Mineral-based Industry

The important large and medium-scale mineral-based industries in organised sector in the State are given in Table - 32.

Table – 32 : Principal Mineral-based Industries in Gujarat

Industry/plant	Capacity ('000 tpy)
Abrasives	
Carborandum Universal Ltd, Okha, Dist. Jamnagar	NA
Carborandum Universal Ltd, Bhatia, Dist. Jamnagar	NA
Emery (I) Pvt Ltd, Badeshwar, Dist. Jamnagar	NA
Asbestos Products	
Gujarat Composite Ltd, Digvijaynagar Dist. Jamnagar	98
Ramco Industries Ltd, Singura, Dist. Kachchh	72
Sanghi Industries Ltd, Sanghipuram, Dist. Kachchh	36
U.P.Asbestos Ltd, Valsad	36
Cement	
Ambuja Cements Ltd, Ambuja Nagar Dist. Junagadh	4500
Grasim Industries Ltd, Sikka, Dist. Jamnagar	1075
Gujarat Sidhee Cements, Sidheegram Dist. Junagadh	1200
HMP Cements Ltd, Porbandar, Dist. Junagadh	198
Sanghi Industries Ltd, Sanghipuram Dist. Kachchh	2600
Shree Digvijay Cement Co. Ltd, Digvijaynagar Dist. Jamnagar	1075
Saurashtra Cements Ltd, Ranavav, Dist. Junagadh	1164
Tata Chemicals Ltd, Mithapur, Dist. Jamnagar	440
Ultra Tech Cement Co. Ltd, Pipavav Dist. Amreli	5300
Ultra Tech Cement Ltd (Narmada Cement) Jafrabad, Dist. Amreli	400
Ultra Tech Cement Ltd (G) (Narmada Cement) Magdalla (Works), Dist. Surat	720
Ceramics	
Akash Ceramics Pvt Ltd, Mansha, Gandhinagar	17.9
Amar Ceramics Industries, Sarkhi Mahudi Kalol	13.5
Asian Granito India Ltd, Dalpur, Dist. Sabarkantha	56
Asian Tiles Ltd, Sabarkantha	12
Bell Ceramics Ltd, Dora, Amod	50
Cera Sanitaryware Ltd, Kadi, Dist. Mehasana	24
City Tiles, Sabarkantha	20.3
Croma Ceramics Pvt Ltd, Morbi	12
Excel Ceramics Pvt Ltd, Morbi	13.5
Gujarat Goldcoin Ceramics Ltd, Paddhari, Rajkot	31.5
Hill Top Ceramics, Wankaner, Rajkot	10
Icon Ceramic Ltd, Morbi	13.5
Italica Ceramics, Morbi	13.5
Jalaram Ceramics Ltd, Kalol	12.3
Jalaram Ceramics Ltd, Mehasana	21
Jay Shree Insulators, Kalol	10.5
Kores Tiles Pvt. Ltd, Surendranagar	135
Madhusudan Ceramics Industries Ltd, Jambusar, Bharuch	20
Parshuram Tiles Ltd, Wankaner, Dist. Rajkot	18
Prime Ceramics Pvt Ltd, Morbi	13.5
Ramco Ceramics Pvt Ltd, Wakaner, Dist. Rajkot	2000
SACMI Ceramic Pvt Ltd, Morbi	13.5
Samay Tiles Ltd, Barna, Dist. Sabarkantha	1.9
Savana Ceramics Ltd, Jambusar	20

(Contd.)

Table - 32 (Contd.)

Industry/plant	Capacity ('000 tpy)
Smruti Ceramics Industries Ltd, Surendranagar	16.5
Sogo Ceramics Pvt Ltd, Morbi	50
SPL Ltd, Mehasana	40
Sunata Ceramics Pvt Ltd, Sabarkantha	21.6
Suncity Ceramics, Morbi	12
VAN Ceramics Ltd, Dalpur, Dist. Sabarkantha	35.3
Varmora Granito Pvt Ltd, Rajkot	24.8
Vrundavan Ceramics Ltd, Dhuva, Dist. Rajkot	71.3
Chemical	
Baroda Rayon Corpn. Ltd, Surat	26(Yarn) 21.8(H_2SO_4) 2.2(Sodium sulphate)
Century Chemicals, Nava Nanga, Dist. Jamnagar	108 (Refined Salt)
Gujarat Alkalies & Chemicals Ltd, Baroda	14.9 (Caustic Soda)
Gujarat Alkalies & Chemicals Ltd, Dahej, Dist. Bharuch	116.5 (Caustic Soda) 26.7(Phosphoric Acid)
Indian Rayon Industries Ltd, Veraval, Dist. Junagadh	16 (Yarn) 35.7 (H_2SO_4) 10 (carbon di-sulphide) 9.3 (sodium sulphate)
Navin Fluorine Industries Ltd, Surat	22(HF)
Saurashtra Chemicals Ltd, Porbandar, Dist. Porbandar	365 (aoda ash) 20.4 (caustic soda) 26.4 (refined bi-carbonate)
Shree Sulphurics Pvt. Ltd, Ankleshwar, Dist. Bharuch	51.8 (H_2SO_4) 12 (chloro-sulphuric acid)
Tata Chemicals Ltd, Mithapur, Dist. Jamnagar	875(soda ash)
Copper	
Hindalco Industries Ltd, Dahej, Dist. Bharuch	500 (copper cathode) 1670 (H_2SO_4) 180 (H_3PO_4) 400 (DAP & complexes) 15 tonne (Au) 150 tonne (Ag)

(Contd.)

Table - 32 (Contd.)

Industry/plant	Capacity ('000 tpy)
Jhagadia Copper Ltd, Jhagadia , Dist. Bharuch	50 (electrolytic copper) 20 (copper anodes)
Fertilizer	
GSFC-Vadodara	367 (urea) 108 (DAP) 196 (As)
GSFC-Sikka, Jamnagar	177.10 (N_2) 452.70 (P_2O_5)
GNFC-Bharuch	594 (urea) 142.5 (CAN) 14.25 (ANP)
HIL-Dahej, Dist. Bharuch	72.00 (N_2) 184.0 (P_2O_5)
IFFCO Ltd, Kandla, Dist. Kachchh	1215 (NPK) 1200 (DAP)
IFFCO Ltd, Kalol, Dist. Gandhinagar	544.5 (urea)
KRIBHCO Ltd, Hazira, Dist. Surat	1729.2 (urea)
Iron &Steel	
Essar Steel Ltd, Hazira, Dist. Surat	5100 (HBI) 1000 (Hot metal) 4600 (HRC) 1400 (CRC)
Ferro Alloys	
Baroda Ferro Alloys Ltd, Panchmahals	3.5
Essel Mining & Industries Ltd, Vapi, Dist. Valsad	2.1
Electro Ferro Alloys Ltd, Ahmedabad	0.3
Sponge Iron	
Electrotherm India Pvt Ltd, Samakhialli, Dist. Kachchh	75
Gallant Metal Ltd, Samakhialli, Dist. Kachchh	170
Global Hi -Tech Industries Ltd, Gandhidham	105
Glass	
Alembic Glass Industries Ltd, Baroda	35.0
Bhagwati Glass Containers Ltd, Kalol	8.7
Bharat Glass Tube Ltd, Bharuch	7.2
Gobind Glass & Industries Ltd, Kadi	NA
Gopal Glass Works Ltd, Budasan, Dist. Mehasana	40.6

(Contd.)

Table - 32 (Concld.)

Industry/plant	Capacity ('000 tpy)
Gujarat Borosil Ltd, Govali, Dist. Bharuch	62.5
Gujarat Glass, Division of Nicholas Piramal, Mangrol	80.3
Gujarat Glass, Division of Nicholas Piramal, Jambusar	84
Gujarat Glass, Division of Nicholas Piramal, Kosamba	12.8
Haldyn Glass (Gujarat) Ltd, Padra, Vadodara	43
Prestige Glass Industries Pvt Ltd, Vagra	11.5
Petroleum Refinery	
IOCL, Koyali	13700
RPL, Jamnagar	33000
Essar Oil Ltd, Vadinar	10500
Refractory	
Shri Natraj Ceramics & Chemical Industries Ltd, Khambhaliya, Dist. Jamnagar	28
VRW Industries Ltd, Ahmedabad	24
Calcined Bauxite	
Bombay Minerals Ltd, Jamkhambhaliya	96
Saurashtra Calcine Bauxite & Allied Industries Ltd, Bhatia	39
Birla VXL Ltd, Porbandar	36
Shri Natraj Ceramics & Chemical Industries Ltd, Khambhaliya	24
Graphite Crucible	
Diamond Crucible Co. Pvt, Mehasana	NA
S.D. Industries, Ahmedabad	NA
Ahmedabad Carbon Products, Ahmedabad	NA
Silicon Carbide Cruicibles	
Vesuvius India Ltd, Mehasana	1

HARYANA

Mineral Resources

The principal minerals occurring in Haryana are **china clay** in Faridabad, Gurgaon and Rewari districts; **limestone** in Ambala, Bhiwani, Mahendragarh and Panchkula districts; **quartz/ silica sand** in Bhiwani, Faridabad, Gurgaon and Mahendragarh districts; **quartzite** in Faridabad and Gurgaon districts; **slate** in Mahendragarh and Gurgaon districts. Besides, **barytes, calcite, felspar** and **marble** occur in Mahendragarh district; **copper** in Bhiwani and Mahendragarh districts; **dolomite** in Ambala and Mahendragarh districts; **granite** in Bhiwani district; **tin** and **tungsten** mineralisations have been located in Tosham area of Bhiwani district (Table - 33).

Exploration and Development

Details of activities conducted by various agencies during 2006-07 and 2007-08 are furnished in Table - 34.

Production

The State, only reported value of mineral production for minor minerals in 2007-08, which was estimated at Rs. 149 crore. Besides, minor minerals, sulphur as by-product was the only other mineral for which production was reported in the state. The production of sulphur recorded an increase of 29% from that of the previous year (Table-35).

There was no reporting mine during 2007-08 as in the previous year. The index of mineral production in Haryana (base 1993-94=100) was 329.56 in 2007-08 as against 255.10 in the previous year.

Table – 33 : Reserves/Resources of Minerals as on 1.4.2005 : Haryana

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	Total (B)	
			STD121	STD122			STD221	STD222					
Barytes	tonne	-	-	-	-	-	-	-	-	-	440	440	440
Calcite	tonne	-	-	-	-	166900	-	183900	-	-	-	350800	350800
China clay	'000 tonnes	-	7	29	36	2367	782	3348	13	34	5485	12029	12065
Copper													
Ore	'000 tonnes	-	-	-	-	-	2230	-	-	-	15000	17230	17230
Metal	'000 tonnes	-	-	-	-	-	11.82	-	-	-	45.00	56.82	56.82
Dolomite	'000 tonnes	-	-	-	-	5371	5149	3722	-	-	15257	29499	29499
Felspar	tonne	-	-	-	-	-	-	-	-	-	72164	72164	72164
Granite (Dim. stone)	'000 cu m	-	-	-	-	-	-	-	-	-	34000	34000	34000
Limestone	'000 tonnes	-	9675	-	9675	-	8222	2954	-	-	50398	61574	71249
Marble	'000 tonnes	-	-	-	-	-	1234	1602	-	-	19492	22328	22328
Quartz-silica sand	'000 tonnes	196	138259	129444	267900	307	114776	96071	27839	46300	1257938	1543231	1811131
Quartzite	'000 tonnes	15702	-	16200	31902	-	89742	96165	86951	85333	231887	590078	621980
Tin													
Ore	tonne	-	-	-	-	22580000	-	31330000	-	-	-	53910000	53910000
Metal	tonne	-	-	-	-	32187.80	-	54032.8	-	-	-	86220.60	86220.60
Tungsten													
Ore	tonne	-	-	-	-	2230000	-	-	-	-	-	2230000	2230000
Contained WO_3	tonne	-	-	-	-	3568	-	-	-	-	-	3568	3568

Figures rounded off.

Table – 34 : Details of Exploration Activities in Haryana, 2006-07 and 2007-08

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling	Remarks
		Scale	Area (sq km)	No. of boreholes	Meterage		Reserves/Resources estimated
2006-07							
GSI							
Base Metal							
Mahendragarh	North of Gangutana	-	-	-	-	-	Recorded copper mineralisation averaging 0.3 to 0.39% Cu.
-do-	Golwa area	-	-	-	-	-	A mineralised zone averaging 0.35 to 0.4% Cu has been intersected.
2007-08							
GSI							
Base Metal							
Mahendragarh	North of Gangutana	-	-	5	-	-	Copper mineralisation has been established over a cumulative strike length of 1.4 km in the North of village Gangutana.
DMG							
Quartzite							
Bhiwani	Kalayana, Kheri Butter	-	-	-	-	2	A band of ferrugenous quartzite was observed.
Gypsum							
Bhiwani Hissar	Garanpur Kalan, Daryapur, etc.	-	-	-	-	17	Recorded gypsum/gypsite pocket deposits of variable thickness.

Table – 35 : Mineral Production in Haryana, 2005-06 to 2007-08 (Excluding Atomic Minerals)

(Value in Rs. '000)

Mineral	Unit	2005-06			2006-07			2007-08 (p)		
		No. of mines	Qty	Value	No. of mines	Qty	Value	No. of mines	Qty	Value
All Minerals		**1**		**1487222**	**-**		**1487198**	**-**		**1487198**
Quartz	tonne	1	237	24	-	-	-	-	-	-
Sulphur*	tonne	-	31838	-	-	83659	-	-	108064	-
Minor minerals@		-	-	1487198	-	-	1487198	-	-	1487198

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

******* *Recovered as by-product from fertilizer plant.*

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

Mineral-based Industry

The important large and medium-scale mineral-based industries in the organised sector in the State are given in Table - 36.

Table – 36 : Principal Mineral-based Industries in Haryana

Industry/plant	Capacity ('000 tpy)
Abrasives	
Indian Abrasives, Faridabad	0.6
Asbestos Products	
Hyderabad Industries Ltd, Ballabrarh	91.7
Cement	
CCI Ltd, Charkhi Dadri, Dist. Bhiwani	174
Ceramic	
Hindustan Sanitaryware & Industries Ltd, Bahadurgarh	NA
SPL Ltd, Bahadurgarh	35000 (sq m per day)
Chemical	
Oriental Carbon & Chemcials Ltd, Dharuhera, Dist. Rewari	55 (H_2SO_4) 5 (Sulphur)
Fertilizer	
NFL- Gohana Road, Panipat	511.5 (Urea) 8.70 (S)
Iron & Steel	
Jindal Stainless Steel Ltd, Hissar	720 (Stainless steel)
Ferro-alloys	
Haryana Ferro Alloys Ltd	2.5
Glass	
Haryana Sheet Glass Ltd., Sevli, Dist. Sonipat	89.5
Hindustan National Glass & Industries Ltd. Ballabrarh	690 TPD
Petroleum Refinery	
IOCL, Panipat	12000
Refractory	
Bhaskar Refractories & SW Pipes (P) Ltd, Amar Nagar	12
Husakha Industries, Faridabad	2.5
Hyderabad Industries Ltd., Dharuhera	3.5

HIMACHAL PRADESH

Mineral Resources

Barytes, limestone, salt (rock) and shale are the important minerals produced in the State. **Barytes** occurs in Sirmaur district; **limestone** in Bilaspur, Chamba, Kangra, Kullu, Mandi, Shimla, Sirmaur and Solan districts; and **rock salt** in Mandi district. Other minerals that occur in the State are **antimony** in Lahaul and Spiti districts; **gypsum** in Chamba, Sirmaur and Solan districts; **magnesite** in Chamba district; **pyrite** in Shimla district; and **quartz, quartzite** and **silica sand** in Una district (Table - 37).

Exploration & Development

Details of exploration activites conducted by various agencies for base metals and limestone during 2006-07 and 2007-08 are furnished in Table - 38.

In 2006-07, ONGC conducted geo-physical survey in Himalayan foot-hills including Himachal Pradesh. An expanse of 51.05 sq km (2D-GLK/LK) was covered and drilling upto 2,819 m was carried out in one exploratory well.

Production

The value of mineral production in Himachal Pradesh during 2007-08 at Rs. 100 crore increased by about 7% as compared to that of the previous year.

Himachal Pradesh was the sole producer of salt (rock) in the country and its production decreased by 30% in 2007-08 as compared to that in the previous year. Limestone, the principal mineral produced in the state, accounted for 73% in the value of mineral production in 2007-08 and recorded an increase of 9% in production. The production of shale during 2007-08 increased by 4% over that of the previous year (Table-39).

The production value of minor minerals was estimated at Rs.26 crore for the year 2007-08.

The number of reporting mines in the state in 2007-08 was 26 which remained the same as that in the previous year. The index of mineral production in Himachal Pradesh (base 1993-94=100) was 462.14 in 2007-08 as against 424.70 in the previous year.

Table – 37 : Reserves/Resources of Minerals as on 1.4.2005 : Himachal Pradesh

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	Total (B)	
			STD121	STD122			STD221	STD222					
Antimony													
Ore	tonne	-	-	-	-	-	-	-	-	-	10588	10588	10588
Metal	tonne	-	-	-	-	-	-	-	-	-	174	174	174
Barytes	tonne	26699	-	11001	37700	-	37700	-	36160	12370	15126	101356	139056
Gypsum	'000 tonnes	-	-	-	-	-	-	1365	-	-	3081	4446	4446
Limestone	'000 tonnes	275755	100816	64032	440603	3721	976539	9860	1154802	1891	2174926	4321739	4762342
Magnesite	'000 tonnes	-	-	-	-	-	-	-	-	100	198	298	298
Pyrite	'000 tonnes	-	-	-	-	-	-	-	-	-	2560	2560	2560
Quartz-silica sand	'000 tonnes	-	-	-	-	-	-	-	428	-	2500	2928	2928
Quartzite	'000 tonnes	95	-	39	134	48	-	-	-	-	-	48	182
Rock salt	'000 tonnes	8470	-	5060	13530	-	-	-	-	-	-	-	13530

Figures rounded off.

Table – 38 : Details of Exploration Activities in Himachal Pradesh, 2006-07 and 2007-08

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling	Remarks
		Scale	Area (sq km)	No. of boreholes	Meterage		Reserves/Resources estimated
2006-07							
DGM							
Limestone							
Shimla	Salbhag	1:2,000	0.7	1	75.15	-	Work under progress.
-do-	Gumma and Rohana	1:2,000	0.7	2	210.90	-	Work under progress.
2007-08							
GSI							
Base Metal							
Sirmaur	Ambota area Tons valley	-	-	-	-	-	Borehole intersected six mineralised zones at depths between 57.15 m and 84 m. The visual estimation of total metal content (Pb+Zn) varies between 2% and 3%.
Solan	Motipur, Narag area	-	-	-	-	-	One borehole intersected sporadic dissemination of galena and pyrite at depths between 21 m and 58.3 m.
DGM							
Limestone							
Shimla	Salbhag	-	-	3	399	-	Drilling on behalf of M/s Cement India Ltd was carried out.
-do-	Gumma and Rohana	-	-	2	192	-	Work under progress.

Table – 39 : Mineral Production in Himachal Pradesh, 2005-06 to 2007-08 (Excluding Atomic Minerals)

(Value in Rs. '000)

Mineral	Unit	2005-06			2006-07			2007-08 (p)		
		No. of mines	Quantity	Value	No. of mines	Quantity	Value	No. of mines	Quantity	Value
All Minerals		**27**	-	**791442**	**26**	-	**934636**	**26**	-	**998073**
Barytes	tonne	1	549	714	1	1019	1427	1	738	1079
Limestone	'000 tonnes	25	7521	620341	24	7422	668461	24	8082	732084
Salt (rock)	tonne	1	1871	2954	1	1714	2706	1	1197	2479
Shale	tonne	-	502780	2933	-	490450	4873	-	511950	5262
Minor minerals @		-	-	164500	-	-	257169	-	-	257169

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

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

Mineral-based Industry

The principal large and medium-scale mineral-based industries in the organised sector in the State are given in Table - 40.

Table – 40 : Principal Mineral-based Industries in Himachal Pradesh

Industry/plant	Capacity ('000 tpy)
Cement	
ACC Ltd, Gagal, Dist. Bilaspur	4400
CCI Ltd, Rajban, Dist.Sirmaur	198
Grasim Industries, Sundernagar, Dist. Mandi	2000
Gujarat Ambuja, Darlaghat, Dist. Solan	1600
J.P.Industtries Ltd,	
Bagga, Dist. Solan	2000
Baroh Sindh, Dist. Chamba	2000
India Cement, Gumma, Dist. Shimla	2000
Lafarge India, Alsindi, Dist. Mandi	2000
Chemical	
Bhagwati Chemical Industries, Paonta Sahib, Dist. Sirmour	8.7 (Hydrate lime)
Doon Shivalik Mineral Industries, Bhagani, Paonta Sahib, Dist. Sirmour	5.5 (Hydrate lime)
Hind Chemical Industries, Badripur Paonta Sahib, Dist. Sirmour	13.2 (Hydrate lime)
Lime Chemicals Ltd, Paonta Sahib, Dist. Sirmour	35($CaCO_3$)
M.I. Industries, Paonta Sahib Dist. Sirmour	15 (Hydrate lime)
Superior Carbonate & Chemicals Ltd, Satiwala, Paonta Sahib, Dist. Sirmour	5($CaCO_3$)
Vashisht Chemical Pvt Ltd, Kala Amb, Paonta Sahib, Dist. Sirmour	6.3 ($CaCO_3$)

JAMMU & KASHMIR

Mineral Resources

Coal, gypsum and limestone are the important minerals produced in the State. **Coal** occurs in Poonch, Rajouri and Udhampur districts; **gypsum** in Baramulla and Doda districts; **limestone** in Anantnag, Baramulla, Kathua, Leh, Poonch, Pulwama, Rajauri, Srinagar and Udhampur districts; and **magnesite** in Leh and Udhampur districts.

Other minerals that occur in the State are **bauxite, ball clay** and **china clay** in Udhampur district; **bentonite** in Jammu district; **borax** and **sulphur** in Leh district; **diaspore** in Rajauri and Udhampur districts; **graphite** in Baramulla district; **lignite** and **marble** in Kupwara district; **quartz** and **silica sand** in Anantnag, Doda and Udhampur districts; **quartzite** in Anantnag district; and **sapphire** in Doda district (Tables - 41(A) and 41(B).

Production

The value of mineral production in Jammu & Kashmir at Rs. 31 crore during 2007-08 decreased by 2.26% from that of the previous year. The minerals produced in the state were limestone, gypsum and coal. The production of coal increased by 6% and there was a 3% increase in production of limestone whereas a fall of 56% was recorded in production of gypsum. The production value of minor minerals was estimated at Rs. 23 crore for the year 2007-08 (Table-42).

The number of reporting mines was 11, which is the same as that of the previous year. The index of mineral production in Jammu & Kashmir (base 1993-94=100) was 135.00 in 2007-08 as against 139.70 in the previous year.

Table – 41(A) : Reserves/Resources of Minerals as on 1.4.2005 : Jammu & Kashmir

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						
Bauxite	'000 tonnes	-	-	-	-	-	-	-	1323	182	520	-	2025	2025
Bentonite	tonne	-	-	-	-	-	-	-	-	-	147400	-	147400	147400
Borax	tonne	-	-	-	-	-	-	-	-	-	-	74204	74204	74204
China clay	'000 tonnes	-	-	-	-	-	-	-	-	-	28122	-	28122	28122
Diaspore	tonne	-	-	-	-	-	-	-	-	566	711	-	1277	1277
Graphite	tonne	-	-	-	-	-	-	-	-	-	1059520	61681035	62740555	62740555
Gypsum	'000 tonnes	6044	-	6875	12919	285	9852	44	7680	-	146055	-	163916	176835
Limestone	'000 tonnes	45409	18990	27428	91827	-	26801	160102	43621	-	1033672	203	1264400	1356227
Magnesite	'000 tonnes	-	2813	-	2813	-	-	-	-	-	150	45	195	3008
Marble	'000 tonnes	-	-	-	-	-	-	-	-	-	404703	-	404703	404703
Quartz-silica sand	'000 tonnes	-	-	-	-	-	-	-	-	-	3110	-	3110	3110
Quartzite	'000 tonnes	-	1112	-	1112	-	-	-	-	-	-	-	-	1112
Sapphire	kg	-	-	-	-	-	-	-	-	-	450	-	450	450
Sulphur (native)	'000 tonnes	-	-	-	-	-	-	-	-	-	210	-	210	210

Figures rounded off.

Table – 41(B) : Reserves of Lignite as on 1.4.2007 : Jammu & Kashmir

(In million tonnes)

District	Proved	Indicated	Inferred	Total
Total	-	**20.25**	**7.30**	**27.55**
Kupwara	-	20.25	7.30	27.55

Source: *Coal Directory of India, 2006-07.*

Table – 42 : Mineral Production in Jammu & Kashmir, 2005-06 to 2007-08 (Excluding Atomic Minerals)

(Value in Rs. '000)

Mineral	Unit	2005-06			2006-07			2007-08 (p)		
		No. of mines	Quantity	Value	No. of mines	Quantity	Value	No. of mines	Quantity	Value
All Minerals		**7**	**-**	**250029**	**11**	**-**	**318135**	**11**	**-**	**310941**
Coal	'000 tonnes	4	19	14250	7	16	12000	7*	17	13804
Gypsum	tonne	1	32636	21768	1	23903	18573	1	10407	8086
Limestone	'000 tonnes	2	166	39296	3	245	55699	3	253	57188
Minor minerals@		-	-	174715	-	-	231863	-	-	231863

Note : *The number of mines excludes minor minerals.*
** Relates to coal mines as on 31.03.2008.*
@ Figures for earlier years have been repeated as estimates, wherever necessary, because of non-receipt of data.

Mineral-based Industry

Jammu & Kashmir Minerals Ltd, a State Government undertaking, operates a cement plant having a capacity of 2 lakh tpy at Khrew in Pulwama district. The company also owns a tiny cement plant of 20,000 tpy capacity in Wuyan in Srinagar district. Besides, two tiny cement plants have a total capacity of 39,000 tpy. There is a unit having 1,800 tpy capacity for ceramic and refractory products in Kathua district. A 3,000-tpy capacity calcium carbide plant is in Pulwama district. There is a calcined bauxite plant capable of producing 7,500 tpy in Jammu.

JHARKHAND

Mineral Resources

Jharkhand is one of the leading mineral producing States. It is one of the leading producers of coal, kyanite, gold, silver, bauxite and felspar. Uranium ore is being mined and processed by Uranium Corporation of India Ltd (UCIL) for use as fuel in the country's nuclear power reactors through four underground mines, an opencast mine, two processing plants and a by-product recovery plant, all in East Singhbhum district. Jharkhand accounts for about 35% rock phosphate, 29% coal, 28% iron ore (hematite), 27% apatite, 22% andalusite, 16% copper ore and 10% silver ore resources of the country.

Important minerals occurring in the State are **bauxite** in Dumka, Gumla, Latehar, Lohardaga and Palamau districts; **china clay** in Dumka, Hazaribagh, Lohardaga, East & West Singhbhum, Sahebganj and Ranchi districts; **coal** in Bokaro, Deoghar, Dhanbad, Giridih, Godda, Hazaribagh, Palamau, Pakur and Ranchi districts; **copper** in Hazaribagh and East Singhbhum districts; **dolomite** in Garhwa and Palamau districts; **felspar** in Deoghar, Dhanbad, Dumka, Giridih, Hazaribagh, Jamtara, Koderma, Latehar, Palamau and Ranchi districts; **fireclay** in Dhanbad, Dumka, Giridih, Godda, Hazaribagh, Latehar, Palamau, Ranchi and West Singhbhum districts; **gold** in East Singhbhum district; **graphite** in Palamau district; **iron ore** (hematite) in West Singhbhum district; **iron ore** (magnetite) in Gumla, Hazaribagh, Latehar, Palamau and East Singhbhum districts; **kyanite** in Saraikala- Kharsawan and West Singhbhum districts; **limestone** in Bokaro, Dhanbad, Garhwa, Giridih, Hazaribagh, Palamau, 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, Palamau, Ranchi, Sahebganj, Saraikala- Kharsawan and West Singhbhum districts; and **quartzite** in East & West Singhbhum districts.

Other minerals that occur in the State are **andalusite** and **rock phosphate** in Palamau district; **apatite, chromite, cobalt, nickel, gold** and **silver** in East Singhbhum district; **asbestos** in East & West Singhbhum districts; **barytes** in Palamau and East Singhbhum districts; **bentonite** in Pakur and Sahebganj districts; **garnet** in Hazaribagh district; **granite** in Deogarh, Dhanbad, Dumka, Giridih, Godda, Gumla, Hazaribagh, Koderma, Lohardaga, Palamau, Ranchi and East Singhbhum districts; **sillimanite** in Hazaribagh district; **talc/steatite/soapstone** in Giridih, Kodarma, Palamau, East & West Singhbhum districts; **titanium minerals** in Ranchi and East Singhbhum districts; and **vermiculite** in Giridih and Hazaribagh districts (Tables - 43(A) and 43(B).

Table – 43(A) : Reserves/Resources of Minerals as on 1.4.2005 : 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	-	4000	4000
Apatite	tonne	-	-	-	-	-	-	-	2110000	1620000	3540000	-	7270000	7270000
Asbestos	tonne	-	-	-	-	-	3871	18309	2885	5769	124059	-	154893	154893
Barytes	tonne	-	-	-	-	-	-	-	-	-	35900	-	35900	35900
Bauxite	'000 tonnes	13408	5528	12722	31657	-	566	5242	320	17397	61827	536	85888	117545
Bentonite	tonne	-	-	609406	609406	-	3067	65200	-	-	134000	-	202267	811673
China clay	'000 tonnes	22162	711	7774	30647	-	1383	28	2007	7280	148753	42	159493	190140
Chromite	'000 tonnes	-	-	-	-	-	-	-	15	98	623	-	736	736
Cobalt	million tonnes	-	-	-	-	-	-	-	-	-	-	7	9	9
Copper														
Ore	'000 tonnes	4464	42356	29075	75895	-	-	-	40307	66188	43692	-	150187	226082
Metal	'000 tonnes	39.20	400.45	278.82	718.47	-	-	-	490.55	631.85	562.70	-	1685.10	2403.57
Dolomite	'000 tonnes	21918	1897	9674	33489	-	-	-	-	-	17606	-	17606	51095
Dunite	'000 tonnes	303	3446	3324	7073	-	-	-	-	-	3410	-	3410	10483
Felspar	tonne	174914	91940	423007	689861	-	-	19845	32510	117705	797470	-	967530	1657391
Fireclay	'000 tonnes	979	634	743	2356	-	23	18	-	-	64405	-	64447	66803
Garnet	tonne	-	58	234	292	-	-	-	-	-	-	682	682	974
Gold														
Ore (primary)	tonne	-	-	92850	92850	-	-	-	-	-	254000	-	254000	346850
Metal(primary)	tonne	-	-	0.83	0.83	-	-	-	-	-	2.29	-	2.29	3.12
Granite														
(Dim. stone)	'000 cu m	-	-	-	-	-	-	-	-	651300	8196064	-	8847364	8847364
Graphite	tonne	442537	670448	2163106	3276091	-	-	720000	2750	1143701	5180124	24350	7070925	10347016
Iron ore														
(hematite)	'000 tonnes	2237629	35730	221065	2494423	-	343	328	30000	50000	460651	1000000	1541323	4035746
Iron ore (magnetite)	'000 tonnes	14	836	2540	3390	-	5	11	411	3948	2472	32	6879	10269
Kyanite	tonne	629475	190200	85458	905133	-	-	-	-	1754900	3048500	-	4803400	5708533
Limestone	'000 tonnes	249920	42009	52889	344818	894	1630	2772	1956	9460	382745	1503	400961	745779

(Contd.)

Table - 43(A) (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						
Manganese ore	'000 tonnes	687	359	4002	5049	-	-	-	-	-	2429	-	2429	7478
Mica	kg	-	-	-	-	-	-	-	-	-	1494430	170700	1665130	1665130
Nickel ore	million tonnes	-	-	-	-	-	-	-	-	2	7	-	9	9
Ochre	tonne	220943	-	12231	233174	-	-	-	-	-	9037	-	9037	242211
Phosphorite/Rock phosphate	tonne	-	-	-	-	-	-	-	-	-	107370000	-	107370000	107370000
Quartz-silica sand.	'000 tonnes	7213	980	6222	14414	1615	941	1223	64	758	135745	6	140352	154766
Quartzite	'000 tonnes	409	-	416	825	-	-	-	197	275	38934	-	39405	40230
Sillimanite	tonne	-	-	-	-	-	-	-	-	-	83000	-	83000	83000
Silver														
Ore	tonne	-	-	-	-	-	-	-	-	-	23840000	-	23840000	23840000
Metal	tonne	-	-	-	-	-	-	-	-	-	5.22	-	5.22	5.22
Talc-steatite-soapstone	'000 tonnes	4	5	22	31	1	-	54	2	4	250	-	311	342
Titanium minerals														
*Ilmenite	tonne	-	-	-	-	-	-	-	-	-	744000	-	744000	744000
*Rutile	tonne	-	-	-	-	-	-	-	-	-	11000	-	11000	11000
Titaniferous magnetite	tonne	-	-	-	-	-	-	-	-	3630000	-	-	3630000	3630000
Vermiculite	tonne	-	-	-	-	-	-	-	-	-	30048	-	30048	30048

Figures rounded off.

** Please refer the respective Mineral Reviews for resources of ilmenite, rutile, leucoxene and zircon as per Department of Atomic Energy.*

Table – 43(B) : Reserves of Coal as on 1.4.2007 : Jharkhand

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total	**36959.80**	**31094.03**	**6338.32**	**74392.15**
Raniganj	1538.19	466.56	31.55	2036.30
Jharia	15077.57	4352.49	0	19430.06
East Bokaro	2896.98	3307.17	863.32	7067.47
West Bokaro	3488.10	1482.47	34.42	5004.99
Ramgarh	446.27	545.15	58.05	1049.47
North Karanpura	8077.77	5917.70	1864.96	15860.43
South Karanpura	2542.18	1985.73	1508.88	6036.79
Aurangabad	213.88	2279.82	503.41	2997.11
Hutar	190.79	26.55	32.48	249.82
Daltongunj	83.86	60.10	0	143.96
Deogarh	326.24	73.60	0	399.84
Rajmahal	2077.97	10596.69	1441.25	14115.91

Source : *Coal Directory of India, 2006-07.*

Exploration & Development

The details of exploration activities conducted by various agencies during 2006-07 and 2007-08 are furnished in Table - 44.

Production

The value of mineral production in Jharkhand during 2007-08 at Rs. 9,258 crore increased by about 11.52% over that of the previous year. The state claiming the fourth position accounted for 8.1% of the total value of mineral production in the country during 2007-08. Coal, the principal mineral produced in the state contributed 91% of the total value of mineral production in the state. The other principal minerals produced in the state were iron ore, bauxite, dolomite and limestone. Jharkhand was the leading producer of coal and kyanite in the country. The state is second leading producer of felspar and mica (crude) after Rajasthan during the year (Table-45).

Among the important minerals, the increase in production in terms of quantity was more than twenty times for manganese ore, 15% for dolomite, 14% for graphite, 12% for iron ore and 6% for limestone during 2007-08 as compared with the previous year. However, the output of gold ore declined by 35%, fireclay by 25%, kyanite 46% and bauxite 13%. The production value of minor minerals in respect of Jharkhand is Rs. 40 crore. The number of reporting mines in Jharkhand during 2007-08 was 293 which is the same as that in the previous year. The index of mineral production in Jharkhand (Base1993-94=100) was 123.73 in 2007-08 as compared to 120.10 in the previous year.

Table – 44 : Details of Exploration Activities in Jharkhand, 2006-07 and 2007-08

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling	Remarks
		Scale	Area (sq km)	No. of boreholes	Meterage		Reserves/Resources estimated
2006-07							
GSI							
Coal							
Brahmani coalfield Dumka	Salbadra-Gomarpahari sector	-	-	-	-	-	Four coal seams/zones varying in thickness from 4 to 58 m have been intersected within Barakar formation at depths between 113 and 464 m.
-do-	Gosaipahari Siulibana block	-	-	-	-	-	Exploration revealed presence of 533 m thick Barakar formation with coal seems of 0.5 to 14 m thick at depths between 102 and 604 m.
-do-	Pokharia-Paharpur block	-	-	-	-	-	About 0.5-26.35 m thick coal seams were recorded at depths between 205 and 572 m within Barakar formation.

(Contd.)

Table - 44 (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling	Remarks
		Scale	Area (sq km)	No. of boreholes	Meterage		Reserves/Resources estimated
East Bokaro coalfield Bokaro	Muditoli block	-	-	-	-	-	Regional coal seams were intersected between the depth range of 352 and 813 m.
South Karanpura coalfield Hazaribagh	Binja block	-	-	-	-	-	Two coal seams of 1.5 m and 0.84 m thickness were intersected between the depth range of 252 and 302 m within Barren Measures. Three coal seams ranging in thickness from 0.6 to 1 m were intersected between 409 and 440 m depth within Barakar formation.
Gold							
Ranchi	Hepsel-Lungtu block	-	-	-	-	-	Boreholes have indicated several visual mineralised zones that were intersected at depths between 53.85 and 173.25 m.
-do-	Kothadih-Sindauri block	-	-	-	-	-	Six mineralised zones were recorded at varying depths.
-do-	Saraikela-Kharswan	-	-	-	-	60	Conducted large scale mapping, pitting, trenching and sampling.
West Singhbhum	Pahardih Eastern Extn.	-	-	3	-	-	Two boreholes intersected mineralised zones.
-do-	Sausal-Hindung sector	-	-	-	-	-	Detailed mapping and sampling done. Analytical results are not encouraging.
Iron Ore							
Palamau	Chunga, Rajhara and Sokra area	-	-	-	-	-	Detailed mapping and sampling were conducted. Five magnetite bodies of dimensions 75 x 5 m to 100 x 10 m were sampled.
West Singhbhum	Ghatkuri block	-	-	86	-	86	Drilling could not be pursued due to lack of receipt of clearance to continue operation at forest areas.
MECL							
Coal							
North Karan-pura Coalfield	Pakri-Barwadih	-	-	-	2026.10	-	Contractual drilling on behalf of M/s NTPC was carried out.
Copper							
Singhbhum (East)	Ramchandra-pahar	1:1,000	1	18	3000	1112	Exploratory drilling has proved occurrence of five lodes. A total of 2.02 million tonnes of ore resources with 0.88% Cu was estimated at 0.5% cut off.
2007-08							
GSI							
Coal							
Brahmani coalfield Dumka	Gosaipahari-Siulibana block	-	-	-	-	-	Three coal seam zones varying in thickness from 0.5 to 10.15 m have been intersected at depths between 193.55 and 470.3 m. Intersections of these coal seam zones established continuity of these seams for about 1.2 km.
-do-	Pokharia-Paharpur block	-	-	-	-	-	Three Barakar coal seams zones were intersected at depths between 199.95 and 321.4 m. These coal seam zones with strike continuity of about 1 km towards South have been established.

(Contd.)

Table - 44 (Contd.)

Agency/ Mineral/ District	Location	Mapping Scale	Mapping Area (sq km)	Drilling No. of boreholes	Drilling Meterage	Sampling	Remarks Reserves/Resources estimated
East Bokaro coalfield Bokaro	Muditoli block	-	-	-	-	-	Regional coal seam, 8.2 m thick was intersected at 1075 m depth.
South Karanpura coalfield Hazaribagh	Binja block	-	-	-	-	-	Five coal seams (>40 cm thick) were intersected of which first one belongs to Barren Measures and others belong to Barakar formation.
Gold							
Ranchi	Hepsel-Lungtu block	-	-	4	-	-	Boreholes intersected several mineralised zone at varying depths.
-do-	Kothadih-Sindauri block	-	-	6	-	-	Sulphide mineralisation observed at varying depths.
Ranchi and Saraikela Kharswan	In parts of Saraikela-Kharswan and Ranchi dists.	-	-	-	-	-	Analytical results of bed rock samples indicated gold values ranging from 50 ppb to 1 g/t Au whereas soil samples yielded <25 ppb Au.
-do-	Sinduari to Urmal area	-	-	-	-	-	Analytical results are awaited.
DMG							
Coal							
Latehar	Jalta Parsahi	1:50,000 1:5,000	20 1	2	151.3	28	-
Graphite							
Palamau	Tabar, Mukta, Navwadih, etc.	1:2,000	1.05	-	300	155	About 1.01 million tonnes of reserves were estimated under indicated category.
Iron Ore							
Singhbhum (West)	Sasangdah	1:50,000 1:2,000	4.6 0.24	-	-	55	About 4.85 million tonnes of hematite reserves were estimated up to 10 m depth.
-do-	Ganalata hill	1:2,000	35	-	-	18	About 156.8 million tonnes of hematite reserves were estimated.
Limestone							
Ramgarh (West)	Sudi, Armadag, Kori, etc.	1:50,000 1:5,000	25 0.84	5	197.2	395	About 10.8 million tonnes of reserves were estimated under indicated category.
Singhbhum (West)	Gangabasa Rajabasa	1:2,000	1	13	248.55	205	About 1.63 million tonnes of reserves were estimated under indicated category.
Quartz							
Hazaribagh	Amritnagar, Charhi, etc.	1:50,000 1:2,000	100 0.35	-	-	6	About 1.68 million tonnes of reserves were estimated.
Jamtara	Gariyanala	1:2,000	0.38	-	-	20	-
MECL							
Coal							
North Karanpura Coalfield	Pakri-Barwadih	-	-	-	1083.2	-	Contractual drilling on behalf of M/s NTPC was carried out.
Copper							
Singhbhum (East)	Dhobani mine area	1:1,000	1.25	20	4000	1500	Grade and thickness of lodes varying from 3 to 4 m with 0.8 to 1% Cu were recorded.

(Contd.)

Table - 44 (Concld.)

Agency/ Mineral/ District	Location	Mapping Scale	Mapping Area (sq km)	Drilling No. of boreholes	Drilling Meterage	Sampling	Remarks Reserves/Resources estimated
Gold							
Ranchi	Parasi Central block	1:1,000	1	9	1709	133	Mineralisation intersected in boreholes varies from 1.5 m to 4.0 m in width with grade ranging from 1.48-3.26 g/t Au.
SAIL							
Iron Ore							
West Singhbhum	Gua iron ore mine	-	-	1	14	-	Exploration activities are in progress.

Table – 45 : Mineral Production in Jharkhand, 2005-06 to 2007-08 (Excluding Atomic Minerals)

(Value in Rs. '000)

Mineral	Unit	2005-06 No. of mines	2005-06 Quantity	2005-06 Value	2006-07 No. of mines	2006-07 Quantity	2006-07 Value	2007-08 (p) No. of mines	2007-08 (p) Quantity	2007-08 (p) Value
All Minerals		**297**	**-**	**82932210**	**293**	**-**	**83018588**	**293**	**-**	**92579937**
Coal	'000 tonnes	173	85423	76105226	173	88764	75765400	174*	90895	84356924
Bauxite	tonne	32	1508370	357295	30	1428154	430047	31	1243132	379690
Copper ore	tonne	-	-	-	-	-	-	-	46914	-
Copper conc.	tonne	-	-	-	-	-	-	1	1550	58947
Gold ore	tonne	-	9581	-	-	11269	-	-	7345	-
Gold	kg	1	34	23019	1	27	25063	1	27	26498
Gold (by-product)**	kg	-	167	122763	-	127	117513	-	-	-
Iron ore	'000 tonnes	16	17975	5357410	17	18608	5511563	17	20929	6507970
Manganese ore	tonne	2	639	1875	2	523	1201	3	11654	7322
Silver	kg	-	3383	41518	-	1708	28444	-	-	-
Dolomite	tonne	1	300351	239791	1	268214	201111	1	307826	233355
Felspar	tonne	4	7450	913	3	11175	1853	3	10804	1785
Fireclay	tonne	8	19952	2560	10	25811	3511	8	19450	2919
Graphite (r.o.m.)	tonne	9	16286	4921	9	12999	4842	9	14762	5600
Kaolin	tonne	12	118931	61527	9	88654	64938	8	91013	78434
Kyanite	tonne	1	5227	5018	1	6750	6480	1	3624	3678
Laterite	tonne	-	777	120	-	4419	681	-	7184	1108
Limestone	'000 tonnes	22	1428	166793	21	1943	396422	18	2056	465911
Mica (crude)	tonne	1	-	-	-	-	-	3	-	-
Mica (waste & scrap)#	tonne	-	42	-	-	-	-	-	-	-
Ochre	tonne	-	-	-	1	481	87	1	187	34
Pyrophyllite	tonne	1	1580	507	1	1451	464	1	3898	1247
Pyroxenite	tonne	4	65293	15476	5	80323	18041	5	49466	11855
Quartz	tonne	7	26610	3447	7	33103	3588	6	24487	1852
Quartzite	tonne	1	9375	938	1	10997	990	1	13152	1315
Silica sand	tonne	2	56507	19645	1	119909	34901	1	111143	32045
Minor minerals@		-	-	401448	-	-	401448	-	-	401448

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

** Relates to coal mines as on 31.03.2008.*

*** Recovered at Ghatsila smelter of HCL from copper slime.*

 # Includes mine waste and that obtained while dressing of crude mica.

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

Mineral-based Industry

The principal large and medium-scale mineral-based industries in the organised sector in the State are given in Table - 46.

Table – 46 : Principal Mineral-based Industries in Jharkhand

Industry/plant	Capacity ('000 tpy)
Alumina	
Hindalco Industries Ltd, Muri	110
Asbestos Products	
Hyderabad Industries Ltd, Deogarh	24.0
Cement	
ACC Ltd, Chaibasa, Dist. Singhbhum	870
ACC Ltd, Sindri, Dist. Dhanbad	600
Lafarge, Jojobera, Dist. Singhbhum	3000
Lemos Cement, Khalari, Dist. Ranchi	109
Sri Durga Cement Ltd, Hosla, Dist. Ramgarh	33
Sone Valley, Japla	254
Ceramic	
Bihar Industrial Corp. Ltd, Madhupur, Dist. Deoghar	0.48
Maithan Ceramics Pvt. Ltd, Dhanbad	NA
Chemicals	
Bihar Caustic & Chemicals Ltd, Garhwa Road, Dist. Palamau	92.75 (Caustic Soda Lye)
Copper Smelter	
HCL, ICC, Ghatsila	16.5 (Copper cathode) 8.4 (Fabricated wire bar) 54 (H_2SO_4) 390 t ($NiSO_4$) 480 kg ($CuSO_4$) 14.6 kg (Selenium) 6105 kg (Ag) 434 kg (Au)
Iron & Steel	
Bokaro Steel Plant, Bokaro	6200 (Sinter) 4585 (Pig iron) 3780 (Saleable steel) 35.5 (H_2SO_4) 27.2 (Ammonium sulphate)
Tata Steel Ltd, Jamshedpur,	2500 (Pellets) 4808 (Saleable steel)
Sinters & Pellets	
Tata Steel Ltd, Noamundi	800
Pig Iron	
Usha Martin Industries, Jamshedpur	110
Sponge Iron	
Bihar Sponge Iron Ltd, Chandil Dist. Saraikela-Kharsawan	210
Jai Durga Iron Pvt. Ltd, Jhumari Tellaiya Dist. Koderma	36
Zoom Vallabh Steels Ltd, Dugdha, Dist. Saraikala-Kharswan	120
Ferro Alloys	
Anjani Ferro Alloys Ltd, Mihijam	NA
Gautam Ferro Alloys Ltd	5.5
Tin Plating	
The Tin Plate Co, of India Ltd, Jamshedpur	165.0 (Electrolytic Tin Plate) 120.0 (Black Plate)
Glass	
IAG Co. Ltd, Bhandainagar	66.8
Refractory	
Allied Refractories (P) Ltd, Amaghata	7.2
Bharat Refractories Ltd, Marar, Dist. Hazaribagh (Ranchi Road Refractories Ltd.)	7.2
Bharat Refractories Ltd, Marar, Dist. Hazaribagh (IFICO Refractories Ltd)	42
Bharat Refractories Ltd, Bhandaridah, (Bhandaridah Refractory Plant) Dist. Bokaro	26
Jharia Firebricks Pottery Works (P) Ltd, Dhansar, Dist. Dhanbad	20
Mineral & Chemical Products, Kendposi, Dist. West Singhbhum	1.5 (Calcined Chinaclay)
Raj Refractory (P) Ltd, Hardag, Dist. Ranchi	6

(Contd.)

Table - 46 (Concld.)

KARNATAKA

Mineral Resources

Karnataka has the distinction of being the main gold producing State in the country. The State is the sole producer of felsite and leading producer of iron ore, chromite and dunite. Karnataka hosts country's 78% vanadium ore, 74% iron ore (magnetite), 42% tungsten ore, 38% asbestos, 33% titaniferous magnetite, 30% limestone, 25% granite, 22% manganese ore, 19% corundum, 18% dunite, 17% gold (primary), 13% kyanite and 11% iron ore (hematite) resources.

The important minerals occurring in the State are **bauxite** in Belgaum, Chickmagalur, Uttar and Dakshin Kannad and Udipi districts; **china clay** in Bangalore, Belgaum, Bellary, Bidar, Chickmagalur, Dharwad, Gadag, Hassan, Haveri, Kolar, Uttar and Dakshin Kannad, Shimoga and Tumkur districts; **chromite** in Chickmagalur, Hassan Mysore districts; **dolomite** in Bagalkot, Belgaum, Bijapur, Chitradurga, Mysore, Uttar Kannad and Tumkur districts; **dunite/pyroxenite** in Chickmagalur, Hassan and Mysore districts; **felspar** in Bangalore, Belgaum, Chitradurga and Hassan districts; **fireclay** in Bangalore, Chitradurga, Dharwad, Hassan, Kolar, Shimoga and Tumkur districts; **gold** in Chitradurga, Dharwad, Gadag, Gulbarga, Hassan, Haveri, Kolar, Raichur and Tumkur districts; **iron ore (hematite)** in Bagalkot, Bellary, Bijapur, Chickmagalur, Chitradurga, Dharwad, Gadag, Uttar Kannad, Shimoga and Tumkur districts; **iron ore (magnetite)** in Chickmagalur, Hassan, Uttar and Dakshin Kannad and Shimoga districts; **kyanite** in Chickmagalur, Chitradurga, Coorg, Mandya, Mysore, Shimoga and Dakshin Kannad districts; **limestone** in Bagalkot, Belgaum, Bellary, Bijapur, Chickmagalur, Chitradurga, Davangere, Gadag, Gulbarga, Hassan, Mysore, Uttar and Dakshin Kannad, Shimoga, Tumkur and Udupi districts; **magnesite** in Coorg, Mandya and Mysore districts; **manganese ore** in Belgaum, Bellary, Chickmagalur, Chitradurga, Davangere, Uttar Kannad, Shimoga and Tumkur districts; **ochre** in Bellary and Bidar districts; **quartz/silica sand** in Bagalkot, Bangalore, Belgaum, Bellary, Chickmagalur, Chitradurga, Davangere, Dharwad, Gadag, Gulbarga, Hassan, Haveri, Kolar, Koppal, Mandya, Mysore, Uttar & Dakshin Kannad, Raichur, Shimoga, Tumkur and Udupi districts; **Quartzite** in Belgaum district; and **talc/steatite/ soapstone** in Bellary, Chickmagalur, Chitradurga, Hassan, Mandya, Mysore, Raichur and Tumkur districts.

Other minerals that occur in the State are **asbestos** in Chickmagalur, Hassan, Mandya, Mysore and Shimoga districts; **barytes** and **pyrite** in Chitradurga district; **calcite** in Belgaum, Bijapur and Mysore districts; **copper** in Chickmagalur, Chitradurga, Gulbarga, Hassan, Uttar Kannad, Raichur and Shimoga districts; **corundum** in Bangalore, Bellary, Chitradurga, Coorg, Hassan, Mandya, Mysore and Tumkur districts; **fuller's earth** in Belgaum and Gulbarga districts; **granite** in Bagalkot, Bangalore, Bellary, Bijapur, Chamrajanagar, Chickmagalur, Chitradurga, Coorg, Dharwar, Gadag, Gulbarga, Hassan, Kolar, Koppal, Mandya, Mysore, Uttar & Dakshin Kannad, Raichur, Tumkur and Udipi districts; **graphite** in Kolar and Mysore districts; **gypsum** in Gulbarga district; **molybdenum** in Kolar and Raichur districts; **nickel** in Uttar Kannad district; **sillimanite** in Hassan, Mysore and Dakshin Kannad districts; **silver** in Chitradurga and Raichur districts; **titanium minerals** in Hassan, Uttar Kannad and Shimoga districts; **tungsten** in Gadag, Kolar and Raichur districts; **vanadium** in Hassan, Uttar Kannad and Shimoga districts; and **vermiculite** in Hassan, Mandya and Mysore districts (Table - 47).

Exploration & Development

The details of exploration activities conducted by various agencies during 2006-07 and 2007-08 are furnished in Table - 48.

Table – 47 : Reserves/Resources of Minerals as on 1.4.2005 : Karnataka

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						
Asbestos	tonne	-	-	-	-	-	-	-	-	2441037	5841420	-	8282457	8282457
Barytes	tonne	-	-	-	-	-	-	-	-	-	15175	-	15175	15175
Bauxite	'000 tonnes	4576	367	786	5729	-	394	7180	378	2940	32882	-	43774	49503
Calcite	tonne	-	-	118	118	-	-	-	-	14400	52415	-	66815	66933
China clay	'000 tonnes	1805	3714	2168	7687	241	311	1997	220360	443	26017	-	249369	257056
Chromite	'000 tonnes	470	-	620	1090	-	68	41	-	20	571	-	700	1790
Copper														
Ore	'000 tonnes	963	-	2595	3558	-	-	-	1750	7148	21948	-	30846	34404
Metal	'000 tonnes	5.99	-	20.34	26.33	-	-	-	22.00	66.90	111.33	-	200.23	226.56
Corundum	tonne	-	-	-	-	-	756	915	13	49	14157	-	15890	15890
Dolomite	'000 tonnes	84865	35916	23929	144710	-	-	-	9360	17578	461377	484	488799	633509
Dunite	'000 tonnes	428	153	955	1536	-	-	-	23909	-	4038	-	27947	29483
Felspar	tonne	67789	-	206430	274219	-	-	-	25000	135133	207245	-	367378	641597
Fireclay	'000 tonnes	119	242	728	1089	-	16	81	-	226	9928	-	10251	11340
Fuller's earth	tonne	-	-	58200	58200	-	-	-	-	551640	1471276	-	2022916	2081116
Gold														
Ore (primary)	tonne	14898956	1075868	1641629	17616453	-	-	1724132	3676371	7914931	1990500	33250000	48555934	66172387
Metal(primary)	tonne	64.47	3.80	10.00	78.27	-	-	6.74	17.43	20.12	5.12	25.73	75.14	153.41
Granite (Dim. stone)	'000 cu m	19212	16617	18983	54812	-	-	-	4198	1231625	7998043	19000	9252866	9307678
Graphite	tonne	1308	6794	188812	196914	-	-	-	-	18200	52500	-	70700	267614
Gypsum	'000 tonnes	-	-	-	-	-	-	-	-	-	3784	-	3784	3784
Iron ore (hematite)	'000 tonnes	465677	190168	284584	940430	939	5524	1034	274600	43380	400813	9502	735792	1676222
Iron ore (magnetite)	'000 tonnes	-	-	-	-	130062	-	18375	1498957	479372	5345018	340000	7811784	7811784
Kyanite	tonne	127830	16	94409	222255	-	-	-	386247	1610502	10682763	-	12679512	12901767
Limestone	'000 tonnes	746295	230249	389331	1365875	19970	152101	450529	2493208	14327809	33076293	-	50519911	51885786

(Contd.)

Table - 47 (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						
Magnesite	'000 tonnes	243	6	777	1025	-	-	-	88	10	2734	-	2832	3857
Manganese ore	'000 tonnes	6735	4426	8057	19218	384	1362	1835	1498	7329	51110	-	63518	82736
Molybdenum														
Ore	tonne	-	-	-	-	-	-	-	-	-	1320900	-	1320900	1320900
Contained MoS_2	tonne	-	-	-	-	-	-	-	-	-	1718.70	-	1718.70	1718.70
Nickel ore	million tonnes	-	-	-	-	-	-	-	-	-	0.23	-	0.23	0.23
Ochre	tonne	487731	-	326100	813831	-	-	-	-	-	952620	-	952620	1766451
Pyrite	'000 tonnes	-	-	-	-	-	-	-	-	-	3000	-	3000	3000
Quartz-silica sand	'000 tonnes	15276	3464	13582	32321	305	1504	1829	80	80	44397	17	48211	80532
Quartzite	'000 tonnes	43	-	680	723	-	-	-	-	-	393	-	393	1116
Sillimanite	tonne	-	-	-	-	-	-	-	-	-	982725	-	982725	982725
Silver														
Ore	tonne	7208303	-	69462	7277765	-	-	-	-	-	314150	-	314150	7591915
Metal	tonne	2.67	-	0.48	3.15	-	-	-	-	-	2.92	-	2.92	6.07
Talc-steatite-soapstone	'000 tonnes	97	-	82	179	20	135	344	-	30	1213	-	1742	1921
Titanium minerals														
Titaniferous magnetite	tonne	-	-	-	-	-	-	-	-	-	13862094	-	13862094	13862094
Tungsten														
Ore	tonne	-	-	-	-	-	-	-	15534073	11805499	-	9338246	36677818	36677818
Contained WO_3	tonne	-	-	-	-	-	-	-	3057	1775	-	1403	6235	6235
Vanadium	tonne													
Ore	tonne	-	500000	4000000	4500000	-	-	-	-	-	14884430	-	14884430	19384430
Metal	tonne	-	700	5600	6300	-	-	-	-	-	43197.55	-	43197.55	49497.55
Vermiculite	tonne	-	17350	10330	27680	-	-	-	-	1562	66658	-	68220	95900

Figures rounded off.

Table – 48 : Details of Exploration Activities in Karnataka, 2006-07 and 2007-08

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling	Remarks
		Scale	Area (sq km)	No. of boreholes	Meterage		Reserves/Resources estimated
2006-07							
GSI							
Diamond							
Gulbarga, Raichur and Bellary	In parts of Gulbarga, Raichur and Bellary dists.	-	-	-	-	-	Search for kimberlite was continued through mapping and sampling. Two stream sediment samples yielded indicator minerals.
Gold							
Chitradurga	Paramanhalli North block	-	-	-	-	-	Detailed mapping, trenching and sampling were conducted. The analytical results of groove samples indicated gold value ranging from 0.13 to 0.72 g/t.
Dharwad	Bangaragatti block (North and South sector)	-	-	-	-	-	Five mineralised zones were demarcated for a strike length of 140 to 550 m. Analytical results indicated gold values ranging from 0.03 to as high as 35 g/t.
Dharwad and Uttar Kannad	Maruthipura-Attigere block	-	-	-	-	-	Detailed mapping, pitting, trenching and sampling were carried out. Analytical results of bed rock samples indicate gold values ranging from 0.02 to1.49 g/t.
Tumkur	Ajjanahalli block	-	-	12	-	-	Analysis of core samples indicated gold values ranging between 0.78 and 1.2 g/t. A tentative resource of gold ore of about 0.1 million tonnes with a grade of 1.65 g/t Au was estimated from Ajjanahalli Central sector.
-do-							In Ajjanahalli East block (North sector) a resource of 0.38 million tonnes of gold ore having 1.7 g/t Au was estimated. Thus the total resource of this block has been augmented from 0.293 million tonnes in 2005-06 to 0.673 million tonnes in 2006-07 with an average grade of 1.83 g/t Au.
-do-							In Ajjanahalli East block - North Extension and South sector, detailed mapping, trenching and sampling were conducted. The continuation of all the six mineralised bands in already explored North sector block was established.
-do-							In Ajjanahalli Central block strike continuity of six mineralised zones was established. Analytical results indicated gold values ranging from 0.05 to 10 g/t.

(Contd.)

Table - 48 (Contd.)

Agency/ Mineral/ District	Location	Mapping Scale	Mapping Area (sq km)	Drilling No. of boreholes	Drilling Meterage	Sampling	Remarks Reserves/Resources estimated
Iron Ore							
Bellary	NMDC block in parts of Sandur schist belt	-	-	-	-	-	Boreholes intersected mineralised zones of varying width. A total of 8 million tonnes of iron ore reserves with >55% Fe was estimated.
Bagalkot and Bellary	Parts of Hungund belt	-	-	-	-	-	The work has established 31 BIF bands of varying widths in Kamatagi block.
Gadag	In parts of Gadag belts	-	-	-	-	-	Regional targetting of iron ore was carried out and a number of BIF bands of thickness ranging from 7 to 15 m have been established.
Platinum Group of Metals							
Davangere	Hanumalapura (block A and B)	-	-	-	-	-	So far a total of 11 boreholes have been completed and a total strike length of 1.8 km mineralised zone has been established. A tentative resource of 0.84 million tonnes of PGE ore with Pt+Pd values ranging from 0.5 to 0.93 ppm was established of which 0.55 million tonnes were augmented during 2006-07.
-do-	Northern part (Block D) of Hanumalapura block (block A)	-	-	-	-	-	One titaniferous-vanadiferous magnetite band has been identified. Analytical results of bed rock samples are awaited.
Uttar Kannad	Kaiga-Mothimakki-Biroligudda-Suryakalyanigudda areas	-	-	-	-	-	Major parts of the area are occupied by gabbro, anorthosite, pyroxenite and vanadiferous magnetite. Analytical results awaited.
HGML							
Gold							
Raichur	Hutti	-	3167	-	721	13459	A total of about 8.27 million tonnes of reserves was estimated with Au content @ 6.04 g/t
-do-	Uti	1:2,000	3	-	-	1417	A total of about 5,06,647 tonnes of reserves was estimated with Au content @ 2.53 g/t
-do-	Hira Buddini	1:1,000	0.36	-	-	3372	A total of about 0.45 million tonnes of reserves was estimated with Au content @ 5.50 g/t
Mysore Minerals Ltd							
Bauxite							
Bagalkot	Paduvare-Byndoor	-	-	-	-	-	A total of about 1.49 million tonnes of reserves was estimated.
Dolomite							
Bagalkot	Katagere	-	-	-	-	-	A total of about 99.88 million tonnes of reserves was estimated.
-do-	Naralakere	-	-	-	-	-	A total of about 10.35 million tonnes of reserves was estimated.

(Contd.)

Table - 48 (Contd.)

Agency/ Mineral/ District	Location	Mapping Scale	Mapping Area (sq km)	Drilling No. of boreholes	Drilling Meterage	Sampling	Remarks Reserves/Resources estimated
Iron Ore							
Bellary	Jambuna-thanahalli	-	-	-	-	-	A total of about 6.05 million tonnes of reserves was estimated.
Limestone							
Bagalkot	Muddapura	-	-	-	-	-	A total of about 9.7 million tonnes of reserves was estimated.
-do-	Lokapura	-	-	-	-	-	A total of about 26.24 million tonnes of reserves was estimated.
Bagalkot	Chikka-Shellikere	-	-	-	-	-	A total of about 32.91 million tonnes of reserves was estimated.
Belgaum	Yadwad	1:2,000	64.35 (hect.)	-	-	-	A total of about 25.87 million tonnes of reserves was estimated.
2007-08 GSI							
Gold							
Dharwad	Bangaragatti block (North and South sector)	-	-	-	-	235	Detailed mapping delineated the southern continuity of BMQ bands traced in the previous years. Analytical results are awaited.
Dharwad and Uttar Kannad	Maruthipura-Attigere block	-	-	-	-	264	Nine BIF bands were traced during large-scale mapping. Analytical results indicated gold values ranging from 0.22 to 1.57 g/t.
Tumkur	Ajjanahalli block 'B' (previously Ajjanahalli East block-Central sector)	-	-	14	-	-	Analysis of core samples indicated gold values ranging between 0.43 and 1.82 g/t.
-do-	Ajjanahalli block 'C'	-	-	1	166.7	-	Borehole intersected weak mineralised zone between 30.2 and 151.6 m. This block was merged in block 'E'
-do-	Ajjanahalli block 'D' (previously Ajjanahalli Central block)	-	-	-	-	-	Detailed mapping and trenching have brought out eight parallel mineralised zones. A maximum gold value of 4.11 g/t with 2 m width has been recorded.
-do-	Ajjanahalli block 'E' (previously Ajjanahalli East block-North Extn. and South sector)	-	-	-	-	-	Detailed mapping has brought out all the six mineralised BIF bands seen in the Northern part. The maximum assay value is 6.0 g/t Au with 2 m width has been recorded in the trench samples.
Iron Ore							
Bellary	NMDC block in parts of Sandur schist belt	-	-	-	-	-	Drill indicated resources that were estimated at 2.98 million tonnes with 56.8% Fe; 2.36 million tonnes with 59.79% Fe and 2.15 million tonnes with 60.58% Fe.

(Contd.)

Table - 48 (Concld.)

Agency/ Mineral/ District	Location	Mapping Scale	Mapping Area (sq km)	Drilling No. of boreholes	Drilling Meterage	Sampling	Remarks Reserves/Resources estimated
Gadag	Near Singatarayankere Tanda area	-	-	-	-	-	Eight BHQ bands of 3 to 5 km in length and 4 to 12 m in width were delineated.
Platinum Group of Metals							
Davangere	Hanumalapura block A	-	-	3	-	-	Mineralised zone proved for a strike length of 2 km.
-do-	Hanumalapura part of Block B and C	-	-	-	-	-	Conducted geological mapping, trenching and sampling.
Uttar Kannad	Kaiga-Mothimakki-Biroligudda-Suryakalyanigudda	-	-	-	-	-	At places, gabbro-ultramafic variants were recorded.
DMG							
Building/Dimension Stone							
Chikballapura	Dibburhalli, Thimmasandra	1:50,000	500	-	-	8	A total of 0.64 million cu m resources of granite to a workable depth of 20 m were estimated.
Hassan	Hosakote, Uchangi, etc.	1:50,000	600	-	-	5	A total of 0.35 million cu m resources of dolorite to a workable depth of 20 m depth were estimated.
Iron Ore							
Tumkur	Melanahalli, C.N.Halli	1:50,000	100	-	-	15	Two million tonnes of resources to a workeable depth of 20 m were estimated.
Limestone							
Gulbarga	Malkhed, Jawargi	-	-	2	388.5	400	Exploration continued.
Tumkur	Melanahalli	-	-	4	388.0	100	Exploration continued.
Manganese Ore							
Gadag	Kellur village	1:50,000	150	-	-	24	A total of 25 thousand tonnes of resources to a workable depth of 10 m were estimated.
NMDC							
Iron Ore							
Bellary	Dolimalai iron ore mine	-	-	12	720.5	-	About 10 million tonnes of hematite reserves were estimated.
HGML							
Gold							
Raichur	Hutti	1:400	5520 (UG)	45	1423.9	11500	As on 1.4.2008, total reserves of gold ore was estimated at 8.27 million tonnes with 6.04 g/t Au.
-do-	Uti	1:2,000	3	-	-	3963	A total of 1.76 million tonnes mineable reserves of gold ore was estimated with 2.53 g/t Au.
-do-	Hira Buddini	1:1,000	4.06	-	-	-	A total of 0.45 million tonnes mineable reserves of gold ore was estimated with 5.5 g/t Au.

Production

The value of mineral production in Karnataka at Rs. 4,495 crore in 2007-08 increased by 23.3% as compared to the previous year. Iron ore, gold, limestone and manganese ore being the important minerals produced in the state together accounted for 99% of the total value of mineral production during the year. Karnataka was the sole producer of felsite and the leading producer of gold and limeshell conntributing 99% and 73%, respectively, to the total production for the respective minerals in the country. The state was also the second leading producer of iron ore and dunite. Among the important minerals, production in terms of quantity of limeshell rose by 72%, bauxite 46%, gold 21%, manganese ore and shale 23% each, iron ore 12% and limestone by 1%. The production of magnesite decreased by 58%, dunite 51%, laterite 43%, silica sand 39%, dolomite 12% and chromite by 6% (Table-49).

The production value of minor minerals was estimated at Rs. 26 crore for the year 2007-08. The number of reporting mines in Karnataka was 218 in 2007-08 as against 231 in the previous year. The index of mineral production in Karnataka (Base1993-94=100) was 305.08 in 2007-08 as compared to 272.60 in the previous year.

Table – 49 : Mineral Production in Karnataka, 2005-06 to 2007-08 (Excluding Atomic Minerals)

(Value in Rs. '000)

Mineral	Unit	2005-06			2006-07			2007-08 (p)		
		No. of mines	Quantity	Value	No. of mines	Quantity	Value	No. of mines	Quantity	Value
All Minerals		**236**	**-**	**33341763**	**231**	**-**	**36451782**	**218**	**-**	**44949142**
Bauxite	tonne	5	72840	9879	3	110971	18276	2	161554	28425
Chromite	tonne	2	8696	34718	2	7715	43387	2	7257	43843
Gold ore	tonne	-	469772	-	-	501340	-	-	684993	-
Gold	kg	2	2846	2677014	2	2334	2148349	3	2831	2799422
Iron ore	'000 tonnes	79	39843	28763801	78	40719	32130403	86	45605	39919060
Manganese ore	tonne	14	267107	271474	15	251995	336364	16	309716	388210
Silver*	kg	-	317	3797	-	268	4310	-	281	5398
Clay (others)	tonne	-	8500	595	-	-	-	-	45000	4500
Corundum	kg	-	-	-	-	-	-	1	5800	67
Dolomite	tonne	11	321339	42408	14	397130	51456	12	348690	46020
Dunite	tonne	1	10896	970	1	13236	1059	1	6438	515
Felspar	tonne	1	2402	781	-	-	-	-	-	-
Fireclay	tonne	1	10637	2147	1	1835	275	-	-	-
Felsite	tonne	5	981	838	5	642	790	3	200	400
Kaolin	tonne	3	12166	12435	3	12647	9709	2	3750	5055
Kyanite	tonne	3	1588	508	1	144	79	-	-	-
Laterite	tonne	3	125567	27042	3	173501	60621	3	99290	37485
Limestone	'000 tonnes	52	13616	1136835	57	14701	1293133	52	14859	1309892
Limeshell	tonne	8	81901	38126	6	59012	31645	6	101232	55605
Magnesite	tonne	2	8277	13620	3	10966	14389	2	4602	7714
Ochre	tonne	1	11550	1887	1	13282	2700	-	9377	1360
Quartz	tonne	6	23628	3032	4	13004	1063	1	2500	153
Quartzite	tonne	-	-	-	1	568	48	1	100	14
Silica sand	tonne	36	123955	12023	30	147021	19887	24	89713	8792
Shale	tonne	-	823260	27461	-	651711	23462	-	800439	26906
Talc/soapstone/ steatite	tonne	1	925	102	1	970	107	1	358	36
Minor minerals@		-	-	260270	-	-	260270	-	-	260270

Note: *The number of mines excludes minor minerals.*
******* *Recovered at Raichur and Tumkur during refining of gold.*
@ *Figures for earlier years have been repeated as estimates because of non-receipt of data.*

Mineral-based Industry

The important large and medium-scale mineral-based industries in organised sector in the State are given in Table - 50.

Table – 50 : Principal Mineral-based Industries in Karnataka

Industry/plant	Capacity ('000 tpy)
Abrasives	
Grindwell Norton Ltd, Bangalore	NA
Sri Sadguru Abrasives Pvt. Ltd, Mache, Dist. Belgaum	24 (t)
Alumina	
Hindalco Industries Ltd, Belgaum	350 (Alumina) 106 (Spl. alumia)
Asbestos Products	
Ramco Industries Ltd, Karur, Dharwad	NA
Southern Asbestos Ltd, Karur, Dist. Dharwad	NA
Cement	
ACC Ltd, Wadi, Dist. Gulbarga	6000
CCI Ltd, Kurkunta, Dist. Gulbarga	198
HMP Cements Ltd, Shahabad, Dist. Gulbarga	476
Kanoria Industries, Bagalkot	330
Mysore Cements Ltd, Ammasandra Dist. Tumkur	570
Raj Shree Cement, Malkhed, Dist. Gulbarga	2600
Siddaganga Cement Pvt Ltd, Sadarahalli, Dist. Tumkur	15
Vasvadatta Cement, Sedam, Dist. Gulbarga	4100
Ceramic	
H&R Johnson (India) Ltd, Hubli	47.72
Murudeshwar Ceramics Ltd, Dharwad	115
Fertilizer	
Mangalore Chemical & Fertilizers Ltd, Panambur, Dist. Dakshin Kannad	380 (Urea) 220 (DAP)
Glass	
United Glass Bottles Mfg. Co. Ltd, Avalahalli	NA
Iron & Steel	
Jindal Vijayanagar Steel Ltd, Vijayanagar, Dist. Bellary	4200 (Pellets) 720 (Pig iron) 2000 (Steel)

(Contd.)

Table - 50 (Concld.)

Industry/plant	Capacity ('000 tpy)
Visvesvaraya Iron & Steel Ltd, Bhadravati, Dist. Shimoga	205(Pig iron) 130(saleable steel) 4.8 (refractory Bricks)
Sunvik Steels Pvt. Ltd, Jodidevarahally, Dist. Tumkur	60
Pellets	
KIOCL, Mangalore	4000 (Pellets) 6700 (Conc.) 205 (Pig Iron)
Pig Iron	
Uni-Metal Ispat Ltd, Bellary	75
Kirloskar Ferrous Industries Ltd, Bevinahalli, Dist. Koppal	240
Kudremukh Iron Ore Co. Ltd, Mangalore	205
Sponge Iron	
Bellary Steel & Alloys Ltd, Bellary	60
Benaka Sponge Iron Pvt. Ltd, Bellary	60
Divya Jyoti Steel Ltd, Taranagar, Dist. Bellary	30
Janki Corp. Ltd, Sidiginamola, Dist. Bellary	180
Haryana Steel and Power, Shanthigrama, Dist. Hassan	35
Hare Krishna Metals Pvt Ltd, Hire Bagundd Dist. Kappad	75
Hospet Ispat Ltd, Allanagar Bagnal Road, Kappad	60
Ferro Alloys	
Dandeli Steel & Ferro Alloys Ltd, Dandeli	6
Yashashvi Steels & Alloys Pvt Ltd, Nalakundi, Dist. Bellary	30
S.R. Chemicals & Ferro Alloys Ltd, Honaga, Dist. Belgaum	0.3
Thermit Ferro Alloys Ltd, Shimoga	1.5
Petroleum Refinery	
MRPL, Mangalore	9690
Refractory	
Ceramic Products Ltd, Khanapur, Dist. Belgaum	5

KERALA

Mineral Resources

Kerala is well known for its deposits of excellent quality china clay and beach sands containing valuable minerals like ilmenite, rutile, sillimanite, zircon, garnet, leucoxene and monazite. The State is the principal producer of kaolin, limeshell and sillimanite. The State also accounts for 92% leucoxene, 70% zircon, 35% ilmenite, 27% rutile and 24% china clay of the country's resources. Important mineral occurrences in the State are **bauxite** in Kannur, Kasaragod, Kollam & Thiruvananthapuram districts; **china clay** in Alappuzha, Ernakulam, Kannur, Kasaragod, Kollam, Kottayam, Palakkad, Thiruvananthapuram & Thrissur districts; **limestone** in Alappuzha, Ernakulam, Kannur, Kollam, Kottayam, Kozhikode, Malappuram, Palakkad & Thrissur districts; **quartz/silica sand** in Alappuzha, Kasaragod, Thiruvananthapuram & Wayanad districts; **sillimanite** in Kollam and Thiruvananthapuram districts; and **titanium minerals** in Kasaragod, Kollam, Pathanamthitta & Thiruvananthapuram districts; and **zircon** in Kollam district.

Other minerals that occur in the State are **fire clay** in Alappuzha, Ernakulam, Kannur & Kollam districts; **garnet** in Kollam & Thiruvananthapuram districts; **gold** in Malappuram & Palakkad districts; **granite** in Palakkad and Thiruvananthapuram districts; **graphite** in Ernakulam, Idukki, Kollam, Kottayam & Thiruvananthapuram districts; **iron ore (magnetite)** in Kozhikode and Malappuram districts; **kyanite** in Kollam and Thiruvananthapuram districts; **lignite** in Alappuzha, Kollam and Kannur districts; **magnesite** in Palakkad district; and **steatite** in Kannur and Wayanad districts (Tables - 51(A) and 51(B)).

Exploration & Development

The details of exploration activities conducted by GSI and State DMG are furnished in Table - 52.

Production

The value of mineral production in Kerala during 2007-08 at Rs. 748 crore decreased marginally compared to that in the previous year. The important minerals produced in the state during 2007-08, were kaolin, limestone, limeshell, silica sand and sillimanite, which together accounted for 21% of the value of mineral production in the state. Minor minerals account for about 79% of the total value of mineral production in the State. Kerala was the second leading producer of kaolin with a share of 30% in the total production of the country. The state was also the second leading producer of sillimanite and limeshell in the country accounting for 34% and 24%, respectively. Among important minerals, production in terms of quanity of laterite decreased by 36%, kaolin 9%, limeshell 8% and limestone 5%. However, the production of sillimanite increased to more than double and that of silica sand increased by 7% as compared to the previous year. The fall in production of limestone, laterite and limeshell was due to temporary closure of mine because of lack of demand and inclement weather whereas for kaolin it was due to sub grade china clay mined and machinery break down (Table-53).

The production value of minor minerals was estimated at Rs. 589 crore for the year 2007-08. The number of reporting mines in Kerala was 27 during 2007-08 as against 33 in the previous year. The index of mineral production (base 1993-94=100) was 229.48 in 2007-08 as against 244.10 in the previous year.

Table – 51(A) : Reserves/Resources of Minerals as on 1.4.2005 : Kerala

Mineral	Unit	Reserves				Remaining resources							Total resources (A+B)
		Proved STD111	Probable		Total (A)	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
			STD121	STD122		STD221	STD222						
Bauxite	'000 tonnes	55	-	-	55	-	-	2037	9284	2722	-	14043	14098
China clay	'000 tonnes	7826	1055	670	9551	303	2077	43930	20439	534582	19770	621101	630652
Fireclay	'000 tonnes	-	-	-	-	-	-	8200	51	9929	-	18180	18180
Garnet	tonne	-	-	45797	45797	-	-	100874	-	52190	-	153064	198861
Gold													
Ore (primary)	tonne	-	-	-	-	-	-	462280	96180	-	-	558460	558460
Metal (primary)	tonne	-	-	-	-	-	-	0.17	0.03	-	-	0.20	0.20
Ore (placer)	tonne	-	-	-	-	-	-	-	2552000	23569000	-	26121000	26121000
Metal (placer)	tonne	-	-	-	-	-	-	-	2.29	3.57	-	5.86	5.86
Granite (Dim. stone)	'000 cu m	140	-	-	140	-	99	-	-	2570	-	2669	2809
Graphite	tonne	-	8300	17762	26062	-	35600	-	1148350	240418	-	1424368	1450430
Iron ore (magnetite)	'000 tonnes	-	-	-	-	-	7074	-	56571	19790	-	83435	83435
Kyanite	tonne	-	-	-	-	-	-	218962	-	10000	-	228962	228962
Limestone	'000 tonnes	136695	77	10936	147709	-	-	21551	2888	34838	-	59276	206985
Magnesite	'000 tonnes	-	-	-	-	-	-	2	-	38	-	40	40
Quartz-silica sand	'000 tonnes	864	765	749	2379	1626	1753	14611	31419	76350	-	125759	128138
Sillimanite	tonne	-	-	2621240	2621240	-	-	3258481	-	3369200	-	6627681	9248921
Talc-soapstone-steatite	'000 tonnes	-	-	-	-	-	-	-	-	14390	-	14390	14390
Titanium minerals													
*Ilmenite	tonne	10591891	-	-	10591891	-	-	-	18406000	85231816	-	103637816	114229707
*Rutile	tonne	745901	-	-	745901	-	-	-	1555000	1474951	-	3029951	3775852
*Leucoxene	tonne	624903	-	-	624903	-	-	-	-	341949	-	341949	966852
*Zircon	tonne	2438147	-	-	2438147	-	-	-	-	569748	-	569748	3007895

Figures rounded off.
** Please refer the respective Mineral Reviews for resources as per Department of Atomic Energy.*

Table – 51(B) : Reserves of Lignite as on 1.4.2007 : Kerala

(In million tonnes)

District	Proved	Indicated	Inferred	Total
Total	-	-	**9.65**	**9.65**
Kannur	-	-	9.65	9.65

Source: *Coal Directory of India, 2006-07.*

Table – 52 : Details of Exploration Activities in Kerala, 2006-07 and 2007-08

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling	Remarks
		Scale	Area (sq km)	No. of boreholes	Meterage		Reserves/Resources estimated
2006-07							
GSI							
Gold							
Wayanad	Mananthavadi-Talapuzha sector (Wayanad gold belt)	-	-	-	-	-	Large-scale mapping pitting, trenching and sampling were conducted.
DMG							
China clay							
Kollam	Kadayattu area, Mulavana village	1:1,000	0.1725	5	154.5	32	About 0.9 million tonnes of china clay reserves were estimated.
-do-	Kanjirakode area, Mulavana village	1:1,000	0.0025	3	81	11	Thickness of china clay bed ranges between 3.05 and 13.5 m. About 0.45 lakh tonnes of china clay reserves were estimated.
Kasargod	Moonu road, Malpacheri Bankalam	-	-	4	93	-	The average thickness of china clay bed is 8 m. A total of 2.5 million tonnes of china clay reserves was estimated.
-do-	Paivalike village	-	-	10	355.4	-	The average thickness of china clay is 18 m. A total of 14 million tonnes of china clay reserves was estimated.
-do-	Kommangala Padavu, Paivalike and Orkadi village	-	-	5	212	-	The average thickness of clay ranges from 12 to 30 m. Four million tonnes resources of china clay were estimated.
-do-	Erikkulam village	-	-	3	80.5	-	Twenty four million tonnes reserves of china clay were estimated.
Thiruvananthapuram	Bishop Thoppu, Veiloor village	-	-	3	90	-	Drilling conducted on behalf of M/s Ashapura Mine Chem Ltd. Three lakh tonnes of china clay reserves were estimated.

Table – 53 : Mineral Production in Kerala, 2005-06 to 2007-08 (Excluding Atomic Minerals)

(Value in Rs. '000)

Mineral	Unit	2005-06			2006-07			2007-08 (p)		
		No. of mines	Quantity	Value	No. of mines	Quantity	Value	No. of mines	Quantity	Value
All Minerals		**37**	-	**6707709**	**33**	-	**7510473**	**27**	-	**7482336**
Bauxite	tonne	2	9915	1590	-	-	-	-	-	-
Kaolin	tonne	20	474594	1835307	19	429208	1376845	13	390642	1297893
Sillimanite	tonne	1	10714	74998	1	5717	31152	1	14570	87420
Laterite	tonne	2	27781	3210	2	43319	7497	3	27702	4417
Limestone	'000 tonnes	1	585	165473	1	498	154315	1	475	147326
Limeshell	tonne	2	19812	19989	2	36073	38247	2	33050	33786
Silica sand	tonne	9	36449	3414	8	35928	9221	7	38552	18298
Minor minerals@		-	-	4603728	-	-	5893196	-	-	5893196

Note : *The number of mines excludes minor minerals.*
@ Figures for earlier years have been repeated as estimates, wherever necessary, because of non-receipt of data.

Mineral-based Industry

The important large and medium-scale mineral-based industries in organised sector in the State are given in Table - 54.

Table – 54 : Principal Mineral-based Industries in Kerala

Industry/plant	Capacity ('000 tpy)
Abrasives	
Carborandum Universal Ltd, Ernakulam	NA
Carborandum Universal Ltd, Thrissur	NA
Carborandum Universal Ltd, Pathanamthitta	NA
Aluminium	
Hindalco Industries Ltd, Alwaye	10
Asbestos Products	
Hyderabad Industries Ltd (formerly Malabar Building Products Ltd) Mulagunnathukavu, Dist. Thrissur	84
Cement	
Malabar Cements, Walayar, Dist. Palakkad	620
The Travancore Cements Ltd, Kottayam	81
Ceramic	
Kerala Ceramics Ltd, Kundara	23
Tata Ceramics, Kozhikode	NA
Chemical	
Tecil chemicals and Hydro Power Ltd, Chingavanam, Dist. Kottayam	30 (Cal. Carbide) 2 (Acetylene black) 7.5 (Ferro silicon)
Synthetic Rutile	
CMRL, Kerala	36
KMML, Chavara	40
TTPL, Thiruvananthapuram	24.5
Fertilizer	
FACT Ltd, Udyogmandal, Dist. Ernakulam	225 (AS) 148.5 (AP)
FACT Ltd, Ambalamedu, Dist. Ernakulam	485 (NP)
Ferro Alloys	
INDSIL Electrosmelts Ltd, Pallatheri Dist. Palakkad	14
Shri Laxmi Electro Smelters Pvt. Ltd, Erumathala	NA
The Silcal Metallurgic Ltd, Wayalur	3.6
Lead-Zinc	
BZL Zinc Smelter, Binanipuram	38 (Zn ingot) 80.3 t (Cd ingot) 50(H_2SO_4)
Petroleum Refinery	
KRL, Cochin	7500

MADHYA PRADESH

Mineral Resources

Madhya Pradesh is the only diamond producing State in the country and is the leading producer of copper conc., pyrophyllite and diaspore. The State hosts the country's 68% diaspore, 41% molybdenum ore, 46% pyrophyllite, 32% diamond, 29% copper ore, 17% rock phosphate, 16% each of manganese ore & fireclay and 11% ochre resources.

Important mineral occurrences in the State are: **bauxite** in Balaghat, Guna, Jabalpur, Katni, Mandla, Rewa, Satna, Shahdol Shivpuri, Sidhi & Vidisa districts; **calcite** in Badwani, Jhabua, Kawardha & Khargone districts; **china clay** in Betul, Chhatarpur, Chhindwara, Gwalior, Hoshangabad, Jabalpur, Khargone, Narsinghpur, Raisen, Satna, Shahdol & Sidhi districts; **copper** in Balaghat, Betul & Jabalpur districts; **coal** in Betul, Shahdol & Sidhi districts; **diamond** in Panna district; **diaspore & pyrophyllite** in Chhatarpur, Shivpuri & Tikamgarh districts; **dolomite** in Balaghat, Chhindwara, Damoh, Dewas, Harda, Hoshangabad, Jabalpur, Jhabua, Katni, Mandla, Narsinghpur, Sagar and Seoni districts; **fireclay** in Betul, Chhindwara, Jabalpur, Katni, Narsinghpur, Panna, Sagar, Shahdol & Sidhi districts; **iron ore (hematite)** in Betul, Gwalior, Jabalpur & Katni districts; **limestone** in Balaghat, Chhindwara, Damoh, Dhar, Hoshangabad, Jabalpur, Jhabua, Khargone, Katni, Mandsaur, Morena, Narsinghpur, Nimach, Rewa, Sagar, Satna, Sehore, Shahdol & Sidhi districts; **manganese ore** in Balaghat and Jhabua districts; **ochre** in Dhar, Gwalior, Jabalpur, Katni, Mandla, Rewa, Satna, Shahdol & Umaria districts; **pyrophyllite** in Chhatarpur, Sagar, Shivpuri & Tikamgarh districts; **quartz/silica sand** in Balaghat, Dewas, Dhar, Jabalpur, Khandwa, Khargone, Morena, Rewa & Shahdol districts; **talc/steatite/ soapstone** in Dhar, Jabalpur, Jhabua, Katni, Narsinghpur & Sagar districts; and **vermiculite** in Jhabua district.

Other minerals that occur in the State are: **barytes** in Dewas, Dhar, Shivpuri, Sidhi & Tikamgarh districts; **calcareous shales** (used in slate pencil) in Mandsaur district; **felspar** in Jabalpur & Shahdol districts; **fuller's earth** in Mandla district; **gold** in Jabalpur and Sidhi districts; **granite** in Betul, Chhatarpur, Chhindwara, Datia, Jhabua, Panna, Seoni & Shivpuri districts; **graphite** in Betul & Sidhi districts; **gypsum** in Shahdol district; **lead-zinc** in Betul district; **molybdenum** in Balaghat district; **potash** in Panna district; **quartzite** in Sehore district; **rock phosphate** in Chhatarpur, Jhabua & Sagar districts; and **sillimanite** in Sidhi disitrict (Tables - 55(A) and 55(B)).

Table – 55(A) : Reserves/Resources of Minerals as on 1.4.2005 : Madhya Pradesh

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						
Barytes	tonne	-	-	4472	4472	-	18500	-	-	35000	233940	-	287440	291912
Bauxite	'000 tonnes	13530	1768	1540	16838	-	8316	237	8920	53715	46037	-	117225	134064
Calcite	tonne	226970	63500	202028	492498	-	-	-	20250	184921	396005	97476	698652	1191150
China clay	'000 tonnes	943	-	443	1386	-	-	17	-	17	11741	-	11774	13161
Copper														
Ore	'000 tonnes	101813	-	125336	227149	-	-	-	49650	33150	94399	-	177199	404348
Metal	'000 tonnes	1343.93	-	1641.90	2985.83	-	-	-	155.75	100.57	913.11	-	1169.43	4155.26
Diamond	carat	605577	-	600000	1205577	-	-	-	-	-	245359	4022	249381	1454958
Diaspore	tonne	798652	506308	699324	2004284	-	-	-	693	-	1552836	59012	1612541	3616825
Dolomite	'000 tonnes	36284	25644	54063	115991	5580	62704	42243	91178	37403	1506850	113830	1859788	1975779
Felspar	tonne	-	-	-	-	-	-	-	-	-	23509	-	23509	23509
Fireclay	'000 tonnes	2128	1415	4462	8005	19	2898	1233	1438	791	100305	100	106784	114789
Fuller's earth	tonne	-	-	-	-	-	-	-	-	-	117200	-	117200	117200
Gold														
Ore (primary)	tonne	-	-	-	-	-	-	-	-	5375000	1947000	-	7322000	7322000
Metal (primary)	tonne	-	-	-	-	-	-	-	-	5.59	2.22	-	7.81	7.81
Granite (Dim. stone)	'000 cu m	-	969224	-	969224	-	-	150	-	540	1024170	-	1024860	1994084
Graphite	tonne	-	-	-	-	-	-	-	-	-	1006660	-	1006660	1006660
Gypsum	'000 tonnes	-	-	-	-	-	-	-	-	-	69	-	69	69
Iron ore (hematite)	'000 tonnes	21093	2355	10469	33917	8280	451	4500	4710	1760	151310	10	171021	204938
Lead-zinc														
Ore	'000 tonnes	-	-	-	-	-	-	-	1510	-	2260	3150	6920	6920
Lead metal	'000 tonnes	-	-	-	-	-	-	-	26.12	-	-	-	26.12	26.12
Zinc metal	'000 tonnes	-	-	-	-	-	-	-	114.76	-	123.45	101.12	339.33	339.33
Limestone	'000 tonnes	562773	97810	134510	795093	-	423310	445248	390901	229338	3394373	242920	5126090	5921183
Manganese ore	'000 tonnes	22796	36	4647	27479	6143	23587	2639	-	-	2309	265	34943	62422

(Contd.)

Table - 55(A) (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						
Molybdenum														
Ore	tonne	-	-	-	-	-	-	-	-	-	8000000	-	8000000	8000000
Contained MoS_2	tonne	-	-	-	-	-	-	-	-	-	5020	-	5020	5020
Ochre	tonne	390370	1578522	815741	2784634	-	108987	225967	436877	2085255	3772380	749250	7378716	10163350
Phosphorite/ Rock phosphate	tonne	7605864	1763187	9787162	19156213	3131683	13700000	5990814	-	2730000	5725000	-	31277497	50433710
Potash	million tonnes	-	-	-	-	-	-	-	-	1206	-	-	1206	1206
Pyrophyllite	tonne	3539365	2447445	4309863	10296673	47400	48354	-	257000	6017	4706948	248405	5314124	15610797
Quartz-silica sand	'000 tonnes	106	11	35	152	-	-	75	47	316	2195	-	2633	2785
Quartzite	'000 tonnes	-	-	-	-	-	-	-	-	-	832	-	832	832
Sillimanite	tonne	-	-	-	-	-	-	-	-	-	-	101600	101600	101600
Talc/soapstone/ steatite	'000 tonnes	4	65	402	471	-	276	522	-	1679	6086	-	8563	9034
Vermiculite	tonne	-	66420	99632	166052	-	-	-	-	-	106960	-	106960	273012

Figures rounded off.

Exploration & Development

The details of exploration activities conducted by various agencies for coal and other minerals during 2006-07 and 2007-08 are furnished in Table - 56.

ONGC continued exploration for petroleum & natural gas in Vindhyan basin. In 2006-07 about 166.80 (2D-GLK/LK) and in 2007-08, 66.58 (2D-GLK/LK) seismic data was acquired.

Table – 55(B) : Reserves of Coal as on 1.4.2007 : Madhya Pradesh

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total	**7841.84**	**9722.52**	**2781.87**	**20346.23**
Johilla	185.08	104.09	32.83	322.00
Umaria	177.70	3.59	0	181.29
Pench-Kanhan	1375.98	733.27	316.78	2426.03
Pathakhera	290.80	88.13	68.00	446.93
Gurgunda	0	47.39	0	47.39
Mohpani	7.83	0	0	7.83
Sohagpur	1567.91	2732.64	197.70	4498.25
Singrauli	4236.54	6013.41	2166.56	12416.51

Source : *Coal Directory of India, 2006-07.*

Table – 56 : Details of Exploration Activities in Madhya Pradesh, 2006-07 and 2007-08

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling	Remarks
		Scale	Area (sq km)	No. of boreholes	Meterage		Reserves/Resources estimated
2006-07							
GSI							
Base Metal							
Betul	Biskhan area	-	-	-	-	-	One borehole intersected two sulphide rich zones represented by disseminations and veinlets of sphalerite with chalcopyrite and pyrite.
-do-	Muariya block	-	-	-	-	-	The total resource of base metal was reassessed as 1.32 million tonnes from 0.8 million tonnes with 7.6% Zn; 1.73% Pb; 0.75% Cu; 131 ppm Cd and 77 ppm Ag.
-do-	Khari area	-	-	-	-	-	Conducted detailed mapping and sampling. Analytical results are awaited.
Chhindwara	Belkhedi area	-	-	-	-	-	Disseminations of sphalerite galena and chalcopyrite have been observed.
Coal							
Pench Valley Coalfield (Chhindwara dist.)	Pathakhuri-Pipariya areas	-	-	-	-	-	Seven coal horizons (0.65 to 3 m thick) of Barakar formation were intersected at depths between 437.05 m and 480 m.
Singrauli Coalfield (Sidhi dist.)	Tendudol block	-	-	-	-	-	Seven Raniganj coal seams (0.7 to 16.45 m thick) of Barakar formation were intersected within the depth range of 508.24 to 742.0 m. Four coal seams (0.78 to 5.65 m thick) of Raniganj formation were intersected at depths between 38.80 m and 167.15 m. Strike continuity established of these seams were for over 2 km towards South.

(Contd.)

Table - 56 (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling	Remarks
		Scale	Area (sq km)	No. of boreholes	Meterage		Reserves/Resources estimated
Sohagpur Coalfield Shahdol	Shahpur and Bicharpur (South) blocks	-	-	-	-	-	Four regional Barakar coal seams varying in thickness from 0.44 to 5.06 m were intersected within the depth range from 38.61m to 89.05 m.
-do-	Maiki block	-	-	-	-	-	Two regional Barakar coal seams varying in thickness from 1.40 to 6.72 m were intersected between the depth range of 406.65 m and 516.3 m. Raniganj coal seams varying in thickness from 0.70 to 2.31 m were intersected at depths between 81.45 and 220.3 m.
-do-	Merkhi block	-	-	-	-	-	Two coal seams (0.7 to 1.63 m thick) were intersected between the depth range of 184.45 m and 247.5 m.
-do-	Gohparu block	-	-	-	-	-	Borehole intersected Raniganj formation and Barren Measures that passes through Barakar formation.
Limestone Katni	Niwar area	-	-	-	-	-	Flux grade limestone bands intersected in boreholes near Mohania village.
Phosphorite Sidhi	Gara-Amarpur area	-	-	-	-	-	A ferruginised chert breccia band which is at places phosphatic in nature was traced for about 3 km from Baskati to Paniha. Analytical results showed P_2O_5 content varying from 7.5 to 13% in Paniha area and 2 to 6% in Baskati area.
DGM Calcite	Chhaktala & Sondwa area	1:50,000	1041	-	-	33	Calcite/calcereous rocks deposits of varying dimensions were demarcated. A total of 0.091 million tonnes of resources was estimated.
Coal Anuppur	Hasdeo	-	-	17	2046.2	-	Production support drilling was carried out.
-do-	Jamuna Kotma area Sohagpur coalfield	-	-	39	3224.35	-	-do-
Dolomite Dewas	Udainagar-Bagli area	1:50,000 1:4,000	205 2	21	840.39	270	Depth persistence of dolomite deposits in the vicinity of Village Pipalpati has been confirmed up to 51.30 m. A total of about 19 million tonnes of dolomite resources was estimated.
Jabalpur	Ritteri area	1:50,000 1:4,000	510 2.13	24	820	210	Analytical results are awaited.

(Contd.)

Table - 56 (Contd.)

Agency/ Mineral/ District	Location	Mapping Scale	Mapping Area (sq km)	Drilling No. of boreholes	Drilling Meterage	Sampling	Remarks Reserves/Resources estimated
Limestone							
Satna	Tala Bandharkh	1:50,000 1:4,000	300 2	25	552.35	395	-
Morena	Sehadpur Kailaras	-	-	-	-	-	A total of 108.27 million tonnes of limestone resources was estimated.
MECL							
Base Metal							
Betul	Banskhapa-Piparia block	1:1,000	1	6	1250	-	Exploration activities established presence of Pb-Zn mineralisation but of lean grade.
Coal							
Singrauli Coalfield	Ameliya North block	-	-	-	859.10	-	-
Pench-Kanhan Coalfield	Jharna	-	-	-	715.0	-	Drilling on behalf of M/s WCL was carried out.
Sohagpur Coalfield	Marwatola Naukariya Naukariya (E)	-	-	-	11605.0 6619.7 9184.1	-	Drilling on behalf of Ministry of Coal was conducted.
Gold							
Balaghat	Ghari-Dongri	-	-	5	801	2184	Mineralised vein quartz has been established over 2 km strike length.
MOIL							
Manganese Ore							
Balaghat	Bharweli	-	-	3	1145.85	-	As on 1.4.2007, the total reserves was estimated at 22.91 million tonnes.
2007-08							
GSI							
Base Metal							
Betul	Biskhan-khari area	-	-	4	-	-	The boreholes intersected mineralised zones at varying depths.
Chhindwara	Jangaldehri-Chordongri area	-	-	-	-	-	Registivity surveys were conducted.
-do-	Khirki, Kaneri, Borkhap area	-	-	-	-	-	Conducted large-scale mapping, detailed mapping, magnetic survey and soil sampling.
Coal							
Pench Valley Coalfield Chhindwara	Bagbardiya block	-	-	-	-	-	Five coal horizons ranging in thickness from 0.25 to 2.5 m were intersected at depths between 371.25 m and 381.6 m.
Singrauli Coalfield Sidhi	Tendudol block	-	-	-	-	-	Seven regional Barakar coal seams of 1.61 to 4.45 m cumulative thickness were intersected within the depth range from 476.34 to 719 m. Four regional Raniganj coal seams (1.22 to 5.64 m thick) were intersected at depths between 49.21 m and 157.1 m. Strike continuity established of these seams were for over 1 km.

(Contd.)

Table - 56 (Concld.)

Agency/ Mineral/ District	Location	Mapping Scale	Mapping Area (sq km)	Drilling No. of boreholes	Drilling Meterage	Sampling	Remarks Reserves/Resources estimated
Sohagpur Coalfield Shahdol	Maiki block	-	-	-	-	-	Three regional Barakar coal seams varying in thickness from 1.25 to 3.6 m have been intersected between the depth range of 399.81 m and 476.85 m. Both strike and dip continuity of these coal seams have been established for more than 1 km.
-do-	Merkhi block	-	-	-	-	-	Four regional Barakar coal seams (cumulative thickness 1.25 to 2.80 m) were intersected at depth range of 225.55 to 363.7 m. Dip continuity of these coal seams have been established for about 2 km.
Diamond							
Shivpuri and Datia	In parts of Shivpuri and Datia dists.	-	-	-	-	-	Stream sediment samples evaluated so far have not indicated presence of any indicator minerals for kimberlite.
Limestone							
Katni	Niwar area	-	-	-	-	-	About 1.49 million tonnes resources of flux grade limestone were estimated.
Phosphorite							
Sidhi	Baskati-Paniha area	-	-	-	-	-	A ferruginised chert breccia band which is at places phosphatic in nature was traced for about 3 km from Baskati to Paniha. Analytical results showed P_2O_5 content varying from 0.5 to 13%.
DGM							
Dolomite							
Dewas	Udainagar	1:50,000	228	40	1020.35	258	Aerial extension and depth persistence of the deposit were demarcated and a total of about 108.6 million tonnes resources was estimated.
	Bagli area	1:4,000	2.1				
Laterite							
Mandsaur	Shamgarh, Suwasra, etc.	1:50,000 1:4,000	1599 2.04	-	-	87	Laterite bodies of varying dimensions were demarcated and about 80 million tonnes of resources were estimated.
MECL							
Coal							
Pench-Kanhan Coalfield	Pench	-	-	-	1071.05	-	Drilling on behalf of M/s WCL was conducted.
Sohagpur Coalfield	Marwatola	-	-	-	181.5	-	Promotional drilling on behalf of Ministry of Coal was conducted.
	Naukariya				2968.0	-	
	Naukariya (E)				33.0	-	
	Chaka	-	-	-	9432.0	-	
	Patnar	-	-	-	8147.5	-	
	Arjuni	-	-	-	9121.3	-	
MOIL							
Manganese Ore							
Balaghat	Tirodi	-	-	5	375	-	The total in situ reserves was estimated at 1.72 million tonnes.
-do-	Bharweli	-	-	2	1082.8	-	As on 1.4.2008, the total reserves was estimated at 22.01 million tonnes.

Production

The value of mineral production in Madhya Pradesh at Rs. 8,271 crore in 2007-08 increased by about 17% as compared to the previous year. Madhya Pradesh contributed 7.2% to the total value of mineral production and claimed fifth position among states in the country. The state was the sole producer of diamond. The state was the leading producer of pyrophyllite with a share of 83% and also led in the production of diaspore (54%) and copper conc. (52%) in the national output for the respective minerals. Madhya Pradesh was also the second leading producer of clay (others) (30%), phosphorite (6%) and shale (20%). During 2007-08, the production in terms of quantity of bauxite increased by more than two folds. Increase in production was also observed in iron ore by 83%, phyrophyllite and laterite 49% each, ochre 39%, diaspore 23%, manganese ore 20%, coal 14% and copper concentrate 4%. However, downward trend in production was observed in dolomite 2%, limestone 10%, phosphorite 38%, clay (others) 45% and diamond 73%. The reasons for fall in production in case of dolomite, phosphorite, clay (others) and limestone were due to engagement of labour in removal of overburden and lack of demand whereas in the case of diamond it was due to closure of mines (Table-57).

The production value of minor minerals was estimated at Rs. 440 crore for the year 2007-08. The number of reporting mines in Madhya Pradesh was 319 in 2007-08 as against 336 in the previous year. The index of mineral production in Madhya Pradesh (base 1993-94=100) was 199.47 in 2007-08 as against 179.10 in the previous year.

Table – 57 : Mineral Production in Madhya Pradesh, 2005-06 to 2007-08 (Excluding Atomic Minerals)

(Value in Rs. '000)

Mineral	Unit	2005-06			2006-07			2007-08 (p)		
		No. of mines	Quantity	Value	No. of mines	Quantity	Value	No. of mines	Quantity	Value
All Minerals		**333**	**-**	**65048095**	**336**	**-**	**70886544**	**319**	**-**	**82706073**
Coal	'000 tonnes	74	55579	54832969	74	59726	59098280	74*	67841	68703260
Bauxite	tonne	35	102078	24114	39	196024	50516	40	474550	119966
Copper ore	tonne	-	1705971	-	-	2270122	-	-	2192665	-
Copper conc.	tonne	1	60774	1430395	1	79066	1718333	1	81858	2183565
Iron ore	'000 tonnes	5	464	46044	5	1212	232735	5	2216	336538
Manganese ore	tonne	20	425136	1644258	20	474893	1759332	21	567915	3620454
Phosphorite/Rock phosphate	tonne	3	178117	64321	4	193213	80995	3	119500	55370
Calcite	tonne	3	655	98	3	150	23	-	-	-
Clay (others)	tonne	-	112281	5525	-	443000	54778	-	242035	31321
Diamond	carat	2	44170	233710	2	2180	14683	2	586	5701
Diaspore**	tonne	-	15062	8511	-	9795	6345	-	12012	7854
Dolomite	tonne	40	129045	18630	43	166825	18706	35	163778	18276
Fireclay	tonne	16	75048	6937	13	51495	4560	11	55782	5403
Kaolin	tonne	6	16835	1578	6	14854	1384	3	10250	923
Laterite	tonne	6	141728	10448	3	83042	5173	4	123642	7030
Limestone	'000 tonnes	82	25274	2773692	86	28411	3407380	84	25640	3161722
Ochre	tonne	14	18453	2603	15	25098	4004	13	34962	6449
Pyrophyllite	tonne	21	143375	28890	19	114309	23147	19	170637	35205
Quartz	tonne	-	10	++	1	90	6	2	1562	94
Silica sand	tonne	1	850	96	-	-	-	1	90	11
Shale	tonne	-	425728	3832	-	474720	4272	-	556864	5051
Slate	tonne	3	2505	690	1	4	1	-	-	-
Talc/soapstone/ steatite	tonne	1	2710	271	1	169	17	1	60	6
Minor minerals@		-	-	3910483	-	-	4401874	-	-	4401874

Note : *The number of mines excludes minor minerals.*
******* *Relates to coal mines as on 31.03.2008.*
******** *Associated with pyrophyllite.*
@ *Figures for earlier years have been repeated as estimates wherever necessary, because of non-receipt of data.*

Mineral-based Industry

The important large and medium-scale mineral-based industries in organised sector in the State are furnished in Table-58.

Table – 58 : Principal Mineral-based Industries in Madhya Pradesh

Industry/plant	Capacity ('000 tpy)
Asbestos Products	
Everest Building Products Ltd, Kymore	NA
Kalani Industries Pvt. Ltd, Pitampur, Dhar	NA
Ramco Industries Ltd, Maksi, Dist. Sajapur	66
Cement	
ACC Ltd, Kymore, dist. Katni	1700
Birla Corpn. Ltd (Satna Cement Works), Satna	1550
CCI Ltd, Mayagaon, Dist. Neemuch	1400
Diamond Cement, Narsingarh, Dist. Damoh	1525
Jaypee Rewa Cement, Dist. Rewa	3500
Jaypee Cement, Bela	2200
Maihar Cement, Maihar, Dist. Satna	3800
Prism Cement, Satna	2510
Vikram Cement, Khor, Dist. Neemuch	3000
Ceramic	
EID Parry India Ltd, Dewas	9
H&R Johnson India Ltd, Dewas	6.7
Govind Tiles Pvt Ltd, Garra, dist. Balaghat	758 million nos.
Fertilizer	
Khaitan Chemical & Fertilizers Ltd, Nimrani, Dist. Khargaon	845.5 (SSP) 221.1 (H_2SO_4)
NFL-Vijaipur, Dist. Guna	1452 (Urea)
Ferro-alloys	
Crescent Alloys Pvt. Ltd, Seoni	4.5
Jalan Ispat Castings Ltd, Meghnagar, Dist. Jhabua	12
MOIL Ferro Manganese Plant, Bharveli, Dist. Balaghat	10
Refractory	
ACC Refractories, Katni	65
Premier Refractories of India Pvt. Ltd, Katni	12.8

MAHARASHTRA

Mineral Resources

Maharashtra is the sole producer of corundum and is the second largest producer of manganese ore after Orissa. The principal mineral-bearing belts in Maharashtra are Vidarbha area in the east and Konkan area in the west. Important mineral occurrences are **bauxite** in Kolhapur, Raigad, Ratnagiri, Satara, Sindhudurg & Thane districts; **china clay** in Amravati, Bhandara, Chandrapur, Nagpur, Sindhudurg & Thane districts; **chromite** in Bhandara, Chandrapur, Nagpur & Sindhudurg districts; **coal** in Nagpur, Chandrapur & Yavatmal districts; **dolomite** in Chandrapur, Nagpur & Yavatmal districts; **fireclay** in Amravati, Chandrapur, Nagpur & Ratnagiri districts; **fluorite** and **Shale** in Chandrapur district; **iron ore (hematite)** in Chandrapur, Gadchiroli and Sindhudurg districts; **iron ore (magnetite)** in Gondia district; **kyanite** in Bhandara & Nagpur districts; **laterite** in Kolhapur district; **limestone** in Ahmednagar, Chandrapur, Dhule, Gadchiroli, Nagpur, Nanded, Pune, Sangli & Yavatmal districts; **manganese ore** in Bhandara, Nagpur & Ratnagiri districts; **corundum & pyrophyllite** in Bhandara district; **quartz & silica sand** in Bhandara, Chandrapur, Gadchiroli, Gondia, Kolhapur, Nagpur, Ratnagiri & Sindhudurg districts and **quartzite** in Gondia & Nagpur districts; and **sillimanite** in Chandrapur district.

Other minerals that occur in the State are **barytes** in Chandrapur & Gadchiroli districts; **copper** in Bhandara, Chandrapur, Gadchiroli & Nagpur districts; **felspar** in Sindhudurg district; **gold** in Bhandara & Nagpur districts; **granite** in Bhandra, Chandrapur, Dhule, Gadchiroli, Nagpur, Nanded, Nasik, Sindhudurg & Thane districts; **graphite & mica** in Sindhudurg district; **lead-zinc & tungsten** in Nagpur district; **marble** in Bhandara & Nagpur districts; **ochre** in Chandrapur & Nagpur districts; **silver** & **vanadium** in Bhandara district; **steatite** in Bhandara, Ratnagiri & Sindhudurg districts; and **titanium minerals** in Gondia and Ratnagiri districts (Tables - 59(A) and 59(B)).

Exploration & Development

The details of exploration activities conducted by various agencies during 2006-07 and 2007-08 are furnished in Table - 60.