

STATE REVIEWS



Indian Minerals Yearbook 2020

(Part- I)

59th Edition

**STATE REVIEWS
(Andhra Pradesh)**

(ADVANCE RELEASE)

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

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ANDHRA PRADESH

Mineral Resources

Andhra Pradesh is the sole producer of apatite. The State is the leading producer of barytes, ball clay, dolomite, garnet (abrasive), laterite, limestone, quartz, quartzite, silica sand and vermiculite. It accounts for 92% barytes, 40% calcite, 41% mica, 31% each kyanite & garnet, 19% titanium minerals, 16% bauxite, 15% dolomite, 13% sillimanite and 12% each vermiculite & limestone resources of the country. Andhra Pradesh is endowed with the internationally known black, pink, blue and multicoloured varieties of granites. Krishna-Godavari basin areas in this State have emerged as new promising areas for hydrocarbons, especially natural gas.

Important minerals occurring in Andhra Pradesh are: **apatite** in Visakhapatnam district; **asbestos** in Cuddapah district; **ball clay** in West Godavari district; **barytes** in Anantapur, Cuddapah, Krishna, Kurnool, Nellore & Prakasam districts; **calcite** in Anantapur, Cuddapah, Kurnool & Visakhapatnam districts; **china clay** in Anantapur, Chittoor, Cuddapah, East Godavari, West Godavari, Guntur, Kurnool, Nellore & Visakhapatnam districts; **coal** in Godavari Valley Coalfield; **corundum** in Anantapur districts; **dolomite** in Anantapur & Kurnool districts; **felspar** in Anantapur, Cuddapah, West Godavari, Nellore & Vizianagaram districts; **fireclay** in Chittoor, Cuddapah, East Godavari, West Godavari, Kurnool & Srikakulam districts; **garnet** in East Godavari, Nellore & Srikakulam districts; **granite** in Anantapur, Chittoor, Cuddapah, Guntur, Krishna, Nellore, Prakasam, Srikakulam & Vizianagaram districts; **iron ore (haematite)** in Anantapur, Cuddapah, Guntur, Krishna, Kurnool & Nellore districts; **iron ore (magnetite)** in Prakasam district; **lead-zinc** in Cuddapah, Guntur & Prakasam districts; **limestone** in Anantapur, Cuddapah, East Godavari, West Godavari, Guntur, Krishna, Kurnool, Nellore, Srikakulam, Visakhapatnam & Vizianagaram districts; **manganese ore** in Srikakulam & Vizianagaram districts; **mica** in Nellore & Visakhapatnam district; **ochre** in Anantapur & Cuddapah, West Godavari, Guntur, Kurnool & Visakhapatnam districts;

pyrophyllite in Anantapur, Chittoor & Cuddapah districts; **quartz/silica sand** in Anantapur, Chittoor, Cuddapah, West Godavari, Guntur, Krishna, Kurnool, Nellore, Prakasam, Srikakulam, Visakhapatnam & Vizianagaram districts; **quartzite** in Kurnool, Srikakulam, Visakhapatnam & Vizianagaram districts; **talc/soapstone/steatite** in Anantapur, Chittoor, Cuddapah & Kurnool districts & **vermiculite** in Nellore & Visakhapatnam districts. **Petroleum & natural gas** deposits of importance are located in the onshore and offshore areas of Krishna-Godavari basin of the State.

Other minerals that occur in the State are **bauxite** in East Godavari & Visakhapatnam districts; **chromite** in Krishna district; **copper** in Guntur, Kurnool & Prakasam districts; **diamond** in Anantapur, Krishna & Kurnool districts; **gold** in Anantapur, Chittoor & Kurnool districts; **graphite** in East Godavari, West Godavari, Srikakulam, Visakhapatnam & Vizianagaram districts; **gypsum** in Guntur, Nellore & Prakasam districts; **kyanite** in Nellore & Prakasam districts; **magnesite** in Cuddapah district; **pyrite** in Kurnool district; **sillimanite** in West Godavari & Srikakulam district; **silver** in Guntur district; **titanium minerals** in East Godavari, Krishna, Nellore, Srikakulam & Visakhapatnam districts; and **tungsten** in East Godavari district (Tables-1 & 2).

Exploration & Development

The details of exploration activities conducted by various agencies for minerals during 2019-20 are furnished in Table - 3.

During 2019-20, National Oil Companies (NOC) continued their operations for exploration of oil and gas in the State.

Production

Many important minerals are produced in Andhra Pradesh. The principal minerals produced in the State were Natural Gas (ut.), Petroleum (crude), Manganese Ore, Limestone, Vermiculite etc. The value of minor mineral's production was estimated at ₹ 13,021 crore for the year 2019-20. The number of reporting mines in the State was 123 in 2019-20 in case of MCDR minerals.

Table –1: Reserves/Resources of Minerals as on 01.04.2015: Andhra Pradesh

Mineral	Unit	Reserves										Remaining Resources				Total resources (A+B)		
		Proved		Probable		Total		Feasibility		Pre-feasibility		Measured	Indicated	Inferred	Reconnaissance		Total	
		STD 111	STD 112	STD 121	STD 122	(A)	(B)	STD 211	STD 221	STD 222	STD 331							STD 332
Apatite	tonnes	27715	-	1680	29395	-	-	-	-	-	-	-	200163	-	200163	-	200163	229558
Asbestos	tonnes	20016	-	4617	24633	684984	40408	18355	-	1541	67392	-	812679	-	812679	-	812679	837312
Ball clay#	tonnes	6700417	202950	1049025	7952392	5622514	2842702	10275648	-	2279330	28044529	-	49064723	-	49064723	-	49064723	57017115
Barytes#	tonnes	48990002	49358	372296	49411656	186544	94489	988514	104322	389630	28165637	105721	30034857	105721	30034857	-	30034857	79446513
Bauxite	'000 tonnes	-	-	-	-	-	-	-	-	188971	288176	-	615267	-	615267	-	615267	615267
Calcite#	tonnes	16522	8098	119526	144146	8538	-	105470	8562700	5200	282204	-	8964112	-	8964112	-	8964112	9108258
China clay#	'000 tonnes	2494	953	1889	5337	1508	989	2071	511	688	51427	362	57556	362	57556	-	57556	62893
Chromite	'000 tonnes	-	-	-	-	-	-	-	-	-	0.4	-	0.4	-	0.4	-	0.4	0.4
Copper																		
Ore	'000 tonnes	-	-	-	-	686	-	105	-	5791	1000	-	7582	-	7582	-	7582	7582
Metal	'000 tonnes	-	-	-	-	6.88	-	1.05	-	97.45	8.32	-	114	-	114	-	114	114
Corundum#	tonnes	200	-	-	200	-	7	-	-	-	-	-	7	-	7	-	7	207
Diamond	carat	-	-	-	-	-	-	-	-	200483	1524317	98155	-	1822955	-	1822955	-	1822955
Dolomite#	'000 tonnes	86134	11371	17539	115045	176476.97	31908	38324	22373	77	910217	4301	1183677	4301	1183677	-	1183677	1298722
Felspar#	tonnes	2295253	150795	556263	3002311	4427537	50911	2379650	361444	1819937	1571271	442950	11053700	442950	11053700	-	11053700	14056011
Fireclay#	'000 tonnes	1252	40	642	1934	771	1400	1574	56	417	10211	132	14562	132	14562	-	14562	16496
Garnet	tonnes	1183898	4500	568750	1757148	12189	232525	791238	18	8800000	5674011	-	15509981	-	15509981	-	15509981	17267129
Gold																		
Ore (primary)	tonnes	-	3902725	-	3902725	655133	-	889515	291000	55000	6980031	-	8870679	-	8870679	-	8870679	12773404
Metal (primary)	tonnes	-	8.49	-	8.49	2.45	-	3.57	1.08	0.17	23.78	-	31.05	-	31.05	-	31.05	39.54
Granite# (Dim. stone)	'000 cu. m	-	-	-	-	-	-	-	-	-	2360396	-	2360396	-	2360396	-	2360396	2360396
Graphite	tonnes	-	-	-	-	-	1195	1135	-	1122	697575	-	701027	-	701027	-	701027	701027
Gypsum#	'000 tonnes	-	-	-	-	-	-	-	-	-	404	-	404	-	404	-	404	404
Iron ore (haematite)	'000 tonnes	17664	273	11832	29768	40595	49589	68425	377	4666	147628	13	311294	13	311294	-	311294	341062
Iron ore (magnetite)	'000 tonnes	-	-	-	-	43105	-	-	13800	1266666	68527	-	1392098	-	1392098	-	1392098	1392098
Kyanite	tonnes	-	-	-	-	-	-	399	-	-	32003829	-	32004228	-	32004228	-	32004228	32004228

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STATE REVIEWS

Table - 1 (contd)

Mineral	Unit	Reserves										Remaining Resources					Total resources (A+B)					
		Proved		Probable		Total (A)		Feasibility		Pre-feasibility		Measured		Indicated		Inferred		Reconnaissance		Total (B)		
		STD 111	STD121	STD122	STD121	STD122	STD211	STD221	STD222	STD331	STD332	STD333	STD334	STD335	STD336	STD337		STD338	STD339	STD340	STD341	STD342
Laterite#	'000 tonnes	13574	680	1710	15964	23238	5107	2244	24	1107	889	.	32608	48572								
Lead-zinc																						
Ore	'000 tonnes	-	-	-	-	-	-	-	1000	4159	17530	-	22689	22689								
Lead metal	'000 tonnes	-	-	-	-	-	-	-	28.70	119.53	688.65	-	836.88	836.88								
Zinc metal	'000 tonnes	-	-	-	-	-	-	-	12.40	43.57	7.19	-	63.16	63.16								
Limestone	'000 tonnes	1003483	19713	385133	1408329	269901	53722	706890	82112	268002	18666131	3466741	23513499	24921828								
Magnesite	'000 tonnes	-	-	-	-	-	-	-	-	-	80	-	80	80								
Manganese ore	'000 tonnes	2235	637	2086	4958	675	387	773	188	3220	6987	457	12687	17645								
Mica#	kg	6194253718293548	-	-	-	-	-	-	93830994	12894000	51668132	-	177353126	257589211								
Ochre#	tonnes	5284990	-	64602	53495921404229.67	430231	1087353	347681	-	-	3596595	2121	6868210	12217802								
Pyrite	'000 tonnes	-	-	-	-	-	-	-	-	-	880	-	880	880								
Pyrophyllite#	tonnes	39376	-	9441	48817	366494	75201	311209	-	108831	737855	-	1599590	1648407								
Quartz-silica sand#	'000 tonnes	94483	3429	13687	111599	32690	4039	17329	7081	6691	45661	11599	125090	236690								
Quartzite#	'000 tonnes	16001	-	1389	17390	2103	8357	6418	-	3975	24797	1256	46905	64295								
Sillimanite	tonnes	2045	-	37	2082	15	11278	12	267	7430300	1346988	-	8788861	8790943								
Silver*																						
Ore	tonnes	-	-	-	-	-	-	-	-	-	16950000	-	16950000	16950000								
Metal	tonnes	-	-	-	-	-	-	-	-	-	128.13	-	128.13	128.13								
Shale#	'000 tonnes	1120	162	272	1554	199	-	563	-	-	1142	90	1994	3548								
Slate#	'000 tonnes	109	667	-	776	-	-	1075	-	-	1511	-	2586	3362								
Talc/soapstone/steatite#	'000 tonnes	1875	482	1001	3358	197	725	1804	184	369	3611	248	7137	10495								
Tungsten*																						
Ore	tonnes	-	-	-	-	-	-	-	3640000	4700800	5952500	509000	14802300	14802300								
Contained																						
WO ₃	tonnes	-	-	-	-	-	-	-	5096	6574.64	8273.65	318.28	20262.57	20262.57								
Vermiculite	tonnes	60892	19413	30566	110871	2040	917	5850	58396	5127	88865	-	161195	272066								

Figures rounded off

Declared as Minor Mineral vide Gazette Notification dated 10.02.2015.

Minor Mineral before Gazette Notification dated 10.02.2015.

Note: The proved and indicated balance recoverable reserves of crude oil and natural gas as on 1.4.2020 in the State are 3.36 million tonnes and 63.57 billion cu. m, respectively.

STATE REVIEWS

Table – 2: Reserves/Resources of Coal as on 1.4.2020: Andhra Pradesh

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total/Godavari Valley	97	1078	432	1607

*Source: Coal Directory of India, 2019-20.***Table – 3: Details of Exploration Activities in Andhra Pradesh, 2019-20**

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI Iron Ore Cuddapah	Letapalle area of Cuddapah Supergroup	1:12500	100	-	-	-	Reconnaissance survey (G4) for Iron Ore was carried out. An area of 100 sq km was mapped on 1:12500 scale. The iron ore occurred in two iron pits (Pit-1 and pit- 2). Pit-1 found at 300 m SW of Village Letapalle with 200 m X 30 m dimension and have ferruginous shale with haematite band (Fe content varying from 35 to 50%) having thickness from 0.5 to 1 m occurring at a depth of 4 to 5 m below the surface at the bottom of the pit. Haematite ore with 150 to 200 m strike length and 20 to 25 m width in the quarry was found to occur as a band within ferruginous shale conforming to the trend of other lithounits. The Pit-2 was allocated 200 m southwest of previous Pit-1. In this pit, the iron (haematite) band occurred at a greater depth, between 5&7 m with a thickness of 10 to 20 cm within ferruginous shale. Petrological study of the ore samples revealed that the iron ore comprised mineral assemblage of haematite, martite and quartz. It was observed that around 5-10% of the magnetite grains have undergone martitisation along the grain boundaries and fractures within the grain. The mineralisation in the study area was strata bound and lensoidal in nature with thickness varying between 0.1 and 1 m. The iron ore body occurred within intercalated sequence of shale. Lensoidal iron ore bodies occurred at a depth of 4-5 m below surface in two pits. The length of the mineralised zone was 200-250 m having NE-SW trend. Analytical

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STATE REVIEWS

Table – 3 (contd)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							chemical result of BRS showed Fe from 35 to 50% and 20 nos. of trench samples of Fe ranged from 30 to 45%.
	Nagayapalle- Konduru area	1:12500	100	-	-	75	Reconnaissance Survey (G4) for Iron Ore was carried out. LSM on a scale of 1:12500 was carried out in an area of 100 sq km and 50 cubic meters of pitting/trenching was carried out. The different lithounits mapped were dolomite, cherty quartzite /quartzite intercalated with purple shale and basic sills belonging to the Vempalle Formation of Papagghi Group. In the western part of the study area, basic flow of Tadpatri Formation belonging to the Chitravati Group was exposed. In the study area, eleven mining leases were granted and at present active mining was going on in the Chinnachappalle (Chabali) area, NE of Tummaluru. During the current investigation, haematite was seen in association with the quartzite/ cherty quartzite and as thin bands associated with the purple shale as observed in the pits. The iron ore bands in the upper part have a thickness of a few cm to 1 m with limited lateral extension. The iron ore bands were pocket type and discontinuous with limited strike extension and were formed by secondary enrichment within the purple shale. The occurrence of iron ore in the study area was observed to be lensoidal and pocket type with limited strike extension and was confined in cherty quartzite and shale up to 2 m depth from surface. Under microscope observations of iron ore occupying the interstitial pore spaces of the quartz grains were reported. The ore was essentially made of haematite with quartz as gangue mineral. Magnetite crystals and flaky haematite (specularite) occupying the interstitial pore spaces were also observed in ferruginous quartzite. Chemical analyses for 75 bedrock samples showed the value of Fe ranging from 0.31% to 62.72%.

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STATE REVIEWS

Table – 3 (contd)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
Prakasam	Juvvikunta and Pedda Alvalapadu area	1:12500	100	-	-	97	Reconnaissance survey (G4) for Iron Ore was carried out by LSM. Large-scale Mapping (on 1:12500 scale) in an area of 100 sq km was carried out in two blocks which were demarcated as (i) Juvvikunta block (34 sq km.) and (ii) Pedda Alvalapadu block (66 sq km). The lithounits mapped in the study area were mainly gneissic rocks belonging to PGC-II and rocks of Lower Gudur Group along with younger intrusives of syenogranite, quartz syenite and very small exposure of quartz-carbonate and pegmatite vein. Two non-significant Banded magnetite quartzite (BMQ) bands have been mapped in the northern part of Pedda Alvalapadu block. Iron ore in the area was found to be very thinly laminated magnetite band within silica-rich quartzite band. BMQ-I band having a strike length of 1 km with an average width of 20-25 m was observed. The strike of BMQ-I was N20°E-S20°W with steep dip amount of 65° to 70° towards east. The strike of the BMQ-II band varied between N15°E- S15°W to N20°E- S20°W with steep dip of 60° to 65° towards east. BMQ-II band was with a strike length of 500 m. Analytical results of 68 BRS samples showed Fe% of BMQI varying from 18.18% to 24.89%. Average Fe% of BMQ-II was found varying from 19.16% to 20.99% in 19 BRS samples. The Fe% ranged from 9.36% to 16.26% with an average of 12.13% in 10 PTS samples (T-1), which revealed no further strike as well as depth continuity of the NNE-SSW trending BMQ-II unit at 1.5 km SE of Panchalingayalam temple. The Fe% suggested low grade for both the BMQ units. The grade of the mineralised zone did not show much change along the length and width of the BMQ band. Study of ore petrography revealed low to moderate degree of martitisation in both the BMQ bands.

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STATE REVIEWS

Table – 3 (contd)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
	Ayyavaripalle- Chundi-Malakonda area	1:12500	100	-	-	-	Reconnaissance Survey (G4) for Iron Ore was carried out. Large-scale mapping in 100 sq km area on 1:12500 scale was carried out. About 6 low to medium-grade BMQ bands were recorded in the two blocks, i.e., 2 bands in southern block viz; (i) South-east of Village Ayyavaripalle (4.5 km x 30 m), (ii) South-east of Ayyavaripalle (800 m x 40 m) and 4 bands in northern block viz; (i) west of Ayyavaripalle to north of Village Malakonda (2.5 km x 20 m), (ii) East of Ramalingapuram (1 km x 15 m) (iii) East of Lakshmakkapalle (1.6 km x 40 m), (iv) north of Village Lakshmakkapalle (2.5 km x 40m). The iron ore exposed in the area were Banded Magnetite Quartzite (BMQ) composed of alternate bands of iron ore minerals (magnetite/ partly martitised) and silica (quartzite), hosed by mostly metarhyolite. The total Fe content ranged from 22% to 44.10 % with an average of 22.71%. The average SiO ₂ , Al ₂ O ₃ and P ₂ O ₅ percentage of BMQ bands were 49.08%, 7.50% and 0.32% respectively. The BMQ band observed in the south-east of Ayyavaripalle village shows the highest total Fe content of 44.10%.
Chittoor	Gadanki and Bommayyapalli	-	-	-	-	-	Reconnaissance survey (G4) for Iron Ore was carried out. The area of investigation was divided into two blocks, namely, Gadanki block (68 sq km) and Bommayyapalli block (36 sq km). In Gadanki block, three discontinuous Banded Magnetite Quartzite (BMQ) bands were mapped with cumulative length of around 780 m. BMQ Band-1, 600-700 m WNW of Cheruvu Mundari Kandriga village, recorded a cumulative length of 35 m and width of 50 to 60 m. In Kesavakuppam area, two small discontinuous bands of magnetite quartzite (BMQ: Band-2 and BMQ: Band-3) with cumulative lengths varying from 150 to 200 m and width of 40-50 m were also mapped. Only two small outcrops of BMQ

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STATE REVIEWS

Table – 3 (contd)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
Anantapur	around Obulapuram area	-	-	-	-	-	<p>(5m x1m x1m) could be traced near Village Telagundlapalle in Bommayyapalli block. The visual estimation of iron to silica ratio varied from 1:2 to 1:5. The bedrock samples in the study area indicated that most of the samples contained silica in the range of 33- 60% and Fe content ranged from 8% to 40% with mean value of 28.67%.</p> <p>General exploration (G2) for Iron Ore was carried out. The study area lies in the south-eastern part of the Sandur Schist Belt exposing primarily rocks of Donimalai Formation of Sandur Schist Belt surrounded by PGC and Closepet Gneiss. Iron ore occurred mainly as Banded Magnetite Quartzite (BMQ) and Banded Haematite Quartzite (BHQ) in the area. Primarily the BIF was that of magnetite quartzite but due to deep weathering during the process of lateritisation, magnetite got martitised. Three prospecting blocks for drilling (Block I: 0.52 sq km, Block II: 1.64 sq km and Block III: 3.84 sq km) were identified during the detailed mapping. In Block I, iron bands were categorised under massive haematite ore (64% to 65% Fe; length: 450 m, width varying from 3 to 40 m), friable haematite ore (55% to 64% Fe, length 550 m, width varying from 20 to 200 m) and alternate bands of haematite and argillite (47 to 49% Fe; length 200m, width varying from 20- 50m). In Block II, BMQ bands were 1.5 km in length width varying from 10 to 60 m and showed 30-40% Fe. In Block III, two 5.6 km long BMQ bands were demarcated (width varying from 10 to 40 m) with 25-40 % Fe. Drilling activity could not be initiated due to non-availability of forest clearance, thus discontinued.</p>

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STATE REVIEWS

Table – 3 (contd)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
Kurnool	Veldurthy- block of cuddapah supergroup	1:4000	-	-	202.50	-	Preliminary exploration (G3) for Iron Ore was carried out. The study area was located in the central part of the western margin of Cuddapah Supergroup. The study area was comprised of two blocks, Block-I and Block-II. Veldurthy Block I falls in Yambayi Reserved Forest and covered an area of about 0.36 sq km, whereas Veldurthy Block II was mainly a plain soil covered area under cultivation and covered an area of about 1.64 sq km. These blocks were observed to be within E-W to ENE-WSW trending Veldurthy-Kalva-Gani fault and fracture zone, and the mineralisation was confined to the fault zone as lensoid and pocket type ore body. Detailed geological mapping of the two blocks was completed on 1:4000 scale, along with the magnetic and gravity survey. Block-I forms hillock where many old pits were located. Iron ore in the form of veins and stringers were noticed within the brecciated cherty quartz reef. In Veldurthy Block II, a few outcrops of dolomite of Vempalle Formation were observed. Considering lithology, structural set-up and disposition of the iron ore mines on either side of Block II and integrating available geological and geophysical data, three mineralised zones Zone-I, Zone-II and Zone-III were demarcated. A total of 202.50 m of drilling were completed in Veldurthy Block-II. Indications of mineralisation were noticed at various depths in the form of thin veinlets of haematite with specks of pyrite associated with fractured quartz vein and dolomite.
Manganese Ore							
Srikakulam and Vizianagaram	Bondapalle and Vegalavalasa area of Eastern Ghat Mobile Belt	1:12,500	100	-	-	-	Reconnaissance survey (G4) for Manganese mineralisation was carried out by LSM. LSM was carried out for 100 sq km area on 1:12500 scale. Geologically, the area belongs to the Eastern Ghats Mobile Belt. The manganese mineralisation was present in the

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STATE REVIEWS

Table – 3 (contd)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							form of manganiferous zone, which showed intimate association with garnet-silimanite gneiss. It occurred as bands, lenses and floats of varying dimensions. The main manganese-rich band was of nearly 1 km strike length with width varying from 5 to 10 m at Village Garraju Cheepurupalli. The dimension of the band was around 200 m x 10 m. The manganese concentration was more in the centre and decreased towards contact. Some other occurrences were observed at Soper with the dimension of 50 m x 10 m, at west of Rachagumadam with 10 m x 5 m and at Kondalaveru with 30 m x 5 m. Float ores were observed at Gotnandi with a cumulative dimension of 20 m x 5 m. One major manganese ore body with average 9.75% MnO was delineated in G. Cheepurupalli. The average MnO value was more than 10% based on analytical data received.
Manganese Ore Department of Mines & Geology, Andhra Pradesh							
Vizinagaram	Sadanandapuram, Gurla mandal & Chinnabantupalli, Merakamudim mandal	-	-	-	-	-	In Vizinagaram district, G3 level exploration was carried out in Village Sadanandapuram, Gurla mandal and Village Chinnabantupalli, Merakamudim mandal covering an area of 36 hect. and 45 hect. respectively by geological mapping, gravity and magnetic surveys. In Sadanandapuram area, 10 boreholes were drilled to a depth of 677.00 m whereas in Chinnabantupalli area, 12 boreholes were drilled to a depth of 831.00 m. The sampling in both areas were in progress. Reconnaissance survey for manganese was taken up in villages of Batuva, Mandiravalasa (Garividi mandal), Nimmalavalasa (Cheepurupalli Mandal) and Peddalingalavasala (Laveru Mandal) and magnetic and gravity survey covered 243 hect., 300 hect., 445 hect. and 472 hect., respectively. In Batuva area, 243 hect. was covered by magnetic and

(contd)

STATE REVIEWS

Table – 3 (contd)

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							gravity survey and 8 boreholes were drilled to a depth of 542 m; in Mandiravalasa area, 300 hect. was covered by magnetic and gravity survey and 8 boreholes were drilled to a depth of 540 m; in Nimmalavalasa area, 445 hect. was covered by magnetic and gravity survey and 10 boreholes were drilled to a depth of 309 m; in Peddalingalavasala area, 472 hect. was covered by magnetic and gravity survey.
MECL Diamond							
Anantpur	Kalyandurg- Timmasumudram block	1:12500	1172	-	-	-	In Andhra Pradesh, a G4 stage survey for Kimberlite Clan of Rocks (KCR) was carried out with an objective to demarcate the Kimberlite clan diamond-bearing formation, collect stream sediments samples, estimate resources, etc. in Kalyandurg-Timmasumudram block, Anantapur district. Area of 1,172.00 sq.km was mapped on 1:12500 scale and a total of 44 samples including 40 stream sediments samples were collected.
Department of Mines & Geology, Limestone							
YSR Kadapa	Bhima- gundam block Peddamedium	-	6.979	34	749.00	505	-
YSR Kadapa	Gundlakunta	-	12.58	68	2825.00	2713	-
YSR Kadapa	Dommaranandhyala block, Mylavaram	-	20.1	101	5409.00	5070	-
YSR Kadapa	Devaudi block, Jammalamadugu	-	17.19	100	4085.50	3491	-
Guntur	Madinapadu block. Dachepalli	-	6.60	38	2328.00	2355	-
	Mutyalampad- utangeda block, Dachepalli	-	4.80	28	2034.00	2015	-
	Tageda block, Dachepalli	-	7.16	39	2850.00	2993	-
	Ramapuram block, Dachepalli	-	4.07	23	1693.00	1758	-

STATE REVIEWS

**Table-4: Mineral Production in Andhra Pradesh, 2017-18 to 2019-20
(Excluding Atomic Minerals)**

(Value in ₹'000)

Mineral	Unit	2017-18			2018-19			2019-20 (P)		
		No. of mines	Quantity	Value [§]	No. of mines	Quantity	Value [§]	No. of mines	Quantity	Value [§]
All Minerals		135	-	179748794	133	-	119550100	123	-	140958100
Natural Gas (ut.)	m cu m	-	959	-	-	1081	-	-	912	-
Petroleum (crude)	'000t	-	322	-	-	296	-	-	243	-
Gold	kg	1	-	-	1	-	-	1	-	-
Iron Ore	'000t	20	674	402892	16	654	402616	17	818	582701
Manganese Ore	t	27	172174	706314	28	293679	1039486	25	331030	1317483
Apatite	t	1	-	-	-	-	-	-	-	-
Garnet (abrasive)	t	2	111513	1283793	2	72521	1068152	-	-	-
Sillimanite*	t	-	53749	472024	-	31243	288810	-	-	-
Limestone	'000t	80	38889	8567180	82	48295	10227864	77	42535	8843286
Vermiculite	t	4	4790	2891	4	2286	1372	3	2190	1430
Minor Minerals [@]		-	-	168313700	-	-	106521800	-	-	130213200

*Note : The number of mines excludes Fuel and minor minerals.**§ Excludes the value of Fuel minerals.*** Only labour reported.**Associated with Garnet (abrasive).***Mineral-based Industry**

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

Table – 5 : Principal Mineral-based Industries

Industry/plant	Capacity ('000 tpy)
Asbestos/Cement sheets	
Hyderabad Industries Ltd, Ibrahimpatnam, Distt Krishna	3000
Ramco Industries, Ibrahimpatnam, Distt Krishna	NA
Cement	
ACC Ltd, (formerly, Encore cement), Vishakhapatnam (G)	300
Andhra Cements Ltd, (Visaka Cement Works), Durga Nagar, Distt Visakhapatnam (G)	540
Andhra Cements Ltd, Durga Cement Works, Dacheipalli, Distt Guntur	2310
Anjani Portland Cement Ltd, Chintalapalem, Mellacheruvu	1925

(contd)

Table - 5 (contd)

Industry/plant	Capacity ('000 tpy)
Bharthi Cement Corp. Pvt. Ltd, Nallingayapalli, Distt Cuddapha	5000
Bhavya Cement, Thangeda, Distt Guntur	1400
BMM Cement Ltd, Gudipadu, Yediki	950
Dalmia Cement (Bharat) Ltd, Cuddapha	4060 2600 (Clincker)
Deccan Cement Ltd, Ravipahad, Nareducherla	1800
Deccan Cement Ltd, Ravipahad, Palakeedu Nalgonda	1800
Greygold Cement Ltd, Hyderabad	91
Himadri Cement Ltd, <Vedadri, Jaggyyapet	247.5
India Cements Ltd, Chilamkur, Distt Cuddapha	1460
India Cements Ltd, Malkapur, Tandur	2900
India Cements Ltd, Vishnupuram Work, Wadapally, Mariyalaguda	3500
India Cements Ltd, Yeraguntla, Distt Cuddapha	1000 540 (Clincker)
My home Industries Pvt. Ltd, Mellacheruvu, Nalgonda	3200

(contd)

STATE REVIEWS

Table - 5 (contd)

Industry/plant	Capacity ('000 tpy)
UltraTech Cements Ltd, Jaypee Balaji Cement, Budawada, Distt Krishna	5000
JSW Cement Ltd, Nandyal, Distt Kurnool	4800
JSW Cement Ltd, Bilakalagudur, Gadivemula	4800
KCP Ltd, Macherla, Distt Guntur	825
KCP Ltd, Muktyala, Distt Krishna	1860
KCP Ltd, Muktyala, Jaggayapeta Unit II	3520
KakatiyaCement Sugar and Industries Ltd, Dondapadu, Melacheruvu	297
My Home Cement Industries Ltd, Mulakapalli, Distt Visakhapatnam (G).	2000
NCL Industries Ltd, Kondapalli, Distt Krishna (G).	990
Orient Cement Ltd, Devapur, Kasipet.	5000
Panyam Cements & Mineral Industries Ltd, Cement Nagar, Distt Kurnool.	1000
Parashakti Cement, Jettipalem, Distt Guntur.,	1260
Penna Cement Industries Ltd, Talaricheruvu,, Tadipatri, Distt Anantapur.	2200
Penna Cement Industries Ltd, Boyareddypalli, Distt Anantapur.	2000
Penna Cement Industries Ltd, Ganeshpahad Damarcherla	1200
Prism Cement Ltd, Kotapadu, Kolimigundla.	4800
Rain Commodities Ltd, (Rain Cements), Boincheruvupalli, Peapully, Distt Kurnool	2770
Rain Cements, Ltd, Ramapuram, Mellacheruvu	1500
Ramco Cement Ltd, (formerly, Madras Cements), Jayantipuram, K.S. Rajanagar, Distt Krishna.	3650
Ramco Cement Ltd, Vizag Grinding Unit, Distt Visakhapatnam.	950
Shree Jayajothi (Subs. of Myhome Cement Ind.) Yanakandala, Distt Kurnool.	3200
Shri Chakra Cements Ltd, Alamada, Distt Vizianagaram (G).	260
Shri Chakra Cements Ltd, Narsimhapuri, Distt Guntur.	310
Sagar Cements Bayyavaram, Distt Visakhapatnam (G)	200
Sagar Cements Mattampally	2350
Sagar Cement Ltd, BMM Cement Anantapur,	1000
UltraTech Cements Ltd, (APCW), Tadipatri, Distt Anantapur.	9000
Zuari Cement, Krishnanagar, Yerranguntala, Distt Cuddapha.	3800
Zuari Cement, Ltd, Sitapuram Dondapadu Mellacheruvu	1200
Chemical	
Andhra Sugars Ltd, Saggonda, Distt West Godavari.	400 TPD (caustic soda) 99 (H ₂ SO ₄)

(contd)

Table - 5 (concl'd)

Industry/plant	Capacity ('000 tpy)
Shree Rayalseema Alkalies & Allied Chem. Ltd, Gondiparla, Distt Kurnool.	156.95 (Total) 69.5 (caustic soda) 49.8 (Cl) 24.7 (HCl) 23.1 (KOH)
Shree Rayalseema High Strength Hypo Ltd, Gondiparla, Distt Kurnool.	14.85 (bleaching powder) 49.5 (H ₂ SO ₄) 15 (Oleum)
Ceramic	
Sentini Ceramica Pvt. Ltd, Kanukollu, Distt Krishna (JV with H R Johnson (I) Ltd)	58 mill. sq.m
Spartek Ceramics India Ltd, Narsingapuram, Distt Chittoor.	NA
Kajaria Ceramics Ltd, Vijayawada.	2.9 (mill. sq m)
Elctrode	
Indus Electrode Gundlapalli, Maddiadiyumandal.	0.90
Magnarc Elctrodes Pvt. Ltd, Pendurthy.	1.8
Fertilizer	
Agri Green Fertilizers & Chemicals Pvt. Ltd, Cuddapah.	30 (SSP)
Bhaskar Fertiliser (P) Ltd, Anantapur	45 (SSP)
Coromandel International Ltd, Visakhapatnam.	1300 (NP/ NPKs)
Coromandel International Ltd, Kakinada, Distt East Godavari.	1925 (DAP)
GDS Chemicals & Fert. Pvt. Ltd, Anakapalli, Visakhapatnam	36 (SSP)
K. P. R. Fertilizers Ltd, Biccavolu, E. Godavari	11300 (SSP)
Krishna Industrial Corpn. Ltd, Nidadavole, Distt West Godavari.	45 (SSP) 33.5 (H ₂ SO ₄)
Nagarjuna Fertilizers & Chemicals Ltd, Kakinada, Distt East Godavari (Unit I & II)	1500 (Urea)
NG Fertilizers & Chemicals Pvt. Ltd, Kodurupadu, Distt Krishna	200 (SSP)
Prathyusha Chems and Fertilisers Ltd, Parwada, Visakhapatnam	100 (SSP)
Subhodaya Chemicals Ltd, Gauripatnam, Distt West Godavari	42.9 (SSP)
Pesticides	
Jayalakshmi Fertilizers, Tanuku, Distt West Godavari	2000
Glass	
Triveni Glass Ltd, Kondagudem, Distt West Godavari	10 (mill. sq. m)
Iron & Steel	
Visakhapatnam Steel Plant, Visakhapatnam	8856 (sinter) 3400 (pig iron) 6300 (crude/liquid steel)

(contd)

STATE REVIEWS

Table - 5 (contd)

Industry/plant	Capacity ('000 tpy)
Sponge Iron	
Amoda Iron and Steel Pvt. Ltd, Jayanthipuram, Jaggayyapet Mandal, Aggayyapet	60
Apple Industries Ltd, Dhiral, Anantapur	150
Maa Mahamaya Industries Ltd, Vizianagaram	112
Pushpit Steel Pvt. Ltd, Merlapaka, Yerpandu, Chittoor	86.4
SLV Steels and alloys Pvt. Ltd, Anantapur	60
Sri Sai Sindhu Industries Ltd, Tadpatri	52.5
Steel exchange India Ltd, Srirampuram, Visakhapatnam	250
Sree Rayalseema Green Steloy Ltd, Gooty, Distt Anantapur	36
Pig Iron	
Rishrtriya Ispat Nigam Ltd, Vishakhapatanam, Andhra Pradesh	6300
Sathavahana Ispat Ltd, Haresamudram, Distt Anantapur	210
Pellets	
Essar Steel Ltd, Visakhapatnam	8000

(contd)

Table - 5 (concl'd)

Industry/plant	Capacity ('000 tpy)
Ferroalloys	
Berry Alloys Ltd, Kothavalasa, Distt Vizianagaram	40 (Fe-Mn) 32 (Si-Mn)
Deccan Ferro alloys (P) Ltd, Pendurthi, Visakhapatnam	30 (Si-Mn) 10 (Fe-Mn)
FACOR Alloys Ltd, Shreeramnagar, Distt Vizianagaram	90.3
Jindal Stainless (Hisar) Ltd, Kothavalasa, Distt Vizianagaram	40
Maithan Alloy Ltd, Atchutapuram	120
Hira Elector Smelters Ltd, Bobbili, Distt Vizianagaram	NA
Nava Bharat Ventures Ltd, Paloncha	125
Rhodium Ferro-alloy Pvt. Ltd, Gollapuram	8
Siri Smelters & Energy Pvt. Ltd, Bobbili	8.5
Petroleum Refinery	
HPCL, Vizag	8300
ONGC, Tatipaka, Distt East Godavari	66

Note: Data, not readily available for fertilizer and cement Industries on respective website, is taken from Indian Fertilizer Scenario, FAI Statistics, and Survey of Cement Industry & Directory, respectively.