Indian Minerals Yearbook 2012

(Part- I)

51st Edition

STATE REVIEWS
(Bihar)

(FINAL RELEASE)

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MINISTRY OF MINES
INDIAN BUREAU OF MINES

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BIHAR

Mineral Resources

Bihar is the principal holder of country's pyrite resources and possesses 95% of resources. The important mineral occurrences in Bihar are **limestone** in Kaimur (Bhabhua), Monghyr and Rohtas districts; **mica** in Nawada district; **quartz/ silica sand** in Bhagalpur, Jamui, Monghyr and Nalanda districts; **quartzite** in Lakhisarai, Monghyr and Nalanda districts; **talc/soapstone/ steatite** in Monghyr district. Besides, occurrences of **bauxite** in Monghyr and Rohtas districts; **china clay** in Bhagalpur and Monghyr districts; **felspar** in Gaya, Jamui and Monghyr districts; **fireclay** in Bhagalpur and Purnea districts; **gold** in Jamui district; **granite** in Bhagalpur, Gaya, Jahanabad and Jamui districts; **iron ore (hematite)** in Bhagalpur district; **iron ore (magnetite)** in Gaya and Jamui districts; **lead-zinc** in Banka and Rohtas districts and **pyrites** in Rohtas district are reported (Tables - 1 and 2).

Exploration & Development

GSI carried out exploration for gold near Bathani District Nalanda & Gaya. Details of exploration activities conducted by GSI during 2011-12 are furnished in Table-3.

In 2011-12, ONGC conducted geo-physical survey under which an expanse of 69.66 (2D-GLKMK) and 52.05(3D-Sq.km) was covered.

Production

The value of mineral production in Bihar at ₹ 333 crore in 2011-12 decreased by about 4% over the previous year. Minor minerals predominate the value of mineral production contributing 94% of the total value of mineral production in the State followed by limestone with 5% and a nominal contribution by quartzite. With an increase of 12%, the State reported 9329 tonnes of sulphur production in the year under review. Though there was a decrease of 43%, it contributed 20% of the total production of quartzite in the country. Decline of 39% in production was also reported in limestone as compared to that of the previous year (Table-4).

The production value of minor minerals was estimated at ₹ 314 crore for the year 2011-12.

The number of reporting mines in Bihar in 2011-12 was 6 as against 10 in the previous year.

The index of mineral production in Bihar (base 2004-05=100) was 221.98 in 2011-12 as compared to 370.30 in the previous year.

Table – 2 : Reserves/Resources of Coal as on 1.4.2012 : Bihar

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total/Rajmahal	-	-	160.0	160.0

Source: *Coal Directory of India, 2011-12*

Table – 1: Reserves/Resources of Minerals* as on 1.4.2010 : Bihar

Mineral	Unit	Reserves				Remaining resources								Total resources (A+B)
		Proved STD111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
			STD121	STD122			STD221	STD222						
Bauxite	000 tonnes	-	-	-	-	-	-	-	-	-	4114	-	4114	4114
China clay	000 tonnes	-	-	-	-	-	-	-	104	39	1296	-	1438	1438
Felspar	tonne	-	-	35147	35147	-	-	-	-	4195	4871499	-	4875694	4910841
Fireclay	000 tonnes	-	-	-	-	-	-	-	-	-	44	-	44	44
Gold					-									
Ore (primary)	tonne	-	-	-	-	-	-	-	-	-	128884860	94000000	222884860	222884860
Metal (primary)	tonne	-	-	-	-	-	-	-	-	-	21.6	16	37.6	37.6
Granite (Dimen. stone)	000 cu m	-	-	-	-	-	-	-	-	179000	698612	-	877612	877612
Iron ore (Hematite)	000 tonnes	-	-	-	-	-	-	-	-	-	55	-	55	55
Iron ore (Magnetite)	000 tonnes	-	-	-	-	-	-	-	-	-	2659	-	2659	2659
Lead-zinc					-								-	-
Ore	000 tonnes	-	-	-	-	-	-	-	-	435	11000	-	11435	11435
Lead metal	000 tonnes	-	-	-	-	-	-	-	-	-	24	-	24	24
Zinc metal	000 tonnes	-	-	-	-	-	-	-	-	14.75	24	-	38.75	38.75
Limestone	000 tonnes	7822	-	795	8617	-	6123	6689	86379	38210	709522	-	846923	855540
Mica	kg	-	-	74233	74233	-	-	-	-	-	12992434	7700	13000134	13074367
Pyrite	000 tonnes	-	-	-	-	13462	-	9680	-	51419	1500000	-	1574561	1574561
Quartzite	000 tonnes	-	32	-	32	146	461	20054	5287	22822	227531	-	276302	276334
Quartz-silica sand	000 tonnes	-	-	2121	2121	-	-	-	-	-	24652	-	24652	26773
Talc-steatite-soapstone	000 tonnes	-	-	149	149	-	-	-	-	-	3	-	3	152

Figures rounded off.
** Resources of zircon as per Department of Atomic Energy are provided in the respective Review.*

Table – 3 : Details of Exploration Activities in Bihar, 2011-12

Agency/ State/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI **Gold** Gaya and Nalanda	Bathani	-	-	-	-	20	Reconnaissance stage investigation (G-4) was carried out to assess gold mineralisation associated with Bathani volcano-sedimentary sequence and Munger Rajgir meta-sediments as a follow up of earlier work in Raja Bigha East Block (Bathani area) where anomalous concentration of gold in the range of 40 ppb to 504 in tuff, BIF intercalated tuff and BIF samples and other surface indications for old mining activities were recorded. Large scale mapping in Bathani-Majhauli- Saren exposes plutonic rocks at south-west of Village Bathani, whereas the area between Majhauli-Sarean-Sitarampur establishes the south-western continuation of volcano-sedimentary sequence in juxtaposition with Rajgir meta-sedimentary sequence. Detailed mapping around Shankarpur and Villages Rajabigha indicated that the area is covered by tuff and phyllitic tuff. The tuff unit was intruded by number of quartz veins (Q2) and shows alteration. Arsenopyrite tines were suspected in alteration zone. Available analytical results near Majhauli, shows anomalous gold concentration ranging from 120 ppb to 2.25 ppm. Quartz vein associated with tuff at Village Saren yielded l.ll ppm gold concentration. 20 samples from Villages Shankarpur and Rajabigha yielded 65 ppb to 250 ppb Au concentration. Taking all these together, a prospective block of 210 m strike length with 80 m width could be established. The work has been completed.

(Contd.)

Table - 3 (Concld.)

Agency/ State/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
- do - Jamui	Gosari-Ghutwe of Sono area	-	-	07	-	-	Reconnaissace Stage investigation (G-4) was carried out as per the recommendation of SGPB, Bihar with an objective to assess the gold potentiality as well as petrographic characterisation of the host rock vis-a-vis mineralised body in the block. So far available results of bedrock samples from west of Gosari area reveal that in schistose amphibolite Au concentration ranges from 60 ppb to 185 ppb (av. 117 ppb) whereas in quartzite - ferruginous quartzite - BMQ. Au concentration ranges from 60 ppb to 125 ppb (avg. 90 ppb). In addition to these. Quartz vein and granite gneiss also yielded 60 ppb Au concentration. All these imply that schistose amphibolite is the most favourable host rock for Au concentration. Four of the seven scout boreholes drilled for which analytical results are available mineralised zones could be identified only in 2 boreholes. The work has been completed.

Table – 4 : Mineral Production in Bihar, 2009-10 to 2011-12 (Excluding Atomic Minerals)

(Value in ₹ '000)

Mineral	Unit	2009-10			2010-11			2011-12 (P)		
		No. of mines	Quantity	Value	No. of mines	Quantity	Value	No. of mines	Quantity	Value
All Minerals		**6**		**2838436**	**10**		**3461179**	**6**		**3333674**
Limestone	'000t	2	567	203330	5	872	292511	2	528	175742
Mica (crude)	t	-	-	-	1	-	-	1	-	-
Mica (waste & Scrap)*	t	-	-	-	-	1459	-	-	4632	-
Quartzite	t	3	56394	20855	3	62767	26855	3	36024	16632
Talc/Soapstone/ Steatite	t	1	2235	380	1	2948	513	-	-	-
Sulphur#	t	-	8681	-	-	8353	-	-	9329	-
Minor Minerals @		-	-	2613871	-	-	3141300	-	-	3141300

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

** Includes mine waste obtained while dressing of crude mica.*

 # Recovered as by-product from oil refinery.

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

Mineral-based Industry

The existing large and medium-scale mineral-based industries in the organised sector in the State with their total installed capacities are given in Table - 5.

Table – 5 : Principal Mineral-based Industries in Bihar

Industry/plant	Capacity ('000 tpy)
Cement	
Kalyanpur Cements Ltd, Banjari, Dist. Rohtas.	1000
Nirman Cement Ltd, Behtta, Dist. Patna.	100
Fertilizer	
Harabhara Fertilizer, Dhanukagra.	9.8 (NPK)
Foundry	
Bharat Wagon & Engg. Co. Ltd, Muzaffarpur.	NA
Petroleum Refinery	
Indian Oil Corporation, Barauni.	6000