, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-37-1

Report No. 67-0573
67-0574

SPECIFIC
GRAVITY

AIR DRY BASIS

Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60	97.3	0.82	5.07	22.90	71.21	14778	0.44	8
1.60	<u>2.7</u>	<u>0.81</u>	<u>17.25</u>				<u>0.39</u>	
	100.0	0.82	5.40				0.44	

% ADM = % Moisture in air dried sample

Weight of as received sample = 6.687 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 226 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-37, Hole No. S-37
1182.0' - 1192.5',
Cored 10.5', Recovered 10.0'

Report No. 67-0118
67-0119

SPECIFIC GRAVITY

Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60	98.4	0.74	4.05	24.32	70.89	14956	0.49	9
1.60	$\frac{1.6}{100.0}$	$\frac{0.50}{0.74}$	$\frac{37.02}{4.58}$				$\frac{0.35}{0.49}$	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 14.559 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-37

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 6.0 ft.		
	SANDSTONE.	GATES MB.	81.0
	SANDSTONE, mudstone interbeds, coal band (1') 98'.		102.0
	MUDSTONE, silty phases.		113.0
	CONGLOMERATE.		145.0
	SANDSTONE.		178.0
	SANDSTONE, mudstone interbeds.		270.0
	SANDSTONE, siltstone and mudstone, worm casts, mudstone predominant in lower half.	SUKUNKA MB.	698.0
	MUDSTONE, ash beds at base.	MOOSEBAR	1001.0
	SANDSTONE, glauconitic.	GETHING	1006.0
	<u>COAL</u> ,	BIRD SEAM	1010.0
	MUDSTONE.		1012.0
	SANDSTONE, coarse at top, fine towards base, mottled (worm casts) 1019'.		1070.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		1086.0

Structure	Description of Strata	Formation or Member	Depth : Base of Stratur (ft)
Fault, established	SANDSTONE.		1091.0
	SANDSTONE AND SILTSTONE, breccia.		1096.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		1113.0
	SANDSTONE, silty interbeds.		1123.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1128.0
	SANDSTONE, coaly wisps, mudstone bands at 1447' and 1151', sandy blebs 1151'-1156'.		1156.0
	CLAYSTONE, carbonaceous.		1157.0
	<u>COAL.</u>		1159.0
	SILTSTONE, sandy interbeds.		1162.0
	<u>COAL.</u>	SKEETER SM.	1167.0
	SILTSTONE.		1171.0
	<u>COAL.</u>		1172.0
	SILTSTONE.		1174.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1182.0
	<u>COAL</u> , coarse at top, fine towards base.	CHAMB. SM.	1192.0
	SANDSTONE.		1236.0
	SILTSTONE AND MUDSTONE INTERBEDDED, granules at base.		1258.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	<p>SANDSTONE, mudstone bands at 1308' and 1312', mud blebs 1303' and 1313'.</p> <p>SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases.</p> <p>MUDSTONE.</p> <p>SILTSTONE, mudstone phases.</p>		<p>1318.0</p> <p>1375.0</p> <p>1387.0</p> <p>1408.0</p> <p><u>Base of Hole</u></p>

BORE NUMBER S-38

Grid Reference 41453.1N 82462.0E

Exploration Grid Reference F+1700'/1+200'

Date Commenced 19th Sept., 1970 Completed 23rd Sept., 1970

Collar R.L. 4550.7' Standard Datum

Total Depth 1068' Electrically Logged Y~~es~~/No

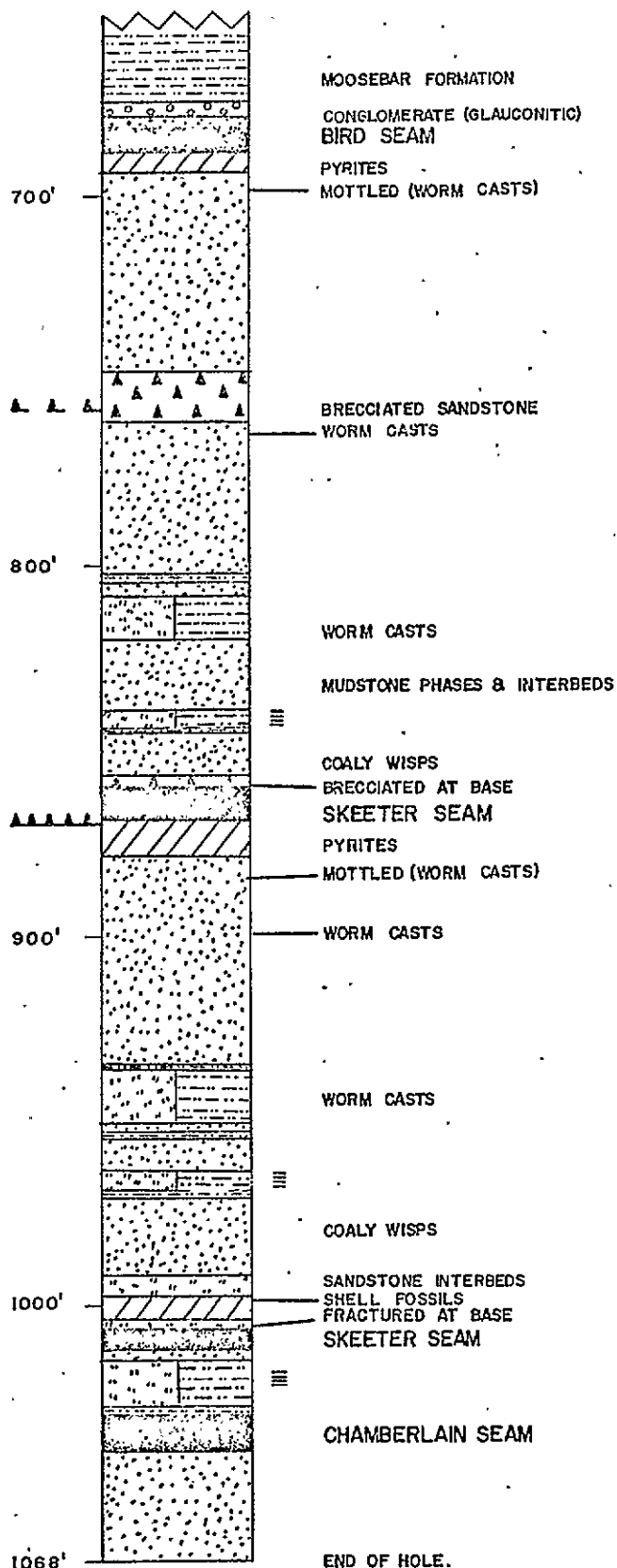
Drilled by Connors Drilling Ltd.
for Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

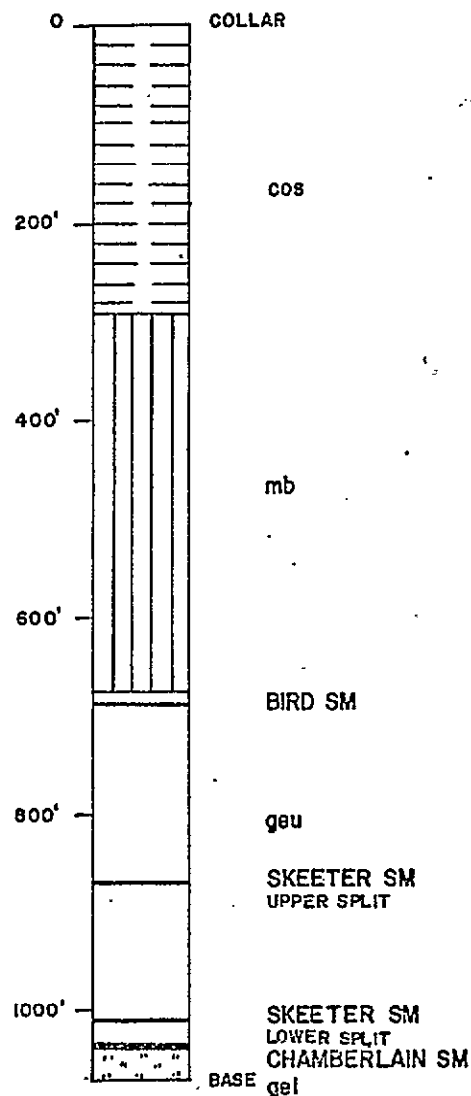
COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter Upper Plate	3682.7	5.85	66.6%	
Skeeter Lower Plate	3539.7	5.82	89.3%	
Chamberlain Lower Plate	3512.7	9.40	95.7%	

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'



SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS

DDH S - 38

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 720-8434

January 25, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-38-1


Report No. 67-0567
67-0568

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60		41.6	0.77	9.31	23.73	66.19	13998	2.78	8½
1.60		<u>58.4</u>	<u>1.19</u>	<u>80.94</u>				<u>2.76</u>	
		100.0	1.02	51.14				2.77	

% ADM = % Moisture in air dried sample

Weight of as received sample = 7.743 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.


R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 25, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. Sk-38-2

Report No. 67-0565
67-0566

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		76.1	0.94	6.25	22.53	70.28	14470	0.49 8
1.60		<u>23.9</u>	<u>1.01</u>	<u>80.78</u>				<u>0.13</u>
		100.0	0.96	24.06				0.40

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 7.866 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.


R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 226 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

October 20, 1970



P.O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRANEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-38, Hole No. S-38
1028.5' - 1038.0', Chamberlain Seam
Cored 9.5', Recovered 9.0'

Report No. 67-0120
67-0121

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sol.
1.60		97.7	0.92	4.26	23.45	71.37	14913	0.38
1.60		2.3	0.47	39.68				0.22
		100.0	0.91	5.07				0.38

% ADM = % Moisture in air dried sample

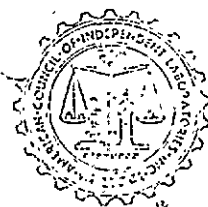
Weight of sample as received in laboratory = 13.291 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-38

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth : Base of Stratum (ft)</i>
	No core to 11.0 ft.		
	SILTSTONE AND SANDSTONE AND MUDSTONE.	SUKUNKA MB.	290.0
	MUDSTONE, slickensided at 458', 482', 433', ash beds at base.	MOOSEBAR FM.	675.0
	CONGLOMERATE, sandy.	GETHING. FM.	678.0
	SANDSTONE.		682.0
	<u>COAL</u> .	BIRD SEAM	686.0
	CLAYSTONE, pyrite, silty interbeds, coal band at base.		693.0
	SANDSTONE, mottled worm casts 697'.		749.0
	SANDSTONE, breccia.		761.0
	SANDSTONE, worm casts at 764'. Mudstone band at 804'.		808.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		820.0
	SANDSTONE, mudstone phases.		838.0
	LAMINITE, siltstone and mudstone, mudstone at base.		844.0
	SANDSTONE, coaly wisps, brecciated at base.		860.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth Base of Stratum (ft)</i>
Fault, established	<u>COAL.</u>	SKEETER SM. upper plate	868.0
	CLAYSTONE, carbonaceous, pyrite.		878.0
	SANDSTONE, mottled (worm casts) 883', worm casts 899', mudstone band 935'.		936.0
	SILTSTONE AND MUDSTONE INTERBEDDED, granules at base, worm casts.		950.0
	SANDSTONE, mudstone band at 953'.		963.0
	LAMINITE, siltstone and mudstone, mudstone at base.		970.0
	SANDSTONE, coaly wisps.		991.0
	SILTSTONE, sandy interbeds.		997.0
	CLAYSTONE, carbonaceous, coaly bands, shell fossils at top.		1003.0
	SILTSTONE, fractured.		1005.0
	<u>COAL.</u>	SKEETER SM. lower plate	1011.0
	LAMINITE, siltstone and mudstone, sandy at top, mudstone at base.		1029.0
	<u>COAL.</u>	CHAMB. SM.	1038.0
	SANDSTONE.		1068.0
			<u>Base of Hole</u>

BORE NUMBER S-39

Grid Reference 38839.2N 94350.4E
Exploration Grid Reference J+900'/5+400'

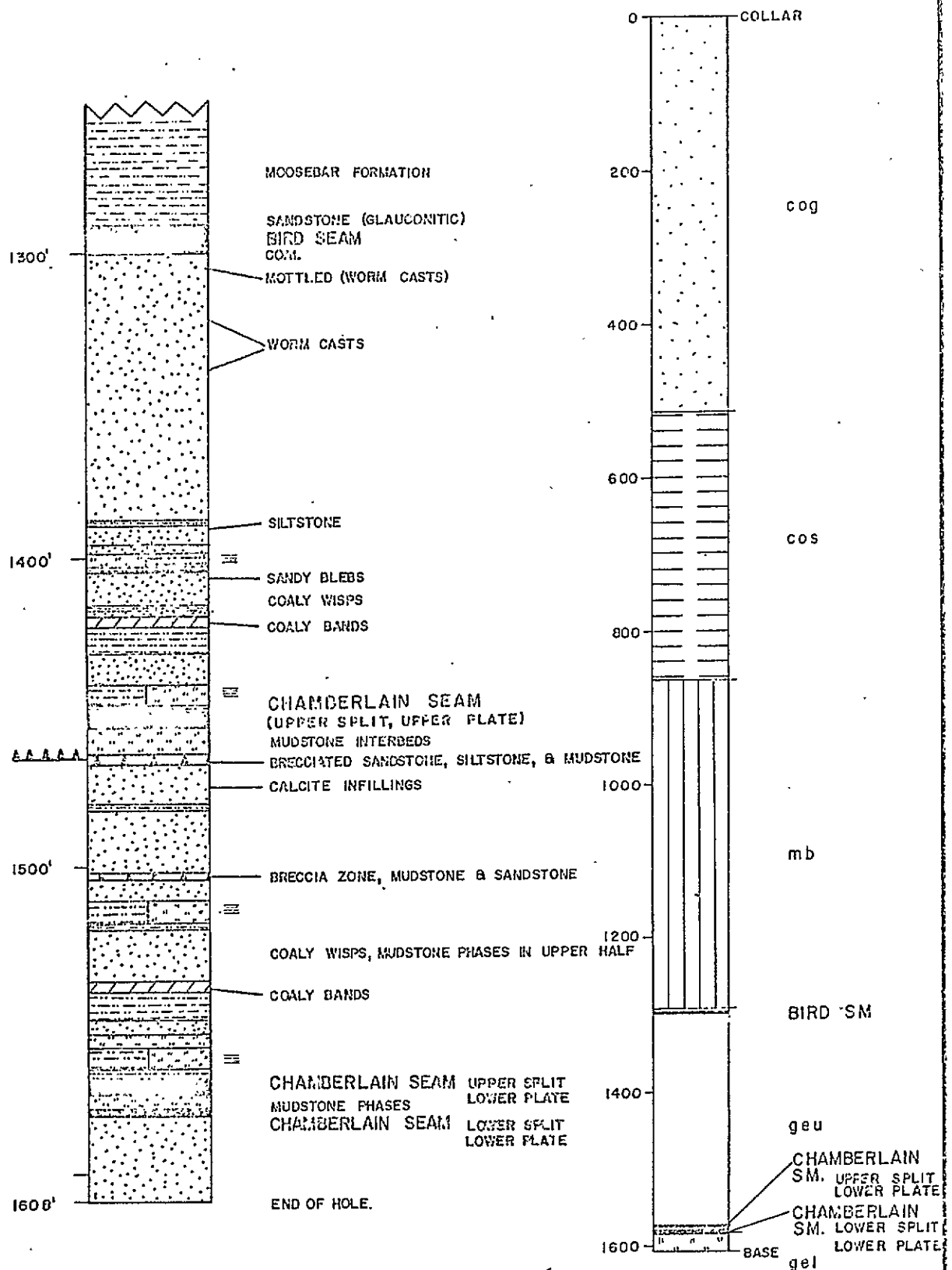
Date Commenced 23rd Sept., 1970 Completed 8th Oct., 1970

Collar R.L. 5391.5' Standard Datum
Total Depth 1608' Electrically Logged ~~Yes~~/No
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain Upper Split Upper Plate	3931.2	3.0	100%	
Chamberlain Upper Split Lower Plate	3821.6	4.5	66.6%	
Chamberlain Lower Split Lower Plate	3815.2	2.0	85.0%	

00641



DETAIL OF GETHING FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 39

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMIDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-39-1


Report No. 67-0527
67-0528

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		95.5	0.75	5.27	20.65	73.33	14732	0.41 7
1.60		4.5	0.63	52.15				0.22
		100.0	0.74	7.38				0.40

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 4.448 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.


R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 720-8434

January 18, 1970



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-39-2

Report No. 67-0529
67-0530

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		95.3	0.83	4.87	21.96	72.34	14688	0.39 8½
1.60		<u>4.7</u>	<u>0.63</u>	<u>64.02</u>				<u>0.50</u>
		100.0	0.82	7.65				0.40

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 2.447 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-39

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth Base of Stratum (ft)</i>
	No core to 3.0 ft.		
	COAL AND CLAYSTONE.	GATES	28.0
	SILTSTONE, sandy phases.		53.0
	MUDSTONE, coaly at base.		81.0
	SANDSTONE, pebble bands.		97.0
	CONGLOMERATE.		118.0
	MUDSTONE, silty interbeds.		153.0
	<u>COAL.</u>		156.0
	SANDSTONE, worm casts.		230.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases, coal band (0.5') at base.		257.0
	MUDSTONE, carbonaceous, coaly bands.		288.0
	SANDSTONE, mudstone phases, finer at base.		406.0
Fault, established	SANDSTONE AND MUDSTONE, brecciated.		450.0
	SANDSTONE AND MUDSTONE PHASES, fine grained at base.		518.0

Structure	Description of Strata	Formation or Member	Depth Base of Stratum (ft)
	SILTSTONE, SANDSTONE AND MUDSTONE INTERBEDDED, worm casts.	SUKUNKA MB.	579.0
	MUDSTONE, silty interbeds.		605.0
	SILTSTONE, SANDSTONE AND MUDSTONE INTERBEDDED, worm casts.		864.0
	MUDSTONE, ash beds towards base.	MOOSEBAR FM.	1291.0
	SANDSTONE, glauconitic.	GETHING FM.	1292.0
	<u>COAL.</u>	BIRD SEAM	1295.0
	MUDSTONE, carbonaceous.		1299.0
	<u>COAL.</u>		1300.0
	SANDSTONE, coarse at top, fine towards base, (mottled) worm casts 1304', worm casts 1319'-1341', mudstone band at 1388'.		1395.0
	SANDSTONE, silty interbeds.		1398.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1404.0
	SANDSTONE, coaly wisps, mudstone bands 1413', 1417' and at base, sandy blebs at 1405'.		1418.0
	<u>COAL</u> AND CLAYSTONE, carbonaceous.		1422.0
	MUDSTONE.		1430.0
	SANDSTONE, silty interbeds and phases.		1440.0

Structure	Description of Strata	Formation or Member	Depth Base of Stratum (ft)
Fault, established	LAMINITE, siltstone and mudstone.	GETHING FM.	1448.0
	MUDSTONE.		1450.0
	COAL AND CLAYSTONE.		1454.0
	SILTSTONE, mudstone interbeds.		1463.0
	SILTSTONE AND SANDSTONE, breccia.		1465.0
	SANDSTONE, mudstone bands at 1480' and 1472' breccia zone to 1476'.		1501.0
	MUDSTONE AND SANDSTONE, breccia.		1503.0
	SANDSTONE, silty phases.		1510.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1519.0
	SANDSTONE, coaly wisps, mudstone phases in lower half.		1537.0
	CLAYSTONE, carbonaceous, coaly bands		1540.0
	MUDSTONE.		1549.0
	SANDSTONE.		1555.0
	SILTSTONE; sandy phases.		1558.0
	LAMINITE, siltstone and mudstone.		1566.5
	MUDSTONE.		1569.5
	<u>COAL.</u>	SKEETER SM.	1573.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth Base of Stratum (ft)</i>
	SILTSTONE, sandstone interbeds.		1578.0
	<u>COAL.</u>	CHAMB. SM.	1580.0
	SANDSTONE.		1608.0
			<u>Base of Hole</u>

BORE NUMBER S-40

Grid Reference 45371.0N 87020.5E
Exploration Gril Reference E+500'/4+200'

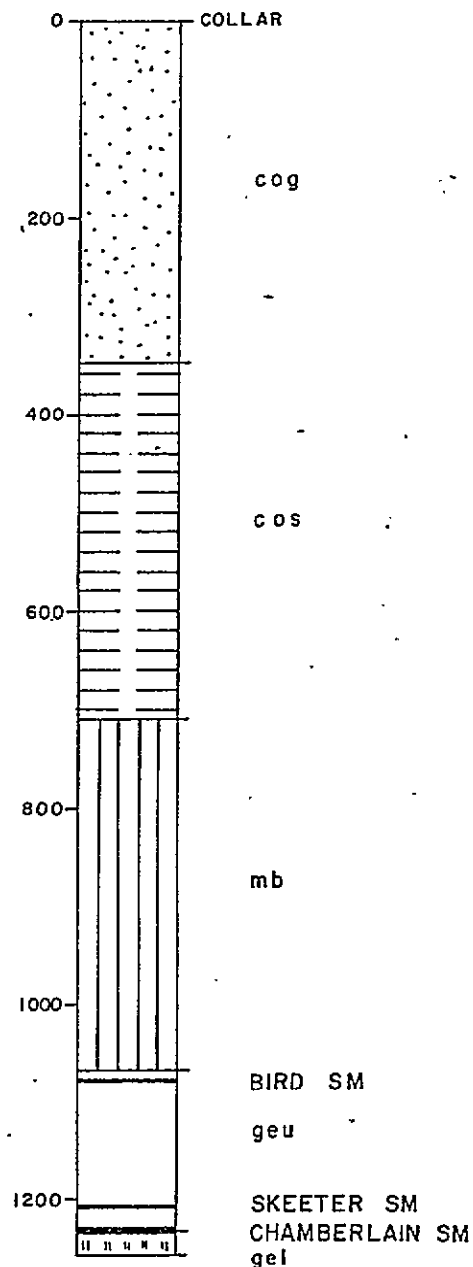
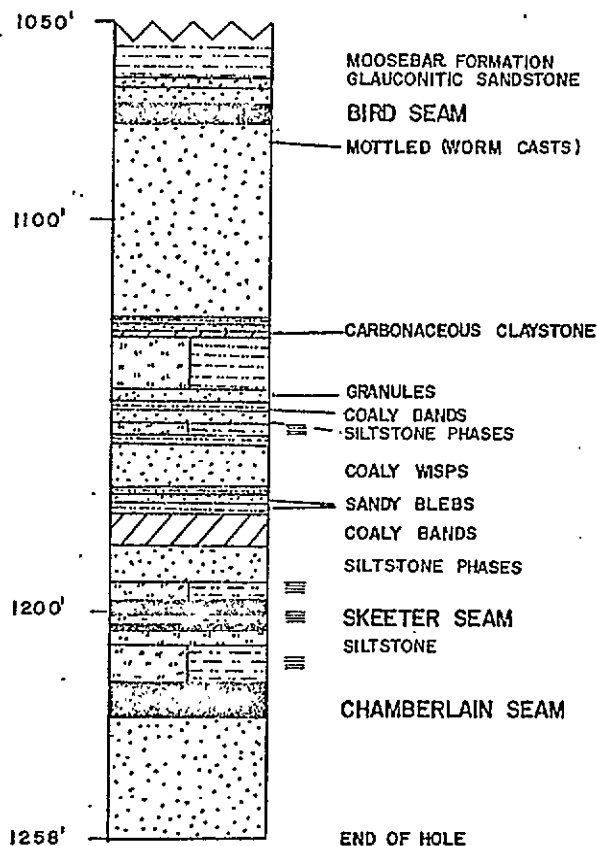
Date Commenced 23rd Sept., 1970 Completed 30th Sept., 1970

Collar R.L. 4929.9' Standard Datum
Total Depth 1258 ' Electrically Logged Y~~es~~/No
Drilled by Connors Drilling Ltd.
for Brameda Resources Limited
Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3717.2	7.0	100%	
Chamberlain	3702.9	9.0	100%	

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-40

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 226 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-6434

October 20, 1970



P. O. Box 8596
Vancouver 5, B. C.

Certificate of analysis for:
BRAMIDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-40, Hole No. S-40
1218' - 1227', Chamberlain Seam
Cored 9.0', Recovered 9.0'

Report No. 67-0122
67-0123

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.
1.60		97.5	1.06	4.06	21.73	73.15	14804	0.46
1.60		2.5	0.56	51.67				0.67
		100.0	1.05	5.25				0.47

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 12.802 lbs.

Respectfully submitted,

COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-40

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 12.0 ft.		
	CONGLOMERATE.	GATES MB.	58.0
	SANDSTONE.		117.0
	SANDSTONE, mudstone interbeds.		161.0
	MUDSTONE.		166.0
	CONGLOMERATE.		193.0
	SANDSTONE.		233.0
	SANDSTONE, mudstone interbeds.		348.0
	SILTSTONE, mudstone interbeds and blebs.	SUKUNKA MB.	710.0
	MUDSTONE, (no clay bands at base).	MOOSEBAR FM.	1064.0
	SANDSTONE, glauconitic.		1066.0
	SANDSTONE, some pebbles at base.		1070.0
	<u>COAL.</u>	BIRD SEAM	1075.0
	SANDSTONE, grey, mottled (worm casts) at 1080', mudstone band at 1126'.		1128.0
	CLAYSTONE, carbonaceous.		1129.0

Structure	Description of Strata	Formation or Member	Depth Base of Strata (ft)
	SILTSTONE AND MUDSTONE INTERBEDS, granules at base.		1143.0
	SANDSTONE.		1146.0
	MUDSTONE, a few coaly bands.		1148.0
	SANDSTONE, silty phases.		1151.0
	LAMINITE, siltstone and mudstone, carbonaceous claystone at base.		1156.0
	SANDSTONE, coaly wisps, mudstone bands at 1170', 1173' and at base, sandy blebs at 1172' and 1174'.		1175.0
	CLAYSTONE, carbonaceous, coaly bands.		1183.0
	SANDSTONE, silty phases.		1191.0
	LAMINITE, siltstone and mudstone.		1197.0
	<u>COAL.</u>)		1200.0
)		
	LAMINITE, siltstone and mudstone.)	SKEETER SM.	1203.0
)		
	<u>COAL.</u>)		1204.0
	SILTSTONE, sandy interbeds.		1208.0
	LAMINITE, siltstone and mudstone.		1218.0
	<u>COAL.</u>	CHAMB. SM.	1227.0
	SANDSTONE, grey.		1258.0
			Base of Hole

BORE NUMBER S-42

Grid Reference 36956.2N 91956.3E

Exploration Grid Reference J+700'/3+1200'

Date Commenced 3rd Oct., 1970 Completed 19th Oct., 1970

Collar R.L. 5248.5' Standard Datum

Total Depth 1488' Electrically Logged Y#\$/No

Drilled by Connors Drilling Ltd.

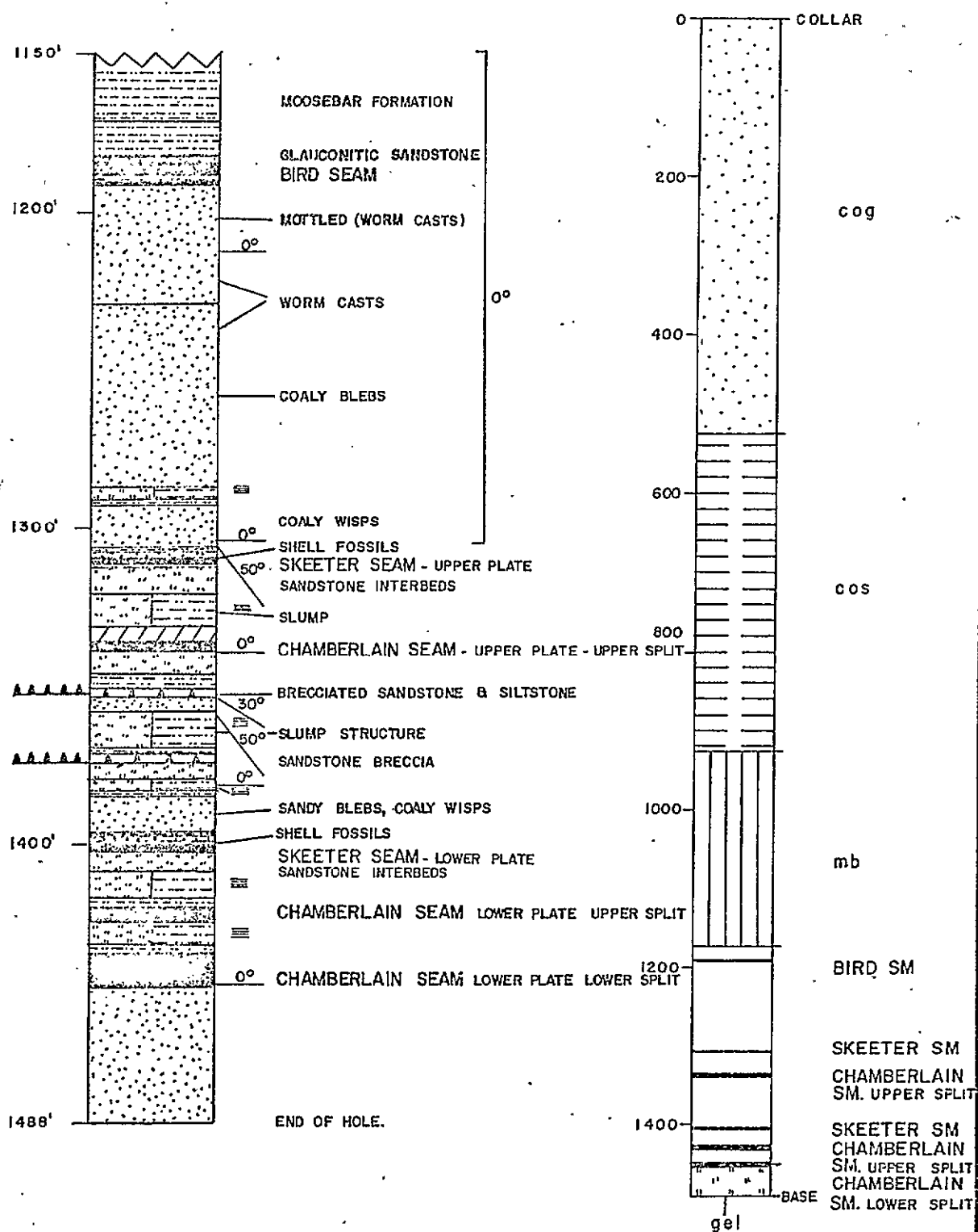
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain Upper Split	3821.5	4.5	93.3%	
Chamberlain Lower Split	3803.7	9.7	100%	

00641



DETAIL OF GETTING
FORMATION
SCALE 1" to 50'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-42

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 728-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-42

Report No. 67-0549
67-0550

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60		83.7	0.69	7.93	20.26	71.12	14168	0.42	4½
1.60		<u>16.3</u>	<u>0.79</u>	<u>58.91</u>				<u>0.18</u>	
		100.0	0.71	16.24				0.38	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 4.643 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-42

Report No. 67-0531
67-0532

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60		98.8	0.70	4.02	22.40	72.88	14996	0.40	8½
1.60		<u>1.2</u>	<u>0.84</u>	<u>47.14</u>				<u>0.26</u>	
		100.0	0.70	4.54				0.40	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 11.111 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-42

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth Base of Stratum (ft.)</i>
	No core to 15.0 ft.		
	SANDSTONE AND MUDSTONE, weathered.	GATES MB.	32.0
	MUDSTONE, sandy interbeds, conglomerate at base.		75.0
	<u>COAL.</u>		76.0
	SILTSTONE, mudstone interbeds.		88.0
	SANDSTONE, coaly wisps, mudstone blebs.		125.0
	MUDSTONE, sandy phases.		145.0
	SANDSTONE, silty phases.		192.0
	MUDSTONE, coaly bands.		205.0
	<u>COAL.</u>		209.0
	SILTSTONE, coaly bands.		214.0
	<u>COAL.</u>		216.0
	MUDSTONE, coaly bands, sandy phases.		243.0
	<u>COAL.</u>		246.0
	SANDSTONE.		331.0

Structure	Description of Strata	Formation or Member	Depth Base of Stratum (ft)
	SANDSTONE, silty and muddy phases, coal band (1') at 343', mudstone at base.		379.0
	SANDSTONE.		453.0
	SANDSTONE, muddy interbeds, predominant towards base.		523.0
	SILTSTONE, sandstone and mudstone interbedded, worm casts.	SUKUNKA MB.	923.0
	MUDSTONE.	MOOSEBAR FM.	1172.0
	MUDSTONE, ash beds at base.		1183.0
	SANDSTONE, glauconitic.	GETHING FM.	1185.0
	<u>COAL</u> .	BIRD SEAM	1189.0
	CLAYSTONE, coaly bands.		1191.0
	<u>COAL</u> .		1191.5
	SANDSTONE, coarse at top, mottled (worm casts) 200', worm casts 1219'-1226'.		1229.0
	SANDSTONE, worm casts 1236', coaly blebs 1256'-1258'.		1288.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1293.0
	SANDSTONE, coaly wisps, mudstone phases at base and 1308', shell fossils at base.	SKEETER SM upper split	1311.0
	SILTSTONE, sandy interbeds, mudstone at base.		1321.0

Structure	Description of Strata	Formation or Member	Depth Base of Stratum (ft)
Fault, established	LAMINITE, siltstone and mudstone, slump at 1327'.		1331.0
	CLAYSTONE, carbonaceous.		1336.0
	<u>COAL</u> .	CHAMB. SM. upper plate upper split	1339.0
	SILTSTONE, sandy phases.		1347.0
	MUDSTONE.		1351.0
	SANDSTONE AND SILTSTONE, breccia.		1353.0
	SANDSTONE, silty interbeds.	GETHING FM.	1359.0
Fault, established	LAMINITE, siltstone and mudstone, mudstone at base, breccia at base.		1571.0
	SANDSTONE, brecciated.		1373.0
	SILTSTONE, sandy interbeds.		1379.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1385.0
	SANDSTONE, coaly wisps, mudstone at base and at 1397', shelly fossils at base to sandy blebs 1391'.		1401.0
	<u>COAL</u> , mudstone at base.	SKEETER SM. lower plate	1403.0
	SILTSTONE, sandy phases.		1408.0
	LAMINITE, siltstone and mudstone.		1417.0
	MUDSTONE.		1420.0
	<u>COAL</u> .	CHAMB. SM. lower plate upper split	1425.0

Structure	Description of Strata	Formation or Member	Depth : Base of Stratum (ft)
	<p>SILTSTONE; sandy interbeds.</p> <p>LAMINITE, siltstone and mudstone, mudstone at base.</p> <p><u>COAL.</u></p> <p>SANDSTONE.</p>	<p>CHAMB. SM. lower plate lower split</p>	<p>1427.0</p> <p>1435.0</p> <p>1445.0</p> <p>1488.0</p> <p><u>Base of Hole</u></p>

BORE NUMBER S-44

Grid Reference 42609.8N 90828.2E

Exploration Grid Reference G/4+1700'

Date Commenced 11th October, 1970 Completed 22nd October, 1970

Collar R.L. 5346.5'

Standard Datum

Total Depth 1528'

Electrically Logged Yes/No

Drilled by Connors Drilling Ltd.

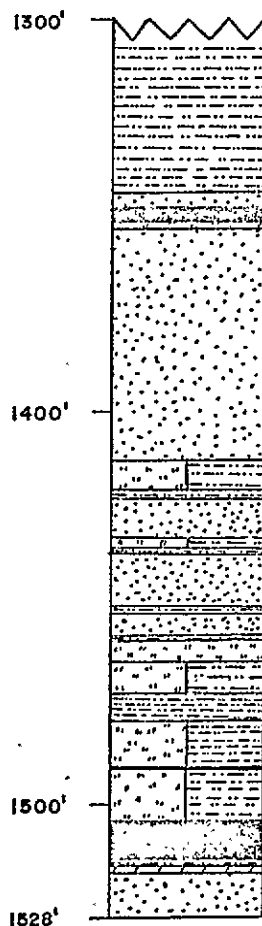
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	3842.0	8.5	100%	

00641



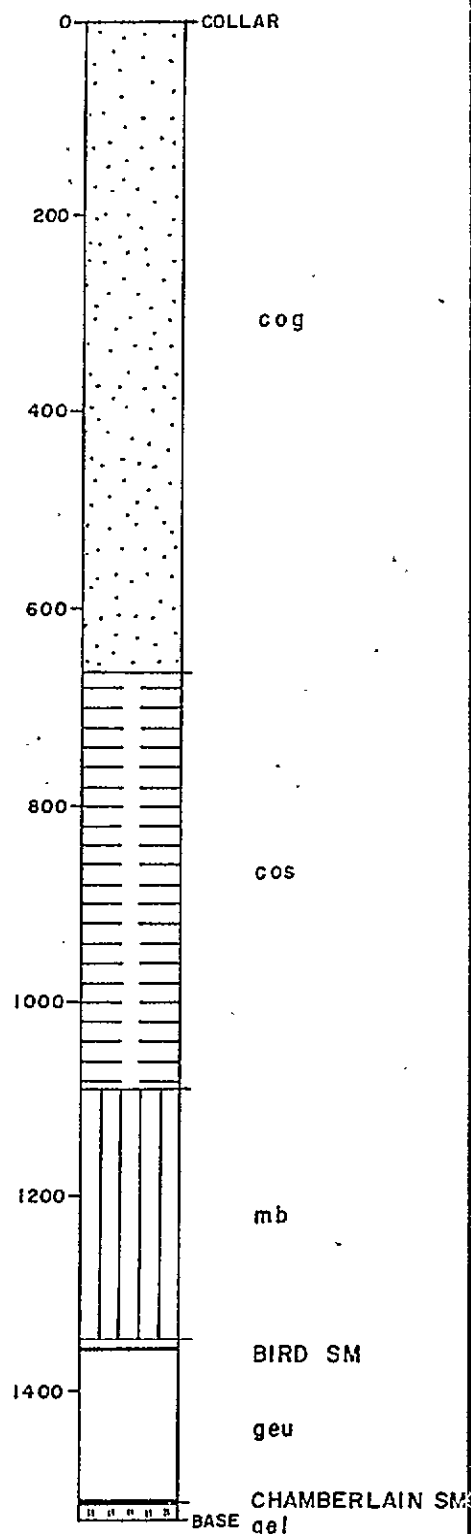
MOOSEBAR FORMATION

SANDSTONE (GLAUCONITIC)
BIRD SEAM
MOTTLED (WORM CASTS)

COALY WISPS
SHELLY FOSSILS THROUGHOUT
SANDSTONE INTERBEDS
SKEETER SEAM COALY BANDS
MUDSTONE INTERBEDS

CHAMBERLAIN SEAM

END OF HOLE



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-44

DRAWN BY S.A.

DATE: November '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-44

Report No. 67-0535
67-0536

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		98.0	0.77	4.02	22.12	73.09	14897	0.36 8½
1.60		2.0	0.77	33.26				0.15
		100.0	0.77	4.60				0.36

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 11.825 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-44

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 9.0 ft.		
	SANDSTONE, mudstone phases predominant towards base.	?HULLCROSS MB.	232.5
	CLAYSTONE, carbonaceous, coal bands.	GATES MB.	256.0
	SANDSTONE, silty phases.		302.0
	CLAYSTONE AND COAL BANDS.		316.0
	SANDSTONE AND CONGLOMERATE.		335.0
	COAL AND CLAYSTONE.		336.0
	MUDSTONE, sandy phases.		373.0
	SANDSTONE, pebble bands.		383.0
	<u>COAL.</u>		384.0
	MUDSTONE, siltstone phases.		411.0
	<u>COAL.</u>		413.0
	MUDSTONE.		422.0
	SANDSTONE.		475.0
	SANDSTONE AND MUDSTONE INTERBEDDED.		506.0

Structure	Description of Strata	Formation or Member	Depth : Base of Stratur (ft)
	CONGLOMERATE.		508.0
	SANDSTONE, conglomerate phases.		606.0
	SANDSTONE AND MUDSTONE INTERBEDDED.		663.0
	SANDSTONE, SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.	SUKUNKA MB.	1088.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1344.0
	SANDSTONE, glauconitic.	GETHING FM.	1348.0
	<u>COAL</u> .	BIRD SEAM	1351.0
	SILTSTONE.		1352.0
	<u>COAL</u> , band.		1352.5
	SANDSTONE, coarse at top, fine towards base, (mottled) worm casts 1359'.		1413.0
	SILTSTONE AND MUDSTONE INTERBEDDED, mudstone at base.		1421.0
	SANDSTONE.		1432.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1436.0
	SANDSTONE, coaly wisps, mudstone at base.		1451.0
	SANDSTONE, mudstone at base, shelly fossils throughout.		1458.0

Structure	Description of Strata	Formation or Member	Depth : Base of Stratur (ft)
	COAL, band.		1458.5
	SILTSTONE, sandy interbeds.		1463.0
	LAMINITE, siltstone and mudstone.		1472.0
	MUDSTONE, carbonaceous, coaly bands.		1479.0
	SILTSTONE, mudstone interbeds, mudstone and coal band at base.		1490.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		1504.5
	COAL.	CHAMB. SM.	1513.0
	MUDSTONE.		1514.0
	CLAYSTONE, carbonaceous.		1515.0
	SANDSTONE.		1528.0
			Base of Hole

BORE NUMBER S-45

Grid Reference 43833.3N 81933.9E

Exploration Grid Reference D/1+1100'

Date Commenced 23rd October, 1970 Completed 31st October, 1970

Collar R.L. 4890.8' Standard Datum

Total Depth 1245' Electrically Logged Y~~e~~s/No

Drilled by Connors Drilling Ltd.

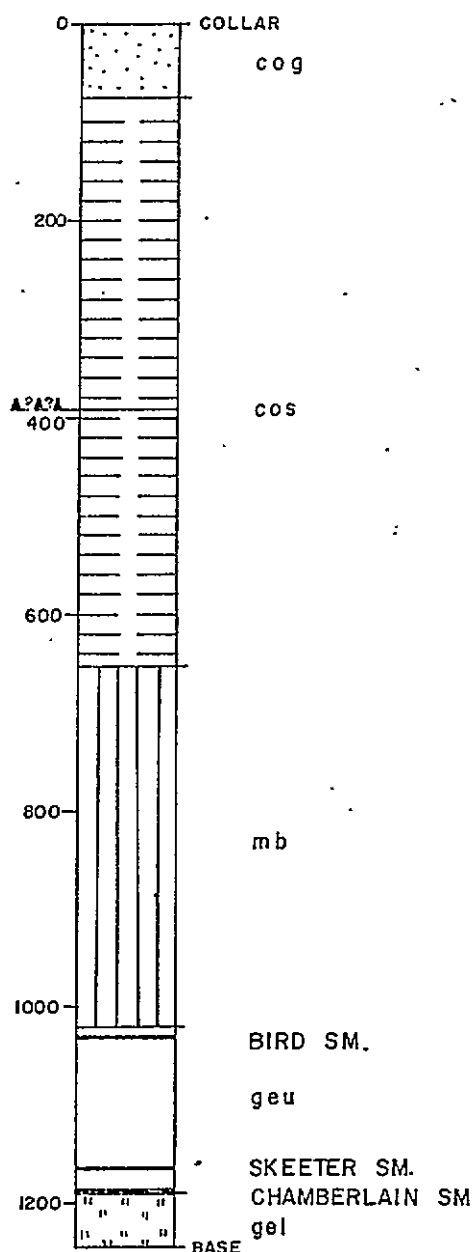
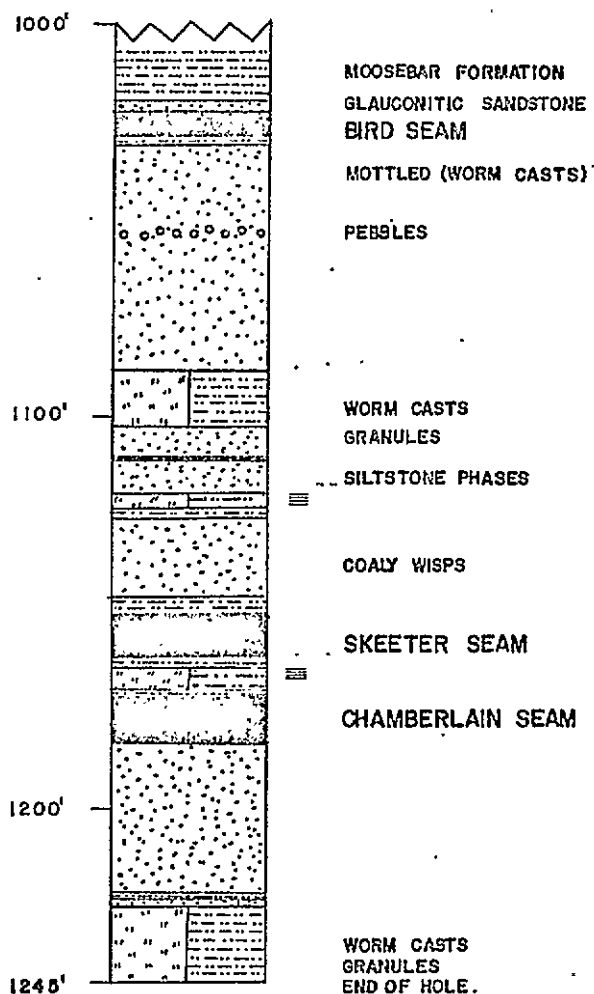
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment .
Skeeter	3732.3	7.7	100%	
Chamberlain	3708.8	7.1	100%	

00641



DETAIL OF GETTING
FORMATION
SCALE 1" to 50'

SCALE : 1" to 200'

Prepared by
CLIFFORD McELROY & ASSOCIATES PTY LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-45

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-45

Report No. 67-0555
67-0556

SPECIFIC GRAVITY		DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
	1.60	89.0	0.77	6.71	22.90	69.62	14387	0.50	7½
1.60		<u>11.0</u>	<u>0.95</u>	<u>54.95</u>				<u>0.69</u>	
		100.0	0.79	12.02				0.52	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 10.401 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser,
District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-45

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
Fault, probable	No core to 10.0 ft.		
	SILTSTONE, MUDSTONE AND SANDSTONE, slickensiding at 391'. Flat at top 391', 30° below 391'.	SUKUNKA MB.	658.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	1020.0
	SANDSTONE, glauconitic.	GETHING FM.	1022.0
	SANDSTONE, pebbles at base.		1025.0
	<u>COAL.</u>	BIRD SEAM	1029.0
	MUDSTONE.		1031.0
	<u>COAL.</u>		1032.0
	SANDSTONE, coarse at top, fine at base, pebbles 1053', (mottled) worm casts 1040'.		1089.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		1104.0
	SANDSTONE, mudstone band at 1111', silty phases.		1120.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1126.0
	SANDSTONE, coaly wisps, mudstone bands at base, 1147', 1149'.		1152.0

Structure	Description of Strata	Formation or Member	Depth : Base of Stratur. (ft)
	<u>COAL.</u>	SKEETER SM.	1161.0
	SILTSTONE, mudstone at top, sandy phases.		1164.0
	LAMINITE, siltstone and mudstone, mudstone at base.		1173.0
	<u>COAL.</u>	CHAMB. SM.	1184.0
	SANDSTONE, coarse at top, mudstone band 1223'.		1225.0
	SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at top.		1245.0
			<u>Base of Hole</u>

BORE NUMBER S-46

Grid Reference 35797.7N 86287.7E

Exploration Grid Reference I+900'/1

Date Commenced 5th November, 1970 Completed 11th November, 1970

Collar R.L. 4567.7' Standard Datum

Total Depth 898' Electrically Logged ~~Yes~~/No

Drilled by Connors Drilling Ltd.

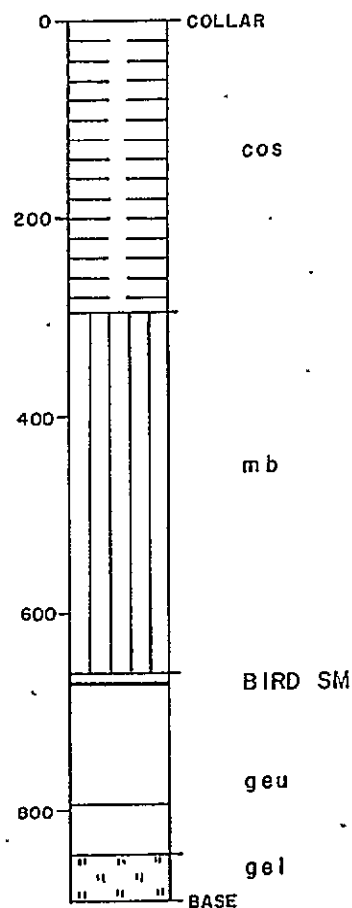
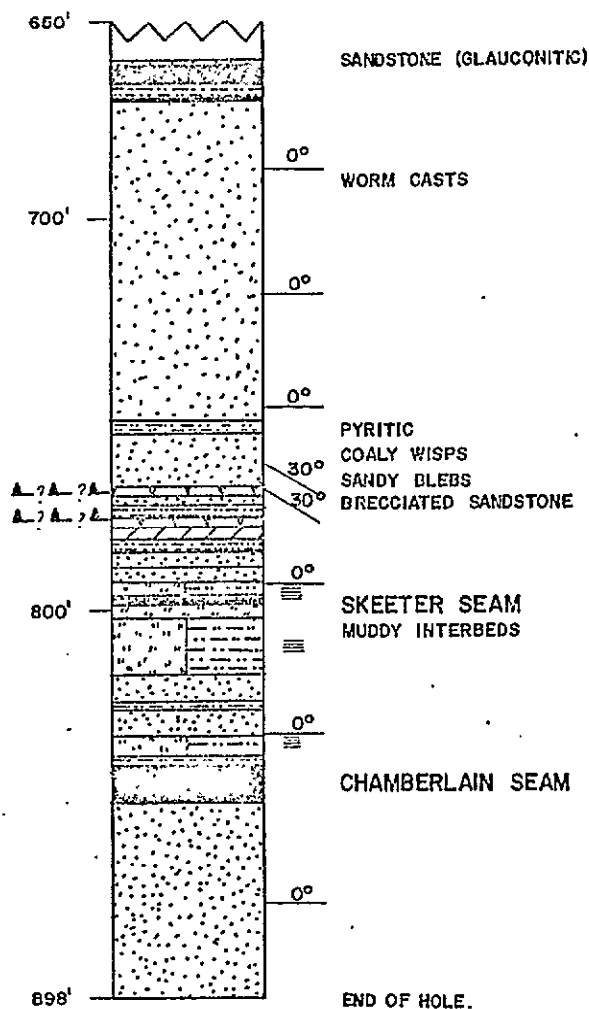
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Chamberlain	3719.2	9.0	100%	

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by:
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-46

DRAWN BY S.A.

DATE: December '71

PAGE 1 of 1

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-46

Report No. 67-0537
67-0538

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60		97.1	0.76	3.97	23.60	71.67	14884	0.51	9
1.60		2.9	0.64	53.70				0.30	
		100.0	0.76	5.41				0.50	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 11.252 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.


R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-46

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft.)
	No core to 13.0 ft.		
	SILTSTONE, SANDSTONE AND MUDSTONE INTERBEDDED, worm casts.	SUKUNKA MB.	298.0
	MUDSTONE, ash beds at base.	MOOSEBAR FM.	661.0
	SANDSTONE, glauconitic.	GETHING FM.	663.0
	<u>COAL.</u>	BIRD SEAM	666.0
	MUDSTONE, coal band at base.		670.0
	SANDSTONE, and silty interbeds, coarse at top, fine towards base, worm casts 676'-706'.		751.0
	MUDSTONE, pyritic.		755.0
	SANDSTONE, coaly wisps, sandy blebs at 765'-768'.		768.0
Fault, possible	SANDSTONE, breccia.		770.0
	SANDSTONE, coaly wisps.		773.0
	MUDSTONE, silty interbeds.		777.0
Fault, possible	CLAYSTONE, carbonaceous claystone.		779.0
	CLAYSTONE, carbonaceous.		781.0

Structure	Description of Strata	Formation or Member	Depth : Base of Stratur (ft)
	MUDSTONE, sandy interbeds.		785.0
	SANDSTONE.		789.0
	SANDSTONE, silty interbeds.		793.0
	LAMINITE, siltstone and mudstone, mudstone at base.		797.0
	<u>COAL</u> , band 0.5'.		797.5
	SILTSTONE, mudstone interbeds.		802.0
	LAMINITE, siltstone and mudstone.		816.0
	SANDSTONE, silty interbeds, mudstone band at 825'.		832.0
	LAMINITE, siltstone and mudstone, mudstone at base.		839.5
	<u>COAL</u> .	CHAMB. SM.	848.5
	SANDSTONE.		898.0
			<u>Base of Hole</u>

BORE NUMBER S-47

Grid Reference 49334.7N 79220.1E

Exploration Grid Reference A+200'/2

Date Commenced 12th November, 1970 Completed 21st November, 1970

Collar R.L. 4176.1'

Standard Datum

Total Depth 417'

Electrically Logged ~~Y~~/No

Drilled by Connors Drilling Ltd.

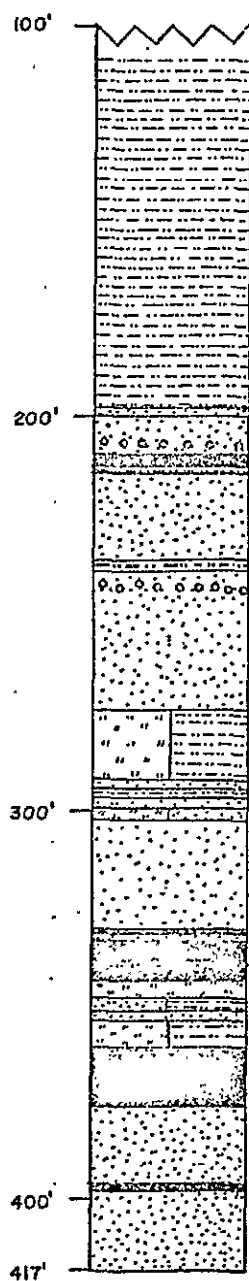
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3832.1	9.5	74.7%	
Chamberlain	3808.7	5.1	96%	

00641



MOOSEBAR FORMATION

SANDSTONE (GLAUCONITIC)

GRANULES

MOTTLED (WORM CASTS)

WORM TRACKS

GRANULES

COALY WISPS

COALY WISPS

SKEETER SEAM

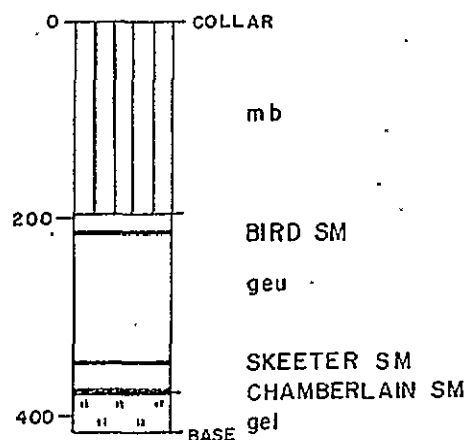
INTERBEDS

CHAMBERLAIN SEAM

GRANULES

MOTTLED (WORM CASTS)

END OF HOLE



DETAIL OF GETHING
FORMATION

SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 47

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-0434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-47

Report No. 67-0557
67-0558

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		87.5	0.95	4.37	24.40	70.28	14706	0.46 9
1.60		12.5	1.06	67.34				0.22
		100.0	0.96	12.24				0.43

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 7.881 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 728-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-47

Report No. 67-0539
67-0540

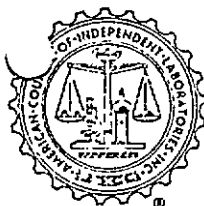
SPECIFIC GRAVITY		AIR DRIED BASIS							
Sink Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI	
1.60	99.2	0.66	2.85	25.55	70.94	15052	0.42	8½	
1.60	0.8	0.66	57.60				0.62		
	100.0	0.66	3.29				0.42		

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 7.017 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-47

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 17.0 ft.		
	MUDSTONE, ash layers towards base.	MOOSEBAR FM.	199.0
	SANDSTONE, glauconitic.	GETHING FM.	202.0
	SANDSTONE, coarse, pebbles 207' and 209'.		211.0
	COAL, mudstone at base.		214.0
	SANDSTONE, coarse becoming finer at base, mottled (worm casts) at 219', mudstone bands at 238', pebbles at 243'.		276.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		293.0
	SANDSTONE, coaly wisps, mudstone band at 297'.		300.0
	LAMINITE, siltstone and mudstone, mudstone base.		303.0
	SANDSTONE, coaly wisps, mudstone band at 332' and at base.		335.0
	<u>COAL</u> , mudstone band at 340'.	SKEETER SM.	343.0
	SILTSTONE, mudstone phases.		348.0

Structure	Description of Strata	Formation or Member	Depth Base of Stratur (ft)
	SANDSTONE AND MUDSTONE INTERBEDDED		351.0
	SANDSTONE, medium grained.		354.0
	LAMINITE, mudstone base.		362.0
	<u>COAL.</u>	CHAMB. SM.	375.5
	SANDSTONE, granule conglomerate at 396'.		397.0
	<u>COAL</u> , band, 0.5'.		398.0
	SANDSTONE, coarse becoming medium grained, mottled (worm casts) at 402'.		417.0
			<u>BASE OF HOLE</u>

BORE NUMBER S-48

Grid Reference 41162.0N 81299E
Exploration Grid Reference E+300'/1-1100'

Date Commenced 22nd November, 1970 Completed 28th November, 1970

Collar R.L. 4068' Standard Datum
Total Depth 867' Electrically Logged ~~Yes~~/No

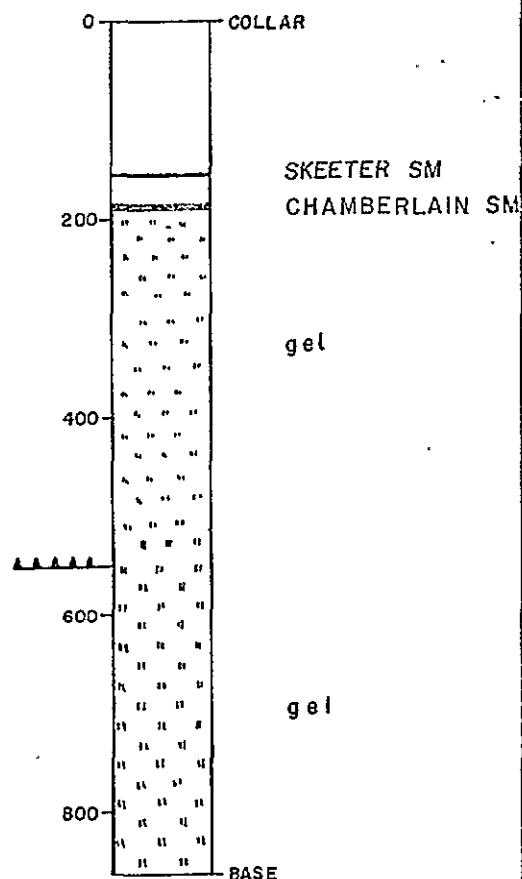
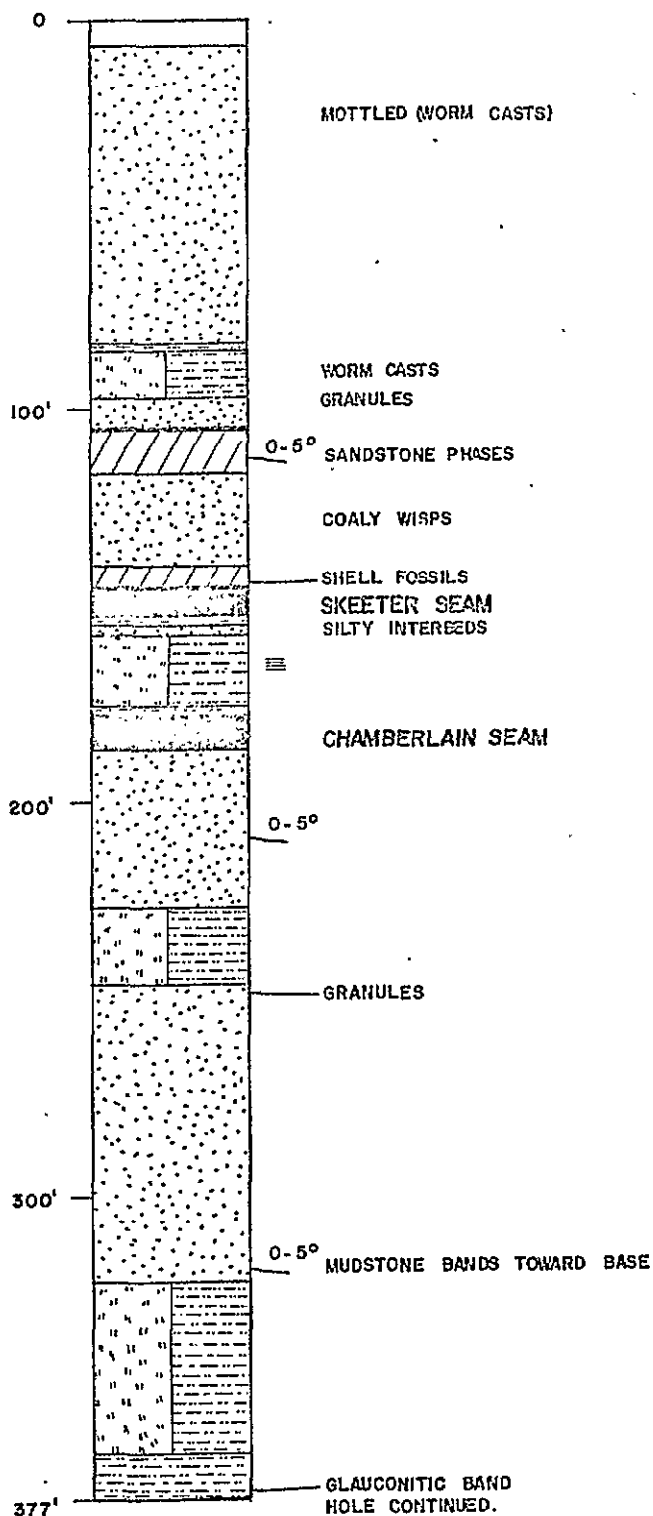
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3916.1	8.1	100%	
Chamberlain	3882.8	8.0	100%	

00641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

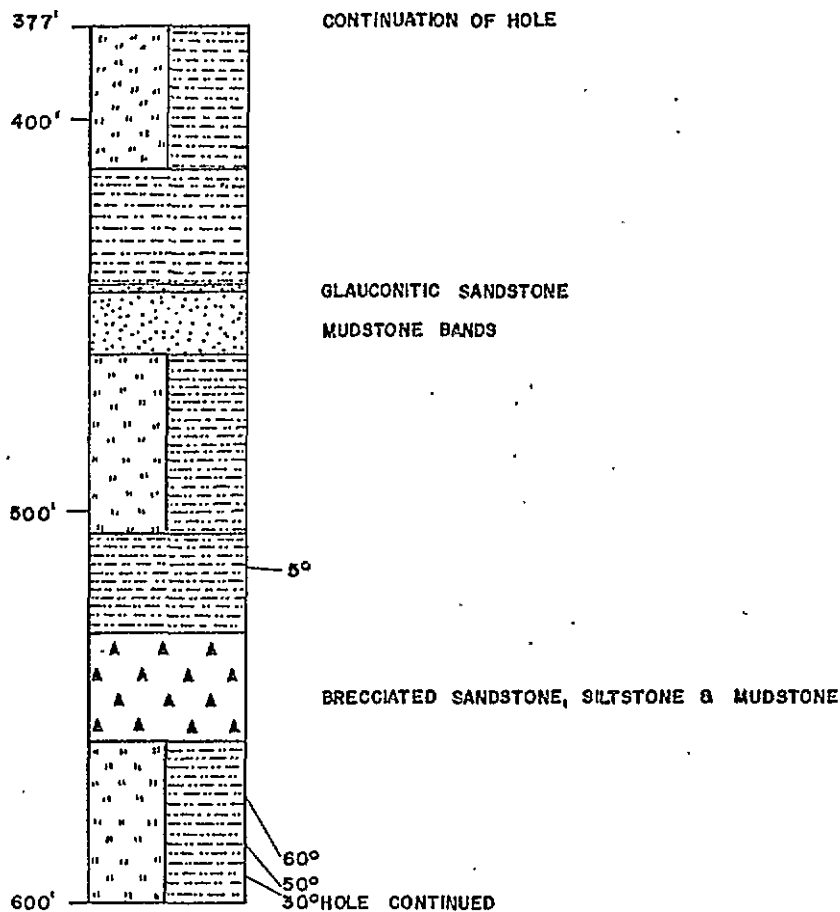
Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S - 48

DRAWN BY S.A.

DATE: December '71

PAGE 1 of 3



DETAIL OF GETTING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

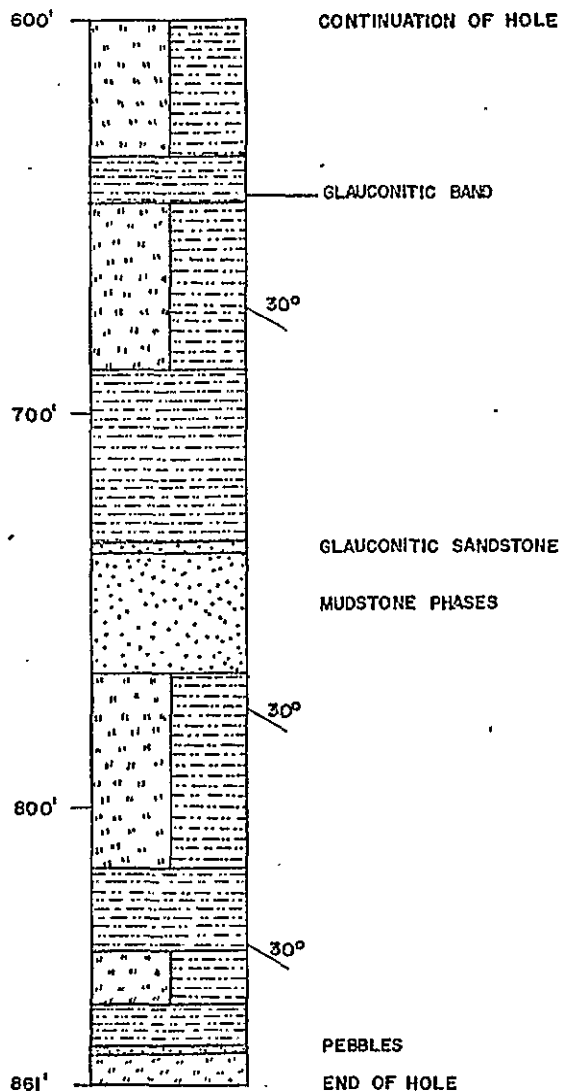
Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-48

DRAWN BY S.A.

DATE: December '71

PAGE 2 of 3



DETAIL OF GETTING
FORMATION

SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS

DDH S-48

DRAWN BY S.A.

DATE: December '71

PAGE 3 of 3

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-48

Report No. 67-0559
67-0560

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		78.4	0.89	7.31	23.53	68.27	14280	0.56 7
1.60		<u>21.6</u>	<u>1.06</u>	<u>65.24</u>				<u>0.29</u>
		100.0	0.93	19.82				0.50

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 5.659 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 720-8434

January 18, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-48

Report No. 67-0541
-67-0542

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		98.9	0.77	3.63	25.98	69.62	14943	0.43 8
1.60		<u>1.1</u>	<u>0.65</u>	<u>43.28</u>				<u>0.25</u>
		100.0	0.77	4.07				0.43

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 11.440 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-48

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 7.0 ft.		
	SANDSTONE, coarse at top becoming fine at base, mottled (worm casts) 26', mudstone band at 85'.	GETHING FM.	86.0.
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		97.0
	SANDSTONE.		105.0
	<u>COAL.</u>		105.5
	CLAYSTONE, sandy phases, carbonaceous at base.		117.0
	SANDSTONE, coaly wisps.		139.0
	CLAYSTONE, carbonaceous, shelly fossils near base.		145.0
	<u>COAL.</u>		146.0
	SANDSTONE, mudstone at top.		147.5
	<u>COAL.</u>	SKEETER SM.	152.0
	SANDSTONE, silty interbeds, mudstone at top.		156.0
	LAMINITE, siltstone and mudstone, mudstone at base.		177.0

Structure	Description of Strata	Formation or Member	Depth : Base of Stratum (ft)
	COAL, chamberlain seam, coarse at top, fine near base.	CHAMB. SM.	185.0
	SANDSTONE, coarse at top, fine near base.		226.5
	SILTSTONE AND MUDSTONE INTERBEDDED, granules near base.		245.0
	SANDSTONE, mudstone bands at 301', 300', 299'.		322.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		365.0
	MUDSTONE, glauconitic layer at 376'.		377.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		414.0
	MUDSTONE.		443.0
	SANDSTONE, glauconitic.		444.0
	SANDSTONE, mudstone bands.		460.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		506.0
	MUDSTONE.		531.0
	SANDSTONE, SILTSTONE, MUDSTONE, breccia.		569.0
	SILTSTONE AND MUDSTONE INTERBEDDED, mudstone layer, glauconitic band at base 635'-647'.		690.0
	MUDSTONE.		734.0

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth : Base of Stratum (ft)</i>
	SANDSTONE, glauconitic.		736.0
	SANDSTONE, mudstone phases.		767.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		817.0
	MUDSTONE.		837.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		851.0
	MUDSTONE.		862.0
	SANDSTONE, pebbles abundant.		864.0
	SILTSTONE, mudstone phases		871.0
			<u>Base of Hole</u>

BORE NUMBER S-49

Grid Reference 48179.6N 77716.0E

Exploration Grid Reference A/1+200'

Date Commenced 18th November, 1970 Completed 20th November, 1970

Collar R.L. 4117.3' Standard Datum

Total Depth 519' Electrically Logged Y~~es~~/No

Drilled by Connors Drilling Ltd.

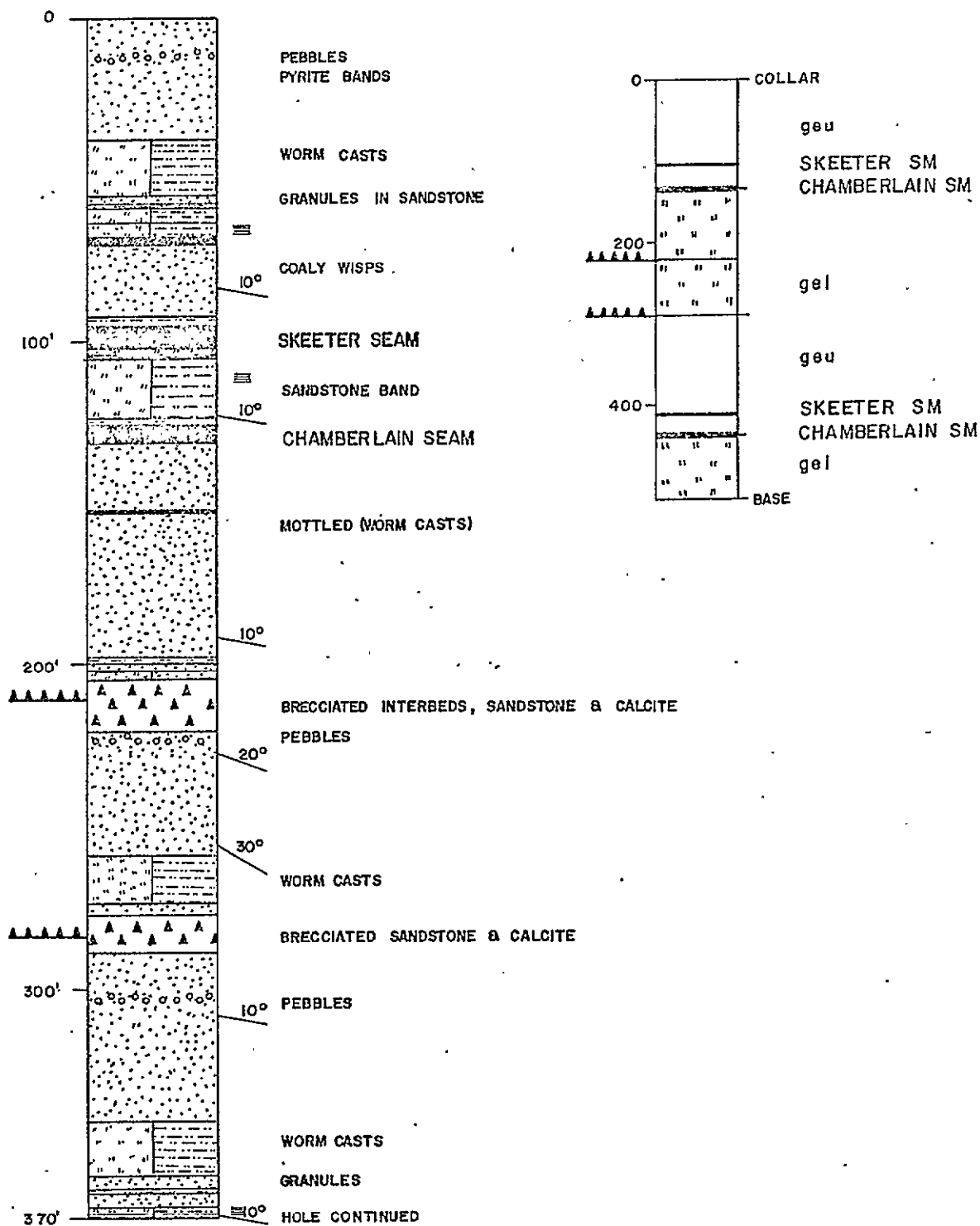
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter Upper Plate	4009.5	13.0	83.8%	
Chamberlain Upper Plate	3986.6	4.3	100%	
Skeeter Lower Plate	3704.9	9.9	88.8%	
Chamberlain Lower Plate	3682.5	6.3	100%	

00341

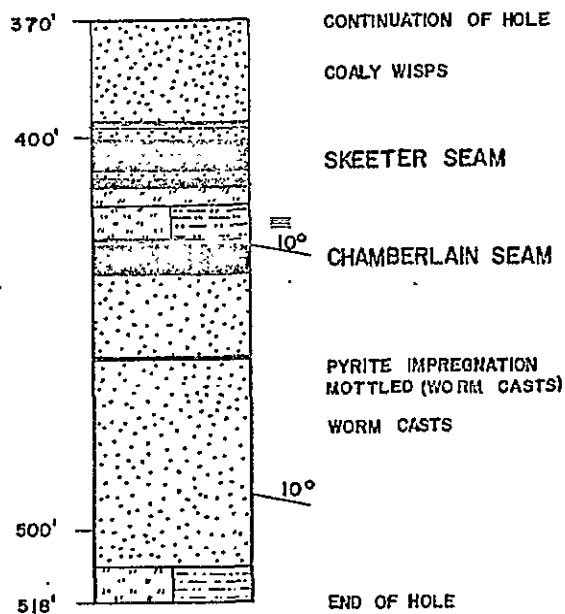


DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-49



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by:
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-49

DRAWN BY S.A.

DATE: December '71

PAGE 2 of 2

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 728-8434

January 25, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-49-1

Report No. 67-0569
67-0570

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		78.1	0.98	7.93	23.69	67.40	14195	0.62 8½
1.60		<u>21.9</u>	<u>0.82</u>	<u>51.25</u>				<u>0.46</u>
		100.0	0.94	17.42				0.58

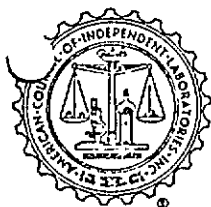
% ADM = % Moisture in air dried sample

Weight of as received sample = 3.891 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 720-8434

January 25, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-49-2.

Report No. 67-0563
67-0564

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60		96.4	1.38	4.13	25.06	69.43	14635	0.49	9
1.60		<u>3.6</u>	<u>1.00</u>	<u>47.81</u>				<u>0.63</u>	
		100.0	1.37	5.70				0.50	

% ADM = % Moisture in air dried sample

Weight of as received sample = 5.977 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 -- AREA CODE 312 720-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-49

Report No. 67-0543
67-0544

SPECIFIC GRAVITY

Sink Float	% Wt.	% ADM	% Ash	AIR DRY BASIS			Btu	% Sul.	FSI
				% Vol.	% F. C.				
1.60	92.3	0.77	2.57	24.78	71.88	15084	0.44	8½	
1.60	7.7	0.77	56.12				1.10		
	100.0	0.77	6.69				0.49		

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 6.876 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 25, 1971

P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-49-2

Report No. 67-0576
67-0575

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
1.60		97.0	0.84	3.09	23.23	72.84	14937	0.43 8½
1.60		<u>3.0</u>	<u>0.60</u>	<u>50.90</u>				<u>0.56</u>
		100.0	0.83	4.52				0.434

% ADM = % Moisture in air dried sample

Weight of as received sample = 7.981 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

R. A. Houser
R. A. Houser,
District Manager



RAH/rh

STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-49

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft.)</i>
	No core to 6.0 ft.		
	SANDSTONE, medium grained, pebbles at 13'.	GETHING FM.	38.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts, granules at base.		55.0
	SANDSTONE, mudstone layer at base.		59.0
	SANDSTONE AND MUDSTONE INTERBEDDED.		64.0
	LAMINITE, mudstone layer at base.		69.0
	SANDSTONE, coaly wisps.		92.0
	MUDSTONE.		95.0
	<u>COAL</u> , mudstone band at top.	SKEETER SM.	101.0
	SILTSTONE AND MUDSTONE INTERBEDDED, mudstone layer at top.		104.0
	LAMINITE, siltstone and mudstone, sandy layer at 116', mudstone at base.		126.0
	<u>COAL</u> .	CHAMB. SM.	131.0
	SANDSTONE, coarse grained.		152.0
	<u>COAL</u> , band, 0.5'.		152.5
	SANDSTONE, coarser at top to fine,		

Structure	Description of Strata	Formation or Member	Depth : Base of Stratur. (ft)
Fault, established	mottled (worm casts) 157', mudstone band at 199'.		201.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		204.0
	SANDSTONE, brecciated.		220.0
	SANDSTONE, pebbles 222'.		258.0
	SILTSTONE AND MUDSTONE INTERBEDDED, worm casts.		274.0
	SANDSTONE, medium grained.		277.0
Fault, established	SANDSTONE, brecciated.		288.0
	SANDSTONE, pebble band 303', coarse becoming fine.		340.0
	SILTSOTNE AND MUDSTONE INTERBEDDED, worm casts, granule conglomerate at base.		357.0
	SANDSTONE, mudstone band at 362'.		366.0
	LAMINITE, siltstone and mudstone, mudstone base.		370.0
	SANDSTONE, coaly wisps, mudstone layer 399'.		402.0
	<u>COAL</u> , mudstone band at top, sandstone band at 410', mudstone base.	SKEETER SM.	413.0
	SILTSTONE, sandy phases.		418.0

Structure	Description of Strata	Formation or Member	Depth : Base of Stratuc. (ft)
	LAMINITE, siltstone and mudstone, mudst one base.		429.0
	<u>COAL</u> .	CHAMB. SM.	435.0
	SANDSTONE, coarse grained.		457.0
	<u>COAL</u> , band, 1.0'.		458.0
	SANDSTONE, mottled (worm casts) 463', pyrite 459', worm casts at 475'.		510.0
	SILTSTONE AND MUDSTONE INTERBEDDED.		518.0
			<u>Base of Hole</u>

BORE NUMBER S-50

Grid Reference 50298N 80911.8E

Exploration Grid Reference B+1900'/2+1900'

Date Commenced 23rd November, 1970 Completed 23rd November, 1970

Collar R.L. 4059.4' Standard Datum

Total Depth 218' Electrically Logged ~~Yes~~/No

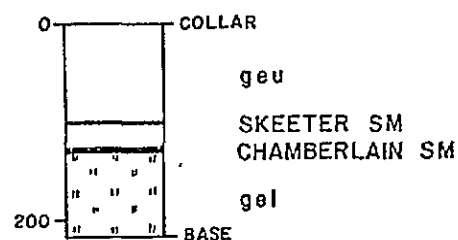
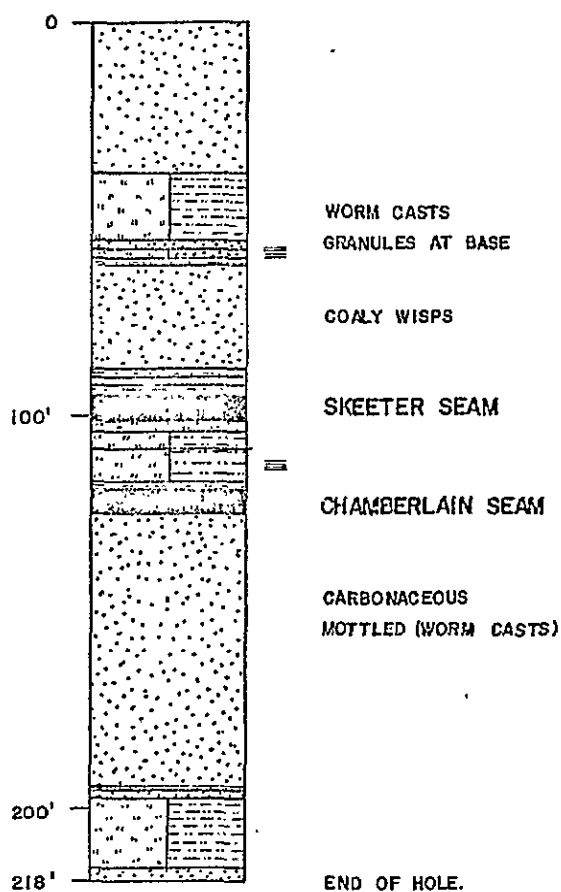
Drilled by Connors Drilling Ltd.
For Brameda Resources Limited

Logged by F.H.S. Tebbutt and G.R. Jordan

COAL SEAM INTERSECTIONS

Seam	Floor R.L.	Thickness (ft.)	Recovery	Comment
Skeeter	3959.7	6.5	89.2%	
Chamberlain	3935.1	4.8	100%	

0641



DETAIL OF GETHING
FORMATION
SCALE: 1" to 50'

SCALE: 1" to 200'

Prepared by :
CLIFFORD McELROY & ASSOCIATES PTY. LTD.
for
COALITION MINING LIMITED

STRATIGRAPHIC LOGS
DDH S-50

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. SK-50


Report No. 67-0561
67-0562

SPECIFIC GRAVITY		AIR DRY BASIS						
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul. FSI
	1.60	84.9	0.68	5.10	23.93	70.29	14662	0.55 8½
1.60		<u>15.1</u>	<u>1.10</u>	<u>73.62</u>				<u>0.57</u>
		100.0	0.74	15.45				0.55

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 9.264 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.


R. A. Houser,
District Manager

RAH/rh



COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 • AREA CODE 312 726-8434

January 18, 1971



P. O. Box 8596
Vancouver 5, B. C.

CERTIFICATE OF ANALYSIS FOR:
BRAMEDA RESOURCES LIMITED
7th Floor, Board of Trade Bldg.
1177 West Hastings Street
Vancouver 1, B. C.

Sample identification:
Sample No. CH-50

Report No. 67-0545
67-0546

SPECIFIC GRAVITY		AIR DRY BASIS							
Sink	Float	% Wt.	% ADM	% Ash	% Vol.	% F. C.	Btu	% Sul.	FSI
1.60		96.8	0.69	2.89	24.45	71.97	15068	0.58	9
1.60		<u>3.2</u>	<u>0.57</u>	<u>54.23</u>				<u>0.38</u>	
		100.0	0.69	4.53				0.57	

% ADM = % Moisture in air dried sample

Weight of sample as received in laboratory = 6.687 lbs.

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.


R. A. Houser,
District Manager

RAH/rh



STRATIGRAPHIC LOG
SUKUNKA D.D.H. S-50

<i>Structure</i>	<i>Description of Strata</i>	<i>Formation or Member</i>	<i>Depth to Base of Stratum (ft)</i>
	No core to 11.0 ft.		
	SANDSTONE, medium grained.	GETHING FM.	38.0
	SILTSTONE AND MUDSTONE INTERBEDDED, pebbles at base, worm casts in lower half.		55.0
	SANDSTONE, medium grained.		57.0
	LAMINITE, siltstone and mudstone, mudstone at base.		60.5
	SANDSTONE, coarse becoming fine, mudstone band at 88', coaly wisps.		92.0
	MUDSTONE.		94.0
	<u>COAL.</u>	SKEETER SM.	100.0
	SILTSTONE, mudstone band at top, sandy phases.		104.0
	SANDSTONE AND MUDSTONE INTERBEDDED.		108.0
	LAMINITE, siltstone and mudstone mudstone band at base.		119.0
	<u>COAL.</u>	CHAMB. SM.	124.0
	SANDSTONE, coarse at top, fine at base, mottled (worm casts) at 153', Mudstone band at 195', carbonaceous		127.0

Structure	Description of Strata	Formation or Member	Depth to Base of Stratum (ft)
	<p>SILTSTONE AND MUDSTONE INTERBEDDED, sandy phases at top, granule conglomerate at base.</p> <p>SANDSTONE, medium grained.</p>		<p>215.0</p> <p>218.0</p> <p><u>Base of Hole</u></p>

