Indian Minerals Yearbook 2019

(Part- I)

58th Edition

STATE REVIEWS
(Jharkhand)

(ADVANCE RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

Indira Bhavan, Civil Lines,
NAGPUR – 440 001

PHONE/FAX NO. (0712) 2565471
PBX : (0712) 2562649, 2560544, 2560648
E-MAIL : cme@ibm.gov.in
Website: www.ibm.gov.in

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JHARKHAND

Mineral Resources

Jharkhand is one of the major mineral producing States. It is the sole producer of flint stone in the country and is one of the leading producers of coal, gold, graphite, bauxite, iron ore & limestone. Uranium ore is mined and processed by Uranium Corporation of India Ltd (UCIL) for supply as fuel to the country's nuclear power reactors through six underground mines, one opencast mine, and two processing plants. Jharkhand has the sole resources of emerald mineral. It accounts for about 31% rock phosphate, 23% iron ore (haematite), 30% apatite, 14% andalusite, 20% cobalt ore, 20% copper ore, 9% each granite (dimension stone) & graphite and 5% silver ore resources of the country.

Important minerals that occur in the State are **bauxite** in Dumka, Gumla, Latehar, Lohardaga & Palamu districts; **china clay** in Dumka, Hazaribagh, Lohardaga, East & West Singhbhum, Sahebganj & Ranchi districts; **coal** in Bokaro, Deoghar, Dhanbad, Giridih, Godda, Hazaribagh, Palamau, Pakur & Ranchi districts; **copper** in Hazaribagh & East Singhbhum districts; **dolomite** in Garhwa & Palamu districts; **felspar** in Deoghar, Dhanbad, Dumka, Giridih, Hazaribagh, Jamtara, Koderma, Latehar, Palamu & Ranchi districts; **fireclay** in Dhanbad, Dumka, Giridih, Godda, Hazaribagh, Latehar, Palamu, Ranchi & West Singhbhum districts; **gold** in East Singhbhum district; **graphite** in Palamu district; **iron ore** (haematite) in West Singhbhum district; **iron ore** (magnetite) in Gumla, Hazaribagh, Latehar, Palamu & East Singhbhum districts; **kyanite** in Saraikela-Kharsawan & West Singhbhum districts; **limestone** in Bokaro, Dhanbad, Garhwa, Giridih, Hazaribagh, Palamu, Ranchi, East & West Singhbhum districts; **manganese ore** in East & West Singhbhum districts; **mica** in Giridih and Koderma districts; **ochre** in West Singhbhum district; **dunite/pyroxenite** in East Singhbhum district; **quartz/silica sand** in Deoghar, Dhanbad, Dumka, Giridih, Godda, Hazaribagh, Jamtara, Koderma, Latehar, Palamu, Ranchi, Sahebganj, Saraikela-Kharsawan & West Singhbhum districts; and **quartzite** in East & West Singhbhum districts.

Other minerals that occur in the State are **andalusite** and **rock phosphate** in Palamu district; **apatite, chromite, cobalt, nickel, gold** & **silver** in East Singhbhum district; **asbestos** in East & West Singhbhum districts; **barytes** in Palamu & East Singhbhum districts; **bentonite** in Pakur & Sahebganj districts; **garnet** in Hazaribagh district; **granite** in Deogarh, Dhanbad, Dumka, Giridih, Godda, Gumla, Hazaribagh, Koderma, Lohardaga, Palamu, Ranchi & East Singhbhum districts; **sillimanite** in Hazaribagh district; **talc/steatite/ soapstone** in Giridih, Koderma, Palamu, East & West Singhbhum districts; **pyrophyllite** in Saraikela-Kharaswan district; **titanium minerals** in Ranchi and East Singhbhum districts; and **vermiculite** in Giridih & Hazaribagh districts (Table - 1). The reserve/resources of coal and the various coalfields located in Jharkhand are furnished in Table - 2.

Exploration & Development

The details of exploration activities conducted by GSI for iron ore, bauxite and nickel and other agencies (MECL) for bauxite, gold, etc. during the year 2018-19 are furnished in Table - 3.

Production

Coal was the principle mineral item reporting production in the State. The other important minerals produced are bauxite, copper ore and concentrate, gold, iron ore etc.The value of minor mineral's production is estimated as ₹ 40 crore for the year 2018-19. There were 59 reporting mines in 2018-19 in case of MCDR of minerals. Details are furnished in Table – 4.

Mineral-based Industry

The present status of each mineral-based industry is not readily available. However, the principal large and medium-scale mineral-based industries in the organised sector in the State are given in Table - 5.

Table – 1 : Reserves/Resources of Minerals as on 1.4.2015: Jharkhand

Mineral	Unit	Reserves				Remaining Resources								Total resources (A+B)
		Proved STD 111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
			STD121	STD122			STD221	STD222						
Andalusite	'000 tonnes	-	-	-	-	-	-	-	-	-	4000	1	4001	4001
Apatite	tonne	-	-	-	-	-	-	-	2110000	1620000	3540000	-	7270000	7270000
Asbestos	tonne	-	-	-	-	-	3871	18309	2885	5769	124059	-	154893	154893
Barytes#	tonne	-	-	-	-	-	-	-	-	-	35900	-	35900	35900
Bauxite	'000 tonnes	54471	219	8049	62740	9734	6154	15117	17883	17397	54106	55930	176321	239061
Bentonite##	tonne	-	-	609406	609406	-	3067	-	-	-	367527	-	370594	980000
China clay#	'000 tonnes	427	-	6412	6838	9338	2093	4738	3962	7363	149892	18019	195405	202244
Chromite	'000 tonnes	-	-	-	-	-	-	-	15	98	623	-	736	736
Cobalt	million tonnes	-	-	-	-	-	-	-	-	2	-	7	9	9
Copper					-								-	-
Ore	'000 tonnes	5374	-	1940	7314	13195	24511	3990	101168	103484	41726	-	288074	295389
Metal	'000 tonnes	61.33	-	20.54	81.87	142.08	255.74	45.92	1183.99	1058.42	507.38	-	3193.53	3275.40
Dolomite#	'000 tonnes	4510	-	6720	11230	10620	350	860	-	-	1857	-	13686	24916
Dunite#	' 000 tonnes	123	-	262	385	264	-	448	607	780	6121	8637	16857	17242
Emerald	kg	-	-	-	-	-	-	0	-	-	-	55869	55869	55869
Feldspar#	tonne	68789	15402	191913	276104	-	40766	348792	32510	120388	836061	-	1378517	1654621
Fire clay#	'000 tonnes	-	-	3	3	-	1125	309	139	122	64755	-	66450	66454
Garnet	tonne	-	-	-	-	-	-	88303	-	-	21768	-	110071	110071
Gold					-								-	-
Ore (Primary)	tonne	9349	-	-	9349	-	-	-	-	5146952	4203337	767000	10117289	10126638
Metal (Primary)	tonne	0.07	-	-	0.07	-	-	-	-	3.61	10.26	0.62	14.49	14.56
Granite## (Dim. Stone)	'000 cu. m	-	-	-	-	-	-	-	-	651300	8197110	26930	8875340	8875340
Graphite	tonne	1518581	1204423	1450550	4173555	39262	445703	1959747	5520	1856563	6639828	2440208	13386831	17560386
Iron ore (Haematite)	'000 tonnes	365111	29238	45022	439372	1081242	458866	457724	207324	597413	673009	1371468	4847045	5286417
Iron ore (Magnetite)	'000 tonnes	-	-	-	-	-	518	1986	411	3948	3722	82	10667	10667
Kyanite	tonne	426240	-	-	426240	824472	524467	881313	-	1754900	3182363	-	7167515	7593755
Laterite#	'000 tonnes	-	-	-	-	-	-	-	-	-	570	-	570	570
Limestone	'000 tonnes	88172	-	29116	117288	95008	13529	29265	89572	13220	354319	11803	606715	724003
Manganese ore	'000 tonnes	1840	-	328	2168	1710	795	1476	-	178	4177	1126	9461	11629
Mica#	kg	-	-	-	-	-	-	-	-	-	1494430	170700	1665130	1665130
Nickel ore	million tonnes	-	-	-	-	-	-	-	-	2	7	-	9	9
Ochre#	tonne	-	-	-	-	62	-	4	-	147	-	-	214	214

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Table - 1 (Concld)

Mineral	Unit	Reserves				Remaining Resources								Total resources (A+B)
		Proved STD 111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
			STD121	STD122			STD221	STD222						
Pyrophyllite#	tonne	858	-	328	1185	-	-	-	-	-	-	-	-	1185
Quartz-Silica Sand#	'000 tonnes	-	-	1070	1070	534	985	4533	137	766	143053	112	150122	151192
Quartzite#	'000 tonnes	181	-	-	181	763	49	390	197	275	38854	-	40527	40708
Rock Phosphate	tonne	-	-	-	-	-	-	-	-	-	107370000	-	107370000	107370000
Silver														
Ore	tonne	-	-	-	-	-	-	-	-	-	23840000	-	23840000	23840000
Metal	tonne	-	-	-	-	-	-	-	-	-	5.22	-	5.22	5.22
Sillimanite	tonne	-	-	-	-	-	-	-	-	-	83000	-	83000	83000
Talc-Steatite-Soapstone#	'000 tonnes	336	-	83	419	-	-	54	2	4	243	16	319	739
Vermiculite	tonne	-	-	-	-	-	-	-	-	-	30048	-	30048	30048

Figures rounded off.

***Note**: The proved and indicated balance recoverable reserves of Coal Bed Methane (CBM) in the state as on 01.04.2016 were 28.91 billion cu m.*

*** Resources of ilmenite, rutile, leucoxene and zircon, as per Department of Atomic Energy, are provided in the respective Mineral Reviews.*

 # Declared as Minor Mineral vide Gazette Notification dated 10.02.2015.

Minor Minerals before Gazette Notification dated 10.02.2015.

Table – 2 : Reserves/Resources of Coal as on 1.4.2019: Jharkhand

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total	**44340.59**	**31876.40**	**6222.53**	**82439.52**
Jharkhand	48031.93	30400.13	6073.90	84505.96
Raniganj	1538.19	466.56	31.55	2036.30
Jharia	16282.19	3248.44	-	19530.63
East Bokaro	3497.43	3922.80	863.32	8283.55
West Bokaro	3922.75	1278.59	17.05	5218.39
Ramgarh	936.65	911.77	58.05	1906.47
North Karanpura	10577.40	6173.27	1864.96	18615.63
South Karanpura	5176.08	1312.28	1143.28	7631.64
Auranga	352.05	2141.65	503.41	2997.11
Hutar	190.79	26.55	32.48	249.82
Daltonganj	83.86	60.10	-	143.96
Deogarh	326.24	73.60	-	399.84
Rajmahal	5148.30	10784.52	1559.80	17492.62

Source: *Coal Directory of India, 2018-19.*

Table –3 : Details of Exploration Activities in Jharkhand, 2018-19

Agency/ Mineral/ District	Location Area/ Block	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq. km)	No. of boreholes	Meterage		
GSI							
Bauxite							
Gumla and Lohardaga	Pokripattoli area	1:4000	5	32	1518.2	-	G3 stage preliminary exploration for bauxite and associated minerals (Ti,V,Ga, etc.) with bauxite and red clay in Pokripattoli area, Serangdag plateau, Gumla and Lohardaga districts that comprised detailed mapping of 5 sq. km area on 1:4,000 scale and 1,518.2 m of drilling in 32 boreholes were carried out. The litho-units of the mapped area consisted of lateritic soil, laterite, bauxite, variegated clay and granite gneiss. Bauxite/ lateritic bauxite was intersected in all the boreholes with thickness ranging from 0.28 m to 8.2 m. However, bauxite thickness > 1 m was recorded in 29 boreholes and towards east, the thickness of the bauxite horizon was found to decrease whereas the thickness of the bauxite/lateritic bauxite horizon showed an increasing trend

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Table –3 (Contd)

Agency/ Mineral/ District	Location Area/ Block	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							towards south. The red clay intersected in the boreholes showed thickness ranging from 1.50 m to 8.85 m. Variegated clay below the bauxite horizon is observed as white to pinkish white, light cream, yellow coloured as well as showing purple, brown, white & grey colour.
Iron Ore							
West Singhbhum	Baraiburu in the northwestern part of Horse-shoe syncline	1:4000	1	8	837.85	50	Preliminary exploration (G3) for iron ore and manganese ore in the gap areas near Baraiburu in the northwestern part of Horse-shoe syncline, West Singhbhum district was continued from field session 2017-18 in the Baraiburu Block, part of the Jamda-Koira basin of Iron Ore Group. During field session 2018-19, detailed mapping of 1 sq. km area on 1:4,000 scale, a total of 837.85 m drilling in eight boreholes, bedrock sampling (25 nos.), trenching sampling (25 nos.) etc. were carried out. The geophysical survey (GP and magnetic) of 4 L.km and 204 m of GP borehole logging (electrical) were carried out. Iron and manganese ore mineralisation was observed to be concentrated in the eastern side of the block. The exposure of manganese ore body on also very small. The analytical results of Trench no. PTS-14 revealed maximum value of Fe as 61.97% with an average of 60.09%, while the values of SiO_2 and Al_2O_3 were 4.91% and 1.79% respectively. In PTS-15, maximum value of Mn was 15.54% with an average of 15.13% Mn, while the values of SiO_2 & Al_2O_3 were 3.53% and 7.03% respectively. Analytical results of core samples of borehole showed the average value of Mn as 0.026%.

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Table –3 (Contd)

Agency/ Mineral/ District	Location Area/ Block	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
Nickel							
East Singhbhum districts	Kanderberiya-Dangardih area	1:12500	100	-	-	267	Reconnaissance survey was taken up for Ni, Cr and PGE mineralisation in Kanderberiya-Dangardih area, East Singhbhum district. During the course of the investigation, mafic and ultramafic bodies intruded in Dalma Group of rocks were targeted for Ni, Cr and PGE mineralisation. Talc-tremolite-chlorite schist (TTCS) has been traced at southern part of the mapped area for a strike length of 7.5 km with maximum width of 500 m. Large-scale mapping of 100 sq. km area on 1:12, 500 scale was carried out along with 100 cu.m of pitting and trenching. A total of 102 bed rock Samples (BRS), 100 pitting & trenching (PTS), 50 stream sediment samples (SSS), 27 petrological samples (PS), 15 petrochemical samples (PCS) and 10 samples for Electron Probe Micro Analyser (EPMA) were collected. Out of 267 samples, results were received for 85 BRS and 32 PTS samples. Based on the part chemical analysis result of BRS and PTS, the maximum value of Cr was 3,011 ppm while that of Ni was 1,374 ppm, Cu 1,339 ppm and Zn 307 ppm. All the values obtained from TTCS of Lower Dalma Formation showed copper mineralisation near Village Haludbani.
Gold and associated minerals							
Saraikela-Kharsawan districts	Jilingda-Kharsawan-Dugni area	1:12500	100	-	-	200	Reconnaissance survey for gold and associated minerals involved large- scale mapping of 100 sq. km on 1:12,500 scale collection of 100 samples each of bedrock samples (BRS) and pitting and trenching samples (PTS), etc. Mineralisation in the form of pyrite, chalcopyrite, pyrrhotite and malachite stains observed in sheared quartzite, hornblende

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Table –3 (Contd)

Agency/ Mineral/ District	Location Area/ Block	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							schist and chlorite phyllite was observed as dissemination and stringers. Visible specks of gold were observed in stream sediment samples from south of Patahatu and north of Jilingda. The results showed gold value ranging from 60 ppb to 80 ppb in eight samples in quartzite of Sanjay hill and hornblende schist in the east of Rampur and brecciated quartzite near Sokandih. Four samples of quartzite showed Cu value ranging from 1228 ppm to 2521 ppm.
Ranchi	In and around Kubasal,Jargo, Serengdih areas	1:12500	110	-	-	2	During reconnaissance survey for gold and associated minerals, an area of 110 sq. km was covered by large scale mapping on 1:12,500. Four distinct shear zones identified in the area are represented by several hydrothermally altered brecciated quartz reefs of dimension 5-20 m wide and 20-40 m long. Specks of sulphides mainly pyrite and chalcopyrite) are seen in brecciated quartz reefs. Suspected arsenopyrite and bornite were also noticed. Pockets of manganese mineralization in the form of psilomelane and pyrolusite are also present. Analytical results of two bedrock sample show anomalous concentration of gold value of 85 ppb and 115 ppb. Visible specks of gold flakes are noticed in panned stream sediments collected from different orders of stream.
Apetite							
East Singhbhum	Around Gopalpur-Katin-Bankuchia areas	1:12,500	100.0	-	-	315	G4 stage reconnaissance survey for apatite magnetite rocks and associated mineralisation was taken up with an objective to assess the potentiality of apatite, titanium and REE mineralisation in the area. During the course of field study, different lithologies viz. apatite-magnetite-bearing metabasic, amphibolite, banded

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Table –3 (Contd)

Agency/ Mineral/ District	Location Area/ Block	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							magnetite quartzite, etc. were recorded. Further, the apatite veins within the metabasic rocks have not been observed. Part analytical results showed that the area does not host any REE potentiality. However, the P_2O_5 content was found to vary from 0.14% to 3.60%, while TiO_2 content showed variation from 0.21% to 5.02%, and Ba content varies from 64 to 1,449 ppm. Analytical results and other lab studies are awaited.
Phosphorite							
Garhwa	Muskaniya-Sinduria area	1:12500	200.0	-	-	-	A G4 stage reconnaissance survey for phosphate & potash fertilizer mineral in and around Muskaniya-Sinduria areas involved large scale mapping of 200 sq. km area during field season 2017-18 & 2018-19. Positive spot values of P_2O_5 have been recorded in brecciated quartzite (4.3 and 4.9 % P_2O_5) and ferruginised quartzite (3.3 to 3.5 % P_2O_5) near Ghagra to Phulwar and Chatanian area. Based on this result, mineralised zone for phosphate was delineated from Ghagra to Phulwar and near Chatanian area in brecciated and ferruginised quartzite. Encouraging values of potash have been noticed in green/ khaki green shale (5.3-8.7 % K_2O), green sandstone (6.2-7.7 % K_2O), chert interlayered with shale (5.2-9.10 % K_2O) and green cherty quartzite (5.2-8.1 % K_2O) during field season 2018-19. Based on these significant potash values, mineralised zones for potash were demarcated near Chaura, south of Parsodih, near Kewaltola and near Gurur area.

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Table –3 (Contd)

Agency/ Mineral/ District	Location Area/ Block	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
MECL							
Bauxite							
Gumla	Hanrup blocks	-	-	4	84.2	268	G2 level exploration in Hanrup blocks on Serandag (Pat) plateau, Gumla district was carried out with the objectives to prove the occurrences of bauxite zones, and to assess the bauxite resources both quantitatively and qualitatively. The exploration comprised 84.20 m drilling in 4 boreholes and 74.00 m vaccum suction drilling in 4 boreholes. A total of 268 samples were collected for various studies/ analysis. The total in-situ net resources estimated all categories in Hanrup block are (i) 0.461 million tonnes with average 45.53% Al_2O_3 and 4.77% SiO_2 at (+) 40% Al_2O_3 and (-) 7% SiO_2 cut-off; (ii) 0.29 million tonnes with average 47.37% Al_2O_3 and 2.55% SiO_2 at (+) 38% Al_2O_3 and (-) 5% SiO_2 cut-off and (iii) 1.56 million tonnes with average 39.76% Al_2O_3 and 6.63% SiO_2 content at (+) 30% Al_2O_3 and (-) 10% SiO_2 cut-off. The content of TiO_2 + Fe_2O_3 showed variations from 17.42 to 38.86%, vanadium from 779.8 ppm to 1,883.5 ppm and gallium from 69.30 to 19.0 ppm. The average content of vanadium and gallium is insignificant.
	Serandag (Pat) plateau	-	-	4	74	-	
Iron Ore							
Singhbhum west	Meghahatuburu	-	-	12	500.00	500	Borehole data indicated that ore types are irregularly distributed both laterally and vertically. The quality of ore was found to improve with increase in depth. In some of the boreholes, ore zones are reported below the parent rock BHQ. Resources have not been estimated.
Tin							
Giridih & Koderma	Pihra block	1:12500	100	-	-	362	MECL carried out a G4 level exploration for tin mineralisation in Pihra block of Giridih & Koderma districts, Jharkhand.

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Table –3 (Concld)

Agency/ Mineral/ District	Location Area/ Block	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							Remote sensing study of 100.00 sq. km was carried out and later the area was mapped on 1:12,500 scale. A total of 362 samples were collected for different studies/analysis. It included 87 sediment samples for Sn, Nb & Ta,; 50 bedrock samples for REE, U & Cs and 68 bedrock samples for Li analysis.
Gold							
Saraikela -Kharsawan	Bachkakhocha and Tankocha area	1:12500	100	12	500.00	445	In Jharkhand, exploration for gold and base metal mineralisation was taken up in Bachkakhocha and Tankocha area of Saraikela-Kharsawan district. An area of 100.00 sq. km was mapped on 1:12,500 scale and 445 nos samples were collected for analysis which included 100 samples for REE analysis.
Andalusite							
Garhwa & Sonbhadra	Nagar-Untari and adjoining areas	1:12500	100.00	-	-	35	The content of andalusite in the rock was found to vary from 5.38% to 22.78% by weight. The total possible resources estimated by isochore method per 1 m and 5 m depth is about 11.80 million tonnes and 58.99 million tonnes, respectively.
HCL							
Base Metals							
	Rakha mine	-	-	15	2796 (I) 52435 (II)	-	Exploration work was carried out in (i) Rakha mine, which comprised drilling of 15 boreholes to a cumulative depth of 2,796.00 m in Phase-I and 5,243.50 m in Phase-II; (ii) Surda mine, which involved drilling of 2 boreholes to 1,576.00 m and shaft sinking of 1,68.00 m; (iii) Kendadih mine, which involved 850.70 m drive & 984.60 m raise. The total resources of Rakha mine is placed at 125.52 million tonnes, Surda mine is 28.57 million tonnes and that of Kendadih mine is 32.26 million tonnes.
	Surda mine Kendadih mine	-	-	2	1570	-	

Table – 4 : Mineral Production in Jharkhand, 2016-17 to 2018-19 (Excluding Atomic Minerals)

(Value in ₹'000)

Mineral	Unit	2016-17			2017-18			2018-19 (P)		
		No. of mines	Quantity	Value$	No. of mines	Quantity	Value$	No. of mines	Quantity	Value$
All Minerals		**59**		**17561832**	**59**		**24558197**	**59**		**25511367**
Coal	'000t	-	126435	-	-	123297	-	-	134666	-
Natural Gas (ut.)+	m c m	-	3	-	-	4	-	-	3	-
Bauxite	t	18	2289825	1642791	25	2593647	2275062	24	2412484	2198169
Copper Ore	t	-	313856	-	-	178700	-	-	243020	-
Copper Conc.	t	2	9802	332320	2	5072	173106	2	6595	529620
Gold Ore	t	-	5581	-	-	4618	-	-	2134	-
Gold	kg	1	15	45424	1	11	31743	1	3	7897
Iron Ore	'000t	21	21224	14623291	20	20169	20636973	19	23433	21883834
Manganese Ore	t	5	508	3440	3	4783	44527	4	4785	43752
Flint Stone	t	1	26	8	-	-	-	-	-	-
Graphite (r.o.m.)	t	1	10343	11450	2	18735	19120	3	15830	17491
Limestone	'000t	10	1146	501660	6	1190	976218	6	1248	429156
Minor Minerals@		-	-	401448	-	-	401448	-	-	401448

Note: *The number of mines excludes Fuel and minor minerals.*

$ Excludes the value of Fuel minerals, + Coal Bed Methane

@ Figures for earlier years have been repeated as estimates because of non-receipt of data.

Table – 5 : Principal Mineral-based Industries

Industry/plant	Capacity ('000 tpy)
Alumina	
Hindalco Industries Ltd, Muri.	450 KTPA
Asbestos Products	
Hyderabad Industries Ltd, Jasidih, Distt Deogarh.	NA
Cement	
ACC Ltd, Chaibasa, Distt Singhbhum.	900
ACC Ltd, Sindri, Distt Dhanbad (G).	2350
Bokaro Cement Plant (formerly JV of Jaypee Cement & SAIL), Bokaro (G).	2100
Lafarge, Jojobera, Distt Singhbhum.	4600
Burnpur Cement Patratu Ramgarh	300
Ceramic	
Maithan Ceramics Pvt. Ltd, Dhanbad.	80

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Table - 5 (Contd)

Industry/plant	Capacity ('000 tpy)
Chemicals	
Bihar Caustic & Chemicals Ltd, Garhwa Road, Distt Palamu.	92.75 (caustic soda lye)
Copper Smelter	
HCL, ICC, Ghatsila, Distt Singhbhum (East).	19 (refined copper) 20.5 (copper smelting) 18.5 (copper cathode) 84 (fabricated wire bar) 54(H_2SO_4), 390 t ($NiSO_4$) 480 kg ($CuSO_4$) 14.6 kg (selenium) 9868 kg (Ag), 698 kg (Au)
Foundry	
Grind chem, Adityapur	15 (Foundry fluxes)
Jharkhand Grid chem Pvt. Ltd, Adityapur, Gamharia	25 (Foundry fluxes)

(Contd)

Table - 5 (Contd)

Industry/plant	Capacity ('000 tpy)
Iron & Steel	
Bokaro Steel Plant, Bokaro	6900 (sinter) 4585 (pig iron) 4500 (Crude/liquid steel) 35.5 (H_2SO_4) 27.2 (ammonium sulphate)
Tata Steel Ltd, Jamshedpur	6000 (pellets) 8000 (sinter) 10550 (Pig Iron) 13000 (Crude/liquid steel)
Usha Martin Ltd, Jamshedpur.	500 (Sponge iron) 1200 (pellets) 715 (sinter) 1000 (Liquid/ crude Steel)
Pellet	
Orissa Manganese & Minerals Ltd, Kandra, Sarai Kharsawan.	1600 (pellets)
Pig Iron	
Atibir Industries Pvt. Ltd, Bhorandiha, Giridih	600 120 (Sponge iron) 680 (sinter)
Elcctrosteel Steels Ltd, Siyal Jori, Chandan Kiyari	1500
Sponge Iron	
Anindita Steel Ltd, Senegarha Rabodh	120
Ashirwad Steel & Industries Ltd, Gamharia, Jamshedpur.	72
Bihar Sponge Iron Ltd, Chandil, Distt Saraikela-Kharsawan.	210
Brahmaputra Metallics Limited, Kamta, Gola, Distt Ramgarh.	105 148.5 (Semi-finished Steel)
Balmukund Sponge & Iron Pvt. Ltd, Majhaladih, Gadisrirampur	63 75 (Crude/liquid steel) 37 ((Pig Iron)
Chintpurni Steel Pvt. Ltd, Indra, Zarba	90 100 (Semi-finished steel)
Jai Durga Iron Pvt. Ltd, (I &II) Jhumari Tellaiya, Distt Koderma	(36+66) =96

(Contd)

Table - 5 (Concld)

Industry/plant	Capacity ('000 tpy)
Jai Balaji Industrial Engg. Ltd, Barajamda	120
Rungta Mines Limit Chaliyama Rajnagar	620.4
Saluja Steels & Power Pvt. Ltd, Mahtodih.	60
Satpuria Alloys Pvt. Ltd, Manjhladih	60
Shivam Iron & Steel Co. Ltd, Bandhi, Chandwara	90
Zoom Vallabh Steels Ltd, Dugdha, Distt Saraikela-Kharsawan.	120
Ferro Alloys	
Astha Ferrotech Pvt. Ltd, Adityapur, Tatanagar	201
Anjaney Ferro Alloys Ltd, Mahijam	12
Bihar Foundary & Ccasting Ltd, Marar	36
Dayal Ferroalloy Ramgarh cantt	10
Gautam Ferro Alloys Ltd,	5.5
Shivam Iron & Steel Co. Ltd, Jambad, Udnabad	37.4 (Si-Mn)
Tin Plates	
The Tin Plate Co. of India Ltd, Jamshedpur.	379
Glass	
IAG Co. Ltd, Bhandainagar.	360 TPD
Refractory	
SAIL Refractory Unit (formerly Bharat Refractories Ltd,), Ranchi Road, Ramgarh.	7.5
SAIL Refractory Unit (formerly Bharat Refractories Ltd,), IFICO, Ramgarh.	42
SAIL Refractory Unit (formerly Bharat Refractories Ltd,), Bhandaridah, Distt Bokaro.	26
Jharia Firebricks Pottery Works (P) Ltd, Dhansar, Distt Dhanbad.	20
Mineral Trade Corporation Khaparsai, Chaibasa	6.6
Raj Refractory (P) Ltd, Hardag, Distt Ranchi.	6

G; Grinding Unit

Note: *Data, for Cement Industries on respective websites, is taken from Survey of Cement Industry & Directory.*