PROPOSAL FOR

BARPAT BAUXITE BLOCK, TAHSIL KUSMI, **BALRAMPUR-RAMANUJGANJ**DISTRICT, **CHHATTISGARH**

FOR PRELIMINARY EXPLORATION (G3 STAGE)

MINERAL EXPLORATION UNDER NMET

(Non-Ferrous)

By

DIRECTORATE OF GEOLOGY AND MINING
CHHATTISGARH

Table No. 1.1 SUMMARY OF THE BLOCK

S.NO.	FEATURES	DETAILS
1	Block ID	
2	Current Exploration Agency (G-3level)	D.G.M. Chhattisgarh
3	Previous Exploration Agency (G-4 level)	D.G.M. Chhattisgarh
4	G-4 stage Geological Report	Already given with initial proposal
5	Commodity	Bauxite
6	Mineral Belt	Samripat & Jamirapat plateau
7	Completion Period with entireTime schedule to complete the project	10 Months
8	Objectives	G-3 level Exploration of bauxite in Barpat block.
9	Whether the work will be carried out by the proposed agency or through out sourcing and details thereof. Components to be outsourced and name of the outsource agency	Most of the component of the field work to be done by exploration wing of DGM, Chhattisgarh. Analysis of cross check samples & REE samples to be done by outsourcing.
10	Name/ Number of Geoscientists	02
11	Expected Field days (Geology, Geophysics, Surveyor)	Geologist: 210 days Surveyor one party: 120 days
I	**Location**	
	Latitude	23°21'08.61" to 23°21'42.34" N
	Longitude	84°01'36.96"to 84°03'02.99" E
	Villages	Barpat
	Tahsil/ Taluk	Kusmi
	District	Balrampur-Ramanujganj
	State	Chhattisgarh
II	**Area (hectares/ square kilometres)**	
	Block Area	2.43 km^2
	Forest Area	Data to be collected
	Government Land Area	
	Private Land Area	
III	**Accessibility**	
	Nearest Rail Head	Ambikapur Railway station about 126 km
	Road	Ambikapur-Kusmi-Mahuatoli
	Airport	Ambikapur Airport about 147 km from site
IV	**Hydrography**	
	Local Surface Drainage Pattern (Channels)	Dendritic to sub dendritic
	Rivers/ Streams	Kanhar river
V	**Climate**	
	Mean Annual Rainfall	1314 mm/annum
	Temperatures (December) (Minimum)	2^0C
	Temperatures (June) (Maximum)	40^0C
VI	**Topography**	
	Toposheet Number	73A/3
	Morphology of the Area	Samripat&Jamirapat are a flat topped plateau

VII	**Availability of baseline geosciences data**	
	Geological Map (1:50K/ 25K)	Available
	Geochemical Map	Not available
	Geophysical Map (Aero geophysical, Ground geophysical, Regional as well as local scale GP maps)	Not available
VIII	**Justification for taking up G-3 or G-2 stage mineral exploration**	
1	Exploration	Based on the available data of DGM, "Demarcation of bauxite bearing area under forest & non forest in Samripat plateau, Distt.Surguja, M.P. in F.S.1990-91" and prospecting work carried out in detail by GSI from 1972 to 1978. *As per the data of GSI, 700 No. of boreholes were drilled& 88 sunk in Samripat&Jamirapat surrounding area with a total meterage of 7133.75m in 9 identified blocks (Kudag, Dumarkholi, Samri, Tatijharia, Chutai, Serangdang, Kerapat, Jamirapat, Dumarpat etc.). Based on detailed study, they estimated a reserve of 40.39 million tons that spread over an area of 17.45 Sq.km. of ore zone with thickness varying from 1.49 to 3.13m. The quality of bauxite varies from grade I to grade III. The proposed area, is very much adjacent to the CL blocks auctioned recently, i.e. one is Damchuan and second is Khajri. During rapid survey, two new prospects are identifiedthat has to be explored to get sub-surface continuation of the ore zones. The analytical result of the collected samples varies from**53.64 to 56.46% Al_2O_3**with less than **2% SiO_2**.Apart from these, there is possibility of getting few more prospects in and around of the area. The further more studies will add to the Geological mapping for targeting the mineralizedzone. In view of MMDR Amendment & Mineral Auction Rule, 2015 and based on GSI reports and available data, DGM CG, proposed the area for the demarcation of potential target area for Bauxite mineralization, its aerial extension and to ascertain the quality and quantity. It is adjacent to the GSI identified blocks as mentioned above. Some prospected blocks are now allotted to M/S Hindalco Industries Ltd. They have got three mining

		leases i.e.Samri, Tatijharia and Kudag leases and are fully in operation. One bauxite block allotted to CMDC at village Jamirapat in toposheet No. 64M/15. Available geological reports illustrated that, the area is very much potential for Bauxite mineralization and the exploration will be helpful in estimation of resources of bauxite as well as in planning of detailed exploration program which in turn will facilitate the State govt. for auctioning ofblock.

**As per the GSI Geological reports (F.S. 1972-78) and DGM report 1990-91.)*

1. ***BLOCK SUMMARY***

Bauxite is the most important mineral which constitute to form the miracle metal of the country, the "Aluminium" in the present scenario of depleting resource of base metals has given more importance to this industrial mineral which contemplates to form a major substitute for the base metal. The state of Chhattisgarh has enormous deposits which are wide spread in the districts of Surguja, Balrampur-Ramanujganj, Jashpur, Kanker and Bastar.

In Chhattisgarh, Samripat plateau has a large resource of bauxite deposit. GSI had carried out various exploration work in Samripatas well as in Jamirapat plateau and 9 potential blocks had been demarcated, i.e. Kudag, Dumarkholi, Samri, Tatijharia, Chutai, Serangdang, Kerapat, Jamirapat, Dumarpat etc.Barpat block is also a potential block containing metallurgical grade bauxite, located north of Khajri CL block of GSI and to assess the metal grade bauxite in the Barpat block DGM Chhattisgarh decided to execute the exploration work in the area.

The Samripat and Jamirapat plateau (N 23° 20'00 to 23°30'00''.: E 84°00'00'' to 84°50'00'') is large dissected table land and comprises of undulating topography, showing steep cliffs, escarpment and slopes. The maximum elevation of the area is 1158m above MSL marked at Partagharsa village in toposheets no. 64M/15 and maximum elevation of the block is 1103m. The drainage pattern of the area shows a combination of dendritic and radial drainage pattern.

PHYSIOGRAPHY

The physiography of Samripat is marked by the pronounced relief of high lands, the average elevation of which ranges from 1120 to 1150m above the MSL. The plateau roughly trends in NE-SW direction and is nearly triangular in shape. The peripheral boundaries of plateau are dissected and often characterised by steep cliffs, scarps and slopes while the rest of the area is marked by undulating topography and rolling plains. Numerous streams descend from the plateau area in dendritic pattern and join the Kanhar, Chorhat, Jhonkha, and Burha River.The plateau top, however suffers from scarcity of water.

BACKGROUNDGEOLOGY

Geological surveys of India, while exploring the Bauxite deposits of Samripat, have made a detailed study of the regional geology of the plateau. They have worked out a regional geological succession as follows-

Age	Formation	Thickness	Rock Types
Recent to Pleistocene	Laterite	25 to 30m	Soil Laterite & Bauxite Lithomarge
Upper Cretaceous to Eocene	Basaltic Lava, Deccan Trap	25 to 30m	Basalt flows with inter-trappeans
----------Unconformity----------			
Upper Cretaceous	Lameta	30 to 50m	White grey gritty feldspathic sandstone and calcareous grit
----------Unconformity----------			
Archean	-		Pegmatites, Quartz veins, Granite-gneisses, Granites, Calc-silicate rocks, Mica-Silicate rocks, Mica schist, Quartzite etc.

Samripat plateau is a dissected tableland. The Archaeans form the basement of the plateau and represented mainly by Quartzite, Mica-Schist, Calc-silicate, Granite-gneiss,and Granites are intruded by Pegmatites and Quartz veins. Itoccupies low lying land surrounding the high table land. These Archaean rocks are overlain by Lametasthatare forming steep scarps at number of places. It consists essentially of arenaceous and calcareous sediments which are gritty and pebbly throughout the section.

Lameta sediments unconformably rest directly over the archaeans. The entire plateau is covered by Deccan trap basalts, which are about 25 to 30m in thickness. These basalts are extensively weathered giving rise to wide spread occurrence of laterite and bauxite except at few places along the scraps and slopes of the plateau, where exposures of basalts are seen. Samripatand Jamirapatplateau is mostly covered with soil and lateritic horizon. Bauxite of the area is associated with level laterites occurring on plateau tops having elevation of more than 1000m. It occurs in lensoid and bouldary form within the laterite horizon, which comprises various recognizable units.

MINERAL POTENTIALITY

Based on the analytical results of surface sample collected during rapid survey, the area is very much potential for metals grade bauxite mineralization. Sporadic outcropof bauxite in the area have been marked during survey & analysis isencouraging.Therefore,the area having good prospect is to be searched & explore forbauxite deposits by means of systematic geological mapping & sampling inlarge/small scale. That point to bright prospects for mounting systematic & detailedgeological resources of bauxite in the area by drilling.

SCOPE FOR PROPOSED EXPLORATION

Based on the review of previous works of GSI and DGM, CGthe area seems very much potential for bauxite mineralization. Some locations for bauxite in the area have been identified. Some prospected blocks are now allotted to M/S Hindalco Industries Ltd. They have got three mining leases i.e. Samri, Tatijharia and Kudag leases and are fully in operation. One bauxite block allotted to CMDC at village Jamirapat in toposheet No. 64M/15. Therefore, the area having good prospect is to be searched for bauxite deposits.The proposed area, is very much adjacent to the CL blocks auctioned recently, i.e. one is Damchuan and second is Khajri.

On the basis of the analytical results of sample collected during the rapid Geological survey, the surface and subsurface data reveals that the Barpat area is very much promising and has high potential for bauxite deposit. Finally it was proposed for G-3 level of exploration.

OBJECTIVES

The exploration project entitled ***"Preliminary Exploration (G-3 level) for Bauxite in Barpat area, Tahsil- Kusmi, Distt. Balrampur-Ramanujganj, Chhattisgarh"*** is being taken up with an objective to prove quantitative as well as qualitative assessment of bauxite resources including aerial extension of mineralized zone and its economic viability of the block. The G-3 level exploration work includes topographical survey, detailed geological mapping, exploratory drilling and sampling work.

2. ***PREVIOUS WORK***

Geological survey of India had carried out detailed prospecting for bauxite in this plateau in 1970's. After dividing the ore zone of the plateau in several sub-blocksthe detailed work was done which has been presented in various year wise progress reports.A number of imminent geologist of GSI have worked on this plateau. GSI had proved 40.39 MT of grade I to III bauxite over 17.45 sq. kms of ore zone with thickness varying from 1.49 to 3.13 m &area distributed over 9 blocks namely:Kudag, Dumarkholi, Samri, Tatijharia, Chutai, Serangdang, Kerapat, Jamirapat, Dumarpat etc.&"Demarcation of bauxite bearing area under forest and non-forest in Samripat plateau, Distt. Surguja, M.P." was done by DGM, M.P. in 1990-1991. The previous work in the area is detailed as below

1. Report on the investigation of bauxite deposits in Jamirapat area, Distt. Surguja, M.P. by S.V.G. Krishna Rao(Geologist SR.) in F.S. 1972 -1973
2. Investigation of bauxite occurrences in Chutai, Tatijharia&Samri block, Jamirapat area,Distt. Surguja, M.P. by N.A.Rao,S.V.G. Krishna Rao (Geologist SR.) & R.S. Jesani (Geologist JR.) in F.S. 1974 -1975.
3. Investigation of bauxite occurrences in Samriblock,Jamirapat areaDistt. Surguja, M.P. by N.A.Rao (Geologist SR.) in F.S. 1975 -1976.
4. Investigation of bauxite in Serangdang block, Jamirapat area Distt. Surguja, M.P.byG.L.Rahangdaley (Geologist SR.) in F.S. 1975 -1976.

5. An interim report on the investigation of bauxite occurrences in Kutkusector ,Samri block, Dumarkholi sector, Kudag block,Jamirapat area Distt. Surguja, M.P.by N.A.Rao (Geologist SR.) in F.S. 1976 -1977.
6. Preliminary report on bauxite investigation in Tatajharia block, Jamirapat area Distt. Surguja, M.P. by G.L.Rahangdaley (Geologist SR.) in F.S. 1976 -1977.
7. A report on the investigation of bauxite occurrences in Kudag block, Jamirapat area Distt. Surguja, M.P. by N.A.Rao (Geologist SR.) in F.S. 1977 -1978.
8. Investigation of bauxite aroundJamirapat area Distt. Surguja, M.P. by G.L.Rahangdaley (Geologist SR.) in F.S. 1978 -1979.
9. Demarcation of bauxite bearing area under the forest & non forest in Samripat plateau Distt. Surguja, M.P. by V.B.Gharpure (Geologist) &M.P.Mishra (Assistant Geologist) in F.S. 1990-91.

3. BLOCK DESCRIPTION

Block Corner Points/ CardinalPoints	Latitude	Longitude
P	23°21'42.34"	84°01'36.99"
Q	23°21'42.34"	84°02'43.18"
R	23°21'29.84"	84°03'02.99"
S	23°21'08.61"	84°03'02.99"
T	23°21'08.61"	84°01'36.99"

4. PLANNED METHODOLOGY

D.G.M. Chhattisgarh systematically executing the exploration works since the last 55 years, particularly in bauxite deposits. Directorate of geology and mining, Chhattisgarh has its own separate mineral exploration wing and it is well established and equipped with drill machines and man power. In the Barpat bauxite block, covers the entire work component with systematic approach in the target area. D.G.M. Chhattisgarh will execute the exploration work in the Barpat bauxite block. Target area is to be geologically mappedfirst and various exposures of different rock units/mineral are to be demarcated and representative samples would be drawn in G3 stage. Simultaneously, through topographical survey, the area will be mapped and mark the baseline for the referenceby "Total Station". Then gridding of the area would be done and borehole point planned in the grid intersection at regular interval of 200x200 meters.

For G-3 level exploration, a total of 73 no. of boreholes are planned at 200m grid interval. All the boreholes will be drilled by calyx drill machine by adopting wet as well as drill method and double tube core barrel would beusedfor achieving 90% core recovery. We planned to concentrate in the ore zone area first and then will go for remaining area to confirm the ore zone extension. To achieve the drilling target in a stipulated time DGM, Chhattisgarh will deploy 02 -03 Calyx drill machines.

In accordance to the objective set for the block, the exploration program is formulated. The exploration shall be carried out as per Evidence of mineral content Rule -2015.Accordingly, the following scheme of exploration is formulated in order to achieve the objectives. The details of different activities to be carried out are presented in subsequent paragraphs.

4.1 TOPOGRAPHICAL SURVEY

The block boundary will be surveyed by DGPS and Total station in WGS-84 datum for demarcation of block boundary points. Survey will be associated with Bed rock samples collection by taking up points and plotting its location on the map for proper interpretation of the sample data. Survey party will also be associated with geological mapping on 1: 4000 scale. During drilling operations, determination of reduced level and co-ordinates of boreholes will be undertaken. Contouring of the survey area would be done at 2.0 meter interval along with marking of surface features.

4.2 DETAILED GEOLOGICAL MAPPING

Detailed geological mapping would be done in 2.43km^2 area in 1:4,000 scale during the exploration.Rock type, their contact and structural features will be mapped. Samples of various litho units for petrological studies will be taken during course of geological mapping. During the course, approximately 20 nos. of representative rock sample will be drawn.

4.3 PITTING & TRENCHING

03 nos. of pits are proposed in this block during G3 level of exploration. The location of pitting points will be decided during the exploration considering the geological conditions. Pitting is required in bauxite exploration to understand the vertical disposition of different litho units and their correlation.

4.4 DRILLING

For G-3 level of exploration, a total of 73 vertical and coring boreholes planned within the block with spacing of borehole of 200x200m grid interval. The average depth of borehole is taken 10.00 meters for estimation of drilling meterage. Total estimated meterage will be around 700 m.

4.5 SAMPLING

During the logging of boreholes of drill core mineralization zone will be marked based on concentration and lithological variation. During the G-3 exploration, approximately 500 core samples expected to be generated through core drilling.

4.6 MINERALOGICAL AND PETROLOGICAL STUDIES

During the course of borehole logging and mapping 10 samples of various litho units intersected will be studied for petrography and 10 samples from mineralized zone will be study for mineral assemblages and their distribution.

5. *NATURE, QUANTOM AND TARGET PROPOSED*

S.NO.	ITEM OF WORK	QUANTUM OF WORK	REMARK
1.	**Detailed Geological Mapping (1:4000 scale)**	2.43 km^2	
2.	**Topographical survey (1: 4000 scale)**	2.43 km^2	
3.	**Drilling (coring)**		
i.	**No. of Borehole**	73 Nos.	
ii.	**Borehole Spacing (As per MEMC rule -2015)**	200mX200m	
iii.	**Total Meterage**	700m	
4.	**Geological work**		
a.	Core logging	700m.	
b.	Core sampling	500 Nos.	
c.	Surface Sampling	50 Nos.	
d.	Pitting & Trenching	50 cu.m	
5.	**Laboratory studies**		
i.	Core samples with (silica, Iron, Alumina. Titanium, vanadium & Gallium, LOI)Surface Sampling	550 Nos.	Primary Samples
ii.	Check Sample Analysis	55 Nos.	10% of Primary Samples
6.	**REE Analysis**	10 Nos.	To be outsourced
7.	**Mineral Physics studies (XRD)**	05 Nos.	
a.	**Petrological studies**	10 Nos.	
b.	**Mineralogical studies**	10 Nos.	

6. NATURE, QUANTOM AND TARGET PROPOSED

Time Schedule (in month) For exploration program in Barpat block, Samripat plateau Distt. Balrampur-Ramanujganj, C.G.												
Item of work	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
Surveying (one party)												
Drilling												
Sample preparation												
Geologist party days for drilling sampling and report work												
Analytical work Drill core sample												
Camp winding												
Geological report												

7. EXPLORATORY DRILLING

BOREHOLE SPACING

As per guidelines of NMET and MEMC-2015, for G-3 level exploration of bauxite, boreholes have been proposed in 200x200m grid interval. However, the nature of bauxite deposit of the central India is lensoidal, discontinuous lenses, bouldary type that is derived from Deccan trap basalt.

BOREHOLE PLANING

During the G-3 exploration, borehole will be drilled in regular 200x200m grid interval. A total of 73 boreholes to be drilled within the block. Boreholes planned in such a way that it covers whole block area. Forest and escarpment area totally discarded. However, some marginal boreholes also proposed to define the bauxite bearing zone.

Altogether 73 numbers ofboreholeplanned for G-3 level exploration.For the exploration, the average depth of borehole 10.00m has been taken for the estimation of drilling meterage.

MATHEDOLOGY OF DRILLING

Total 73 no. of boreholes will be drilled in G3 level of exploration for achieving the drilling target of 700m by deploying 02-03 no. of calyx drill rigs using diamond core drill technique.

The core of each borehole received from drilling will arranged run wise in the core boxes for its logging and sampling. Details of logging sheet for each borehole will be prepared. Qualitative logging of the sample includes lithology, mineralogy, grain size, alteration, presence of laterite partings and presence of cavity filled with clay and weathering.

8. ***MAN POWER DEPLOYMENT***

S.NO.	DESIGNATION	NO. OF PERSON	REMARK
1.	**Supervising officer**	01	
2.	**Project officer**		
	Dy. Director (Geology)	01	
	Asstt. Geologist	01	
3.	**Surveyor**	01	
	Topo surveyor	01 party	
4.	**Drilling staff**		
	Drill mechanic	02	
	Asstt. Driller	04	
	Helper	04	
5.	**Driving staff**		
	Jeep driver	01	
	Truck driver	02	
	Tractor driver	01	

9. ***BREAK UP OF EXPENDITURE***

COST ESTIMATE FOR PRELIMINARY EXPLORATION (G-3) FOR BAUXITE IN BARPAT *BLOCK*, TEHSIL: KUSMI, DISTRICT: BALRAMPUR-RAMANUJGANJ, CHHATTISGARH						
S. No.	**Item of work**	**Unit**	**Rates as per NMET SoC 2020-21**		**Total**	
			SoC Item - S.No.	Rates as per SoC	Qty.	Amount (Rs)
A.	**GEOLOGICAL WORK**					
1	Survey Party Days (1 party)	Per day	1.6.1a	8300	120	996000
2	Labour charges for Survey work	Per Labour	5.7	504	480	241920
3	Geologist Party Days (1 Party) Field	Per day	1.3	11000	180	1980000
4	Geologist Party Days (1 Party) HQ	Per day	1.3	9000	120	1080000
5	Labour charges for Geological Field work	Per Labour	5.7	504	720	362880
6	Sampler (2 Parties)	Per day	1.5.2	5100	360	1836000
7	Labour for Sampling	Per Labour	5.7	504	720	362880
8	Other geological work/studies(Core logging & sampling etc.)	Per day	1.5.1a	11000	90	990000
	Sub Total A					**6859680**
B.	**DRILLING**					
1	Surface drilling (2 rigs)	Meter	2.2.1.3	5242	700	3669400
2	Excavation of Pit up to 2.0m depth	Per cu.m.		3800	30	114000
3	Excavation of Pit between 2.0 to 5.0m depth	Per cu.m.		5330	20	106600
4	Road making (flat terrain)	Per km	2.2.10a	22020	5	110100
5	Transportation (3 rigs)	Per km	2.2.8	36	740	26640
6	Monthly Accommodation charges for drilling camp	Monthly basis	2.2.9	50000	8	400000
7	Camp Establishment cost (3 rigs)	Per Drill	2.2.9a	250000	3	750000
8	Camp Winding cost (3 rigs)	Per Drill	2.2.9b	250000	3	750000
	Sub Total B					**5926740**
C.	**LABORATORY STUDIES**					
a	Sp. gravity test	per sample	4.8.1	1605	5	8025
b.	Chemical Analysis					
1	Primary + Check Samples					
	(i) Primary Samples 7 radicals (SiO_2, Al_2O_3, Fe_2O_3%, TiO2, Ga, V & LOI)	per sample	4.1.15a	4200	550	2310000
	(ii)For Check Samples 7 radicals (SiO2, Al2O3, Fe2O3%, TiO2, Ga, V & LOI)	per sample	4.1.15a	4200	55	231000
	(iii) Mineral Physics Study (XRD)	per sample	4.5.1	4000	5	20000

	(iv) Petrological study	per sample	4.3.1	2353	10	23530
	(v) Combined determination of Trihydrate Alumina (THA-140°C), Monohydrate Alumina (MHA-240°C) & Reactive Silica	per sample	4.1.17a	6700	10	67000
	(vi) Determination of Trihydrate Alumina (THA-140°C),	per sample	4.1.17b	2000	10	20000
	(vii) Determination of Monohydrate Alumina (MHA-140°C),	per sample	4.1.17c	3500	10	35000
	(viii) Determination of Reactive Silica	per sample	4.1.17d	1500	10	15000
	(ix) Determination of Bond work Index	per sample	4.1.17e	10000	5	50000
	(x) Analysis of REE (14 Element) by ICPMS	per sample	4.1.13	5380	10	53800
	Sub Total C					**2833355**
D.	**MISCELLANEOUS CHARGES**					
	Drill core preservation	per meter	5.3	1590	700	1113000
	Land/crop compensation	Per BH	5.6	20000	73	1460000
	Sub Total D					**2573000**
E.	**Total A + B + C + D**				-	**18192775**
F.	Peer review					**30000**
	Preparation of exploration proposal	One Number (5 Hard copies along with soft copy)	5.1	2% of the project cost or Rs 3.8 lakh whichever is lower	1	363,856
	Geological Report Preparation	Copy per 5 Hard copies of report along with soft copy	5.2	For the projects having cost upto Rs 300 lakhs : A Minimum of Rs.7.5 lakhs or 3% of the value of work whichever is more	1	750,000
	Sub Total F					**1143856**
	Grand Total E+F					**19336631**
	GST 18%					**3480593**
	Grand Total: with GST 18%					**22817224**
						Say 228.17 Lakhs

REFERENCE

1. Report on the investigation of bauxite deposits in Jamirapat area, Distt. Surguja, M.P. by S.V.G. Krishna Rao (Geologist SR.) in F.S. 1972 -1973
2. Investigation of bauxite occurrences in Chutai ,Tatijharia&Samri block, Jamirapat area,Distt. Surguja, M.P. by N.A.Rao,S.V.G. Krishna Rao (Geologist SR.) & R.S. Jesani (Geologist JR.) in F.S. 1974 -1975.
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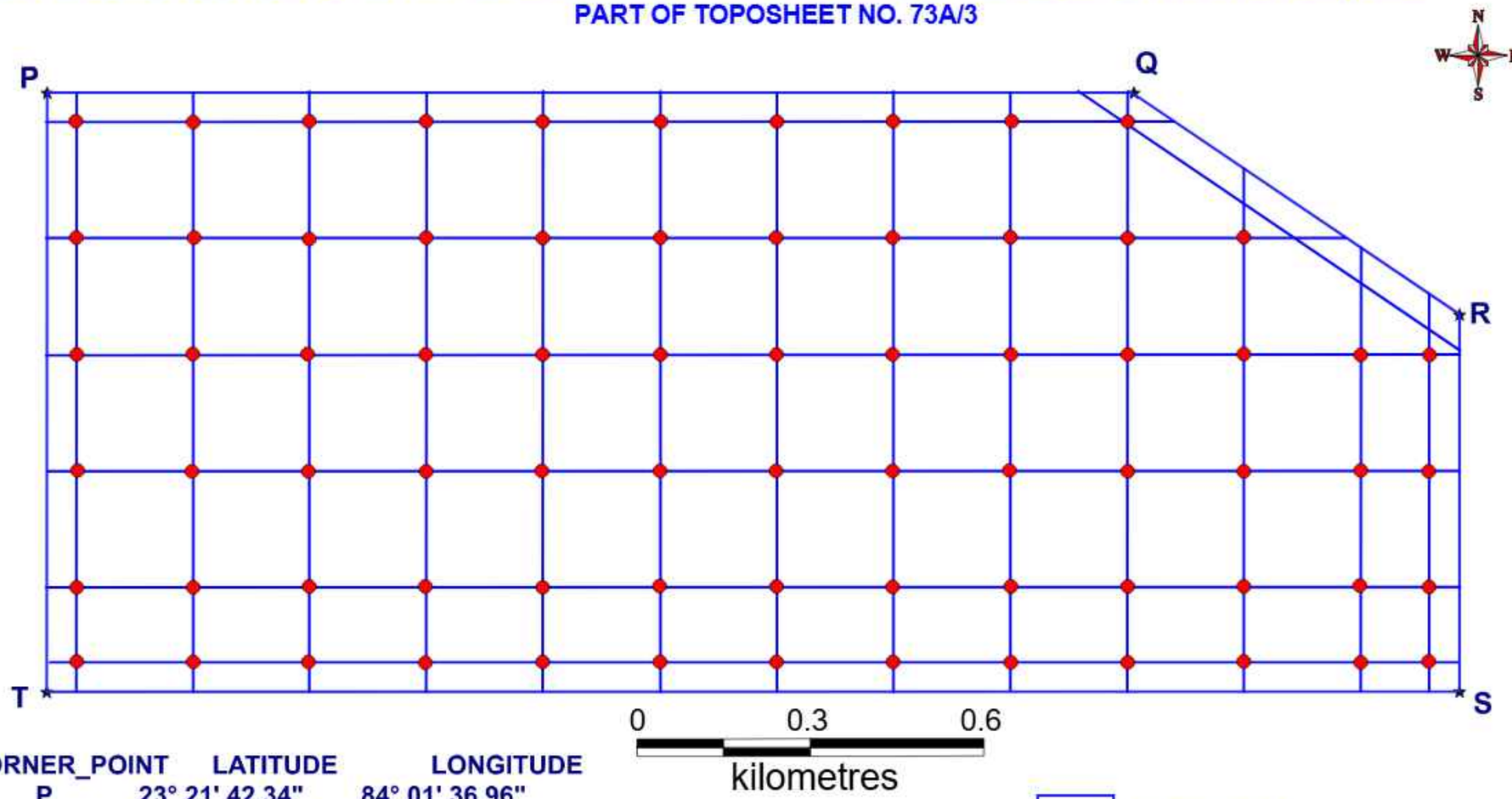
9. Demarcation of bauxite bearing area under the forest & non forest in Samripat plateau Distt. Surguja, M.P. by V.B.Gharpure (Geologist) &M.P.Mishra (Assistant Geologist) in F.S. 1990-91.

LIST OF PLATES

GRID AND BOREHOLE PLAN OF BARPAT BAUXITE BLOCK, TAHSIL KUSMI, DISTT. BALRAMPUR-RAMANUJGANJ, C.G.

PART OF TOPOSHEET NO. 73A/3



CORNER_POINT	LATITUDE	LONGITUDE
P	23° 21' 42.34"	84° 01' 36.96"
Q	23° 21' 42.34"	84° 02' 43.81"
R	23° 21' 29.84"	84° 03' 02.99"
S	23° 21' 08.61"	84° 03' 02.99"
T	23° 21' 08.61"	84° 01' 36.96"

PROPOSED BLOCK

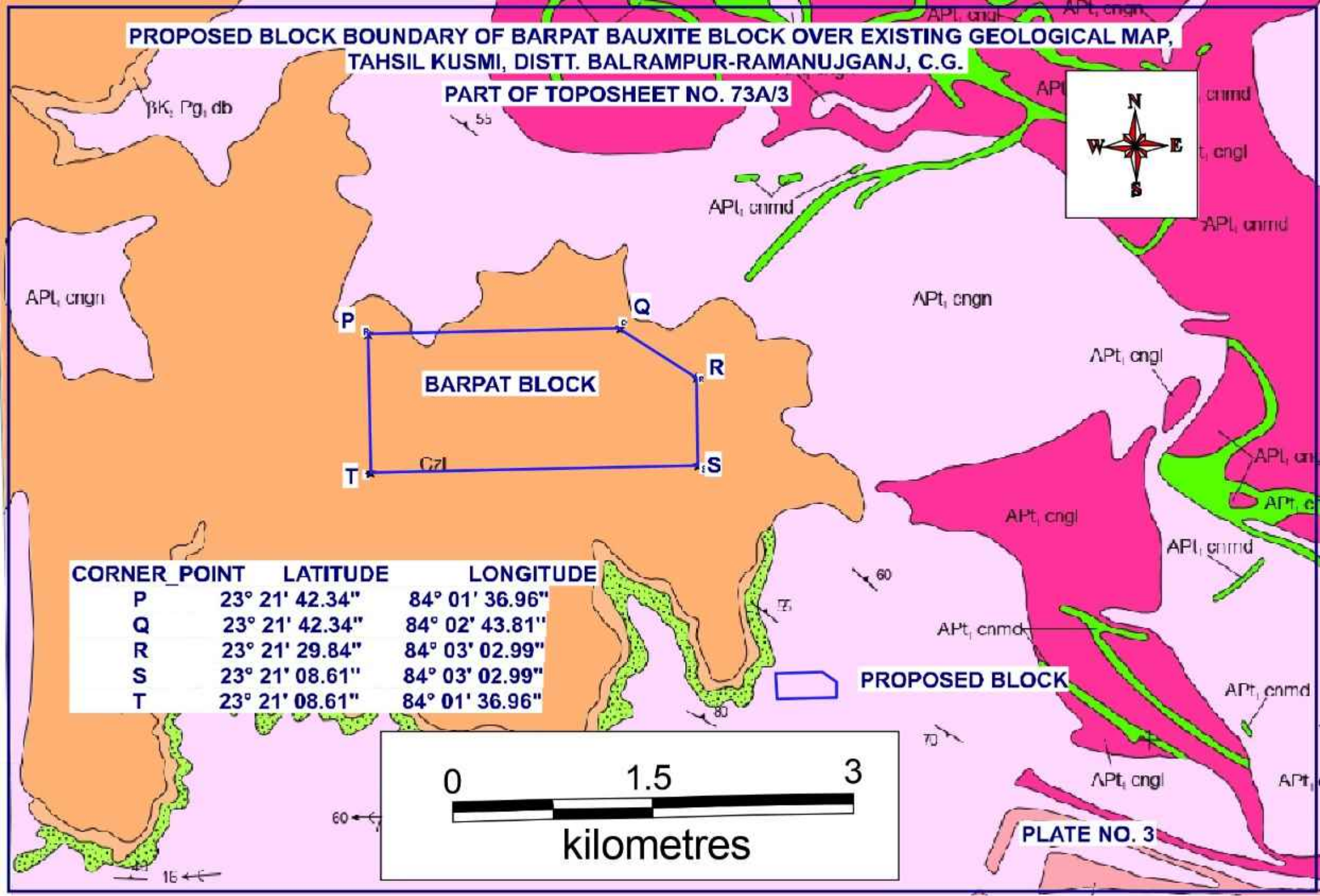
GRID LINE

PROPOSED BH

TOTAL AREA OF THE BLOCK: 2.43 SQ. KM.
NO. OF BH PROPOSED : 73
BH SPACING 200X200M

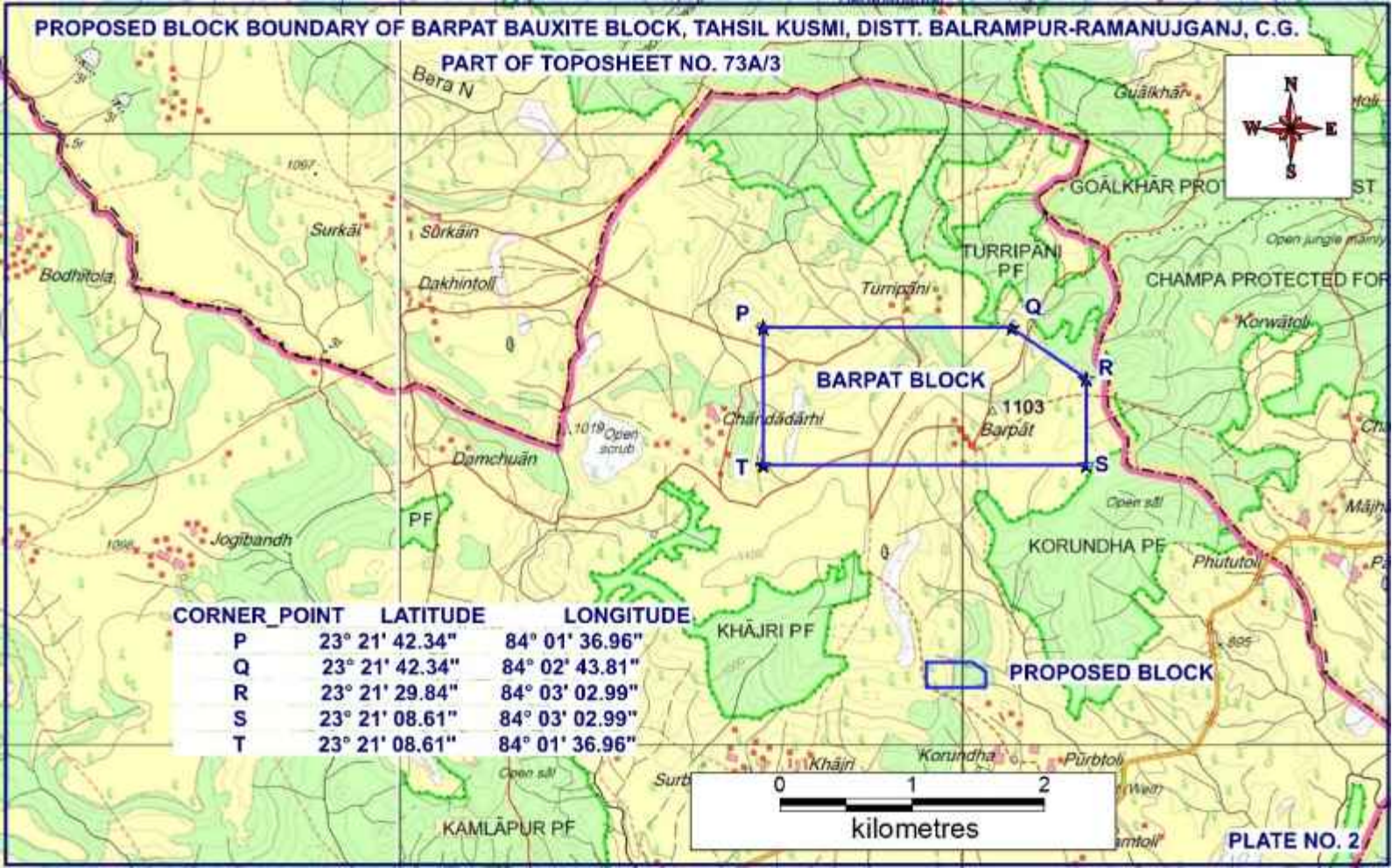
PROPOSED BLOCK BOUNDARY OF BARPAT BAUXITE BLOCK OVER EXISTING GEOLOGICAL MAP, TAHSIL KUSMI, DISTT. BALRAMPUR-RAMANUJGANJ, C.G.

PART OF TOPOSHEET NO. 73A/3



CORNER_POINT	LATITUDE	LONGITUDE
P	23° 21' 42.34"	84° 01' 36.96"
Q	23° 21' 42.34"	84° 02' 43.81"
R	23° 21' 29.84"	84° 03' 02.99"
S	23° 21' 08.61"	84° 03' 02.99"
T	23° 21' 08.61"	84° 01' 36.96"

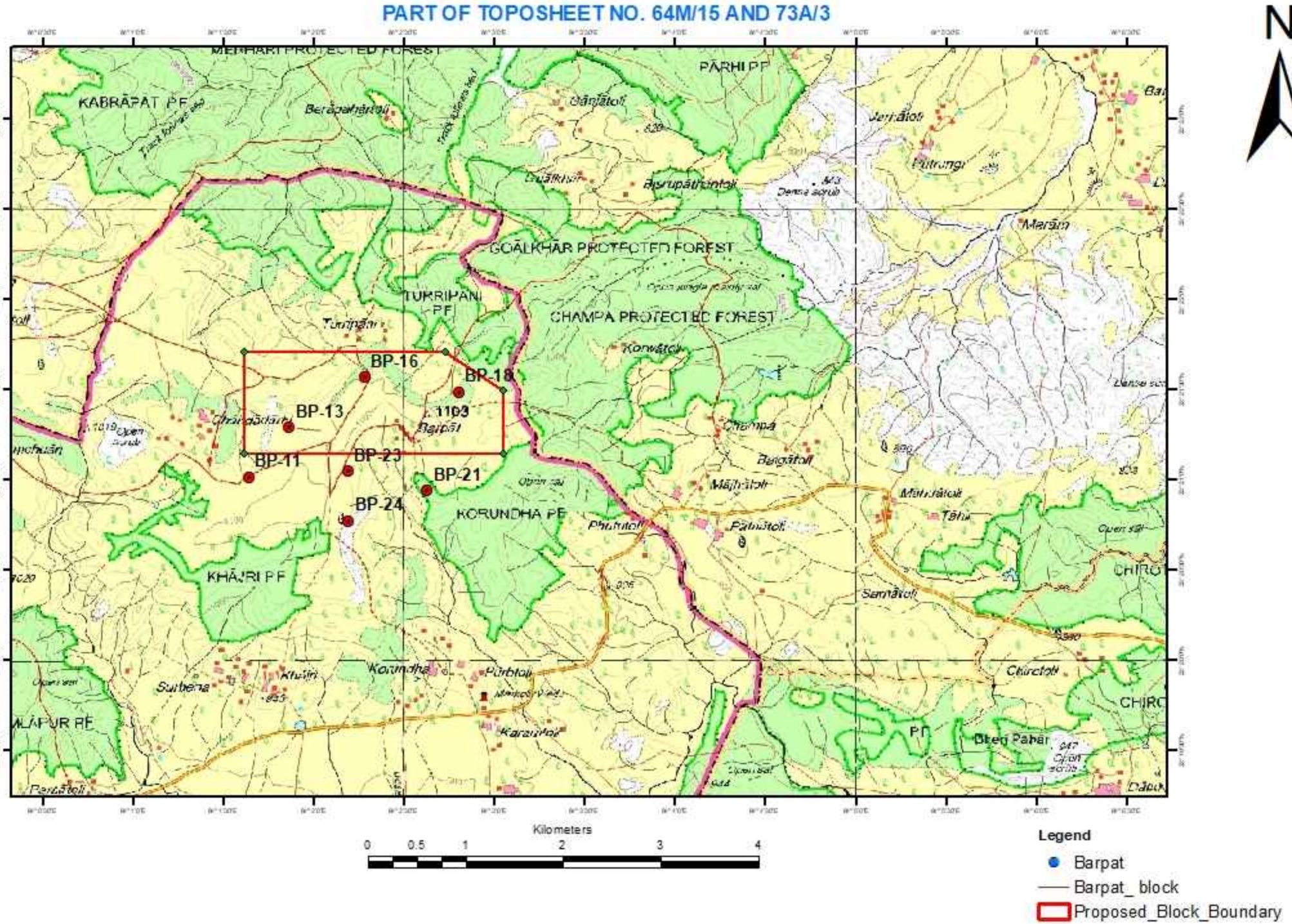
PLATE NO. 3



CORNER_POINT	LATITUDE	LONGITUDE
P	23° 21' 42.34"	84° 01' 36.96"
Q	23° 21' 42.34"	84° 02' 43.81"
R	23° 21' 29.84"	84° 03' 02.99"
S	23° 21' 08.61"	84° 03' 02.99"
T	23° 21' 08.61"	84° 01' 36.96"

LOCATION MAP OF BARPAT BAUXITE BLOCK, TAHSIL KUSMI, DISTT. BALRAMPUR-RAMANUJGANJ, C.G.

PART OF TOPOSHEET NO. 64M/15 AND 73A/3



LOCATION MAP OF VARIOUS BAUXITE BLOCKS IN SAMRIPAT & JAMIRAPAT PLATEAU, TAHSIL KUSMI, DISTT. BALRAMPUR-RAMANUJGANJ, C.G.
PART OF TOPOSHEET NO. 64M/15 AND 73A/3

N
W E
S

CHANDADARHI BLOCK

CHANDADARHI 1.18 SQ.KM

BARPAT BLOCK

BARPAT BLOCK 2.43 SQ.KM

DAMCHUAN CL BLOCK 5.46 SQ. KM

KHAJRI CL BLOCK GSI (6.2 SQ.KM.)

JAMIRAPAT CMDC BLOCK (1.23 SQ.KM)

DUMARPAT BLOCK (1.70 SQ.KM)

Surkāi
Surkāin
Dakhintoli
Bodhītola
Dambātoli
Dumarpāt
Jogībandh
Damchuān
Chāndādarhi
Barpāt
Turripāni
TURRIPANI PF
KORUNDHA PF
KHĀJRI PF
KAMLĀPUR PF
PF
Open scrub
Open sāl
Khājri
Korundha
Pūrbtoli
1097
1098
1019
1103
1100
1000
3r
5r
2r

0 1 2
kilometres