

STATE REVIEWS



Indian Minerals Yearbook 2020

(Part- I)

59th Edition

**STATE REVIEWS
(Assam)**

(ADVANCE RELEASE)

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

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ASSAM

Mineral Resources

Coal, petroleum & natural gas, limestone, fuller's earth, sillimanite and minor minerals are the chief mineral resources of the State. **Coal** occurs in Mikirs Hills, Dilli-Jeypore, Makum and Singrimari coalfields. Coal extracted from the State is friable and contains high sulphur. **Petroleum & natural gas** occurs in Digboi oilfields, Lakhimpur district and at Moran Rudrasagar oilfields in Sivasagar district located in Assam Arakan Fold Belt (AAFB), Upper Assam and Assam basins. **Limestone** occurs in Karbi Anglong, North Cachar Hills and Nowgaon districts. Besides, **china clay** occurs in Karbi

Anglong and North Lakhimpur districts; **fireclay** in Dibrugarh, Karbi Anglong, North Cachar Hills & North Lakhimpur districts; **fuller's earth** in Nalbari district; **granite** in Goalpara, Kamrup & Karbi Anglong districts, **iron ore (haematite)** in Kokrajhar district; **iron ore (magnetite)** in Dhubri, Goalpara & Kokrajhar districts; **quartz/silica sand** in Nowgaon district; and **sillimanite** in Karbi Anglong & Nowgaon districts. The reserves / resources of coal and minerals are furnished in (Tables - 1 and 2).

Exploration & Development

GSI carried out exploration for REE and Tungsten in Assam during 2019-20. Details of the activities are furnished in Table-3.

Table – 1: Reserves/Resources of Coal as on 1.4.2020 : Assam

(In million tonnes)

Coalfield	Proved	Indicated	Inferred	Total
Total	464.78	57.21	3.02	525.01
Singrimari	-	14.49	-	14.49
Makum	432.09	20.70	-	452.79
Dilli-Jeypore	32.00	22.02	-	54.02
Mikir Hills	0.69	-	3.02	3.71

Source: Coal Directory of India 2019-20.

Table – 2 : Reserves/Resources of Minerals as on 1.4.2015 : Assam

Mineral	Unit	Reserves			Remaining Resources							Total Resources (A+B)	
		Proved STD111	Probable STD121 STD122	Total (A)	Feasibility STD211	Pre-feasibility STD221 STD222	Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)		
China Clay [#]	'000 tonnes	-	-	-	-	131	392	-	-	3520	-	4043	4043
Fireclay [#]	'000 tonnes	-	-	-	-	-	-	-	-	3161	-	3161	3161
Fuller's earth ^{##}	tonne	-	-	-	-	-	-	-	-	18860000	-	18860000	18860000
Granite (Dim. stone) ^{##}	'000 cu. m	-	-	-	-	-	-	800	-	583150	-	583950	583950
Iron Ore (Haematite)	'000 tonnes	-	-	-	-	-	-	8600	-	4000	-	12600	12600
Iron Ore (Magnetite)	'000 tonnes	-	-	-	-	-	-	-	-	15380	-	15380	15380
Limestone	'000 tonnes	25542	152546	178088	167902	21973	4257	39859	901623	1290258	1468346	1468346	
Quartz-silica sand [#]	'000 tonnes	-	-	-	-	-	-	-	-	1790	-	1790	1790
Sillimanite	tonne	-	-	-	-	-	-	850000	3748000	4604700	4604700	4604700	

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Figures rounded off
Declared as Minor Mineral vide Gazette Notification dated 10.02.2015.

Minor Minerals before issue of 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 are 155.45 million tonnes and 166.60 billion cu. m, respectively.

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Table – 3 : Details of Exploration Activities in Assam, 2019-20

Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq. km)	No. of boreholes	Meterage		
GSI							
RARE-EARTH ELEMENT (REE)							
Dima hasao	Bore Hundong Area	1:12500	50.0	-	-	-	G4 stage Reconnaissance survey for REE, Vanadium and associated minerals in phosphate - bearing shales of Kopili Formation in Boro Hundong area, Dima Hasao district involved large-scale mapping of 50.0 sq km area on 1:12,500 scale and 102.0 cu. m of pitting and trenching. Phosphatic nodules observed were of a few millimetres to twelve centimetres in diameter. The thickness of band containing the phosphatic nodules was 1.0 to 1.5 metres with an average concentration of 0.3% phosphatic nodules per unit volume of shale. Chemical results showed P ₂ O ₅ value ranging from 0.07% to 5.05% with highest values observed in phosphatic nodules of Kopili Formation collected from Village Bodo Hundong. The highest value of total REE from the phosphatic nodules was 1,233 ppm recorded near Village Cheksolangso and the lowest value was 121 ppm reported from grey shale. The vanadium value of 681 ppm was recorded from black shale exposed near Village Lobang and the lowest value of 145 ppm was recorded from grey shale.
Karbi Anglong	-	-	50.0	-	-	-	G4 stage reconnaissance survey for REE & niobium mineralisation in Jashora Alkaline Complex, Karbi Anglong district was carried out with the main objective to delineate prospective zones enriched with REE Nb mineralisation. During the survey, mapping of 50.0 sq km was carried out in the study area. The total REE concentration observed was 0.45% to 0.63% (average 0.56%) and Nb & vanadium concentration varied from 0.1% to 0.15% and 0.15% to 0.20%, respectively from the magnetite-perovskite layers. The total REE concentration of 0.26 to 0.45% (average 0.32%) and 0.07 to 0.33% of vanadium was reported in the regolith (B-horizon). Anomalous values of total REE 0.10% were also recorded from alkaline rocks like ijolite and syenite.

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Agency/ Mineral/ District	Location	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq. km)	No. of boreholes	Meterage		
Ri-Bhoi	Byrnihat Area	1:12500	50	-	-	-	During G4 stage reconnaissance survey for REE and associated mineralisation in and around Byrnihat area, Ri-Bhoi district, Meghalaya and Kamrup (Metro) district, Assam, Large Scale Mapping of 50.0 sq km area on 1:12,500 scale, collection of various types of 200 samples along with 5.00 cu. m pitting /trenching and 398 m drilling in 15 nos. of boreholes were carried out in the study area. Chemical analysis results showed 0.24% Ba, 0.14% Cr and 0.1% REE (1,064 ppm) within diorite of Umprikhola. Zinc value of 445 ppm was recorded from sulphide-bearing cordierite metapelite of Tandu area. Yttrium value of 2,098 ppm was reported in pink granite intruded within cordierite metapelite of Umdot area.
Tungsten							
Karbi Anglong Morigaon	Amgurigaon Nellie Ghgara Area	-	-	-	-	-	G4 stage reconnaissance survey for tungsten mineralisation was taken up in Amgurigaon-Nellie-Ghgara area, Karbi Anglong and Morigaon district. Fine disseminations of sulphide minerals comprising mainly pyrite, pyrrhotite, chalcopyrite, covellite, pentlandite and arsenopyrite and a few tiny grains of scheelite were also observed under UV Light within metavolcanics. The maximum value of tungsten at 65.5 ppm was reported from quartzo feldspathic vein. Four bedrock samples of metavolcanics yielded gold (Au) values of 124 to 160 ppb, 2 pit samples of metavolcanics yielded 174 ppb & 186 ppb of gold (Au) and in 5 trench samples of the same metavolcanics, gold (Au) value recorded was 102 to 193 ppb. The metavolcanic band recorded had length varying from 500 m to 1 km with width 25-50 metre. The presence of sulphide, scheelite and associated gold the in study area was seen mainly confined to the metavolcanics. A gold grain up to 10 microns in size was identified under Scanning Electron Microscope (SEM). The scheelite grains were seen associated with mainly pyroxene and sphene, the possible source to form scheelite, the required Ca may have been released from pyroxene or sphene and W might have got incorporated due to hydrothermal fluid release from granitic magma source which might have caused to form the scheelite.

Production

Petroleum (crude), natural gas (utilised), coal and limestone were the principal minerals produced in Assam State in 2019-20. The value of minor minerals

production was estimated at ₹ 31 crore for the year 2019-20. There were 3 reporting mines in 2019-20 in Assam in case of MCDR minerals. (Table - 4)

**Table – 4: Mineral Production in Assam, 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 ^s	No. of mines	Quantity	Value ^s	No. of mines	Quantity	Value ^{ss}
All Minerals		3		768157	3		845538	3		816195
Coal	'000t	-	781	-	-	784	-	-	517	-
Natural Gas (utilised)	m cu. m	-	3219	-	-	3289	-	-	3141	-
Petroleum (crude)	'000t	-	4345	-	-	4309	-	-	4039	-
Limestone	'000t	3	1432	454352	3	1652	531733	3	1552	502390
Sulphur [#]	t	-	8051	-	-	7100	-	-	5955	-
Minor Minerals [@]		-	-	313805	-	-	313805	-	-	313805

Note : The number of mines excludes fuels and minor minerals.

\$ Excludes the value of Fuel minerals.

Recovered as by-product from oil refinery.

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

Mineral-based Industry

The present status of each mineral-based industry is not readily available. However, as per the

available information, the principal mineral-based industries in the Organised Sector in the State are furnished in Table - 5.

Table – 5 : Principal Mineral-based Industries

Industry/plant	Capacity ('000 tpy)
Asbestos Products	
Assam Roofing Ltd, Bonda, Distt. Kamrup.	58
Cement	
Barak Valley Cements Ltd, Jhoom basti, Badarpurghat, Distt. Karimganj.	330
Calcom Cement (Dalmia Subsidiary), Distt. Nagaon.	1720
CCI Ltd, Bokajan, Distt. Karbi Anglong.	200
Cement Manufacturing Co. Ltd, Chamata Pathar, P. O. Sonapur, Distt. Kamrup (G).	2000
Purbanchal Cement, Vill. Sarutari, Distt. Kamrup	360
Topcem Cement Gauripur Kamrup	660
Fertilizer	
Assam State Fertilizer & Chemicals Ltd, Chandrapur, Distt. Kamrup (H ₂ SO ₄)	33 (SSP) 16.5

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Table – 5 (contd)

Industry/plant	Capacity ('000 tpy)
Brahmaputra Valley Fertilizers Corpn. Ltd, (Urea)	510
Namrup (Namrup II & III), Distt. Dibrugarh. Progressive Fertichem Pvt. Ltd, Topatoli, Kamrup.	45 (SSP)
Iron & Steel	
Shri Ganapati Ispat Pvt Ltd, Tinsukia.	NA
Petroleum Refinery	
Indian Oil Corporation, Bongaigaon.	2350
Indian Oil Corporation, Moonmati, Guwahati.	1000
Indian Oil Corporation, Digboi.	650
NRL, Numaligarh, Golaghat.	3000

Note: Data, as not readily available for fertilizer and cement industries on respective websites, was taken from Indian Fertilizer Scenario, FAI Statistics, and Survey of Cement Industry & Directory, respectively. As per rule-45 of MCDR, 2017, total 36 nos. co companies are registered with IBM as given in <https://ibm.gov.in/writereaddata/files/05102020114426ASSAMALL.pdf>