

ANNEXURE 3.4 Reserves/Resources of Minerals in India *

Mineral	Unit	Reserves				Remaining resources									
		Proved STD 111	Probable		Total (A)	Feasibility STD211	Pre-feasibility			Measured STD331	Indicated STD332	Inferred STD333	Reconnai- ssance STD334	Total (B)	Total resources (A+B)
			STD121	STD122			STD221	STD222							
Andalusite	'000 tonnes	-	-	-	-	-	-	-	-	-	18450	-	18450	18450	
Antimony															
Ore	tonne	-	-	-	-	-	-	-	-	-	10588	-	10588	10588	
Metal	tonne	-	-	-	-	-	-	-	-	-	174	-	174	174	
Apatite	tonne	6125946	-	19629	6145575	-	-	-	2281521	11481250	5938716	1017646	20719133	26864708	
Asbestos	tonne	2973825	204992	2861727	6040544	-	321847	2207339	90687	2489218	10528926	57800	15695817	21736361	
Ball clay	tonne	14786626	3062777	14680390	32529793	112700	1610220	1398102	-	2279330	41361051	-	46761403	79291196	
Barytes	tonne	31639934	359813	2313033	34312780	-	4347714	26482273	244159	708880	8107541	-	39890567	74203347	
Bauxite	'000 tonnes	538945	225424	135015	899384	335	90224	240179	579561	394022	1085576	536	2390433	3289817	
Bentonite	tonne	-	11415982	13644526	25060508	-	3067	65200	26519818	225744237	227450576	25730000	505512898	530573406	
Borax	tonne	-	-	-	-	-	-	-	-	-	-	74204	74204	74204	
Calcite	tonne	3218256	178420	3345354	6742030	166900	12346	1106370	9097635	1241559	4109651	97476	15831937	22573967	
China clay	'000 tonnes	101520	13142	107459	222121	3214	29460	34819	287435	408009	1588599	22005	2373540	2595661	
Chromite	'000 tonnes	30892	10217	25019	66128	-	1191	2286	39673	30701	47235	25849	146935	213063	
Cobalt ore	million tonnes	-	-	-	-	-	-	-	30.63	2	2.78	9.5	44.91	44.91	
Copper															
Ore	'000 tonnes	135461	48178	185854	369493	3375	2230	13995	112019	158678	734637	-	1024934	1394427	
Metal	'000 tonnes	1643.93	494.39	2245.65	4383.97	3.37	11.82	60.43	1052.47	1396.27	4509.39	-	7033.75	11417.72	
Corundum	tonne	317	-	288	605	-	756	915	13	49	81457	-	83190	83795	
Diamond	carat	605577	-	600000	1205577	-	1240	-	298638	1523077	1549359	4022	3376336	4581913	
Diaspore	tonne	1662218	531012	931802	3125032	-	-	-	1238	566	2092228	118329	2212361	5337393	
Diatomite	'000 tonnes	634	-	-	634	-	-	-	-	-	2251	-	2251	2885	
Dolomite	'000 tonnes	407794	187077	390286	985156	11193	327152	152446	191266	392699	5356870	116327	6547952	7533108	
Dunite	'000 tonnes	12714	4476	110884	128074	-	557	1157	23909	384	13848	-	39855	167929	
Felspar	tonne	19220596	4288467	14540773	38049836	57004	1008010	2800094	2235339	8381136	38250244	-	52731827	90781663	
Fireclay	'000 tonnes	26897	14456	17948	59301	19	9447	5595	49149	47758	532436	1058	645462	704763	
Fluorite	tonne	8585124	165222	463485	9213831	65889	450168	6224178	1713833	495061	1857527	145183	10951838	20165669	
Fuller's earth	tonne	-	-	58200	58200	-	-	-	-	912340	255681539	-	256593879	256652079	
Garnet	tonne	6719626	9700	14246279	20975605	-	-	-	119831	10233123	26326391	682	36680028	57655633	
Gold Ore (primary)	tonne	15554089	1075868	2623994	19253951	-	-	1724132	27062651	83529855	118635315	140083333	371035286	390289237	
Metal (primary)	tonne	66.92	3.8	14.4	85.12	-	-	6.74	62.08	118.4	52.74	165.73	405.69	490.81	
Ore (placer)	tonne	-	-	-	-	-	-	-	-	2552000	23569000	-	26121000	26121000	
Metal (placer)	tonne	-	-	-	-	-	-	-	-	2.29	3.57	-	5.86	5.86	

ANNEXURE 3.4 (CONTD...)

Reserves						Remaining resources								
Mineral	Unit	Proved STD 111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnai- ssance STD334	Total (B)	Total resources (A+B)
			STD121	STD122			STD221	STD222						
Granite	'000 cu.m	23010	1075059	31955	1130024	-	44220	513249	841284	2064405	32793579	39240	36295977	37426001
Graphite	'000 tonnes	5164	1022	4565	10750	12	78	930	51	5957	16507	134490	158025	168775
Gypsum	'000 tonnes	40803	1276	26579	68658	285	10418	7756	9033	710681	430034	10	1168218	1236876
Iron ore														
Hematite	'000 tonnes	4945329	995556	1063283	7004168	178449	101713	267013	491631	1031763	4021763	1533887	7626219	14630387
Magnetite	'000 tonnes	14339	38767	5397	58503	173273	9120	25460	1624796	1878483	6280882	568964	10560978	10619481
Kyanite	tonne	921762	190216	262213	1374191	-	4317	1749782	605209	3586402	95293321	-	101239031	102613222
Lead & Zinc Ore	'000 tonnes	62860	6574	56320	125754	3375	-	13572	12193	161985	202361	3340	396826	522580
Lead metal	'000 tonnes	1262.98	130.21	1197.36	2590.55	85.39	-	306.35	244.37	1601.86	2378.73	-	4616.7	7207.25
Zinc metal	'000 tonnes	5503.16	282.11	5307.62	11092.89	269.32	-	631.45	535.06	5271.77	6357.54	101.65	13166.79	24259.68
Lead & zinc metals	'000 tonnes	-	-	-	-	-	-	-	-	-	118.45	-	118.45	118.45
Limestone	million tonnes	7492	1978	3245	12715	38	6310	8735	7883	20726	115473	3466	162630	175345
Magnesite	'000 tonnes	20863	10197	45073	76133	-	1363	15	59010	59752	141564	45	261749	337882
Marble	'000 tonnes	-	2507	2193	4700	-	27805	236316	-	17129	1506688	-	1787938	1792638
Mica	kg	1270873	9668	67289302	68569843	-	-	1418	109494690	43264890	170326124	2198454	325285576	393855419
Manganese ore	'000 tonnes	76844	16683	44624	138151	7966	29541	11971	4175	24033	160183	2549	240418	378569
Molybdenum Ore	tonne	-	1500000	-	1500000	-	-	425180	36000	569304	15266248	1490000	17786732	19286732
Contained MoS ₂	tonne	-	1050	-	1050	-	-	128	83	287	10049	1043	11590	12640
Nickel ore	'000 tonnes	-	-	-	-	-	20840	20620	30700	53060	63490	-	188710	188710
Ochre	tonne	25747479	3926955	18193423	47867858	856596	1433728	15329242	669393	3085333	23449894	749250	45573436	93441294
Perlite	'000 tonnes	188	-	316	504	-	-	334	-	-	-	1051	1385	1889
Rock Phosphate	tonne	33090127	3892392	15740973	52723492	23798683	28974156	19118001	3036903	4428773	173228568	-	252585084	305308576
Platinum group of metals	tonne	-	-	-	-	-	-	7.7	-	-	-	-	-	-
Potash	million tonnes	-	-	-	-	-	-	-	-	18142	3651	22	21815	21815
Pyrite	'000 tonnes	27129	-	29597	56726	-	-	3000	9590	77729	1527356	-	1617675	1674401
Pyrophyllite	tonne	9584547	3653843	6251227	19489617	47400	118304	3449665	867742	1638452	6870521	1213236	14205319	33694936
Quartz/silica sand	'000 tonnes	271614	190580	309314	771508	2618	134965	152072	55566	251843	1869517	123	2466703	3238211
Quartzite	'000 tonnes	26419	26051	46074	98544	801	90774	96281	91089	111326	656142	-	1046413	1144957
Rock salt	'000 tonnes	8470	-	5060	13530	-	-	-	-	-	-	-	-	13530
Ruby	kg	143.1	-	1782	1925.1	-	-	1683.01	-	-	1662.63	-	3345.64	5270.74
Sapphire	kg	-	-	-	-	-	-	-	-	-	450	-	450	450

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Mineral	Unit	Reserves				Remaining resources								
		Proved STD 111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnai- ssance STD334	Total (B)	Total resources (A+B)
			STD121	STD122			STD221	STD222						
Sillimanite	tonne	457305	-	10966689	11423994	-	4000	20097619	5358481	17630300	15975875	3849600	62915875	74339869
Silver Ore	tonne	55752053	1707043	58453642	115912738	3375000	-	11864000	1900000	34370000	77211729	-	128720729	244633467
Metal	tonne	2283.19	133.81	3641.33	6058.33	270	-	878.18	161.6	958.24	1886.27	-	4154.29	10212.62
Sulphur	'000 tonnes	-	-	-	-	-	-	-	-	-	210	-	210	210
Talc/steatite soapstone	'000 tonnes	65012	8574	41940	115526	6183	47823	20524	143	6705	115229	-	-	-
Tin Ore	tonne	200828	-	48669	249497	22580000	2518093	31330101	168326	595914	29110378	-	86302812	86552310
Metal	tonne	107.68	-	26.4	134.08	32187.8	892	13240.7	662.49	213.6	53906.43	-	101103.02	1011237.1
Titanium minerals														
Ilmenite@	tonne	11727540	602635	8851412	21181587	-	151888	-	1090326	37281942	269835940	-	308360096	329541683
Rutile	tonne	826121	760500	418933	2005554	-	-	-	4460	331205	8584030	-	11800695	13806249
Leucoxene	tonne	643772	-	25625	669397	-	-	-	1994	-	341949	-	343943	1013340
Anatase	tonne	-	-	-	-	-	-	3345000	-	-	-	-	3345000	3345000
Titaniferous magnetite	tonne	423500	-	868500	1292000	-	-	-	950000	3630000	34810094	-	39390094	40682094
Tungsten Ore	tonne	-	-	-	-	2230000	-	173063	19784073	23435954	25183128	16581246	87387464	87387464
Contained WO ₃	tonne	-	-	-	-	3568	-	450	10056	20180.92	103273.15	4566.28	142094.35	142094.35
Vanadium														
Vanadium Ore	tonne	490663	1720000	4108000	6318663	-	-	-	1382875	263000	16883350	-	18529225	24847888
Vanadium Metal	tonne	1913.58	2835	6021.2	10769.78	-	-	-	7162.2	552.3	46905.99	-	54620.49	65390.27
Vermiculite	tonne	1556664	86930	120036	1763630	-	2773	-	765	21153	649940	-	674631	2438261
Wollastonite	tonne	7423894	-	1109417	8533311	372866	-	3836224	-	3325042	4174180	-	11708312	20241623
Zircon	tonne	2484687	852642	368583	3705912	-	-	-	-	-	569748	-	569748	4275660

Figures rounded off.

Source : National Mineral Inventory as on 1.4.2005

@ : The resources of ilmenite are 461.37 million tonnes as per Department of Atomic Energy.