

Central Mine Planning & Design Institute  
( A Subsidiary of Coal India Limited )

**GEOLOGICAL REPORT ON  
COAL EXPLORATION  
AMLABAD BLOCK  
JHARIA COALFIELD  
Dist. - Dhanbad,  
( Bihar )**

Text. Annexures & Reserves



**MINERAL EXPLORATION CORPORATION LIMITED**  
( A GOVERNMENT OF INDIA ENTERPRISE )  
**ASHOK NAGAR, RANCHI - 2**  
**MARCH, 1995**

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SALIENT FEATURES

## SALIENT FEATURES

1. Name of the Block : Amlabad Block  
Jharia Coalfield, Bokaro (Bihar)
2. Area & Location : Area of the Block - 1.40 Sq. Km.  
Latitude (N) 23°40' & 23°42'  
Longitude (E) 86°22' & 86°24'  
Survey of India  
Topo Sheet No. - 73 I/6  
R.F. 1:4,000  
Sheet No. - 5 & 8 of  
Geological Map of Jharia Coalfield
3. Main Objective : i) To enhance the confidence limit  
and facilitate production in  
Amlabad Project of BCCL.  
ii) To decipher the lay, disposition  
and geological structure of the  
coal seams.  
iii) To assess potentiality of the  
block upto Seam VIII.  
iv) Delineation of Zone of burning  
of seams due to dykes and sills.
4. Quantum of Work : i) Surveying:  
a) Triangulation - 1.40 Sq. Km.  
b) Topographical  
Surveying - 1.40 Sq. Km.  
ii) Geological Mapping - 1.40 Sq. Km.  
iii) Drilling:  
a) Total no. of  
bhs./meterage  
drilled by MECL - 8/4,179.00m  
(AMD Series)  
b) Total no. of bhs./  
meterage drilled  
by MECL earlier - 7/3,487.95m  
(AM Series)  
Total: 15/7,666.95m

(Contd. p/2)

## 5. Quantum of Work

- i) Surveying:
- a) Triangulation - 1.40 Sq.Km.
- b) Topographical Survey - 1.40 Sq.Km.
- ii) Geological Mapping - 1.40 Sq.Km.
- iii) Drilling:
- a) Total no. of bhs./meterage (AMD Series) - 8/4,179.00m
- b) Total no. of bhs./meterage drilled by MECL earlier - 7/3,487.95m
- Total: 15/7,666.95m
- iv) Sampling & Analysis:
- a) No. of bhs. sampled for analysis - 8/345.53m
- b) Band-by-Band Analysis - 8/345.53m
- c) Seam Overall analysis - 8/345.53m

6. Duration of Field Operation : 20.08.1992 - 14.09.1994

7. Geology:a) Geological Sequence:

Recent/Sub-Recent	Unconformity	Soil Alluvium
Post Gondwana		Basic Intrusive
Lower Gondwana	Damuda Sub-Group	Raniganj Formation Barren Measure Formation Barakar Formation Talchir Formation
	Talchir Sub-Group	
	Unconformity	
Pre-cambrian	Archaean	

(Contd. p/3)

- b) Structure: The area exhibits a domal structure with quaquaversal dip of the beds, which is confirmed by the arcuate pattern of the coal seams.
- i) Strike: Except in the northern part where the beds show quaquaversal dip the strike is:
- N - S in north-western part  
 NW-SE in southern and south-western part.  
 NE-SW in eastern and south-eastern part.
- ii) Dip: Shallow (2° to 3°) to steep (15° to 20°) in divergent directions.
- iii) Faults: Nine faults having local development as well as continuing from adjoining blocks showing regional trend have been interpreted in the blocks which are mostly strike to Oblique faults and throw varies from 5m to 35 m. Besides, an inseam fault (Syn depositional) (XV Seam) had been interpreted on the basis of mine plans, having a throw of 5m.

8. Coal Seams : A total of 20 coal seams (of thickness > 0.50m) have been established in ascending order from I to XVIII.

9. Reserve & Quality : The total reserves are as follows:

a) Proved	-	43.238 m.t.
b) Indicated	-	1.251 m.t.

Total: 44.489 m.t.

The seams are Coking in nature and vary from S-II to Ungraded Category.

c) Total Reserves of Coal within Partial Jhama Zone 30.396 m.t.

Total Reserves: 74.885 m.t.

CONTENTS

CHAPTER NO.	SUBJECT	PAGE NO.
I	INTRODUCTION	I.01 to I.08
II	GEOLOGICAL SETTING	II.01 to II.07
III	COAL SEAMS	III.01 to III.44
IV	RESERVES	IV.01 to IV.07
V	PRELIMINARY INFORMATION & ENVIRONMENT IMPACT ASSESMENT	V.01 to V.
VI	LIMITATION AND RECOMMENDATION	VI.01 to VI.05

LIST OF ANNEXURES

ANNEXURE NO.	TITLE	PAGE NO.
I	Statement showing Reduced Level, Latitude, Departure and Total Depth of Boreholes Drilled by M.E.C.L. AMD- Series and AM-Series	I.01
II	Runwise detail Lithology with Analysis of AMD- Series	II.01 to II.122
III	Statement of Dirt-band within the Seams in AMD- Series of Boreholes	III.01 to III.23
IV	Statement showing the Quality of Coal Seams	IV.01 to IV.43
V	Statement showing Seam-wise, Thickness-wise, Ash-wise, UVM-wise and Horizon-wise Proved and Indicated Reserves	V.01 to V.86

LIST OF PLATES

SL. NO.	PLATE NO.	SUBJECTS	SCALE
1	2	3	4
1.	I	Location Map	1:16,000
2.	II	Topographical Map	1:4,000
3.	III	Geological Plan	1:4,000
4.	IV	Graphic Lithologs (A) AMD- 1 to AMD- 6 (B) AMD- 7 to AMD- 8	1:1,000
5.	V	Graphic Correlation Chart V-A, V-B & V-C	1:1,000
6.	VI	Tabular Correlation Chart (A) AMD- 1 to AMD- 8 (B) AM- 1 to AM-18	1:1,000
7.	VII	Geological Cross Sections - A-A' - B-B' - C-C'	1:4,000
8.	VIII	Floor Contour Plan of Seams	1:4,000
	A	- XVIII TOP (Upper Split)	
	B	- XVIII TOP (Lower Split and Combined)	
	C	- XVIII BOTTOM	
	D	- XVII	
	E	- XVI TOP	
	F	- XVI MIDDLE	
	G	- XVI BOTTOM	
	H	- XVA	
	I	- XV	
	J	- XIV	
	K	- XIII	
	L	- XI/XII	
	M	- X	
	N	- IX	
	O	- VIII	

(Contd. p/2)

1	2	3	4
9.	IX	Seam Folio Plans of Seam	1:4,000
	A	- XVIII TOP (Upper Splits)	
	B	- XVIII TOP (Lower Splits and Combined)	
	C	- XVIII BOTTOM	
	D	- AM/L-4	
	E	- XVII	
	F	- AM/L-3	
	G	- XVI TOP	
	H	- XVI MIDDLE	
	I	- XVI BOTTOM	
	J	- XVA	
	K	- XV	
	L	- XIV	
	M	- XIII	
	N	- XI/XII	
	O	- X	
	P	- IX	
	Q	- VIII	
10.	X	Seam Structure (Seam-wise)	1:50
	A	- XVIII TOP (Lower Split)	
	B	- XVIII TOP	
	C	- XVIII BOTTOM	
	D	- AM/L-4	
	E	- XVII	
	F	- AM/L- 3	
	G	- XVI TOP	
	H	- XVI MIDDLE	
	I	- XVI BOTTOM	
	J	- XVA	
	K	- XV	
	L-M	- XIV	
	N	- XIII	
	O	- XI/XII	
	P	- X	
	Q	- IX	
	R	- V	
11.	XI	Geophysical log of AMD-7.	

CHAPTER - I

INTRODUCTION  
(PP.I.01 to I.08)

(I.01)

CHAPTER - I1.00.00 INTRODUCTION1.01.00 GENERAL:

1.01.01 The Bharat Coking Coal Limited (BCCL) and Central Mine Planning & Design Institute Limited (CMPDIL) have drawn up a programme to ensure production of planned quantity of coal efficiently and economically in North Amlabad Project area herein called as Amlabad Block. The present block is part of the earlier explored Amlabad Block by MECL during period of July, 1973 to March, 1978.

1.01.02 B.C.C.L. had identified certain data gaps in Amlabad Block to fill in these by drilling, work was awarded to MECL during the Mid Term Review Meeting held at Dhanbad CMPDIL, RI-II on 16/17.9.1992 under production support work. Subsequently in Co-ordination Committee Meeting held at CMPDIL, RI-II on 4.3.1993 this block was taken as regular exploration block with main objective to facilitate production support work. Drilling in this block started on 20.8.1992 and completed on 14.9.1994.

1.02.00 LOCATION:

1.02.010 Amlabad Block covering an area of 1.40 Sq.Km. is included in the leasehold of Amlabad Colliery, earlier owned by M/s. Karamchand Thapar. It is an underground project of BCCL and is situated in the south-eastern part of Jharia Coalfield, District- Bokaro, Bihar. The block is included in Survey of India Toposheet No. 73 I/6. It is also represented in Sheet No. 5 & 8 of the Geological Map of Jharia Coalfield, published by Geological Survey of India. It falls between:

Latitude : 23°40' and 23°42' (N)

Longitude: 86°22' and 86°24' (E)

1.03.00

BLOCK BOUNDARY:

1.03.01

The limits of the Amlabad Block are given in the Surface and Geological Map (Plate II & III). Geographically the block is bounded as detailed below:

North & East : Damodar River

South & West : Amlabad Leasehold Areas and Trace of Fault  $F_1-F_1$ .

1.04.00

COMMUNICATION:

1.04.01

The block is 32 Kms. from Dhanbad and is connected by fair weather road via bridge on Damodar river near Sudamdih Colliery. The area is also conveniently approached by road via Chas located on National Highway No. 32. Talgaria Railway Station on the Bhojudih Mohuda Loop Line in Adra-Gomoh Section of South Eastern Railway is about 9 Kms. south-west of Amlabad Colliery.

1.05.00

PHYSIOGRAPHY AND DRAINAGE:

1.05.01

The ground is gently undulating with north-easterly slope towards the Damodar river, which skirts the block on the northern and eastern sides. The maximum ground elevation of 158.145m (Triangulation Station 16) is in the Eastern End while the lowest topographic contour of 130m above MSL passes along the river bank in the north-eastern part of the block. There are a few ponds and small nalas in the area and they normally go dry in summer. The drainage of the area is controlled by south-easterly flowing Damodar river.

1.06.00

CLIMATE AND VEGETATION:

1.06.01

The coalfield lies in the sub-humid belt of South Bihar and the climate is extreme in this region. The average temperature during the summer (April to Middle of June) rises upto 40°C while

during winter (Late November to February) the mercury often drops below 10°C. The eastern monsoon usually breaks out during the second fortnight of June. The average annual rainfall in the area is about 140 cms. with maximum precipitation during June to October.

1.06.02 The area is fairly vegetated with shrubs of *Lentana* and, at places *Dhatoras*. Trees like Mahua, Palas, Bair, Pipal, Shishu, Mango and Banyan are common.

1.07.00 PREVIOUS WORK:

1.07.01 The first reference to Jharia (Jerriah) in connection with Coal dates back to 1777 by S.G. Tolle in his "History of the Development of Mineral Resources of India".

1.07.02 Hughes and Oldham initiated geological studies in Jharia Coalfield in 1865-66. C.S. Fox (1930) during his economic survey of Jharia Coalfield with an objective of correlation of the coal seams and its qualitative study up-dated the geological map of Jharia Coalfield in 8 sheets (scale: 1:15,840) and recognised I to XVIII major seams. Later, Mehta and Murthy (1957) made re-assessment of coal resources in Jharia Coalfield.

1.07.03 The GSI has been engaged in regional proving of coal seams in this field since 1957 and the work is in progress in different parts of the field, mostly to the north of the Damodar River. Detail exploration of Amlabad Area was carried out by MECL during July '73 and March '78. AM Series of boreholes were drilled involving 3,487.95 m of drilling in 7 nos. of boreholes and a Geological report was submitted by MECL.

1.07.04            The qualitative assessment of coal seams being worked in various parts of the coalfield as well as the coal cores obtained during exploration by different agencies, is done by the Jharia Coal Survey Laboratory, CFRI, Jealgora and the findings are published in their periodical reports.

1.08.00

OBJECTIVE AND SCOPE OF PRESENT WORK:

1.08.01

The main objective of this work was to enhance the confidence limit and to fill in the data gaps to facilitate production support work. Eight boreholes (AMD Series) were drilled as proposed by BCCL/CMPDI. The work was carried with the following objectives:

- (1) To decipher the lay and disposition of the seams considering the faults encountered in the mine workings.
- (2) Assessment of potentiality of the block upto Seam VIII.
- (3) Delineation of zone of burning of seams due to dykes and sills.

1.08.02

Eight boreholes (AMD Series) were drilled as proposed by BCCL/CMPDI. Though still there are certain data gaps but drilling is not possible due to multiseam workings. Earlier drilled 18 boreholes (AM Series) involving 11,389.85m of drilling falls within and in adjoining areas of the block.

1.09.00

SURVEYING:

1.09.01

Present survey work was done on the earlier laid out triangulation network. The R.Ls. and Coordinates of the AMD Series of boreholes were calculated accordingly (Appendix-I). As required necessary modifications in surface contour was done in certain parts.

1.09.02

Surveying done during the 1st Phase of exploration (AM Series) was carried out by precise triangulation with 6 second Microptic Theodolite. The base line joining triangulation section.  $T_1$  and  $T_2$  was established. Triangulation Station  $T_1$  formed the point of origin with co-ordinates (+) 5,000 both for Latitude and Departure. The co-ordinates are with reference to magnetic north determined in July, 1973.

1.09.03

The surface contouring at 2m interval was done by direct method. The level was carried from GTS Bench Mark P6/4 having 174.35m reading above MSL, at railway culvert No. 432, near Talgaria Railway Station. The surface features were picked up by plane-table, with Microptic Alidade and were plotted on 1:4,000 scale. The Amlabad Colliery pits were connected and reduced levels were determined. It was observed that R.L. Value of colliery bench mark is higher than that of GTS bench mark by 3.48m. Necessary corrections were incorporated while considering the spot heights of mine workings.

1.10.00

DRILLING:

1.10.01

Exploratory drilling carried out in Amlabad Block can be grouped in two phases. During the first phase 18 boreholes were drilled involving 11,389.85m of drilling. Out of this, 7 boreholes of AM Series (AM-4, <sup>AM-08</sup>AM-10, AM-12, AM-14, AM-15 & AM-16) fall within the present block. These 7 earlier drilled boreholes involve 3,487.95m of drilling.

1.10.02

During the IInd phase (AMD Series) eight boreholes were drilled as proposed by BCCL/QMPDI. A total of 4,179.00m of drilling was done during this phase. Boreholes were generally confined upto IX or VIII Seam however certain boreholes were deepened for the purpose of correlation and fault proving. Borehole No. AMD-2 had to be closed at a shallow depth due to fire accident in the course of drilling the borehole.

1.10.03

Thus total drilling for the block is in 16 no. of boreholes drilled during the two phases.

1.11.00

DEVIATION:

1.11.01

In all boreholes deviation test has been carried out <sup>EXCEPT AMD-2.</sup> It has been observed that the boreholes have undergone some deviation with the depth from the vertical axis of the borehole. However since deviation survey was not done in all boreholes drilled during Phase-I the boreholes have been assumed to be verticle and interpretation have been made accordingly. The deviation data of AMD series of boreholes are given in Annexure-VI

1.12.00

CORE LOGGING AND SAMPLING:

1.12.01

The borehole cores were logged and detailed descriptive borehole lithologs were prepared (Appendix-II). The graphic lithologs on 1:1,000 scale (Plate-IV) were also prepared for correlation of seams and interpretation of sub-surface data.

1.12.02

The coal and Jhama cores, having thickness of 0.5m and above, were sent for analysis. In all 345.53m of 8 boreholes (AMD- 1 to 8) of core samples were handed over to Jharia Coal Survey Laboratory, CFRI, Jealgora, for chemical analysis.

The qualitative assessment of coal seams is based on the analytical results (Appendix- IV and Plate No. IX ) furnished by them.

1.13.00

GEOPHYSICAL LOGGING:

1.13.01

Geophysical logging with various parameters have been carried out in all boreholes <sup>except AMD-1 & 2.</sup> Geophysical logging of 1 borehole (AMD- 7 ) was done by MECL . Log of this <sup>& other</sup> boreholes is attached as Plate No. XI. The geophysical logging of borehole nos. AMD- 3 to 6 & AMD- 8 have been done by CMPDI

CHAPTER - II

GEOLOGICAL SETTING  
( PP.II.01 to II.07 )

( II.01 )

CHAPTER - II2.00.00 GEOLOGICAL SETTING2.01.00 REGIONAL GEOLOGY:

2.01.01 The Jharia Coalfield is covered by the Lower Gondwana formations, consisting of Talchir formation and Damuda Group of formations. The Gondwanas are unconformably overlying the Arch-aeans. The coal bearing Barakars contain 18 major workable coal seams while the immediate overlying Barren Measures are devoid of any workable coal horizons. The youngest, Raniganj formations, are developed only in Mahuda Basin, in the south-western part of the coalfield.

2.01.02 The general geological sequence of rock formations observed in Jharia Coalfield is given below in Table: 2.01.

TABLE: 2.01GENERAL GEOLOGICAL SEQUENCE IN JHARIA COALFIELD

Jurassic	Intrusives	Mica-peridotite & dolerite
		Raniganj Formation
Permian	Lower Gondwana	Damuda Group
		Barren Measures
		Barakar Formation
		Talchir Formation
	Unconformity	
Archaeon		Gneisses and Schists

2.01.03

The Talchir boulder beds are exposed in the north-western part of the coalfield while along the northern fringe of the coalfield, shales and green sandstones occur. In general, it is observed that in the southern part of the coalfield, Talchirs are not properly developed.

2.01.04 The Coal-bearing Barakar formation is the most important in the area. It is represented by rocks of arenaceous, argillaceous and carbonaceous facies. Eighteen major coal horizons, numbered I to XVIII in the ascending order, are found in this formation. It is generally observed that Seams IX to XVIII contain prime coking coal while those below Seam IX contain medium to weakly coking coals.

2.01.05 The Barren Measures are represented by ferruginous shales and sandstones, sideritic at places. This formation contains a few carbonaceous shale horizons or thin coal bands but is devoid of any workable coal seam.

2.01.06 The Raniganj formation is developed only in Mahuda basin and is represented by sandstones and shales along with 11 coal seams.

2.01.07 The Lower Gondwana formations are profusely intruded by mica-peridotite and dolerite. In the western part of the coalfield, occurrence of dolerite dykes is more predominant while mica-peridotites are abundant in the eastern part. The central portion (around Katras) appears to have had minimum igneous activity.

2.02.00 ROCK FORMATION IN AMLABAD BLOCK:

2.02.01 The Amlabad Block is occupied by Barakar Formations. The north-western part is under thin soil cover.

2.02.02 Talchirs are neither exposed nor have been encountered in any borehole in this block.

2.02.03

In one borehole (AM-8) metamorphics, represented by mica-schists, were encountered at 708.35m depth after Seam-II. The contact between Barakars and Metamorphics is faulted.

2.02.04

The Barakars are exposed on the bank of the Damodar river to the north of Amlabad Colliery workings (Plate-III). At places, thin veneer of Barren Measures remains, on the top of these outcrops. Two exposures of thin coal seams were observed along a gully cutting in this area.

2.02.05

Barakars are represented by sandstones, varying in grain size from fine-grained to pebbly, along with shales and carbonaceous horizons. The carbonaceous facies has developed 18 major coal seams designated I to XVIII, in ascending order, along with 4 local correlatable seams (AM/L-1 to AM/L-4) in a total Barakar thickness of 900 to 950m. In addition to these correlatable seams a few thin and impersistent coal bands are also observed above Seam XVIII. In general, the Barakar strata above Seam XVII are predominantly argillaceous while the horizons from XVII to VIII contain almost equal amount of argillaceous and arenaceous material. The strata below Seam VIII are mostly arenaceous, with sandstones gradually becoming pebbly at depth.

2.02.06

Barren Measures occur about 80 to 120m above Seam XVIII. The Barakar-Barren Measure contact runs almost N-S along the north-western boundary of the block, whereas it assumes an east west trend in the southern and south-eastern part upto fault  $F_1$ - $F_1$  (Plate-III).

The Barren Measures are exposed beyond the north-western boundary of the block near AM-11 and are represented by sandstones, shales and intercalations of shale and sandstone. The shales and sandstones are ferruginous at places. From the borehole cores, it is observed that the Barren Measures are mostly argillaceous with thick bands of dark grey shales near Barakar-Barren Measure contact.

2.02.07

Thin cover of soil and river alluvium are seen in the eastern part of the block. The thickness of soil cover is generally around 10.00m but a maximum thickness of 19.00m is recorded in an area around borehole AMD- 1. Weathered zone extends upto a maximum depth of 20.00m (AMD- 1).

2.03.00

REGIONAL STRUCTURE:

2.03.01

The strike of the Gondwana formations in major part of Jharia Coalfield is more or less east west with gentle southerly dip. The sickle shaped Jharia Coalfield is a down thrown remnant of a synclinal basin preserved by the southern boundary fault. The main structural basin extends east wards from south of Dugda to Bhulanbararee and beyond. Parallel to it in the south is the anticlinal <sup>axis</sup> on which the successive domes of Bhowra, Amlabad and Fatehpur occur. To the south of this anticlinal <sup>axis</sup>, the Bhojudih-Chhatatanr synclinal is located followed further south by a complicated anticlinal <sup>structure</sup>, squeezed up against the boundary fault.

2.03.02

Due to the compressional forces acting from east to west, the main synclinal and anticlinal axes are corrugated, resulting in the successive domes. Along with the folding, tensional faults are developed as adjusted dislocations in the central part of the coalfield. The faults

are not continuous for any considerable distance. FOX (1930) is of the opinion that many faults are confined to the sedimentary rocks and do not continue into the metamorphics. The major faults eg. boundary fault and the faults in the Dugda and Pathardih areas, are clearly due to displacement in the gneisses which are due to regional movements. "On the other hand the local foldings and faulting observed in the Gondwana strata are restricted and they are the result of adjustment of the pliable beds to major deformations".

2.04.00

STRUCTURE OF AMLABAD BLOCK:

2.04.01

The Amlabad Dome, mentioned in the regional structure, lies in the northern part of Amlabad leasehole. As the area is mostly covered by soil, the detailed structural set-up has been mainly inferred on the basis of sub-surface data. It confirms the domal structure in the north-eastern part of Amlabad Block. The beds show quaquaversal dips around the domal structure and tend to assume normal homoclinal south-westerly trend in the southern part.

2.04.02

The available surface and sub-surface data indicate presence of 9 normal faults traversing the Gondwana formations in the ground. Most of these faults are not exposed on the ground. Their surface position below soil cover is marked on the basis of sub-surface data.

2.04.03

Generally, the faults show north-south trend in western part of the block and with curvilinear tendency assume WNW-ESE strike in the southern part of the block. The amount of dip and throw of these faults vary along their trajectory and this feature probably persists along depth also.

2.04.04

The Fault  $F_2 - F_2$  in the eastern part of the block has been inferred on the basis of mine data of the workings of Seam XVI T (Colliery XVII Seam). This fault has neither been intersected in any of the MECL boreholes nor its nature established in the mine workings. However, the regional geological set up suggests that this fault may be a westerly branch of Petia Dungri fault having westerly throw.

2.04.05

In addition to the faults mentioned above, intraformational faults in Seams XVIII to XVI BOT. have been inferred to explain the absence of seam/strata in the workings near Pit-4. These faults generally show minor amounts of throw and are limited in linear extent also.

2.04.06

The detailed description of individual faults is given in Table: II.2.

TABLE: II.02

DETAILS OF FAULTS ENCOUNTERED IN AMLABAD BLOCK  
 JHARIA COALFIELD, DISTRICT: DHANBAD, BIHAR

Fault No.	Location	Nature	Trend/Dip/Amount of Direction	Throw	Depth of Intersection of Boreholes		Evidence
					Bh.No.	Depth(m)	
1	2	3	4	5	6	7	8
F <sub>1</sub> -F <sub>1</sub>	Form the western and southern boundary of the block. Runs N-S 150m from AM-3 and swings towards east 40m from AM-5A and runs roughly in E-W direction 20m south of AM-2.	Curvilinear near, Oblique	N-S swings to E-W. 60° due E to N	120m to 150m	AM-12	600.00	Seam VII omitted Seam XVII, XVIII & XVIIIIT roof faulted Seam XVII, XVIII & XVIII omitted Seam XIII roof faulted and seams XV-A, XV & XIV omitted.
					AM-9A	345.00	
					AM-11	182.20	
					AM-3	170.00	
					AM-8	400.00	
AM-13	394.67						
F <sub>2</sub> -F <sub>2</sub>	Located beyond the eastern boundary of the block, partially along the Damodar River.	Linear Oblique	NNW-SSE dips in SSW	350m Approx.	AM-11	187.75	XVIIIIB roof faulted AM/L-4, XVII & AM/L-3 faulted VIA, VI & V faulted XVA faulted Parting between AM/L-4 and XVII faulted XVA floor faulted.
					AM-3	212.00	
					AM-7A	603.40	
					AM-6	500.00	
					AM-18	262.00	
AM-1	514.70						
F <sub>3</sub>	Located in the central and south-eastern part of the block.	Curvilinear near Oblique	E-W to NW-SE 45° to 80° N. Steeping at depth as well as towards its western extension	30m to 100m	AMD-8	114.00	Seam XVIIIIB, AM/L-4, XVII & AM/L-3 faulted Parting between AM/L-4 & XVII faulted Seam XVII & AM/L-3 faulted Seam XVII & AM/L-3 omitted
					AMD-1	140.00	
					AMD-3	180.00	
					AMD-2	120.00	
F <sub>3a</sub>	Branches off from fault F <sub>3</sub> near borehole AM-12. It extends in N-S direction upto around borehole AMD-8 and thereafter it swings to NW-SE direction and dies out within the block.	Curvilinear near Oblique	NW-SE to N-S 60° easterly	0-10m	AMD-3	140.00	Seam AM/L-4 faulted Seam XV roof faulted
					AMD-5	437.10	
F <sub>3b</sub>	Branches off from fault F <sub>3</sub> and runs almost parallel to F <sub>3a</sub> and dies out within the block.	Curvilinear near Oblique	NW-SE to NW 60° easterly	0-10m	AMD-7	405.00	Seam XVIA omitted Seam XVIII & XVIIIIB faulted
					AMD-5	295.00	
F <sub>4</sub>	Located in the SE portion of the block and extends in NW-SE direction at a distance of around 120m from borehole AM-8.	Curvilinear near Oblique	NW-SE 40° due NE	0-40m	AMD-3	450.00	Seam XI/XII faulted Seam XV floor faulted Seam XVIII floor faulted Seam XVII & AM/L-3 faulted Seam XIII faulted
					AMD-4	402.00	
					AM-12	258.90	
					AM-9A	305.00	
					AMD-8		

(Contd. p/2)

TABLE: II.02 (CONTD.)

1	2	3	4	5	6	7	8
F <sub>5</sub>	Located in the north-eastern corner of E-W direction, the block runs almost upto around 240m south of borehole AM-10 and there after it swings north-westerly.	Curvilinear Oblique	NW-SE to E-W 60° due northerly	15m	AM-10	418.00	Parting between Seams XV & XVA faulted. Mine working of Seam XVI TOP abut against this fault.
F <sub>6</sub>	Located in the southern portion of the block and is extending upto its western boundary.	Curvilinear Oblique	ESE-WNW 60° due northerly	0-10m	AM-12	525.70	Seam IX floor faulted. Mine working of Seam XVII abut against this fault.
F <sub>6a</sub>	Branches off from fault F <sub>6</sub> at about 30m south of borehole AM-8.	Curvilinear Strike	NW-SE 60° due NE	0-5m			Mine working of Seam XVII abut against it.
F <sub>7</sub>	Located near the eastern boundary of the block and runs in NW-SE at around 165m from borehole AMD-1.	Linear, Oblique	NW-SE 60° due NE	0-5m	AMD-1	435.00	Seams XV, XIV, XIII & XI/XII faulted. Encountered in the mine working of Seam XVII.
F <sub>8</sub>	Parallel to fault F <sub>7</sub> . Extends in NW-SE direction around 280m from borehole AMD-1.	Linear, Oblique	NW-SE 60° due NE	0-5m	AMD-1 AM-13	455.00 165.00	Seam X omitted Parting between Seams AM/L-4 & XVII faulted. Encountered in the mine working of Seam XVII.
F <sub>9</sub>	The fault has limited development and has affected Seams XVIII to XVI BOTTOM only. It is depicted only in the floor and seam folio plans of these seams. It is located in the central part of the block near Pit-4 and extend in almost E-W direction	Linear, Oblique	E-W 60° due north	0-5m			Encountered in the mine working of Seams XVIII to XVII around Pit-4.
F <sub>1</sub> -F <sub>1</sub>	In Seam fault, intersected in AMD-4. (Syndepositional) Seam XV	Linear, Oblique	E-W 55° due north	5m			Floor of Seam XV faulted in AMD-4.

CHAPTER - III

COAL SEAMS  
( III.01 to III.44 )

( III.01 )

CHAPTER - III

33.00.00

COAL SEAMS

33.01.00

GENERAL:

33.01.01

Presence of 20 major coal seams along with 4 correlatable local seams in Barakar formations have been proved in Amlabad Block. Besides these, a few inconsistent and consequently uncorrelatable, coal bands, having thickness more than 0.50m have also been observed, particularly above XVIII seam horizon.

33.01.02

Outcrops are scarce and the area is generally covered by soil. Only two minor coal bands are exposed in a gully cutting near the Damodar river bank at the northern boundary of the block. In general the coal seams follow an arcuate trend conforming with the domal structure in northern part of the block. In the southern and western part of the block the seams assume a general north-west south-east trend in a curvilinear fashion maintaining the southerly dip. The average dip amount varies from 15 to 25° (Floor Contour Plans Plate-VII).

33.02.00

CORRELATION OF COAL SEAMS

33.02.01

The regional correlation/nomenclature of coal seams as established in earlier Geological Report has been followed in this report. But in this highly disturbed area precise correlation of coal seams has been a major problem. Hardly in any single borehole completely undisturbed sequence of coal seams could be intersected.

33.03.00

MARKER HORIZONS:

33.03.01

In Amlabad Block two marker horizons were considered for establishing the correlation of seams. The Seam XIV with its characteristic carbonaceous roof and floor, is well developed in the middle

horizon of Barakars and is fairly consistent in thickness (around 11.50m). Undisturbed Seam XIV has been intersected in 9 out of 15 boreholes drilled in this area and it serves as a good marker horizon for correlation of coal seams above and below it. The local Seam AM/L-2 occurring between the two thick Seams IX and VIII is easy to identify and helps in correlating the Lower Seams.

3.04.00

NOMENCLATURE OF COAL SEAMS:

3.04.01

The major coal seams are assigned, number I to XVIII in ascending order in regional correlation. Any persistent additional coal seams developed within a particular horizon and above a major Coal Seam is denoted by suffixing 'A' to that seam. In cases where any seam, which is composite elsewhere in the region but has split in the block (with development of major parting) the splits are designated as TOP, MIDDLE and BOTTOM depending on their relative position. When they are further split, they are named Upper split and Lower split. The local seams are designated as AM/L-1 to L-4 in ascending order. The ranges of thickness, Ash, U.V.M. and other details for seams as determined in bhs. AMD-1 to 8 are given in Table alongwith description of each seam. The nomenclature of seams followed by Amlabad Colliery, differs slightly from the one adopted by MECL in the earlier Geological Report and the same is followed here. The inter-relationship of these two nomenclatures is given in Table: III.04 for ready reference.

TABLE: III.01INTER RELATIONSHIP OF NOMENCLATURE OF COAL SEAMS  
DESIGNATED BY MECL AND COLLIERY

<u>Nomenclature as per MECL</u>	<u>Nomenclature as per Amlabad Colliery</u>
XVIII-T/XVIII-B	XIX
XVII	XVIII
XVI-T	XVII
XVI-M	XVI
XVI-B	XVI-B
XVI-A	XV
XV	XIV
XIV	XIII

3.05.00

QUALITY OF COAL SEAMS:

3.05.01

The Band-by-Band and Seam / Sectional overall, analysis of 345.53m of coal core samples from boreholes drilled by MECL in Amlabad Block has been carried out by CFRI, Jealgora.

3.05.02

The carbonaceous material containing upto 35% Ash has been considered as coal while that analysing more than 35% but not, exceeding 50% Ash is classified as shaly coal. The carbonaceous matter showing more than 50% and upto 75% ash is designated as carbonaceous shale. All bands having more than 1.65 sp.gr. are considered as Dirt Bands (D.B.). In overall analysis, dirt bands more than 0.05m thickness as well as pyrolitised portions, were

excluded from the seam/section. The dirt bands of more than 0.30m thickness were considered as partings for separating the sections while deducing overall analysis.

3.05.03

The volatile matter on unit coal basis was calculated from the overall proximate analysis, by applying the following formula wherever it was not actually determined by CFRI.

$$VM(u) = 100 - \frac{100 \times FC}{100 - (1.1 A + M + 0.07 CO_2\%)}$$

Where,

VM (u) = VM% on Unit Coal Basis  
 FC = Fixed Carbon %  
 M = Moisture %  
 A = Ash %

3.05.04

Wherever available, appropriate carbonate correction has been applied.

3.05.05

In the overall analysis, in band overall ash content is not determined by CFRI. It has been calculated from band-by-band analysis on the basis of weighted average.

3.05.06

The band-by-band analysis received from CFRI is given in Appendix-III. The seam structures based on these are drawn on 1:50 scale<sup>and</sup> are shown in Plate- X. The overall/sectional analysis of the seam has also been indicated therein. The analysis are tabulated in Appendix- IV. The statement showing details of Dirt Bands occurring in various seams is given as Appendix-VII.

3.06.00

SEAM FOLIO PLANS :

3.06.01

The seam folio plans for the Seams XVIII to VIII (except seam AM/L-1 & AM/L-2) have been prepared on 1:4,000 scale (Plate- IX). For each seam, separate folio plans are prepared to depict the in-band characteristics. For preparation of folio plans, only undisturbed seam intersections in the boreholes are considered along with mine data. For in-band thickness of the seam all bands upto 0.30m thickness are included along with shaly coal. The obvious bands of non-coal material like sandstone, shale, mica-peridotite and Jhama are excluded from in-band thickness irrespective of their thickness.

3.06.02

The variation in seam thickness is depicted by isochores in folio plans while the quality variation is shown by iso-ash, and iso-vol. (Volatile matter on unit coal basis). The iso-vol are shown only for ex-band thickness of seam. The extent of pyrolitisation is indicated by partial Jhama (C+Jh) and Jhama (Jh) lines.

3.06.03

The grading of coal has been done on the basis of ash% as per S.O. 442(E) dated 22.8.75 by G.O.I. Coal having more than 35% ash is indicated as Ungraded (U).

SUMMARY DATA OF SEAM XVIII-TOP (UP.SEAM)

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1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	8
a) FULL INTERSECTION	7
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	1
e) SEAM PART FAULTED / INTERSECTED	
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	1
l) SEAM PARTLY PYROLITISED	
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	55.74 AMD-4	94.00 AMD-1
3) FRL	95.48 AMD-4	58.84 AMD-1

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RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : XVIII-TOP (UP. SEAM)

DETAILS	MINIMUM	BOREHOLE	MAXIMUM	BOREHOLE	NO.
<u>EXBAND</u>					
THICKNESS(M)	.48	AMD-1	1.33	AMD-4	5
MOISTURE(%)	1.10	AMD-1	1.90	AMD-2	5
ASH(%)	19.70	AMD-1	25.00	AM-18	5
V.M.(%)	24.40	AM-18	26.70	AM-15	5
LVM(%)	30.08	AMD-1	32.68	AM-15	5
GRADE	W-I	AMD-1	W-III	AM-18	
<u>INBAND</u>					
THICKNESS(M)	.62	AMD-1	1.50	AMD-4	5
MOISTURE(%)	1.70	AM-15	1.90	AM-18	2
ASH(%)	20.90	AM-15	29.10	AMD-2	5
V.M.(%)	24.40	AM-18	26.70	AM-15	2
LVM(%)	31.02	AM-18	32.68	AM-15	2
GRADE	W-I	AM-15	W-IV	AMD-2	

3.07.00

SEAM XVIII TOP (Upper Split)

3.07.01

OCCURRENCE:

3.07.02

Seam XVIII TOP (Upper Split) is developed in the northern and north-eastern part of the Amlabad Block. It has been fully intersected in 7 boreholes. The minimum and maximum depths of the floor are 55.74m (AMD-4) & 228.16m (AM-18) respectively.

3.07.03

THICKNESS:

3.07.04

The seam has attained mineable thickness of more than 0.50m in almost entire area. The thickness of the seam ranges from 0.62m (AMD-1) to 1.50m (AMD-4). Workable thickness is around AMD-4 & AMD-2.

3.07.05

ROOF AND FLOOR:

3.07.06

While the roof is represented dominantly by intercalations of shale and sandstone, it is occasionally represented by sandstone. The immediate floor has a dominant shale lithology followed by occasional shale/sandstone intercalations.

3.07.07

DIRT BANDS:

3.07.08

Except Jhama & Mica-Peridotite, Non-combustible bands of shaly coal and carbonaceous shale of thickness from 0.62m to 1.50m is occurring.

3.07.09

PYROLITISATION:

3.07.10

The seam has suffered pyrolitization in the northern and north-eastern part of the block. Seam is completely burnt in north-eastern part in boreholes AM-14 & AM-16 and is partially burnt in northern part in borehole AM-10.

3.07.11

MINE WORKING:

3.07.12

The seam has not been worked in the area under exploration.

3.07.13

QUALITY:

3.07.14

Unburnt sections of the coal seam indicate that the seam contains medium coking coal with grade varying from W-I to W-IV. Borehole-wise quality of seam is given in Table:

3.07.15

RESERVES (In Million Tonnes)Pure Coal

Proved	-	0.533
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Indicated	-	-
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In Partial Jhama <del>Zone</del>	-	<u>0.119</u>
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<u>Total:</u>		<u>0.652</u>
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3.08.00 SEAM XVIII TOP (Lower Split)

3.08.01 OCCURRENCE:

3.08.02 The development of this seam is confined in the northern and western half of the block. The seam has been fully intersected in 7 boreholes. The seam occurs between the floor depths of 57.97m (AMD-4) & 230.93m (AM-18) (Refer Table: ).

3.08.03 THICKNESS:

3.08.04 The thickness of the seam varies from 0.41m AMD- 1) to 0.73m (AM-10).

3.08.05 ROOF AND FLOOR:

3.08.06 Both the immediate roof and floor are represented dominantly by intercalations of sandstone and shale and occasionally by shale.

3.08.07 DIRT BANDS:

3.08.08 Except Jhama and Mica-Peridotite, Non-combustible bands of shaly coal and carbonaceous shale of thickness from 0.07m to 0.16m is present.

3.08.09 PYROLITISATION:

3.08.10 The seam is completely burnt around borehole AM-14 in the north-western corner of the block.

3.08.11 MINE WORKINGS:

3.08.12 The seam has not been worked in the block.

3.08.13 QUALITY:

3.08.14 The seam contains Medium Coking Coal of Grade W-IV to Ungraded. Borehole-wise details in terms of quality of the seam is given in Table:

3.08.15

RESERVES (In Million Tonnes)

Pure Coal

Proved - 0.642

Indicated - -

In Partial

Jhama Zone - 0.204

Total: 0.846

SUMMARY DATA OF SEAM XVIII-TOP (LW.SEAM)

---

1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	8
a) FULL INTERSECTION	7
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	1
e) SEAM PART FAULTED / INTERSECTED	
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	1
j) SEAM CONVERTED CSH	
l) SEAM PARTLY PYROLITISED	
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	57.97 AMD-4	96.02 AMD-1
3) FRL	93.25 AMD-4	56.82 AMD-1

RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : XVIII-TOP (LW.SEAM)

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXBAND</u>					
THICKNESS(M)	.48	AMD-4	1.00	AM-18	3
MOISTURE(%)	1.20	AMD-4	1.60	AM-15	3
ASH(%)	28.00	AM-18	31.50	AM-15	3
V.M.(%)	24.70	AM-15	25.60	AM-18	3
LMM(%)	33.66	AMD-4	33.80	AM-15	3
GRADE	WIII	AM-18	W-IV	AM-15	
<u>INBAND</u>					
THICKNESS(M)	.41	AMD-1	1.00	AM-18	5
MOISTURE(%)	1.00	AMD-1	1.60	AM-15	3
ASH(%)	28.00	AM-18	38.40	AMD-4	5
V.M.(%)	22.30	AMD-1	25.60	AM-18	3
LMM(%)	32.43	AMD-1	33.80	AM-15	3
GRADE	WIII	AM-18	UG	AMD-4	

3.09.00 SEAM XVIII TOP

3.09.01 OCCURRENCE:

3.09.02 The Seam XVIII TOP is combined in the southern and eastern half of the block. It is fully intersected in 7 boreholes. The seam is faulted in 2 boreholes (AM-8 & 12). The seam occurs between the depths of 39.82m (AMD- 6) & 232.85m (AM- 9).

3.09.03 THICKNESS:

3.09.04 The thick of the seam varies from 0.56m (AMD- 8) to 1.40m (AM- 4).

3.09.05 ROOF AND FLOOR:

3.09.06 Immediate roof of the seam is dominantly represented by intercalations of shale and sandstone while occasionally by sandstone. Floor of the seam is composed mainly by intercalations of sandstone and shale and subordinately by shale.

3.09.07 DIRT BANDS:

3.09.08 Except Jhama and Mica-Peridotite, Non-combustible bands of shaly coal of thickness varying between 0.18m to 0.56m are present.

3.09.09 MINE WORKINGS:

3.09.10 The seam is not worked in the area under exploration.

3.09.11 PYROLITISATION:

3.09.12 This seam is completely burnt in the region of the boreholes AMD- 6, AMD- 5 & AMD- 7 in the eastern and east-central part of the block.

3.09.13

QUALITY:

3.09.14

The seam contains Medium Coking Coal with Grade ranging from W-III to W-IV. Details are given in Table:

3.09.15

RESERVES (In Million Tonnes)

Pure Coal

Proved - 0.604

Indicated - -

In Partial  
Jhama Zone - 0.045

Total: 0.649

SUMMARY DATA OF SEAM XVIII-TOP

---

1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	8
a) FULL INTERSECTION	6
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	1
e) SEAM PART FAULTED / INTERSECTED	
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	1
l) SEAM PARTLY PYROLITISED	
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
<hr style="border-top: 1px dashed black;"/>		
2) FLOOR DEPTH(M)	39.82	111.34
	AMD-6	AMD-8
3) FRL	112.46	42.48
	AMD-6	AMD-8
<hr style="border-top: 1px dashed black;"/>		

RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : XVIII-TOP

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXBAND</u>					
THICKNESS (M)	.78	AMD-3	.78	AMD-3	1
MOISTURE (%)	1.30	AMD-3	1.30	AMD-3	1
ASH (%)	16.30	AMD-3	16.30	AMD-3	1
V.M. (%)	26.20	AMD-3	26.20	AMD-3	1
LVM (%)	30.42	AMD-3	30.42	AMD-3	1
GRADE	S-II	AMD-3	S-II	AMD-3	
<u>INBAND</u>					
THICKNESS (M)	1.11	AMD-3	1.11	AMD-3	1
MOISTURE (%)					
ASH (%)	25.20	AMD-3	25.20	AMD-3	1
V.M. (%)					
LVM (%)					
GRADE		AMD-3	WIII	AMD-3	

3.10.00 SEAM XVIII (BOTTOM)

3.10.01 OCCURRENCE:

3.10.02 Seam XVIII (BOTTOM) is fully intersected in 12 boreholes. It is obliterated due to fault in 3 boreholes. It occurs between the depth range of

3.10.03 THICKNESS:

3.10.04 The seam exhibits a significant variation mainly due to the effect of pyrolitisation. However thickness of pure coal attained in only one borehole (AM-10) is 4.10m.

3.10.05 ROOF AND FLOOR:

3.10.06 Roof of the seam is represented by intercalations of sandstone/shale and also shale at places. Immediate floor has a dominant shale lithology followed by occasional shale/sandstone intercalations.

3.10.07 DIRT BANDS:

3.10.08 Besides Jhama and Mica-Peridotite Dirt Bands of shaly coal ranging in thickness from 0.06m to 0.33m are prevalent in the block.

3.10.09 PYROLITISATION:

3.10.10 Seam is largely effected by pyrolitisation in the block. Only small patch in the north-eastern corner and another in the south-east corner pure coal is present.

3.10.11 MINE WORKINGS:

3.10.12 The seam has not been worked.

3.10.13

QUALITY:

3.10.14

Quality-wise seam is found to be medium to prime coking coal with grade varying from W-I to W-III.

3.10.15

RESERVES: (In Million Tonnes)

Pure Coal

Proved - 0.690

Indicated - -

In Partial

Jhama Zone - 1.431

Total: 2.121

SUMMARY DATA OF SEAM XVIII - BOT.

---

1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	15
a) FULL INTERSECTION	12
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	3
e) SEAM PART FAULTED / INTERSECTED	
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	2
l) SEAM PARTLY PYROLITISED	9
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	48.32	122.80
	AM-4	AMD-3
3) FRL	-48.32	29.66
	AM-4	AMD-3

---

RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : XVIII - BOT.

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXBAND</u>					
THICKNESS(M)	2.41	AM-18	4.02	AM-10	2
MOISTURE(%)	1.30	AM-18	1.50	AM-10	2
ASH(%)	16.90	AM-18	19.20	AM-10	2
V.M.(%)	24.30	AM-10	27.90	AM-18	2
LVM(%)	28.92	AM-10	32.72	AM-18	2
GRADE	S-II	AM-18	W-I	AM-10	
<u>INBAND</u>					
THICKNESS(M)	2.83	AM-18	4.10	AM-10	2
MOISTURE(%)					
ASH(%)	20.10	AM-10	20.90	AM-18	2
V.M.(%)					
LVM(%)					
GRADE		AM-10	W-I	AM-18	

- 3.11.00 SEAM AM/L-4
- 3.11.01 OCCURRENCE:
- 3.11.02 The seam occurs below Seam XVIII (BOTTOM). Seam is not developed in the western and northern portion of the block. It is intersected in 13 boreholes. The seam is completely obliterated by fault  $F_3$  in 2 boreholes (AMD- 8 & AMD- 3). The seam occurs between the depths of 62.30m (AM-12) and 140.85m (AM-14).
- 3.11.03 THICKNESS:
- 3.11.04 Thickness of the seam varies from 0.39m (AMD-6) to 1.01m (AMD-1).
- 3.11.05 ROOF AND FLOOR:
- 3.11.06 Roof of the seam comprises dominantly of intercalations of sandstone/shale and at places by carbonaceous shale and shale followed by medium grained sandstone. Floor of the seam is mostly comprises by shale and/or arenaceous shale and occasionally by intercalations of sandstone/shale.
- 3.11.07 DIRT BANDS:
- 3.11.08 Except Jhama and Mica-Peridotite, Non-combustible bands are rare, Dirt Bands of Shaly coal of thickness varying between 0.08m to 0.15m are present.
- 3.11.09 PYROLITISATION:
- 3.11.10 Complete pyrolitisation is observed in 1 borehole (AM-16). A zone of partially burnt seam is present in north of the block.
- 3.11.11 MINE WORKINGS:
- 3.11.12 Thickness of the seam is largely unworkable.

3.11.13

QUALITY:

3.11.14

Seam contains medium coking coal  
of grade varying largely from W-I to Ungraded.

3.11.15

RESERVES: (In Million Tonnes)Pure Coal

Proved	-	0.796
Indicated	-	-
In Partial Jhama Zone	-	-
<u>Total:</u>		<u>0.796</u>

SUMMARY DATA OF SEAM AM/L-4

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1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	15
a) FULL INTERSECTION	13
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	2
e) SEAM PART FAULTED / INTERSECTED	
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	
l) SEAM PARTLY PYROLITISED	
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	62.72	140.85
	AM-12	AM-14
3) FRL	-62.72	1.91
	AM-12	AM-14

RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : AM/L-4

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXBAND</u>					
THICKNESS(M)	.45	AMD-7	1.01	AMD-1	6
MOISTURE(%)	1.00	AMD-1	1.80	AM-18	6
ASH(%)	13.30	AMD-7	28.70	AMD-1	6
V.M.(%)	22.10	AMD-1	26.00	AM-18	6
LVM(%)	28.52	AMD-1	31.37	AM-18	6
GRADE	S-I	AMD-7	W-IV	AMD-1	
<u>INEAND</u>					
THICKNESS(M)	.39	AMD-6	1.01	AMD-1	7
MOISTURE(%)	1.00	AMD-1	1.60	AMD-5	3
ASH(%)	18.30	AMD-7	36.60	AMD-6	7
V.M.(%)	20.40	AMD-6	25.00	AMD-5	3
LVM(%)	28.52	AMD-1	30.01	AMD-5	3
GRADE	W-I	AMD-7	UG	AMD-6	

3.12.00

SEAM XVII

3.12.01

OCCURRENCE:

3.12.02

Seam XVII is fully intersected in 11 boreholes. It is completely obliterated in 3 boreholes (AMD- 2, AMD- 8 & AMD- 3) by  $F_3$  fault. The floor of the seam has been encountered within the depth range of

3.12.03

THICKNESS:

3.12.04

The thickness of the seam varies between 2.00m (AM-16) and 3.80m (AM-10).

3.12.05

ROOF AND FLOOR:

3.12.06

Carbonaceous shale and shale forms the major roof lithology. However at places intercalations of sandstone/shale forms roof of the seam. Floor of the seam is dominantly of shale and occasionally of intercalations of sandstone/shale.

3.12.07

DIRT BANDS:

3.12.08

Besides Jhama & Mica-Peridotite, occurrence of shaly coal and carbonaceous shale of thickness varying between 0.13m to 0.51m is present.

3.12.09

PYROLITISATION:

3.12.10

The seam has been affected by partial pyro-litisation in the south-east corner of the block.

3.12.11

MINE WORKINGS:

3.12.12

The seam has been extensively worked in the entire area of the block.

3.12.13

QUALITY:

3.12.14

The seam contains medium to primary coking coal of grade varying between S-II to W-I.

3.12.15

RESERVES: (In Million Tonnes)

Pure Coal

Proved - 2.782

Indicated - -

In Partial  
Jhama Zone - - 0.613

Total: 3.395

SUMMARY DATA OF SEAM XVII

---

1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	15
a) FULL INTERSECTION	11
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	3
e) SEAM PART FAULTED / INTERSECTED	
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	1
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	
l) SEAM PARTLY PYROLITISED	1
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	104.00	163.80
	AMD-4	AMD-5
3) FRL	47.22	-18.60
	AMD-4	AMD-5

RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : XVII

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXBAND</u>					
THICKNESS(M)	3.50	AMD-4	4.27	AM-18	5
MOISTURE(%)	1.00	AMD-1	1.60	AMD-4	5
ASH(%)	15.10	AMD-7	16.00	AMD-4	5
V.M.(%)	17.20	AMD-4	28.60	AM-18	5
UVM(%)	19.31	AMD-4	33.13	AM-18	5
GRADE	S-II	AMD-7	S-II	AMD-4	
<u>INBAND</u>					
THICKNESS(M)	3.50	AMD-4	4.27	AM-18	5
MOISTURE(%)	1.30	AM-18	1.60	AMD-4	3
ASH(%)	15.50	AM-18	19.20	AMD-7	5
V.M.(%)	17.20	AMD-4	28.60	AM-18	3
UVM(%)	19.31	AMD-4	33.13	AM-18	3
GRADE	S-II	AM-18	W-I	AMD-7	

3.13.00

SEAM AM/L-3

3.13.01

OCCURRENCE:

3.13.02

Seam AM/L-3 has been fully intersected in 10 boreholes. Seam is completely obliterated by fault  $F_3$  in three boreholes (AMD-2, AMD-8 & AMD-3). The minimum and maximum depths of occurrence of the floor of the seam are 119.32m (AMD-4) and 184.65m (AM-10).

3.13.03

THICKNESS:

3.13.04

Thickness of the seam varies between 0.52m (AMD-1) and 0.96m (AMD-7). Seam is unworkable throughout the block, except around AMD-6.

3.13.05

ROOF AND FLOOR:

3.13.06

Roof of the seam comprises dominantly of intercalations of sandstone/shale and sandstone. Floor of the seam is mostly comprised by shale.

3.13.07

DIRT BANDS:

3.13.08

Apart from Jhama and Mica-Peridotite bands of shaly coal of thickness 0.30m is observed in the seam.

3.13.09

PYROLITISATION:

3.13.10

Complete pyrolitisation of the seam is observed in 1 borehole (AM-12). A zone surrounding the borehole has been partially burnt in the south-eastern part of the block.

3.13.11

MINE WORKINGS:

3.13.12

Thickness of the seam is unworkable.

3.13.13

QUALITY:

3.13.14

Seam contains medium to prime  
coking coal of grade varying from W-I to Ungraded.

3.13.15

RESERVES: (In Million Tonnes)

Pure Coal

Proved - 1.121

Indicated - -

In Partial  
Jhama Zone - 0.049

Total: 1.170

SUMMARY DATA OF SEAM AM/L-3

---

1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	15
a) FULL INTERSECTION	10
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	3
e) SEAM PART FAULTED / INTERSECTED	
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	2
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	1
l) SEAM PARTLY PYROLITISED	
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	119.32	184.65
	AMD-4	AM-10
3) FRL	31.90	-42.98
	AMD-4	AM-10

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RANGE OF QUALITY PARAMETERS

(COKING COAL)

SEAM : AM/L-3

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
EXBAND					
THICKNESS(M)	.36	AM-16	.95	AMD-6	6
MOISTURE(%)	1.10	AMD-1	1.70	AM-18	6
ASH(%)	13.50	AM-16	28.00	AMD-1	6
V.M.(%)	23.00	AMD-5	26.00	AM-16	6
UVM(%)	27.34	AMD-5	30.84	AMD-1	6
GRADE	S-I	AM-16	WIII	AMD-1	
INBAND					
THICKNESS(M)	.52	AMD-1	.96	AMD-7	6
MOISTURE(%)	1.10	AMD-1	1.20	AMD-5	3
ASH(%)	20.00	AMD-5	36.80	AM-16	6
V.M.(%)	23.00	AMD-5	23.80	AMD-1	3
UVM(%)	27.34	AMD-5	30.84	AMD-1	3
GRADE	W-I	AMD-5	UG	AM-16	

3.14.00 SEAM XVI (TOP)

3.14.01 OCCURRENCE:

3.14.02 Seam XVI (TOP) has been fully intersected in 12 boreholes. It is part faulted in 1 borehole (AM-12). The minimum and maximum depths of occurrence of the floor of the seam are 210.10m (AMD-4) and 378.14m (AM- 1) respectively.

3.14.03 THICKNESS:

3.14.04 Thickness of the seam varies from 2.00m (AMD-5 & 8) to 3.00m (AMD- 7 & AM- 8).

3.14.05 ROOF AND FLOOR:

3.14.06 The immediate roof of the seam is dominantly composed of sandstone/shale intercalations and subordinately by Carbonaceous and Shale bands. The floor of the seam is mainly represented by Carbonaceous shale and shale bands and occasionally by sandstone and shale intercalations.

3.14.07 DIRT BANDS:

3.14.08 Bands of Carbonaceous shale/Shaly coal varying in thickness from 2.00m to 3.00m are common within the seam.

3.14.09 PYROLITISATION:

3.14.10 No effect of burning has been observed in the seam.

3.14.11 MINE WORKINGS:

3.14.12 The seam has been extensively worked in the area as indicated by the occurrence of numerous Goafs, Drifts and Galleries throughout the block.

3.14.13

QUALITY:

3.14.14

The seam contains prime coking coal with grade varying from W-I to W-III. The details are furnished in Table:

3.14.15

RESERVES (In Million Tonnes)Pure Coal

Proved	-	2.270
Indicated	-	0.084
In Partial Jhama Zone	-	<u>        </u>
<u>Total:</u>		<u>2.354</u>

SUMMARY DATA OF SEAM XVI - TOP

---

1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	15
a) FULL INTERSECTION	12
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	
e) SEAM PART FAULTED / INTERSECTED	1
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	2
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	
l) SEAM PARTLY PYROLITISED	
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	210.10 AMD-4	283.10 AMD-5
3) FRL	-58.88 AMD-4	-137.90 AMD-5

RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : XVI - TOP

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXBAND</u>					
THICKNESS (M)	.95	AM-12	2.67	AMD-6	5
MOISTURE (%)	.90	AMD-1	1.50	AMD-6	5
ASH (%)	18.00	AM-16	25.50	AM-12	5
V.M. (%)	24.10	AMD-6	27.20	AM-16	5
LVM (%)	28.92	AMD-6	34.37	AM-12	5
GRADE	S-II	AM-16	WIII	AM-12	
<u>INBAND</u>					
THICKNESS (M)	.95	AM-12	2.87	AMD-6	5
MOISTURE (%)	1.40	AM-12	1.40	AM-12	1
ASH (%)	22.70	AMD-1	25.80	AM-16	5
V.M. (%)	26.80	AM-12	26.80	AM-12	1
LVM (%)	34.37	AM-12	34.37	AM-12	1
GRADE	W-II	AMD-1	WIII	AM-16	

3.15.00 SEAM XVI (MIDDLE)

3.15.01 OCCURRENCE:

3.15.02 The seam is fully intersected in 11 boreholes. The seam is faulted in 1 borehole (AMD- 5). The minimum and maximum depths of occurrence of the floor of the seam are 230.25m (AMD- 3) and 412.75m (AM- 1) respectively.

3.15.03 THICKNESS:

3.15.04 For the major part of the area thickness of the seam is between 2.00m to 3.00m. However, the minimum and maximum values of thickness are 1.29m (AMD- 8) & 3.70m (AM-15) respectively.

3.15.05 ROOF AND FLOOR:

3.15.06 The immediate roof of the seam is mainly composed of Carbonaceous shale with subordinate shale. The floor is dominantly represented by shale and occasionally by sandstone/shale intercalations and medium grained sandstone.

3.15.07 DIRT BANDS:

3.15.08 Development of carbonaceous shale bands and shaly coal bands of thickness from 0.07m to 0.20m is seen.

3.15.09 PYROLITISATION:

3.15.10 No effect of burning has been observed in the seam.

3.15.11 MINE WORKINGS:

3.15.12 The seam has been worked throughout the block.

3.15.13

QUALITY:

3.15.14

The seam contains medium to prime coking coal with grade varying from W-I (AM-16) to Ungraded (AMD-8). Further details in respect of quality of the seam are given in Table:

3.15.15

RESERVES (In Million Tonnes)

Pure Coal

Proved - 2.670

Indicated - -

In Partial  
Jhama Zone - 0.130

Total: 2.800

SUMMARY DATA OF SEAM XVI - MID

---

1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	<b>15</b>
a) FULL INTERSECTION	11
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	2
e) SEAM PART FAULTED / INTERSECTED	
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	3
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	
l) SEAM PARTLY PYROLITISED	
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	230.25	310.90
	AMD-3	AMD-7
3) FRL	-77.79	-174.28
	AMD-3	AMD-7

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RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : XVI - MID

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXBAND</u>					
THICKNESS(M)	1.06	AMD-8	2.63	AM-12	9
MOISTURE(%)	.90	AMD-4	1.60	AMD-8	9
ASH(%)	20.80	AM-16	31.90	AMD-3	9
V.M.(%)	21.70	AMD-6	28.20	AM-12	9
U.M.(%)	26.91	AMD-6	34.31	AM-12	9
GRADE	W-I	AM-16	W-IV	AMD-3	
<u>INEBAND</u>					
THICKNESS(M)	1.29	AMD-8	2.74	AM-12	9
MOISTURE(%)	1.20	AM-16	1.30	AMD-6	2
ASH(%)	20.80	AM-16	44.40	AMD-8	9
V.M.(%)	21.70	AMD-6	26.10	AM-16	2
U.M.(%)	26.91	AMD-6	31.64	AM-16	2
GRADE	W-I	AM-16	UG	AMD-8	

3.16.00                    SEAM XVI BOTTOM

3.16.01                    OCCURRENCE:

3.16.02                    Seam XVI BOTTOM has been fully intersected in 9 boreholes. It is totally obliterated due to faulting in 1 borehole (AMD- 5) and partly faulted in AM-12 in which floor of the seam is missing. The minimum and maximum depths of the floor are 239.39m (AMD- 3) and 424.30m (AM- 1) respectively.

3.16.03                    THICKNESS:

3.16.04                    Thickness of the seam shows variation from 0.39m (AMD- 3) to 1.90m (AMD- 6). Thickness less than 0.50m is around AMD- 3 and it increases towards west.

3.16.05                    ROOF AND FLOOR:

3.16.06                    Immediate roof of the seam is mostly composed of Carbonaceous shale and Shale. It is occasionally found to be of medium grained sandstone. Floor of the seam is represented dominantly by shale and carbonaceous shale.

3.16.07                    DIRT BANDS:

3.16.08                    Bands of Carbonaceous shale and Shaly coal are often present within the seam.

3.16.09                    PYROLITISATION:

3.16.10                    Burning effect is not observed in the seam in the area under exploration.

3.16.11

MINE WORKINGS:

3.16.12

Seam is extensively worked in the major part of the block. A small workable patch is left in the north-western corner of the block. Otherwise there working potential is nil due to presence of faults.

3.16.13

QUALITY:

3.16.14

The seam contains medium to prime coking coal with grade varying from W-II (AM-16) to Ungraded (AMD-1).

3.16.15

RESERVES: (In Million Tonnes)Pure Coal

Proved	-	1.614
Indicated	-	-
In Partial Jhama Zone	-	-
<u>Total:</u>		<u>1.614</u>

SUMMARY DATA OF SEAM XVI - BOT

---

1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	15
a) FULL INTERSECTION	10
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	1
e) SEAM PART FAULTED / INTERSECTED	1
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	3
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	2
j) SEAM CONVERTED CSH	
l) SEAM PARTLY PYROLITISED	4
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	239.39 AMD-3	320.29 AMD-7
3) FRL	-86.93 AMD-3	-183.67 AMD-7

RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : XVI - BOT

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXBAND</u>					
THICKNESS(M)	.33	AMD-3	1.72	AMD-6	6
MOISTURE(%)	.90	AM-16	1.30	AMD-6	6
ASH(%)	21.20	AMD-6	29.60	AMD-1	6
V.M. (%)	21.40	AMD-1	25.30	AM-16	6
MM(%)	27.84	AMD-1	30.81	AM-16	6
GRADE	W-II	AMD-6	W-IV	AMD-1	
<u>INEBAND</u>					
THICKNESS(M)	.39	AMD-3	1.90	AMD-6	6
MOISTURE(%)	.90	AM-16	1.20	AM-18	2
ASH(%)	21.90	AM-16	36.60	AMD-1	6
V.M. (%)	23.50	AM-18	25.30	AM-16	2
MM(%)	30.10	AM-18	30.81	AM-16	2
GRADE	W-II	AM-16	UG	AMD-1	

3.17.00 SEAM XV-A

3.17.01 OCCURRENCE:

3.17.02 Seam XV-A is fully intersected in 10 boreholes. It is totally cut-off by faults in 2 boreholes (AMD- 7 & AM- 8). The floor of this seam is intersected between the depths of

3.17.03 THICKNESS:

3.17.04 Thickness of the seam ranges between 0.77m (AMD- 1) and 2.26m (AM-12).

3.17.05 ROOF AND FLOOR:

3.17.06 Roof of the seam is composed mainly of medium grained sandstone and occasionally by intercalations of sandstone/shale. Floor of the seam is dominantly of shale and subordinately by intercalations of sandstone/shale.

3.17.07 DIRT BANDS:

3.17.08 Besides Jhama and Mica-Peridotite, Dirt Bands of shaly coal and carbonaceous shale of thickness 0.07m to 0.27m is present in the seam.

3.17.09 PYROLITISATION:

3.17.10 The seam is pyrolitised in the eastern portion of the block. Seam is partly and completely pyrolitised in 1 borehole. Each in AMD- 6 and AMD-5 respectively.

3.17.11

MINE WORKINGS:

3.17.12

The seam is worked extensively in the northern half of the block.

3.17.13

QUALITY:

3.17.14

Seam contains primary coking coal of grade varying between W-I and W-IV.

3.17.15

RESERVES: (In Million Tonnes)

Pure Coal

Proved - 1.923

Indicated - -

In Partial  
Jhama Zone - 0.264

Total: 2.187

SUMMARY DATA OF SEAM XV - A

---

1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	15
a) FULL INTERSECTION	10
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	2
e) SEAM PART FAULTED / INTERSECTED	
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	3
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	1
j) SEAM CONVERTED CSH	1
l) SEAM PARTLY PYROLITISED	
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	310.36	386.65
	AM-12	AM-15
3) FRL	-310.36	-228.86
	AM-12	AM-15

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RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : XV - A

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXBAND</u>					
THICKNESS (M)	.77	AMD-1	2.26	AM-12	9
MOISTURE (%)	.90	AMD-8	1.50	AMD-1	9
ASH (%)	19.50	AMD-8	28.50	AM-15	9
V.M. (%)	20.30	AM-15	24.70	AM-12	9
LVM (%)	25.16	AM-10	29.74	AM-12	9
GRADE	W-I	AMD-8	W-IV	AM-15	
<u>INBAND</u>					
THICKNESS (M)	.77	AMD-1	2.26	AM-12	9
MOISTURE (%)	.90	AMD-8	1.50	AMD-1	4
ASH (%)	19.50	AMD-8	28.70	AM-10	9
V.M. (%)	20.30	AM-15	24.70	AM-12	4
LVM (%)	25.76	AM-15	29.74	AM-12	4
GRADE	W-I	AMD-8	W-IV	AM-10	

3.18.00

SEAM XV

3.18.01

OCCURRENCE:

3.18.02

Seam XV is fully intersected in 8 boreholes and partly in 1 borehole (AMD- 5) in which the roof of the seam is faulted. The minimum and maximum depths of the floor are 374.80m (AM-17) and 577.40m (AM- 1) respectively.

3.18.03

THICKNESS:

3.18.04

Thickness of the seam shows variation from 10.45m (AMD- 6) to 14.20m (AM- 9). Major part of the block is affected by burning. Only in one borehole (AMD- 6) full coal of thickness 10.45m is encountered.

3.18.05

ROOF AND FLOOR:

3.18.06

The roof is mostly composed on carbonaceous shale with subordinate shale. The floor is mainly represented by carbonaceous shale and shale bands with occasional sandstone / shale intercalations and medium grained sandstone.

3.18.07

DIRT BANDS:

3.18.08

There is abundant occurrence of Jhama and Mica-Peridotite. Non-combustible bands of thick varying from 1.49m to 7.74m occurs.

3.18.09

PYROLITISATION:

3.18.10

The seam is completely pyrolitised in the south-central part of the block and is partially pyrolitised in 4 boreholes in north-western and south-eastern part of the block.

3.18.11

MINE WORKING:

3.18.12

The seam has been worked north of fault F<sub>3</sub>-F<sub>3</sub>. No further mining potential due to fault occurrence and pyrolitisation.

3.18.13

QUALITY:

3.18.14

Seam contains medium to prime coking coal. Grade-wise quality is given in S-II.

3.18.15

RESERVES: (In Million Tonnes)Pure Coal

Proved	-	4.104
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Indicated	-	-
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In Partial Jhama Zone	-	<u>7.433</u>
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<u>Total:</u>		<u>11.537</u>
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SUMMARY DATA OF SEAM XV

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1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	15
a) FULL INTERSECTION	8
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	4
e) SEAM PART FAULTED / INTERSECTED	1
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	2
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	2
l) SEAM PARTLY PYROLITISED	
m) COAL SLUDGE	4
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	382.83 AMD-3	473.15 AM-15
3) FRL	-230.37 AMD-3	-473.15 AM-15

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RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : XV

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXEBAND</u>					
THICKNESS(M)	10.45	AMD-6	10.45	AMD-6	1
MOISTURE(%)	1.00	AMD-6	1.00	AMD-6	1
ASH(%)	15.30	AMD-6	15.30	AMD-6	1
V.M.(%)	22.20	AMD-6	22.20	AMD-6	1
LVM(%)	25.16	AMD-6	25.16	AMD-6	1
GRADE	S-II	AMD-6	S-II	AMD-6	
<u>INEBAND</u>					
THICKNESS(M)	10.45	AMD-6	10.45	AMD-6	1
MOISTURE(%)	1.00	AMD-6	1.00	AMD-6	1
ASH(%)	15.30	AMD-6	15.30	AMD-6	1
V.M.(%)	22.20	AMD-6	22.20	AMD-6	1
LVM(%)	25.16	AMD-6	25.16	AMD-6	1
GRADE	S-II	AMD-6	S-II	AMD-6	

3.19.00

SEAM XIV

3.19.01

OCCURRENCE:

3.19.02

Seam XIV has been fully intersected in 9 boreholes. In 2 boreholes (AMD-1 & AM-8) the seam is totally cut-off by fault  $F_1$ . The minimum and maximum depths of occurrence of the floor of the seam are 419.20m (AMD-3) and 512.40m (AM-15).

3.19.03

THICKNESS:

3.19.04

Thickness of the seam ranges from 10.30m (AM-15) to 13.06m (AMD-7).

3.19.05

ROOF AND FLOOR:

3.19.06

Both the roof and floor of the seam comprises dominantly of Carbonaceous shale and subordinately by Shale.

3.19.07

DIRT BANDS:

3.19.08

Jhama and Mica-Peridotite occur abundantly. Dirt Bands of Carbonaceous shale and Shaly coal of thickness 0.05m to 0.26m is common in the seam.

3.19.09

PYROLITISATION:

3.19.10

Effect of pyrolitisation is prevalent in the south-eastern corner and east-central portion of the block.

3.19.11

MINE WORKINGS:

3.19.12

The seam has been exploited for a small area in the central portion of the block above fault  $F_3$ .

3.19.13

QUALITY:

3.19.14

Seam contains Prime Coking coal of grade varying between W-I to W-III.

3.19.15

RESERVES: (In Million Tonnes)Pure Coal

Proved - 11.631

Indicated - 1.251

In Partial  
Jhama Zone - 3.493Total: 16.375

SUMMARY DATA OF SEAM XIV

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1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	15
a) FULL INTERSECTION	9
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	2
e) SEAM PART FAULTED / INTERSECTED	
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	4
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	
l) SEAM PARTLY PYROLITISED	3
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	419.20	512.40
	AMD-3	AM-15
3) FRL	-266.74	-354.61
	AMD-3	AM-15

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RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : XIV

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXBAND</u>					
THICKNESS(M)	9.31	AMD-4	13.06	AMD-7	7
MOISTURE(%)	.60	AM-15	1.20	AM-18	7
ASH(%)	15.30	AM-18	22.00	AMD-7	7
V.M. (%)	20.20	AMD-5	22.90	AMD-8	7
LVM(%)	23.53	AM-15	26.81	AMD-8	7
GRADE	S-II	AM-18	W-II	AMD-7	
<u>INBAND</u>					
THICKNESS(M)	10.30	AM-15	13.10	AM-18	7
MOISTURE(%)	.80	AMD-7	.80	AMD-7	1
ASH(%)	17.20	AM-18	25.50	AMD-4	7
V.M. (%)	21.00	AMD-7	21.00	AMD-7	1
LVM(%)	25.07	AMD-7	25.07	AMD-7	1
GRADE	S-II	AM-18	WIII	AMD-4	

3.20.00

SEAM XIII

3.20.01

OCCURRENCE:

3.20.02

Seam XIII is fully intersected in 8 boreholes. It is totally obliterated in 3 boreholes (AM-15, AMD-1 & AMD-8) due to faulting. The minimum and maximum depths of intersection of the floor of the seam are

3.20.03

THICKNESS:

3.20.04

Thickness of the seam ranges between 1.65m (AM-16) and 3.23m (AMD-4). Thickness is high in the central and southern portion of the block and less in eastern and northern portion.

3.20.05

ROOF AND FLOOR:

3.20.06

Shale is the dominant lithology in the roof of the seam. Floor of the seam is mainly composed of shale and occasionally of carbonaceous shale.

3.20.07

DIRT BANDS:

3.20.08

Bands of shaly coal and carbonaceous of thickness varying between 0.14m and 0.68m is present in the seam.

3.20.09

PYROLITISATION:

3.20.10

The seam is unaffected by burning.

3.20.11

MINING WORKINGS:

3.20.12

The seam has not been worked out.

3.20.13

QUALITY:

3.20.14

Seam comprises of medium to primary coking coal of grade varying between W-I to Ungraded.

3.20.15

RESERVES: (In Million Tonnes)

Pure Coal

Proved	-	3.970
Indicated	-	-
In Partial Jhama Zone	-	-
<u>Total:</u>		<u>3.970</u>

SUMMARY DATA OF SEAM XIII

---

1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	15
a) FULL INTERSECTION	
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	3
e) SEAM PART FAULTED / INTERSECTED	
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	3
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	
l) SEAM PARTLY PYROLITISED	
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	414.70	505.60
	AM-8	AMD-5
3) FRL	-414.70	360.40
	AM-8	AMD-5

RANGE OF QUALITY PARAMETERS

(COKING COAL)

SEAM : XIII

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXBAND</u>					
THICKNESS(M)	1.03	AM-16	3.57	AM-18	8
MOISTURE(%)	.70	AMD-3	1.70	AM-18	8
ASH(%)	16.90	AM-18	29.20	AMD-3	8
V.M.(%)	16.70	AMD-5	27.70	AM-18	8
UVM(%)	20.47	AMD-5	32.63	AM-18	8
GRADE	S-II	AM-18	W-IV	AMD-3	
<u>INEAND</u>					
THICKNESS(M)	1.65	AM-16	4.59	AM-18	9
MOISTURE(%)	.90	AMD-7	.90	AMD-7	2
ASH(%)	20.20	AM-8	41.70	AMD-7	9
V.M.(%)	20.00	AMD-7	24.90	AM-8	2
UVM(%)	29.74	AMD-7	29.76	AM-8	2
GRADE	W-I	AM-8	UG	AMD-7	

3.21.00

SEAM XI/XII

3.21.01

OCCURRENCE:

3.21.02

Seam is fully intersected in 7 boreholes. It is totally obliterated by faults in 3 boreholes. In one borehole (AMD-8) seam is partially faulted in which roof of the seam is missing. The floor of the seam occurs between the depths of 433.40m (AM-8) to 520.19m (AMD- 5).

3.21.03

THICKNESS:

3.21.04

Thickness of the seam ranges from 3.86m (AMD- 6) & 5.20m (AMD- 5). Thickness is almost uniform in major part of the block, it however increases towards north-east.

3.21.05

ROOF AND FLOOR:

3.21.06

Roof of the seam is mainly composed of carbonaceous shale and subordinately by sandstone. Floor of the seam is dominantly comprised of carbonaceous shale and at places by shale and/or sandstone.

3.21.07

DIRT BANDS

3.21.08

Besides Jhama and Mica-Peridotite, Dirt Bands of Carbonaceous shale and shaly coal of thickness varying between 0.05m to 1.24m is present in the seam.

3.21.09

PYROLITISATION:

3.21.10

Seam in the southern half portion of the block is affected by partial pyrolitisation as is evidenced by 3 boreholes (AMD- 7, AMD- 4 & AM-12).

3.21.11

MINE WORKINGS:

3.21.12

The seam has not yet been mined.

3.21.13

QUALITY:

3.21.14

Coal seam contains primary coking coal of grade varying between W-II to W-III.

3.21.15

RESERVES: (In Million Tonnes)

Pure Coal

Proved - 1.535

Indicated - -

In Partial

Jhama Zone - 1.908

Total: 3.543

SUMMARY DATA OF SEAM XI / XII

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1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	15
a) FULL INTERSECTION	7
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	3
e) SEAM PART FAULTED / INTERSECTED	1
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	4
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	3
l) SEAM PARTLY PYROLITISED	
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	433.40	520.19
	AM-8	AMD-5
3) FRL	-433.40	-374.99
	AM-8	AMD-5

RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : XI / XII

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXEAND</u>					
THICKNESS(M)	3.60	AMD-6	5.11	AMD-5	3 3 3 3 3 3
MOISTURE(%)	.70	AMD-5	1.00	AM-16	
ASH(%)	18.60	AM-16	24.50	AMD-6	
V.M.(%)	19.90	AMD-6	20.80	AM-16	
UM(%)	23.84	AMD-5	24.12	AMD-6	
GRADE	W-I	AM-16	WIII	AMD-6	
<u>INEAND</u>					
THICKNESS(M)	3.86	AMD-6	5.20	AMD-5	3
MOISTURE(%)					
ASH(%)	21.70	AMD-5	26.90	AMD-6	3
V.M.(%)					
UM(%)					
GRADE		AMD-5	WIII	AMD-6	

3.22.00

SEAM - X

3.22.01

OCCURRENCE: Seam X is fully intersected in 7 boreholes. The Seam is totally cut-off by fault  $F_1$  in two boreholes (AM-15 & AMD-1). Floor of the seam occurs between the depths of 485.80m (AM-8) to 568.30m (AM-16).

3.22.02

THICKNESS:

3.22.03

Seam thickness varies considerably due to pyrolitisation. Pure coal intersected in one borehole is having a thickness of 7.15m.

3.22.04

ROOF AND FLOOR:

3.22.05

Carbonaceous shale dominates over intercalations of sandstone/shale in defining the roof of the seam. Fine grained sandstone also intercalations of sandstone/shale forms floor of the seam.

3.22.06

DIRT BANDS:

3.22.07

Besides Jhama and Mica-Peridotite, presence of shaly coal and carbonaceous shale bands as non-combustible bands are prevalent in the seam.

3.22.08

PYROLITISATION:

3.22.09

Intensive effect of pyrolitisation is observed in the seam. In 5 boreholes the seam is partly pyrolitised and in 1 borehole (AM-16), Seam X is completely pyrolitised. Seam is fully converted to Jhama in the northern portion of the block. In the central and south-central portion of the block seam is partly converted to Jhama.

3.22.10

MINE WORKINGS:

3.22.11

The seam is not worked in the area under exploration.

3.22.12

QUALITY:

3.22.13

Seam contains medium to prime coking coal of grade W-I to W-II.

3.22.14

RESERVES: (In Million Tonnes)

Pure Coal

Proved - 0.840

Indicated - -

In Partial  
Jhama Zone - 5.984

Total: 6.824

SUMMARY DATA OF SEAM X

---

1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	15
a) FULL INTERSECTION	7
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	
e) SEAM PART FAULTED / INTERSECTED	2
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	6
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	1
l) SEAM PARTLY PYROLITISED	5
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	485.80 AM-8	568.30 AM-16
3) FRL	-485.80 AM-8	-568.30 AM-16

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RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : X

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
EXBAND					
THICKNESS(M)	6.85	AM-12	6.85	AM-12	1
MOISTURE(%)	.80	AM-12	.80	AM-12	1
ASH(%)	17.00	AM-12	17.00	AM-12	1
V.M.(%)	21.60	AM-12	21.60	AM-12	1
LVM(%)	24.72	AM-12	24.72	AM-12	1
GRADE	S-II	AM-12	S-II	AM-12	
INBAND					
THICKNESS(M)	7.18	AM-12	7.18	AM-12	1
MOISTURE(%)					
ASH(%)	18.50	AM-12	18.50	AM-12	1
V.M.(%)					
LVM(%)					
GRADE		AM-12	W-I	AM-12	

3.23.00

SEAM IX

3.23.01

OCCURRENCE:

3.23.02

This seam occurring below Seam X has been fully intersected in 8 boreholes. It is completely obliterated by fault in 1 borehole (AM-8) and partly faulted in borehole AM-12 in which floor of the seam is missing. The minimum and maximum depths of intersection of the floor of the seam are 485.35m (AMD-1) and 599.75m (AM-16).

3.23.03

THICKNESS:

3.23.04

Thickness of the seam ranges between 2.92m (AMD-3) and 8.22m (AM-15). Thickness of the seam is maximum in western portion and is gradually decreasing towards east and south, with low values in the central part around AMD- 4.

3.23.05

ROOF AND FLOOR:

3.23.06

Carbonaceous shale and at places shale forms the roof of the seam while shale is more prevalent than intercalations of sandstone and shale in the floor of the seam.

3.23.07

DIRT BANDS:

3.23.08

Besides Jhama and Mica-Peridotite, non-combustible bands of shaly coal of thickness varying from 0.25m to 2.91m is present in the seam.

3.23.09

PYROLITISATION:

3.23.10

The seam has been partially converted to Jhama in the major portion of the block. Small patches of unaffected coal is present in the south-eastern corner and west-central portion of the block.

3.23.11

MINE WORKINGS:

3.23.12

The seam has not been exploited sofar.

3.23.13

QUALITY:

3.23.14

The seam contains Prime Coking Coal  
of Grade W-I to W-III.

3.23.15

RESERVES: (In Million Tonnes)Pure Coal

Proved	-	2.199
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Indicated	-	-
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In Partial Jhama Zone	-	6.597
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<u>Total:</u>		<u>8.796</u>
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SUMMARY DATA OF SEAM IX

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1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES		15
a) FULL INTERSECTION		8
b) SEAM WEATHERED		
c) SEAM PARTLY WEATHERED		
d) SEAM FAULTED		1
e) SEAM PART FAULTED / INTERSECTED		1
f) SEAM NOT DEVELOPED		
g) BOREHOLE BEYOND INCROP		
h) BOREHOLE NOT DRILLED UPTO SEAM		5
i) DETAILS NOT AVAILABLE		
k) SEAM PYROLITISED		
j) SEAM CONVERTED CSH		4
l) SEAM PARTLY PYROLITISED		
m) COAL SLUDGE		
n) SEAM PART ENCOUNTERED		
o) SEAM NOT CONSIDERED		

	SHALLOWEST	DEEPEST
2) FLOOR DEPTH(M)	485.35	599.75
	AMD-1	AM-16
3) FRL	-332.51	-599.75
	AMD-1	AM-16

RANGE OF QUALITY PARAMETERS

(COKING COAL)

SEAM : IX

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
<u>EXBAND</u>					
THICKNESS(M)	2.92	AMD-3	7.75	AM-15	3
MOISTURE(%)	.70	AMD-1	.80	AM-15	3
ASH(%)	19.10	AM-15	24.40	AMD-3	3
V.M.(%)	19.50	AMD-3	21.60	AMD-1	3
LVM(%)	22.50	AM-15	25.54	AMD-1	3
GRADE	W-I	AM-15	WIII	AMD-3	
<u>INBAND</u>					
THICKNESS(M)	2.92	AMD-3	8.22	AM-15	3
MOISTURE(%)	.70	AMD-1	.70	AMD-1	2
ASH(%)	20.80	AMD-1	24.40	AMD-3	3
V.M.(%)	19.50	AMD-3	21.60	AMD-1	2
LVM(%)	23.54	AMD-3	25.54	AMD-1	2
GRADE	W-I	AMD-1	WIII	AMD-3	

3.24.00

SEAM VIII

3.24.01

OCCURRENCE:

3.24.02

Seam VIII has been fully intersected in 7 boreholes. It is partly faulted in 1 borehole (AM-8) in which roof of the seam is missing. Floor of this seam has been intersected between the depths of 496.10m (AM-8) and 627.10m (AM-16).

3.24.03

THICKNESS:

3.24.04

The seam exhibits appreciable range of variation in thickness from 1.10m (AMD-5) to 7.45m (AM-12). Thickness is maximum in the southern part of the block and is minimum in the east-central part.

3.24.05

ROOF AND FLOOR:

3.24.06

Carbonaceous shale and/or shale defines roof of the seam. While the floor mainly comprises of shale and occasionally by intercalations of sandstone/shale.

3.24.07

DIRT BANDS:

3.24.08

Apart from Jhama and Mica-Peridotite Dirt Bands of shaly coal of thickness 0.08m to 0.25m is present in the seam.

3.24.09

MINE WORKINGS:

3.24.10

The seam is not worked in the block.

3.24.11

PYROLITISATION:

3.24.12

Pyro litisation of the seam has been delineated in the west and northern portion of the block in the boreholes AM-16, AM-15 & AMD-1.

3.24.13

QUALITY:

3.24.14

Qualitatively the seam contains medium to prime coking coal with grade varying from W-I to Ungraded.

3.24.15

RESERVES:( In Million Tonnes)Pure Coal

Proved - 3.314

Indicated - -

In Partial  
Jhama Zone - 2.042Total: 5.356

SUMMARY DATA OF SEAM VIII

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1) DETAILS OF SEAM INTERSECTION IN BOREHOLES

TOTAL NO OF BOREHOLES	15
a) FULL INTERSECTION	7
b) SEAM WEATHERED	
c) SEAM PARTLY WEATHERED	
d) SEAM FAULTED	
e) SEAM PART FAULTED / INTERSECTED	1
f) SEAM NOT DEVELOPED	
g) BOREHOLE BEYOND INCROP	
h) BOREHOLE NOT DRILLED UPTO SEAM	7
i) DETAILS NOT AVAILABLE	
k) SEAM PYROLITISED	
j) SEAM CONVERTED CSH	
l) SEAM PARTLY PYROLITISED	4
m) COAL SLUDGE	
n) SEAM PART ENCOUNTERED	
o) SEAM NOT CONSIDERED	

	SHALLOWEST	DEEPEST
<hr style="border-top: 1px dashed black;"/>		
2) FLOOR DEPTH(M)	496.10	627.10
	AM-8	AM-16
3) FRL	-496.10	-627.10
	AM-8	AM-16
<hr style="border-top: 1px dashed black;"/>		

RANGE OF QUALITY PARAMETERS

(COOKING COAL)

SEAM : VIII

! DETAILS	!MINIMUM!	BOREHOLE	MAXIMUM!	BOREHOLE	NO.!
EXBAND					
THICKNESS(M)	.20	AMD-3	6.41	AM-12	6
MOISTURE(%)	.70	AMD-5	1.10	AMD-4	6
ASH(%)	19.70	AMD-4	24.10	AM-12	6
V.M.(%)	17.90	AMD-3	20.60	AM-8	6
UMM(%)	21.06	AMD-3	24.97	AM-8	6
GRADE	W-I	AMD-4	WIII	AM-12	
INBAND					
THICKNESS(M)	1.10	AMD-5	7.45	AM-12	6
MOISTURE(%)	1.10	AMD-4	1.10	AMD-4	1
ASH(%)	19.70	AMD-4	36.70	AMD-3	6
V.M.(%)	19.00	AMD-4	19.00	AMD-4	1
UMM(%)	22.05	AMD-4	22.05	AMD-4	1
GRADE	W-I	AMD-4	UG	AMD-3	

Due to the paucity of the data, seam folio plan for seams VII, VIA, VI, V, AM/L-2 and AM/L-1 could not be prepared and their reserves has also not been estimated. However a brief description of the seam is given below:

3.25.00

SEAM VII

3.25.01

Seam VII is fully intersected in 3 boreholes (AM-15, AM-16 & AMD-1). It is totally obliterated by fault  $F_9$  in borehole AM-8 and by  $F_1$  in borehole AM-12. Thickness of the seam varies from 0.22m (AMD-1) to 0.97m (AM-16). Both roof and floor of the seam comprises dominantly by shale and subordinately by medium grained sandstone. Seam VII is totally pyrolitised in borehole AM-15.

3.26.00

SEAM VIA

3.26.01

Seam VIA is intersected fully in 2 boreholes (AM-15 & 16). Seam is faulted by  $F_9$  in borehole AM-8. Seam VIA is completely pyrolitised in borehole AM-16.

3.27.00

SEAM VI

3.27.01

Seam VI is intersected fully in 3 boreholes (AM-15, AM-16 & AMD-1). Thickness of the seam varies from 0.75m (AM-15) to 4.06m effective thickness (AMD-1). Seam VI is faulted by  $F_9$  in borehole AM-8. It is completely burnt in borehole AM-16.

3.28.00

SEAM V

3.28.01

Seam V is intersected fully in 2 boreholes (AM-15 & AMD-1). Thickness in AMD-1 is 1.50m whereas seam is completely pyrolitised in AM-15. Seam is faulted by  $F_9$  in borehole AM-8.

3.29.00

SEAM AM/L-2

3.29.01

Seam AM/L-2 occurs below Seam IX. It is fully intersected in 5 boreholes. Thickness of the seam varies from 0.25m (AM-15) to 0.86m (AMD-3). Seam is completely pyrolitised in 1 borehole (AMD-4). Seam AM/L-2 is faulted by fault  $F_{9a}$  in borehole AM-8 &  $F_6$  in borehole AM-12.

3.30.00

SEAM AM/L-1

3.30.01

Seam AM/L-1 occurs below Seam AM/L-2. It is not developed in the block. Thickness encountered in boreholes AM-15 & AM-16 varies from 0.13m to 0.17m respectively. Seam is faulted by  $F_{9a}$  in borehole AM-8 & by  $F_6$  in borehole AM-12.

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CHAPTER - IV

R E S E R V E S

(IV.01)

CHAPTER - IV

4.00.00

RESERVES

4.01.00

GENERAL:

4.01.01

Exploration by MECL in Amlabad Block has established the presence of 23 regional <sup>/developed</sup> coal seams and occurrence of 4 local correlatable coal seams. The category-wise In-band reserves are estimated for 15 upper seams (XVIII Top Upper Split to VIII) and two local seams AM/L-3 & AM/L-4. For seams below VIII upto seam I reserves have not been calculated due to paucity of data. The reserves have not been estimated for local seam AM/L-2 & AM/L-1 as its thickness is generally less than 0.50m.

4.02.00

METHOD OF CALCULATING RESERVES:

4.02.01

For estimation and compilation of coal reserves, the following general procedure has been adopted.

4.02.02

In case of seams XVIII to VIII, the reserves for individual coal seams are calculated by isochore method.

4.02.03

The area of the exploration block has been divided into two sectors. Each sector is controlled by position of the fault.  $F_3-F_3$  in a seam. The down thrown side of fault  $F_3-F_3$  is Sector I while the area in upthrown side is designated as Sector-II.

4.03.00

SEGMENTS:

4.03.01

The sectors have been further sub-divided into segments as depicted in seam folios by:-

- (a) Horizon Lines: The horizon lines generally depict the floor of the coal seam up 0m, (-) 100m, (-) 200m and (-) 300m R.L. In a few cases (+) 200m and (-) 400m lines have also been drawn.
- (b) Isochores: The isochores show lateral variation of thickness of a coal seam ranging from less than 0.50m, 0.50m to 0.90m, 0.90 to 1.20m, 1.20m to 2.00m and then at interval of every 2m.
- (c) Isoash Lines: The lateral variation in ash content is depicted by isoash lines of less than 15%, 15 to 18%, 18 to 21%, 21 to 24%, 24 to 28%, 28 to 35% and more than 35% ash ranges.
- (d) Isovol Lines: The isovol lines are drawn to depict the variation in volatile matter, calculated on unit coal basis and show variation in the range of less than 20%, 20 - 22%, 22 - 25%, 25 - 30%, 30 - 35% and more than 35%.
- (e) Pyrolitized Zone: Full jhama and partial Jhama lines are indicative of the degree of pyrolytization suffered by a coal seam.
- (f) Line of Split: The line of split separates the area covered by a combined seam and its split sections.
- (g) Faults: Only prominent faults have been considered in delineating segments within a coal seam.

4.04.00

BASIC CONSIDERATIONS:

4.04.01

The following basic considerations have been made while estimating the coal reserves.

4.04.02

The minimum thickness of 0.50m has been considered for reserves estimation.

4.04.03

For the area lying in between the two isochores, the average of the two isochore values has been considered as the thickness of the seam for that area.

4.04.04

In a segment, where one isochore and one borehole are located, the average of the isochore value and the thickness of the seam as encountered in the borehole has been taken as the effective thickness of the seam.

4.04.05

In the event of only one borehole falling in a segment, the thickness of the seam as intersected in that borehole has been considered as the effective thickness of the seam in that segment.

4.04.06

In the peripheral region of the block, where the area extends 200m and beyond from the last borehole, the thickness of the seam is taken either from the peripheral borehole or the average of the nearest isochore and the thickness intersected in the borehole, as the case may be.

4.04.07

In a "Developed Area", either the thickness of the seam encountered in the borehole or the value of the isochore in the adjacent 'virgin' area has been considered, for both the 'pillared' and 'virgin' segment.

4.04.08 While estimating the reserves the maximum ash content considered for the 'in-band' seam is 50%.

4.04.09 The average ash value of the 'isoash lines' within an area has been taken as the ash content of the seam in that area.

4.04.10 In case of 'Developed Area', in absence of colliery quality data, the ash content as indicated by the trend of the isoash lines in the peripheral virgin area has been considered.

4.04.11 The specific gravity has been calculated from the ash values by adopting the formula:

$$\text{Sp. Gr.} = 1.28 + (0.01 \times \text{Ash } \%)$$

4.04.12 Goafed areas has been excluded from the purview of reserve estimation.

4.04.13 The area falling within the heave zone of a fault has been excluded for the purpose of reserve estimation.

4.04.14 A deduction of 10% from the 'gross reserves' of coal has been made to account for unidentified geological uncertainties like structural disturbances, wash out zones, pyrolitization of seams etc. to arrive at the 'net reserves'.

4.04.15 A deduction of 30% from the estimated 'gross reserves' has been made on account of percentage of extraction in the 'developed' areas of the working seams.

4.04.16

A barrier of 40m has been considered along the western bank of the Damodar River and reserves of coal falling within the barrier zone estimated separately.

4.05.00

METHOD OF CALCULATION:

4.05.01

The gross reserves of coal have been calculated as follows:

$$\text{Gross Reserves} = \text{Area (in sq.m.)} \times \text{Thick-ness (in m.)} \times \text{Sp. Gr.}$$

4.05.02

The area of each segment on seam folios is calculated by planimeter and the volume is worked out by multiplying it with appropriate thickness of coal. The tonnage for the given ranges of different parameters has been calculated by multiplying the volume (in cu.m.) by the appropriate sp.gr.

4.06.00

CATEGORISATION OF RESERVES:

4.06.01

As per the norms of the Indian Standard Procedure the coal reserves have been classified under 'Proved' and 'Indicated' categories. For 'Proved' category the influence of each borehole intersection has been assumed upto a distance of 200m around the borehole. However, where the geological continuity of a coal seam has been established beyond the 200m limit, the reserves within the entire area have been considered as 'Proved'. Where the geological continuity of a coal seam has not been established beyond doubt the reserves for that area has been put under 'Indicated' category. The reserves locked up in pillars of a developed area have been considered as 'Proved'.

4.06.02

The total net insitu in-band reserves of 44.489 million tonnes of coal have estimated for the Amlabad Block. Out of which 43.238 million tonnes are of 'Proved' category while the remaining 1.251 million tonnes fall under the 'Indicated' category. These net reserves of coal are exclusive of those associated with partial jhama zone in which the total reserves are estimated to be 30.396 million tonnes. The break-up figures for the reserves are summarised in Tables:

4.06.03

It is seen that the maximum reserves of coking coal amounting to 16.375 million tonnes are contained in the XIV seam. These reserves include 3.493 million tonnes of coal associated with partial jhama zone and 1.251 million tonnes of coal falling under 'Indicated' category. Further details in respect of the reserves of coal have been incorporated in annexures for reserves.

CHAPTER-V

PRELIMINARY INFORMATION AND ENVIRONMENT  
IMPACT ASSESSMENT

(PP.V.01 to V.05)

(V.01)

CHAPTER - V

5.00.00 PRELIMINARY INFORMATION AND ENVIRONMENT  
IMPACT ASSESSMENT

5.01.00 LOCATION, AREA ETC.:

5.01.01 Amlabad Block falls in Survey of India Toposheet No. 73 I/6 and is bounded by Latitudes  $23^{\circ}40'$  -  $23^{\circ}42'$  (N) and Longitudes  $86^{\circ}22'$  -  $86^{\circ}24'$  (E). Further details about location and communication are provided in Chapter-I (please see Plate-I). The infrastructures of adjacent area are shown in Plate-II.

Total Area of:

- |                                  |   |                                                                                                                  |
|----------------------------------|---|------------------------------------------------------------------------------------------------------------------|
| i) Geological Block              | - | 1.4 Sq.Kms.                                                                                                      |
| ii) Area for mine infrastructure | - | Certain Upper Seams of the block is highly worked and goafed. The infrastructure is already present in the area. |
| iii) Township                    | - | Can be established beyond southern part of the block.                                                            |

5.02.00

PHYSIOGRAPHY:

5.02.01

The area has flat to moderately undulating topography (Plate-II) with gentle north-easterly slope. The ground level varies between 158.145m and 130.00m above mean sea level.

5.03.00

FEATURES EXISTING WITHIN 10 KMS. OF BLOCK:

5.03.01

The area falls in well known Jharia Coal-field, the prime coking coal producing sector of India. As such it is surrounded by active mining centers, both opencast and underground. The colliery in immediate vicinity is Bhowra. Besides collieries, Sindri Fertilizer Plant, a number of refractory plants, coke oven plants etc. are in close vicinity of the block.

5.04.00

CLIMATE:

5.04.01

The area has a tropical monsoon climate.

5.04.02

The winter season extends from November to February with temperature as low as 5°C. Occasional rains are also observed during January and February.

5.04.03

Summers are from March to June. The highest temperature recorded is 48°C.

5.04.04

Rainy Season starts from later half of the month of June and ends in September. The south-west monsoon brings the major precipitation. The maximum rainfall recorded in this region is 272mm in 24 hours during August.

5.05.00

RAINFALL:

5.05.01

The daily rainfall data for the period of 21 years are collected from the two rain Gauging Station, one at Dhanbad and another located at Loyabad Colliery. The annual rainfall measured in and around Jharia Coalfields for different periods are as follows:

- |                                               |   |          |
|-----------------------------------------------|---|----------|
| 1) CMRS Dhanbad at SMNE<br>of J.C.F.          | : | 1379.2mm |
| ii) Bagdigi Colliery in<br>J.C.C. (1967-1979) | : | 1258.9mm |
| iii) Dhanbad (1931-1960)                      | : | 1197.3mm |

The monthly rainfall and rainy days are given in Table No.: V.01

5.06.00

TEMPERATURE:

5.06.01

The maximum temperature is usually experienced during the month of May with temperature in the range of 45°C to 48°C whereas, during the winter months temperature falls to a minimum of 5°C to 6°C. The average monthly temperature with maximum and minimum values are given in Table No.: V.02. The rainfall data were observed by Central Mine Research Station, Dhanbad for year 1979-80.

5.07.00

WIND AND CLOUD:

5.07.01

Wind directions during the different months with average velocity are given in Table: V.03. These observations were carried out on the basis of monthly average recorded for 50 years at I.M.D. observatory located at Purulia which is about 30 Kms. south of Jharia Coalfield.

5.07.02

During a complete seasonal cycle, different type of clouds with variable intensity are seen to cover the area. The winter sky in month of December and January is covered with cirrostratus clouds. In the monsoon months the sky is occasionally covered with nimbostratus and altostratus. During April and May, the dust storm is common with cyclone followed by precipitation.

5.08.00

POLLUTION:

5.08.01

Air quality data for four seasons from the existing air monitoring station at Moonidih is given in Table No.: V.04. The table shows 8 days average maximum and minimum values of observations obtained with regards to SPM, SO<sub>2</sub>, NOX and CO<sub>2</sub> content in the air.

5.08.02

Water Pollution: Coal Mining and its allied activities may affect the quality of natural drainage water by means of domestic sewage, industrial and mine water discharge. The main contaminants of these water are suspended solids, rock and coal dust, grease and oil. However all precautions are being taken for treating mine and industrial discharge to bring the water pollution under permissible limit.

5.09.00

FLORA AND FAUNA:

5.09.01

The area has scanty natural vegetation. Some of the common trees are:

<u>Local Name</u>	<u>Botanical Name</u>
Palas	Butca nomosperma
Babul	Acacia Arabica
Putus	Lantane Camera
Ber	Zizyphus Jujuba
Kathal	Artocarpus integrifolia
Bans	Bansbasa avundineca
Bel	Degle marmeles
Jamun	Jambulana indica
Neem	Azadirachta indica
Mango	Margifera indica

5.09.02

The area is practically devoid of any significant wild life except some common Jackals, foxes etc. Under domestic animals cows, buffalows, goats and dogs are common.

CHAPTER - VI

LIMITATIONS AND RECOMMENDATIONS  
(PP.VI.01 to VI.05)

(VI.01)

CHAPTER - VI

6.00.00

LIMITATIONS AND RECOMMENDATIONS

6.01.00

LIMITATIONS:

6.01.01

During the preparation of this geological report the following constraints and limitations were observed:

- (1) The latest mine working plans which were either collected from Amlabad Colliery or were provided by CMPDI/BCCL have been utilized in preparation of different plans for these seams in this report. In the absence of co-ordinates survey of the surface features (Borehole positions and Triangulation Stations) with respect to the mine workings certain approximation exists in their superimposition in the plans of different seams.
- (2) Mine working plans of seams XVII, XVI T, XVI M & XVI B on 1:2400 RF & 1:2000 RF have been reduced to 1:4000 RF. This reduction was done at CMPDIL (HQ.) and these plans have been used in interpretation and preparation of floor contour of lower seams. The possibility of certain amount of error in these reduced plans cannot be ruled out.
- (3) Due to paucity of drilling data the geological interpretation in the south-eastern corner of the block is tentative. Since it is difficult to drill in this area due to Damodar river and four underground workings/goaves of seams XVII, XVI T, XVI M & XVI B it is understood that a couple of underground boreholes were proposed

by CMPDI to BCCL. Since this drilling is yet to be taken up vital data gap exist in this structurally complicated part, where the behaviour of  $F_2-F_2$  &  $F_3-F_3$  faults does not conform with the trend of contours and the delineation of the extent of pyroclitisation is also tentative. Hence it is suggested that drilling in this part should be done before commencement of any mining work.

- (4) The strike length of fault  $F_3-F_3$  to the west of Dyke upto fault  $F_1-F_1$  and the varying angle of this fault which is low angled near surface (around  $45^\circ\text{C}$ ) and steeper at depth ( $75^\circ\text{C}$ ) from XVI T to XIV seam is entirely based on the interpretation of mine working data provided by colliery. The westward strike and its throw in this area needs to be provided.
- (5) With the present exploration it is not possible to precisely delineate faults of less than 5m throw. However if such faults are intersected in the mines and if shows in the mine plans, they have been incorporated in the respective plans. Faults of such magnitude have been shown in the workings of XV-A & XV seams and the possibility of existance of similar faults in other seams and their intersection during the course of mining cannot be ruled out.
- (6) In the boreholes where in seam faults (syndepositional) have been encountered the strike and dip are tentative.

- (7) Since all the boreholes drilled earlier in this block (AM Series) were not surveyed for deviation test the boreholes therefore have been assumed to be vertical. The boreholes drilled under the present exploration (AMD Series) have however been surveyed for deviation, but as per the advice of CMPDIL even these boreholes have been assumed as vertical. Some minor variation on the account cannot be ruled out.
- (8) The pyrolitised portions of the seams as depicted in seam folio plans are based on borehole/mine data and are purely interpretative. No Isochore lines have been drawn in partial Jhama zone and as such the reserves of this zone have been estimated on average thickness basis.
- (9) Due to faulting of XV Seam in boreholes drilled in the south-western part there is a data gap and the extent of pyrolitisation in this zone for this seam is interpretative.
- (10) Overall analysis as given by CFRI is for Ex-band/Sectional only. To arrive at the In-band seam overall values, calculations have been done on weighted average basis from Band-by-Band data.

6.02.00

RECOMMENDATIONS:

6.02.01

Considering the above limitations following recommendations are suggested:

- (1) Drilling of boreholes for the existing mine floor should necessarily be taken up in the south-eastern part of the block to fill in data gap and to precisely delineate the structure before commencement of mining in that area.
- (2) Drilling in south-western part of the block is necessary to precisely delineate the Jhama zone for XV Seam.
- (3) Drilling is also proposed in the northern part of the block since borehole no. AM-10 has been drilled only upto XV Seam and the reserves below this seam have to put under indicated category due to data gap. Further it is also required to prove the extent of pyrolitisation in this part for Seam XIV. In this case also underground boreholes can be taken up from XV Seam working.
- (4) Continuation of fault  $F_3-F_3$  west of dyke its dip and throw should be assessed/proved by horizontal drilling or exploratory drivage before commencement of any mining operations.

ANNEXURE-IV

STATEMENT SHOWING THE QUALITY OF COAL SEAMS

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	M%	ASH%	VM%	F.C.	UVM%	CI/CT/SI	CO2 %	C.V. (KCL/KG)	GRADE
	FROM (M)	TO (M)											
AMD-1 #	93.38	93.44	EXBAND	.06	1.30	21.90	27.70	49.10	34.19				W-II
			INBAND	.06	1.30	21.90	27.70	49.10	34.19				W-II
AMD-1 #	93.58	94.00	EXBAND	.42	1.10	19.50	25.00	54.40	29.76				W-I
			INBAND	.42	1.10	19.50	25.00	54.40	29.76				W-I
SEAM OVERALL	93.38	94.00	EXBAND	.48	1.10	19.70	25.20	54.00	30.08				W-I
			INBAND	.62	1.90	21.80	25.60	50.70	31.60				W-II
AMD-2	55.35	56.50	EXBAND	1.15	1.90	21.80	25.60	50.70	31.60				W-II
			INBAND	1.15	1.90	21.80	25.60	50.70	31.60				W-II
AMD-4	54.24	55.74	EXBAND	1.50	1.30	22.40	25.90	50.40	31.95				W-II
			INBAND	1.50	1.30	22.40	25.90	50.40	31.95				W-II
AM-1	132.18	133.45	EXBAND	1.27	1.80	20.70	26.70	50.80	32.65				W-I
			INBAND	1.27	1.90	19.40	25.60	53.10	30.82				W-I
AM-5	144.10	145.52	EXBAND	1.42	1.90	28.70	28.70	.00	.00				W-IV
			INBAND	1.42	1.90	28.70	28.70	.00	.00				W-IV
AM-6	84.99	86.11	EXBAND	1.12	2.10	23.10	25.70	49.10	32.27				W-II
			INBAND	1.12	2.10	23.10	25.70	49.10	32.27				W-II
AM-8	76.25	76.90	EXBAND	.65	1.40	15.80	24.30	58.50	27.97				S-II
			INBAND	.65	1.40	15.80	24.30	58.50	27.97				W-III
AM-10	76.90	77.92	EXBAND	1.02	1.70	20.90	26.70	50.70	32.68				W-I
			INBAND	.80	1.70	20.90	26.70	50.70	32.68				W-I
SEAM OVERALL	76.25	77.92	EXBAND	1.67	1.70	20.90	26.70	50.70	32.68				W-I
			INBAND	.80	1.70	20.90	26.70	50.70	32.68				W-I
AM-16	78.65	80.05	EXBAND	.92	.90	15.00	26.20	57.90	29.90				S-I
			INBAND	.92	.90	15.00	26.20	57.90	29.90				S-I
AM-17	177.60	178.72	EXBAND	1.23	1.90	25.00	24.40	48.70	31.02				W-III
			INBAND	1.23	1.90	25.00	24.40	48.70	31.02				W-III
AM-18	226.93	228.16	EXBAND	1.23	1.90	25.00	24.40	48.70	31.02				W-III
			INBAND	1.23	1.90	25.00	24.40	48.70	31.02				W-III

NOTE : # INDICATES SECTIONAL OVERALL  
 \* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A ; COLFIELD : DISTRICT : EDWARD ; STATE : BIHAR ANNEXURE-IV

SEAM : XVIII-TOP (LW,SEAM)

PAGE NO: 2

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	PROXIMATE ANALYSIS							C1/CT/S1	CO2 %	C.V. (KCL/KG) on dmf	GRADE
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.	UVM%						
AMD-1	95.61	96.02	.41	INBAND	1.00	38.20	22.30	38.50	32.43				UG		
AMD-2	58.00	58.80	.80	INBAND		38.30							UG		
AMD-4	57.27	57.97	.70	EXBAND	1.20	28.70	25.50	44.60	33.66				W-IV		
				*INBAND	.70	38.40						UG			
AM-1	FAULTED		.56	NOT ANALYSED											
AM-2	136.64	137.20	.99	EXBAND	1.50	34.10	23.80	40.60	33.43				W-IV		
AM-5	146.48	147.47	.99	INBAND	1.50	34.10	23.80	40.60	33.43				W-IV		
AM-6	FAULTED		.91	EXBAND	1.70	33.80	25.80	38.70	36.68				W-IV		
AM-7	86.79	87.70	.91	INBAND		38.70							UG		
AM-8	FAULTED		.73	NOT ANALYSED											
AM-10	81.72	82.45	.83	EXBAND	1.60	31.50	24.70	42.20	33.80				W-IV		
AM-15	77.52	78.35	.83	INBAND	1.60	31.50	24.70	42.20	33.80				W-IV		
AM-16	82.85	83.45	.60	NOT ANALYSED											
AM-17	180.14	180.75	.61	EXBAND	1.10	32.40	22.40	44.10	30.29				W-IV		
AM-18	229.93	230.93	1.00	INBAND	1.50	28.00	25.60	44.90	33.68				UG		
				EXBAND	1.00	28.00	25.60	44.90	33.68			W-III			

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES  
 DRILLED IN A M L A B A D : BLOCK : J H A R I A ; COALFIELD : DISTRICT : BOKARO ; STATE : BIHAR ANNEXURE-IV

SEAM : XVIII-TOP PAGE NO: 3

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM			MODE OF ANALY.	THICK (M)	PROXIMATE ANALYSIS				CO2 %	C.V. (KCL/KG) on dmf	GRADE
	FROM (M)	TO (M)	THICK (M)			M%	ASH%	VM%	F.C.			
AMD-3	106.50	107.61	1.11	EXBAND	.78	1.30	16.30	26.20	56.20	30.42		S-II
				*INBAND	1.11		25.20					W-III
AMD-5	# 70.46	71.02	.56	JHAMA								W-IV
				*EXBAND	.86		32.40					W-IV
				*INBAND	.86		32.40					W-IV
SEAM OVERALL												
AMD-5	70.46	71.88	1.42	COAL+JHAMA+MP								
AMD-6	# 59.43	59.82	.39	JHAMA								W-II
				EXBAND	1.00	1.60	24.00	24.00	50.40	30.00		W-III
AMD-7	# 57.52	58.75	1.23	*INBAND	1.23		26.10					W-III
				JHAMA+MP.								
AMD-7	# 58.75	58.93	.18	JHAMA+MP.								
SEAM OVERALL												
AMD-7	57.52	58.93	1.41	COAL+JHAMA+MP								
AM-3	194.25	195.65	1.40	JHAMA+MP.								
AM-4	38.70	40.10	1.40	NOT ANALYSED								
AM-9	231.15	232.85	1.70	EXBAND	1.70	1.30	26.00	21.70	51.00	27.25		W-III
				INBAND	1.70	1.30	26.00	21.70	51.00	27.25		W-III
AM-11	182.30	183.70	1.40	SEAM PART FAULTED								
AM-13	115.55	116.55	1.00	EXBAND	.58	1.60	25.60	27.00	45.80	34.79		W-III
				INBAND	1.00		35.00					W-IV
AM-14	93.15	93.80	.65	NOT ANALYSED								
AM-12				FAULTED								

NOTE : # INDICATES SECTIONAL OVERALL  
 \* INDICATES CALCULATED OVERALL

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	MC	ASH%	VM%	F.C.	VM%	C:CT/ES	COR. INCL/KG ON DMF	GRADE
	FROM (M)	TO (M)										
AMD-1	98.66	102.18	JHAMA									S-1
AMD-1	102.18	102.28	EXBAND	.10	1.00	11.00	20.80	67.20	22.67			S-1
			INBAND	.57	1.00	22.40	25.80	49.80	32.02			W-11
AMD-1	102.60	103.17	INBAND	.57	1.00	23.40	25.80	49.80	32.02			W-11
SEAM OVERALL												
AMD-1	98.66	103.17	COAL+JHAMA+MP		1.30	25.10	24.50	49.10	30.93			W-11
AMD-2	61.26	61.98	EXBAND	.72	1.30	25.10	24.50	49.10	30.93			W-11
			INBAND	.72	1.30	25.10	24.50	49.10	30.93			W-11
SEAM OVERALL												
AMD-2	61.98	63.24	JHAMA									W-11
AMD-2	61.98	63.24	COAL+JHAMA+MP		1.60	21.40	17.40	59.60	20.38			W-11
AMD-3	120.60	121.03	EXBAND	.43	1.60	21.40	17.40	59.60	20.38			W-11
			INBAND	.43	1.60	25.00	25.00					W-11
AMD-3	121.03	122.80	JHAMA									W-11
AMD-3	120.60	122.80	COAL+JHAMA+MP		1.20	24.80	24.50	49.50	30.79			W-11
AMD-4	60.99	62.50	EXBAND	1.51	1.51	25.10	25.10					W-11
			INBAND	1.51	1.51	25.10	25.10					W-11
AMD-4	62.50	65.50	JHAMA+MP									W-11
AMD-4	60.99	65.50	COAL+JHAMA+MP									W-11
AMD-5	80.21	81.29	JHAMA									W-11
AMD-5	80.21	81.29	EXBAND	.21	23.50	23.50						W-11
			INBAND	.21	23.50	23.50						W-11
SEAM OVERALL												
AMD-5	80.21	85.58	COAL+JHAMA+MP		1.40	22.90	23.90	51.80	29.44			W-11
AMD-6	49.82	50.99	EXBAND	1.17	1.40	22.90	23.90	51.80	29.44			W-11
			INBAND	1.17	1.40	22.90	23.90	51.80	29.44			W-11
AMD-6	50.99	52.50	JHAMA+MP									W-11
AMD-6	49.82	52.50	COAL+JHAMA+MP		1.60	24.90	24.90	48.60	31.56			W-11
AMD-7	76.30	77.88	EXBAND	1.58	25.80	25.80						W-11
			INBAND	1.58	25.80	25.80						W-11
AMD-7	77.88	80.50	JHAMA+MP		1.30	13.50	27.40	57.80	31.07			S-1
			INBAND	.50	19.00	19.00						W-1
SEAM OVERALL												
AMD-7	76.30	80.80	JHAMA									W-1
AMD-8			FAULTED									W-1
AMD-8			FAULTED									W-1
AMD-1	140.69	142.86	EXBAND	2.17	1.80	19.20	27.20	51.80	32.80	-/G/-		W-1
			INBAND	2.17	1.90	19.20	27.20	51.80	32.80	-/G/-		W-1
AMD-3	196.68	199.40	JHAMA+MP									W-1
AMD-4	44.97	45.20	NOT ANALYSED									W-1
AMD-4	45.20	48.32	JHAMA+MP									W-1
SEAM OVERALL												
AMD-4	44.97	48.32	COAL+JHAMA+MP		1.80	18.80	27.40	52.00	32.92	24/G/-		W-1
			EXBAND	2.78	1.80	18.80	27.40	52.00	32.92	24/G/-		W-1
			INBAND	2.78	1.80	18.80	27.40	52.00	32.92	24/G/-		W-1

NOTE : # INDICATES SPLITTING INTERVAL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : XVIII - BOT. PAGE NO: 5

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM			MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S						CO2 %	C.V. KCL/KG on dmf	GRADE	
	FROM (M)	TO (M)	THICK (M)			M%	ASH%	VM%	F.C.	UM%	CI/CT/SI				
AM-6	FAULTED			JHAMAMP.											
AM-7	91.25	93.80	2.55			1.40	30.30	24.80	43.50	33.35				W-IV	
AM-8	FAULTED														
AM-9	235.50	237.30	1.80	EXBAND 1.80										W-IV	
				ROOF FAULTED		1.40	30.30	24.80	43.50	33.35					
				INBAND 1.80											
AM-10	85.55	89.65	4.10	ROOF FAULTED										W-I	
				EXBAND 4.02		1.50	19.20	24.30	55.00	28.92				W-I	
				INBAND 4.10			20.10							W-I	
AM-11	187.75	188.90	1.15	EXBAND 1.15		1.90	17.30	24.70	56.10	29.05				S-II	
				FLOOR FAULTED											
				INBAND 1.15		1.90	17.30	24.70	56.10	29.05				S-II	
				FLOOR FAULTED											
AM-13	118.94	122.36	3.42	EXBAND 3.21		1.70	19.50	27.20	51.60	32.86				W-I	
				INBAND 3.42			21.80							W-II	
AM-14	98.16	103.25	5.09	JHAMAMP.										W-I	
AM-15	81.20	86.32	5.12	JHAMAMP.										W-I	
AM-16	# 88.40	89.90	1.50	EXBAND 1.50		1.20	20.10	24.00	54.70	28.67				W-I	
				INBAND 1.50			20.10	24.00	54.70	28.67				W-I	
AM-16	# 89.90	92.05	2.15	JHAMAMP.											
SEAM OVERALL															
AM-16	88.40	92.05	3.65	COAL+JHAMAMP											
AM-17	184.73	189.05	4.32	JHAMAMP.											
AM-18	233.88	236.71	2.83	EXBAND 2.41		1.30	16.90	27.90	53.90	32.72				S-I	
				INBAND 2.83			20.90							W-I	
AM-12	FAULTED														

NOTE : # INDICATES SECTIONAL-OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COOKING COAL SEAMS ENCOUNTERED IN BOREHOLES  
 DRILLED IN A M L A B A D : BLOCK : J H A R I A ; COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV  
 PAGE NO: 6

S E A M : AM/L-4

PAGE NO: 6

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK: (M)	M%	ASH%	VM%	F.C.	VM%	CI/CT/SI	CD2 %	C.V. on dmf	GRADE
	FROM (M)	TO (M)											
AMD-1	127.20	128.21	1.01	EXBAND	1.00	28.70	22.10	48.20	28.52				W-IV
AMD-2	93.40	93.85	.45	NOT ANALYSED									W-IV
AMD-3	88.20	88.80	.60	EXBAND	1.70	21.80	24.40	52.10	29.90				W-IV
AMD-4	113.34	114.07	.73	EXBAND	1.60	19.70	25.00	53.70	30.01				W-IV
AMD-5	75.88	76.27	.39	INBAND	1.60	19.70	25.00	53.70	30.01				W-IV
AMD-6	111.55	112.15	.60	EXBAND	1.50	15.30	25.30	59.90	28.58				W-IV
AMD-7	165.75	166.71	.96	EXBAND	1.80	23.70	26.10	48.40	32.90				W-IV
AMD-8	77.35	78.10	.75	NOT ANALYSED									W-IV
AM-3	171.65	172.15	.50	NOT ANALYSED									W-IV
AM-4	106.05	106.37	.32	NOT ANALYSED									W-IV
AM-5	117.95	118.40	.45	EXBAND	1.40	1.30	26.70	48.10	30.62				W-IV
AM-6	252.40	253.95	1.55	INBAND	1.55	24.60	24.10	49.90	30.25				W-IV
AM-7	95.76	96.63	.87	EXBAND	1.40	24.60	24.10	49.90	30.25				W-IV
AM-8	149.31	150.46	1.15	EXBAND	1.90	24.30	24.40	49.40	30.78				W-IV
AM-9	140.69	140.85	.16	NOT ANALYSED									W-IV
AM-10	118.32	118.67	.35	NOT ANALYSED									W-IV
AM-11	112.44	112.79	.35	JHAMAHMP.									W-IV
AM-12	205.37	206.85	1.48	JHAMAHMP.									W-IV
AM-13	258.77	259.70	.93	EXBAND	.74	1.80	19.60	26.00	52.60	31.37			W-IV
AM-14	62.30	62.72	.42	NOT ANALYSED									W-IV

NOTE : # INDICATES SECTIONAL OVERALL  
 \* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COOKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I R : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : XVII

PAGE NO: 7

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM			MODE OF ANALY.	PROXIMATE ANALYSIS	CO2 %	C.V. KCL/KG or dmf	GRADE				
	FROM (M)	TO (M)	THICK (M)									
AMD-1	# 144.02	146.26	2.24	EXBAND	2.24	1.00	14.80	28.40	55.80	32.54	S-I	
				INBAND	2.24	1.00	14.80	28.40	55.80	32.54	S-I	
AMD-1	# 146.26	147.76	1.50	EXBAND	1.51	1.90	18.20	28.70	51.20	34.43	W-I	
				INBAND	1.50		20.80				W-I	
SEAM OVERALL												
AMD-1	144.02	147.76	3.74	EXBAND	3.55	1.00	15.40	28.20	55.40	32.49	S-II	
				INBAND	3.74		17.40				S-II	
AMD-2	FAULTED											
AMD-3	FAULTED											
AMD-4	100.50	104.00	3.50	EXBAND	3.50	1.60	16.00	17.20	65.20	19.31	S-II	
				INBAND	3.50	1.60	16.00	17.20	65.20	19.31	S-II	
AMD-5	161.00	163.80	2.80	GALLERY								W-II
AMD-6	# 131.85	133.20	1.35	EXBAND	1.07	1.30	23.60	23.40	51.70	28.92	W-II	
				INBAND	1.35		26.70				W-II	
AMD-6	# 133.20	134.70	1.50	GALLERY								W-I
AMD-6	# 134.70	135.20	.50	EXBAND	.50	1.30	19.20	23.90	55.60	28.33	W-I	
				INBAND	.50	1.30	19.20	23.90	55.60	28.33	W-I	
SEAM OVERALL												
AMD-6	131.85	135.20	3.35	PARTLY WORKED								S-II
AMD-7	# 157.18	159.97	2.79	EXBAND	2.79	1.40	15.40	28.00	55.20	32.40	S-II	
				INBAND	2.79	1.40	15.40	28.00	55.20	32.40	S-II	
AMD-7	# 159.97	161.35	1.38	EXBAND	.98	1.40	21.90	24.60	52.10	30.08	W-II	
				INBAND	1.38		22.30				W-II	
SEAM OVERALL												
AMD-7	157.18	161.35	4.17	EXBAND	3.77	1.50	15.10	26.90	56.50	31.01	S-II	
				INBAND	4.17	1.40	19.20	25.80	53.60	30.82	W-I	
AMD-8	FAULTED											
AMD-1	239.37	243.35	3.98	EXBAND	3.76	1.70	14.60	24.70	59.00	28.26	S-I	
				INBAND	3.98		17.00				S-II	
AM-2	FAULTED											
AM-3	FAULTED											
AM-4	133.25	125.90	2.65	GALLERY								S-I
AM-5	220.20	222.35	2.15	EXBAND	1.81	1.50	14.50	27.30	56.70	31.31	S-I	
				INBAND	2.15		22.30				W-II	
SEAM OVERALL												
AM-5	# 218.46	220.20	1.74	JHAMA+MP.								W-II
AM-5	218.46	222.35	3.89	COAL+JHAMA+MP								W-II
AM-6	FAULTED											
AM-7	161.10	164.45	3.35	EXBAND	3.35	1.70	21.50	26.10	50.70	32.08	W-II	
				INBAND	3.35	1.70	21.50	26.10	50.70	32.08	W-II	
AM-8	153.50	156.50	3.00	AS PER GEO.PHY.LOG/ N.A.								W-II
AM-9	FAULTED											
AM-10	158.20	162.00	3.80	EXBAND	3.55	1.50	15.50	27.40	55.60	31.74	G5	
				INBAND	3.80		18.90				W-I	
AM-11	223.90	226.40	2.50	EXBAND	2.50	1.70	19.30	25.10	53.90	30.06	W-I	
				INBAND	2.50	1.70	19.30	25.10	53.90	30.06	W-I	

NOTE : # INDICATES SECTIONAL OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

SEAM : XVII

PAGE NO: 8

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM			MODE OF ANALY.	PROXIMATE ANALYSIS	CO2 %	C.V. KCL/KG on dmf	GRADE			
	FROM (M)	TO (M)	THICK (M)						M%	ASHX	VM%
AM-13	170.29	173.50	3.21	EXPAND INBAND	3.07	1.60	14.60	28.30	55.50	32.60	S-I
AM-14	NOT DRILLED UP TO THE SEAM								W-II		
AM-15	# 154.85	156.10	1.25	EXPAND	1.20	1.50	21.40	26.00	51.10	31.83	W-II
AM-15	# 156.10	157.30	1.20	INBAND	1.20	1.50	21.40	26.00	51.10	31.83	W-II
SEAM OVERALL											
AM-15	154.85	157.30	2.45	PARTLY WORKED							
AM-16	157.00	159.00	2.00	GALLERY							
AM-17	253.97	257.00	3.03	EXPAND	2.91	1.50	15.30	25.70	57.50	29.59	S-II
				INBAND	3.03		16.00				S-II
AM-18	# 281.40	285.35	3.95	EXPAND	3.95	1.40	14.70	28.80	55.10	33.16	S-I
				INBAND	3.95	1.40	14.70	28.80	55.10	33.16	S-I
AM-18	# 285.35	285.92	.57	EXPAND	.32	1.10	26.30	25.40	47.20	32.54	W-III
				INBAND	.32	1.10	26.30	25.40	47.20	32.54	W-III
SEAM OVERALL											
AM-18	281.40	285.92	4.52	EXPAND	4.27	1.30	15.50	28.60	54.60	33.13	S-II
				INBAND	4.27	1.30	15.50	28.60	54.60	33.13	S-II
AM-12	# 110.20	111.47	1.27	JHAMAMP.							
AM-12	# 111.47	115.35	3.88	EXPAND	3.65	1.20	17.60	29.40	51.80	34.79	S-II
				INBAND	3.88		22.10				W-II
SEAM OVERALL											
AM-12	110.20	115.35	5.15	COAL+JHAMAMP							

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN AMLA3AD : BLOCK : JHARRIA : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

SEAM : AM/L-3

PAGE NO: 9

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		ANALY.	THICK: (M)	PROXIMATE ANALYSIS						CO2 %	C.V. on dmf	GRADE
	FROM (M)	TO (M)			THICK: (M)	M%	ASH%	VM%	F.C.	UVM%			
AMD-1	160.59	161.11	.52	EXBAND	.52	1.10	28.00	23.80	23.80	47.10	30.84	WIII	
				INBAND	.52	1.10	28.00	23.80	23.80	47.10	30.84	WIII	
AMD-2	FAULTED												
AMD-3	FAULTED												
AMD-4	118.58	119.32	.74	EXBAND	.74	1.20	20.00	23.00	23.00	55.80	27.34	W-I	
AMD-5	181.82	182.56	.74	INBAND	.74	1.20	20.00	23.00	23.00	55.80	27.34	W-I	
AMD-6	156.00	156.95	.95	EXBAND	.95	1.20	24.50	23.10	23.10	51.20	28.74	WIII	
				INBAND	.95	1.20	24.50	23.10	23.10	51.20	28.74	WIII	
AMD-7	175.89	176.85	.96	EXBAND	.96	1.50	20.30	23.80	23.80	54.40	28.58	W-I	
				INBAND	.96	1.50	20.30	23.80	23.80	54.40	28.58	WIII	
AMD-8	FAULTED												
AM-1	266.58	267.41	.83	EXBAND	.83	1.40	14.30	23.60	23.60	60.70	26.75	S-I	
				INBAND	.83	1.40	14.30	23.60	23.60	60.70	26.75	S-I	
AM-2	FAULTED												
AM-3	FAULTED												
AM-4	NOT DRILLED UP TO THE SEAM												
AM-5	240.85	241.40	.55	NOT ANALYSED									
AM-6	FAULTED												
AM-7	179.00	179.25	.25	NOT ANALYSED									
AM-8	172.30	172.55	.25	NOT ANALYSED									
AM-9	FAULTED												
AM-10	174.50	175.70	1.20	NOT ANALYSED									
AM-11	241.70	242.30	.60	EXBAND	.50	1.30	14.80	25.30	25.30	58.60	28.90	S-I	
				INBAND	.60	1.30	14.80	25.30	25.30	58.60	28.90	S-II	
AM-13	187.26	187.99	.73	EXBAND	.51	.70	24.30	21.50	21.50	53.50	26.28	WIII	
				INBAND	.73	.70	24.30	21.50	21.50	53.50	26.28	W-IV	
AM-14	NOT DRILLED UP TO THE SEAM												
AM-15	171.20	171.67	.47	NOT ANALYSED									
AM-16	172.87	173.64	.77	EXBAND	.36	1.20	13.50	26.00	26.00	59.30	29.36	S-I	
				INBAND	.77	1.20	13.50	26.00	26.00	59.30	29.36	UG	
AM-17	268.90	269.13	.23	NOT ANALYSED									
AM-18	308.52	309.20	.68	EXBAND	.43	1.70	21.00	24.50	24.50	52.80	29.79	W-I	
				INBAND	.68	1.70	21.00	24.50	24.50	52.80	29.79	W-IV	
AM-12	133.10	134.10	1.00	JHAMA+MP.									

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES  
 DRILLED IN A M L A R A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : XVI - TOP

PAGE NO: 10

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S					CO2 %	C.V. on dmf	GRADE
	FROM (M)	TO (M)			THICK (M)	M%	ASH%	VM%	F.C.			
AMD-1	252.14	254.57	EXBAND	2.21	.90	20.50	25.60	53.20	30.70		W-I	
			INBAND	2.43		22.70					W-II	
AMD-2	211.50	213.95	GALLERY	2.45							W-I	
AMD-3	213.60	215.70	GALLERY	2.10							W-II	
AMD-4	207.60	210.10	GALLERY	2.50							W-II	
AMD-5	281.10	283.10	GALLERY	2.00							W-I	
AMD-6	241.45	244.32	EXBAND	2.87	1.50	20.10	24.10	54.30	28.92		W-I	
			INBAND	2.87		25.50					W-III	
AMD-7	268.00	271.00	GALLERY	3.00							W-I	
AMD-8	217.30	219.30	GALLERY	2.00							W-III	
AM-1	375.57	378.14	EXBAND	2.57	1.30	18.50	27.00	53.20	32.10	21/66	W-I	
			INBAND	2.57		24.90					W-III	
AM-2	222.25	224.75	EXBAND	2.50	1.60	17.50	29.20	51.60	34.72	19/61	S-II	
			INBAND	2.50		20.40					W-I	
AM-2	# 224.75	225.03	JHAMAMP.	.28								
SEAM OVERALL	222.25	225.03	COAL+JHAMAMP	2.78								
AM-3	FAULTED											
AM-4	NOT DRILLED UP TO THE SEAM											
AM-5	FAULTED											
AM-6	FAULTED											
AM-7	263.77	266.75	JHAMAMP.	2.98								
AM-8	254.49	257.49	AS PER GEO.PHY.LOG/ N.A.	3.00								
AM-9	FAULTED											
AM-10	264.05	266.75	EXBAND	2.70	1.20	21.20	25.60	52.00	31.11	24/63	W-II	
			INBAND	2.70		22.80					W-II	
AM-11	341.60	344.90	EXBAND	3.30	1.20	17.90	24.50	56.40	29.71	24/ 63	S-II	
			INBAND	3.30		24.90					W-III	
AM-13	268.14	270.85	EXBAND	2.71	1.50	19.30	26.00	53.20	31.15		W-I	
			INBAND	2.71		25.40					W-III	
AM-14	NOT DRILLED UP TO THE SEAM											
AM-15	# 264.09	264.75	NOT ANALYSED	.66								
AM-15	# 264.75	266.00	GALLERY	1.25								
AM-15	# 266.00	266.85	NOT ANALYSED	.85								
SEAM OVERALL	264.09	266.85	PARTLY WORKED	2.76								
AM-15	259.98	262.66	EXBAND	2.68	1.30	18.00	27.20	53.50	32.19		S-II	
AM-16			INBAND	2.68		25.90					W-III	
AM-17	FAULTED											
AM-18	FAULTED											
AM-12	213.05	214.00	EXBAND	.95	1.40	25.50	26.80	46.30	34.37	25.5 /F	W-III	
			ROOF FAULTED									
			INBAND	.95	1.40	25.50	26.80	46.30	34.37	25.5 /F	W-III	
			ROOF FAULTED									

NOTE : # INDICATES SECTIONAL OVERALL  
 \* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COOKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A ; COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : XVI - MID

PAGE NO: 11

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK: (M)	P R O X I M A T E A N A L Y S I S					CO2 %	C.V. (KCL/KG) on dmft	GRADE
	FROM (M)	TO (M)			THICK: (M)	M%	ASH%	VM%	F.C.			
AMD-1	279.15	281.31	2.16	EXBAND	2.09	1.40	21.80	24.60	52.20	30.05		W-II
				*INBAND	2.16		22.90					W-II
AMD-2	NOT DRILLED UP TO THE SEAM											
AMD-3	228.76	230.25	1.49	EXBAND	1.38	1.10	31.90	23.00	44.00	31.05		W-IV
				*INBAND	1.49		36.70					UG
AMD-4	233.52	235.19	1.67	EXBAND	1.60	.90	23.60	24.10	51.40	29.72		W-II
				*INBAND	1.67		25.40					W-III
AMD-5	FAULTED											
AMD-6	270.27	272.50	2.23	EXBAND	2.23	1.30	24.80	21.70	52.20	26.91		W-III
				INBAND	2.23	1.30	24.80	21.70	52.20	26.91		W-III
AMD-7	309.45	310.90	1.45	EXBAND	1.25	1.20	26.30	22.00	50.50	27.72		W-III
				*INBAND	1.45		26.40					W-III
AMD-8	232.02	233.40	1.38	EXBAND	1.06	1.60	24.10	23.90	50.40	29.89		W-III
				*INBAND	1.29		44.40					UG
AM-1	FAULTED											
AM-1	409.85	412.75	2.90	EXBAND	2.67	.80	20.30	26.00	52.90	31.18	21	W-I
				INBAND	2.90		23.30					W-II
AM-2	247.85	250.30	2.45	EXBAND	1.45	1.50	19.20	27.80	51.50	33.45	20	W-I
				INBAND	2.45		32.80				62	W-IV
AM-3	FAULTED											
AM-4	NOT DRILLED UP TO THE SEAM											
AM-5	FAULTED											
AM-6	FAULTED											
AM-7	289.35	292.35	3.00	EXBAND	3.00	1.60	20.60	25.50	52.30	30.95	24	W-I
				INBAND	3.00	1.60	20.60	25.50	52.30	30.95	24	W-I
AM-8	AS PER GEO.PHY.LOG/ N.A.											
AM-8	282.00	282.50	.50	EXBAND	2.33	1.20	21.60	24.80	52.40	30.17		W-II
				INBAND	2.50		22.80					W-II
AM-9	FAULTED											
AM-10	291.95	294.45	2.50	EXBAND	2.50							W-II
				INBAND	2.50							W-II
AM-11	361.60	362.50	.90	CONVERTED TO CSH								W-I
AM-13	295.15	297.85	2.70	EXBAND	2.54	1.30	19.70	25.20	53.80	30.16		W-I
				INBAND	2.70		25.50					W-III
AM-14	NOT DRILLED UP TO THE SEAM											
AM-15	291.90	294.70	2.80	GALLERY								W-I
AM-16	284.30	286.85	2.55	EXBAND	2.55	1.20	20.80	26.10	51.90	31.64		W-I
				INBAND	2.55	1.20	20.80	26.10	51.90	31.64		W-I
AM-17	FAULTED											
AM-18	FAULTED											
AM-12	241.76	244.50	2.74	EXBAND	2.63	.90	20.90	28.20	50.00	34.31		W-I
				INBAND	2.74		25.50					W-III

NOTE : \* INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARD : STATE : BIHAR ANNEXURE-IV

S E A M : XVI - BOT

PAGE NO: 12

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM			MODE OF ANALY.	THICK (M)	PROXIMATE ANALYSIS	CO2 %	C.V. (KCL/KG)	GRADE		
	FROM (M)	TO (M)	THICK (M)							M%	ASH%
AMD-1	293.63	294.44	.81	EXBAND	.44	1.20	29.60	21.40	47.80	27.84	W-IV
				*INBAND	.81		36.60				UG
AMD-2	NOT DRILLED UP TO THE SEAM										W-III
AMD-3	239.00	239.39	.39	EXBAND	.33	1.00	26.10	22.50	50.40	28.30	W-IV
				*INBAND	.39		31.30				W-IV
AMD-4	246.10	248.60	2.50	GALLERY							W-III
AMD-5	FAULTED										UG
AMD-6	# 283.80	284.08	.28	EXBAND	.10	1.10	26.70	21.10	51.10	26.51	W-III
				INBAND	.28		50.50				UG
AMD-6	# 284.08	285.70	1.62	EXBAND	.28	1.30	20.80	25.10	52.80	30.36	W-I
				INBAND	1.62	1.30	20.80	25.10	52.80	30.36	W-I
SEAM OVERALL											
AMD-6	283.80	285.70	1.90	*EXBAND	1.72	1.30	21.20	24.80	52.70	30.09	W-II
				*INBAND	1.90		26.70				W-III
				GOAF							W-III
AMD-8	243.05	243.25	.20	NOT ANALYSED							W-III
AMD-1	423.42	424.30	.88	EXBAND	1.65	1.10	24.80	24.90	49.20	31.30	W-III
AMD-2	255.92	257.57	1.65	INBAND	1.65	1.10	24.80	24.90	49.20	31.30	W-III
AMD-3	FAULTED										UG
AMD-4	NOT DRILLED UP TO THE SEAM										UG
AMD-5	FAULTED										W-III
AMD-6	414.20	416.10	1.90	EXBAND	1.41	1.00	24.40	24.30	50.30	30.29	W-III
				INBAND	1.90		.00	30.30	.00	.00	S-I
AMD-7	307.10	308.45	1.35	EXBAND	.67	1.90	27.50	18.30	52.30	22.92	W-III
				INBAND	1.35		40.10				UG
AMD-8	302.10	304.10	2.00	AS PER GEO. PHY. LOG/ N.A.							UG
AMD-9	FAULTED										W-III
AMD-10	304.32	306.00	1.68	EXBAND	1.51	1.10	22.00	24.40	52.50	29.72	W-III
				INBAND	1.68		25.40				W-III
AMD-11	377.85	378.05	.20	FLOOR FAULTED							W-III
AMD-13	313.06	314.21	1.15	EXBAND	.85	1.30	24.50	21.70	52.50	26.83	W-III
				INBAND	1.15		32.90				W-IV
AMD-14	NOT DRILLED UP TO THE SEAM										W-III
AMD-15	305.30	307.40	2.10	GALLERY							W-III
AMD-16	296.38	297.65	1.27	EXBAND	1.27	.90	21.90	25.30	51.90	30.81	W-III
				INBAND	1.27	.90	21.90	25.30	51.90	30.81	W-III
AMD-17	FAULTED										W-III
AMD-18	329.30	329.82	.52	EXBAND	.52	1.20	27.00	23.50	48.30	30.10	W-III
				INBAND	.52	1.20	27.00	23.50	48.30	30.10	W-III
AMD-12	258.32	258.90	.58	FLOOR FAULTED							W-III

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : X V - A

PAGE NO. 13

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	PROXIMATE ANALYSIS	CO2 %	C.V. KCL/KG on dmf	GRADE			
	FROM (M)	TO (M)						THICK (M)	M%	ASH%
AMD-1	375.42	376.25	.83	EXBAND .77	1.50	25.60	21.00	51.90	26.22	WIII
AMD-2	NOT DRILLED UP TO THE SEAM			INBAND .77	1.50	25.60	21.00	51.90	26.22	WIII
AMD-3	310.50	312.38	1.88	EXBAND 1.79	1.30	21.70	21.40	55.60	25.70	W-II
AMD-4	323.00	324.91	1.91	INBAND 1.88	1.50	22.80	21.80	53.90	26.59	W-II
AMD-5	378.26	378.51	.25	EXBAND 1.84	1.50	22.80	21.80	53.90	26.59	W-II
AMD-6	# 359.44	360.32	.88	JHAMA INBAND .88	1.40	19.10	21.10	58.40	24.73	W-I
AMD-6 OVERALL	# 360.32	361.02	.70	JHAMA						WIII
AMD-6 /SEAM OVERALL	359.44	361.02	1.58	COAL+JHAMA+MP						
AMD-7	309.08	311.10	2.02	EXBAND 2.02	.90	19.50	24.40	55.20	28.91	W-I
AMD-8	514.05	514.70	.65	INBAND .65	.90	19.50	24.40	55.20	28.91	W-I
AM-1	514.05	514.70	.65	EXBAND .65	.90	22.60	23.10	53.40	28.07	W-II
AM-2	347.46	349.56	2.10	SEAM PART FAULTED INBAND .65	.90	22.60	23.10	53.40	28.07	W-II
AM-3	347.46	349.56	2.10	EXBAND 1.80	1.40	19.00	26.40	53.20	31.53	W-I
AM-4	NOT DRILLED UP TO THE SEAM			INBAND 2.10						W-II
AM-5	334.23	335.45	1.22	EXBAND 1.22	1.10	27.00	23.90	48.00	30.64	W-IV
AM-6	334.23	335.45	1.22	INBAND 1.22	1.10	27.00	23.90	48.00	30.64	W-IV
AM-7	FAULTED									
AM-8	FAULTED									
AM-9	FAULTED									
AM-10	370.27	371.80	1.53	EXBAND 1.28	1.30	20.00	21.30	57.40	25.16	W-I
AM-11	370.27	371.80	1.53	INBAND 1.53		28.70				W-IV
AM-12	FAULTED									
AM-13	FAULTED									
AM-14	NOT DRILLED UP TO THE SEAM			EXBAND 1.65	.90	28.50	20.30	50.30	25.76	W-IV
AM-15	385.00	386.65	1.65	INBAND 1.65	.90	28.50	20.30	50.30	25.76	W-IV
AM-16	367.13	367.23	.10	EXBAND 2.03	1.40	20.60	22.80	55.20	27.31	W-I
AM-17	367.13	367.23	.10	INBAND 2.10		23.90				W-II
AM-18	409.85	411.80	1.95	EXBAND 1.85	1.10	21.70	23.20	54.00	28.03	W-II
AM-19	409.85	411.80	1.95	INBAND 1.95		23.60				W-II
AM-20	308.10	310.36	2.26	EXBAND 2.26	1.30	20.50	24.70	53.50	29.74	W-I
AM-21	308.10	310.36	2.26	INBAND 2.26	1.30	20.50	24.70	53.50	29.74	W-I

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

SEAM : XV

PAGE NO: 14

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	PROXIMATE ANALYSIS						CO2 %	C.V. KCL/KG on dmf	GRADE
	FROM (M)	TO (M)			THICK (M)	M%	ASH%	VM%	F.C.	UVM%			
AMD-1	FAULTED NOT DRILLED UP TO THE SEAM												
AMD-2	FAULTED												
AMD-3	375.09 382.85 7.74 JHAMA+MP.												
AMD-4	FAULTED												
AMD-5	437.10	439.50	2.40	ROOF FAULTED	1.20	16.40	22.10	60.30	25.33			S-II	
AMD-6	430.86	435.30	4.44	INBAND	4.44	16.40	22.10	60.30	25.33			S-II	
AMD-6	# 435.30	439.80	4.50	EXBAND	4.50	16.20	21.80	60.80	24.92			S-II	
AMD-6	# 439.80	441.31	1.51	INBAND	1.51	11.90	22.60	64.40	24.95			S-I	
AMD-6	# 439.80	441.31	1.51	EXBAND	1.51	11.90	22.60	64.40	24.95			S-I	
AMD-6	SEAM OVERALL												
AMD-6	430.86	441.31	10.45	EXBAND	10.45	1.00	15.30	22.20	61.50	25.16		S-II	
AMD-6				INBAND	10.45	1.00	15.30	22.20	61.50	25.16		S-II	
AMD-7	# 488.48	409.50	1.02	JHAMA								S-I	
AMD-7	# 489.50	422.56	13.06	EXBAND	13.06	.90	15.00	22.50	61.60	25.42		S-I	
AMD-7	# 422.56	423.03	.47	JHAMA								S-I	
AMD-7	SEAM OVERALL												
AMD-7	488.48	423.03	14.55	COAL+JHAMA+MP								S-II	
AMD-8	391.04	397.20	6.16	EXBAND	6.85	.80	16.10	22.50	60.60	25.64	19/67	S-II	
AMD-8	# 564.80	571.65	6.85	INBAND	6.85	.80	16.10	22.50	60.60	25.64	19/67	S-II	
AMD-1	# 571.65	573.32	1.67	JHAMA+MP.								S-I	
AMD-1	# 573.32	577.40	4.08	EXBAND	4.08	.60	12.20	23.10	64.10	25.45	20/65	S-I	
AMD-1				INBAND	4.08	.60	12.20	23.10	64.10	25.45	20/65	S-I	
AMD-1	SEAM OVERALL												
AMD-1	564.80	577.40	12.60	COAL+JHAMA+MP								S-I	
AMD-2	422.45	430.20	7.75	FLOOR FAULTED								S-I	
AMD-3	FAULTED												
AMD-4	NOT DRILLED UP TO THE SEAM												
AMD-5	FAULTED												
AMD-6	540.40	552.03	11.63	EXBAND	11.45	1.00	12.70	24.50	61.80	27.32	-/65/-	S-I	
AMD-6				INBAND	11.63	13.90	15.80	26.10	57.00	30.08	E	S-I	
AMD-7	427.40	431.22	3.82	EXBAND	3.82	1.10	15.80	26.10	57.00	30.08	E	S-II	
AMD-7				INBAND	3.82	1.10	15.80	26.10	57.00	30.08	E	S-II	
AMD-7	# 431.22	431.60	.38	JHAMA								S-I	
AMD-7	# 431.60	439.00	7.40	EXBAND	7.40	1.10	18.90	24.30	55.70	28.69		W-I	
AMD-7				INBAND	7.40	1.10	18.90	24.30	55.70	28.69		W-I	
AMD-7	SEAM OVERALL												
AMD-7	427.40	439.00	11.60	COAL+JHAMA+MP								S-I	
AMD-8	FAULTED												
AMD-9	364.35	378.55	14.20	EXBAND	14.20	1.10	12.60	24.90	61.40	27.80		S-I	
AMD-9				INBAND	14.20	1.10	12.60	24.90	61.40	27.80		S-I	
AMD-10	# 422.10	423.10	1.00	EXBAND	1.00	1.20	16.30	20.90	61.60	23.83		S-II	
AMD-10				INBAND	1.00	1.20	16.30	20.90	61.60	23.83		S-II	

NOTE : # INDICATES SECTIONAL OVERALL \* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

D R I L L E D I N A M L A B A D : B L O C K : J H A R I A : C O A L F I E L D : D I S T R I C T : B O K A R O : S T A T E : B I H A R A N N E X U R E - I V

S E A M : X V

P A G E N O : 15

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S					C O <sub>2</sub> %	C.V. (KCL/KG) on dmf	GRADE	
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.	UM%				CI/CT/SI
AM-10	# 423.10	426.10	3.00	GALLERY								S-I	
AM-10	# 426.10	432.30	6.20	EXBAND 6.20 INBAND 6.20	14.70							S-I	
SEAM OVERALL													
AM-10	422.10	432.30	10.20	PARTLY WORKED									
AM-11	FAULTED												
AM-13	FAULTED												
AM-14	NOT DRILLED UP TO THE SEAM												
AM-15	# 460.50	467.42	6.92	EXBAND 6.83 INBAND 6.83	.90	14.10	21.90	63.10	24.51			S-I	
AM-15	# 467.42	468.78	1.36	JHAMA+MP.	.90	14.10	21.90	63.10	24.51			S-I	
AM-15	# 468.78	473.15	4.37	EXBAND 4.27 INBAND 4.37	.90	12.60	20.80	65.70	22.92			S-I	
SEAM OVERALL													
AM-15	460.50	473.15	12.65	COAL+JHAMA+MP									
AM-16	# 430.00	430.63	.63	JHAMA+MP.								S-I	
AM-16	# 430.63	440.85	10.22	EXBAND 10.12 INBAND 10.22	1.30	12.30	21.80	64.60	24.15			S-I	
SEAM OVERALL													
AM-16	430.00	440.85	10.85	COAL+JHAMA+MP									
AM-17	# 361.55	363.68	2.13	EXBAND 2.13 INBAND 2.13	.90	14.40	26.10	58.60	29.62			S-I	
AM-17	# 363.68	364.52	.84	JHAMA+MP.								S-I	
AM-17	# 364.52	372.22	7.70	EXBAND 7.70 INBAND 7.70	1.00	12.20	26.10	60.70	29.07			S-I	
AM-17	# 372.22	372.54	.32	BURNT CSH								S-I	
AM-17	# 372.54	374.80	2.26	EXBAND 2.18 INBAND 2.26	1.30	11.90	23.90	62.90	26.53			S-I	
SEAM OVERALL													
AM-17	361.55	374.80	13.25	COAL+JHAMA+MP									
AM-18	FAULTED												
AM-12	# 382.91	395.28	12.37	EXBAND 12.37 INBAND 12.37	.70	11.10	24.50	63.70	26.86			S-I	
AM-12	# 395.28	396.70	1.42	JHAMA+MP.	.70	11.10	24.50	63.70	26.86			S-I	
SEAM OVERALL													
AM-12	382.91	396.70	13.79	COAL+JHAMA+MP									

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES  
 DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

SEAM : XIV

PAGE NO: 16

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK: (M)	PROXIMATE ANALYSIS	CO2 %	C.V. KCL/KG on dmf	GRADE	
	FROM (M)	TO (M)							THICK: (M)
AMD-1	FAULTED								
AMD-2	NOT DRILLED UP TO THE SEAM								
AMD-3	# 407.26	410.11	EXBAND	2.85	.80	20.90	21.70	56.60	25.73
			INBAND	2.85	.80	20.90	21.70	56.60	25.73
AMD-3	# 410.11	412.67	EXBAND	2.56	1.10	24.20	22.00	52.70	27.09
			INBAND	2.56	1.10	24.20	22.00	52.70	27.09
AMD-3	# 412.67	413.59	JHAMAMP.	.92	1.00	18.60	21.50	58.90	25.01
AMD-3	# 413.59	415.97	EXBAND	2.38	1.00	18.60	21.50	58.90	25.01
			INBAND	2.38	.80	22.10	21.00	56.10	25.09
AMD-3	# 415.97	419.20	EXBAND	3.23	.80	22.10	21.00	56.10	25.09
			INBAND	3.23	.80	22.10	21.00	56.10	25.09
AMD-3	# 419.20	420.50	JHAMAMP.	1.30	1.10	20.20	21.20	57.50	25.01
SEAM OVERALL	407.26	419.20	COAL+JHAMAMP	11.94	1.00	18.30	23.70	57.00	27.73
AMD-3	# 410.15	412.55	EXBAND	2.40	1.00	18.30	23.70	57.00	27.73
			INBAND	2.40	1.00	18.30	23.70	57.00	27.73
AMD-4	# 412.55	414.98	EXBAND	2.43	1.10	19.60	23.20	56.10	27.46
			INBAND	2.43	1.10	19.60	23.20	56.10	27.46
AMD-4	# 414.98	417.60	EXBAND	2.62	1.00	19.30	22.70	57.00	26.71
			INBAND	2.62	1.00	19.30	22.70	57.00	26.71
AMD-4	# 417.60	419.42	EXBAND	2.42	1.10	20.20	21.20	57.50	25.01
			INBAND	2.42	1.10	20.20	21.20	57.50	25.01
AMD-4	# 419.42	421.61	EXBAND	2.19	1.20	22.30	21.90	54.60	26.48
			INBAND	2.19	1.20	22.30	21.90	54.60	26.48
AMD-4	# 421.61	422.10	EXBAND	.49	1.10	17.10	21.20	60.60	24.34
			INBAND	.49	1.10	17.10	21.20	60.60	24.34
SEAM OVERALL	410.15	422.10	EXBAND	9.31	1.00	19.70	22.60	56.70	26.68
AMD-4	# 471.85	475.40	EXBAND	3.55	1.20	23.70	21.10	54.00	25.75
			INBAND	3.55	1.20	23.70	21.10	54.00	25.75
AMD-5	# 475.40	478.40	EXBAND	3.00	.80	21.60	20.70	56.90	24.58
			INBAND	3.00	.80	21.60	20.70	56.90	24.58
AMD-5	# 478.40	482.10	EXBAND	3.70	1.30	19.70	19.00	60.00	22.11
			INBAND	3.70	1.30	19.70	19.00	60.00	22.11
AMD-5	# 482.10	483.10	EXBAND	1.00	.70	14.70	18.30	66.30	20.25
			INBAND	1.00	.70	14.70	18.30	66.30	20.25
AMD-5	# 483.10	483.23	EXBAND	.13	.80	34.80	18.80	45.60	25.15
			INBAND	.13	.80	34.80	18.80	45.60	25.15
SEAM OVERALL	471.85	483.23	EXBAND	11.12	.80	21.00	20.20	58.00	23.78
AMD-5	OVER		INBAND	11.38	.80	22.30			
AMD-6	466.94	477.88	SENT FOR GEO. ENGG. TEST	10.94	.80	22.00	21.00	56.20	25.07
AMD-7	451.20	464.26	EXBAND	13.06	.80	22.00	21.00	56.20	25.07
			INBAND	13.06	.80	22.00	21.00	56.20	25.07

NOTE : # INDICATES SECTIONAL OVERALL  
 \* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COOKING COAL SEAMS ENCOUNTERED IN BOREHOLES  
 DRILLED IN A H L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : XIV

PAGE NO: 1

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM			MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S					CO2 %	C.V. (KCL/KG) on dmf	GRADE
	FROM (M)	TO (M)	THICK (M)			M%	ASH%	VM%	F.C.	UM%			
AMD-8	# 415.80	419.46	3.66	EXBAND	3.66	.70	16.70	23.20	59.40	26.60			S-II
				INBAND	3.66	.70	16.70	23.20	59.40	26.60			S-II
AMD-8	# 419.46	423.00	3.54	EXBAND	3.54	1.10	19.40	23.40	56.10	27.67			W-I
				INBAND	3.54	20.10							W-I
AMD-8	# 423.00	427.70	4.70	EXBAND	4.50	1.00	21.80	22.40	54.80	26.95			W-II
				INBAND	4.70	22.20							W-II
SEAM OVERALL	415.80	427.70	11.90	EXBAND	11.62	.70	19.10	22.90	57.30	26.81			W-I
AMD-8				INBAND	11.90	19.70							W-I
AM-1	# 456.68	462.45	5.77	FAULTED									S-II
AM-2	# 462.45	469.54	7.09	EXBAND	5.72	1.20	17.60	23.03	58.20	26.74	18/52/-		S-II
				INBAND	5.77	17.70							S-II
SEAM OVERALL	456.68	469.54	12.86	COAL+JHAMA+HP									
AM-2	# 405.07	405.30	.23	HP									W-II
AM-3	# 405.30	413.02	7.72	EXBAND	7.54	1.20	22.20	24.50	52.10	29.95	23/-/-		W-II
				INBAND	7.72	22.70							W-II
SEAM OVERALL	405.07	414.54	9.47	COAL+JHAMA+HP									
AM-3	# 485.07	414.54	9.47	THE SEAM									
AM-4	# 382.80	389.45	6.65	NOT DRILLED UP TO									
				EXBAND	6.65	1.20	19.80	23.60	55.40	28.07			W-I
				ROOF	FAULTED								
				INBAND	6.65	1.20	19.80	23.60	55.40	28.07			W-I
				ROOF	FAULTED								
AM-6	# 474.90	487.80	12.90	FAULTED									
AM-7	# 487.80	488.20	.40	EXBAND	12.15	.80	19.20	22.10	57.90	25.85	F/-/-		W-I
				INBAND	12.90	22.00							W-II
SEAM OVERALL	474.90	488.20	13.30	COAL+JHAMA+HP									
AM-7	# 404.60	409.55	4.95	FAULTED									
AM-8	# 409.55	414.75	5.20	EXBAND	4.95	.80	13.80	24.20	61.20	27.16			S-I
				INBAND	4.95	.80	13.80	24.20	61.20	27.16			S-I
SEAM OVERALL	404.60	414.75	10.15	COAL+JHAMA+HP									
AM-9	# 423.45	435.38	11.93	NOT DRILLED UP TO									
				EXBAND	.43	.90	19.60	22.50	57.00	26.49	F/-/-		W-I
				INBAND	11.93	20.90							W-I
AM-11	# 435.38	436.20	.82	JHAMA+HP									
SEAM OVERALL	423.45	436.20	12.75	COAL+JHAMA+HP									
AM-11	# 502.10	512.40	10.30	FAULTED									
AM-13	# 474.11	485.05	10.94	NOT DRILLED UP TO									
				EXBAND	9.80	.60	20.10	20.20	59.10	23.53			W-I
				INBAND	10.30	22.20							W-II
				EXBAND	10.16	1.00	18.00	20.90	60.10	24.12			S-II
				INBAND	10.94	20.60							W-I

66865

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : ECKARO : STATE : BIHAR ANNEXURE-IV

S E A M : XIV

PAGE NO: 18

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM			MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S						C O 2 %	C. V. (KCL/KG) on dmf	GRADE
	FROM (M)	TO (M)	THICK (M)			M%	ASH%	VM%	F.C.	UVM%	CI/CT% SI			
AM-17	# 418.25	428.28	10.03	EXBAND	9.57	1.20	18.40	21.60	59.80	25.15			W-I	
				INBAND	9.73		22.00						W-II	
AM-17	# 428.28	430.05	1.77	JHAMA+MP.									S-II	
AM-17	# 430.05	431.28	1.23	EXBAND	1.03	1.10	16.20	21.40	61.30	24.40			S-II	
				INBAND	1.23		24.50						W-III	
SEAM OVERALL														
AM-17	418.25	431.28	13.03	COAL+JHAMA+MP										
SEAM OVERALL														
AM-18	507.75	520.85	13.10	EXBAND	12.48	1.20	15.30	22.90	60.60	26.07			S-II	
				INBAND	13.10		17.20						S-II	
AM-12	# 420.97	427.20	6.23	JHAMA+MP.									W-II	
AM-12	# 427.20	428.24	1.04	EXBAND	1.04	.80	22.10	20.90	56.20	24.96			W-II	
				INBAND	1.04	.80	22.10	20.90	56.20	24.96			W-II	
AM-12	# 428.24	429.29	1.05	JHAMA+MP.									W-II	
SEAM OVERALL														
AM-12	420.97	429.29	8.32	COAL+JHAMA+MP										

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO ; STATE : BIHAR ANNEXURE-IV

S E A M : XIII

PAGE NO: 19

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	M%	P R O X I M A T E A N A L Y S I S				C I / C T / S I	C O 2 %	C . V . % K C L / K G on dmt	GRADE
	FROM (M)	TO (M)				ASH%	V M %	F . C .	V M %				
AMD-1	FAULTED												
AMD-2	NOT DRILLED UP TO THE SEAM												
AMD-3	440.10	442.03	1.93	1.37	.70	29.20	21.70	48.40	27.95				W-IV
				INBAND		39.60							UG
AMD-4	434.72	438.10	3.38	2.49	1.10	20.00	20.10	58.80	23.54				W-I
				INBAND		25.10							W-III
AMD-5	503.90	505.60	1.70	1.41	1.10	28.30	16.70	53.90	20.47				W-IV
				INBAND		35.50							UG
AMD-6	# 496.72	497.92	1.20	1.10	1.00	27.00	17.50	54.50	21.36				W-III
				INBAND		17.50							W-III
AMD-6	# 498.64	499.20	.56	.47	1.00	27.40	18.10	53.50	22.31				W-III
				INBAND		34.80							W-IV
SEAM OVERALL	496.72	499.20	2.48	1.57	.80	27.20	17.70	54.30	21.62				W-III
AMD-6	486.02	487.80	1.78	1.78	.90	41.70	20.00	37.40	29.74				W-IV
				INBAND									UG
AMD-8	FAULTED												
AM-1	584.55	589.24	4.69	3.36	.60	20.60	22.00	56.80	25.98				W-I
				INBAND		28.20							W-IV
AM-2	486.98	490.71	3.73	2.98	1.00	22.10	22.90	54.00	27.70	22/-/-			W-II
				INBAND		28.80							W-IV
AM-3	436.09	438.75	2.66	1.49	1.10	22.10	21.80	55.00	26.26	21/-/-			W-II
				INBAND		27.50							W-III
AM-4	NOT DRILLED UP TO THE SEAM												
AM-5	403.95	407.50	3.55	2.11	1.10	23.40	21.70	53.80	26.46				W-II
				INBAND		33.80							W-IV
AM-6	FAULTED												
AM-7	FAULTED												
AM-8	411.70	414.70	3.00	3.00	.90	20.20	24.90	54.00	29.76	18/F/-			W-I
				INBAND		20.20							W-I
AM-9	FAULTED												
AM-10	NOT DRILLED UP TO THE SEAM												
AM-11	450.70	453.20	2.50	1.13	.90	26.70	18.90	53.50	23.28				W-III
				INBAND		40.80							UG
AM-13	394.67	395.55	.88										
AM-14	NOT DRILLED UP TO THE SEAM												
AM-15	FAULTED												
AM-16	503.90	505.55	1.65	1.03	1.30	26.00	18.60	54.10	22.82				W-III
				INBAND		38.90							UG
AM-17	446.05	446.70	.65										
AM-18	542.31	546.90	4.59	3.57	1.70	16.90	27.70	53.70	32.63				S-II
				INBAND		28.90							W-IV

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES  
 DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : XIII

PAGE NO: 20

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	PROXIMATE ANALYSIS	CO2 %	C.V. KCL/KG ON DMF	GRADE						
	FROM (M)	TO (M)						THICK (M)	M%	ASH%	VM%	F.C.	UVM%
AM-12	444.50	447.10	2.60	EXBAND	1.50	.80	24.00	20.00	55.20	24.18			W-II
				INBAND	2.60		33.90						W-IV

NOTE : # INDICATES SECTIONAL OVERALL  
 \* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : XI / XII

PAGE NO: 21

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S					C O 2 %	C.V. (KCL/KG) on dmf	GRADE
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.	UM%			
AMD-1	FAULTED											
AMD-2	NOT DRILLED UP TO THE SEAM											
AMD-3	FAULTED											
AMD-4	# 455.35	458.39	EXBAND	2.87	1.10	22.20	19.50	57.20	23.20			W-II
			INBAND	3.04		23.70						W-II
AMD-4	# 458.39	461.02	JHAMA+MP.									
SEAM OVERALL	455.35	461.02	COAL+JHAMA+MP									
AMD-4	# 514.99	517.99	EXBAND	3.01	1.10	23.10	20.00	55.80	24.07			W-II
			INBAND	3.01	1.10	23.10	20.00	55.80	24.07			W-II
AMD-5	# 517.99	520.19	EXBAND	2.20	.80	18.10	20.40	60.70	23.45			W-I
			INBAND	2.20		19.90						W-I
SEAM OVERALL	514.99	520.19	EXBAND	5.11	.70	20.80	20.30	58.20	23.84			W-I
			INBAND	5.20		21.70						W-II
AMD-6	# 512.80	514.00	EXBAND	1.06	1.00	24.80	17.50	56.70	20.94			W-II
			INBAND	1.16		29.10						W-IV
AMD-6	# 514.00	516.70	EXBAND	2.54	1.00	24.20	20.80	54.00	25.39			W-II
			INBAND	2.70		25.90						W-II
SEAM OVERALL	512.80	516.70	EXBAND	3.60	.70	24.50	19.90	54.90	24.12			W-II
			INBAND	3.86		26.90						W-II
AMD-7	# 500.02	504.23	EXBAND	3.80	.80	25.20	18.60	55.40	22.50			W-II
			INBAND	4.23	.90	27.40	18.80	52.90	23.29			W-II
AMD-7	# 504.23	504.48	JHAMA+MP.									
AMD-7	# 504.48	505.28	EXBAND	.80	.90	15.70	19.20	64.20	21.54			S-II
			INBAND	.80	.90	15.70	19.20	64.20	21.54			S-II
SEAM OVERALL	500.02	505.28	ROOF FAULTED									
AMD-7	449.88	451.64	EXBAND	3.89	.80	20.60	21.60	57.00	25.53	18/62/-		W-I
AMD-8	608.90	613.21	EXBAND	4.31		27.30						W-II
			INBAND	4.31		27.30						W-II
AMD-2	511.68	515.03	EXBAND	2.90	1.30	25.50	19.50	53.70	23.99	20/-/-		W-II
			INBAND	3.35		28.80						W-II
AMD-3	442.25	447.10	EXBAND	4.85	1.10	23.30	23.10	52.50	28.35			W-II
			INBAND	4.85	1.10	23.30	23.10	52.50	28.35			W-II
AMD-4	NOT DRILLED UP TO THE SEAM											
AMD-5	416.55	421.50	EXBAND	4.95	1.10	23.90	23.70	51.30	27.68			W-II
			INBAND	4.95	1.10	23.90	23.70	51.30	27.68			W-II
AMD-6	582.50	588.30	EXBAND	4.67	.90	17.50	23.40	58.20	27.11			S-II
			INBAND	5.80		17.80						S-II
AMD-7	521.55	524.55	EXBAND	3.00	.90	32.00	19.70	47.40	25.82			W-IV
			INBAND	3.00	.90	32.00	19.70	47.40	25.82			W-IV
AMD-8	# 430.55	432.03	JHAMA+MP.									

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DILLED IN AMLABAD : BLOCK : JHARIA : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

SEAM : XI / XII PAGE NO: 22

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK: (M)	PROXIMATE ANALYSIS					CO2 %	C.V. (KCL/KG) on dmf	GRADE
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.	UVM%			
AM-8	# 432.03	433.40	1.37	EXBAND INBAND	.15	.80	19.00	19.70	60.50	22.73		W-I UG
SEAM OVERALL												
AM-8	430.55	433.40	2.85	COAL+JHAMA+MP								W-II
AM-9	440.80	443.20	2.40	EXBAND INBAND	1.67	1.00	22.90	23.10	53.00	28.19		W-IV
AM-10 NOT DRILLED UP TO THE SEAM												
AM-11	462.30	468.00	5.70	EXBAND INBAND	5.28	.90	21.20	22.30	55.60	26.63	-/F/-	W-II
AM-13	402.95	408.70	5.75	EXBAND INBAND	5.70	1.10	23.70	22.70	53.70	27.58		W-II
AM-14 NOT DRILLED UP TO THE SEAM												
AM-15	FAULTED											
AM-16	512.51	517.70	5.19	EXBAND INBAND	4.27	1.00	18.60	20.80	59.60	24.12		W-I
AM-17	461.26	468.59	7.33	EXBAND INBAND	5.19	1.00	24.40	20.00	60.40	23.10		W-I
AM-18 FAULTED												
AM-12	# 456.95	457.43	.48	JHAMA+MP								W-III
AM-12	# 457.43	461.02	3.59	EXBAND INBAND	3.59	.80	24.90	23.00	51.30	28.56		W-III
SEAM OVERALL												
AM-12	456.95	461.02	4.07	COAL+JHAMA+MP								W-III

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES  
 DRILLED IN AMLABAD BLOCK JHARIA COALFIELD DISTRICT BOKARO STATE BIHAR ANNEXURE-IV

SEAM : X

PAGE NO: 23

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	PROXIMATE ANALYSIS			CO2 %	C.V. (KCL/KG on dmf)	GRADE
	FROM (M)	TO (M)			ASH%	VM%	F.C. VM%			
AMD-1	FAULTED									
AMD-2	NOT DRILLED UP TO THE SEAM									
AMD-3	# 484.29	495.23	.94	JHARIA+MP.	1.20	19.10	21.10	58.60	24.67	W-I
AMD-3	# 485.23	487.80	2.57	INSAND	1.20	19.10	21.10	58.60	24.67	W-I
AMD-3	# 487.80	490.88	3.08	EXSAND	.60	19.50	23.20	56.60	27.39	W-I
				INSAND						W-I
SEAM OVERALL	484.29	490.88	6.59	COAL+JHARIA+MP						
AMD-3	# 500.30	502.75	2.45	EXSAND	1.10	17.50	19.80	61.60	22.66	S-II
AMD-4	# 502.75	505.20	2.45	INSAND	1.10	17.50	19.80	61.60	22.66	S-II
AMD-4	# 505.20	506.70	1.50	INSAND	1.00	19.70	18.90	60.40	21.89	W-I
AMD-4	# 506.70	506.93	.23	INSAND	1.00	16.00	20.60	62.40	23.34	S-II
SEAM OVERALL	500.30	506.93	6.63	COAL+JHARIA+MP						
AMD-5	# 547.79	550.20	2.41	EXSAND	1.10	19.20	19.80	59.90	22.99	W-I
AMD-5	# 550.20	551.82	1.62	INSAND	1.20	20.10	19.10	59.60	22.28	W-I
AMD-5	# 551.82	554.65	2.83	EXSAND	1.20	18.30	18.90	61.60	21.70	W-I
AMD-5	# 554.65	559.04	4.39	INSAND	1.20	18.30	18.90	61.60	21.70	W-I
SEAM OVERALL	547.79	559.04	11.25	COAL+JHARIA+MP						
AMD-6	NOT DRILLED UP TO THE SEAM									
AMD-7	NOT DRILLED UP TO THE SEAM									
AMD-8	# 493.00	493.30	.30	JHARIA+MP.	.90	19.50	21.20	58.40	24.79	W-I
AMD-8	# 493.30	494.72	1.42	EXSAND	.90	20.70	21.40	57.00	25.32	W-I
AMD-8	# 494.72	497.35	2.63	INSAND	1.00	17.60	21.40	60.20	24.41	S-II
AMD-8	# 497.35	497.67	.32	INSAND	1.00	17.60	21.20	60.20	24.41	S-II
SEAM OVERALL	491.00	497.67	6.67	COAL+JHARIA+MP						
AMD-1	# 491.00	662.70	8.65	EXSAND	.90	15.90	21.10	62.10	23.91	S-II
AMD-1	# 662.70	662.70	0.00	INSAND	.90	17.40	21.30	58.00	24.99	S-II
AMD-2	# 552.75	557.35	4.60	EXSAND	.90	19.80	21.30	58.00	24.99	W-I
AMD-2	# 557.35	557.35	0.00	INSAND	.90	19.80	21.30	58.00	24.99	W-I
AMD-3	# 494.30	498.19	3.89	FLOOR FAULTED						W-I
AMD-3	# 498.19	500.50	2.31	EXSAND	1.10	19.20	21.60	58.10	25.30	W-I
AMD-3	# 500.50	500.50	0.00	INSAND	1.10	19.20	21.60	58.10	25.30	W-I
SEAM OVERALL	494.30	500.50	6.20	JHARIA+MP.						W-I
SEAM OVERALL	494.30	500.50	6.20	COAL+JHARIA+MP						

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

SEAM : X

PAGE NO: 24

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	PROXIMATE ANALYSIS					CO2 %	C.V. KCL/KG on dmf	GRADE
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.	UVM%			
AM-4	NOT DRILLED UP TO THE SEAM											
AM-5	FAULTED											
AM-6	630.50	637.75	EXBAND	6.87	.90	16.20	21.50	61.40	24.46	22/63/-	S-II	
			INBAND	7.25		18.70					W-I	
AM-7	FAULTED											
AM-8	477.41	477.71	JHAMMA+MP.		.90	17.10	22.40	59.60	25.77		S-II	
AM-8	477.71	485.80	EXBAND	7.56		19.50					W-I	
			INBAND	8.09								
SEAM OVERALL	477.41	485.80	COAL+JHAMMA+MP		.70	14.80	21.80	62.70	24.48		S-I	
AM-9	476.25	484.30	EXBAND	7.80		16.60					S-II	
			INBAND	8.05								
AM-10	NOT DRILLED UP TO THE SEAM											
AM-11	518.20	518.90	EXBAND	.55	.90	22.70	18.00	58.40	21.22		W-II	
			INBAND	.70		29.00					W-IV	
AM-11	518.90	526.66	JHAMMA+MP.									
SEAM OVERALL	518.20	526.66	COAL+JHAMMA+MP		.90	16.70	22.60	59.80	25.93		S-II	
AM-11	450.95	456.81	EXBAND	5.86		16.70					S-II	
			INBAND	5.86								
AM-14	NOT DRILLED UP TO THE SEAM											
AM-15	FAULTED											
AM-16	560.40	568.30	JHAMMA+MP.		.80	18.40	19.60	61.20	22.49		W-I	
AM-17	519.00	520.08	EXBAND	.97		22.00					W-II	
			INBAND	1.08								
AM-17	520.08	523.55	JHAMMA+MP.		1.10	17.90	19.60	61.40	22.48		S-II	
AM-17	523.55	527.34	EXBAND	3.74		18.20					W-I	
			INBAND	3.79								
SEAM OVERALL	519.00	527.34	COAL+JHAMMA+MP									
AM-17	FAULTED											
AM-18	495.42	502.60	EXBAND	6.85	.80	17.00	21.60	60.60	24.72		S-II	
AM-12			INBAND	7.18		18.50					W-I	

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

SEAM : IX

PAGE NO: 25

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	PROXIMATE ANALYSIS						CO2 %	C.V. on dmf	GRADE
	FROM (M)	TO (M)			THICK (M)	M%	ASH%	VM%	F.C.	UVM%			
AMD-1	# 477.96	479.75	1.79	EXBAND	1.79	.60	24.60	19.80	55.00	23.97	WIII		
				INBAND	1.79	.60	24.60	19.80	55.00	23.97	WIII		
AMD-1	# 479.75	480.75	1.00	EXBAND	1.00	.60	17.40	22.00	60.00	25.24	S-II		
				INBAND	1.00	.60	17.40	22.00	60.00	25.24	S-II		
AMD-1	# 480.75	483.20	2.45	EXBAND	2.45	.70	23.30	21.90	54.10	26.56	W-II		
				INBAND	2.45	.70	23.30	21.90	54.10	26.56	W-II		
AMD-1	# 483.20	485.35	2.15	EXBAND	2.15	.80	17.50	22.30	59.40	25.70	S-II		
				INBAND	2.15	.80	17.50	22.30	59.40	25.70	S-II		
SEAM OVERALL													
AMD-1	477.96	485.35	7.39	EXBAND	7.39	.70	20.80	21.60	56.90	25.54	W-I		
				INBAND	7.39	.70	20.80	21.60	56.90	25.54	W-I		
AMD-2	NOT DRILLED UP TO THE SEAM												
AMD-3	520.28	523.20	2.92	EXBAND	2.92	.70	24.40	19.50	55.40	23.54	WIII		
				INBAND	2.92	.70	24.40	19.50	55.40	23.54	WIII		
AMD-4	# 541.95	544.50	2.55	EXBAND	2.55	.90	26.40	18.20	54.50	22.21	WIII		
				INBAND	2.55	.90	26.40	18.20	54.50	22.21	WIII		
AMD-4	# 544.50	547.50	3.00	EXBAND	3.00	.90	24.40	18.00	56.70	21.53	WIII		
				INBAND	3.00	.90	24.40	18.00	56.70	21.53	WIII		
AMD-4	# 547.50	548.81	1.31	EXBAND	1.31	.90	21.80	21.30	56.00	25.45	W-II		
				INBAND	1.31	.90	21.80	21.30	56.00	25.45	W-II		
AMD-4	# 548.81	549.21	.40	JHAMA									
SEAM OVERALL													
AMD-4	541.95	549.21	7.26	EXBAND	7.26	.80	32.70	18.90	47.60	24.72	W-IV		
				INBAND	7.26	.80	32.70	18.90	47.60	24.72	W-IV		
AMD-5	# 586.60	587.12	.52	JHAMA+MP.									
				INBAND	.52	.80	32.70	18.90	47.60	24.72	W-IV		
AMD-5	# 587.12	587.91	.79	JHAMA+MP.									
				EXBAND	2.22	1.30	19.10	17.60	62.00	20.20	W-I		
				INBAND	2.22	1.30	19.10	17.60	62.00	20.20	W-I		
AMD-5	# 590.13	592.60	2.47	JHAMA+MP.									
				EXBAND	2.90	1.20	24.20	19.60	55.00	23.80	WIII		
				INBAND	2.90	1.20	24.20	19.60	55.00	23.80	WIII		
SEAM OVERALL													
AMD-5	586.60	595.50	8.90	COAL+JHAMA+MP									
AMD-6	NOT DRILLED UP TO THE SEAM												
AMD-7	NOT DRILLED UP TO THE SEAM												
AMD-8	# 528.60	530.11	1.51	EXBAND	1.51	.90	27.60	19.90	51.60	24.93	WIII		
				INBAND	1.51	.90	27.60	19.90	51.60	24.93	WIII		
AMD-8	# 530.11	532.25	2.14	EXBAND	2.14	1.00	17.80	19.20	62.00	21.93	S-II		
				INBAND	2.14	1.00	17.80	19.20	62.00	21.93	S-II		
AMD-8	# 532.25	532.50	.25	JHAMA+MP.									
				EXBAND	2.32	.90	20.20	18.90	60.00	21.96	W-I		
				INBAND	2.32	.90	20.20	18.90	60.00	21.96	W-I		
AMD-8	# 532.50	534.82	2.32	EXBAND	2.32	.90	21.20	21.50	56.40	25.57	W-II		
				INBAND	2.32	.90	21.20	21.50	56.40	25.57	W-II		
AMD-8	# 534.82	538.05	3.23	EXBAND	3.23	.90	21.20	21.50	56.40	25.57	W-II		
				INBAND	3.23	.90	21.20	21.50	56.40	25.57	W-II		
SEAM OVERALL													
AMD-8	528.60	538.05	9.45	COAL+JHAMA+MP									

NOTE : # INDICATES SECTIONAL OVERALL  
 \* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A ; COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : IX

PAGE NO: 26

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	PROXIMATE ANALYSIS		CO <sub>2</sub> %	C.V. (KCL/KG) on dmf	GRADE			
	FROM (M)	TO (M)		THICK (M)	MX				ASH%	VM%	F.C.
AM-1	# 679.07	680.97	1.90	JH/PART	EXBAND .15	15.40	21.80	62.20	24.57	S-II	
AM-1	# 680.97	681.12	.15	INBAND	.15	15.40	21.80	62.20	24.57	S-II	
SEAM OVERALL											
AM-1	679.07	681.12	2.05	PART JH/ PART FAULTED	EXBAND 9.13	1.10	19.50	20.20	59.20	23.56	
AM-2	566.22	576.20	9.98	INBAND	9.98	20.90				W-I	
AM-3	# 522.98	523.85	.87	JHAMAM+MP.						W-I	
AM-3	# 523.85	532.45	8.60	EXBAND	8.35	20.30	19.60	59.20	22.89	-/G5/-	
				INBAND	8.60	21.20				W-II	
SEAM OVERALL											
AM-3	522.98	532.45	9.47	COAL+JHAMAM+MP						W-I	
AM-4	NOT DRILLED UP TO THE SEAM										
AM-5	# 461.90	463.30	1.40	JHAMAM+MP.						W-I	
AM-5	# 463.30	472.85	9.55	EXBAND	9.07	1.00	19.70	22.30	57.00	26.29	-/F/-
				INBAND	9.55	21.40				W-II	
SEAM OVERALL											
AM-5	461.90	472.85	10.95	COAL+JHAMAM+MP						W-I	
AM-6	# 662.08	663.17	1.09	JHAMAM+MP.						W-I	
AM-6	# 663.17	671.05	7.88	EXBAND	7.73	.90	20.30	20.10	58.70	23.54	19/G/-
				INBAND	7.88	20.70				W-I	
SEAM OVERALL											
AM-6	662.08	671.05	8.97	COAL+JHAMAM+MP						W-I	
AM-7	FAULTED										
AM-8	496.90	506.55	9.65	EXBAND	8.44	.80	19.00	20.00	60.20	23.12	
				INBAND	9.65	22.00				W-II	
AM-10	553.10	562.85	9.75	EXBAND	9.67	1.20	23.90	19.40	55.50	23.46	
				INBAND	9.75	24.00				W-II	
AM-11	485.09	492.67	7.58	EXBAND	7.33	1.00	18.70	22.00	58.30	25.67	
				INBAND	7.58	19.40				W-I	
AM-14	538.68	546.90	8.22	EXBAND	7.75	.80	19.10	19.50	60.60	22.50	
				INBAND	8.22	20.80				W-I	
AM-16	# 592.43	592.60	.17	JHAMAM+MP.						W-I	
AM-16	# 592.60	599.75	7.15	EXBAND	7.01	1.10	18.30	17.70	62.90	20.15	
				INBAND	7.15	18.60				W-I	
SEAM OVERALL											
AM-16	592.43	599.75	7.32	COAL+JHAMAM+MP						W-I	
AM-17	555.40	561.71	6.31	EXBAND	6.18	1.10	18.40	19.20	61.30	22.07	
				INBAND	6.31	18.60				W-I	
AM-18	521.20	525.70	4.50	FLOOR FAULTED							

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES FAULTED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO ; STATE : BIHAR ANNEXURE-IV

S E A M : A M / L - 2

PAGE NO: 27

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM			MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S					CO2 %	C.V. (KCL/KG) on dmf	GRADE
	FROM (M)	TO (M)	THICK (M)			M%	ASH%	VM%	F.C.	UM%			
AMD-1	493.09	493.43	.34	EXPAND	.34	.80	20.20	22.30	56.70	26.34			W-I
				INBAND	.34	.80	20.20	22.30	56.70	26.34			W-I
AMD-2				NOT DRILLED UP TO THE SEAM									
AMD-3	526.30	527.16	.86	NOT ANALYSED									
AMD-4	556.01	556.15	.14	JHAMA									
AMD-5				NOT DEVELOPED									
AMD-6				NOT DRILLED UP TO THE SEAM									
AMD-7				NOT DRILLED UP TO THE SEAM									
AMD-8	682.20	682.90	.70	EXPAND	.70	.90	20.10	18.10	60.90	20.90			W-I
				INBAND	.70	.90	20.10	18.10	60.90	20.90			W-I
AM-1	577.45	578.50	1.05	EXPAND	.90	.80	23.10	20.20	55.90	24.24			W-IV
				INBAND	1.05		29.80						
AM-2				FAULTED									
AM-3				NOT DRILLED UP TO THE SEAM									
AM-4	474.00	474.90	.90	EXPAND	.73	1.10	16.40	20.20	62.30	22.95			S-II
AM-5				INBAND	.90		28.60						W-IV
AM-6				NOT DEVELOPED									
AM-7				FAULTED									
AM-8				FAULTED									
AM-9	508.13	508.38	.25	NOT ANALYSED									
AM-10				NOT DRILLED UP TO THE SEAM									
AM-11	564.52	565.27	.75	EXPAND	.75	1.20	14.70	18.80	65.30	20.97			S-I
				INBAND	.75	1.20	14.70	18.80	65.30	20.97			S-I
AM-13	494.42	495.85	1.43	EXPAND	1.33	1.30	14.80	22.60	61.30	25.62			S-I
				INBAND	1.43		20.00						W-I
AM-14				NOT DRILLED UP TO THE SEAM									
AM-15	548.60	548.85	.25	EXPAND	.25	.50	21.30	21.00	57.20	24.81			W-II
				INBAND	.25	.50	21.30	21.00	57.20	24.81			W-II
AM-16	601.20	602.40	1.20	EXPAND	.80	.80	13.40	20.30	65.50	22.45			S-I
				INBAND	1.20	.80	13.40	20.30	65.50	22.45			S-I
AM-17	565.36	565.94	.58	EXPAND	.58	1.00	10.70	19.50	68.80	21.13			S-I
AM-18	557.94	559.38	1.44	JHAMA+HP.									
AM-12				FAULTED									

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : A M / L - 1

PAGE NO: 28

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S					CO2 %	C.V. (KCL/KG on dmf)	GRADE
	FROM (M)	TO (M)			THICK (M)	M%	ASH%	VM%	F.C.			
AMD-1			NOT DEVELOPED									
AMD-2			NOT DRILLED UP TO THE SEAM									
AMD-3			NOT DEVELOPED									
AMD-4			NOT DEVELOPED									
AMD-5			NOT DEVELOPED									
AMD-6			NOT DRILLED UP TO THE SEAM									
AMD-7			NOT DRILLED UP TO THE SEAM									
AMD-8			NOT DRILLED UP TO THE SEAM									
AM-1	688.15	688.74	NOT ANALYSED									
AM-2	582.95	583.70	NOT ANALYSED									
AM-3			FAULTED									
AM-4			NOT DRILLED UP TO THE SEAM									
AM-5	479.90	480.30	NOT ANALYSED									
AM-6	679.69	680.30	NOT ANALYSED									
AM-7			FAULTED									
AM-8			FAULTED									
AM-9	514.92	515.16	NOT ANALYSED									
AM-10			NOT DRILLED UP TO THE SEAM									
AM-11	575.03	575.53	NOT ANALYSED									
AM-13	504.05	504.60	NOT ANALYSED									
AM-14			NOT DRILLED UP TO THE SEAM									
AM-15	552.62	552.75	NOT ANALYSED									
AM-16	609.55	609.72	NOT ANALYSED									
AM-17	577.50	577.70	NOT ANALYSED									
AM-18	564.85	565.20	NOT ANALYSED									
AM-12			FAULTED									

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COOKING COAL SEAMS ENCOUNTERED IN BOREHOLES  
 DRILLED IN AMLABAD : BLOCK : JHARRIA : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

SEAM : VIII

PAGE NO: 29

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK: (M)	PROXIMATE ANALYSIS						CO2 %	C.V. (KCAL/KG) on dmf	GRADE
	FROM (M)	TO (M)			MC	ASH:	VM:	F.C.	VMX:	UMX:			
AMD-1	# 509.84	512.53	3.69	EXBAND	3.64	1.10	25.50	19.90	53.70	20.22		5.37	WIII
AMD-1	# 512.53	514.92	2.39	INBAND	3.69		26.90						WIII
SEAM OVERALL													
AMD-1	# 509.84	514.92	6.08	COAL+JHAMA+MP									W-III
AMD-2	NOT DRILLED UP TO THE SEAM												UG
AMD-3	# 548.26	550.84	2.58	INBAND	2.58		36.70						W-III
AMD-4	# 566.83	570.50	1.67	EXBAND	1.67	1.00	21.60	18.40	59.00	21.58			W-III
AMD-4	# 570.50	572.50	2.00	INBAND	2.00	1.20	17.00	19.90	61.90	22.72			S-III
AMD-4	# 570.50	572.50	2.00	INBAND	2.00	1.20	17.00	19.90	61.90	22.72			S-III
SEAM OVERALL													
AMD-4	# 569.83	572.50	3.67	EXBAND	3.67	1.10	19.70	19.00	60.20	22.05			W-I
AMD-4	# 569.83	572.50	3.67	INBAND	3.67	1.10	19.70	19.00	60.20	22.05			W-I
AMD-5	# 623.10	624.20	1.10	EXBAND	1.10		21.70	18.70	58.90	21.91			W-III
AMD-5	# 623.10	624.20	1.10	INBAND	1.10		27.20						W-III
AMD-6	NOT DRILLED UP TO THE SEAM												WIII
AMD-7	NOT DRILLED UP TO THE SEAM												W-IV
AMD-8	703.95	712.00	8.05	EXBAND	8.05	.70	25.70	19.20	54.40	23.41	15/E/-		WIII
AMD-2	# 600.30	609.15	8.85	EXBAND	8.85	.90	23.80	19.40	55.90	23.34			W-III
AMD-3	# 534.95	543.05	8.10	EXBAND	8.10	.90	24.60	19.30	55.20	23.38	18/-/-		WIII
AMD-4	NOT DRILLED UP TO THE SEAM					.90	26.50	18.90	53.70	23.23			WIII
AMD-5	493.40	501.80	8.40	EXBAND	8.40	.90	26.70	19.10	55.70	23.03	19/E/-		WIII
AMD-6	687.35	685.67	8.32	EXBAND	8.32	.90	24.30	19.10	55.70	23.03	19/E/-		WIII
AMD-7	492.30	496.10	3.80	EXBAND	3.71	.70	24.00	20.60	54.70	24.97			W-II
AMD-8	492.30	496.10	3.80	ROOF FAULTED			24.60						WIII
AMD-9	# 530.30	535.61	5.31	ROOF FAULTED			24.60						W-III
AMD-9	# 535.61	537.08	1.47	EXBAND	4.67	.80	21.50	19.70	58.00	23.23			W-III
AMD-9	# 537.08	539.50	1.42	JHAMA+MP	5.31		24.60						WIII
AMD-9	# 538.50	539.96	.46	JHAMA+MP	1.42	.90	25.60	19.20	54.30	23.46			WIII
AMD-9	# 538.50	539.96	.46	JHAMA+MP	1.42	.90	25.60	19.20	54.30	23.46			WIII
SEAM OVERALL													
AMD-9	# 530.30	533.96	8.66	COAL+JHAMA+MP									WIII
AMD-10	NOT DRILLED UP TO THE SEAM												W-IV
AMD-11	# 592.80	599.98	7.18	EXBAND	6.91	1.00	27.50	16.90	54.60	20.58			W-IV
AMD-11	# 592.80	599.98	7.18	INBAND	7.18		28.10						W-IV

NOTE : # INDICATES SECTIONAL OVERALL

SEAM : VIII

PAGE NO: 30

BOPSHOLE NO.	DEPTH & THICKNESS OF THE SEAM			MODE OF ANALY.	PROXIMATE ANALYSIS							CO2 %	C.V. KCL/KG on dmf	GRADE	
	FROM (M)	TO (M)	THICK (M)		M%	ASH%	VM%	F.C.	VM%	CI/CT/SI					
AM-13	514.65	518.75	4.10	JHAMA+MP.											WIII
AM-14	NOT DRILLED UP TO THE SEAM														
AM-15	# 569.06	571.55	2.49	JHAMA+MP.	.60	25.00	17.70	56.70	21.14						WIII
AM-15	# 571.55	577.30	5.75	EXBAND 5.36 INBAND 5.75		25.20									WIII
SEAM OVERALL															
AM-15	569.06	577.30	8.24	COAL+JHAMA+MP											
AM-16	# 621.01	622.35	1.34	EXBAND 1.34 INBAND 1.34	.70	25.00	16.00	58.30	18.80						WIII
AM-16	# 622.35	622.70	.35	JHAMA		25.00	16.00	58.30	18.80						WIII
AM-16	# 622.70	627.10	4.40	EXBAND 4.22 INBAND 4.40	1.10	25.10	16.90	56.90	20.19						WIII
SEAM OVERALL															
AM-15	621.01	627.10	6.09	COAL+JHAMA+MP											
AM-17	598.20	607.50	9.30	EXBAND 8.35 INBAND 9.30	1.00	20.50	17.70	60.80	20.47						W-I
AM-18	576.65	578.40	1.75	EXBAND 1.47 FLOOR FAULTED	1.10	22.90	18.30	57.70	21.72						W-II
				INBAND 1.75 FLOOR FAULTED		25.80									WIII
AM-12	540.90	548.35	7.45	EXBAND 6.41 INBAND 7.45	.90	24.10	18.70	56.30	22.44						WIII

NOTE : # INDICATES SECTIONAL OVERALL  
 \* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : VII

PAGE NO: 31

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S							CO2 %	C.V. KCL/KG on dmf	GRADE	
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.	UVM%	CI/CT/SI					
AMD-1	549.69	549.91	.22												
AMD-2	NOT DRILLED UP TO THE SEAM														
AMD-3	NOT DRILLED UP TO THE SEAM														
AMD-4	NOT DRILLED UP TO THE SEAM														
AMD-5	NOT DRILLED UP TO THE SEAM														
AMD-6	NOT DRILLED UP TO THE SEAM														
AMD-7	NOT DRILLED UP TO THE SEAM														
AMD-8	NOT DRILLED UP TO THE SEAM														
AM-1	NOT DRILLED UP TO THE SEAM														
AM-2	454.46	455.61	1.15												
AM-3	592.75	594.20	1.45												
AM-4	NOT DRILLED UP TO THE SEAM														
AM-5	513.30	514.32	1.02												
AM-6	750.10	751.48	1.38												
AM-6	752.70	753.30	.60												
SEAM OVERALL															
AM-6	750.10	753.30	3.20												
AM-7	556.50	557.60	1.10												
AM-8	NOT ANALYSED														
AM-8	INBAND 1.10 37.70														
AM-9	576.30	577.95	1.65												
AM-9	FAULTED														
AM-9	577.95	578.66	.71												
AM-9	578.66	579.00	.34												
SEAM OVERALL															
AM-9	576.30	579.00	2.70												
AM-9	EXPAND 1.77 .90 25.40 17.40 56.30 20.88														
AM-9	INBAND 2.59 31.50														
AM-10	NOT DRILLED UP TO THE SEAM														
AM-11	FAULTED														
AM-13	FAULTED														
AM-14	NOT DRILLED UP TO THE SEAM														
AM-15	616.15	617.97	1.82												
AM-15	JHAMAMP.														
AM-16	670.61	671.58	.97												
AM-17	EXPAND .97 .50 28.80 14.00 56.70 16.40														
AM-17	INBAND .97 .50 28.80 14.00 56.70 16.40														
AM-18	NOT DRILLED UP TO THE SEAM														
AM-18	594.26	595.37	1.11												
AM-18	EXPAND .11 .80 27.80 16.70 54.70 20.29														
AM-18	INBAND 1.11 43.40														
AM-12	FAULTED														

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

SEAM : VI-A

PAGE NO: 32

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	PROXIMATE ANALYSIS					CO2 %	C.V. KCL/KG on dmf	GRADE
	FROM (M)	TO (M)			WZ	ASH%	VM%	F.C.	UVM%			
AMD-1			NOT DEVELOPED									
AMD-2			NOT DRILLED UP TO THE SEAM									
AMD-3			NOT DRILLED UP TO THE SEAM									
AMD-4			NOT DRILLED UP TO THE SEAM									
AMD-5			NOT DRILLED UP TO THE SEAM									
AMD-6			NOT DRILLED UP TO THE SEAM									
AMD-7			NOT DRILLED UP TO THE SEAM									
AMD-8			NOT DRILLED UP TO THE SEAM									
AM-1			NOT DRILLED UP TO THE SEAM									
AM-2	636.32	637.70	EXBAND INBAND	1.38	1.10	22.50	16.50	59.90	19.22	16/D/-		W-II
AM-3			EXBAND INBAND	1.38	1.10	22.50	16.50	59.90	19.22	16/D/-		W-II
AM-4			NOT DRILLED UP TO THE SEAM									
AM-5			FAULTED									
AM-6	794.77	795.85	EXBAND INBAND	1.08	1.20	27.10	15.50	56.20	18.54			W-III
AM-7			FAULTED									
AM-8			FAULTED									
AM-9	615.60	616.80	EXBAND INBAND	1.20	.90	19.60	17.20	62.30	19.65			W-I
AM-10			NOT DRILLED UP TO THE SEAM									
AM-11	623.15	624.80	EXBAND INBAND	.85	.90	30.30	16.00	52.80	19.72			W-IV
AM-12			NOT DRILLED UP TO THE SEAM									
AM-13			FAULTED									
AM-14			NOT DRILLED UP TO THE SEAM									
AM-15	664.80	665.55	EXBAND INBAND	.75	.50	18.10	18.70	62.70	21.22			W-I
AM-16	706.85	707.72	JHAMMA+MP.	.87		29.40						W-I
AM-17			NOT DRILLED UP TO THE SEAM									
AM-18	634.80	636.47	EXBAND INBAND	1.67	1.00	21.50	17.10	60.40	19.84			W-II
AM-19			EXBAND INBAND	1.67	1.00	21.50	17.10	60.40	19.84			W-II

NOTE : # INDICATES SECTIONAL OVERALL  
 \* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : VI PAGE NO: 33

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK: (M)	P R O X I M A T E A N A L Y S I S					CO2 %	C.V. KCL/KG on dmf	GRADE
	FROM (M)	TO (M)			W%	ASH%	VN%	F.C.	UVN%			
AMD-1 # 601.19	602.67	1.48	EXBAND	.88	1.20	24.20	18.10	56.50	21.72		WIII	
			*INBAND	1.03		33.00					W-IV	
AMD-1 # 602.67	605.70	3.03	EXBAND	3.03	1.20	23.80	15.80	58.20	19.86		W-II	
			INBAND	3.03	1.20	23.80	16.80	58.20	19.86		W-II	
SEAM OVERALL												
AMD-1	601.19	605.70	4.51	*EXBAND	3.91	.80	23.90	17.00	58.30	20.04	W-II	
				*INBAND	4.06		26.40				WIII	
AMD-2				NOT DRILLED UP TO THE SEAM								
AMD-3				NOT DRILLED UP TO THE SEAM								
AMD-4				NOT DRILLED UP TO THE SEAM								
AMD-5				NOT DRILLED UP TO THE SEAM								
AMD-6				NOT DRILLED UP TO THE SEAM								
AMD-7				NOT DRILLED UP TO THE SEAM								
AMD-8				NOT DRILLED UP TO THE SEAM								
AM-1				NOT DRILLED UP TO THE SEAM								
AM-2				NOT DRILLED UP TO THE SEAM								
AM-3	638.52	641.25	2.73	EXBAND	2.51	1.10	25.80	16.40	56.70	19.60	16/-/-	
				INBAND	2.73		29.10				WIII	
AM-4				NOT DRILLED UP TO THE SEAM								
AM-5				FAULTED								
AM-6	797.80	801.77	3.97	EXBAND	3.14	.80	20.70	17.50	61.00	20.19	W-I	
				INBAND	3.97		22.90				W-II	
AM-7				FAULTED								
AM-8				FAULTED								
AM-9	681.51	621.70-59.81		EXBAND	2.15	.80	18.50	18.00	62.70	20.48	W-I	
	618.51	621.70	3.19	INBAND	3.19		27.10				WIII	
AM-10				NOT DRILLED UP TO THE SEAM								
AM-11	624.45	626.50	2.05	EXBAND	2.05	1.00	33.00	15.80	50.20	19.94	W-IV	
				INBAND	2.05	1.00	33.00	15.80	50.20	19.94	W-IV	
AM-13				FAULTED								
AM-14				NOT DRILLED UP TO THE SEAM								
AM-15	666.05	666.80	.75	EXBAND	.75	.60	18.70	17.30	63.40	19.57	W-I	
				INBAND	.75	.60	18.70	17.30	63.40	19.57	W-I	
AM-16	708.27	709.60	1.33	JHAMA+MP.								
AM-17				NOT DRILLED UP TO THE SEAM								
AM-18	638.65	641.87	3.22	EXBAND	3.22	1.10	25.50	17.30	56.10	20.82	WIII	
				INBAND	3.22	1.10	25.50	17.30	56.10	20.82	WIII	
AM-12				NOT DRILLED UP TO THE SEAM								

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES  
 DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : V

PAGE NO: 34

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S					CO2 %	C.V. on dmf	GRADE
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.	UM%			
AHD-1	616.10	617.60	1.50	EXBAND INBAND	1.50	.80	33.80	16.70	48.70	21.48	21.48	W-IV
AMD-2	NOT DRILLED	UP TO THE SEAM										
AMD-3	NOT DRILLED	UP TO THE SEAM										
AMD-4	NOT DRILLED	UP TO THE SEAM										
AMD-5	NOT DRILLED	UP TO THE SEAM										
AMD-6	NOT DRILLED	UP TO THE SEAM										
AMD-7	NOT DRILLED	UP TO THE SEAM										
AMD-8	NOT DRILLED	UP TO THE SEAM										
AM-1	NOT DRILLED	UP TO THE SEAM										
AM-2	NOT DRILLED	UP TO THE SEAM										
AM-3	654.30	655.35	1.05	EXBAND INBAND	.95	.90	26.60	16.70	55.80	20.10	20.10	W-III
AM-4	NOT DRILLED	UP TO THE SEAM										
AM-5	556.75	559.60	2.85	EXBAND INBAND	2.85	1.00	29.30	17.30	52.40	21.52	21.52	W-IV
AM-5	559.60	560.22	.62	JHAMA	.68	1.00	29.30	17.30	52.40	21.52	21.52	W-IV
AM-5	560.22	560.90	.68	EXBAND INBAND	.68	1.00	29.30	17.30	52.40	21.52	21.52	W-IV
SEAM OVERALL	556.75	560.90	4.15	COAL+JHAMA+MP								
AM-6	FAULTED											
AM-7	FAULTED											
AM-8	FAULTED											
AM-9	628.25	632.70	4.45	EXBAND INBAND	3.70	.90	23.10	17.30	58.70	20.34	20.34	W-II
AM-10	NOT DRILLED	UP TO THE SEAM										
AM-11	641.80	642.25	.45	JHAMA+MP	.45	1.10	28.60	16.00	54.30	19.48	19.48	W-IV
AM-11	642.25	646.15	3.90	EXBAND INBAND	2.75	1.10	28.60	16.00	54.30	19.48	19.48	W-IV
SEAM OVERALL	641.80	646.15	4.35	COAL+JHAMA+MP								
AM-11	FAULTED											
AM-13	NOT DRILLED	UP TO THE SEAM										
AM-14	675.80	677.23	1.43	EXBAND INBAND	.93	.70	26.30	13.20	59.80	15.02	15.02	W-III
AM-15	677.23	678.13	.90	JHAMA+MP	.90	1.10	28.60	16.00	54.30	19.48	19.48	W-IV
AM-15	677.23	678.13	.90	JHAMA+MP	.90	1.10	28.60	16.00	54.30	19.48	19.48	W-IV
SEAM OVERALL	675.80	678.13	2.33	COAL+JHAMA+MP								
AM-15	675.80	678.13	2.33	COAL+JHAMA+MP								
AM-16	NOT DRILLED	UP TO THE SEAM										
AM-17	NOT DRILLED	UP TO THE SEAM										
AM-18	643.60	645.55	1.95	EXBAND INBAND	1.79	1.00	22.40	18.20	58.40	21.46	21.46	W-II
AM-18	643.60	645.55	1.95	EXBAND INBAND	1.79	1.00	22.40	18.20	58.40	21.46	21.46	W-II
AM-12	NOT DRILLED	UP TO THE SEAM										

NOTE : # INDICATES SECTIONAL OVERALL  
 \* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COOKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

SEAM : IV

PAGE NO: 35

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	PROXIMATE ANALYSIS				CO2 %	C.V. KCL/KG on dmt	GRADE	
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.				UVM%
AMD-7	NOT DRILLED UP TO THE SEAM											
AM-1	NOT DRILLED UP TO THE SEAM											
AM-2	NOT DRILLED UP TO THE SEAM											
AM-3	719.35	725.35		6.00	FLOOR FAULTED							
AM-4	NOT DRILLED UP TO THE SEAM											
AM-5	# 620.50	622.05		1.55	JHAMAMP.							
	# 622.05	627.75		5.70	EXBAND	5.23	1.10	24.40	18.40	56.10	22.15	WIII
					INBAND	5.70		24.80				WIII
SEAM OVERALL												
AM-5	620.50	627.75		7.25	COAL+JHAMAMP							
AM-6	811.52	819.15		7.63	EXBAND	5.33	.70	25.60	17.30	56.40	20.72	WIII
					INBAND	7.63		30.70				W-IV
					EXBAND	1.16	.70	25.20	20.60	53.50	25.26	WIII
AM-7	635.70	636.86		1.16	ROOF FAULTED							
					INBAND	1.16	.70	25.20	20.60	53.50	25.26	WIII
					ROOF FAULTED							
AM-8	# 585.20	586.20		1.00	INBAND							
					INBAND	1.00		44.70				UG
AM-8	# 586.20	587.13		.93	JHAMAMP.							
AM-8	# 587.13	592.05		4.92	EXBAND	4.44	.80	27.00	18.30	53.90	22.45	WIII
					INBAND	4.92		27.90				WIII
SEAM OVERALL												
AM-8	585.20	592.05		6.85	COAL+JHAMAMP							
AM-9	NOT DRILLED UP TO THE SEAM											
AM-10	NOT DRILLED UP TO THE SEAM											
AM-11	# 719.43	721.20		1.77	EXBAND	.75	.90	30.60	14.70	53.80	17.79	W-IV
					INBAND	1.77		38.40				UG
AM-11	# 721.80	727.90		6.10	EXBAND	5.61	1.00	26.50	15.60	56.90	18.54	WIII
					INBAND	6.10		29.10				W-IV
SEAM OVERALL												
AM-11	719.43	727.90		8.47	EXBAND	5.91	.90	27.30	15.50	56.30	18.49	WIII
					INBAND	8.47		28.00				WIII
AM-13	623.71	630.41		6.70	EXBAND	6.21	.90	24.70	18.60	55.80	22.42	WIII
					INBAND	6.70		25.80				WIII
AM-14	NOT DRILLED UP TO THE SEAM											
AM-15	NOT DRILLED UP TO THE SEAM											
AM-16	NOT DRILLED UP TO THE SEAM											
AM-17	NOT DRILLED UP TO THE SEAM											
AM-18	700.00	707.39		7.39	EXBAND	5.99	1.20	25.80	16.90	56.10	20.34	WIII
					INBAND	7.39		.00	27.20	.00	.00	S-I
AM-12	NOT DRILLED UP TO THE SEAM											

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COOKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO ; STATE : BIHAR ANNEXURE-IV

S E A M : III

PAGE NO: 36

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S					C/OI/CT/SI	CO2 %	C.V. on dmf	GRADE
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.	UVM%				
AMD-7			NOT DRILLED UP TO THE SEAM										
AM-1			NOT DRILLED UP TO THE SEAM										
AM-2			NOT DRILLED UP TO THE SEAM										
AM-3			NOT DRILLED UP TO THE SEAM										
AM-4			NOT DRILLED UP TO THE SEAM										
AM-5	# 651.46	656.35	EXBAND	3.20	1.00	27.40	16.50	55.10	19.98			WIII	
			INBAND	4.89		31.70						W-IV	
AM-5	# 656.68	658.35	EXBAND	1.13	.60	24.40	16.30	58.70	19.10			WIII	
			INBAND	1.67		39.50						UG	
AM-5	# 658.85	659.90	EXBAND	1.05	1.10	17.60	18.20	63.10	20.67			S-II	
			INBAND	1.05	1.10	17.60	18.20	63.10	20.67			S-II	
SEAM OVERALL	651.46	659.90	*EXBAND	5.27	1.00	25.70	16.80	56.50	20.12			WIII	
AM-5			*INBAND	8.44		32.80						W-IV	
AM-6			NOT DRILLED UP TO THE SEAM										
AM-7	# 681.70	684.28	EXBAND	2.58	.80	26.00	19.80	53.40	24.36			WIII	
			INBAND	2.58	.80	26.00	19.80	53.40	24.36			WIII	
AM-7	# 684.28	686.70	JHAMMA+MP.	2.42									
SEAM OVERALL	681.70	686.70	COAL+JHAMMA+MP	5.00									
AM-7	# 624.70	625.30	NOT ANALYSED	.60								W-II	
AM-8	# 626.80	628.76	EXBAND	1.96	.60	21.90	20.20	57.30	23.91			W-IV	
			INBAND	1.96	.60	30.00						W-IV	
AM-8	# 630.75	633.25	EXBAND	.94	.60	31.00	17.10	51.30	21.44			UG	
			INBAND	2.50		38.90						UG	
SEAM OVERALL	624.70	633.25	*EXBAND	6.34	.60	25.70	18.90	54.80	22.96			WIII	
AM-8			*INBAND	8.55		34.80						W-IV	
AM-9			NOT DRILLED UP TO THE SEAM										
AM-10			NOT DRILLED UP TO THE SEAM										
AM-11			NOT DRILLED UP TO THE SEAM										
AM-13	693.70	698.25	EXBAND	1.64	.70	34.00	19.50	45.80	26.01			W-IV	
			INBAND	4.55		40.90						UG	
			ROOF FAULTED										
AM-14			NOT DRILLED UP TO THE SEAM										
AM-15			NOT DRILLED UP TO THE SEAM										
AM-16			NOT DRILLED UP TO THE SEAM										
AM-17			NOT DRILLED UP TO THE SEAM										
AM-18	# 754.90	756.79	EXBAND	1.89		36.70	18.20	55.90	21.94			UG	
			INBAND	3.21		24.90						WIII	
AM-18	# 757.39	760.60	EXBAND	3.21	1.00	29.60						W-IV	
			INBAND	3.21		29.60						W-IV	
SEAM OVERALL	754.90	760.60	EXBAND	2.28	.60	24.00	17.30	58.10	20.41			W-II	
AM-18	757.39	760.60	INBAND	5.70		36.20						UG	

NOTE : # INDICATES SECTIONAL OVERALL

71663

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

SEAM : III

PAGE NO: 37

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S						CO <sub>2</sub> %	C.V. KCL/KG on dmf	GRADE
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.	UM%	CI/CT/SI			
AM-12	NOT DRILLED UP TO THE SEAM												

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

SEAM : II

PAGE NO: 38

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	PROXIMATE ANALYSIS	M% ASH% VM% F.C. UVM%	CI/CT/SI	CO2 %	C.V. on dmf	GRADE		
	FROM (M)	TO (M)										
AM-7	NOT DRILLED UP TO THE SEAM											
AM-1	NOT DRILLED UP TO THE SEAM											
AM-2	NOT DRILLED UP TO THE SEAM											
AM-3	NOT DRILLED UP TO THE SEAM											
AM-4	NOT DRILLED UP TO THE SEAM											
AM-5	# 661.90	666.96	EXBAND	5.06	4.62	.80	26.00	16.60	56.60	19.63	WIII	
			INBAND	5.06	30.80						W-IV	
AM-5	# 667.57	682.02	EXBAND	14.45	9.48	.80	28.00	16.30	54.90	19.74	WIII	
			INBAND	14.45	34.60						W-IV	
AM-5	# 682.25	683.83	EXBAND	1.58	.75	.80	27.30	16.30	55.60	19.62	WIII	
			INBAND	1.58	32.50						W-IV	
SEAM OVERALL												
AM-5	661.90	683.83	EXBAND	14.67	14.67	.80	27.30	16.40	55.50	19.76	WIII	
			INBAND	21.93	33.40						W-IV	
AM-6	NOT DRILLED UP TO THE SEAM											
AM-7	# 695.75	699.50	EXBAND	3.75	3.75	.80	28.40	18.00	52.80	22.31	W-IV	
			INBAND	3.75	28.40						W-IV	
AM-7	# 700.10	705.40	EXBAND	5.30	4.40	.90	31.70	16.10	51.30	20.13	W-IV	
			INBAND	5.30	35.40						UG	
AM-7	# 705.40	706.05	JHAMA+MP.								.65	W-IV
			EXBAND	4.39	4.39	.80	29.60	14.80	54.80	17.77	W-IV	
			INBAND	5.10	32.70						W-IV	
AM-7	# 712.02	714.75	EXBAND	2.73	.65	.80	29.60	16.00	53.60	19.57	W-IV	
			INBAND	2.73	39.60						UG	
SEAM OVERALL												
AM-7	695.75	714.75	EXBAND	10.59	10.59	.80	29.20	16.10	53.90	19.65	W-IV	
			INBAND	19.00	33.80						W-IV	
FLOOR FAULTED												
AM-8	691.90	701.65	FLOOR FAULTED								9.75	WIII
AM-9	NOT DRILLED UP TO THE SEAM											
AM-10	NOT DRILLED UP TO THE SEAM											
AM-11	NOT DRILLED UP TO THE SEAM											
AM-13	NOT DRILLED UP TO THE SEAM											
AM-14	NOT DRILLED UP TO THE SEAM											
AM-15	NOT DRILLED UP TO THE SEAM											
AM-16	NOT DRILLED UP TO THE SEAM											
AM-17	NOT DRILLED UP TO THE SEAM											
AM-18	# 762.23	764.55	EXBAND	2.32	.69	.80	27.00	14.80	57.40	17.41	WIII	
			INBAND	2.32	37.90						UG	
AM-18	# 765.20	772.78	EXBAND	7.58	5.56	1.00	29.40	16.10	53.50	19.74	W-IV	
			INBAND	7.58	30.40						W-IV	
AM-18	# 773.15	776.50	EXBAND	3.35	1.79	1.00	28.00	15.50	55.50	18.62	WIII	
			INBAND	3.35	37.50						UG	
AM-18	# 777.50	779.00	EXBAND	1.50	.50	.50	28.00	18.70	52.80	23.14	WIII	
			INBAND	1.50	28.00						WIII	

NOTE : # INDICATES SECTIONAL OVERALL  
 \* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COOKING COAL SEAMS ENCOUNTERED IN BOREHOLES  
 DRILLED IN AMLABAD : BLOCK : JHARIA ; COALFIELD : DISTRICT : BOKARO ; STATE : BIHAR ANNEXURE-IV

SEAM : II

PAGE NO: 59

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	PROXIMATE ANALYSIS						CO2 %	C.V. (KCL/KG) on dmf	GRADE
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.	UVM%	CI/CT/SI			
SEAM OVERALL													
AM-18	762.23	779.00	16.77	9.54	.50	27.10	15.20	57.20	17.92			WIII	
			*INBAND	15.40		30.60						W-IV	

AM-12 NOT DRILLED UP TO THE SEAM

NOTE : # INDICATES SECTIONAL OVERALL  
 \* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A : COALFIELD : DISTRICT : BOKARO : STATE : BIHAR ANNEXURE-IV

S E A M : II/III

PAGE NO: 40

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S					C O 2 %	C . V . K C L / K G on dmf	GRADE
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.	UM%			
AH-18	754.90	779.00	24.10	EXBAND 16.07	.90	27.40	16.30	55.40	19.66			WIII
				INBAND 24.90		33.00						W-IV

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A ; COAL-FIELD : DISTRICT : BOKARO ; STATE : BIHAR ANNEXURE-IV

SEAM : I

PAGE NO: 41

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	P R O X I M A T E A N A L Y S I S					C O 2 %	C.V. (KCL/KG) on dmft	GRADE
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.	UVN%			
AMD-7	NOT DRILLED UP TO THE SEAM											
AM-5	692.55	694.20	1.65	EXBAND	.90	32.40	15.90	50.80	19.95			W-IV
				INBAND	1.65	35.60						UG
AM-7	720.40	722.70	2.30	EXBAND	.70	29.80	16.00	53.50	19.57			W-IV
				INBAND	2.30	35.40						UG
AM-9	NOT DRILLED UP TO THE SEAM											
AM-10	NOT DRILLED UP TO THE SEAM											
AM-11	NOT DRILLED UP TO THE SEAM											
AM-13	NOT DRILLED UP TO THE SEAM											
AM-14	NOT DRILLED UP TO THE SEAM											
AM-15	NOT DRILLED UP TO THE SEAM											
AM-16	NOT DRILLED UP TO THE SEAM											
AM-17	NOT DRILLED UP TO THE SEAM											
AM-18	NOT DRILLED UP TO THE SEAM											
AM-12	NOT DRILLED UP TO THE SEAM											

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

DRILLED IN A M L A B A D : BLOCK : J H A R I A ; COALFIELD : DISTRICT : BOKARO ; STATE : BIHAR ANNEXURE-IV

S E A M : LOCAL

PAGE NO: 42

BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK: (M)	P R O X I M A T E A N A L Y S I S				C O 2 %	C.V. on dmf	GRADE
	FROM (M)	TO (M)			M%	ASH%	VM%	F.C.			
AMD-1	42.13	43.06	EXPAND	.93	1.40	28.30	23.40	46.90	30.49	W-IV	
			INBAND	.93	1.40	28.30	23.40	46.90	30.49	W-IV	
AMD-1	115.17	115.74	EXPAND	.57	1.10	27.20	23.80	47.90	30.56	WIII	
			INBAND	.57	1.10	27.20	23.80	47.90	30.56	WIII	
AMD-1	168.45	168.75	INBAND	.30	1.10	32.00	22.70	44.20	30.61	W-IV	
AMD-1	# 319.20	319.56	JHAMA	.16							
AMD-1	# 319.56	319.75	EXPAND	.39	1.10	29.60	21.80	47.50	28.40	W-IV	
			INBAND	.39	1.10	29.60	21.80	47.50	28.40	W-IV	
SEAM OVERALL											
AMD-1	319.20	319.75	COAL+JHAMA+MP	.55							
AMD-2	78.79	79.45	EXPAND	.66	1.30	29.40	23.50	45.80	30.98	W-IV	
			INBAND	.66	1.30	29.40	23.50	45.80	30.98	W-IV	
AMD-3	10.86	11.02	EXPAND	.16	2.20	33.10	22.70	42.00	31.58	W-IV	
			INBAND	.16	2.20	33.10	22.70	42.00	31.58	W-IV	
AMD-3	42.70	43.55	EXPAND	.85	1.50	27.10	23.60	47.80	30.41	WIII	
			INBAND	.85	1.50	27.10	23.60	47.80	30.41	W-IV	
AMD-3	84.84	85.30	EXPAND	.46	1.30	29.40	24.70	44.60	32.79	W-IV	
			INBAND	.46	1.30	29.40	24.70	44.60	32.79	UG	
AMD-4	73.71	74.60	EXPAND	.89	1.20	19.50	26.00	53.30	31.09	W-I	
			INBAND	.89	1.20	19.50	26.00	53.30	31.09	W-IV	
AMD-7	108.72	109.24	EXPAND	.52	1.30	22.80	25.90	50.00	32.08	W-IV	
			INBAND	.52	1.30	22.80	25.90	50.00	32.08	W-IV	
AMD-7	180.88	181.50	EXPAND	.62	1.20	20.70	24.00	54.10	28.84	W-I	
			INBAND	.62	1.20	20.70	24.00	54.10	28.84	W-I	
AMD-8	16.94	17.70	EXPAND	.76	2.10	25.50	25.10	47.30	32.28	WIII	
			INBAND	.76	2.10	25.50	25.10	47.30	32.28	UG	
AMD-8	50.74	51.78	EXPAND	1.04	1.40	28.80	24.20	45.60	31.86	W-IV	
			INBAND	1.04	1.40	28.80	24.20	45.60	31.86	W-IV	
AMD-8	91.12	91.62	EXPAND	.44	1.60	31.00	24.30	43.10	32.97	W-IV	
			INBAND	.44	1.60	31.00	24.30	43.10	32.97	W-IV	

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL

STATEMENT SHOWING QUALITY OF COKING COAL SEAMS ENCOUNTERED IN BOREHOLES

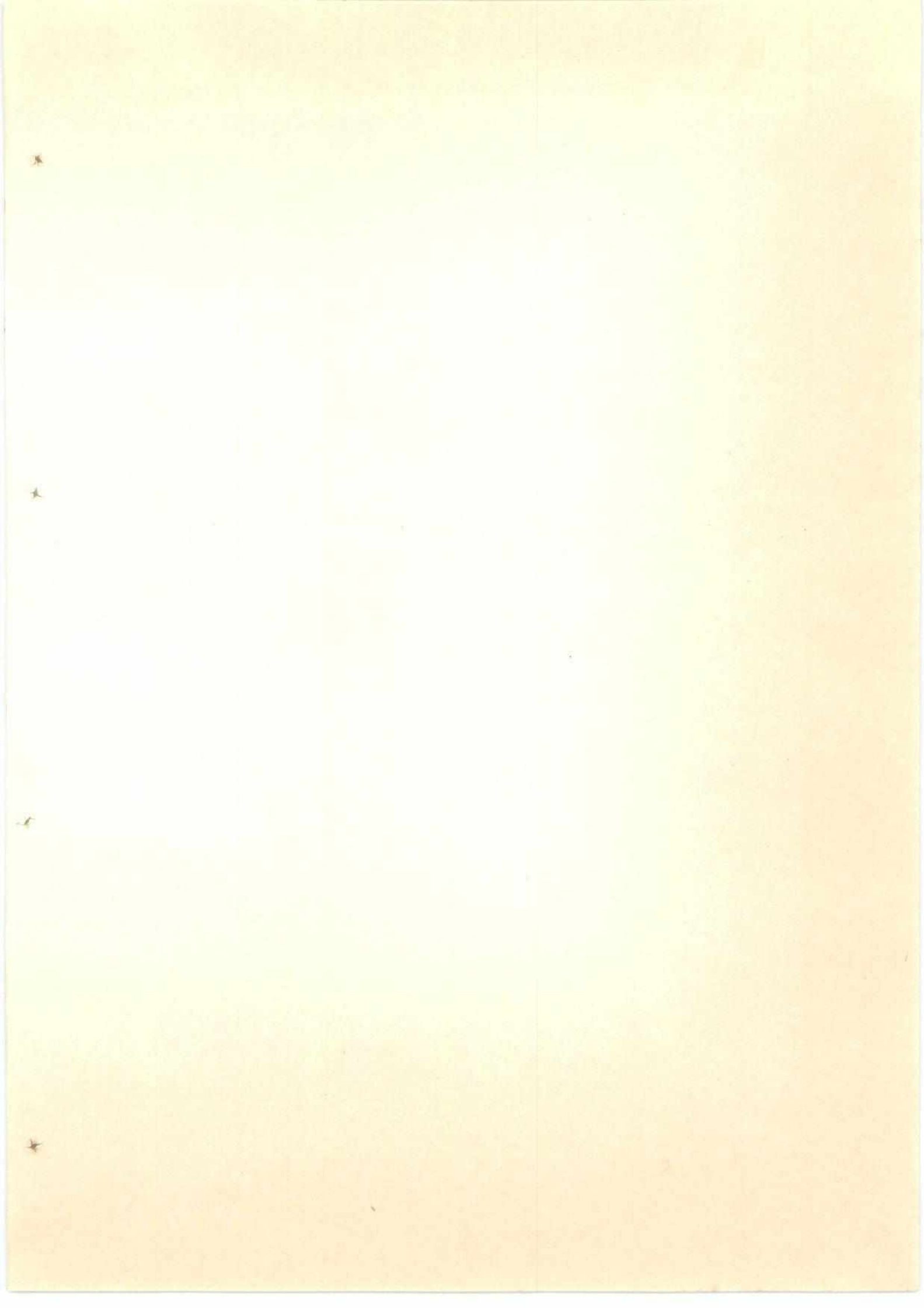
DRILLED IN A M L A B A D : BLOCK : J H A R I A ; COALFIELD : DISTRICT : BOKARO ; STATE : BIHAR ANNEXURE-IV

S E A M : LOCAL

PAGE NO: 43

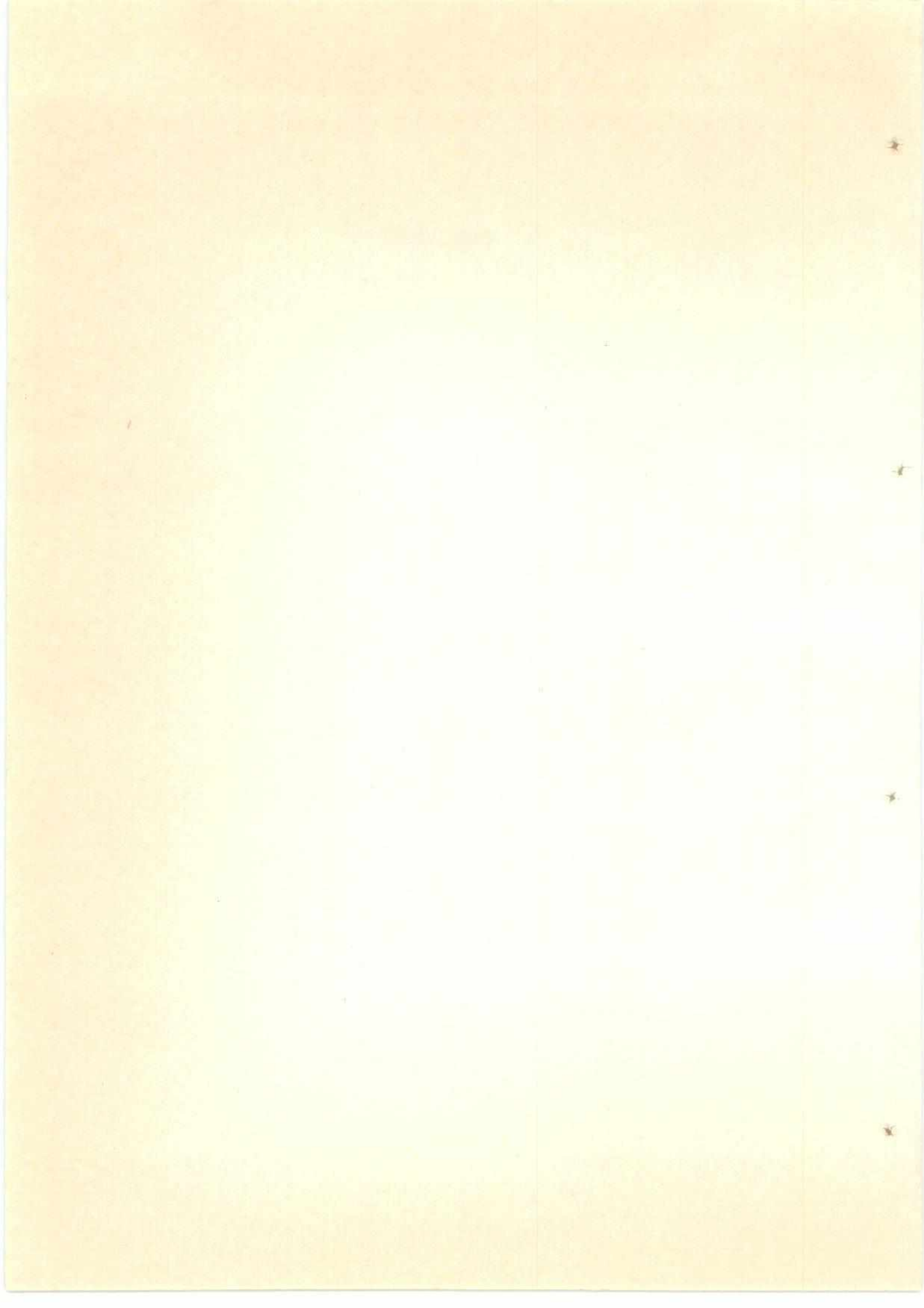
BOREHOLE NO.	DEPTH & THICKNESS OF THE SEAM		MODE OF ANALY.	THICK (M)	M%	ASH%	VM%	F.C.	VM%	CI/CT/SI	CO2 %	C.V. KCL/KG on dmf	GRADE
	FROM (M)	TO (M)											
AMD-7	93.24	94.11	EXBAND	.87	1.40	22.40	25.00	51.20	30.77				W-II
			INBAND	.87	1.40	22.40	25.00	51.20	30.77				W-II
AMD-7	125.35	126.08	EXBAND	.73	1.30	12.30	29.20	57.20	32.84				S-I
			INBAND	.73	1.30	12.30	29.20	57.20	32.84				S-I

NOTE : # INDICATES SECTIONAL OVERALL  
\* INDICATES CALCULATED OVERALL



ANNEXURE-V

STATEMENT SHOWING SEAM-WISE, THICKNESS-WISE, ASH-WISE,  
UVM-WISE AND HORIZON-WISE PROVED AND INDICATED RESERVES



SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE NET IN-SITU PROVED RESERVES

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : VIII A-V / 1

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	

1

VIRGIN

-400-500 20 - 22

1.2-2.0	0.	0.	0.	10.	35.	0.	0.	0.	0.	45.
2.0-4.0	0.	0.	62.	17.	0.	0.	0.	0.	0.	79.
4.0-6.0	0.	0.	191.	0.	0.	0.	0.	0.	0.	191.
SUB-TOTAL	0.	0.	253.	27.	35.	0.	0.	0.	0.	315.
HORIZON -TOTAL	0.	0.	253.	27.	35.	0.	0.	0.	0.	315.

20 - 22

1.2-2.0	0.	0.	0.	10.	35.	0.	0.	0.	0.	45.
2.0-4.0	0.	0.	62.	17.	0.	0.	0.	0.	0.	79.
4.0-6.0	0.	0.	191.	0.	0.	0.	0.	0.	0.	191.
SUB-TOTAL	0.	0.	253.	27.	35.	0.	0.	0.	0.	315.
VER/DEV -TOTAL	0.	0.	253.	27.	35.	0.	0.	0.	0.	315.

20 - 22

1.2-2.0	0.	0.	0.	10.	35.	0.	0.	0.	0.	45.
2.0-4.0	0.	0.	62.	17.	0.	0.	0.	0.	0.	79.
4.0-6.0	0.	0.	191.	0.	0.	0.	0.	0.	0.	191.
SUB-TOTAL	0.	0.	253.	27.	35.	0.	0.	0.	0.	315.



SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISRET IN-SITU PROVED RESERVES

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : VIII

A-V / 4

FULL COAL

UNDERGROUND

(RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE				UG TOTAL
					S-I	S-II	W-I	W-II	
22 - 25									
	4.0-6.0		0.	86.	429.	495.	134.	0.	1144.
SUB-TOTAL			0.	86.	429.	495.	134.	0.	1144.
20 - 22									
	1.2-2.0		0.	0.	10.	53.	60.	2.	125.
	2.0-4.0		0.	187.	98.	409.	179.	282.	1155.
	4.0-6.0		0.	530.	45.	139.	176.	0.	890.
SUB-TOTAL			0.	717.	153.	601.	415.	284.	2170.
22 - 25									
	4.0-6.0		0.	86.	429.	495.	134.	0.	1144.
SUB-TOTAL			0.	86.	429.	495.	134.	0.	1144.
	1.2-2.0		0.	0.	10.	53.	60.	2.	125.
	2.0-4.0		0.	187.	98.	409.	179.	282.	1155.
	4.0-6.0		0.	616.	474.	634.	310.	0.	2034.
SEAM -TOTAL			0.	803.	582.	1096.	549.	284.	3314.

BEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE NET IN-SITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : VIII A-V / 3

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE						
					S-I	S-II	W-I	W-II	W-III	W-IV	UG TOTAL
20 - 22											
	1.2-2.0	0.	0.	0.	0.	0.	18.	60.	2.	80.	
	2.0-4.0	0.	0.	125.	81.	409.	179.	282.	1076.		
	4.0-6.0	0.	0.	339.	45.	139.	176.	0.	699.		
HORIZON -TOTAL		0.	0.	550.	555.	1061.	495.	0.	2661.		
SUB-TOTAL											
	4.0-6.0	0.	0.	86.	429.	495.	134.	0.	1144.		
SUB-TOTAL		0.	0.	86.	429.	495.	134.	0.	1144.		
22 - 25											
	1.2-2.0	0.	0.	0.	0.	18.	60.	2.	80.		
	2.0-4.0	0.	0.	125.	81.	409.	179.	282.	1076.		
	4.0-6.0	0.	0.	339.	45.	139.	176.	0.	699.		
HORIZON -TOTAL		0.	0.	464.	126.	566.	415.	284.	1855.		
SUB-TOTAL											
	4.0-6.0	0.	0.	86.	429.	495.	134.	0.	1144.		
SUB-TOTAL		0.	0.	86.	429.	495.	134.	0.	1144.		
20 - 22											
	1.2-2.0	0.	0.	0.	0.	18.	60.	2.	80.		
	2.0-4.0	0.	0.	125.	81.	409.	179.	282.	1076.		
	4.0-6.0	0.	0.	339.	45.	139.	176.	0.	699.		
HORIZON -TOTAL		0.	0.	550.	555.	1061.	549.	284.	2999.		
SUB-TOTAL											
	4.0-6.0	0.	0.	86.	429.	495.	134.	0.	1144.		
SUB-TOTAL		0.	0.	86.	429.	495.	134.	0.	1144.		



SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISNET IN-SITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BO:ARO STATE: BIHAR

SEAM : IX A-V / 6

FULL COAL

UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE				UG TOTAL	
					S-I	S-II	W-I	W-II		W-III
22 - 25										
			>6.0	0.	0.	659.	0.	0.	0.	659.
SUB-TOTAL										
				0.	0.	659.	0.	0.	0.	659.
>6.0										
				0.	0.	659.	0.	0.	0.	659.
SECTOR -TOTAL										
				0.	0.	659.	0.	0.	0.	659.

11

VIRGIN

-300--400										
22 - 25										
			2.0-4.0	0.	0.	0.	0.	978.	0.	978.
SUB-TOTAL										
				0.	0.	0.	0.	978.	0.	978.
25 - 30										
			4.0-6.0	0.	0.	120.	0.	0.	0.	120.
SUB-TOTAL										
				0.	0.	120.	0.	0.	0.	120.
			2.0-4.0	0.	0.	0.	0.	978.	0.	978.
			4.0-6.0	0.	0.	120.	0.	0.	0.	120.
HORIZON -TOTAL										
				0.	0.	120.	0.	978.	0.	1098.
-400--500										
22 - 25										
			2.0-4.0	0.	0.	0.	0.	102.	0.	102.
SUB-TOTAL										
				0.	0.	0.	0.	102.	0.	102.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE NET IN-SITU PROVED RESERVES  
 APLABAD BLOCK; JHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : IX

A-V / 7

FULL COAL

UNDERGROUND

(RESERVES IN '000 TONNES)

SECTOR VER/DEV HORIZON UVM % THICKNESS

S-I S-II W-I W-II W-III W-IV UG TOTAL

25 - 30

SUB-TOTAL

4.0-6.0	0.	0.	340.	0.	0.	0.	0.	0.	340.
SUB-TOTAL	0.	0.	340.	0.	0.	0.	0.	0.	340.
2.0-4.0	0.	0.	0.	0.	102.	0.	0.	102.	
4.0-6.0	0.	0.	340.	0.	0.	0.	0.	340.	
HORIZON -TOTAL	0.	0.	340.	0.	102.	0.	0.	442.	

22 - 25

SUB-TOTAL

2.0-4.0	0.	0.	0.	0.	1080.	0.	0.	1080.
SUB-TOTAL	0.	0.	0.	0.	1080.	0.	0.	1080.
4.0-6.0	0.	0.	460.	0.	0.	0.	0.	460.
SUB-TOTAL	0.	0.	460.	0.	0.	0.	0.	460.
2.0-4.0	0.	0.	0.	0.	1080.	0.	0.	1080.
4.0-6.0	0.	0.	460.	0.	0.	0.	0.	460.
VER/DEV -TOTAL	0.	0.	460.	0.	1080.	0.	0.	1540.

22 - 25

SUB-TOTAL

2.0-4.0	0.	0.	0.	0.	1080.	0.	0.	1080.
SUB-TOTAL	0.	0.	0.	0.	1080.	0.	0.	1080.

SEAM-WISE SECTOR-WISE, VERT/DEV-WISE, HORIZON-WISE UVM %-WISE THICKNESS-WISE AND GRADE-WISNET IN-SITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : IX

A-V / B

FULL COAL	SECTOR	VERT/DEV	HORIZON	UVM %	THICKNESS	UNDERGROUND					UG TOTAL		
						S-I	S-II	W-I	W-II	W-III		W-IV	
(RESERVES IN '000 TONNES)													
G R A D E													
25 - 30													
	4.0-6.0					0.	0.	460.	0.	0.	0.	0.	460.
	SUB-TOTAL					0.	0.	460.	0.	0.	0.	0.	460.
	2.0-4.0					0.	0.	0.	0.	1080.	0.	0.	1080.
	4.0-6.0					0.	0.	460.	0.	0.	0.	0.	460.
	SECTOR -TOTAL					0.	0.	460.	0.	1080.	0.	0.	1540.
22 - 25													
	2.0-4.0					0.	0.	0.	0.	1080.	0.	0.	1080.
	>6.0					0.	0.	659.	0.	0.	0.	0.	659.
	SUB-TOTAL					0.	0.	659.	0.	1080.	0.	0.	1739.
25 - 30													
	4.0-6.0					0.	0.	460.	0.	0.	0.	0.	460.
	SUB-TOTAL					0.	0.	460.	0.	0.	0.	0.	460.
	2.0-4.0					0.	0.	0.	0.	1080.	0.	0.	1080.
	4.0-6.0					0.	0.	460.	0.	0.	0.	0.	460.
	>6.0					0.	0.	659.	0.	0.	0.	0.	659.
	SEAM -TOTAL					0.	0.	1119.	0.	1080.	0.	0.	2199.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-BITU PROVED RESERVE  
 AMLABAD BLOCK; JHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM 1 X A-V / 9

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE							
					S-I	S-II	W-I	W-II	W-III	W-IV	UG	TOTAL

11

VIRGIN

-300--400 22 - 25

>4.0	0.	0.	775.	0.	0.	0.	0.	0.	0.	0.	0.	775.
SUB-TOTAL	0.	0.	775.	0.	0.	0.	0.	0.	0.	0.	0.	775.
>6.0	0.	0.	775.	0.	0.	0.	0.	0.	0.	0.	0.	775.
HORIZON -TOTAL	0.	0.	775.	0.	0.	0.	0.	0.	0.	0.	0.	775.

-400--500

25 - 30

4.0-6.0	0.	65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	65.
SUB-TOTAL	0.	65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	65.
4.0-6.0	0.	65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	65.
HORIZON -TOTAL	0.	65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	65.

22 - 25

>6.0	0.	0.	775.	0.	0.	0.	0.	0.	0.	0.	0.	775.
SUB-TOTAL	0.	0.	775.	0.	0.	0.	0.	0.	0.	0.	0.	775.
4.0-6.0	0.	65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	65.
SUB-TOTAL	0.	65.	0.	0.	0.	0.	0.	0.	0.	0.	0.	65.

25 - 30

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE NET IN-SITU PROVED RESERVES  
 AMLDAD BLOCK I JHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : X  
 A-V / 10

FULL COAL				UNDERGROUND (RESERVES IN '000 TONNES)									
SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE								
					S-I	S-II	W-I	W-II	W-III	W-IV	UG	TOTAL	
22 - 25				>6.0	0.	0.	775.	0.	0.	0.	0.	0.	775.
SUB-TOTAL					0.	0.	775.	0.	0.	0.	0.	775.	
25 - 30				4.0-6.0	0.	65.	0.	0.	0.	0.	0.	65.	
SUB-TOTAL					0.	65.	0.	0.	0.	0.	0.	65.	
SECTOR -TOTAL					0.	65.	775.	0.	0.	0.	0.	840.	
22 - 25				>6.0	0.	0.	775.	0.	0.	0.	0.	775.	
SUB-TOTAL					0.	0.	775.	0.	0.	0.	0.	775.	
25 - 30				4.0-6.0	0.	65.	0.	0.	0.	0.	0.	65.	
SUB-TOTAL					0.	65.	0.	0.	0.	0.	0.	65.	

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: ROKARO STATE: BIHAR

SEAM : X

A-V / 11

FULL COAL				UNDERGROUND (RESERVES IN '000 TONNES)						
SECTOR	VER/DEV	HORIZON	UVM %	GRADE						
			THICKNESS	S-I	S-II	W-I	W-II	W-III	W-IV	UG TOTAL
4.0-6.0				0.	65.	0.	0.	0.	0.	65.
>6.0				0.	775.	0.	0.	0.	0.	775.
-TOTAL				0.	65.	775.	0.	0.	0.	840.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE NET IN-SITU PROVED RESERVES

AMLABAD BLOCK I JHARIA COAL FIELD; DIST: HOKARO STATE: BIHAR

SEAM : XI/XII

A-V / 12

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	
22 - 25										
		2.0-4.0	0.	0.	0.	0.	246.	0.	0.	246.
		4.0-6.0	0.	0.	0.	127.	0.	0.	0.	127.
SUB-TOTAL			0.	0.	0.	127.	246.	0.	0.	373.
25 - 30										
		2.0-4.0	0.	0.	0.	243.	0.	0.	0.	243.
		4.0-6.0	0.	0.	0.	583.	0.	0.	0.	583.
SUB-TOTAL			0.	0.	0.	826.	0.	0.	0.	826.
		2.0-4.0	0.	0.	0.	243.	246.	0.	0.	489.
		4.0-6.0	0.	0.	0.	710.	0.	0.	0.	710.
HORIZON - TOTAL			0.	0.	0.	953.	246.	0.	0.	1199.
22 - 25										
		2.0-4.0	0.	0.	0.	0.	246.	0.	0.	246.
		4.0-6.0	0.	0.	0.	127.	0.	0.	0.	127.
SUB-TOTAL			0.	0.	0.	127.	246.	0.	0.	373.
25 - 30										
		2.0-4.0	0.	0.	0.	243.	0.	0.	0.	243.
		4.0-6.0	0.	0.	0.	583.	0.	0.	0.	583.
SUB-TOTAL			0.	0.	0.	826.	0.	0.	0.	826.

VIRGIN 400-500

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE NET IN-SITU PROVED RESERVES  
 AMLABAD BLOCK I JHARIA COAL FIELD, DIST: BOKARO STATE: BIHAR

SEAM : XI/XII

A-V / 13

FULL COAL

UNDERGROUND

(RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL	
					S-I	S-II	W-I	W-II	W-III		W-IV
22 - 25											
	2.0-4.0		0.	0.	0.	0.	0.	0.	0.	0.	246.
	4.0-6.0		0.	0.	0.	0.	127.	0.	0.	0.	127.
VER/DEV -TOTAL			0.	0.	0.	953.	246.	0.	0.	0.	4199.
SUB-TOTAL											
			0.	0.	0.	127.	246.	0.	0.	0.	373.
25 - 30											
SUB-TOTAL											
	2.0-4.0		0.	0.	0.	243.	0.	0.	0.	0.	243.
	4.0-6.0		0.	0.	0.	583.	0.	0.	0.	0.	583.
BUB-TOTAL			0.	0.	0.	826.	0.	0.	0.	0.	826.
	2.0-4.0		0.	0.	0.	243.	246.	0.	0.	0.	489.
	4.0-6.0		0.	0.	0.	710.	0.	0.	0.	0.	710.
SECTOR -TOTAL			0.	0.	0.	953.	246.	0.	0.	0.	1199.
VIRGIN											
400-300											
22 - 25											
	2.0-4.0		0.	0.	0.	0.	0.	0.	0.	11.	11.
SUB-TOTAL											
			0.	0.	0.	0.	0.	0.	0.	11.	11.
25 - 30											
	4.0-6.0		0.	0.	0.	235.	20.	70.	0.	0.	325.
SUB-TOTAL											
			0.	0.	0.	235.	20.	70.	0.	0.	325.

II

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AMLARAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XI/XII  
 A-V / 14

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE										
					R-I	R-II	W-I	W-II	W-III	W-IV	HD	TOTAL			
22 - 25															
	2.0-4.0		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	11.	11.
SUB-TOTAL			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	11.	11.
25 - 30															
	4.0-6.0		0.	0.	0.	0.	235.	20.	70.	0.	0.	0.	0.	325.	325.
SUB-TOTAL			0.	0.	0.	235.	20.	70.	0.	0.	0.	0.	0.	325.	325.
	2.0-4.0		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	11.	11.	
	4.0-6.0		0.	0.	0.	235.	20.	70.	0.	0.	0.	0.	0.	325.	
VER/DEV -TOTAL			0.	0.	0.	235.	20.	70.	11.	11.	0.	0.	0.	336.	
22 - 25															
	2.0-4.0		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	11.	11.	
SUB-TOTAL			0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	11.	11.	
25 - 30															
	4.0-6.0		0.	0.	0.	235.	20.	70.	0.	0.	0.	0.	0.	325.	
SUB-TOTAL			0.	0.	0.	235.	20.	70.	0.	0.	0.	0.	0.	325.	

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : XI/XII (RESERVES IN '000 TONNES)  
 A-V / 15

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE							
						H-I	B-II	W-I	W-II	W-III	W-IV	W-V	TOTAL
UNDERGROUND													
(RESERVES IN '000 TONNES)													
	2.0-4.0				0.	0.	0.	0.	0.	0.	0.	11.	11.
	4.0-6.0				0.	0.	0.	235.	20.	70.	0.	325.	325.
	SECTOR -TOTAL				0.	0.	0.	235.	20.	70.	11.	356.	356.
	22 - 25												
	2.0-4.0				0.	0.	0.	0.	246.	0.	0.	11.	257.
	4.0-6.0				0.	0.	0.	127.	0.	0.	0.	127.	127.
	SUB-TOTAL				0.	0.	0.	127.	246.	0.	11.	384.	384.
	25 - 30												
	2.0-4.0				0.	0.	0.	243.	0.	0.	0.	243.	243.
	4.0-6.0				0.	0.	0.	818.	20.	70.	0.	908.	908.
	SUB-TOTAL				0.	0.	0.	1061.	20.	70.	0.	1151.	1151.
	2.0-4.0				0.	0.	0.	243.	246.	0.	11.	500.	500.
	4.0-6.0				0.	0.	0.	945.	20.	70.	0.	1035.	1035.
	SEAM -TOTAL				0.	0.	0.	1188.	266.	70.	11.	1535.	1535.



SEAM-WISE RECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-BITU PROVED RESERVE

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XIII A-VI / 17

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

RECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL		
					S-I	S-II	W-I	W-II	W-III		W-IV	
20 - 22												
	1.2-2.0		0.	0.	0.	0.	0.	0.	0.	301.	27.	328.
	2.0-4.0		0.	0.	0.	0.	0.	7.	680.	0.	0.	687.
	HORIZON - TOTAL		0.	0.	0.	0.	7.	1122.	549.	1678.		
22 - 25												
	1.2-2.0		0.	0.	0.	0.	0.	0.	141.	482.	623.	
	2.0-4.0		0.	0.	0.	0.	7.	714.	0.	721.		
	SUB-TOTAL		0.	0.	0.	0.	0.	301.	27.	328.		
25 - 30												
	1.2-2.0		0.	0.	0.	0.	0.	0.	07.	07.		
	SUB-TOTAL		0.	0.	0.	0.	0.	0.	87.	87.		
20 - 22												
	1.2-2.0		0.	0.	0.	0.	0.	0.	442.	596.	1038.	
	2.0-4.0		0.	0.	0.	0.	7.	714.	0.	721.		
	VER/DEV - TOTAL		0.	0.	0.	0.	7.	1156.	596.	1759.		
20 - 22												
	1.2-2.0		0.	0.	0.	0.	0.	0.	301.	27.	328.	
	SUB-TOTAL		0.	0.	0.	0.	0.	301.	27.	328.		

DEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISEBET IN-SITU PROVED RESERVES

AM/ADWD BLOCK: CHARVA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XIII

A-V / 18

FULL COAL

UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	

22 - 25

1.2-2.0	0.	0.	0.	0.	0.	0.	0.	0.	141.	482.	623.
2.0-4.0	0.	0.	0.	0.	0.	0.	0.	0.	714.	0.	721.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>855.</b>	<b>482.</b>	<b>1344.</b>

25 - 30

1.2-2.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	87.	87.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>117.</b>	<b>117.</b>

<b>SECTOR -TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>7.</b>	<b>1156.</b>	<b>596.</b>	<b>1759.</b>
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II

VIRGIN

-200--300

20 - 22

1.2-2.0	0.	0.	0.	0.	0.	0.	0.	0.	28.	0.	28.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>28.</b>	<b>0.</b>	<b>28.</b>

22 - 25

1.2-2.0	0.	0.	0.	0.	0.	0.	0.	0.	349.	211.	2.	560.
2.0-4.0	0.	0.	0.	0.	0.	0.	0.	0.	349.	211.	0.	560.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>349.</b>	<b>211.</b>	<b>2.</b>	<b>562.</b>

25 - 30

1.2-2.0	0.	0.	0.	0.	0.	0.	0.	0.	1.	0.	158.	158.
2.0-4.0	0.	0.	0.	0.	0.	0.	0.	0.	1.	3.	145.	145.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>1.</b>	<b>3.</b>	<b>145.</b>	<b>273.</b>

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM % WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XIII

A-V / 19

FULL COAL

UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE							
					S-I	S-II	W-I	W-II	W-III	W-IV	UG TOTAL	
22 - 25												
-380--400												
		1.2-2.0	0.	0.	0.	0.	0.	0.	0.	0.	35.	35.
		2.0-4.0	0.	0.	0.	0.	0.	268.	176.	17.	461.	
		HORIZON -TOTAL	0.	0.	0.	0.	1.	352.	384.	275.	1012.	
SUB-TOTAL												
25 - 30												
		1.2-2.0	0.	0.	0.	0.	0.	0.	0.	123.	123.	
		2.0-4.0	0.	0.	3.	198.	256.	123.	123.	0.	580.	
		SUB-TOTAL	0.	0.	3.	198.	256.	123.	123.	703.		
		1.2-2.0	0.	0.	0.	0.	0.	0.	0.	158.	158.	
		2.0-4.0	0.	0.	3.	198.	524.	299.	17.	1041.		
		HORIZON -TOTAL	0.	0.	3.	198.	524.	299.	175.	1199.		
20 - 22												
		1.2-2.0	0.	0.	0.	0.	0.	0.	0.	28.	0.	28.
		SUB-TOTAL	0.	0.	0.	0.	0.	0.	0.	28.	0.	28.
22 - 25												
		1.2-2.0	0.	0.	0.	0.	0.	0.	0.	37.	37.	
		2.0-4.0	0.	0.	0.	0.	0.	617.	387.	17.	1021.	
		SUB-TOTAL	0.	0.	0.	0.	0.	617.	387.	54.	1058.	

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE RESERVE IN-SITU PROVED RESERVES

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XIII A-V / 20

(RESERVES IN '000 TONNES)

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL	
						B-I	B-II	W-I	W-II	W-III		W-IV
25 - 30												
		1.2-2.0		0.	0.	0.	0.	0.	0.	0.	281.	281.
		2.0-4.0		0.	0.	3.	199.	259.	268.	115.	844.	
	SUB-TOTAL			0.	0.	3.	199.	259.	268.	396.	1125.	
20 - 22												
		1.2-2.0		0.	0.	0.	0.	0.	0.	28.	0.	28.
	SUB-TOTAL			0.	0.	0.	0.	0.	0.	28.	0.	28.
22 - 25												
		1.2-2.0		0.	0.	0.	0.	0.	0.	0.	37.	37.
		2.0-4.0		0.	0.	0.	0.	617.	387.	17.	1021.	
	SUB-TOTAL			0.	0.	0.	0.	617.	387.	54.	1058.	
25 - 30												
		1.2-2.0		0.	0.	0.	0.	0.	0.	0.	281.	281.
		2.0-4.0		0.	0.	3.	199.	259.	268.	115.	844.	
	SUB-TOTAL			0.	0.	3.	199.	259.	268.	396.	1125.	
		1.2-2.0		0.	0.	0.	0.	0.	0.	28.	346.	
		2.0-4.0		0.	0.	3.	199.	876.	655.	132.	1865.	
	SUB-TOTAL			0.	0.	3.	199.	876.	683.	450.	2211.	
	SECTOR -TOTAL			0.	0.	3.	199.	876.	683.	450.	2211.	

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-BITU PROVED RESERVES

AMLRAND BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XIII

A-V- / 21

FULL COAL

(RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL		
					S-I	S-II	W-I	W-II	W-III		W-IV	
20 - 22												
				1.2-2.0	0.	0.	0.	0.	0.	329.	27.	356.
SUB-TOTAL					0.	0.	0.	0.	0.	329.	27.	356.
22 - 25												
				1.2-2.0	0.	0.	0.	0.	0.	141.	519.	660.
				2.0-4.0	0.	0.	0.	0.	0.	624.	1101.	1725.
SUB-TOTAL					0.	0.	0.	0.	0.	624.	1242.	2402.
25 - 30												
				1.2-2.0	0.	0.	0.	0.	0.	199.	268.	467.
				2.0-4.0	0.	0.	0.	0.	0.	199.	268.	467.
SUB-TOTAL					0.	0.	0.	0.	0.	199.	268.	467.
				1.2-2.0	0.	0.	0.	0.	0.	470.	914.	1384.
				2.0-4.0	0.	0.	0.	0.	0.	199.	1369.	2516.
SUB-TOTAL					0.	0.	0.	0.	0.	199.	883.	1839.
SEAM -TOTAL					0.	0.	0.	0.	0.	199.	883.	1839.
					0.	0.	3.	199.	883.	1839.	1046.	3970.

BEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AMLABAD BLOCK; JHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : XIV A-V / 22

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

FUNCTION	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					9-I	9-II	W-I	W-II	W-III	

VIRGIN

-300--400

22 - 25	>6.0	0.	0.	878.	3093.	0.	0.	0.	0.	3971.
SUB-TOTAL		0.	0.	878.	3093.	0.	0.	0.	0.	3971.
25 - 30	>6.0	0.	0.	0.	51.	0.	0.	0.	0.	51.
SUB-TOTAL		0.	0.	0.	51.	0.	0.	0.	0.	51.
	>6.0	0.	0.	878.	3144.	0.	0.	0.	0.	4022.
HORIZON -TOTAL		0.	0.	878.	3144.	0.	0.	0.	0.	4022.
22 - 25	>6.0	0.	0.	878.	3093.	0.	0.	0.	0.	3971.
SUB-TOTAL		0.	0.	878.	3093.	0.	0.	0.	0.	3971.
25 - 30	>6.0	0.	0.	0.	51.	0.	0.	0.	0.	51.
SUB-TOTAL		0.	0.	0.	51.	0.	0.	0.	0.	51.
	>6.0	0.	0.	878.	3144.	0.	0.	0.	0.	4022.
VER/DEV -TOTAL		0.	0.	878.	3144.	0.	0.	0.	0.	4022.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE NET IN-SITU PROVED RESERVES  
 AHLARAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XIV UNDERGROUND (RESERVES IN '000 TONNES) A-VI / 23

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	

DEVELOPED -200--300

22 - 25													
SUB-TOTAL					>6.0	0.	0.	0.	1319.	0.	0.	1319.	
HORIZON -TOTAL					>6.0	0.	0.	0.	1319.	0.	0.	1319.	
22 - 25													
SUB-TOTAL					>6.0	0.	0.	0.	1319.	0.	0.	1319.	
HORIZON -TOTAL					>6.0	0.	0.	0.	1319.	0.	0.	1319.	
22 - 25													
SUB-TOTAL					>6.0	0.	0.	0.	878.	4412.	0.	0.	5290.
HORIZON -TOTAL					>6.0	0.	0.	0.	878.	4412.	0.	0.	5290.
25 - 30													
SUB-TOTAL					>6.0	0.	0.	0.	51.	51.	0.	0.	51.
HORIZON -TOTAL					>6.0	0.	0.	0.	51.	51.	0.	0.	51.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM % WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

BEAM XIV A-V / 24

FULL COAL

UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	
>6.0	0.	0.	878.	4463.	0.	0.	0.	0.	0.	5341.
SECTOR -TOTAL	0.	0.	878.	4463.	0.	0.	0.	0.	0.	5341.

II

VIRGIN

-200--300

22 - 23

>6.0	0.	0.	0.	679.	0.	0.	0.	0.	0.	679.
SUB-TOTAL	0.	0.	0.	679.	0.	0.	0.	0.	0.	679.

25 - 30

>6.0	0.	0.	1561.	3698.	0.	0.	0.	0.	0.	5289.
SUB-TOTAL	0.	0.	1561.	3698.	0.	0.	0.	0.	0.	5289.
>6.0	0.	0.	1561.	4377.	0.	0.	0.	0.	0.	5938.
HORIZON -TOTAL	0.	0.	1561.	4377.	0.	0.	0.	0.	0.	5938.

-300--400

25 - 30

>6.0	0.	0.	76.	276.	0.	0.	0.	0.	0.	352.
SUB-TOTAL	0.	0.	76.	276.	0.	0.	0.	0.	0.	352.
>6.0	0.	0.	76.	276.	0.	0.	0.	0.	0.	352.
HORIZON -TOTAL	0.	0.	76.	276.	0.	0.	0.	0.	0.	352.

BEAM-WISE BECTOR-WISE, VERT/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-GITU PAVED RESERVE

APLABAD BLOCKI JHARIA COAL FIELDI DIGI BOKARO STATEI BIHAR

SEAM : XIV A-V / 25

FULL CVNL UNDERGROUND (RESERVED IN 6000 TUNNES)

SECTOR VER/DEV HORIZON UVM % THICKNESS S-I S-II W-I W-II W-III W-IV UG TOTAL

22 - 25 >6.0 0. 0. 679. 0. 0. 0. 0. 0. 0. 0. 679.

SUB-TOTAL 0. 0. 679. 0. 0. 0. 679.

25 - 30 >6.0 0. 0. 1637. 3974. 0. 0. 0. 0. 0. 0. 5611.

SUB-TOTAL 0. 0. 1637. 3974. 0. 0. 0. 5611.

>6.0 0. 0. 1637. 4653. 0. 0. 0. 0. 6290.

VER/DEV -TOTAL 0. 0. 1637. 4653. 0. 0. 0. 6290.

22 - 25 >6.0 0. 0. 0. 679. 0. 0. 0. 0. 0. 679.

SUB-TOTAL 0. 0. 0. 679. 0. 0. 0. 679.

25 - 30 >6.0 0. 0. 1637. 3974. 0. 0. 0. 0. 0. 5611.

SUB-TOTAL 0. 0. 1637. 3974. 0. 0. 0. 5611.

>6.0 0. 0. 1637. 4653. 0. 0. 0. 0. 6290.

SECTOR -TOTAL 0. 0. 1637. 4653. 0. 0. 0. 6290.

22 - 25 >6.0 0. 0. 878. 5091. 0. 0. 0. 0. 5969.

SUB-TOTAL 0. 0. 878. 5091. 0. 0. 0. 5969.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XIV A-V / 26

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	UNDERGROUND (RESERVES IN '000 TONNES)						
						S-I	S-II	W-I	W-II	W-III	W-IV	UG TOTAL
25 - 30												
				>6.0	0.	0.	1637.	4025.	0.	0.	0.	5662.
				SUB-TOTAL	0.	0.	1637.	4025.	0.	0.	0.	5662.
				>6.0	0.	0.	2515.	9116.	0.	0.	0.	11631.
				BEAM -TOTAL	0.	0.	2515.	9116.	0.	0.	0.	11631.





SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISRET IN-SITU PROVED RESERVES

APL/AFAD BLOCK 1 JHARIA COAL FIELD, DIST, DOKARD STATE, BIHAR

SEAM XV (RESERVES IN '000 TONNES)

FULL COAL

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE				UG TOTAL
					S-I	S-II	W-I	W-II	

25 - 30

SUB-TOTAL					0.	4104.	0.	0.	0.	0.	4104.
SEAM					0.	4104.	0.	0.	0.	0.	4104.
-TOTAL					0.	4104.	0.	0.	0.	0.	4104.

SEAM-WISE BECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM % WISE, THICKNESS-WISE AND GRADE-WISNET IN-SITU PROVED RESERVES

AML/AVD BLOCK I CHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : XV-A A-V / 30

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE				UG TOTAL
					S-I	S-II	W-I	W-II	

VIRGIN 400-500 25 - 30

1.2-2.0	0.	0.	0.	0.	194.	23.	0.	217.
2.0-4.0	0.	0.	0.	0.	10.	0.	0.	10.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>204.</b>	<b>23.</b>	<b>0.</b>	<b>227.</b>
1.2-2.0	0.	0.	0.	0.	194.	23.	0.	217.
2.0-4.0	0.	0.	0.	0.	10.	0.	0.	10.
<b>HORIZON -TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>204.</b>	<b>23.</b>	<b>0.</b>	<b>227.</b>

300-200 25 - 30

0.5-0.9	0.	0.	0.	0.	1.	0.	0.	1.
1.2-2.0	0.	0.	0.	0.	68.	17.	0.	85.
2.0-4.0	0.	0.	0.	0.	64.	51.	0.	115.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>64.</b>	<b>120.</b>	<b>17.</b>	<b>201.</b>
0.5-0.9	0.	0.	0.	0.	0.	1.	0.	1.
1.2-2.0	0.	0.	0.	0.	68.	17.	0.	85.
2.0-4.0	0.	0.	0.	0.	64.	51.	0.	115.
<b>HORIZON -TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>64.</b>	<b>120.</b>	<b>17.</b>	<b>201.</b>

25 - 30

0.5-0.9	0.	0.	0.	0.	1.	0.	0.	1.
1.2-2.0	0.	0.	0.	0.	262.	40.	0.	302.
2.0-4.0	0.	0.	0.	0.	64.	61.	0.	125.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>64.</b>	<b>324.</b>	<b>40.</b>	<b>428.</b>



SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISEBET IN-SITU PROVED RESERVES

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: ROKARD STATE: BIHAR

SEAM : XV-A A-V / 32

FULL COAL

UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL	
					S-I	S-II	W-I	W-II	W-III		W-IV
0.5-0.9	0.	0.	0.	0.	0.	0.	0.	1.	0.	0.	1.
1.2-2.0	0.	0.	0.	0.	0.	0.	0.	557.	69.	0.	626.
2.0-4.0	0.	0.	0.	0.	0.	0.	64.	61.	0.	0.	125.
SECTOR -TOTAL	0.	0.	0.	0.	0.	0.	64.	619.	69.	0.	752.

II

VIRGIN

300-200

25 - 30

1.2-2.0	0.	0.	0.	100.	539.	321.	0.	0.	0.	0.	960.
2.0-4.0	0.	0.	0.	0.	203.	0.	0.	0.	0.	0.	203.
MINI-TOTAL	0.	0.	0.	100.	742.	321.	0.	0.	0.	0.	1171.
1.2-2.0	0.	0.	0.	108.	539.	321.	0.	0.	0.	0.	968.
2.0-4.0	0.	0.	0.	0.	203.	0.	0.	0.	0.	0.	203.
HORIZON -TOTAL	0.	0.	0.	108.	742.	321.	0.	0.	0.	0.	1171.
25 - 30											
1.2-2.0	0.	0.	0.	108.	539.	321.	0.	0.	0.	0.	968.
2.0-4.0	0.	0.	0.	0.	203.	0.	0.	0.	0.	0.	203.
SUB-TOTAL	0.	0.	0.	108.	742.	321.	0.	0.	0.	0.	1171.
1.2-2.0	0.	0.	0.	108.	539.	321.	0.	0.	0.	0.	968.
2.0-4.0	0.	0.	0.	0.	203.	0.	0.	0.	0.	0.	203.
VER/DEV -TOTAL	0.	0.	0.	108.	742.	321.	0.	0.	0.	0.	1171.



BEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XVI-BOT A-V / 34

FULL COAL

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	UNDERGROUND (RESERVES IN '000 TONNES)					
					S-I	S-II	W-I	W-II	W-III	W-IV

VIRGIN

> 30

0.5-0.9	0.	0.	0.	0.	0.	0.	0.	14.	0.	14.
0.9-1.2	0.	0.	0.	0.	0.	0.	0.	20.	0.	20.
1.2-2.0	0.	0.	0.	0.	0.	0.	0.	205.	109.	314.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>205.</b>	<b>143.</b>	<b>348.</b>

> 30

1.2-2.0	0.	0.	0.	272.	184.	0.	0.	0.	0.	456.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>272.</b>	<b>184.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>456.</b>

0.5-0.9	0.	0.	0.	0.	0.	0.	0.	14.	0.	14.
0.9-1.2	0.	0.	0.	0.	0.	0.	0.	20.	0.	20.
1.2-2.0	0.	0.	0.	272.	389.	109.	0.	770.	0.	770.
<b>HORIZON -TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>272.</b>	<b>389.</b>	<b>143.</b>	<b>0.</b>	<b>804.</b>	<b>0.</b>	<b>804.</b>

25 - 30

0.5-0.9	0.	0.	0.	0.	0.	0.	0.	14.	0.	14.
0.9-1.2	0.	0.	0.	0.	0.	0.	0.	20.	0.	20.
1.2-2.0	0.	0.	0.	0.	0.	0.	0.	205.	109.	314.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>249.</b>	<b>143.</b>	<b>392.</b>

> 30

1.2-2.0	0.	0.	0.	272.	184.	0.	0.	0.	0.	456.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>272.</b>	<b>184.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>456.</b>

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE



SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM % WISE THICKNESS-WISE AND GRADE-WISE NET IN-SITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XVI-BOT

A-VI / 36

FULL COAL

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	RESERVED IN (MM TONNES)						
					S-I	S-II	W-I	W-II	W-III	W-IV	UG TOTAL

25 - 30

0.5-0.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	24.	0.	24.
0.9-1.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	23.	0.	23.
1.2-2.0	0.	0.	0.	0.	0.	0.	0.	0.	205.	114.	0.	319.
2.0-4.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	99.	0.	99.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>205.</b>	<b>260.</b>	<b>0.</b>	<b>465.</b>	<b>0.</b>	<b>465.</b>

> 30

1.2-2.0	0.	0.	0.	0.	272.	184.	0.	0.	0.	456.	0.	456.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>272.</b>	<b>184.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>456.</b>	<b>0.</b>	<b>456.</b>

<b>SECTOR -TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>272.</b>	<b>389.</b>	<b>260.</b>	<b>0.</b>	<b>0.</b>	<b>921.</b>	<b>0.</b>	<b>921.</b>
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VIRGIN

0 - -100

25 - 30

0.5-0.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	29.	0.	29.
0.9-1.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	49.	0.	49.
1.2-2.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.	0.	97.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>175.</b>	<b>0.</b>	<b>175.</b>	<b>0.</b>	<b>175.</b>

0.5-0.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	29.	0.	29.
0.9-1.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	49.	0.	49.
1.2-2.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	97.	0.	97.
<b>HORIZON -TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>175.</b>	<b>0.</b>	<b>175.</b>	<b>0.</b>	<b>175.</b>



SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: ROKARO STATE: BIHAR

SEAM : XVI-BOT A-V / 38

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL		
					S-I	S-II	W-I	W-II	W-III		W-IV	
25 - 30												
	0.5-0.9		0.	0.	0.	0.	0.	0.	19.	59.	15.	93.
	0.9-1.2		0.	0.	0.	0.	0.	0.	7.	91.	26.	124.
	1.2-2.0		0.	0.	0.	0.	0.	0.	0.	301.	39.	340.
	2.0-4.0		0.	0.	0.	0.	0.	0.	0.	136.	0.	136.
VER/DEV -TOTAL			0.	0.	0.	0.	0.	0.	26.	587.	80.	693.
25 - 30												
	0.5-0.9		0.	0.	0.	0.	0.	0.	23.	517.	80.	640.
	0.9-1.2		0.	0.	0.	0.	0.	0.	2.	0.	0.	2.
	1.2-2.0		0.	0.	0.	0.	0.	0.	1.	0.	0.	1.
	2.0-4.0		0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
UVM TOTAL			0.	0.	0.	0.	0.	0.	26.	517.	80.	640.
> 30												
	0.5-0.9		0.	0.	0.	0.	0.	0.	2.	0.	0.	2.
	0.9-1.2		0.	0.	0.	0.	0.	0.	1.	0.	0.	1.
SUB-TOTAL			0.	0.	0.	0.	0.	0.	3.	0.	0.	3.
25 - 30												
	0.5-0.9		0.	0.	0.	0.	0.	0.	19.	59.	15.	93.
	0.9-1.2		0.	0.	0.	0.	0.	0.	7.	91.	26.	124.
	1.2-2.0		0.	0.	0.	0.	0.	0.	0.	301.	39.	340.
	2.0-4.0		0.	0.	0.	0.	0.	0.	0.	136.	0.	136.
SECTOR -TOTAL			0.	0.	0.	0.	0.	0.	26.	587.	80.	693.
25 - 30												
	0.5-0.9		0.	0.	0.	0.	0.	0.	17.	83.	15.	115.
	0.9-1.2		0.	0.	0.	0.	0.	0.	6.	114.	26.	146.
	1.2-2.0		0.	0.	0.	0.	0.	0.	0.	205.	39.	244.
	2.0-4.0		0.	0.	0.	0.	0.	0.	0.	235.	0.	235.
SUB-TOTAL			0.	0.	0.	0.	0.	0.	238.	647.	80.	1155.



SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AMLARAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XVI-MID (RESERVES IN '000 TONNES)  
 A-V-2 / 40

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	UNDERGROUND					UG TOTAL
						S-I	S-II	W-I	W-II	W-III	

I VIRGIN -100--200

25 - 30 SUB-TOTAL 2.0-4.0 0. 0. 0. 0. 70. 0. 0. 70.

30 SUB-TOTAL 2.0-4.0 0. 0. 140. 137. 0. 0. 0. 277.

2.0-4.0 0. 0. 140. 137. 0. 0. 0. 277.

2.0-4.0 0. 0. 140. 137. 70. 0. 0. 347.

HORIZON -TOTAL 0. 0. 140. 137. 70. 0. 0. 347.

25 - 30 SUB-TOTAL 2.0-4.0 0. 0. 0. 0. 70. 0. 0. 70.

30 SUB-TOTAL 2.0-4.0 0. 0. 140. 137. 0. 0. 0. 277.

2.0-4.0 0. 0. 140. 137. 0. 0. 0. 277.

2.0-4.0 0. 0. 140. 137. 70. 0. 0. 347.

VER/DEV -TOTAL 0. 0. 140. 137. 70. 0. 0. 347.

BEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM % WISE, THICKNESS-WISE AND GRADE-WISE IN-BITU PROVED RESERVE  
 AMLABAD BLOCK; CHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : XVI-MID

A-V / 41

FULL COAL

(RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE							UG TOTAL
					S-I	S-II	W-I	W-II	W-III	W-IV	UG	

DEVELOPED -100--200

25 - 30

1.2-2.0	0.	0.	0.	0.	0.	36.	80.	11.	127.
2.0-4.0	0.	0.	0.	26.	455.	0.	0.	481.	
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>26.</b>	<b>491.</b>	<b>80.</b>	<b>11.</b>	<b>648.</b>		

> 30

1.2-2.0	0.	0.	0.	0.	0.	61.	0.	0.	61.
2.0-4.0	0.	0.	0.	365.	0.	0.	0.	365.	
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>365.</b>	<b>61.</b>	<b>0.</b>	<b>426.</b>			

HORIZON -TOTAL

0.	0.	0.	391.	552.	80.	11.	1034.
----	----	----	------	------	-----	-----	-------

25 - 30

1.2-2.0	0.	0.	0.	0.	0.	36.	80.	11.	127.
2.0-4.0	0.	0.	0.	26.	455.	0.	0.	481.	
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>26.</b>	<b>491.</b>	<b>80.</b>	<b>11.</b>	<b>648.</b>		

> 30

1.2-2.0	0.	0.	0.	0.	0.	61.	0.	0.	61.
2.0-4.0	0.	0.	0.	365.	0.	0.	0.	365.	
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>365.</b>	<b>61.</b>	<b>0.</b>	<b>426.</b>			

1.2-2.0	0.	0.	0.	0.	0.	97.	80.	11.	188.
2.0-4.0	0.	0.	0.	391.	455.	0.	0.	846.	
<b>VER/DEV -TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>391.</b>	<b>552.</b>	<b>80.</b>	<b>11.</b>	<b>1034.</b>		

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE THICKNESS-WISE AND GRADE-WISE IN-SITU /PROVED RESERVES

AHLABAD BLOCK: JHARIA COAL FIELD: DIST: ROKARD STATE: BIHAR

SEAM : XVI-MID A-VI / 42

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	

25 - 30

1.2-2.0	0.	0.	0.	0.	36.	80.	11.	127.
2.0-4.0	0.	0.	0.	26.	525.	0.	0.	551.
SUB-TOTAL	0.	0.	0.	26.	561.	80.	11.	678.

> 30

1.2-2.0	0.	0.	0.	0.	61.	0.	0.	61.
2.0-4.0	0.	0.	140.	502.	0.	0.	0.	642.
SUB-TOTAL	0.	0.	140.	502.	61.	0.	0.	703.

1.2-2.0	0.	0.	0.	0.	97.	80.	11.	188.
2.0-4.0	0.	0.	140.	528.	525.	0.	0.	1193.
SECTOR -TOTAL	0.	0.	140.	528.	622.	80.	11.	1381.

11 VIRGIN 0-100 25-30

1.2-2.0	0.	0.	0.	0.	7.	0.	0.	37.
SUB-TOTAL	0.	0.	0.	0.	7.	0.	0.	37.

> 30

1.2-2.0	0.	0.	0.	0.	0.	85.	0.	85.
2.0-4.0	0.	0.	0.	0.	213.	122.	0.	335.
SUB-TOTAL	0.	0.	0.	0.	213.	207.	0.	420.

1.2-2.0	0.	0.	0.	0.	7.	85.	30.	122.
2.0-4.0	0.	0.	0.	0.	213.	122.	0.	335.
HORIZON -TOTAL	0.	0.	0.	0.	220.	207.	30.	457.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE NET IN-SITU PROVED RESERVES

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XVI-MID

A-VI- / 43

FULL COAL

(RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	

-100--200

> 30

2.0-4.0	0.	0.	0.	0.	29.	0.	0.	0.	0.	29.
<b>SUB-TOTAL</b>	0.	0.	0.	0.	29.	0.	0.	0.	0.	29.
1.2-2.0	0.	0.	0.	0.	4.	0.	0.	0.	0.	4.
2.0-4.0	0.	0.	0.	120.	195.	169.	0.	0.	0.	484.
<b>SUB-TOTAL</b>	0.	0.	0.	120.	199.	169.	0.	0.	0.	488.

25 - 30

1.2-2.0	0.	0.	0.	0.	7.	0.	0.	0.	0.	37.
2.0-4.0	0.	0.	0.	0.	29.	0.	0.	0.	0.	29.
<b>SUB-TOTAL</b>	0.	0.	0.	0.	36.	0.	0.	0.	0.	66.

> 30

1.2-2.0	0.	0.	0.	0.	4.	115.	0.	0.	0.	119.
2.0-4.0	0.	0.	0.	120.	400.	291.	0.	0.	0.	691.
<b>SUB-TOTAL</b>	0.	0.	0.	120.	412.	376.	0.	0.	0.	908.
1.2-2.0	0.	0.	0.	0.	11.	119.	30.	0.	0.	126.
2.0-4.0	0.	0.	0.	120.	477.	291.	0.	0.	0.	768.
<b>SUB-TOTAL</b>	0.	0.	0.	120.	488.	376.	30.	0.	0.	894.



BEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM % WISE, THICKNESS-WISE AND GRADE-WISNET IN-BITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARD STATE: BIHAR

SEAM XVI-MID (RESERVES IN '000 TONNES) A-VI / 45

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	

25 - 30

1.2-2.0	0.	0.	0.	0.	0.	72.	0.	64.	136.
2.0-4.0	0.	0.	0.	0.	0.	4.	0.	0.	4.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>76.</b>	<b>0.</b>	<b>64.</b>	<b>140.</b>

> 30

1.2-2.0	0.	0.	0.	0.	0.	69.	53.	0.	122.
2.0-4.0	0.	0.	0.	0.	0.	12.	41.	0.	53.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>12.</b>	<b>110.</b>	<b>53.</b>	<b>175.</b>

25 - 30

1.2-2.0	0.	0.	0.	0.	0.	79.	0.	74.	173.
2.0-4.0	0.	0.	0.	0.	0.	33.	0.	0.	33.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>112.</b>	<b>0.</b>	<b>74.</b>	<b>206.</b>

> 30

1.2-2.0	0.	0.	0.	0.	0.	73.	138.	0.	211.
2.0-4.0	0.	0.	0.	0.	0.	132.	449.	0.	872.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>522.</b>	<b>429.</b>	<b>0.</b>	<b>1083.</b>

1.2-2.0	0.	0.	0.	0.	0.	152.	138.	94.	384.
2.0-4.0	0.	0.	0.	0.	0.	132.	482.	0.	905.
<b>SECTOR -TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>132.</b>	<b>634.</b>	<b>94.</b>	<b>1209.</b>

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZN-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AML/Divd: HUCKI; JHARKIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : XVI-MID

A-V / 46

FULL COAL

UNDERGROUND

(RESERVES IN '000 TONNES)

SECTOR | VER/DEV | HORIZON | UVM % | THICKNESS | S-I | 9-II | W-I | W-II | W-III | W-IV | UG | TOTAL

25 - 30

1.2-2.0 0. 0. 0. 0. 0. 115. 80. 105. 300.  
 2.0-4.0 0. 0. 0. 26. 558. 0. 0. 584.

SUB-TOTAL 0. 0. 0. 26. 673. 80. 105. 884.

> 30

1.2-2.0 0. 0. 0. 0. 134. 138. 0. 272.  
 2.0-4.0 0. 0. 140. 634. 449. 291. 0. 1514.

SUB-TOTAL 0. 0. 140. 634. 583. 429. 0. 1786.

1.2-2.0 0. 0. 0. 0. 249. 210. 105. 572.  
 2.0-4.0 0. 0. 140. 660. 1007. 291. 0. 2070.

SEAM TOTAL 0. 0. 140. 660. 1256. 509. 105. 2670.



SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN SITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XVI-TOP A-V / 48

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	RESERVES IN '000 TONNES							
						GRADE							
						S-I	S-II	W-I	W-II	W-III	W-IV	UG	TOTAL

> 30													
2.0-4.0						0.	0.	0.	103.	338.	0.	0.	441.
SUB-TOTAL						0.	0.	0.	103.	338.	0.	0.	441.
2.0-4.0						0.	0.	0.	103.	377.	0.	0.	480.
VER/DEV - TOTAL						0.	0.	0.	103.	377.	0.	0.	480.

DEVELOPED 0- -100 23 - 30

> 30													
2.0-4.0						0.	0.	0.	0.	300.	0.	0.	300.
SUB-TOTAL						0.	0.	0.	0.	300.	0.	0.	300.
2.0-4.0						0.	0.	0.	0.	106.	0.	0.	106.
SUB-TOTAL						0.	0.	0.	0.	106.	0.	0.	106.
2.0-4.0						0.	0.	0.	0.	405.	0.	0.	405.
HORIZON - TOTAL						0.	0.	0.	0.	405.	0.	0.	405.

-100--200 25 - 30

1.0-2.0						0.	0.	0.	0.	110.	0.	0.	110.
2.0-4.0						0.	0.	0.	0.	280.	0.	0.	280.
SUB-TOTAL						0.	0.	0.	0.	390.	0.	0.	390.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE NET IN-BITU PROVED REBERVES  
 OHL AHEAD BLOCK # 314813 CHN FIELD DIRT IMPARTI GRADE # 111111

SEAM : XVI-TOP

A-V / 49

FULL COAL

UNDERGROUND

(RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL	
					S-I	S-II	W-I	W-II	W-III		W-IV
25 - 30											
	1.2-2.0		0.	0.	0.	0.	0.	110.	0.	0.	110.
	2.0-4.0		0.	0.	0.	0.	0.	580.	0.	0.	580.
SUB-TOTAL			0.	0.	0.	0.	0.	690.	0.	0.	690.
> 30											
	2.0-4.0		0.	0.	0.	0.	0.	106.	0.	0.	106.
SUB-TOTAL			0.	0.	0.	0.	0.	106.	0.	0.	106.
25 - 30											
	1.2-2.0		0.	0.	0.	0.	0.	110.	0.	0.	110.
	2.0-4.0		0.	0.	0.	0.	0.	619.	0.	0.	619.
SUB-TOTAL			0.	0.	0.	0.	0.	729.	0.	0.	729.
> 30											
	2.0-4.0		0.	0.	0.	0.	0.	103.	0.	0.	103.
SUB-TOTAL			0.	0.	0.	0.	0.	103.	0.	0.	103.
SUB-TOTAL			0.	0.	0.	0.	0.	444.	0.	0.	444.
SUB-TOTAL			0.	0.	0.	0.	0.	444.	0.	0.	444.
SUB-TOTAL			0.	0.	0.	0.	0.	547.	0.	0.	547.

MINER WISE SECTOR-WISE, VLR/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-QUANTITY PROVED RESERVE  
 AMLABAD BLOCK, JHARIA COAL FIELD, DIST, BOKARO STATE, BIHAR

SEAM : XVI-TOP

A-VI / 50

FULL COAL

UNDERGROUND

(RESERVES IN '000 TONNES)

SECTOR	VLR/DEV	HORIZON	UVM %	THICKNESS	GRADE						UG TOTAL	
					S-I	S-II	W-I	W-II	W-III	W-IV		
				1.2-2.0	0.	0.	0.	0.	110.	0.	0.	110.
				2.0-4.0	0.	0.	0.	103.	1063.	0.	0.	1166.
				<b>-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>103.</b>	<b>1173.</b>	<b>0.</b>	<b>0.</b>	<b>1276.</b>

TI

VIRGIN

0-10M  
25 - 30

				2.0-4.0	0.	0.	0.	0.	312.	0.	0.	312.
				<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>312.</b>	<b>0.</b>	<b>0.</b>	<b>312.</b>
			> 30	2.0-4.0	0.	0.	226.	169.	0.	0.	0.	395.
				<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>226.</b>	<b>169.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>395.</b>
				2.0-4.0	0.	0.	226.	169.	312.	0.	0.	707.
				<b>HORIZON -TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>226.</b>	<b>169.</b>	<b>312.</b>	<b>0.</b>	<b>0.</b>	<b>707.</b>

-100--200

			> 30	2.0-4.0	0.	0.	0.	249.	38.	0.	0.	287.
				<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>249.</b>	<b>38.</b>	<b>0.</b>	<b>0.</b>	<b>287.</b>
				2.0-4.0	0.	0.	0.	249.	38.	0.	0.	287.
				<b>HORIZON TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>249.</b>	<b>38.</b>	<b>0.</b>	<b>0.</b>	<b>287.</b>

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AHLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XVI-TOP (RESERVES IN '000 TONNES)  
 A-V / 51

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE												
						U-I	U-II	W-I	W-II	W-III	W-IV	UG TOTAL						
UNDERGROUND																		
(RESERVES IN '000 TONNES)																		
25 - 30																		
		2.0-4.0		0.	0.	226.	418.	38.	0.	0.	312.							
		SUB-TOTAL									0.	0.	226.	418.	38.	0.	0.	682.
25 - 30																		
		2.0-4.0		0.	0.	226.	418.	38.	0.	0.	312.							
		SUB-TOTAL									0.	0.	226.	418.	38.	0.	0.	682.
25 - 30																		
		2.0-4.0		0.	0.	226.	418.	38.	0.	0.	312.							
		SUB-TOTAL									0.	0.	226.	418.	38.	0.	0.	682.
25 - 30																		
		1.2-2.0		0.	0.	0.	0.	0.	110.	0.	0.	110.						
		2.0-4.0		0.	0.	0.	0.	0.	931.	0.	0.	931.						
		SUB-TOTAL									0.	0.	0.	1041.	0.	0.	1041.	



SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM % WISE, THICKNESS-WISE AND GRADE-WISE NET IN-SITU PROVED RESERVES  
 AMLAHAD BLOCK I CHARIA COAL FIELD I DIST I BOKARO STATE I BIHAR

SEAM : AM/L-3 (RESERVE IN '000 TONNES)  
 A-V / 53

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	

VIRGIN 100- 0 25 - 30

0.5-0.9	0.	0.	0.	68.	156.	235.	0.	459.
0.9-1.2	0.	0.	0.	7.	41.	0.	0.	48.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>75.</b>	<b>197.</b>	<b>235.</b>	<b>0.</b>	<b>507.</b>

0.5-0.9	0.	0.	0.	41.	34.	0.	75.	
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>41.</b>	<b>34.</b>	<b>0.</b>	<b>75.</b>	
0.5-0.9	0.	0.	0.	68.	197.	269.	0.	534.
0.9-1.2	0.	0.	0.	7.	41.	0.	0.	48.
<b>HORIZON - TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>75.</b>	<b>238.</b>	<b>269.</b>	<b>0.</b>	<b>582.</b>

0- -100 25 - 30

0.5-0.9	0.	0.	7.	31.	59.	128.	42.	267.
0.9-1.2	0.	0.	0.	43.	29.	0.	0.	72.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>7.</b>	<b>74.</b>	<b>88.</b>	<b>128.</b>	<b>42.</b>	<b>339.</b>

0.5-0.9	0.	0.	0.	0.	1.	20.	0.	21.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>1.</b>	<b>20.</b>	<b>0.</b>	<b>21.</b>
0.5-0.9	0.	0.	7.	31.	60.	148.	42.	288.
0.9-1.2	0.	0.	0.	43.	29.	0.	0.	72.
<b>HORIZON - TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>7.</b>	<b>74.</b>	<b>89.</b>	<b>148.</b>	<b>42.</b>	<b>360.</b>

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AHLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : AHL-3 (RESERVES IN '000 TONNES)  
 A-VI / 54

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	UNDERGROUND					UG TOTAL
						S-I	S-II	W-I	W-II	W-III	
25 - 30											
		0.5-0.9		0.	0.	7.	99.	215.	363.	42.	726.
		0.9-1.2		0.	0.	0.	50.	70.	0.	0.	120.
	SUB-TOTAL			0.	0.	7.	149.	285.	363.	42.	846.
	> 30	0.5-0.9		0.	0.	0.	0.	42.	54.	0.	96.
	SUB-TOTAL			0.	0.	0.	0.	42.	54.	0.	96.
	0.5-0.9			0.	0.	7.	99.	215.	363.	42.	726.
	0.9-1.2			0.	0.	0.	50.	70.	0.	0.	120.
	SUB-TOTAL			0.	0.	7.	149.	285.	363.	42.	846.
	> 30	0.5-0.9		0.	0.	0.	0.	42.	54.	0.	96.
	SUB-TOTAL			0.	0.	0.	0.	42.	54.	0.	96.
	0.5-0.9			0.	0.	7.	99.	257.	417.	42.	822.
	0.9-1.2			0.	0.	0.	50.	70.	0.	0.	120.
	SUB-TOTAL			0.	0.	7.	149.	327.	417.	42.	942.
	> 30	0.5-0.9		0.	0.	0.	0.	42.	54.	0.	96.
	SUB-TOTAL			0.	0.	0.	0.	42.	54.	0.	96.
	0.5-0.9			0.	0.	7.	99.	257.	417.	42.	822.
	0.9-1.2			0.	0.	0.	50.	70.	0.	0.	120.
	SUB-TOTAL			0.	0.	7.	149.	327.	417.	42.	942.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : AML-3

A-V / 55

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	

11

VIRGIN

100- 0 25 - 30

0.5-0.9 0. 0. 0. 125. 1. 0. 126.

SUB-TOTAL

0. 0. 0. 125. 1. 0. 126.

> 30

0.5-0.9 0. 0. 0. 49. 4. 0. 53.

SUB-TOTAL

0. 0. 0. 49. 4. 0. 53.

0.5-0.9 0. 0. 0. 174. 5. 0. 179.

HORIZON -TOTAL

0. 0. 0. 174. 5. 0. 179.

25 - 30

0.5-0.9 0. 0. 0. 125. 1. 0. 126.

UVM TOTAL

0. 0. 0. 125. 1. 0. 126.

> 30

0.5-0.9 0. 0. 0. 49. 4. 0. 53.

UVM-TOTAL

0. 0. 0. 49. 4. 0. 53.

0.5-0.9 0. 0. 0. 174. 5. 0. 179.

VER/DEV -TOTAL

0. 0. 0. 174. 5. 0. 179.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISEBET IN-SITU PROVED RESERVES  
 AMLABAD BLOCK; JHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : AML-L-3 A-V / 56

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	UNDERGROUND (RESERVES IN '000 TONNES)						
						S-I	S-II	W-I	W-II	W-III	W-IV	UG TOTAL
25 - 30												
	0.5-0.9			0.	0.	0.	0.	0.	125.	1.	0.	126.
	SUB-TOTAL											
				0.	0.	0.	0.	0.	125.	1.	0.	126.
	> 30											
	0.5-0.9			0.	0.	0.	0.	0.	49.	4.	0.	53.
	SUB-TOTAL											
				0.	0.	0.	0.	0.	49.	4.	0.	53.
	25 - 30											
	0.5-0.9			0.	0.	7.	99.	340.	364.	42.	0.	852.
	0.9-1.2			0.	0.	0.	50.	70.	0.	0.	0.	120.
	SUB-TOTAL											
				0.	0.	7.	149.	410.	364.	42.	0.	972.
	> 30											
	0.5-0.9			0.	0.	0.	0.	0.	91.	58.	0.	149.
	SUB-TOTAL											
				0.	0.	0.	0.	0.	91.	58.	0.	149.
	0.5-0.9			0.	0.	7.	99.	431.	422.	42.	0.	1001.
	0.9-1.2			0.	0.	0.	50.	70.	0.	0.	0.	120.
	SUB-TOTAL											
				0.	0.	7.	149.	501.	422.	42.	0.	1121.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISEBET IN-SITU PROVED RESERVES

APL(MIND) BLODKI JIARRIA COAL FIELD, DIST: ROKHARD STATE: BIHAR

SEAM : XVII A-V / 57

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE									
					R-I	R-II	W-I	W-II	W-III	W-IV	UP	DOWN		
I														
VIRGIN														
100- 0														
22 - 25														
					2.0-4.0	0.	7.	14.	0.	0.	0.	0.	0.	21.
SUB-TOTAL					0.	7.	14.	0.	0.	0.	0.	0.	21.	
25 - 30														
					2.0-4.0	0.	313.	61.	0.	0.	0.	0.	374.	
SUB-TOTAL					0.	313.	61.	0.	0.	0.	0.	0.	374.	
> 30														
					2.0-4.0	0.	0.	68.	0.	0.	0.	0.	68.	
SUB-TOTAL					0.	0.	68.	0.	0.	0.	0.	0.	68.	
					2.0-4.0	0.	320.	143.	0.	0.	0.	0.	463.	
HORIZON -TOTAL					0.	320.	143.	0.	0.	0.	0.	0.	463.	
0--100														
20 - 22														
					2.0-4.0	0.	0.	26.	0.	0.	0.	0.	26.	
SUB-TOTAL					0.	0.	26.	0.	0.	0.	0.	0.	26.	
22 - 25														
					2.0-4.0	0.	0.	110.	0.	0.	0.	0.	110.	
SUB-TOTAL					0.	0.	110.	0.	0.	0.	0.	0.	110.	

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AMLABAD BLOCK; CHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : XVII

A-VII / 58

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE						UG TOTAL	
					S-I	S-II	W-I	W-II	W-III	W-IV		
25 - 30												
				2.0-4.0	0.	0.	64.	0.	0.	0.	0.	64.
SUB-TOTAL					0.	0.	64.	0.	0.	0.	0.	64.
> 30												
				2.0-4.0	0.	39.	0.	0.	0.	0.	0.	39.
SUB-TOTAL					0.	39.	0.	0.	0.	0.	0.	39.
HORIZON -TOTAL					0.	39.	200.	0.	0.	0.	0.	239.
20 - 22												
				2.0-4.0	0.	0.	26.	0.	0.	0.	0.	26.
SUB-TOTAL					0.	0.	26.	0.	0.	0.	0.	26.
22 - 25												
				2.0-4.0	0.	7.	124.	0.	0.	0.	0.	131.
SUB-TOTAL					0.	7.	124.	0.	0.	0.	0.	131.
25 - 30												
				2.0-4.0	0.	313.	125.	0.	0.	0.	0.	438.
SUB-TOTAL					0.	313.	125.	0.	0.	0.	0.	438.
> 30												
				2.0-4.0	0.	39.	60.	0.	0.	0.	0.	107.
SUB-TOTAL					0.	39.	60.	0.	0.	0.	0.	107.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XVIII A-V / 59

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL	
					B-I	B-II	W-I	W-II	W-III		W-IV
2.0-4.0	0.	359.	343.	0.	0.	0.	0.	0.	0.	702.	
VER/DEV - TOTAL					0.	359.	343.	0.	0.	0.	702.

DEVELOPED 100- 0

20 - 22	2.0-4.0	0.	0.	242.	0.	0.	0.	0.	0.	242.
SUB-TOTAL		0.	0.	242.	0.	0.	0.	0.	0.	242.

22 - 25	2.0-4.0	0.	69.	149.	0.	0.	0.	0.	0.	218.
SUB-TOTAL		0.	69.	149.	0.	0.	0.	0.	0.	218.

25 - 30	2.0-4.0	0.	0.	224.	0.	0.	0.	0.	0.	224.
SUB-TOTAL		0.	0.	224.	0.	0.	0.	0.	0.	224.

> 30	2.0-4.0	0.	170.	0.	0.	0.	0.	0.	0.	170.
SUB-TOTAL		0.	170.	0.	0.	0.	0.	0.	0.	170.

2.0-4.0	0.	239.	615.	0.	0.	0.	0.	0.	0.	854.
HORIZON - TOTAL		0.	239.	615.	0.	0.	0.	0.	0.	854.

0- -1000

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISEBET IN-SITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR  
 A-VI / 60

BEAM : XVII

UNDERGROUND (RESERVES IN '000 TONNES)

FULL COAL SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					SUB-TOTAL	
					B-I	S-II	W-I	W-II	W-III		W-IV
20 - 22											
				2.0-4.0	0.	0.	39.	0.	0.	0.	39.
SUB-TOTAL					0.	0.	39.	0.	0.	0.	39.
22 - 25											
				2.0-4.0	0.	0.	15.	0.	0.	0.	15.
SUB-TOTAL					0.	0.	15.	0.	0.	0.	15.
> 30											
				2.0-4.0	0.	171.	0.	0.	0.	0.	171.
SUB-TOTAL					0.	171.	0.	0.	0.	0.	171.
				2.0-4.0	0.	171.	54.	0.	0.	0.	225.
HORIZON - TOTAL					0.	171.	54.	0.	0.	0.	225.
20 - 22											
				2.0-4.0	0.	0.	281.	0.	0.	0.	281.
SUB-TOTAL					0.	0.	281.	0.	0.	0.	281.
22 - 25											
				2.0-4.0	0.	69.	164.	0.	0.	0.	233.
SUB-TOTAL					0.	69.	164.	0.	0.	0.	233.
25 - 30											
				2.0-4.0	0.	0.	224.	0.	0.	0.	224.
SUB-TOTAL					0.	0.	224.	0.	0.	0.	224.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISRET IN-SITU PROVED RESERVES  
 AMI ATAND BLOCK 1 JHARRA (COAL FIELD) DIST. HOKKARO DIVISION BIIAR

SEAM : XVII

A-V / 61

FULL COAL

UNDERGROUND

(RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UB TOTAL	
					S-I	B-II	W-I	W-II	W-III		W-IV
> 30											
	2.0-4.0		0.	341.	0.	0.	0.	0.	0.	0.	341.
SUB-TOTAL			0.	341.	0.	0.	0.	0.	0.	0.	341.
	2.0-4.0		0.	410.	669.	0.	0.	0.	0.	0.	1079.
VER/DEV -TOTAL			0.	410.	669.	0.	0.	0.	0.	0.	1079.
20 - 22											
	2.0-4.0		0.	0.	307.	0.	0.	0.	0.	0.	307.
SUB-TOTAL			0.	0.	307.	0.	0.	0.	0.	0.	307.
22 - 25											
	2.0-4.0		0.	76.	288.	0.	0.	0.	0.	0.	364.
SUB-TOTAL			0.	76.	288.	0.	0.	0.	0.	0.	364.
25 - 30											
	2.0-4.0		0.	313.	349.	0.	0.	0.	0.	0.	662.
SUB-TOTAL			0.	313.	349.	0.	0.	0.	0.	0.	662.
> 30											
	2.0-4.0		0.	380.	68.	0.	0.	0.	0.	0.	448.
SUB-TOTAL			0.	380.	68.	0.	0.	0.	0.	0.	448.
	2.0-4.0		0.	769.	1012.	0.	0.	0.	0.	0.	1781.
SECTOR -TOTAL			0.	769.	1012.	0.	0.	0.	0.	0.	1781.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM % WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

BEAM : XVII A-VI / 62

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	UNDERGROUND (RESERVES IN '0000 TONNES)					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	

11

VIRGIN

0-1000										
25 - 30										
100-0										
22 - 25										
2.0-4.0	0.	5.	0.	7.	0.	0.	0.	0.	0.	12.
SUB-TOTAL										
2.0-4.0	0.	5.	0.	7.	0.	0.	0.	0.	0.	12.
25 - 30										
2.0-4.0	0.	55.	52.	0.	77.	0.	0.	0.	0.	184.
SUB-TOTAL										
2.0-4.0	0.	55.	52.	0.	77.	0.	0.	0.	0.	184.
> 30										
2.0-4.0	0.	23.	60.	0.	30.	0.	0.	0.	0.	121.
SUB-TOTAL										
2.0-4.0	0.	23.	68.	0.	30.	0.	0.	0.	0.	121.
2.0-4.0										
2.0-4.0	0.	83.	120.	7.	107.	0.	0.	0.	0.	317.
HORIZON -TOTAL										
2.0-4.0	0.	83.	120.	7.	107.	0.	0.	0.	0.	317.
0-1000										
25 - 30										
2.0-4.0	0.	0.	0.	0.	35.	0.	0.	0.	0.	35.
SUB-TOTAL										
2.0-4.0	0.	0.	0.	0.	35.	0.	0.	0.	0.	35.
2.0-4.0										
2.0-4.0	0.	0.	0.	0.	35.	0.	0.	0.	0.	35.
HORIZON -TOTAL										
2.0-4.0	0.	0.	0.	0.	35.	0.	0.	0.	0.	35.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES

AMLABAD BLOCK: JHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : XVIII A-V / 63

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE				UG TOTAL			
					S-I	S-II	W-I	W-II		W-III	W-IV	
22 - 25												
				2.0-4.0	0.	5.	0.	7.	0.	0.	0.	12.
SUB-TOTAL					0.	5.	0.	7.	0.	0.	0.	12.
25 - 30												
				2.0-4.0	0.	55.	52.	0.	112.	0.	0.	219.
SUB-TOTAL					0.	55.	52.	0.	112.	0.	0.	219.
> 30												
				2.0-4.0	0.	23.	68.	0.	30.	0.	0.	121.
SUB-TOTAL					0.	23.	68.	0.	30.	0.	0.	121.
				2.0-4.0	0.	83.	120.	7.	142.	0.	0.	352.
VER/DEV - TOTAL					0.	83.	120.	7.	142.	0.	0.	352.
DEVELOPED 100- 0												
22 - 25												
				2.0-4.0	0.	109.	0.	87.	0.	0.	0.	196.
SUB-TOTAL					0.	109.	0.	87.	0.	0.	0.	196.
25 - 30												
				2.0-4.0	0.	39.	25.	0.	95.	0.	0.	159.
SUB-TOTAL					0.	39.	25.	0.	95.	0.	0.	159.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM % WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AMLABAD BLOCK; JHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

BENCH XVII

A-V / 64

FULL COAL

UNDERGROUND

(RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	
	2.0-4.0		0.	148.	25.	87.	95.	0.	0.	355.
HORIZON -TOTAL			0.	148.	25.	87.	95.	0.	0.	355.

0-100  
25-30

	2.0-4.0	0.	0.	0.	0.	48.	0.	0.	0.	48.
SUB-TOTAL		0.	0.	0.	0.	48.	0.	0.	0.	48.
	2.0-4.0	0.	0.	0.	0.	48.	0.	0.	0.	48.
HORIZON -TOTAL		0.	0.	0.	0.	48.	0.	0.	0.	48.

22-25

	2.0-4.0	0.	109.	0.	87.	0.	0.	0.	0.	196.
SUB-TOTAL		0.	109.	0.	87.	0.	0.	0.	0.	196.

25-30

	2.0-4.0	0.	39.	25.	0.	143.	0.	0.	0.	207.
SUB-TOTAL		0.	39.	25.	0.	143.	0.	0.	0.	207.
	2.0-4.0	0.	148.	25.	87.	143.	0.	0.	0.	403.
VER/DEV -TOTAL		0.	148.	25.	87.	143.	0.	0.	0.	403.

22-25

	2.0-4.0	0.	114.	0.	94.	0.	0.	0.	0.	208.
SUB-TOTAL		0.	114.	0.	94.	0.	0.	0.	0.	208.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES

AHLABAD BLOCK, JHARIA COAL FIELD, DIST: BOKARO STATE: BIHAR

SEAM : XVII A-V / 65

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	UNDERGROUND (RESERVED IN 0MM TUNNERS)					UG TOTAL		
						S-I	S-II	W-I	W-II	W-III		W-IV	
25 - 30													
					2.0-4.0	0.	94.	77.	0.	255.	0.	0.	426.
					SUB-TOTAL	0.	94.	77.	0.	255.	0.	0.	426.
					> 30	2.0-4.0	0.	23.	68.	0.	30.	0.	121.
					SUB-TOTAL	0.	23.	68.	0.	30.	0.	0.	121.
					2.0-4.0	0.	231.	145.	94.	285.	0.	0.	755.
					SECTOR -TOTAL	0.	231.	145.	94.	285.	0.	0.	755.
20 - 22													
					2.0-4.0	0.	0.	307.	0.	0.	0.	0.	307.
					SUB-TOTAL	0.	0.	307.	0.	0.	0.	0.	307.
22 - 25													
					2.0-4.0	0.	190.	288.	94.	0.	0.	0.	572.
					SUB-TOTAL	0.	190.	288.	94.	0.	0.	0.	572.
25 - 30													
					2.0-4.0	0.	407.	426.	0.	255.	0.	0.	1088.
					SUB-TOTAL	0.	407.	426.	0.	255.	0.	0.	1088.
					> 30	2.0-4.0	0.	403.	136.	0.	30.	0.	569.
					SUB-TOTAL	0.	403.	136.	0.	30.	0.	0.	569.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISNET IN-SITU PROVED RESERVES  
 AHLABAD BLOCK: JHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : XVII

A-VI / 66

FULL COAL

UNDERGROUND

(RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL	
					S-I	S-II	W-I	W-II	W-III		W-IV
				2.0-4.0	0.	1000.	1157.	94.	200.	0.	2536.
				TOTAL	0.	1000.	1157.	94.	200.	0.	2536.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UCM %-WISE, THICKNESS-WISE AND GRADE-WISEBET IN-SITU PROVED RESERVES  
 AHLARAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : AM/L-4 (RESERVES IN '000 TONNES) A-V / 67

FULL COAL	SECTOR	VER/DEV	HORIZON	UCM %	THICKNESS	GRADE					UG TOTAL
						S-I	S-II	W-I	W-II	W-III	

1  
 WITHIN 100- 0 25 - 30  
 0.5-0.9 0. 0. 32. 58. 21. 9. 0. 120.

SUB-TOTAL 0. 0. 32. 58. 21. 9. 0. 120.  
 > 30  
 0.5-0.9 0. 0. 0. 0. 0. 0. 22. 0. 22.  
 0.9-1.2 0. 0. 0. 0. 0. 0. 14. 0. 14.

SUB-TOTAL 0. 0. 0. 0. 0. 0. 36. 0. 36.  
 0.5-0.9 0. 0. 32. 58. 21. 31. 0. 142.  
 0.9-1.2 0. 0. 0. 0. 0. 14. 0. 14.  
 HORIZON -TOTAL 0. 0. 32. 58. 21. 45. 0. 156.

0-100  
 25 - 30  
 0.5-0.9 0. 0. 4. 31. 25. 145. 95. 300.  
 FULL TOTAL 0. 0. 4. 31. 25. 145. 95. 300.

W 0.5 W-V 0. 0. 0. 0. 0. 0. 41. 0. 41.  
 FULL-TOTAL 0. 0. 0. 0. 0. 0. 41. 0. 41.  
 0.5-0.9 0. 0. 4. 31. 25. 186. 95. 341.  
 HORIZON -TOTAL 0. 0. 4. 31. 25. 186. 95. 341.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISEBET IN-SITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : AML-4

A-VI / 68

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	UNDERGROUND (RESERVES IN '000 TONNES)					
						U-I	U-II	U-III	U-IV	U-V	U-VI
25 - 30											
	0.5-0.9	0.	0.	36.	89.	46.	154.	95.	420.		
SUB-TOTAL		0.	0.	36.	89.	46.	154.	95.	420.		
> 30											
	0.5-0.9	0.	0.	0.	0.	0.	65.	0.	65.		
	0.9-1.2	0.	0.	0.	0.	0.	14.	0.	14.		
SUB-TOTAL		0.	0.	0.	0.	0.	77.	0.	77.		
	0.5-0.9	0.	0.	36.	89.	46.	217.	95.	483.		
	0.9-1.2	0.	0.	0.	0.	0.	14.	0.	14.		
VER/DEV -TOTAL		0.	0.	36.	89.	46.	231.	95.	497.		
25 - 30											
	0.5-0.9	0.	0.	36.	89.	46.	154.	95.	420.		
SUB-TOTAL		0.	0.	36.	89.	46.	154.	95.	420.		
> 30											
	0.5-0.9	0.	0.	0.	0.	0.	65.	0.	65.		
	0.9-1.2	0.	0.	0.	0.	0.	14.	0.	14.		
SUB-TOTAL		0.	0.	0.	0.	0.	77.	0.	77.		
	0.5-0.9	0.	0.	36.	89.	46.	217.	95.	483.		
	0.9-1.2	0.	0.	0.	0.	0.	14.	0.	14.		
SECTOR -TOTAL		0.	0.	36.	89.	46.	231.	95.	497.		

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE RESERVE IN-SITU PROVED RESERVES  
 ANLARBAD BLOCK: JHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : AM/L-4

A-VI / 69

UNDERTAKING (RESERVES IN '000 TUNNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE						UG TOTAL
					S-I	S-II	W-I	W-II	W-III	W-IV	

11

VIRGIN

0- -100  
25 - 30

0.5-0.9 0. 0. 0. 23. 47. 0. 0. 70.  
 0.9-1.2 0. 0. 0. 0. 0. 32. 0. 32.

SUB-TOTAL 0. 0. 23. 47. 32. 0. 102.

> 30

0.5-0.9 0. 0. 0. 72. 85. 0. 157.  
 0.9-1.2 0. 0. 0. 0. 40. 0. 40.

SUB-TOTAL 0. 0. 0. 72. 125. 0. 197.

HORIZON -TOTAL 0. 0. 23. 119. 157. 0. 299.

25 - 30

0.5-0.9 0. 0. 0. 23. 47. 0. 70.  
 0.9-1.2 0. 0. 0. 0. 32. 0. 32.

SUB-TOTAL 0. 0. 23. 47. 32. 0. 102.

> 30

0.5-0.9 0. 0. 0. 72. 85. 0. 157.  
 0.9-1.2 0. 0. 0. 0. 40. 0. 40.

SUB-TOTAL 0. 0. 0. 72. 125. 0. 197.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM % WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES

AMLARAD BLOCK: CHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : AHL-4 A-VI. / 70

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	UNDERGROUND (RESERVES IN '000 TONNES)					UG TOTAL	
						S-I	S-II	W-I	W-II	W-III		W-IV
GRADE												
25 - 30												
		0.5-0.9		0.	0.	0.	0.	23.	47.	0.	0.	70.
		0.9-1.2		0.	0.	0.	0.	0.	0.	32.	0.	32.
		VER/DEV -TOTAL		0.	0.	0.	0.	23.	119.	157.	0.	299.
		SUB-TOTAL		0.	0.	0.	0.	23.	47.	32.	0.	102.
		> 30										
		0.5-0.9		0.	0.	0.	0.	0.	72.	85.	0.	157.
		0.9-1.2		0.	0.	0.	0.	0.	0.	40.	0.	40.
		SUB-TOTAL		0.	0.	0.	0.	0.	72.	125.	0.	197.
		SECTOR -TOTAL		0.	0.	0.	0.	23.	119.	157.	0.	299.
25 - 30												
		0.5-0.9		0.	0.	0.	36.	112.	93.	154.	95.	490.
		0.9-1.2		0.	0.	0.	0.	0.	0.	32.	0.	32.
		SUB-TOTAL		0.	0.	0.	36.	112.	93.	186.	95.	522.
		> 30										
		0.5-0.9		0.	0.	0.	0.	0.	72.	140.	0.	220.
		0.9-1.2		0.	0.	0.	0.	0.	0.	54.	0.	54.
		SUB-TOTAL		0.	0.	0.	0.	0.	72.	202.	0.	274.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISBET IN-SITU PROVED RESERVES

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : AM/L-4 A-V1 / 71

FULL COAL

UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE						TOTAL
					S-I	S-II	W-I	W-II	W-III	W-IV	
			0.5-0.9	0.	0.	36.	112.	165.	302.	95.	710.
			0.9-1.2	0.	0.	0.	0.	0.	86.	0.	86.
BEAM											
-TOTAL			0.	0.	36.	112.	165.	388.	95.	796.	

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 ANLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XVIII-BOT

A-VI / 72

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	G-1	G-II	W-I	W-II	W-III	W-IV	UG TOTAL
1 VIRGIN 100- 0 25 - 30											
	4.0-6.0		0.	638.	0.	0.	0.	0.	0.	0.	638.
SUB-TOTAL											
	0.	0.	638.	0.	0.	0.	0.	0.	0.	0.	638.
> 30											
	1.2-2.0		0.	0.	0.	0.	52.	0.	0.	0.	52.
SUB-TOTAL											
	0.	0.	0.	0.	0.	52.	0.	0.	0.	0.	52.
	1.2-2.0		0.	0.	0.	0.	52.	0.	0.	0.	52.
	4.0-6.0		0.	638.	0.	0.	0.	0.	0.	0.	638.
HORIZON -TOTAL											
	0.	0.	638.	0.	52.	0.	0.	0.	0.	0.	690.
25 30											
	4.0-6.0		0.	638.	0.	0.	0.	0.	0.	0.	638.
SUB-TOTAL											
	0.	0.	638.	0.	0.	0.	0.	0.	0.	0.	638.
> 30											
	1.2-2.0		0.	0.	0.	0.	52.	0.	0.	0.	52.
SUB-TOTAL											
	0.	0.	0.	0.	0.	52.	0.	0.	0.	0.	52.
	1.2-2.0		0.	0.	0.	0.	52.	0.	0.	0.	52.
	4.0-6.0		0.	638.	0.	0.	0.	0.	0.	0.	638.
VER/DEV -TOTAL											
	0.	0.	638.	0.	52.	0.	0.	0.	0.	0.	690.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XVIII-BOT

A-V / 73

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	UNDERGROUND (RESERVES IN '000 TONNES)					UG TOTAL
						S-I	S-II	W-I	W-II	W-III	
25 - 30											
	4.0-6.0	0.	0.	638.	0.	0.	0.	0.	0.	0.	638.
	SUB-TOTAL	0.	0.	638.	0.	0.	0.	0.	0.	0.	638.
> 30											
	1.2-2.0	0.	0.	0.	52.	0.	0.	0.	0.	0.	52.
	SUB-TOTAL	0.	0.	0.	52.	0.	0.	0.	0.	0.	52.
	1.2-2.0	0.	0.	0.	52.	0.	52.	0.	0.	0.	52.
	4.0-6.0	0.	0.	638.	0.	0.	0.	0.	0.	0.	638.
	SUB-TOTAL	0.	0.	638.	0.	52.	0.	0.	0.	0.	638.
	SEAM -TOTAL	0.	0.	638.	0.	52.	0.	0.	0.	0.	690.
25 - 30											
	4.0-6.0	0.	0.	638.	0.	0.	0.	0.	0.	0.	638.
	SUB-TOTAL	0.	0.	638.	0.	0.	0.	0.	0.	0.	638.
> 30											
	1.2-2.0	0.	0.	0.	52.	0.	0.	0.	0.	0.	52.
	SUB-TOTAL	0.	0.	0.	52.	0.	0.	0.	0.	0.	52.
	1.2-2.0	0.	0.	0.	52.	0.	52.	0.	0.	0.	52.
	4.0-6.0	0.	0.	638.	0.	0.	0.	0.	0.	0.	638.
	SUB-TOTAL	0.	0.	638.	0.	52.	0.	0.	0.	0.	638.
	SEAM -TOTAL	0.	0.	638.	0.	52.	0.	0.	0.	0.	690.



SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-GITTU PROVED RESERVES

ANLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XVIII-TOP/LW A-VI / 75

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL		
					S-I	S-II	W-I	W-II	W-III		W-IV	
> 30												
SUB-TOTAL					0.	0.	0.	0.	0.	0.	626.	626.
0.5-0.9					0.	0.	0.	0.	0.	0.	626.	626.
SECTOR -TOTAL					0.	0.	0.	0.	0.	0.	626.	626.

11 VIRGIN

100-0

> 30												
SUB-TOTAL	0.5-0.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	16.	16.
HORIZON -TOTAL												
SUB-TOTAL												
0.5-0.9												
VER/DEV -TOTAL												

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISEBET IN-SITU PROVED RESERVES  
 AHLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

BEAM XVIII-TOP(LW) UNDERGROUND (RESERVES IN '000 TONNES)  
 A-VI / 76

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL	
						S-I	S-II	W-I	W-II	W-III		W-IV
> 30												
	0.5-0.9			0.	0.	0.	0.	0.	0.	0.	16.	16.
	BLIND-TOTAL			0.	0.	0.	0.	0.	0.	0.	16.	16.
	0.5-0.9			0.	0.	0.	0.	0.	0.	0.	16.	16.
	SECTOR -TOTAL			0.	0.	0.	0.	0.	0.	0.	16.	16.
> 30												
	0.5-0.9			0.	0.	0.	0.	0.	0.	0.	642.	642.
	SUB-TOTAL			0.	0.	0.	0.	0.	0.	0.	642.	642.
	0.5-0.9			0.	0.	0.	0.	0.	0.	0.	642.	642.
	SEAM -TOTAL			0.	0.	0.	0.	0.	0.	0.	642.	642.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM % WISE THICKNESS-BASED AND GRADE-WISE NET IN-BITU PROVED RESERVE  
 AMLABAD BLOCK; JHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

FULL COAL SEAM : XVIII-TOP (UP) (RESERVES IN '000 TONNES)  
 A-VI / 77

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	

VIRGIN 200-100

100-0

> 30											
	0.5-0.9	0.	0.	67.	0.	0.	0.	0.	0.	0.	67.
	0.9-1.2	0.	0.	0.	23.	66.	38.	0.	0.	0.	127.
	1.2-2.0	0.	0.	0.	0.	13.	0.	0.	0.	0.	13.
	SUB-TOTAL	0.	0.	67.	23.	79.	38.	0.	0.	0.	207.
> 30											
	0.5-0.9	0.	0.	67.	0.	0.	0.	0.	0.	0.	67.
	0.9-1.2	0.	0.	0.	23.	66.	38.	0.	0.	0.	127.
	1.2-2.0	0.	0.	0.	0.	13.	0.	0.	0.	0.	13.
	SUB-TOTAL	0.	0.	67.	23.	79.	38.	0.	0.	0.	207.
> 30											
	0.5-0.9	0.	0.	156.	0.	38.	0.	0.	0.	0.	194.
	0.9-1.2	0.	0.	0.	4.	22.	21.	0.	0.	0.	47.
	1.2-2.0	0.	0.	0.	0.	52.	0.	0.	0.	0.	52.
	SUB-TOTAL	0.	0.	156.	4.	112.	21.	0.	0.	0.	293.
> 30											
	0.5-0.9	0.	0.	156.	0.	38.	0.	0.	0.	0.	194.
	0.9-1.2	0.	0.	0.	4.	22.	21.	0.	0.	0.	47.
	1.2-2.0	0.	0.	0.	0.	52.	0.	0.	0.	0.	52.
	SUB-TOTAL	0.	0.	156.	4.	112.	21.	0.	0.	0.	293.
> 30											
	0.5-0.9	0.	0.	223.	0.	38.	0.	0.	0.	0.	261.
	0.9-1.2	0.	0.	0.	27.	88.	59.	0.	0.	0.	174.
	1.2-2.0	0.	0.	0.	0.	65.	0.	0.	0.	0.	65.
	SUB-TOTAL	0.	0.	223.	27.	191.	59.	0.	0.	0.	500.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES  
 AMLABAD BLOCK; JHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : XVIII-TOP(CUP) UNDERGROUND (RESERVES IN '000 TONNES) A-VI / 78

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					TOTAL
					G-I	B-II	W-I	W-II	W-III	
0.5-0.9	0.	0.	0.	225.	0.	38.	0.	0.	0.	261.
0.9-1.2	0.	0.	0.	27.	88.	59.	0.	0.	0.	174.
1.2-2.0	0.	0.	0.	0.	65.	0.	0.	0.	0.	65.
VER/DEV - TOTAL	0.	0.	0.	225.	27.	191.	59.	0.	0.	500.
> 30										
0.5-0.9	0.	0.	0.	225.	0.	38.	0.	0.	0.	261.
0.9-1.2	0.	0.	0.	27.	88.	59.	0.	0.	0.	174.
1.2-2.0	0.	0.	0.	0.	65.	0.	0.	0.	0.	65.
SUB-TOTAL	0.	0.	0.	225.	27.	191.	59.	0.	0.	500.
> 30										
0.5-0.9	0.	0.	0.	225.	0.	38.	0.	0.	0.	261.
0.9-1.2	0.	0.	0.	27.	88.	59.	0.	0.	0.	174.
1.2-2.0	0.	0.	0.	0.	65.	0.	0.	0.	0.	65.
SECTOR -TOTAL	0.	0.	0.	225.	27.	191.	59.	0.	0.	500.

VIRGIN 100- 0 > 30

HORIZON	GRADE					TOTAL				
	G-I	B-II	W-I	W-II	W-III		W-IV	UG		
0.5-0.9	0.	0.	0.	0.	0.	9.	9.	0.	0.	18.
0.9-1.2	0.	0.	0.	0.	0.	0.	4.	0.	0.	4.
1.2-2.0	0.	0.	0.	0.	0.	11.	0.	0.	0.	11.
VER/DEV -TOTAL	0.	0.	0.	0.	0.	20.	13.	0.	0.	33.
> 30										
0.5-0.9	0.	0.	0.	0.	0.	9.	9.	0.	0.	18.
0.9-1.2	0.	0.	0.	0.	0.	0.	4.	0.	0.	4.
1.2-2.0	0.	0.	0.	0.	0.	11.	0.	0.	0.	11.
HORIZON -TOTAL	0.	0.	0.	0.	0.	20.	13.	0.	0.	33.



SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE THICKNESS-WISE AND GRADE-WISE IN-SITU PROVED RESERVES

AMLADAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XVIII-TOP (UP) (RESERVE IN '000 TUNNES) A-V / 00

FULL UVM	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE				UG TOTAL		
						S-I	S-II	W-I	W-II		W-III	W-IV
0.5-0.9					0.	0.	223.	0.	47.	9.	0.	279.
0.9-1.2					0.	0.	0.	27.	88.	63.	0.	178.
1.2-2.0					0.	0.	0.	0.	76.	0.	0.	76.
-TOTAL					0.	0.	223.	27.	211.	72.	0.	533.

(UNDERGROUND) (RESERVE IN '000 TUNNES)

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE THICKNESS-WISE AND GRADE-WISE NET IN-SITU PROVED RESERVES  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XVIII-TOP

A-V / 91

FULL COAL

UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	

VIRGIN 100- 0

> 30

0.5-0.9	0.	0.	0.	0.	0.	0.	0.	0.	28.	0.	28.
0.9-1.2	0.	0.	0.	0.	0.	0.	60.	0.	0.	0.	60.
1.2-2.0	0.	0.	0.	0.	0.	0.	159.	0.	0.	0.	159.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>219.</b>	<b>28.</b>	<b>0.</b>	<b>0.</b>	<b>247.</b>

> 30

0.5-0.9	0.	0.	0.	0.	0.	0.	0.	0.	28.	0.	28.
0.9-1.2	0.	0.	0.	0.	0.	0.	60.	0.	0.	0.	60.
1.2-2.0	0.	0.	0.	0.	0.	0.	159.	0.	0.	0.	159.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>219.</b>	<b>28.</b>	<b>0.</b>	<b>0.</b>	<b>247.</b>

> 30

0.5-0.9	0.	0.	0.	0.	0.	0.	0.	0.	28.	0.	28.
0.9-1.2	0.	0.	0.	0.	0.	0.	60.	0.	0.	0.	60.
1.2-2.0	0.	0.	0.	0.	0.	0.	159.	0.	0.	0.	159.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>219.</b>	<b>28.</b>	<b>0.</b>	<b>0.</b>	<b>247.</b>

> 30

0.5-0.9	0.	0.	0.	0.	0.	0.	0.	0.	28.	0.	28.
0.9-1.2	0.	0.	0.	0.	0.	0.	60.	0.	0.	0.	60.
1.2-2.0	0.	0.	0.	0.	0.	0.	159.	0.	0.	0.	159.
<b>VER/DEV - TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>219.</b>	<b>28.</b>	<b>0.</b>	<b>0.</b>	<b>247.</b>

> 30

0.5-0.9	0.	0.	0.	0.	0.	0.	0.	0.	28.	0.	28.
0.9-1.2	0.	0.	0.	0.	0.	0.	60.	0.	0.	0.	60.
1.2-2.0	0.	0.	0.	0.	0.	0.	159.	0.	0.	0.	159.
<b>SUB-TOTAL</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>0.</b>	<b>219.</b>	<b>28.</b>	<b>0.</b>	<b>0.</b>	<b>247.</b>

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISEBET IN-SITU PROVED RESERVES  
 AHLABAD BLOCK; JHARIA COAL FIELD; DIST: BOKARO STATE: BIHAR

SEAM : XVIII-TOP

A-V: / 82

FULL CLAM

UNDERGROUND

(RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL		
					B-I	B-II	W-I	W-II	W-III		W-IV	
0.5-0.9					0.	0.	0.	0.	0.	28.	0.	28.
0.9-1.2					0.	0.	0.	0.	60.	0.	0.	60.
1.2-2.0					0.	0.	0.	0.	159.	0.	0.	159.
SECTOR -TOTAL					0.	0.	0.	0.	219.	28.	0.	247.

II

VIRGIN

100- 0

> 30

0.5-0.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	6.	0.	6.
0.9-1.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	45.	0.	45.
1.2-2.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	77.	0.	77.
SUB-TOTAL	0.	0.	0.	0.	0.	0.	0.	0.	0.	128.	0.	128.
0.5-0.9	0.	0.	0.	0.	0.	0.	0.	0.	0.	4.	0.	4.
0.9-1.2	0.	0.	0.	0.	0.	0.	0.	0.	0.	45.	0.	45.
1.2-2.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	77.	0.	77.
HORIZON -TOTAL	0.	0.	0.	0.	0.	0.	0.	0.	0.	120.	0.	120.

0- --100

> 30

1.2-2.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	65.	164.	0.	229.
SUB-TOTAL	0.	0.	0.	0.	0.	0.	0.	0.	0.	65.	164.	0.	229.
1.2-2.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	65.	164.	0.	229.
HORIZON -TOTAL	0.	0.	0.	0.	0.	0.	0.	0.	0.	65.	164.	0.	229.



SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISEBET IN-SITU PROVED RESERVE  
 AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARD STATE: BIHAR

BEAM XVIII-TOP

UNDERGROUND (RESERVES IN '000 TONNES)

GRADE

FULL COAL	SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	UNDERGROUND					UG TOTAL			
						S-I	S-II	W-I	W-II	W-III		W-IV		
					0.5-0.9	0.	0.	0.	0.	0.	28.	6.	34.	
					0.9-1.2	0.	0.	0.	0.	0.	60.	0.	45.	
					1.2-2.0	0.	0.	0.	0.	0.	224.	164.	77.	
					SEAM									
					-TOTAL	0.	0.	0.	0.	0.	284.	192.	128.	604.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM %-WISE, THICKNESS-WISE AND GRADE-WISE-IN-SITU INDICATED RESERVES

AMLIIND BLOCKI JHARIA CIVIL FIELDI DIBI HOKARD STATE BIHAR

SEAM I XIV A-VI / 85

FULL COAL UNDERGROUND (RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE					UG TOTAL
					S-I	S-II	W-I	W-II	W-III	
22 - 25										
VIRGIN										
-300--400										
22 - 25										
SUB-TOTAL										
>6.0	0.	0.	0.	1251.	0.	0.	0.	0.	0.	1251.
>6.0	0.	0.	0.	1251.	0.	0.	0.	0.	0.	1251.
HORIZON -TOTAL										
>6.0	0.	0.	0.	1251.	0.	0.	0.	0.	0.	1251.
22 - 25										
SUB-TOTAL										
>6.0	0.	0.	0.	1251.	0.	0.	0.	0.	0.	1251.
>6.0	0.	0.	0.	1251.	0.	0.	0.	0.	0.	1251.
VER/DEV -TOTAL										
>6.0	0.	0.	0.	1251.	0.	0.	0.	0.	0.	1251.
22 - 25										
SUB-TOTAL										
>6.0	0.	0.	0.	1251.	0.	0.	0.	0.	0.	1251.
>6.0	0.	0.	0.	1251.	0.	0.	0.	0.	0.	1251.
SECTOR -TOTAL										
>6.0	0.	0.	0.	1251.	0.	0.	0.	0.	0.	1251.

SEAM-WISE SECTOR-WISE, VER/DEV-WISE, HORIZON-WISE UVM % WISE, THICKNESS-WISE AND GRADE-WISE RESERVES IN '000 TONNES

AMLABAD BLOCK: JHARIA COAL FIELD: DIST: BOKARO STATE: BIHAR

SEAM : XIV

A-V / 86

FULL COAL

UNDERGROUND

(RESERVES IN '000 TONNES)

SECTOR	VER/DEV	HORIZON	UVM %	THICKNESS	GRADE				UG TOTAL				
					S-I	S-II	W-I	W-II		W-III	W-IV		
22 - 25													
BUD-TOTAL					0.	0.	0.	1251.	0.	0.	0.	0.	1251.
>6.0					0.	0.	0.	1251.	0.	0.	0.	0.	1251.
>6.0					0.	0.	0.	1251.	0.	0.	0.	0.	1251.
SEAM -TOTAL					0.	0.	0.	1251.	0.	0.	0.	0.	1251.

INSITU RESERVES OF COAL IN PARTIAL JHAMA ZONE (.000 MILLION TONNES)

XVIII (TOP) UPPER SEAM	119
XVIII (TOP) LOWER SEAM	204
XVIII (TOP)	45
XVIII (BOTTOM)	1431
AM/L-4	-
XVII	613
AM/L-3	49
XVI (TOP)	84
XVI (MIDDLE)	130
XVI (BOTTOM)	-
XV-A	164
XV	7433
XIV	3493
XIII	-
XI/XII	1908
X	5984
IX	6597
VIII	2042

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30.396 million tonnes

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ANNEXURE-VI

DEVIATION DATA OF AMD- SERIES OF BOREHOLES

BOREHOLE NO.: AMD-1 DEPTH: 622.80M, CASING: 462.00M

BOREHOLE DEPTH(M)	ANGLE FROM VERTICAL	MEGNETIC BEARING
0	0°	Effectted
25	1°	-do-
75	2°	-do-
100	3°	-do-
150	2°	-do-
125	4°	-do-
150	5°	-do-
175	5°	-do-
200	6°	-do-
225	7°	-do-
250	7°	-do-
275	8°	-do-
300	8°	-do-
325	8°	-do-
350	10°	-do-
375	10°	-do-
400	10°	-do-
425	10°	-do-
450	10°	-do-
475	10°	-do-
500	10°	S 55° E
525	10°	S 55° E
550	10°	S 55° E
575	10°	S 50° E
600	10°	S 50° E

BOREHOLE NO.: AMD-3 DEPTH: 546.00M. CASING: 215.00M.

BOREHOLE DEPTH(M)	ANGLE FROM VERTICAL	MEGNETIC BEARING
0	0°	Effect
10	0°	-do-
20	2°	-do-
30	2°	-do-
40	2°	-do-
50	2°	-do-
60	2°	-do-
70	2°	-do-
80	2°	-do-
90	2°	-do-
100	2°	-do-
110	2°	-do-
120	2°	-do-
130	2°	-do-
140	2°	-do-
150	2°	-do-
160	3°	-do-
170	3°	-do-
180	3°	-do-
190	3°	-do-
200	3°	-do-
210	3°	-do-
220	3°	-do-
230	3°	N 14° E
240	5°	N 14° E
250	5°	N 14° E
260	5°	N 14° E
270	5°	N 14° E
280	5°	N 15° E
290	5°	N 15° E
300	5°	N 15° E
310	5°	N 15° E
320	5°	N 18° E
330	5°	N 18° E
340	5°	N 18° E
350	6°	N 18° E
360	6°	N 18° E
370	6°	N 20° E
380	6°	N 20° E
390	6°	N 20° E
400	6°	N 20° E
410	6°	N 20° E
420	6°	N 21° E
430	6°	N 21° E
440	6°	N 21° E
450	7°	N 21° E
460	7°	N 21° E
470	7°	N 21° E
480	7°	N 24° E
490	8°	N 24° E
500	8°	N 25° E
510	8°	N 25° E

BOREHOLE NO.: AMD-4 DEPTH: 551.00M. CASING:

BOREHOLE DEPTH(M)	ANGLE FROM VERTICAL	MEGNETIC BEARING
0	0°	Effectted
25	1°	-do-
50	2°	-do-
75	2°	-do-
100	3°	-do-
125	3°	-do-
150	4°	-do-
175	4°	-do-
200	5°	-do-
225	5°	-do-
250	5°	-do-
275	5°	-do-
300	5°	-do-
325	5°	-do-
350	5°	-do-
375	5°	-do-
400	5°	-do-
425	5°	-do-
450	5°	-do-
475	5°	-do-
500	5°	-do-
525	5°	-do-

BOREHOLE NO.: AMD-5    DEPTH: 600.00M.    CASING: 429.00M.

BOREHOLE DEPTH(M)	ANGLE FROM VERTICAL	MEGNETIC BEARING
0	0°	Effectted
25	0°	-do-
50	1°	-do-
75	1°	-do-
100	2°	-do-
125	3°	-do-
150	3°	-do-
175	4°	-do-
200	4°	-do-
225	4°	-do-
250	5°	-do-
275	6°	-do-
300	6°	-do-
325	7°	-do-
350	8°	-do-
375	8°	-do-
400	10°	-do-
425	10°	-do-
450	10°	-do-
475	11°	S 55° W
500	11°	S 60° W
525	12°	S 60° W
550	12°	S 6 ° W
575	12°	S 6 ° W

BOREHOLE NO.: AMD-6 DEPTH: 536.90M CASING: 321.00M.

BOREHOLE DEPTH(M)	ANGLE FROM VERTICAL	MEGNETIC BEARING
0	0°	Effectted
15	0°	-do-
30	1°	-do-
45	1°	-do-
60	2°	-do-
75	2°	-do-
90	2°	-do-
105	2°	-do-
120	2°	-do-
135	4°	-do-
150	4°	-do-
165	4°	-do-
180	4°	-do-
195	4°	-do-
210	4°	-do-
225	6°	-do-
240	6°	-do-
255	6°	-do-
270	6°	-do-
285	6°	-do-
300	6°	-do-
315	6°	-do-
330	6°	-do-
345	7°	N 20° E
360	7°	N 20° E E
375	7°	N 20° E E E
390	8°	N 20° E E E E
405	8°	N 20° E E E E E
420	8°	N 22° E E E E E
435	8°	N 22° E E E E E
450	10°	N 24° E E E E E
465	10°	N 24° E E E E E
480	10°	N 24° E E E E E
495	10°	N 25° E E E E E
510	10°	N 25° E E E E E

BOREHOLE NO. + AMD-7 DEPTH: 507.40M. CASING: 360.00 M.

BOREHOLE DEPTH(M)	ANGLE FROM VERTICAL	MAGNETIC BEARING
0	0°	Effectuated
25	1°	-do-
50	2°	-do-
75	2°	-do-
100	3°	-do-
125	3°	-do-
150	3°	-do-
175	3°	-do-
200	4°	-do-
225	4°	-do-
250	4°	-do-
275	4°	-do-
300	5°	-do-
325	5°	-do-
350	5°	-do-
375	6°	-do-
400	7°	N 23° E
425	7°	N 23° E
450	7°	N 25° E
475	7°	N 25° E
500	7°	N 25° E

BOREHOLE NO.: AMD-8 DEPTH: 541.50M. CASING: 18.00M.

BOREHOLE DEPTH(M)	ANGLE FROM VERTICAL	MAGNETIC BEARING
0	0°	Effectuated
24	1°	N 15° E
48	2°	N 20° E
72	3°	N 22° E
96	3°	N 23° E
120	3°	N 24° E
144	4°	N 23° E
168	4°	N 21° E
192	4°	N 23° E
216	4°	N 23° E
240	4°	N 24° E
264	5°	N 24° E
288	5°	N 24° E
312	5°	N 25° E
336	5°	N 25° E
360	5°	N 25° E
384	5°	N 25° E
408	5°	N 25° E
432	5°	N 24° E
456	5°	N 24° E
480	5°	N 24° E
504	5°	N 24° E
528	5°	N 24° E