

STATE REVIEWS



Indian Minerals Yearbook 2017

(Part- I)

56th Edition

**STATE REVIEWS
(Karnataka)**

(FINAL RELEASE)

**GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES**

Indira Bhavan, Civil Lines,
NAGPUR – 440 001

PHONE/FAX NO. (0712) 2565471
PBX : (0712) 2562649, 2560544, 2560648

E-MAIL : cme@ibm.gov.in
Website: www.ibm.gov.in

March, 2018

KARNATAKA

Mineral Resources

Karnataka has the distinction of being the principal gold producing State in the country. The State is the sole producer of feldspar and one of the leading producer of iron ore, chromite, dolomite, dunite, kyanite and shale. Karnataka hosts the country's 79% vanadium ore, 72% iron ore (magnetite), 65% corundum, 42% tungsten ore, 36% asbestos, 27% limestone, 21% gold ore (primary), 20% granite (dimension stone), 20% manganese ore, 17% dunite, 13% kyanite, 10% PGM (metal) resources.

The important mineral-occurrence found in the State are **bauxite** in Belagavi, Chikkamagaluru, Uttara & Dakshina Kannada and Udupi districts; **china clay** in Bengaluru, Belagavi, Ballari, Bidar, Chikkamagaluru, Dharwad, Gadag, Hassan, Haveri, Kolar, Uttara & Dakshina Kannada, Shivamogga and Tumakuru districts; **chromite** in Chikkamagaluru, Hassan and Mysuru districts; **dolomite** in Bagalkot, Belagavi, Vijayapura, Chitradurga, Mysuru, Uttara Kannada and Tumakuru districts; **dunite/pyroxenite** in Chikkamagaluru, Hassan and Mysuru districts; **felspar** in Bengaluru, Belagavi, Chitradurga and Hassan districts; **fireclay** in Bengaluru, Chitradurga, Dharwad, Hassan, Kolar, Shivamogga and Tumakuru districts; **gold** in Chitradurga, Dharwad, Gadag, Kalaburagi, Hassan, Haveri, Kolar, Raichur and Tumakuru districts; **iron ore (hematite)** in Bagalkot, Ballari, Vijayapura, Chikkamagaluru, Chitradurga, Dharwad, Gadag, Uttara Kannada, Shivamogga and Tumakuru districts; **iron ore (magnetite)** in Chikkamagaluru, Hassan, Uttara & Dakshina Kannada and Shivamogga districts; **kyanite** in Chikkamagaluru, Chitradurga, Coorg, Mandya, Mysuru, Shivamogga and Dakshina Kannada districts; **limestone** in Bagalkot, Belagavi, Ballari, Vijayapura, Chikkamagaluru, Chitradurga, Davangere, Gadag, Kalaburagi, Hassan, Mysuru, Uttara & Dakshina Kannada, Shivamogga, Tumakuru and Udupi districts; **magnesite** in Coorg, Mandya and Mysuru districts; **manganese ore** in Belagavi, Ballari, Chikkamagaluru,

Chitradurga, Davangere, Uttara Kannada, Shivamogga and Tumakuru districts; **ochre** in Ballari and Bidar districts; **quartz/silica sand** in Bagalkot, Bengaluru, Belagavi, Ballari, Chikkamagaluru, Chitradurga, Davangere, Dharwad, Gadag, Kalaburagi, Hassan, Haveri, Kolar, Koppal, Mandya, Mysuru, Uttara & Dakshina Kannada, Raichur, Shivamogga, Tumakuru and Udupi districts; **Quartzite** in Belagavi district; and **talc/steatite/soapstone** in Ballari, Chikkamagaluru, Chitradurga, Hassan, Mandya, Mysuru, Raichur and Tumakuru districts.

Other minerals that occur in the State are **asbestos** in Chikkamagaluru, Hassan, Mandya, Mysuru and Shivamogga districts; **barytes** and **pyrite** in Chitradurga district; **calcite** in Belagavi, Vijayapura and Mysuru districts; **copper** in Chikkamagaluru, Chitradurga, Kalaburagi, Hassan, Uttara Kannada, Raichur and Shivamogga districts; **corundum** in Bengaluru, Ballari, Chitradurga, Coorg, Hassan, Mandya, Mysuru and Tumakuru districts; **fuller's earth** in Belagavi and Kalaburagi districts; **granite** in Bagalkot, Bengaluru, Bellari, Vijayapura, Chamrajanagar, Chikkamagaluru, Chitradurga, Coorg, Dharwad, Gadag, Kalaburagi, Hassan, Kolar, Koppal, Mandya, Mysuru, Uttara & Dakshina Kannada, Raichur, Tumakuru and Udupi districts; **graphite** in Kolar and Mysuru districts; **gypsum** in Kalaburagi district; **molybdenum** in Kolar and Raichur districts; **nickel** in Uttara Kannada district; **Platinum Group of Metals** in Davangere district; **sillimanite** in Hassan, Mysuru and Dakshina Kannada districts; **silver** in Chitradurga and Raichur districts; **titanium minerals** in Hassan, Uttara Kannada and Shivamogga districts; **tungsten** in Gadag, Kolar and Raichur districts; **vanadium** in Hassan, Uttara Kannada and Shivamogga districts; and **vermiculite** in Hassan, Mandya and Mysuru districts (Table - 1).

Exploration & Development

The details of exploration activities conducted by GSI for gold, iron ore & rare earth elements and also various agencies (MECL) during 2016-17 are furnished in Table - 2.

STATE REVIEWS

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

Mineral	Unit	Reserves										Total resources (A+B)			
		Proved		Probable		Feasibility		Pre-feasibility		Remaining resources			Reconnaissance	Total (B)	
		STD 111	STD 112	STD 121	STD 122	STD 211	STD 212	STD 221	STD 222	Measured STD331	Indicated STD332				Inferred STD333
Asbestos	tonne	-	-	-	-	-	-	-	-	-	2441037	5841420	-	8282457	8282457
Barytes [#]	tonne	-	-	-	-	78296	136220	14252	-	-	-	15175	-	243943	243943
Bauxite	'000 tonnes	126	3140	4389	2468	31800	864	10	82	2220	35603	-	-	41246	45635
Calcite [#]	tonne	-	-	-	-	31800	-	15900	-	14400	51547	-	-	113647	113647
China clay [#]	'000 tonnes	330	472	802	1768	747	2683	220360	443	24803	6030	256834	6030	256834	257636
Chromite	'000 tonnes	315	340	72	727	300	230	96	-	20	259	-	-	905	1631
Copper															
Ore	'000 tonnes	314	557	872	64	64	-	2445	1750	6833	22701	-	-	33793	34665
Metal	'000 tonnes	3.52	4.19	7.71	0.49	0.49	-	16.04	22	65.77	117.49	-	-	221.79	229.50
Corundum	tonne	-	-	-	-	64920	756	53590	13	38	27575	52675	199566	199566	199566
Dolomite [#]	'000 tonnes	28609	5910	6093	40612	16264	6684	9202	8519	76244	455337	13482	585731	626344	626344
Dunite [#]	'000 tonnes	3074	18	189	3282	0	34	23909	25000	135133	177300	3900	625676	625676	31831
Felspar [#]	tonne	-	-	-	-	103675	73613	107055	2003	226	8832	-	11648	11794	11794
Fire clay [#]	'000 tonnes	146	-	-	146	247	340	2003	-	58200	1557156	-	-	2166996	2166996
Fullers earth [#]	tonne	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gold															
Ore	'000 tonnes	10395000	2499000	422100	13316100	1270536	1303000	1078661	24979968	8204595	16020324	37673000	90530084	103846184	103846184
Metal															
(Primary)	tonne	53.34	7.77	0.42	61.53	5.24	3.85	8.53	120.73	28.67	38.29	43.78	249.09	310.62	310.62
Granite [#]															
(Dimension															
Stone)	'000 cum	26363	19389	21836	67587	-	-	-	238	1231625	8012784	25659	9270306	9337893	9337893
Graphite	tonne	-	-	-	-	140827	18750	48821	-	41605	149403	-	399406	399406	399406
Gypsum [#]	'000 tonnes	-	-	-	-	-	-	-	-	-	3784	-	3784	3784	3784
Iron Ore															
(Haematite)	'000 tonnes	416684	46169	87394	550247	518155	48231	211632	248299	44094	669239	176956	1916607	2466854	2466854
Iron Ore															
(Magnetite)	'000 tonnes	319	127	-	446	120022	-	18375	1498957	479372	5345018	340000	7801744	7802190	7802190
Kyanite	tonne	-	-	-	-	637460	15930	113630	386247	1610502	10531529	-	13295298	13295298	13295298
Limestone	'000 tonnes	461049	2154	1113795	1576998	497136	559903	1355522	1572501	13920771	34952588	-	52858420	54435419	54435419
Magnesite	'000 tonnes	1264	125	-	1389	566	190	391	88	10	3179	168	4592	5981	5981

(Contd.)

Table-1 (Concl.)

Mineral	Unit	Reserves					Remaining resources					Total resources (A+B)	
		Proved STD 111	Probable		Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334		Total (B)
			STD121	STD122		STD221	STD222						
Manganese ore	'000 tonnes	9196	-	150	14003	10225	11430	1498	7306	54333	2923	101718	111064
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	tonnes	-	-	-	-	-	1766367	-	-	-	20000	1786367	1786367
Pt. Group of Metals	tonne	-	-	-	-	-	-	-	-	-	1.50	1.50	1.50
Pyrite	'000 tonnes	-	-	-	-	-	-	-	-	3000	-	3000	3000
Quartzite#	'000 tonnes	231	-	-	69	48	592	-	-	4914	1730	7353	7584
Quartz-Silica Sand#	'000 tonnes	7975	417	1807	15904	6695	9448	94	52	52077	525	84794	94993
Sillimanite	tonne	-	-	-	-	-	-	-	-	982725	-	982725	982725
Silver	tonne	10620000	1730000	-	-	-	69462	-	-	314150	-	383612	12733612
Ore Metal	tonne	2.71	0.24	-	-	-	0.48	-	-	2.92	-	3.40	6.35
Talc-Steatite-Soapstone#	'000 tonnes	46	53	182	58	78	251	11	208	1196	-	1800	2081
Tungsten Ore	tonne	-	-	-	-	-	-	15361152	11805499	172921	9338246	36677818	36677818
Contained WO ₃	tonne	-	-	-	-	-	-	2915	1775	142	1403	6235	6235
Vanadium Ore	tonne	-	-	-	-	500000	4000000	-	-	14884430	-	19384430	19384430
Metal	tonne	-	-	-	-	700	5600	-	-	43197.55	-	49497.55	49497.55
Vermiculite	tonne	-	-	-	13550	22520	29450	-	1562	66658	-	133740	133740

Figures rounded off.

Declared as minor mineral vide Gazette notification dated 10.02.2015.

M inor mineral before Gazette notification dated 10.02.2015.

STATE REVIEWS

Table – 2 : Details of Exploration Activities in Karnataka, 2016-17

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI							
Bauxite							
Uttara Kannada	Western Ghat belt, in Kabri-Honnabar- Apsarkond areas	1:12500	65	-	-	-	G-4 stage reconnaissance survey for bauxite was taken up by geological mapping. The laterite profile composed of limonite, goethite, haematite, laterite and free silica in different proportions is found at all places. Lithomarge, at the bottom most part of lateritic profile is generally not very well developed in most of the exposed sections. The total 65 sq km area is covered by laterite capped plateaus. The average thickness of the laterite profile is approximately 6.5 m. Based on the analytical chemical data values, Fe content varies from 1.428 to 48.27% and values of Fe ₂ O ₃ content varies from 2.04 to 69.1%. Values of Al ₂ O ₃ content varies from 10.52 to 56.17%. Values of SiO ₂ content varies from 2.87 to 73.8%. Values of Al ₂ O ₃ ranging from 39 to 56% have been reported from the bedrock sample analysis in the Navilga and Haldipur plateau. The XRD results of bauxite samples shows gibbsite in major amount, Kaolinite in minor amount and quartz in trace amount.
Iron ore							
Ballari	Kumaraswamy, Hill Range,	1:2000	0.04	-	-	-	G3 stage preliminary exploration for iron ore resource was carried out in notified Block 4B/C116/MMM 2003 of Kumaraswamy Hill Range by geological mapping. An impersistent iron ore band of average width 34 m and cumulative length of 1180 m had been delineated. The total surface area of the ore body is 0.04 sq km with mineralisation factor 0.027. The iron ore band predominantly consist of hematite, goethite, with minor amount of ferruginous clay, limonite and specularite. The average (of 18 samples) Fe% in the band is 44.79%.
	Ramanadurga, Hill Range,	1:2000	-	-	-	-	On request from DGM, Govt. of Karnataka, a G-3 stage preliminary exploration for iron ore resources in blocks 13/1(north) and 6B/C116MMM 2003 was taken up with an objective to establish the grade of the iron ore bodies and assess the

(Contd.)

STATE REVIEWS

Table – 2 (contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							resources in the area along with detailed mapping. BIF bands are associated with shale. The shale is ferruginous at places, the concentration of hematite is more forming pocket deposit. The banded iron formation is the most important litho unit of the study area because it is the high grade iron ore deposits. The surfacial width of individual bands varies between 5 and 160 m.
		1:2000	-	-	-	121	On request from DGM, Govt. of Karnataka, a G-3 stage preliminary exploration for iron ore resource in blocks 13/1(north) and 6A/C116MMM 2003 was carried out with an objective to establish the grade of the iron ore bodies and assess the resource in the area along with detailed mapping. A single band of iron ore body with strike length of 1500 m and true thickness of 170-180 m is targeted for exploration. Total 121 samples collected from mineralised zone shows Fe content varying from 13.65 to 66.07% with an average of 51.41%. Analytical results of 95 samples have given Fe values above cut-off grade (45%).
Chitradurga & Tumakuru	Kenkere block in, Hosadurga Taluka & Chikkanayakanahalli Taluka	1:2000	2	-	-	-	G3 stage preliminary exploration for iron ore resource in selected free hold areas in the both blocks were carried out by detailed mapping. The litho units exposed in the area are dolomitic limestone, Mn phyllite, argillite and banded hematite quartzite. Exploration will continue.
Haveri & Shivamogga	Shikaripura, taluka	-	100	-	-	-	G-4 stage reconnaissance survey for banded Iron Formation (BIF) was taken up by large scale mapping along with collection of samples covering the iron ore formations located in parts of Shikaripura taluka. A cumulative strike length of 31,825 m of BIF band was delineated during the present field programme. Four potential BIF bands were identified based on iron oxide content

(Contd.)

Table – 2 (contd.)

STATE REVIEWS

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							(magnetite, hematite + goethite). strike length and width. These bands are numbered as IX, X, XI and XII from South of Kaginalli to Nagavanda area. The analytical results of 51 BRS have been received so far. Out of the 51 samples, 16 samples have Fe ₂ O ₃ less than 20% with an average grade of 11.9%, 13 samples have Fe ₂ O ₃ values from 20 to 30% with an average grade of 23.55%, 10 samples have Fe ₂ O ₃ between 30 to 45% with an average grade or 34.35% and 12 samples have Fe ₂ O ₃ between 30% to 45% with an average Fe ₂ O ₃ of 52.26%. The analytical results of 61 trench samples have been received so far. The wt% of trench samples for Fe ₂ O ₃ <20% is shown by 31 nos. of samples with an average grade of 8.60%. The wt% of Fe ₂ O ₃ ranging between 20-30% in 8 samples with an average grade of 23.67%, 30-45% is shown by 10 samples with an average or 34.71% and Fe ₂ O ₃ >45% is observed in 12 samples with an average or 51.75%. Based on the results received so far, BIF bands IX, XI and XII are of low to medium grade iron ore potential.
Manganese Tumakuru	Doddaguni basin	-	-	-	-	-	G-4 reconnaissance survey was taken up for manganese protore. The investigation was proposed by the DMG, Govt. of Karnataka. Evidences for multiple phases of deformations are observed at many places. The manganese concentration is found in the fractured zones at the hinges of folds. The main protore forming manganese minerals are psilomelane and pyrolusite occurring as irregular pockets and lenses and confined to the banded iron–manganese chert. The analytical results are awaited. However, based on available bed rock and trench samples results, Mn values range from 0.78% to 27.4% and Fe values from 7.54% to 45.78%.

(Contd.)

Table – 2 (contd.)

STATE REVIEWS

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
Tin, Tungsten, Lithium bearing zone							
Jalihalli, Wengalapur, Anandapur & Gopalapur, Raichur	Deodurg project	1:50000 1:12500	350 150	- -	- -	- -	G-4 reconnaissance survey for tin, tungsten, lithium bearing zone was taken up in the granitoids around Jalihalli, Wengalapur, Anandapur and Gopalapur, Raichur district. Bedrock samples, stream sediment samples, trench samples, PCS, petrographic samples were collected for identification of potential zones for Sn, W and Li mineralisation. The area shows low potential with respect to mineralisation of Sn, W and Li as no major pegmatite veins or probable alteration zones were observed. Thin section studies indicate the presence of several REE phases like allanite, monazite, sphene, xenotime etc. in the granites and pegmatites.
Gold							
Tumakuru	Ajjanahalli Block-E	-	-	9	-	-	G-2 stage general exploration was taken up for gold in this block. Quartz carbonate veins carries gold mineralisation in the form of auriferous veins. Gold grains occur as inclusions in pyrrhotite, arsenopyrite, galena and as stringers and disseminations associated with pyrite, chalcopyrite, sphalerite and loellingite. Total nine boreholes drilled to target mineralised BIF band nos. I, IV, V and VI. Chemical analysis results of 3 boreholes has been received from HGML so far. The first borehole has given gold values of 0.8g/t/0.5 m in Band-I, 0.4 to 0.6g/t/1.0 m in Band IV and 0.4g/t/0.5 m in Band V. The second borehole has given average gold values of 0.53g/t/1.5 m to 1.1g/t/1.0 m in Band I, 0.2g/t/1.0 m to 0.6g/t/1.5 m in band IV and 0.5g/t/1.15 m in band –VI. The third borehole has given average gold value of 3.1g/t/1.5 m in quartz vein intruded into meta basalt, 0.2g/t/0.5m at closure of Band-I and IV, 0.75g/t/4.5m in Band-V and 0.4 to 0.6g/t/0.5m in Band-VI.
	Ajjanahalli east block	1:1000	1.00	19	5061.00	3796	During G2 stage of exploration for gold in Ajjanahall east block, MECL carried out large scale mapping of 1.00 sq km area on 1:1000 scale, core drilling of 19 boreholes for total meterage of 5061.00 m and collection of 3346 nos. of primary, check,

(Contd.)

Table – 2 (contd.)

STATE REVIEWS

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							duplicate half core samples for Au; 151 nos primary samples each for As and Sb; 50 nos composite samples for Pb, An and Cu; 50 nos samples for petrological studies; 50 nos samples for mineragraphic studies; 39 & 50 samples for XRD & spectroscopic studies, respectively; 60 nos samples for specific gravity determination and one sample for beneficiation. Estimated 1.061 million tonnes of gold ore with 2.39 g/t Au at 0.50 g/t Au cut-off under UNFC indicated (332) category. This includes all previous estimations made by various exploration agencies at different time.
Tumakuru	Ajjanahalli Block-D	-	-	10	2231.70	733	G2 stage general exploration for gold was carried out in this block. The block forms the southern continuity of Ajjanahalli main block. G-2 stage of exploration was carried out to intersect the mineralised zones in the Block – D to test the mineralised zones at second level (120 m vertical depth). Out of 10 boreholes, three boreholes have been drilled to intersect the mineralised zone III and 5 boreholes have been drilled to intersect the MZ-V at second level (120 m vertical depth). One borehole of 327.30 m depth was drilled in the SW part of the block on the basis of the GPR survey. Total 733 nos. of borehole core sample have been sent for gold analysis by fire assay method. Gold analysis of 3 boreholes has been received so far. In first borehole average gold values of the mineralised zones are 0.20g/t/0.5 m, 0.40g/t/0.50 m and 0.20/t/1.0 m, whereas, the second borehole mineralised zones intersected with values of 0.40g/t/0.60 m, 0.60g/t/1.50 m and 0.45g/t/2.0 m. In the 3 rd borehole gold values are of 0.53g/t/ 1.50 m and 0.27g/t/1.50 m.
Chitradurga	Paramanahalli Central & North blocks	-	-	-	-	-	G3 stage preliminary exploration for gold was carried out in Paramanahalli Central and North blocks. During earlier work, in central and north blocks, 3 auriferous zones, viz eastern, middle and western, with strike lengths

(Contd.)

STATE REVIEWS

Table – 2 (contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							having 250m, 400m and 700m could be delineated by trenching and sampling. Au potential, with an average grade of 1.2g/t over 4 m and 1.6 g/t over 1.33 m has been estimated for the eastern and middle zones, respectively. A prominent 700 m long western main auriferous ore zone with an average tenor of 2.3 g/t Au over 1.26m, forming the northern extension of main auriferous ore zones in the south block was traced in central block. The Au assay values are sporadically distributed throughout the zone but more enrichment is noticed in the central part. The Au values range from 0.10g/t to 9.59g/t over 1-2 m width and 0.44g/t over 5 m from bedrock profile sampling data at 500 m due the above auriferous ore zones suggest the probable extension of the above western main lode to about > 1.8 km. A resource potential of 0.395 million tonnes of gold ore with grade ranging from 0.9 to 4.17 g/t and width ranging from 0.5 to 3m could be estimated. Only a part of analysis is received which is not much encouraging while the remaining results are awaited.
Ballari	Bagali & Uppanayakanahalli area	1:12500 1:2000	100.0 0.50	- -	- -	- -	G4 stage reconnaissance survey was carried out for gold and associated minerals around Bagali and Uppanayakanahalli area. The mineralisation in the area is associated with the alteration zones between the schist belt and the BIF as well as the metabasalts of the area. Au values of 30 and 45 ppb are reported from BIF collected from the Huligudda ridge and its extension. However, a value of 125 ppb gold is associated with carbonated metabasalt at 3 km east of Uppanayakanahalli.
Davangere & Shivamogga	Nyamati block	1:50000 1:12500	450.0 150.0	- -	- -	- -	G4 stage reconnaissance survey for gold was taken up in Nyamati block in parts of Davangere and Shimoga district. A series of old workings, shafts and one adit were observed in the area. The mineralisation in the Kudrekonda area was reportedly associated with the 'Turnbull Reef' which is exposed in the adit. It appears in the adit as smoky sheared quartz vein of 1.5 m width.

(Contd.)

STATE REVIEWS

Table – 2 (contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							A mineralised zone (nearly 1000 m length and 500 m width) hosted in and site is located 1.5km south of Gadikatte. The rock is rich in sulphides which occur mainly as disseminations and also occur as thin stringers. Sulphides mainly noticed are pyrites and pyrrhotites. All the samples were processed for the chemical analysis to assess the Au and associated metal content. Only a part of analysis is received, which is not much encouraging while the remaining results are awaited.
Raichur & Koppal	North of Tawargeri area	-	-	-	-	-	G4 reconnaissance survey was taken up for gold and associated minerals in this area. Old working in the form of shafts, inclines, trenches and pits of various sizes have been profusely observed. Most of these workings are excavated either for Iron or Gold. Primary sulphides such as pyrite, arsenopyrite and chalcopyrite were observed as disseminations and massive flecks in fresh outcrop. Secondary sulphides like homite and covellite were also seen, while malachite was present as surface stains. Au concentration in all 38 samples, ranges from <25 to 74 ppb. Out of 25 BRS analytical results received so far, one sample shows value of Cu as 395 ppm, while others range from <10 ppm to 320 ppm. In BRS peak value of Pb is <20 ppm, Zn is 125 ppm, Co 75 is ppm, As is 55 ppm, Cd 55 ppm, Cr is 75 ppm and Ag is < 5 ppm.
Shivamogga	Sidharahalli block	1:12500	300.0	-	-	110	G4 stage reconnaissance survey for gold was taken up in this block by large scale mapping. Collected BR and trench samples for Au and other associated elements and samples were also collected for petrographic, petrochemical, ore microscopic, etc study. Four suspected gold ore zone were delineated according to the presence of sulphide minerals and field evidences like hydrothermal alterations located in north of Kenchapur, west of Bhairapur, south

(Contd.)

Table – 2 (contd.)

STATE REVIEWS

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							of Siddarahalli and SW of Jambadahalla. The sulphide minerals identified are pyrite, chalcopyrite, pyrrhotite, malachite in association with sphalerite, galena, magnetite and arsenopyrite. Out of analytical results of 110 BRS samples only ten samples have analysed gold values > 25 ppb ranging from 30 ppb - 1186 ppb. Values of associated Cu, Zn, Ni, Cr etc are not significant. Out of the analytical results of 50 trench samples only 4 have gold values > 25 ppb ranging from 38-494 ppb.
Tumakuru	Timmanahalli block	-	1.50	-	-	-	A G4 stage reconnaissance survey for gold was taken up in this Block. The gold values ranges from 25 to 1040 ppb and the important assays are as follows. A 230 m zone of carbonatised BIF was traced at the southern part of the block. Two of these samples collected from this zone are reported with gold values 550 ppb and 1040 ppb, respectively. Another sample collected from limonitised BIF in the eastern part yielded 510 ppb Au over a width of 2.4 m.
Shivamogga Davangere	Yerekatte & Siddapura area	1:12500	150.0	-	-	20	G4 stage reconnaissance survey for gold was taken up in and around this area in parts of Shivamogga and Davangere districts. Six samples out of 20 collected from Tarlaghatta area has analysed gold value ranging from 28 to 40 ppb in strike contribution for about 1 km. Along with these another two BRS analysed have yielded 282 ppb and 30 ppb of Au value. Two samples of one trench have analysed Au values of 60 ppb and 636 ppb of Au. Only one sample of another trench have given Au value of 106 ppb. Apart from this, based on the results received so far no other mineralised zone is established in the area.
Limestone Belagavi	Hoskoti & Salapur	1:4000	2	7	1054	-	G3 stage preliminary exploration for SMS grade limestone was taken up to locate and intersect desired limestone body in the area. All boreholes intersected the expected limestone. Analytical results of a few grey limestone and pink limestone samples

(Contd.)

STATE REVIEWS

Table - 2 (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							show CaO in the range of 42 to 51%. Based on visual estimation and available BRS analytical results, some band within variegated limestone are likely to be cement grade. Resources will be estimated after the receipt of chemical results.
Belagavi	Around Tondikati, Chippalkati and adjoining areas of Yadwad	1:4000	2	-	-	11	During G3 stage exploration for SMS grade limestone, various litho units like dolomitic limestone, grey limestone, pink & white limestone, purple laminated limestone, banded limestone and variegated limestone were mapped. Analytical results from Manami block have some encouraging results in terms of CaO %. The four samples collected from grey limestone, pink white limestone, banded limestone & variegated limestone analysed Cao > 40%. The average SiO ₂ in grey limestone is 24 - 28%, banded limestone 1 - 3% and pink white limestone 3 - 11%. The percentage of Fe ₂ O ₃ , Al ₂ O ₃ and TiO ₂ is high in grey limestone. Further exploration activities in the area has been closed.
MECL Iron Ore							
Ballari	M/s S.B. Minerals Ltd, ML No. 2550	1:1000	0.394	24	1050.5	972	Exploration was carried out with an objective of determination of i) Lump & fines ratio ii) mineralised/ non-mineralised area iii) associated minerals and quantification of resources as per threshold value, etc. Estimated a net reserve of a) 4.203 million tonnes of iron ore with average grade of Fe 57.28%, SiO ₂ 5.42%, Al ₂ O ₃ at 45% Fe cut-off, b) 3.630 million tonnes of net reserve with average grade of Fe 60.36%, SiO ₂ 6.82%, Al ₂ O ₃ 4.48% at Fe 55% cut-off under (121) category.
	M/s Trident Minerals Ltd, ML No. 2315	1:1000	0.3243	19	856.1	789	Exploration was carried out with an objective of determination of i) Lump & fines ratio, ii) mineralised/non-mineralised area, iii) associated minerals and quantification of resources as per threshold value, etc. Estimated a net reserve of, a) 2.153 million tonnes with average grade of Fe 54.37%, SiO ₂ 19.02%, Al ₂ O ₃ 3.02%, Fe 45% cut-off, b) 1.323 million tonnes with average grade of

(Contd.)

STATE REVIEWS

Table - 2 (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							Fe 59.57, SiO ₂ 11.10%, Al ₂ O ₃ 2.89% at Fe 55% cut off under (121) category.
Ballari	Kanhaiyalal Dudheria ML No. 2563 Ramanadurga village	1:1000	0.3009	19	1278.3	1191	Exploration was carried out with an objective of determination of i) Lump & fines ratio, ii) mineralised/non-mineralised area, iii) associated minerals and quantification of resources as per threshold value, etc. Estimated a net reserve of a) 9.26 million tonnes with average grade of Fe 50.89%, SiO ₂ 17.9%, Al ₂ O ₃ 4.56% at Fe 45% cut-off, b) 4.588 million tonnes with average grade of Fe 59.34%, SiO ₂ 8.85%, Al ₂ O ₃ 4.36% at Fe 55% cut-off under (121) category.
	Smt.Santhalakshmi Jayaram ML No. 2553 Kallahalli village	1:1000	0.3253	20	1119.8	1063	Exploration was carried out with an objective of determination of i) Lump & fines ratio, ii) mineralised/non-mineralised area, iii) associated minerals and quantification of resources as per threshold value, etc. Estimated a net reserve of a) 4.542 million tonnes with average grade of Fe 49.52%, SiO ₂ 23.97%, Al ₂ O ₃ 2.87% at Fe 45% cut-off, b) 1.141 million tonnes with average grade of Fe 59.26%, SiO ₂ 4.30%, Al ₂ O ₃ 2.44% at Fe 55% cut-off under (121) category.
	M/s.H.Rangana Goud, ML No. 2148 Ramgad Range	1:1000	0.6066	48	3280.7	3071	Exploration was carried out with an objective of determination of i) Lump & fines ratio, ii) mineralised/non-mineralised area, iii) associated minerals and quantification of resources as per threshold value, etc. Estimated a net reserve of a) 63.331 million tonnes with average grade of Fe 58.84%, SiO ₂ 6.54%, Al ₂ O ₃ 4.25%, b) 48.102 million tonnes with average grade of Fe 62.75%, SiO ₂ 3.40%, Al ₂ O ₃ 3.25% at Fe 55% cut-off under (121) category.
	M/s.Bharat Mines & Minerals Ltd, ML No. 2245, Kumaraswamy Range	1:1000	0.2447	19	880.80	1338	Exploration was carried out with an objective of determination of i) Lump & fines ratio, ii) mineralised/non-mineralised area, iii) associated minerals and quantification of resources as per threshold value, etc.

(Contd.)

STATE REVIEWS

Table - 2 (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							Estimated a net reserve of a) 7.577 million tonnes with average grade of Fe 52.19%, SiO_2 9.74%, Al_2O_3 6.85%, b) 2.917 million tonnes with average grade of Fe 59.18%, SiO_2 4.65%, Al_2O_3 4.65% at Fe 55% cut-off under (121) category.
Ballari	M/s.Mysore Minerals Ltd, ML No. 995 Donimalai Range	1:1000	0.2447	23	1253.7	1977	Exploration was carried out with an objective of determination of i) the strike and depth continuity of iron ore in the mining lease area, ii) Lump & fines ratio, iii) mineralised/non-mineralised area, iv) associated minerals and quantification of resources as per threshold value, etc. Estimated a net reserve of a) 9.708 million tonnes with average grade of Fe 55.96%, SiO_2 13.39% and Al_2O_3 3.20% at Fe 45% cut-off, b) 8.407 million tonnes with average grade of Fe 60.96%, SiO_2 6.82% and Al_2O_3 3.44% at Fe 55% cut-off under (121) category.
	Sri N. Manzoor Ahmed., ML No. 1324/2616, North of Venkatgiri village	1:1000	0.1571	16	883.50	434	Exploration was carried out with an objective of determination of i) the strike and depth continuity of iron ore in the mining lease area, ii) Lump & fines ratio, iii) mineralised/non-mineralised area, iv) associated minerals and quantification of resources as per threshold value, etc. No mineralised zone could be demarcated within the area at threshold value cut-off (45% Fe). Hence, resources not estimated.
	M/s.Veeyam Pvt Ltd., ML No. 2615, Vadrahalli Village	1:100	0.2004	-	-	-	Exploration was carried out with an objective of determination of i) the strike and depth continuity of iron ore in the mining lease area, ii) Lump & fines ratio, iii) mineralised/non-mineralised area, iv) associated minerals and quantification of resources as per threshold value, etc.
	M/s S.B. Minerals Ltd, ML No. 2515 Vysankari village	1:1000	0.7125	6	539.00	582	Exploration was carried out with an objective of determination of i) the strike and depth continuity of iron ore in the mining lease area, ii) Lump & fines ratio, iii) mineralised/non-mineralised area, iv) associated minerals and quantification of

(Contd.)

STATE REVIEWS

Table - 2 (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							resources as per threshold value, etc. Estimated a net resource of 0.896 million tonnes with average grade of Fe 52.84%, SiO ₂ 19.55% and Al ₂ O ₃ 3.57% at Fe 45% cut-off under measured (331) and indicated (332) categories.
Ballari	M/s Rajapur ML No. 2190	1:100	0.9175	3	226.00	257	Exploration was carried out with an objective of determination of i) the strike and depth continuity of iron ore in the mining lease area, ii) Lump & fines ratio, iii) mineralised/non-mineralised area, iv) associated minerals and quantification of resources as per threshold value, etc. Estimated a net resource of 0.088 million tonnes with average grade of Fe 36.01%, SiO ₂ 38.48% and Al ₂ O ₃ 1.41% at Fe 35% planning cut-off grade under measured (331) and indicated (332) categories.
Chitradurga	Sri Allum Veerabhadrapa ML No. 2436 Kenchihalli village, Hosadurga Taluka	1:1000	0.2453	25	1330.00	5919	Exploration was carried out with an objective of determination of i) the strike and depth continuity of iron ore in the mining lease area, ii) Lump & fines ratio, iii) mineralised/non-mineralised area, iv) associated minerals and quantification of resources as per threshold value, etc. Estimated a net resource of i) 3.645 million tonnes with average grade of Fe 37.19%, SiO ₂ 19.42% and Al ₂ O ₃ 1.91% at Fe 35% cut-off value under measured (331) and indicated (332) categories, ii) 0.931 million tonnes of manganese resources with average grade of Mn 12.71% and Fe 27.39% at Mn 10% cut-off value.
	M/s Thangavelu and others ML No. 2585, Doddabyaladakere village Hosadurga Taluka	1:1000	0.6092	42	2101.90	6762	Exploration was carried out with an objective of determination of i) the strike and depth continuity of iron ore in the mining lease area, ii) Lump & fines ratio, iii) mineralised/non-mineralised area, iv) associated minerals and quantification of resources as per threshold value, etc. Estimated a net resource of i) Iron ore at 3.303 million tonnes with average grade of Fe 46.43%, SiO ₂ 30.33% and Al ₂ O ₃ 1.67% at Fe 45%

(Contd.)

STATE REVIEWS

Table - 2 (Contd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							cut-off value under measured (331) and indicated (332) categories, ii) Limestone at 5.650 million tonnes with average grade of CaO 37.35%, MgO 13.05% and SiO ₂ 13.05% at CaO 35% cut-off value., iii) Dolomite at 8.994 million tonnes with average grade of MgO 15.18% and CaO 28.71%, at CaO 15% cut-off value, iv) Manganese ore at 4.803 million tonnes with average grade of Mn 15.43%.
Tumakuru	M/s Karnataka Limpo Cement Industry, ML No.2650, Honnebagi & Bullenahalli village	1:1000	0.0647	8	361.00	472	Exploration was carried out with an objective of determination of i) the strike and depth continuity of iron ore in the mining lease area, ii) Lump & fines ratio, iii) mineralised/non-mineralised area, iv) associated minerals and quantification of resources as per threshold value, etc. Estimated a net resource of i) 0.598 million tonnes with average grade of Fe 54.28%, SiO ₂ 11.95% and Al ₂ O ₃ 4.76% at Fe 45% cut-off value under UNFC measured (331) and indicated (332) categories.
	M/s Deepchand Kishanlal, ML No.2348, Chikkanayakanahalli and Tiptur Taluka	1:1000	0.0647	47	2528.00	6471	Exploration was carried out with an objective of determination of i) the strike and depth continuity of iron ore in the mining lease area, ii) Lump & fines ratio, iii) mineralised/non-mineralised area, iv) associated minerals and quantification of resources as per threshold value, etc. Estimated a net reserve of a) 34.939 million tonnes with average grade of Fe 53.46%, SiO ₂ 8.41% and Al ₂ O ₃ 8.68% at Fe 45% cut-off value, b) 18.168 million tonnes with average grade of Fe 56.66%, SiO ₂ 6.15% and Al ₂ O ₃ 7.15% at Fe 55% cut-off value under UNFC code (121) category,
	M/s Mysore Stoneware & Potteries Ltd., ML No.2521, Somanahalli & Sondenahalli Villages, Chikkanayakanahalli and Tiptur Taluka	1:1000	1.2265	22	1512.00	3002	Exploration was carried out with an objective of determination of i) the strike and depth continuity of iron ore in the mining lease area, ii) Lump & fines ratio, iii) mineralised/non-mineralised area, iv) associated minerals and quantification of

(Contd.)

STATE REVIEWS

Table - 2 (Concl'd.)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							resources as per threshold value, etc. Estimated a net reserve of a) 12.945 million tonnes with average grade of Fe 54.04% , SiO₂ 9.24% and Al₂O₃ 7.96% at Fe 45% cut-off value, b) 8.782 million tonnes with average grade of Fe 56.47%, SiO ₂ 7.15% and Al ₂ O ₃ 6.79% at Fe 55% cut-off value under UNFC code (121) category.
Tumakuru	Sri B.R. Surendranath Singh, ML No.2187, Honnebagi & Bullenahalli Villages	1:1000	0.2371	22	584.40	657	Exploration was carried out with an objective of determination of i) the strike and depth continuity of iron ore in the mining lease area, ii) Lump & fines ratio, iii) mineralised/non-mineralised area, iv) associated minerals and quantification of resources as per threshold value, etc. Estimated a net resource of 0.869 million tonnes with average grade of Fe 46.92%, SiO ₂ 11.63% and Al ₂ O ₃ 9.72% at Fe 45% cut off value under UNFC code (331) / (332) categories.
	M/s Sri G. Rajashekhar ML No.2229, Mavinahalli Village, Gubbi Taluka	1:1000	1.2742	2.42	1697.00	6714	Exploration was carried out with an objective of determination of i) the strike and depth continuity of iron ore in the mining lease area, ii) Lump & fines ratio, iii) mineralised/non-mineralised area, iv) associated minerals and quantification of resources as per threshold value, etc. Estimated a net resource of 1.765 million tonnes with average grade of Fe 49.02%, SiO ₂ 7.95%, Al ₂ O ₃ 2.10% and Mn 3.70% at Fe 45% cut-off value under UNFC code (331) / (332) categories.

STATE REVIEWS

Production

Gold, iron ore, manganese ore and limestone are the important minerals produced in Karnataka state. The value of minor minerals production was estimated at ` 1,321 crore for the year 2016-17.

The number of reporting mines in Karnataka was 141 during 2016-17 (Table-3).

Mineral-based Industry

The present status of each mineral-based industry is not readily available. However, the important mineral-based industries in organised sector in the State are given in Table - 4.

**Table – 3 : Mineral Production in Karnataka, 2014-15 to 2016-17
(Excluding Atomic Minerals)**

(Value in ` '000)

Mineral	Unit	2014-15			2015-16			2016-17 (P)		
		No. of mines	Quantity	Value	No. of mines	Quantity	Value	No. of mines	Quantity	Value
All Minerals		197		77157908	160		55849293	141		67681353
Bauxite	t	2	127500	31875	2	12050	5423	2	386	171
Chromite	t	4	2674	16044	3	1808	10884	3	782	4321
Gold Ore	t	-	443279	-	-	558803	-	-	576699	-
Gold	kg	3	1430	3572107	3	1310	3178752	3	1579	4316986
Iron Ore	'000t	67	20205	55165630	69	25036	34659850	58	26363	43850893
Manganese Ore	t	14	206700	933894	11	145623	410733	9	261374	1189857
Silver*	kg	-	139	5103	-	122	4048	-	169	6640
Dolomite#	t	13	619367	208550	-	-	-	-	-	-
Dunite#	t	1	1123	164	-	-	-	-	-	-
Fireclay#	t	-	2965	2535	-	-	-	-	-	-
Felsite#	t	2	324	242	-	-	-	-	-	-
Graphite										
(r.o.m.)	t	2	-	-	1	-	-	1	-	-
Kaolin#	t	1	1984	6271	-	-	-	-	-	-
Kyanite	t	1	4400	3520	1	-	-	1	-	-
Laterite#	t	1	121200	52154	-	-	-	-	-	-
Limestone	'000t	62	24008	3782551	66	27062	4325671	60	29784	5057615
Limeshell	t	1	200	240	2	1221	1258	2	4003	6596
Magnesite	t	3	9129	40910	2	8161	39962	2	8391	35562
Quartz#	t	5	88673	30344	-	-	-	-	-	-
Quartzite#	t	1	8500	4505	-	-	-	-	-	-
Silica Sand#	t	13	88773	39998	-	-	-	-	-	-
Shale#	t	-	646286	48559	-	-	-	-	-	-
Vermiculite	t	1	-	-	-	-	-	-	-	-
Minor Minerals@		-	-	13212712	-	-	13212712	-	-	13212712

Note: The number of mines excludes silver and 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.

Declared as minor mineral vide Gazette Notification dated 10.02.2015.

STATE REVIEWS

Table – 4 : Principal Mineral-based Industries in Karnataka

Industry/plant	Capacity ('000 tpy)
Abrasives	
Grindwell Norton Ltd, Bengaluru.	NA
Sri Sadguru Abrasives Pvt. Ltd, Mache, Distt. Belagavi.	24 (t)
Alumina	
Hindalco Industries Ltd, Belagavi.	350 (alumina)
Cement	
ACC Ltd, Wadi (Wadi & Wadi New), Distt. Gulbarga.	6030
ACC Ltd, Kuduthini, Ballari (G).	1100
ACC Ltd, Thondebhavi, Distt. Chikkaballapur (G).	1660
Bagalkot Cement Industries Ltd, Distt. Bagalkot.	600
Chettinad Cement, Kallur, Distt. Kalaburagi.	2500
Dalmia Cement, Yadwad, Distt. Belagavi.	4000
Heidelberg Cement India Ltd, (Formerly Mysore Cements Ltd) Ammasandra, Distt. Tumakuru.	510
J. K. Cement Ltd, Muddapur, Distt. Bagalkot.	3000
JSW Cement, Vijaynagar, Distt. Ballari.	600
Kesoram Industries, Vasavadatta Cement, Sedam, Distt. Kalaburagi.	5750
Kalaburagi Cement Pvt Ltd (formerly Vicatsagar) Chatrasala, Distt. Kalaburagi.	2290
Ramco Cement Ltd, Mathodu, Distt. Chitradurga.	290
Ultratech Cement, Raj Shree Cement, Malkhed, Distt. Kalaburagi.	3200
Ultratech Cement, Ginigera, Distt. Koppal (G).	1300
Ceramic	
Ceramic Products Ltd, Khanapur, Distt. Belagavi.	5
H&R Johnson (India) Ltd, Hubballi.	47.72
Murudeshwar Ceramics Ltd, Dharwad.	115

(Contd.)

Table - 4 (Contd.)

Industry/plant	Capacity ('000 tpy)
The Mysore Spongware Pipes Potteries Ltd, Solandavanahalli, Bengaluru.	6
Chemical	
Solaris Chem Tech Industries Ltd, Bhinga, Distt. Uttara Kannada.	59.4 (caustic soda), 52.3 (Cl), 133.7 (HCl) 24.0 (H ₃ PO ₄)
Fertilizer	
K. P. R. Fertilizers Ltd Halvarthi, Koppal.	60 (SSP)
Mangalore Chemical & Fertilizers Ltd, Panambur, Mangaluru.	379.5 (Urea) 260 (DAP) 40 (Complex)
Tungabhadra Fertilizers & Chemicals Ltd, Munirabad, Koppal.	45 (SSP)
Iron & Steel	
JSW Steel Ltd, Vijayanagar, Distt. Ballari.	9200 (pellets) 720 (pig iron) 10000 (crude/liquid steel) 12950 (sinter)
Visvesvaraya Iron & Steel Ltd, Bhadravati, Distt. Shivamogga.	205 (pig iron) 118(crude/liquid steel) 4.8 (refractory bricks)
Sunvik Steels Pvt. Ltd, Jodidevarahally, Distt. Tumakuru.	60 (sponge iron) 60 (TMT bar)
Pellets	
KIOCL, Mangaluru.	3500 (pellets) 6700 (conc.) 227 (pig iron)
BMM Ispat, Danapur, Distt. Ballari.	2400 (pellets)
Xindia Steel, Koppal.	800 (pellets)
Pig Iron	
Uni-Metal Ispat Ltd, Ballari.	75
Kalyani Ferrous Ind. Ltd, Koppal.	120
Kirloskar Ferrous Industries Ltd, Bevinahalli, Distt. Koppal.	240
Sponge Iron	
Agrawal Sponge & Energy (P) Ltd, Kuduthini, Distt. Ballari.	72
Balakundi Premium Steels Pvt. Ltd, Halakundi, Distt. Ballari.	34

(Contd.)

STATE REVIEWS

Table - 4 (Contd.)

Industry/plant	Capacity ('000 tpy)
Bellary Ispat (P) Ltd, Halakundi Distt. Ballari.	33
Ballary Steel & Alloys Ltd, Ballari.	60
Benaka Sponge Iron Pvt. Ltd, Belagal, Distt. Ballari.	60
Dhruvdes Metasteel Pvt. Ltd, Hirebaganal, Distt. Koppal.	60
Divya Jyoti Steel Ltd, Taranagar, Distt. Ballari.	30
Embitee Iron & Steel Pvt. Ltd, Ballari.	60
Gayatri Metals Pvt Ltd, Belagal, Distt. Ballari.	30
Janki Corp. Ltd, Sidiginamola, Distt. Ballari.	180
Haryana Steel and Power, Shanthigrama, Distt. Hassan.	35
Hare Krishna Metalics Pvt Ltd, Hire Baganal, Distt. Koppal.	75
Hospet Ispat Pvt. Ltd, Allanagar Bagnal Road, Distt. Koppal.	60
Hothur Ispat Pvt. Ltd, Veniveerpur, Distt. Ballari.	60
KMMI Steel Pvt. Ltd, Yerabanahally, Distt. Ballari.	120
Mastek Steels Pvt. Ltd, Halakundi, Distt. Ballari.	105
Noble Distillaries & Powers Ltd, Sirivar, Distt. Ballari.	72

(Contd.)

Table - 4 (Concltd.)

Industry/plant	Capacity ('000 tpy)
PGM Ferro Steel Pvt. Ltd, Hariganadani, Distt. Ballari.	60
Popuri Steels Ltd, Halakundi, Distt. Ballari.	30
Rayon Steel Pvt Ltd, Veniverapur, Distt. Ballari.	60
Rengineni Steel Pvt. Ltd, Halakundi, Distt. Ballari.	25
Shree Venkateshwara Sponge & Power Ltd, Halakundi, Distt. Ballari.	30
Yashshvi Steel & Alloys Ltd, Halakundi, Distt. Ballari.	30
Ferro Alloys	
Dandeli Steel & Ferro Alloys Ltd, Dandeli.	6
Sandur Manganese & Iron Ore Ltd, Vyasankere Distt. Ballari.	24
S.R. Chemicals & Ferro Alloys Ltd, Honaga, Distt. Belagavi.	0.3
Thermit Alloys Pvt. Ltd, Shivamogga.	1.2
Petroleum Refinery	
MRPL, Mangaluru.	15000

G; Grinding Unit

Note: Data for fertilizer and cement industries is taken from Indian Fertilizer Scenario, 2016/FAI Statistics, 2015-16 and Survey of Cement Industry & Directory, 2016 respectively.