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SCHEME OF MINING

FOR SAND, *BAJRI* AND BOULDERS
IN
KOSI RIVER
AREA: 254.0 ha.

TARAI WEST FOREST DIVISION
TEHSIL – RAMNAGAR,
DISTRICT – NAINITAL (UTTARAKHAND)

APPLICANT

M/S UTTARAKHAND FOREST DEVELOPMENT CORPORATION (UKFDC),
ARANYA VIKAS BHAWAN, 73 NEHRU ROAD,
DEHRADUN (UTTARAKHAND) -248001

भूतत्व एवं खनिकर्म इकाई
उद्योग निदेशालय, उत्तराखण्ड
देहरादून
शर्तों के अधीन अनुमोदित
पत्रांक 422/खनन/भूखनीज ई/2021
दिनांक 24-05-2021
24/05/2021
अपर निदेशक
भूतत्व एवं खनिकर्म इकाई
उद्योग निदेशालय, उत्तराखण्ड
देहरादून

PREPARED BY

HARISH KAINTHOLA
मु0ख0 / 05 / खनन / RQP / 2015–16

KainGeotech
DEHRADUN (UTTARAKHAND)

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CHAPTER - 1

GENERAL INFORMATION

M/s Uttarakhand Forest Development Corporation (UKFDC), Dehradun has got GO No. 35 / VII-1 / 21–ख / 2013 दिनांक 19.02.2013 for ten year from Government of Uttarakhand over an area of 254.0 ha for mining of RBM (sand, *bajri* & boulder) in Kosi river-section of Tarai West Forest Division, Ramnagar, Distt Nainital (Uttarakhand) (Annexure No.-1). Copy of joint inspection report of area is enclosed as Annexure- 2 Demarcation report by forest department is enclosed as Annexure- 3. Demarcated map is enclosed as Annexure- 4. Replenishment study report for the year 2020- 21 done by Soil Conservation is enclosed as annexure 5. Environment clearance of the area has already been taken by the applicant (Annexure- 6). Work order for mining from forest department enclosed as Annexure- 7.

Mining plan is being prepared as per Uttarakhand Minor Mineral (Sand, *bajri* & boulder) picking policy 2016, Uttarakhand Minor Mineral Concession Rule 2001and GO No 333/VII-1/2020/05(18)/19 dated 04/03/2020. This mining plan is being prepared considering depth upto 1.6m.

As per work order No. 3493/माइनिंग प्लान / कोसी एवं दाबका नदी & Agreement dated 10 November 2020 M/s Uttarakhand Forest Development Corporation (UKFDC), Office of Regional Manager (Western Region) Ramnagar, Nainital has assigned/ authorized to prepare the Mining Plan of Kosi River to Harish Kainthola, RQP registration No. मु0ख0 / 05 / खनन / RQP /2015–16 (Annexure- 8), over an area of 254.0 ha. for minor mineral, falls under forest land in Kosi River, Tarai West Forest Division, Ramnagar, Distt Nainital (Uttarakhand) and acceptance for the same by RQP is enclosed as Annexure- 9. Georeference Satellite location map showing mineable area leaving 25% from both bank of the river is given in Annexure – 10. Copy of chalan for Rs 50,000/- for approval of mining plan is enclosed as Annexure- 11.

Mining plan has been prepared for the period of three years for exploitation of deposited mineral. Mining will be done manually in open cast method in quite systematic manner. As per Uttarakhand Govt. notification no. 334/VII-A-1/5(15)/19 dated 4 March 2020 from first year to third year mining is proposed upto 1.6m depth or upto underground water level whichever is less, which is (2030000 cum) 4466000.00 Tonnes per year. From first year to third year total extraction quantity will be around 13398000.00 tonne.

Mining of minerals is site specific in nature and the location of the proposed project is restricted to the mineral deposition of the area. Safety, economical and technical constraints determine the mining methods to be employed.

As per replenishment study about 455628.17m3 (1002381.97 Tonnes) mineral can be exploited each year.

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CHAPTER - 2

GEOREFERENCING

Georeferencing means that the internal coordinate system of a map or aerial photo image can be related to a ground system of geographic coordinates. Geographic locations are most commonly represented using a coordinate reference system, which in turn can be related to a geodetic reference system.

To georeference an image, one first needs to establish control points, input the known geographic coordinates of these control points, choose the coordinate system and other projection parameters and then minimize residuals. Residuals are the difference between the actual coordinates of the control points and the coordinates predicted by the geographic model created using the control points. They provide a method of determining the level of accuracy of the georeferencing process.

To reduce the time and cost involved in data acquisition, this study develops an integrated approach by integrating global position system (GPS) data, remote sensing (RS) imagery, DGPS and existing maps. The regions of study are river bed in Kosi River, Tarai West Forest Division, Ramnagar, Distt Nainital (Uttarakhand). The results are the creation of updated maps with a lot of information which can be used in updating the existing data. Pillar no. with coordinates of applied area is tabulated below:

Demarcated Pillar at Western End	Coordinates of the pillars at Western End		Demarcated Pillar at Eastern End	Coordinates of the pillars at Eastern End	
W1	29°20'25.89"N	79°07'33.57"E	E1	29°20'22.2"N	79°07'42.6"E
W2	29°20'22.80"N	79°07'30.14"E	E2	29°20'18.8"N	79°07'41.0"E
W3	29°20'19.62"N	79°07'28.65"E	E3	29°20'15.7"N	79°07'38.7"E
W4	29°20'13.45"N	79°07'25.25"E	E4	29°20'08.9"N	79°07'36.8"E
W5	29°20'10.49"N	79°07'22.85"E	E5	29°20'06.01"N	79°07'34.7"E
W6	29°20'7.31"N	79°07'21.83"E	E6	29°20'03.3"N	79°07'33.2"E
W7	29°20'2.73"N	79°07'21.54"E	E8	29°19'53.3"N	79°07'28.0"E
W8	29°19'59.25"N	79°07'21.11"E	E9	29°19'53.1"N	79°07'27.1"E
W9	29°19'55.48"N	79°07'19.18"E	E10	29°19'48.9"N	79°07'24.7"E
W10	29°19'51.74"N	79°07'17.50"E	E11	29°19'45.5"N	79°07'24.1"E
W11	29°19'48.06"N	79°07'14.74"E	E12	29°19'42.5"N	79°07'22.2"E
W12	29°19'45.13"N	79°07'12.28"E	E13	29°19'37.8"N	79°07'22.4"E
W13	29°19'41.21"N	79°07'8.96"E	E14	29°19'32.1"N	79°07'17.4"E
W14	29°19'37.08"N	79°07'5.88"E	E15	29°19'29.2"N	79°07'16.7"E
W15	29°19'32.90"N	79°07'2.96"E	E16	29°19'24.9"N	79°07'15.5"E
W16	29°19'27.71"N	79°07'2.30"E	E17	29°19'22.1"N	79°07'14.4"E
W17	29°19'23.25"N	79°07'0.07"E	E18	29°19'19.2"N	79°07'13.7"E
W18	29°19'19.80"N	79°06'57.58"E	E19	29°19'16.5"N	79°07'09.6"E
W19	29°19'15.42"N	79°06'56.64"E	E20	29°19'14.9"N	79°07'06.1"E
W20	29°19'11.10"N	79°06'56.99"E	E21	29°19'11.4"N	79°07'04.5"E
W21	29°19'7.07"N	79°06'57.52"E	E22	29°19'06.6"N	79°07'02.9"E
W22	29°19'1.69"N	79°06'55.73"E	E23	29°19'02.3"N	79°07'04.2"E
W23	29°18'50.60"N	79°06'54.10"E	E24	29°18'56.7"N	79°07'07.0"E
W24	29°18'45.55"N	79°06'54.37"E	E25	29°18'47.9"N	79°07'10.1"E
W25	29°18'40.49"N	79°06'53.58"E	E26	29°18'42.8"N	79°07'06.9"E

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Demarcated Pillar at Western End	Coordinates of the pillars at Western End		Demarcated Pillar at Eastern End	Coordinates of the pillars at Eastern End	
W26	29°18'35.76"N	79°06'53.87"E	E27	29°18'38.1"N	79°07'05.3"E
W27	29°18'30.92"N	79°06'52.96"E	E28	29°18'34.1"N	79°07'03.7"E
W28	29°18'26.12"N	79°06'53.02"E		29°18'34.1"N	79°07'03.7"E
W29	29°18'21.61"N	79°06'52.11"E	E29	29°18'24.9"N	79°07'03.7"E
W30	29°18'17.70"N	79°06'48.21"E	E30	29°18'18.1"N	79°07'02.6"E
W31	29°18'13.00"N	79°06'45.82"E	E31	29°18'13.1"N	79°07'05.3"E
W32	29°18'8.46"N	79°06'44.36"E	E32	29°18'04.6"N	79°07'02.8"E
W60	29°16'23.0"N	79°06'15.9"E	E33	29°18'02.8"N	79°07'02.1"E
W59	29°16'24.9"N	79°06'16.6"E		29°18'55.6"N	79°06'58.4"E
W58	29°16'27.9"N	79°06'16.1"E	E60	29°16'21.3"N	79°06'28.0"E
W57	29°16'31.5"N	79°06'17.0"E	E7	29°19'59.4"N	79°07'31.9"E
W56	29°16'34.6"N	79°06'18.3"E	E59	29°16'23.0"N	79°06'30.3"E
W55	29°16'38.3"N	79°06'19.1"E	E58	29°16'27.1"N	79°06'31.1"E
W54	29°16'41.9"N	79°06'19.6"E	E34	29°18'03.1"N	79°06'51.8"E
W53	29°16'45.6"N	79°06'20.2"E	E35	29°17'57.5"N	79°06'52.4"E
W52	29°16'49.5"N	79°06'20.7"E	E36	29°17'53.2"N	79°06'49.5"E
W51	29°16'52.8"N	79°06'21.5"E	E37	29°17'49.5"N	79°06'52.6"E
W50	29°16'58.0"N	79°06'22.8"E	E38	29°17'45.0"N	79°06'50.7"E
W49	29°17'02.2"N	79°06'23.1"E	E39	29°17'42.0"N	79°06'49.4"E
W48	29°17'04.7"N	79°06'23.5"E	E40	29°17'37.4"N	79°06'47.2"E
W47	29°17'09.6"N	79°06'25.9"E	E41	29°17'33.6"N	79°06'47.8"E
W46	29°17'15.0"N	79°06'26.5"E	E42	29°17'29.3"N	79°06'45.5"E
W45	29°17'18.3"N	79°06'27.8"E	E43	29°17'26.5"N	79°06'45.6"E
W44	29°17'21.4"N	79°06'28.6"E	E44	29°17'20.9"N	79°06'45.2"E
W43	29°17'25.3"N	79°06'30.8"E	E45	29°17'16.1"N	79°06'43.4"E
W42	29°17'29.2"N	79°06'32.0"E	E46	29°17'13.7"N	79°06'42.0"E
W41	29°17'33.1"N	79°06'32.2"E	E47	29°17'10.1"N	79°06'40.1"E
W40	29°17'36.8"N	79°06'33.6"E	E48	29°17'05.2"N	79°06'38.7"E
W39	29°17'40.7"N	79°06'35.9"E	E49	29°17'01.2"N	79°06'38.6"E
W38	29°17'41.4"N	79°06'37.2"E	E50	29°16'57.8"N	79°06'37.9"E
W37	29°17'49.3"N	79°06'36.7"E		29°16'34.2"N	79°06'37.5"E
W36	29°17'52.5"N	79°06'38.4"E	E51	29°16'50.1"N	79°06'35.3"E
W35	29°17'56.8"N	79°06'40.1"E	E52	29°16'46.5"N	79°06'33.3"E
W34	29°18'0.04"N	79°06'41.7"E	E53	29°16'42.1"N	79°06'33.0"E
W33	29°18'04.7"N	79°06'43.6"E	E54	29°16'39.5"N	79°06'31.9"E
			E55	29°16'35.1"N	79°06'32.2"E
			E56	29°16'31.5"N	79°06'31.4"E
			E57	29°16'28.7"N	79°06'30.3"E

PROJECT: Preparation of Georeference Map for Mine Plan

Scope of Work

- Survey of plots situated at the bank of River.
- Co-referencing of ground.
- Preparation of Map over imagery.

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Taking GCPS on Ground

- GCPs are taken with the help of DGPS.
- Number of GCPs varies between 6 and 10, depending on the area of plot/Site.

Assessment of extractable river bed material from river Kosi for the year 2020-21

Introduction

The Mountain Rivers of Himalayas bring down huge quantity of sediment material (sand, bajri, gravel and stones) from hilly catchments while flowing with high velocity on steep slopes. The river bed material (RBM) rolls over the surface and gets deposited while coming to the foothills with mild slopes due to reduction in flow velocity.

The RBM deposited on the river bed in the form of mounds/islands causes braiding of flow (i.e. flow through several small streams instead of confined one) and meandering of the river course. This process continues and the river encroaches on adjoining lands thus increasing the total width of the river, though the required width for actual flow is much less. Further, the encroachment of river along the banks damages valuable property, agricultural lands and forests during the monsoon period.

The extraction/removal of this erratic deposited material, therefore, needs to be done periodically from the river bed in order to channelize the flow and consequently prevent bank erosion and flood damages along the banks.

The river Kosi originates from the hills of Kausani and Binsar in Almora district of Uttarakhand and flows down in the foothills near Ramnagar, district Nainital in the area under jurisdiction of Uttrakhand Forest Development Corporation, Ramnagar, Uttarakhand. The river carries sediment/river bed material (RBM) consisting of sand, bajri, gravel and stones during every monsoon season.

The monthly discharges from the barrage are decreasing over the years resulting into reduction in quantity of RBM. Monthly discharges, as provided, from the barrage is presented Table :1.

The Study Area

The study area is located at Ramnagar, district, Nainital (Uttarakhand). It is situated at about 07 Km downstream of Kosi barrage in river Kosi, under jurisdiction of UKFDC near Ramnagar and extends up to a river length of 07 km .

Methodology

A team from ICAR-IISWC, Dehradun consisting of Dr. P.R. Ojasvi, Director ICAR IISWC, Er. S.S. Shrimali, Sr. Scientist, Scientist, Er. S.K. Sharma, ACTO, Sh. H.S. Bhatt, Technical Officer, Er. Amit Chauhan, Senior Technical Officer, the detailed data analysis. The project site near Ramnagar was visited during December, 2020 to conduct a detailed survey of the study area. The officials of UKFDC accompanied the team during the survey.

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The study was divided into different segments having different length to get the cross-sections for estimation of RBM. Depth of fresh sediment brought by the river was determined by its distinguishable attributes such as; color, density and packing of the sediment. It is recommended that 25 per cent of the river bed width along each bank of river would be left untouched for extraction in order to protect the land adjoining the banks. Therefore, volume of extractable sediment within the middle 50 per cent of river width was worked out based on the average width of the segment and deposited sediment depth between pre and post monsoon surveys.

Analysis, Results and Discussion

1. The cross-section of river Kosi at different locations is shown in. It is seen from the cross-sections that the sediment deposits occurring in the middle portion of the river (shown by hatched portion between $R_1 - L_1$) may be removed for the safe passage of flow in the middle of the stream.
2. The quantity of scientifically extractable RBM in different segments of the study area is shown in Table-2. The extractable quantity has been worked out as 455628.94 cum.
3. The deposition of RBM has raised the river bed and its haphazard deposition has resulted in overtopping of flow during the monsoon season and consequently scouring of the banks and flooding of the adjoining lands. Bank erosion was also seen at several places.
4. The recommended depths in respect of different locations as mentioned in Table 3 should be strictly monitored during extraction of RBM.
5. Suitable river training measures need to be taken for prevention of bank erosion and protection of adjoining lands from flood damages.
6. Other environmental concerns may be addressed in consultation with relevant state Agencies.

Recommendations

1. The estimated quantity of extractable RBM from allowable river bed area is 455628.94 cum.
2. The RBM deposited in the form of mounds/islands should be extracted for maintaining a proper river course in order to channelize the river flow.
3. The extraction of RBM should be done from the middle 50% portion of the river width, leaving 25 per cent width on either side; up to the depth of sediment deposition as per recommended depths as shown in the Table 3.
4. Permanent RCC pillars should be established at every km length to mark the allowable area for extraction of RBM. They would be total of 4 in numbers across each cross-section, 2 along the banks and 2 indicating the middle 50 per cent portion of the river for extraction zone. They should be marked as 1/1, 1/2, 1/3, 1/4; 2/1, 2/2, 2/3, 2/4.....for easy identification.
5. Extraction should be carried out in such a way that ultimately a safe and smooth river course is maintained. Towards this goal, maximum depth of cut should be in the middle of the river course and it should be nil at the boundary of middle half of the river (Fig.4 a & b). Following this approach, the river would take a parabolic shape in the long run, which is an ideal cross-section for the river flow.

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6. Suitable river training measures need to be taken wherever required for prevention of bank erosion and protecting the adjoining lands from flood damages.

Table 1 : Discharge at Kosi Barrage, Ramnagar from 2007-2016 (in cusec)

Table 1 : Discharge at Kosi Barrage, Ramnagar from 2007-2016 (in cusec)

Years	Months											
	January	February	March	April	May	June	July	August	September	October	November	December
2007	4026	11382	26952	8806	5832	12327	48799	144767	122988	60056	17044	9880
2008	8587	5115	4248	4404	3536	20156	97340	115373	81092	28081	12038	9048
2009	6268	6536	4394	4321	3777	3184	11686	48000	102418	41408	12871	9052
2010	5982	8616	4018	2515	2553	3619	65368	156172	322616	54232	17248	12336
2011	13687	8237	6238	5206	4413	15700	88664	258273	83590	25770	10828	8969
2012	9704	6665	5786	4027	3436	2025	28214	104032	70473	19841	8147	6508
2013	10172	26751	10625	5483	3238	74580	114256	102277	46006	22248	9400	6552
2014	9881	14139	21900	6117	5869	4628	127397	99751	45072	18652	7868	16289
2015	15441	7966	27549	19570	9136	16238	140220	89326	30606	16696	7617	6250
2016	5516	4236	5668	3378	4466	13607	91599	128777	41445	20448	7386	5295
2017	780	0	456	1707	47323	73152	86316	15295	-	-	-	-

Note: Discharge recorded at Kosi Barrage, Ramnagar
Source: Assistant Engineer-I, Kosi Construction Division-II, Ramnagar (Nainital)

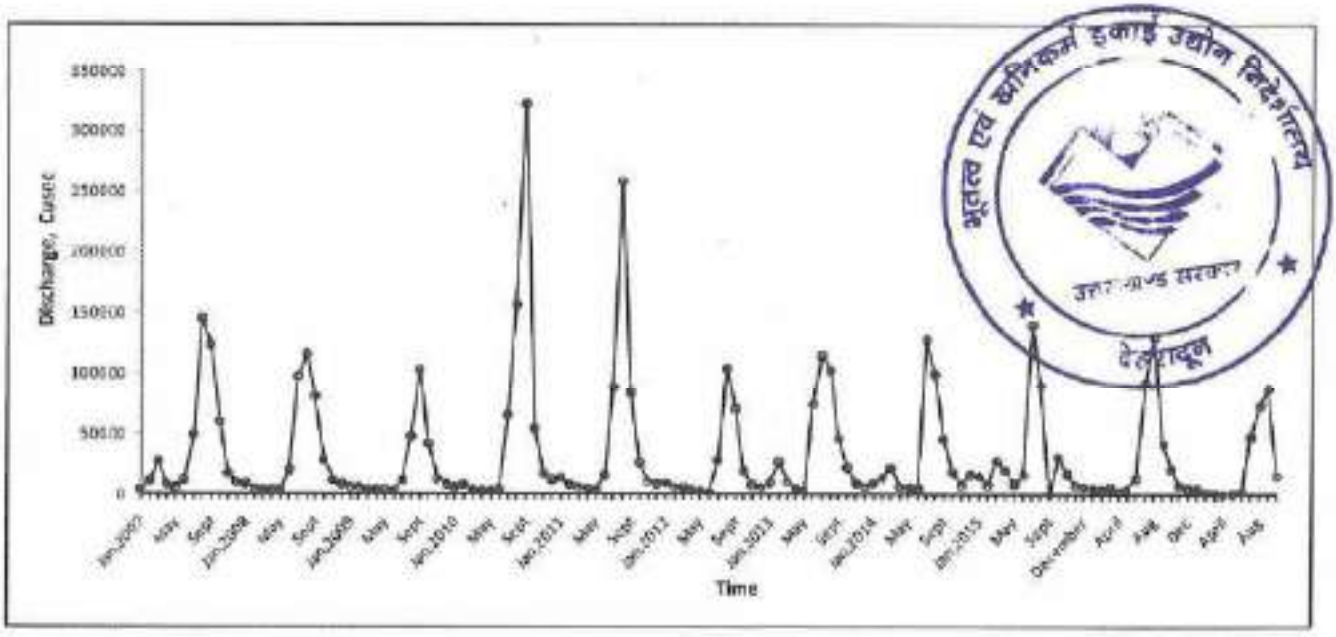

Fig.: Temporal variation of discharges after Barrage in River Kosi

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Table 2: Estimation of the extractable RBM for the defined river reach of River Kosi

Volume of safely extractionable RBM from River Kosi

Location	Length Segment(m)	Width of the river (m)	Extractionable width (m)	Average Depth of Extraction	Cross Section (m^2)	Average Cross section, (m^2)	Volume (m^3)	Cumulative Volume (m^3)
CS1	0.00	461.01	230.5	0.33	76.07	0	0	0
CS2	1682	407.47	156.95	0.45	70.63	73.35	123368.39	123368.39
CS3	1783	462.98	231.49	0.41	94.91	82.77	147577.48	270945.88
CS4	995	560.63	150.04	0.48	72.02	83.47	83047.72	353993.60
CS5	1755	505.92	168.47	0.33	55.60	63.81	111981.55	465975.15
CS6	1520	629.44	192.07	0.42	80.67	68.13	103561.02	569536.17
							Total Volume	569536.17
							Recommended volume of extraction (80% of total volume)	455628.94

Table 3: Distance and extraction depth across width

CS1	Distance	115.25	126.20	153.82	226.51	276.48	316.99	345.76				230.50
	Depth	0.21	0.16	0.03	0.18	0.53	0.72	0.48				0.33
CS2	Distance	148.65	172.90	193.01	203.74	214.55	239.31	261.20	289.54	305.60		156.95
	Depth	0.00	0.10	0.21	0.55	0.90	1.00	0.70	0.40	0.21		0.45
CS3	Distance	115.74	132.84	150.02	174.56	207.40	230.93	266.13	300.12	329.02	347.23	231.49
	Depth	0.33	0.38	0.52	0.35	0.03	0.90	0.30	1.13	0.07	0.06	0.41
CS4	Distance	130.27	140.16	159.80	190.65	233.71	263.47	280.32				150.04
	Depth	0.28	0.84	0.40	0.44	0.78	0.61	0.00				0.48
CS5	Distance	210.97	219.66	248.32	252.96	275.32	317.54	347.38	379.44			168.47
	Depth	0.00	0.37	0.31	0.36	0.61	0.80	0.05	0.13			0.33
CS6	Distance	280.01	299.87	314.72	379.33	409.54	457.46	472.08	192.07			192.07
	Depth	0.00	0.22	0.45	1.06	0.48	0.45	0.30	0.42			0.42

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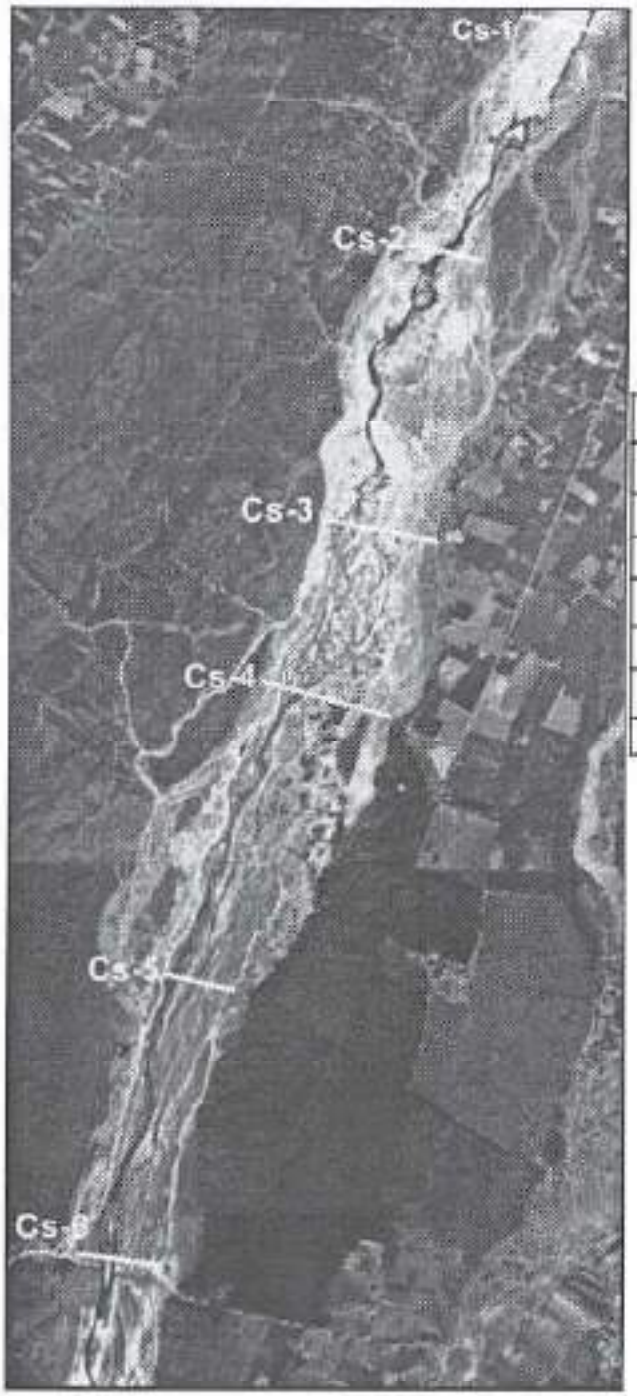

No. C S	Coordinates	
	Latitude	Longitude
CS1	29°20'28.82"N	79° 7'29.99"E
CS2	29°19'38.61"N	79° 7'11.86"E
CS3	29°18'41.89"N	79° 6'54.34"E
CS4	29°18'8.37"N	79° 6'45.29"E
CS5	29°17'13.76"N	79° 6'28.57"E
CS6	29°16'23.73"N	79° 6'16.67"E

Fig. 2: Location of various cross sections along the river reaches

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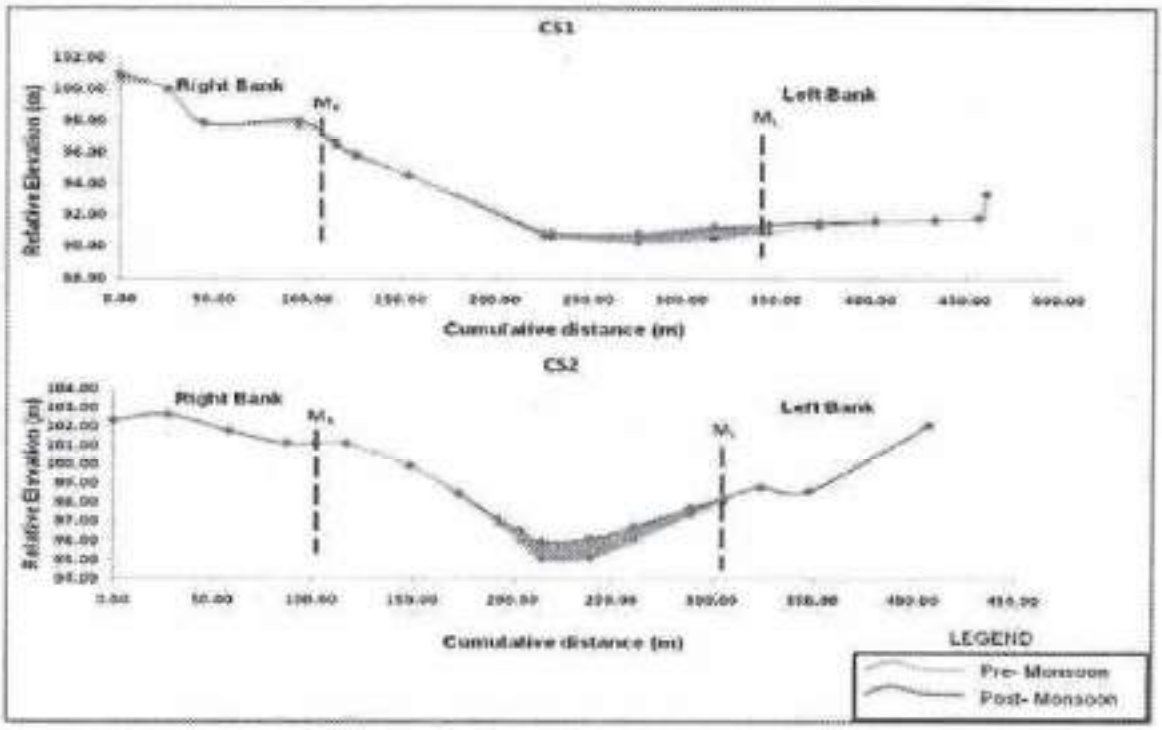

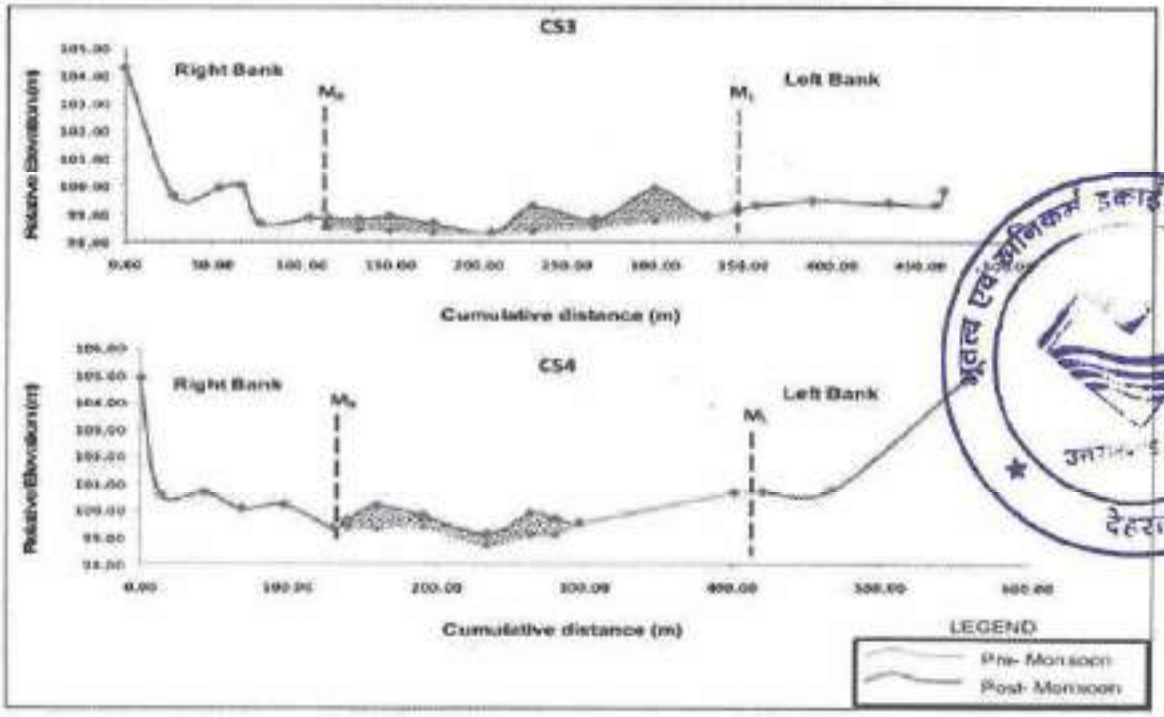

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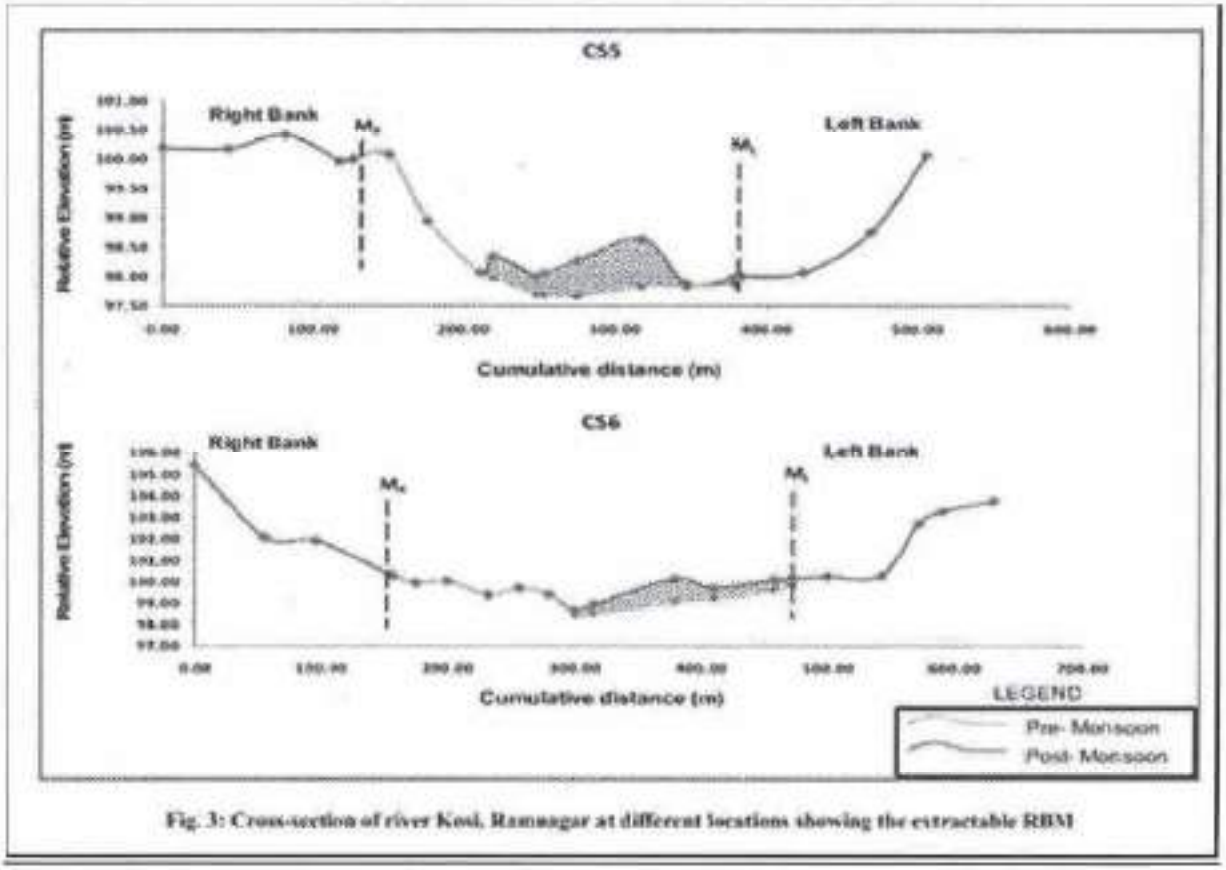

Fig. 3: Cross-section of river Kosi, Ramnagar at different locations showing the extractable RBM

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CHAPTER – 3

DETAIL INFORMATION OF QUARRY LEASE

Name & Address of the Applicant:
M/s Uttarakhand Forest Development Corporation (UKFDC), Aranya Vikas Bhawan, 73 Nehru Road, Dehradun (Uttarakhand) -248001

Status of the Applicant:
Govt. Body. Applicant has more than 10 year experience in mining activities.

Minerals which are occurring in the area and which the applicant intends to mine:
Sand, *Bajri* and Boulder (RBM)

Status of the area:
M/s Uttarakhand Forest Development Corporation (UKFDC) has applied for an area of 254.0 ha falls under forest land in Kosi River, Tarai West Forest Division, Ramnagar, Distt Nainital (Uttarakhand). Demarcated area is 127ha which is jointly done by UKFDC with Forest Department.

Period for which the mining lease is granted / renewed / proposed to be applied:
10 years

Name, Address & Registration No. of the recognized person, who prepared the Mining Plan:

Harish Kainthola,
3/1 Ekta Enclave Way to Seemadwar- ITBP,
Opposite Hotel Sun Park Inn,
GMS Raod, Dehradun - 248001 (Uttarakhand)
Telephone (Cell): 08755182584.
E-mail – kaingeotech@gmail.com
Registration No. - मु0ख0 / 05 / खनन / RQP / 2015–16

Kailash Chandra,
3/1 Ekta Enclave Way to Seemadwar- ITBP,
Opposite Hotel Sun Park Inn,
GMS Raod, Dehradun - 248001 (Uttarakhand)
Telephone (Cell): 08755182584.
E-mail – ksati84@gmail.com
Registration No. - RQP/UKGMU/NO 012/Year 2019

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Infrastructure facilities –

Power & Electricity:

The lease area falls near villages- Puchhri, Santoshpur, Kalusidh, Shahbazpur and Choi which are electrified by 220 volt supply; nearly 80% area fall 5 km periphery of the area is electrified.

Water Supply:

Water table of this area is about 15-160 ft below the ground. Water supply from tank will be arranged for drinking purpose. Dug wells and spring water can also be used for drinking water purposes. For irrigation, small canal are made on the perennial *nalas* and water supply for drinking purpose through pipelines by Uttarakhand Jal Sasthan.

Post office & Telegraph:

Post Office is situated at Ramnagar which is about 8 km away from lease hold area.

Education institute:

Primary school is situated in Kalusidh which is about 1 km away from lease hold area.

Junior High School and Intermediate collage are situated in Ramnagar which is about 8 km away from lease hold area.

For getting higher studies, people are going to Ramnagar which is about 8 km from the lease area.

Health facility:

In Ramnagar Primary Health Centre is available, which is about 8 km from lease area. District hospital is situated at Haldwani which is 39 km away from the lease area.

Police station:

The nearest police station is at Ramnagar which is about 8 km from applied area.

Bank:

There are number of banks available at Ramnagar which is about 8 km from the applied area.

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CHAPTER-4

GEOLOGY AND RESERVES

Physiography:

Geographically, the study region constitutes of plain area. The natural environment of the hilly region is greatly different from that of the remaining areas of the plains. The diversified topography, soil, climate and vegetation on the one hand and socio-cultural and economic on the other have formed these regions into two separate entities. The plains have two separate sub-regions which are, physiographically distinctive, i.e., Bhabar and Tarai.

The frontal ranges which are relatively lower from the Outer Himalaya greatly determine rainfall distribution in both area, i.e., Siwalik and upper interior areas. The Siwalik belt consists of parallel ridges which are covered with dense forests but sporadic agricultural patches are also found at several places. Bhabar is immediately to the south of the hills and is a narrow belt which is covered with forest at places, but devoid of water.

The foothill plain is composed of the recent deposits which mainly includes coarse deposits. On account of porous substratum this tract is superficially devoid of water. A major proportion of the region falls within the drainage basis of main rivers i.e. Kosi, Dabka while the southern face of the Siwalik gives rise to numerous streams that flow southwards across the foothill zone of Bhabar.

The climate of Ramnagar-Haldwani region is exceedingly diversified due to marked differences in attitude, rainfall, temperature, winds and configuration of land. The climate of this region is influenced by the south-west and north-east monsoons winds. Maximum temperature reaches 39^0C and the minimum even to freezing points in winters. Average rainfall is about 1565.9mm and most of it flows as runoff and some percolates in sandstones and conglomerates.

Geology:

The hilly physiographic unit comprises the northern hills of outer Himalaya, which is separated by Main Boundary Thrust (MBT) from east to west of the district. The region geologically comes under the lesser Himalaya and Siwalik.The study region is divisible into four distinct geological units, these from four units south to north are: (a) Bhabar, (b) Siwalik, (c) Tarai belt, and (d) Lesser Himalaya orogenic belt. Of these, the Siwalik Range and the Lesser Himalayan Range have folded mountains having medium to high relief and rugged terrain. The Siwaliks are also designated as a Sub-Himalayan zone. In general, the Bhabar belt formations contain alluvial fan deposits or piedmont deposits below the foothills or the Siwalik. This formation is made up of unconsolidated sand-boulder and clay boulder beds (Rao, 1965) The Bhabar stretches in the north from Siwalik Hills to the spring line and spring demarcates the starting of Tarai belt.

The autochthon Siwalik is separated from the Lesser Himalaya by a regional tectonic break (i.e., Main Boundary Fault). Along this fault, the rocks of the Nagthat, and/or the Blaini, Infra-Krol, Krol Formations of the Krol Nappe have come in contact with the Siwaliks. This group is constituted of alternate bands of shales, sandstones, clay bands and pebbles. The Siwalik group has been divided into three formations: (a) the Lower Siwalik, (b) The Middle Siwalik, and (c) the Upper Siwalik. A generalized geological succession, of the area, is as follows;

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Age	Morphotectonic	Divisions	Lithology
Recent to Quaternary	Piedmont	Bhabar	Boulder, sand and clay
	Alluvial plain	Tarai	Sand, clay and silt.

Exploration:

It is an existing mine and exploitation of RBM is being carried out as the minerals are replenished every year in the proposed lease area.

Estimation and Categories of reserve:

The method of cross section has been adopted for computing the geological reserve. The mining lease boundary & mining limits are marked on the plans. The intersectional volume between two section lines has been determined by the following manner:

V= (S1+S2)/2 x L, where

V= volume

S1 & S2= Sectional area of the mineral body

L=Strike influence

The mining lease has been applied only in river bed area. Geological reserves have been estimated through geological cross sections. The strike influence of sections is 190.775 m to 424.603 m. The area of each section line is calculated and sectional area is multiplied by the strike influence in between two section line to give the volume of each section line. While computing the geological mineral reserves the depth of mineralization is taken upto 4m in all the applied area.

There are two categories of reserve; namely measured/proved and indicated/probable,. The proved categories include mineral upto 2 m depth. The probable category includes 1 m after the proved depth as far as this lease in concerned.

The proved reserve and probable reserves are 16764000.701 tonnes, 5588000.521 tonnes, respectively. Following table shows the calculation of different categories of reserve.

Measured/Proved Reserve:

Section Line	Sectional area (m^2)	Strike influence (m)	Volume $(m)^3$	Recoverable reserves (tonnes)
LB to 1-1'	1075.917	225.057	242142.652	532713.835
1-1' to 2-2'	1114.496	424.603	473218.345	1041080.359
2-2' to 3-3'	1103.528	335.278	369988.661	813975.054
3-3' to 4-4'	1100.556	422.311	464776.905	1022509.191
4-4' to 5-5'	1184.337	408.159	483397.806	1063475.172
5-5' to 6-6'	1201.889	300.681	361385.186	795047.410
6-6' to 7-7'	1085.439	319.343	346627.347	762580.162
7-7' to 8-8'	1100.448	363.826	400371.594	880817.507
8-8' to 9-9'	965.154	303.345	292774.640	644104.208
9-9' to 10-10'	1015.377	266.043	270133.943	594294.675
10-10' to 11-11'	1105.551	397.517	439475.317	966845.697
11-11' to 12-12'	897.813	384.779	345459.588	760011.094
12-12' to 13-13'	932.982	334.335	311928.537	686242.781
13-13' to 14-14'	977.502	327.812	320436.886	704961.148
14-14' to 15-15'	761.440	324.193	246853.518	543077.739
15-15' to 16-16'	596.355	190.775	113769.625	250293.175
16-16' to 17-17'	897.284	322.388	289273.594	636401.907
17-17' to 18-18'	1184.999	315.146	373447.695	821584.929

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Section Line	Sectional area (m^2)	Strike influence (m)	Volume $(m)^3$	Recoverable reserves (tonnes)
18-18' to 19-19'	1116.032	242.025	270107.645	594236.819
19-19' to 20-20'	909.149	289.107	262841.340	578250.948
20-20' to 21-21'	737.111	235.599	173662.614	382057.752
21-21' to 22-22'	819.390	208.540	170875.591	375926.299
22-22' to 23-23'	974.618	218.471	212925.769	468436.692
23-23' to 24-24'	869.564	236.919	206016.233	453235.713
24-24' to LB	678.106	262.657	178109.288	391840.433
Total	**24405.037**		**7620000.319**	**16764000.701**

Indicated/Probable reserve:

Section Line	Sectional area (m^2)	Strike influence (m)	Volume $(m)^3$	Recoverable reserves (tonnes)
LB to 1-1'	358.639	225.057	80714.217	177571.278
1-1' to 2-2'	371.499	424.603	157739.590	347027.098
2-2' to 3-3'	367.843	335.278	123329.665	271325.264
3-3' to 4-4'	366.852	422.311	154925.635	340836.397
4-4' to 5-5'	394.779	408.159	161132.602	354491.724
5-5' to 6-6'	400.630	300.681	120461.829	265016.024
6-6' to 7-7'	361.813	319.343	115542.449	254193.387
7-7' to 8-8'	366.816	363.826	133457.198	293605.836
8-8' to 9-9'	321.718	303.345	97591.547	214701.403
9-9' to 10-10'	338.459	266.043	90044.648	198098.225
10-10' to 11-11'	368.517	397.517	146491.772	322281.899
11-11' to 12-12'	299.270	384.779	115152.811	253336.185
12-12' to 13-13'	310.994	334.335	103976.179	228747.594
13-13' to 14-14'	325.834	327.812	106812.295	234987.049
14-14' to 15-15'	253.813	324.193	82284.398	181025.675
15-15' to 16-16'	198.785	190.775	37923.208	83431.058
16-16' to 17-17'	299.095	322.388	96424.639	212134.205
17-17' to 18-18'	395.000	315.146	124482.670	273861.874
18-18' to 19-19'	372.011	242.025	90035.962	198079.117
19-19' to 20-20'	303.050	289.107	87613.876	192750.528
20-20' to 21-21'	245.704	235.599	57887.617	127352.757
21-21' to 22-22'	273.130	208.540	56958.530	125308.766
22-22' to 23-23'	324.873	218.471	70975.329	156145.724
23-23' to 24-24'	289.855	236.919	68672.157	151078.745
24-24' to LB	226.034	262.657	59369.412	130612.707
Total	**8135.013**		**2540000.237**	**5588000.521**

Category according to UNFC classification:

Reserves	UNFC code	Geological Reserves (tonnes)	Grade
Proved	111	16764000.197	Road, Bridges and building construction
Probable	122	5588000.101	Road, Bridges and building construction

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CHAPTER - 5

MINING

Mining (Past):

Area for mining is 127 ha out of 254.0 ha. As per tender document the proposed area is 181ha.The present topography shows some depositional and erosional activity during past years. Infect mining pits if any, are replenished every year during the rainy season. The lease area has gentle slope towards SW direction. Highest point is at RL 308 m in the NE corner of the area where as lowest point RL 264 is in the SW corner of the area. The mining plan is being prepared as per Uttarakhand Minor Mineral Concession Rule 2001 and Uttarakhand Minor Mineral (Sand, bajri & boulder) picking policy 2016 and as per Uttarakhand Govt. notification no. 334/VII-A-1/5(15)/19 dated 4 March 2020 excavation is proposed more than 1.5 m depth from surface.

Proposed Method of Mining:

Applied area is a part of a river bed and mining will be done manually in open cast method in quite a systematic manner by forming benches. Considering the area of present mining lot as 127.0 ha out of 254.0 ha, the average volume of material available in each year cycle of replenishment would be 4466000.00 tonne (2030000 Cum) and the same quantity has been granted by SEIAA in their EC letter (Annexure- 6).

The lease area does not involve any processes such as drilling, blasting and beneficiation. The mining process involves collection of material by simple hand tool such as shovel, pans and sieves. This is followed by sorting and manual picking, stacking and loading into trucks/tractor-trolley for transporting.

Mining will be carried out considering replenishment upto 1.6m in each years and flow shall follow the normal channel direction of the river. These get replenished during monsoon.

Mining will be carried out only during the day time. The factors such as topography, bed gradient, soils, rainfall etc will be taken into consideration for the same. The material is transported through the high velocity flow and is deposited where the bed slope is mild.

Exploitation of the mineral will be done after leaving 25% distances from both bank considering as non mining area. About 4466000.00 Tonnes mineral will be exploited each year. This mining plan is being prepared for three years. From first year to third year total 13398000.00 Tonne mineral will be produced up to third year. The proposed area is within river bed and mined out area will be replenished during succeeding rainy season. The clayey sand if any to be scrapped manually with the help of pickaxe, spade & crowbar and will be stacked separately and will be used for plantation.

RBM is excavated depending upon the grain size variation; no blasting will be used to make the sand, *Bajri* & boulder containing material more amenable to excavation. Excavation is typically performed by manual means. Hand operated tools like spade, fasla etc. will be used to collect the sand. The excavated material may be directly loaded into trucks, dumpers, tippers and tractors trolleys and will be transported to the destination wherever it is required for construction and other purposes.

Transportation of sand, *Bajri* & boulder from the mine is a process to deliver mined out material to the location where it is going to be collected. Mined out sand, *Bajri* & boulder will

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manually be loaded into truck and transported to its destination where it will ultimately be used. Sufficient space will be left for loading of trucks. Excavation of river bed minerals will commence from downstream to upstream and from centre of the river bed to outer site of the river bed and from top surface of the area and commence towards down removing the minerals manually. Mining will be restricted upto a maximum depth of 1.6 m. The entire area does not require excavating at once. About 4466000.00 Tonnes per year production of river RBM (sand *bajri* & boulder) and total 13398000.00 tonne from first year to third year have been proposed to meet the market requirement.

The mineral extraction will be done for a period of 245 days in a year. During this period the areas of mining quarry will be free from submergence. During mining operation the river bed will be dry to enable dry pit mining. During monsoon in the lease area the river flow being increased and sediment load get deposited. During flood season, the area gets replenished with sediments and source of erosion at this location will comparatively less.

The guidelines of the Ministry of Environment & Forests and Directorate of Geology and Mining will be followed; the most important is as under: Uttarakhand Minor Mineral (Sand, *Bajri*, Boulder) Mining Policy 2016.

- Dry pit mining will be followed which means mining an all times will be above the water flow level of river. Mining activity will be immediately stopped when water comes in the mining pits.
- RBM (sand *bajri* & boulder) will be collected a depth of 1.6m in every year as per Uttarakhand Govt. notification no. 334/VII-A-1/5(15)/19 dated 4 March 2020 or river water levels whichever less than prescribed. Bench/levels in pre monsoon & post monsoon are given according to sequence of mining from lower elevation to higher elevation shown in Plate No- 6 to 7 of pit layout plans.

- Mining at the concave side of the river channel will be avoided to prevent bank erosion.
- Mining will be restricted minimum 25% from both site of river bank to minimize effect of river bank erosion and to avoid consequent channel migration. No mining activity will be done at safety zone or non-mining area.
- Considering the cohesion factor of RBM the excavated pit slope have to be protected by maintaining the slope with average height of 1.6m in each bench.
- Area of mining lease will be demarcated prior to mining and Pillars will be erected on ground.
- No mining operations shall be carried out in proximity of any bridge and or embankment. Working will be done during day-time only; i.e. sunrise to sunset only;
- No constructions will be done at site except for construction of initial temporary shelter house and office hut.
- No water intake from river will be done. Water will be supplied by tankers from outside sources.
- No machineries will be used.
- Mining will be completely stopped during monsoon season.

Proposed Rate of Production and Life of Mine

Depending upon the market about 4466000.00 Tonnes per year & from first year to third year total 13398000.00 tonne RBM is proposed to be swiped out from the mining area. Each bench will be of 1.6m height or upto water table in per year. Tonnage factor of 2.2 has been considered. This material will be expected to be replenished during the next rainy season.

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Year Wise Mining & Development:

From I year to III year the excavation of river bed will be according to Uttarakhand Minor Mineral (Sand, *bajri* & boulder) picking policy 2016, Uttarakhand Minor Mineral Concession Rule 2001 Notification. Extraction of RBM from river bed will not exceed the depth of 1.6m/ annual replenishment rate or water level which ever less.

Area does not show any outcrop of in-situ deposit. The production is generally in the form of sand, *bajri* and boulder. Every year the extractable quantity of RBM is proposed 4466000.00 tonne (2030000 cum) per year and upto third year total extraction quantity will be around 13398000.00 tonne.

Year	I	II	III	Total
Proposed Production (Tonne)	4466000.00	4466000.00	4466000.00	**13398000.00**

From first year to third year about 2256 meter long Retaining Wall will be constructed along the plantation and dumping area.

I Year:

The mining face will be started from SSW direction from the lower level and advance towards higher levels. During this year mining is proposed from RL 260m to RL 292m in post monsoon (Plate No. 6) and from RL 292m to 308m in pre monsoon (Plate No. 7) to open the mining faces and transportation of mineral. The mining face will be advanced towards NNE direction. Tonnage factor of 2.2 has been considered. Thus, total extractable quantity in Tonnes will be 4466000.00. During monsoon period only excavated depth/pit will be replenished from RL 260m to RL 308m. After monsoon mined out area of first year will be replenished.

About 750m long retaining wall will be constructed to protect the plantation & dump area in this year.

The bench wise proposed quantity, production and closing recoverable reserves are given below:

Post- Monsoon:-

Section No.	Bench / Level (m)		Mineable area (m^2)	Mineable Depth (m)	Mineable Reserves (Tonne)	Production (Tonne)	Residue (Tonne)
	From	To					
LB to 1-1'	260-262	258.5-260.5	43317.222	1.6	152476.621	152476.621	0.000
1-1' to 2-2'	260-264	258.5-262.5	80325.342	1.6	282745.204	282745.204	0.000
2-2' to 3-3'	264-266	262.5-264.5	62335.570	1.6	219421.206	219421.206	0.000
3-3' to 4-4'	264-268	262.5-266.5	79421.814	1.6	279564.785	279564.785	0.000
4-4' to 5-5'	266-268	264.5-266.5	81073.244	1.6	285377.819	285377.819	0.000
5-5' to 6-6'	268-270	266.5-268.5	61215.552	1.6	215478.743	215478.743	0.000
6-6' to 7-7'	270-272	268.5-270.5	59153.556	1.6	208220.517	208220.517	0.000
7-7' to 8-8'	274-278	272.5-276.5	61903.352	1.6	217899.799	217899.799	0.000
8-8' to 9-9'	276-278	274.5-276.5	48092.615	1.6	169286.005	169286.005	0.000
9-9' to 10-10'	276-280	274.5-278.5	40618.627	1.6	142977.567	142977.567	0.000

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Section No.	Bench / Level (m)		Mineable area (m^2)	Mineable Depth (m)	Mineable Reserves (Tonne)	Production (Tonne)	Residue (Tonne)
	From	To					
10-10' to 11-11'	278-282	276.5-280.5	70035.229	1.6	246524.006	246524.006	0.000
11-11' to 12-12'	280-284	278.5-282.5	60041.656	1.6	211346.277	211346.277	0.000
12-12' to 13-13'	282-288	280.5-286.5	50525.771	1.6	177850.714	177850.714	0.000
13-13' to 14-14'	288.000	286.500	55304.299	1.6	194671.132	194671.132	0.000
14-14' to 15-15'	288-292	286.5-290.5	43740.995	1.6	153968.302	153968.302	0.000
15-15' to 16-16'	290-292	288.5-290.5	18234.668	1.6	64186.031	61086.031	3100.000
Total			**915339.412**		**3221994.730**	**3218894.730**	**3100.000**

Pre- Monsoon:-

Section No.	Bench / Level (m)		Mineable area (m^2)	Mineable Depth (m)	Mineable Reserves (Tonne)	Production (Tonne)	Residue (Tonne)
	From	To					
16-16' to 17-17'	292.000	290.500	46901.833	1.6	165094.452	165094.452	0.000
17-17' to 18-18'	292-296	290.5-294.5	61056.576	1.6	214919.148	214919.148	0.000
18-18' to 19-19'	294-296	292.5-294.5	43860.027	1.6	154387.295	154387.295	0.000
19-19' to 20-20'	296.000	294.500	43186.744	1.6	152017.339	152017.339	0.000
20-20' to 21-21'	296-298	294.5-296.5	30981.671	1.6	109055.482	109055.482	0.000
21-21' to 22-22'	298-304	296.5-302.5	31104.805	1.6	109488.914	109488.914	0.000
22-22' to 23-23'	298-304	296.5-302.5	33764.741	1.6	118851.888	118851.888	0.000
23-23' to 24-24'	302-304	300.5-302.5	37797.635	1.6	133047.675	133047.675	0.000
24-24' to LB	304-308	302.5-306.5	26006.556	1.6	91543.077	90243.077	1300.000
Total			**354660.588**		**1248405.270**	**1247105.270**	**1300.000**

The position of benches in pre monsoon and post monsoon in first year is shown in Plate No. 6, 7, 8, 9 and 10 respectively.

II Year:

After monsoon mined out area of first year will be replenished. The mining face will be started from SSW direction from the lower level and advance towards higher levels. During this year mining is proposed from RL 260m to RL 292m in post monsoon (Plate No. 6) and from RL 292m to 308m in pre monsoon (Plate No. 7) to open the mining faces and transportation of mineral. The mining face will be advanced towards NNE direction. Tonnage factor of 2.2 t/m³ has been considered. Thus, total extractable quantity in Tonnes will be 4466000.00. During monsoon period excavated depth/pit will be replenished from RL 260m to RL 308m. After monsoon, mined out area of second year will be replenished.

About 755m long retaining wall will be constructed to protect the plantation & dump area in this year. The bench wise proposed quantity, production and closing recoverable reserves are given below:

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Post- Monsoon:-

Section No.	Bench / Level (m)		Mineable area (m^2)	Mineable Depth (m)	Mineable Reserves (Tonne)	Production (Tonne)	Residue (Tonne)
	From	To					
LB to 1-1'	260-262	258.5-260.5	43317.222	1.6	152476.621	152476.621	0.000
1-1' to 2-2'	260-264	258.5-262.5	80325.342	1.6	282745.204	282745.204	0.000
2-2' to 3-3'	264-266	262.5-264.5	62335.570	1.6	219421.206	219421.206	0.000
3-3' to 4-4'	264-268	262.5-266.5	79421.814	1.6	279564.785	279564.785	0.000
4-4' to 5-5'	266-268	264.5-266.5	81073.244	1.6	285377.819	285377.819	0.000
5-5' to 6-6'	268-270	266.5-268.5	61215.552	1.6	215478.743	215478.743	0.000
6-6' to 7-7'	270-272	268.5-270.5	59153.556	1.6	208220.517	208220.517	0.000
7-7' to 8-8'	274-278	272.5-276.5	61903.352	1.6	217899.799	217899.799	0.000
8-8' to 9-9'	276-278	274.5-276.5	48092.615	1.6	169286.005	169286.005	0.000
9-9' to 10-10'	276-280	274.5-278.5	40618.627	1.6	142977.567	142977.567	0.000
10-10' to 11-11'	278-282	276.5-280.5	70035.229	1.6	246524.006	246524.006	0.000
11-11' to 12-12'	280-284	278.5-282.5	60041.656	1.6	211346.277	211346.277	0.000
12-12' to 13-13'	282-288	280.5-286.5	50525.771	1.6	177850.714	177850.714	0.000
13-13' to 14-14'	288.000	286.500	55304.299	1.6	194671.132	194671.132	0.000
14-14' to 15-15'	288-292	286.5-290.5	43740.995	1.6	153968.302	153968.302	0.000
15-15' to 16-16'	290-292	288.5-290.5	18234.668	1.6	64186.031	61086.031	3100.000
Total			**915339.412**		**3221994.730**	**3218894.730**	**3100.000**

Pre- Monsoon:-

Section No.	Bench / Level (m)		Mineable area (m^2)	Mineable Depth (m)	Mineable Reserves (Tonne)	Production (Tonne)	Residue (Tonne)
	From	To					
16-16' to 17-17'	292.000	290.500	46901.833	1.6	165094.452	165094.452	0.000
17-17' to 18-18'	292-296	290.5-294.5	61056.576	1.6	214919.148	214919.148	0.000
18-18' to 19-19'	294-296	292.5-294.5	43860.027	1.6	154387.295	154387.295	0.000
19-19' to 20-20'	296.000	294.500	43186.744	1.6	152017.339	152017.339	0.000
20-20' to 21-21'	296-298	294.5-296.5	30981.671	1.6	109055.482	109055.482	0.000
21-21' to 22-22'	298-304	296.5-302.5	31104.805	1.6	109488.914	109488.914	0.000
22-22' to 23-23'	298-304	296.5-302.5	33764.741	1.6	118851.888	118851.888	0.000
23-23' to 24-24'	302-304	300.5-302.5	37797.635	1.6	133047.675	133047.675	0.000
24-24' to LB	304-308	302.5-306.5	26006.556	1.6	91543.077	90243.077	1300.000
Total			**354660.588**		**1248405.870**	**1247105.270**	**1300.000**

The position of benches in pre monsoon and post monsoon in first year is shown in Plate No. 6, 7, 8, 9 and 10 respectively.

III Year:

After monsoon mined out area of second year will be replenished. The mining face will be started from SSW direction from the lower level and advance towards higher levels. During this year mining is proposed from RL 260m to RL 292m in post monsoon (Plate No. 6) and from RL 292m to 308m in pre monsoon (Plate No. 7) to open the mining faces and transportation of mineral. The

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mining face will be advanced towards NNE direction. Tonnage factor of 2.2 has been considered. Thus, total extractable quantity in Tonnes will be 4466000.00. During monsoon period only excavated depth/pit will be replenished from RL 260m to RL 308m. After monsoon mined out area of third year will be replenished.

About 750m long retaining wall will be constructed to protect the plantation & dump area in this year. The bench wise proposed quantity, production and closing recoverable reserves are given below:

Post- Monsoon:-

Section No.	Bench / Level (m)		Mineable area (m^2)	Mineable Depth (m)	Mineable Reserves (Tonne)	Production (Tonne)	Residue (Tonne)
	From	To					
LB to 1-1'	260-262	258.5-260.5	43317.222	1.6	152476.621	152476.621	0.000
1-1' to 2-2'	260-264	258.5-262.5	80325.342	1.6	282745.204	282745.204	0.000
2-2' to 3-3'	264-266	262.5-264.5	62335.570	1.6	219421.206	219421.206	0.000
3-3' to 4-4'	264-268	262.5-266.5	79421.814	1.6	279564.785	279564.785	0.000
4-4' to 5-5'	266-268	264.5-266.5	81073.244	1.6	285377.819	285377.819	0.000
5-5' to 6-6'	268-270	266.5-268.5	61215.552	1.6	215478.743	215478.743	0.000
6-6' to 7-7'	270-272	268.5-270.5	59153.556	1.6	208220.517	208220.517	0.000
7-7' to 8-8'	274-278	272.5-276.5	61903.352	1.6	217899.799	217899.799	0.000
8-8' to 9-9'	276-278	274.5-276.5	48092.615	1.6	169286.005	169286.005	0.000
9-9' to 10-10'	276-280	274.5-278.5	40618.627	1.6	142977.567	142977.567	0.000
10-10' to 11-11'	278-282	276.5-280.5	70035.229	1.6	246524.006	246524.006	0.000
11-11' to 12-12'	280-284	278.5-282.5	60041.656	1.6	211346.277	211346.277	0.000
12-12' to 13-13'	282-288	280.5-286.5	50525.771	1.6	177850.714	177850.714	0.000
13-13' to 14-14'	288.000	286.500	55304.299	1.6	194671.132	194671.132	0.000
14-14' to 15-15'	288-292	286.5-290.5	43740.995	1.6	153968.302	153968.302	0.000
15-15' to 16-16'	290-292	288.5-290.5	18234.668	1.6	64186.031	61086.031	3100.000
Total			**915339.412**		**3221994.730**	**3218894.730**	**3100.000**

Pre- Monsoon:-

Section No.	Bench / Level (m)		Mineable area (m^2)	Mineable Depth (m)	Mineable Reserves (Tonne)	Production (Tonne)	Residue (Tonne)
	From	To					
16-16' to 17-17'	292.000	290.500	46901.833	1.6	165094.452	165094.452	0.000
17-17' to 18-18'	292-296	290.5-294.5	61056.576	1.6	214919.148	214919.148	0.000
18-18' to 19-19'	294-296	292.5-294.5	43860.027	1.6	154387.295	154387.295	0.000
19-19' to 20-20'	296.000	294.500	43186.744	1.6	152017.339	152017.339	0.000
20-20' to 21-21'	296-298	294.5-296.5	30981.671	1.6	109055.482	109055.482	0.000
21-21' to 22-22'	298-304	296.5-302.5	31104.805	1.6	109488.914	109488.914	0.000
22-22' to 23-23'	298-304	296.5-302.5	33764.741	1.6	118851.888	118851.888	0.000
23-23' to 24-24'	302-304	300.5-302.5	37797.635	1.6	133047.675	133047.675	0.000
24-24' to LB	304-308	302.5-306.5	26006.556	1.6	91543.077	90243.077	1300.000
Total			**354660.588**		**1248405.270**	**1247105.270**	**1300.000**

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The position of benches in pre monsoon and post monsoon in first year is shown in Plate No. 6, 7, 8, 9 and 10 respectively.

Ultimate pit limit and life of the mine:

The proposed area is within river bed and mined out area will be replenished gradually during succeeding rainy season. Hence there will be no change in land use, land cover or topography of the area. Mining will be undertaken through manually. The height of the mining faces will be kept 1.6m from first year to third as per Uttarakhand Govt. Notification. The existing track will be used for the opening of the faces and transportation of mineral. The waste material will stack separately and will be kept in the earmarked stack site. Mineable reserve of the area is calculated with the help of cross sectional and is tabulated below:

Mineable reserve:

Section	Bench / Level (m)		Mineable Area (m^2)	Depth (m)	Total Volume (m^3)	Mineable Reserves (Tonne)
LB to 1-1'	260-262	258.5-260.5	43317.222	1.6	69307.555	152476.621
1-1' to 2-2'	260-264	258.5-262.5	80325.342	1.6	128520.547	282745.204
2-2' to 3-3'	264-266	262.5-264.5	62335.570	1.6	99736.912	219421.206
3-3' to 4-4'	264-268	262.5-266.5	79421.814	1.6	127074.902	279564.785
4-4' to 5-5'	266-268	264.5-266.5	81073.244	1.6	129717.190	285377.819
5-5' to 6-6'	268-270	266.5-268.5	61215.552	1.6	97944.883	215478.743
6-6' to 7-7'	270-272	268.5-270.5	59153.556	1.6	94645.690	208220.517
7-7' to 8-8'	274-278	272.5-276.5	61903.352	1.6	99045.363	217899.799
8-8' to 9-9'	276-278	274.5-276.5	48092.615	1.6	76948.184	169286.005
9-9' to 10-10'	276-280	274.5-278.5	40618.627	1.6	64989.803	142977.567
10-10' to 11-11'	278-282	276.5-280.5	70035.229	1.6	112056.366	246524.006
11-11' to 12-12'	280-284	278.5-282.5	60041.656	1.6	96066.490	211346.277
12-12' to 13-13'	282-288	280.5-286.5	50525.771	1.6	80841.234	177850.714
13-13' to 14-14'	288.000	286.500	55304.299	1.6	88486.878	194671.132
14-14' to 15-15'	288-292	286.5-290.5	43740.995	1.6	69985.592	153968.302
15-15' to 16-16'	290-292	288.5-290.5	18234.668	1.6	29175.469	64186.031
16-16' to 17-17'	292.000	290.500	46901.833	1.6	75042.933	165094.452
17-17' to 18-18'	292-296	290.5-294.5	61056.576	1.6	97690.522	214919.148
18-18' to 19-19'	294-296	292.5-294.5	43860.027	1.6	70176.043	154387.295
19-19' to 20-20'	296.000	294.500	43186.744	1.6	69098.790	152017.339
20-20' to 21-21'	296-298	294.5-296.5	30981.671	1.6	49570.674	109055.482
21-21' to 22-22'	298-304	296.5-302.5	31104.805	1.6	49767.688	109488.914
22-22' to 23-23'	298-304	296.5-302.5	33764.7[illegible]	1.6	54023.[illegible]	118851.888
23-23' to 24-24'	302-304	300.5-302.5	37797.[illegible]	1.6	60476.2[illegible]	133047.675
24-24' to LB	304-308	302.5-306.5	26006.[illegible]	1.6	41610.490	91543.077
Total			**1270000.000**		**2032000.000**	**4470400.000**

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Conceptual Mine Plan and Life of Mine:

A margin of 25% from both banks has been left from the lease boundary which will help in proper channelization of the river as a statutory condition. No RBM will be collected from the 100m proximity of any bridge/embankment. Collection of RBM is restricted up to a maximum depth of 1.5 or river water levels whichever less from first to third year. River/stream will not be diverted in any case. No mining is proposed during rainy season. A quantity of material about 18626.67 tonnes per day ROM from first year to third year has been proposed to collect during the course of mining. This will be replenished during the next rainy season. Mining will be done within 127.0 ha area. The environment/ultimate pit plan is shown in Plate No.11.

Afforestation:

The entire mining lease area being a part of river bed, there is no vegetation in the leased out area. Hence there would be no clearance of existing land and vegetation. Plantation will be done on both side of river bank for stabilising the slope.

Infrastructure:

Track having width 3.0m and gradient varies 1:20 to 1:50 will be made for different working pits and up to sandy soil stockyard. The entire mining lease area being a part of river bed, there is no buildings in the leased out area. Hence there would be no clearance of existing land. Coordinates of the approach route from lease area is given below and also shown in annexure –II.

ARP1- 29°16'34.22"N, 79°5'1.23"E, ARP2- 29°17'55.70"N, 79°6'17.82"E,
ARP3- 29°20'3.41"N, 79°7'4.81"E,

Backfilling:

The mining will be undertaken on the river bed. The mined out area will be replenished during extraction of RBM (sand *bajri* & boulder) from Kosi river bed clayey sand will also be removed in form of waste materials. The excavated clayey sand/sandy clay will be used in plantation area. Therefore there is no risk associated with failure of waste dump. During the monsoon season mined out pit will be replenished and the mineral will be filled back over the mined out pit itself.

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CHAPTER – 6

USE OF MINERAL

The RBM containing sand, *bajri* & boulder is an important material for construction and developmental activities. The RBM will be used in road, bridge and building constructions. It is an essential minor mineral used extensively across the country for construction purposes.

CHAPTER – 7

MINE DRAINAGE

The deposit is situated in the river bed and area has a moderate to heavy rainfall. In proposed pit location the maximum highest RL is about 308 m in the NE part of the area, while the lowest RL recorded on the SW part of the area is about RL 264m and general slope is towards south-western direction. Provision of garland drainage is given along the lease boundary with proper gradient towards south western direction.

CHAPTER – 8

STACKING OF MINERAL REJECTS AND DISPOSAL OF WASTE

The top RBM containing sandy soil will be removed with the help of pickaxe, spade & crowbar and stacked separately. Part of these rejects will be utilized in construction and maintenance of retaining walls.

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CHAPTER - 9

OTHER

Site Services

The following site services will be provided:

(i) Office
(ii) Store
(iii) First Aid Centre
(iv) Drinking water shed
(v) Rest shelter

Employment Potential

The mine manager should be a graduate engineer holding at least second class manager's certificate. The category-wise employments are given as below:

Category	
Manager/Foreman	1
Skilled	
Supervisor	6
Time Keeper	2
Office Assistant/Dispatch Supervisor	4
Un-skilled	
Daily wages/mining workers	3041
Total	**3054**

The services of following persons/agencies may be retained on part time basis.

(i) Geologist
(ii) Mining Engineer
(iii) Environment consultancy agency
(iv) Surveyor

CHAPTER - 10

BENEFICIATION

No beneficiation of mineral processing will required for RBM. There for no such investigations have been conducted.

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CHAPTER - 11

ENVIRONMENT

Land use:

Land degradation and ecological disturbances generally occurs in open cast mining. In preparation of mining plan in River Kosi, Area- 127.0 ha out of 254.0 ha sand, *bajri* & boulders Mine of M/s Uttarakhand Forest Development Corporation (UKFDC), emphasis on environmental protection has been given to minimize the adverse impact on the present environmental status. Opencast method of mining causes some land degradation and disturbs the ecology of the area. While preparing the Environment Management Plan (EMP) emphasis has been laid on restoring the ecology of the area as much as possible. Applied area is almost barren. This has been made possible by planning the mine workings in the most systematic, safe and scientific manner with due regard to conservation of mineral.

Water regime:

The ground water table in Kosi valley region is at shallow depth below ground surface and hence ground water may interfere in opencast mining below 1.6m

The variations in topography make the district rich with different fauna and flora. Such a variation in topography makes the district a natural zoo, having rich biodiversity. The common faunal species are Leopard, Tiger, Blackbear, Barking Deer, Cheetal, Lizard, Python and Cobra. Besides these Apes, Monkey, Musk dear is the rare species found in the district. Doves, Patridge, Vulture, Kite Eagle, Wild-Fowl, Sparrow, Crow and various other species are common in the district. Honeybee and colorful butterflies with various other insects makes the study area more lively and colourful. The valleys and slops of hills are full of mixed vegetation comprising chiefly Pine, Deodar, Oak, Rhododandren, Thuner, Kail, Khair, Bhimal, Kharik, Tun, Amla, Harada etc. Different fruit trees like Mango, Apple, Peach, Apricot, Nut and Citrus give delicious test to life.

Shrubs: *Calotropis procera*, with a few *Datura innoxia* and *Ipomoea carnea* etc. occurs in the depressions.

Herbs: Ageratum conyzoides, Amaranthus spinosus, Cannabis savita and Hydrolea zeylanica.

Quality of air, ambient noise level and water

Mining activities includes excavation and lifting of minerals. The proposed mining activity is manual in nature. No drilling and blasting is envisaged for the mining activity. Hence the only impact anticipated is due to movement of vehicles deployment for transportation of minerals. Ambient air quality monitoring will be done in the Core zone and in the buffer zone within the study area. The monitoring will be done for 24 hrs twice a week for one season except monsoon. The location of the monitoring stations will be selected based on predominant wind direction and sensitive locations within the study area. Noise pressure level will be monitored from the surrounding of the project from residential, commercial, sensitive locations and at traffic junctions. Monitoring will be done for day and night and noise pressure level once every month during study period.

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Water quality:

The surface drainage system in the area is perennial. The flow of the tributaries of Kosi River is observed more after the rainfall and then its tributary become entirely dry. Drinking water quality will not deteriorate by mining and allied activities.

Climatic condition:

Rainfall: Kosi valley is characterized by humid climate with moderate temperature, rainfall and luxuriant vegetation. The total annual rainfall in the area is 1028.6 mm. Maximum rainfall seems during July and August. On an average there are about 48 rainy days in a year.

Temperature: Mean Maximum temperature is 36.2^{0}C and the mean minimum temperature is 6.1^{0}C. In association with the cold waves arising in the wake of the western disturbance which travels East wards, the minimum temperature goes down to about 3^0 and at times leads to frosts.

Socio-Economics:

Social and demographic profile:

The scale of operation is small. It is expected that 90% employment will be local. Therefore there will be positive impact on socio-economic status of people.

Historical monuments etc

There is no historical building in the lease area.

Programme of afforestation:

Plantation is proposed along the slope on both bank of the river. Rehabilitation of extracted land has to be designed skilfully in order to restore it to its formal use, or to an alternative use that is compatible with the surroundings. Plantation with grasses, herbs, shrubs and trees is an important means for restoring such areas.

Stabilizing and re-vegetate the de-vegetated areas viz. debris, dumps and slopes which get degraded due to vehicle movement, rolling stones, etc are important for conservation of soil, regulation of surface and underground water and for rehabilitation of wild life habitat. These generally are extracting operations and need planting in various phases by select species. Protective engineering measures, in conjunction, become necessary.

Top layer of RBM having some sandy soil is considered as an overburden and will be stacked separately and nature of this dump will be temporary.

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CHAPTER - 12

CLOSURE PLAN

Mined Out land:

Plantation is proposed along the slope on both bank of the river. The mining will commence from the lower levels and will advance towards higher levels.

Water Quality Management:

The mineral as well as soil are non-toxic and mining is also proposed at medium scale. Hence no proposal has been provided for the surface and ground water bodies. The expected depth of water table in applied area likely to be more than the exploitation depth.

Necessary arrangement shall be made at stockpiles to prevent silt and sediments flowing into water body. Domestic waste water if any generated at site should be disposed off through septic tank-soak pit. Water shall be required in mining to cater for drinking purposes, dust suppressing at faces and on haul roads, and plantation. The water bodies flowing water channel remains in unaltered condition because the site conditions are in virgin form i.e. the topography, landscape etc. remains in unaltered form. Portable bio toilets will be provided for the workers at site. The sewage generated from toilet will be collected and treated.

Air Quality Management:

The proposed sand, *bajri* & boulder mining activities shall be entirely manual in operations. No machinery, explosive etc. shall be used for blasting, excavations and loading of sand into trucks or tippers. Therefore, the proposed mining activities shall generate negligible fugitive particulates. Further, there shall be no usage of machinery or explosives which generate heavy load of dust particulates. This shall not be taking place in the proposed mining.

- Approach road shall be sprinkled with water at regular intervals for controlling fugitive emission during vehicular movement.
- Vehicles shall not be overloaded and RBM transportation shall be done only through covered trucks so that no spillage of RBM takes place.
- Vehicles used in mining and transportation shall be maintained well so as keep Vehicular emissions in control.
- Ambient air quality shall be monitored at site and the nearest human habitation and it shall conform to the norms prescribed by SEIAA, MoEF, Govt. of India.

Waste Management:

The RBM containing sandy soil will be stacked separately and these dumps are temporary in nature. The dumping will be undertaken manually. The toe wall having width 1.5m and height 1.0m will be made along the side and slope of the soil and width & height 1.5m each retaining wall for protecting RBM dump to avoid the wash off material during intermittent rains.

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Top Soil Management:

Some sandy soil shall be generated during plan period therefore precautionary measures have been proposed for its preservation and utilization.

Infrastructure:

In river bed sand, bajri and boulders is manual open cast mining. No mechanization is required. The tracks having width of 3.0m and gradient 1:20 to 1:50 will be made for the advancement of mining faces and for the transportation of RBM and waste material. There will not be any changed in existing infrastructure.

Disposal of Mining Machinery:

The RBM (sand *bajri* & boulder) mine is manual open cast. Hence disposal of mining machineries are not required.

Safety and Security:

Each worker employed in the mine will be provided helmets and shoes will be used for working in the benches. Protective works like parapet walls, garland drains shall be provided before the mine/pit is abandoned.

A worker in a mine should be able to work under adequately safe and healthy condition. Safety of the mine and the employees is taken care of by the Mining Rules & Regulations. The minerals will be mined out in a uniform wash so that the river flow/course shall not get disturbed. Mining is to be done leaving safety barrier on both sides and maximum barrier should be on concave side of the river, preferably the flow channel (excavation void) created should be kept straight so as to help avoid erosion. River banks will not be excavated to form access ramps. Only excavated river gravel should be used to deposit against the river bank to form access ramps.

Disaster management and risk assessment:

At present the mining is proposed in a sloping forest land in river bed. The mining faces shall be dressed properly because any hanging boulders/loose material may create fatal accidents to the labourers while working in the pit. The mine shall be critically examined for its proneness to any natural hazard and assessment regarding danger of hazard and precautions to be taken and should be reviewed so that chances of slope failures will be minimized. At present the mining is proposed in a mild sloping forest land in river bed. Pits will be created of limited depth of 1.5m, thus the chance of failure of pit slope may not exist. A worker in a mine should be able to work under adequately safe and healthy condition. Safety of the mine and the employees is taken care of by the Mining Rules & Regulations. The minerals will be mined out in a uniform wash so that the river flow/course shall not get disturbed. Mining is to be done leaving safety barrier on both bank and maximum barrier should be on concave side of the river, preferably the flow channel (excavation void) created should be kept straight so as to help avoid erosion.

Harish Kainthola
मु0ख0 / 05 / खनन / RQP / 2015-16

KAILASH CHANDRA
RQP/UKGMU/No.012/YEAR 2019

CHAPTER - 13

CONCLUSION

This applied area is suitable for producing material for making road, bridge, buildings and other constructional work. This is a part of Govt. of India's policy to develop maximum infrastructure facility in India. This making of road or bridge will generate direct & indirect employment to the local people. M/s Uttarakhand Forest Development Corporation (UKFDC) will undertake mining activity as per the plan indicated in the above chapters with proper taking care of environmental aspects i.e. without disturbing the ambient condition. Mining is proposed from RL 260 m to RL 292m in post monsoon and from 292m to 308m in pre monsoon for exploitation of the mineral. Quantity of RBM is proposed 4466000.00 Tonnes (2030000 cum) per year and total extractable quantity will be 13398000.00 Tonnes. During monsoon period excavated depth/pit will be replenished from RL 260m to RL 308m. Pits will be created of limited depth of 1.6m in each year as per Uttarakhand Govt. Notification. Thus the chance of failure of pit slope seems to be least. The proposed river bed mining is unlikely to change any characteristic of the river bed as the permitted mining volume will be based upon 1.6m depth. Collection of RBM is restricted up to a maximum depth of 1.6m or river water level or replenishment.

KAILASH CHANDRA
RQP/UKGMU/No.012/YEAR 2019

Harish Kainthola
मु0खा0/05/खनन/RQP/2015-16

Annexure - 1

संख्याः 350 /VII-1/21-घ/2013

प्रेषक,

राकेश शर्मा,
प्रमुख सचिव,
उत्तराखण्ड शासन।

सेवा में,

जिलाधिकारी,
नैनीताल।

11378
21-2-13

औद्योगिक विकास अनुभाग

देहरादून : दिनांकः 19 फरवरी, 2013

विषयः जनपद नैनीताल के तराई पश्चिमी वन प्रभाग, रामनगर के अन्तर्गत कोसी नदी के 254.00 हैक्टेयर नदी तल क्षेत्रफल में पत्थर बोल्डर एवं अन्य उपखनिजों का खनन पट्टा उत्तराखण्ड वन विकास निगम को स्वीकृत किये जाने के सम्बन्ध में।

महोदय,

उपरोक्त विषयक अपर सचिव, वन एवं पर्यावरण विभाग, उत्तराखण्ड शासन के कार्यालय ज्ञाप संख्या 217(2)/X-3-13-8(14)2009, दिनांक 18 फरवरी, 2013 के द्वारा जनपद नैनीताल के तराई पश्चिमी वन प्रभाग, रामनगर के अन्तर्गत कोसी नदी के 254.00 हैक्टेयर नदी तल क्षेत्रफल को पत्थर एवं अन्य उपखनिजों के चुगान हेतु आगामी दस वर्षों तक उत्तराखण्ड वन विकास निगम को हस्तान्तरित किया गया है।

2- अतः वन एवं पर्यावरण विभाग, उत्तराखण्ड शासन द्वारा निर्गत उपरोक्त आदेश के क्रम में सम्यक् विचारोपरान्त मुझे यह कहने का निदेश हुआ है कि जनपद नैनीताल के तराई पश्चिमी वन प्रभाग, रामनगर के अन्तर्गत कोसी नदी के 254.00 हैक्टेयर नदी तल वन क्षेत्र में 10 (दस) वर्ष की अवधि हेतु उपखनिज रेता, बजरी एवं बोल्डर के चुगान किये जाने की अनुमति, वन संरक्षण अधिनियम, 1980 के प्राविधानों के अन्तर्गत पर्यावरण एवं वन मंत्रालय, भारत सरकार के पत्र संख्या F No-8-61/1999-FC(pt-I) दिनांक 15 फरवरी, 2013 एवं पर्यावरण संरक्षण अधिनियम, 1986 के प्राविधानों के अन्तर्गत पर्यावरण एवं वन मंत्रालय, भारत सरकार के पत्र संख्या J-11015/360/2009-IA.II(M) दिनांक 13 अप्रैल, 2011 के अधीन, उत्तराखण्ड वन विकास निगम को निम्नलिखित शर्तों के अधीन प्रदान की जाती है :-

1. वन भूमि की वैधानिक स्थिति में कोई परिवर्तन नहीं होगा।
2. उत्तराखण्ड वन विकास निगम द्वारा उक्त नदी से उपखनिजों के चुगान से पूर्व भारत सरकार, पर्यावरण एवं वन मंत्रालय, नई दिल्ली के आदेश संख्या J-11015/360/2009-

I.A.II(M) दिनांक 13 अप्रैल, 2011 एवं आदेश संख्या F No-8-61/1999-FC(pt-I) दिनांक 15 फरवरी, 2013 में परिलक्षित समस्त शर्तों का अक्षरशः अनुपालन सुनिश्चित किया जायगा।

3. पर्यावरण एवं वन मंत्रालय, भारत सरकार द्वारा वन संरक्षण अधिनियम, 1980 तथा पर्यावरण संरक्षण अधिनियम, 1986 के अधीन अन्य समस्त अधिनियमों के अन्तर्गत समय-समय पर दिये गये निर्देशों का अनुपालन सुनिश्चित किया जायगा।

4. विभाग द्वारा कार्य से किसी भी वन सम्पदा को क्षति नहीं पहुचायेगा। यदि वन सम्पदा को कोई क्षति पहुचती है या पहुचायी जाती है तो उसके लिये सम्बन्धित प्रभागीय वनाधिकारी द्वारा निर्धारित प्रतिकर उत्तराखण्ड वन विकास निगम द्वारा देय होगा।

5. उक्त वन भूमि उत्तराखण्ड वन विकास निगम के उपयोग में तब तक बना रहेगा जब तक कि उत्तराखण्ड वन विकास को उसकी उक्त प्रयोजन हेतु आवश्यकता रहेगी। यदि उत्तराखण्ड वन विकास निगम को उक्त भूमि अथवा उसका ऐसा भाग, जो उत्तराखण्ड वन विकास निगम के लिए आवश्यक न रहे, वन विभाग को बिना किसी प्रतिकर का भुगतान किये यथा स्थिति वापस हो जायेगी।

6. वन विभाग/भूतत्व एवं खनिकर्म विभाग एवं राज्य सरकार के कर्मचारी/अधिकारी या उनके अभिकर्ताओं को किसी भी समय जब वे आवश्यक समझे, प्रश्नगत वन भूमि का निरीक्षण करने का पूर्ण अधिकार होगा।

7. प्रश्नगत क्षेत्र में उपखनिजों के खुगान हेतु किसी भी विस्फोटक पदार्थ का प्रयोग नदी में नहीं किया जायेगा व खुगान कार्य केवल हैण्ड टूल्स द्वारा ही किया जायेगा।

8. प्रश्नगत क्षेत्र में उपखनिजों के खुगान का कार्य सूर्योदय से पूर्व तथा सूर्योदय के पश्चात नहीं किया जायेगा।

9. उत्तराखण्ड उपखनिज परिहार नियमावली, 2001 तथा उत्तराखण्ड खनिज नीति, 2011 के प्राविधानों का अनुपालन सुनिश्चित किया जायेगा।

10. खनन पट्टा की स्वीकृति के पश्चात उक्त स्थल का सीमाबन्धन भूतत्व एवं खनिकर्म इकाई के अधिकारियों द्वारा राजस्व एवं वन विभाग के अधिकारियों की उपस्थिति में किया जायेगा।

11. किसी सार्वजनिक विनोदस्थल, शमशान अथवा कब्रिस्तान या व्यक्तियों के किसी वर्ग द्वारा पवित्र माने जाने वाला स्थान, मकान अथवा ग्रामस्थल, सार्वजनिक सड़क या कोई अन्य स्थान जो जिलाधिकारी द्वारा सार्वजनिक स्थान घोषित किया गया हो, ऐसे स्थानों पर न तो कोई खीज खड़ी की जाय न ही स्थापित की जायेगी और न ही कोई सतह संक्रियायें की जायेंगी, जिससे कोई भवन, भवन निर्माण कार्य, सम्पति या अन्य व्यक्तियों अधिकारों को क्षति पहुँचे।

12. पट्टे में असम्मिलित निर्माण कार्यों या अन्य प्रयोजनों के निमित्त कोई ऐसी भूमि, सतह संक्रियाओं के लिए प्रयुक्त नहीं की जायेगी, जो राज्य सरकार से भिन्न व्यक्तियों के दखल में पहले से ही हो।

13. किसी भी मार्ग का उपयोग करने के अधिकार पर हस्तक्षेप न किया जायेगा।

14. प्रस्तावित क्षेत्र में खनन कार्य करने से पूर्व प्रवेश व निकासी मार्गों पर पर्याप्त संख्या में अस्थाई चेक पोस्ट स्थापित किये जायेंगे। निकासी किये जाने वाले उपखनिजों के उचित मिलेजों का रखरखाव उत्तराखण्ड वन विकास निगम द्वारा किया जायेगा।

15. वन विकास निगम द्वारा उपखनिज की निकासी की मात्रा पर निर्धारित रायल्टी आदि नियमानुसार जमा किया जायेगा।

16. उत्तराखण्ड उपखनिज परिहार नियमावली–2001 के नियम–70 के अनुसार उपखनिजों का परिवहन खनन विभाग द्वारा निर्गत प्रपत्र एम0एम0–11 पर किया जायेगा तथा नियम–73 के अनुसार प्रपत्र एम0एम0–12 पर त्रैमासिक विवरण निगम द्वारा जिलाधिकारी, नैनीताल तथा खान अधिकारी, भूतत्व एवं खनिकर्म इकाई हल्द्वानी–नैनीताल को प्रेषित किया जायेगा।
17. इसके अतिरिक्त इस हेतु जो भी शर्तें स्थानीय जिला प्रशासन तथा भूतत्व एवं खनिकर्म इकाई द्वारा निर्धारित की जायेंगी, का अनुपालन उत्तराखण्ड वन विकास निगम द्वारा किया जायेगा।
18. उत्तराखण्ड वन विकास निगम द्वारा उक्त नदी से उपखनिजो के चुगान हेतु वन विभाग/अन्य प्राधिकारियों को प्रदत समस्त वचनबद्धताओं का अनुपालन सुनिश्चित किया जायेगा।
19. निगम द्वारा उपखनिजों के चुगान हेतु मुख्य वन्य जीव प्रतिपालक, उत्तराखण्ड की संस्तुतियों व उनके द्वारा समय–समय पर जारी निर्देशो का अनुपालन सुनिश्चित किया जायेगा।

संलग्नक : भारत सरकार के आदेश दिनांक 13 अप्रैल, 2011
एवं दिनांक 15 फरवरी, 2013

भवदीय,

(उमेश शर्मा)
प्रमुख सचिव।

पृष्ठांकन संख्या: 350 (1)/VII-1/ 21–ख/2013, तद्दिनांकित।

प्रतिलिपि : निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित :–

1. सचिव, पर्यावरण एवं वन मंत्रालय, भारत सरकार, पर्यावरण भवन, सी0जी0ओ0 कामप्लेक्स, लोदी रोड, नई दिल्ली।
2. प्रमुख सचिव, मा0 मुख्यमंत्री जी, उत्तराखण्ड शासन।
3. प्रमुख सचिव, वन एवं पर्यावरण विभाग, उत्तराखण्ड शासन।
4. स्टाफ आफीसर–मुख्य सचिव, उत्तराखण्ड शासन।
5. आयुक्त, कुमाऊँ मण्डल, नैनीताल।
6. प्रमुख वन संरक्षक, उत्तराखण्ड, देहरादून।
7. निदेशक, भूतत्व एवं खनिकर्म इकाई, उद्योग निदेशालय, देहरादून।
8. अपर प्रमुख वन संरक्षक एवं नोडल अधिकारी, वन संरक्षक, इन्दिरानगर, फारेस्ट कालोनी, देहरादून।
9. प्रबन्ध निदेशक, उत्तराखण्ड वन विकास निगम लि0, देहरादून।
10. गार्ड फाईल।

भूतत्व एवं खनिकर्म इकाई उद्योग निदेशालय उत्तराखण्ड सरकार देहरादून

आज्ञा से,

(शैलेश बगौली)
अपर सचिव।

Annexure - 2

संयुक्त निरीक्षण रिपोर्ट

जिलाधिकारी/अध्यक्ष खनन समिति-नैनीताल के पत्रांक-710/30 जी0सी0/2020-21 दिनांक 28.09.2020 के द्वारा दिये गये निर्देशों के अनुपालन में दिनांक 15.10.2020 को कोसी एवं दाबका नदियों में खनन सत्र 2020-21 के अन्तर्गत कार्य प्रारम्भ करने से पूर्व संयुक्त निरीक्षण किया गया था जिसमें गठित समिति द्वारा एक बार पुनः उक्त दोनों नदियों में संयुक्त निरीक्षण किये जाने हेतु सहमति व्यक्त की गई।

दिनांक 16.10.2020 को आहूत क्षेत्रीय खनन समिति की बैठक में उपजिलाधिकारी/अध्यक्ष क्षेत्रीय खनन समिति, रामनगर द्वारा कोसी एवं दाबका नदियों में चुगान कार्य से पूर्व दिनांक 23.10.2020 को संयुक्त निरीक्षण किये जाने हेतु निर्देशित किया गया, जिस क्रम में इस कार्यालय के पत्रांक-1433/खनन सत्र 2020-21/दिनांक 17.10. 2020 द्वारा गठित समिति के सदस्यों को संयुक्त निरीक्षण हेतु अनुरोध पत्र प्रेषित किया गया।

चयनित तिथि 23.10.2020 को उपजिलाधिकारी/अध्यक्ष क्षेत्रीय खनन समिति, रामनगर की अध्यक्षता में गठित समिति, जिसमें जिला खान अधिकारी, हल्द्वानी, उपप्रभागीय वनाधिकारी, त0प0 वन प्रभाग, रामनगर एवं प्रभागीय प्रबन्धक, खनन प्रभाग, उ0 वन विकास निगम, रामनगर सदस्य थे के द्वारा कोसी एवं दाबका नदियों का पुनः संयुक्त निरीक्षण किया गया निरीक्षण में पाया गया कि दोनों नदियों में सीमांकन का कार्य वन विभाग द्वारा पूर्व कर लिया गया है तथा निकासी मार्गो की मरम्मत का कार्य प्रगति पर है। माह अक्टूबर के अन्तिम सप्ताह में कई राजपत्रित अवकाश होने तथा इस सप्ताह तक निकासी मार्गो के निर्माण का कार्य पूर्ण होने व नदियों में जल स्तर न्यून हो जाने पर दिनांक 02.11.2020 से कौसी एवं दाबका नदियों में उपखनिज चुगान कार्य प्रारम्भ करने का निर्णय लिया गया।

उपजिलाधिकारी/
अध्यक्ष क्षेत्रीय खनन समिति,
रामनगर (नैनीताल)

सहायक भू-वैज्ञानिक/
प्रभारी अधिकारी,
भूतत्व एवं खनिकर्म इकाई, हल्द्वानी (नैनीताल)

प्रभागीय प्रबन्धक, (खनन)
उ0 वन विकास निगम, रामनगर
/सदस्य सचिव क्षेत्रीय खनन समिति,

उप प्रभागीय वनाधिकारी,
तराई पश्चिमी वन प्रभाग,
रामनगर, (नैनीताल)

भूतत्व एवं खनिकर्म इकाई हल्द्वानी (नैनीताल) कार्यालय

Annexure -3

कार्यालय, वन क्षेत्राधिकारी (रामनगर), तराई पश्चिमी वन प्रभाग, रामनगर

पत्रांक ३८१ /

रामनगर, दिनांक 01.10.2020

सेवा में,

प्रभागीय वनाधिकारी
तराई पश्चिमी वन प्रभाग, रामनगर

द्वारा: उप-प्रभागीय वनाधिकारी रामनगर , तराई पश्चिमी वन प्रभाग, रामनगर

विषय: कोसी नदी में सीमांकन एवं मार्ग संधारण के संबंध में।

महोदय,

सादर अवगत कराना है कि इस रेंज के अन्तर्गत पड़ने वाली कोसी नदी के उप खनिज विदोहन सत्र हेतु मार्ग संधारित कर लिये गये हैं, सीमांकन कार्य करने के उपरान्त सीमांकन पीलर स्थापित किये कर दिये गये हैं जिनकी जी.पी.एस. स्थितिवार विवरण निम्न प्रकार है:-

नदी के पश्चिमी छोर पर स्थित सीमांकन पीलरों की जी.पी.एस. स्थिति	नदी के पूर्वी छोर पर स्थित सीमांकन पीलरों की जी.पी.एस. स्थिति
29°20'25.89"N 79° 7'33.57"E	29°20'22.2"N 79° 07'42.6"E
29°20'22.80"N 79° 7'30.14"E	29°20'18.8"N 79° 07'41.0"E
29°20'19.62"N 79° 7'28.65"E	29°20'15.7"N 79° 07'38.7"E
29°20'13.45"N 79° 7'25.25"E	29°20'08.9"N 79° 07'36.8"E
29°20'10.49"N 79° 7'22.85"E	29°20'06.1"N 79° 07'34.7"E
29°20'7.31"N 79° 7'21.83"E	29°20'03.3"N 79° 07'33.2"E
29°20'2.73"N 79° 7'21.54"E	29°19'53.3"N 79° 07'28.0"E
29°19'59.25"N 79° 7'21.11"E	29°19'53.1"N 79° 07'27.1"E
29°19'55.48"N 79° 7'19.18"E	29°19'48.9"N 79° 07'24.7"E
29°19'51.74"N 79° 7'17.50"E	29°19'45.5"N 79° 07'24.1"E
29°19'48.06"N 79° 7'14.74"E	29°19'42.5"N 79° 07'22.2"E
29°19'45.13"N 79° 7'12.28"E	29°19'37.8"N 79° 07'22.4"E
29°19'41.21"N 79° 7'8.95"E	29°19'32.1"N 79° 07'17.4"E
29°19'37.08"N 79° 7'5.89"E	29°19'29.2"N 79° 07'16.7"E
29°19'32.90"N 79° 7'2.98"E	29°19'24.9"N 79° 07'15.5"E
29°19'27.71"N 79° 7'2.30"E	29°19'22.1"N 79° 07'14.4"E
29°19'23.25"N 79° 7'0.07"E	29°19'19.2"N 79° 07'13.7"E
29°19'19.00"N 79° 6'57.58"E	29°19'16.5"N 79° 07'09.6"E
29°19'15.42"N 79° 6'56.64"E	29°19'14.1"N 79° 07'06.1"E
29°19'11.10"N 79° 6'56.99"E	29°19'11.4"N 79° 07'04.8"E
29°19'7.07"N 79° 6'57.52"E	29°19'06.6"N 79° 07'02.8"E
29°19'1.69"N 79° 6'55.73"E	29°19'02.3"N 79° 07'01.2"E
29°18'50.60"N 79° 6'54.10"E	29°18'56.2"N 79° 07'01.0"E
29°18'45.55"N 79° 6'54.37"E	29°18'47.9"N 79° 07'10.1"E
29°18'40.49"N 79° 6'53.58"E	29°18'42.8"N 79° 07'06.9"E
29°18'35.76"N 79° 6'53.87"E	29°18'38.1"N 79° 07'05.3"E
29°18'30.92"N 79° 6'52.96"E	29°18'34.1"N 79° 07'03.7"E
29°18'26.12"N 79° 6'53.02"E	29°18'34.1"N 79° 07'03.7"E
29°18'21.61"N 79° 6'52.11"E	29°18'24.9"N 79° 07'03.7"E
29°18'17.70"N 79° 6'48.21"E	29°18'18.1"N 79° 07'02.6"E
29°18'13.00"N 79° 6'45.82"E	29°18'13.1"N 79° 07'05.3"E
29°18'8.46"N 79° 6'44.36"E	29°18'04.6"N 79° 07'02.8"E

29°16'23.0"N 79° 06'15.9"E	29°18'02.8"N 79° 07'02.1"E
29°16'24.9"N 79° 06'16.6"E	29°18'55.6"N 79° 06'58.4"E
29°16'27.9"N 79° 06'16.1"E	29°16'21.3"N 79° 06'28.0"E
29°16'31.5"N 79° 06'17.0"E	29°19'59.4"N 79° 07'31.9"E
29°16'34.6"N 79° 06'18.3"E	29°16'23.0"N 79° 06'30.3"E
29°16'38.3"N 79° 06'19.1"E	29°16'27.1"N 79° 06'31.1"E
29°16'41.9"N 79° 06'19.6"E	29°18'03.1"N 79° 06'51.8"E
29°16'45.6"N 79° 06'20.2"E	29°17'57.5"N 79° 06'52.4"E
29°16'49.5"N 79° 06'20.7"E	29°17'53.2"N 79° 06'49.5"E
29°16'52.8"N 79° 06'21.5"E	29°17'49.5"N 79° 06'52.6"E
29°16'58.0"N 79° 06'22.8"E	29°17'45.0"N 79° 06'50.7"E
29°17'02.2"N 79° 06'23.1"E	29°17'42.0"N 79° 06'49.4"E
29°17'04.7"N 79° 06'23.5"E	29°17'37.4"N 79° 06'47.2"E
29°17'09.6"N 79° 06'25.9"E	29°17'33.6"N 79° 06'47.8"E
29°17'15.0"N 79° 06'26.5"E	29°17'29.3"N 79° 06'45.5"E
29°17'18.3"N 79° 06'27.8"E	29°17'26.5"N 79° 06'45.6"E
29°17'21.4"N 79° 06'28.6"E	29°17'20.9"N 79° 06'45.2"E
29°17'25.3"N 79° 06'30.8"E	29°17'16.1"N 79° 06'43.4"E
29°17'29.2"N 79° 06'32.0"E	29°17'13.7"N 79° 06'42.0"E
29°17'33.1"N 79° 06'32.2"E	29°17'10.1"N 79° 06'40.1"E
29°17'36.8"N 79° 06'33.6"E	29°17'05.2"N 79° 06'38.7"E
29°17'40.7"N 79° 06'35.9"E	29°17'01.2"N 79° 06'38.6"E
29°17'41.4"N 79° 06'37.2"E	29°16'57.8"N 79° 06'37.9"E
29°17'49.3"N 79° 06'36.7"E	29°16'34.2"N 79° 06'37.5"E
29°17'52.6"N 79° 06'38.4"E	29°16'50.1"N 79° 06'35.3"E
29°17'56.8"N 79° 06'40.1"E	29°16'46.5"N 79° 06'33.3"E
29°18'0.04"N 79° 06'41.7"E	29°16'42.1"N 79° 06'33.0"E
29°18'04.7"N 79° 06'43.6"E	29°16'39.5"N 79° 06'31.9"E
	29°16'35.1"N 79° 06'32.2"E
	29°16'31.5"N 79° 06'31.1"E
	29°16'28.7"N 79° 06'30.3"E

अतः महोदय की सेवा में सूचना आवश्यक कार्यवाही हेतु सादर प्रेषित।

भवदीय

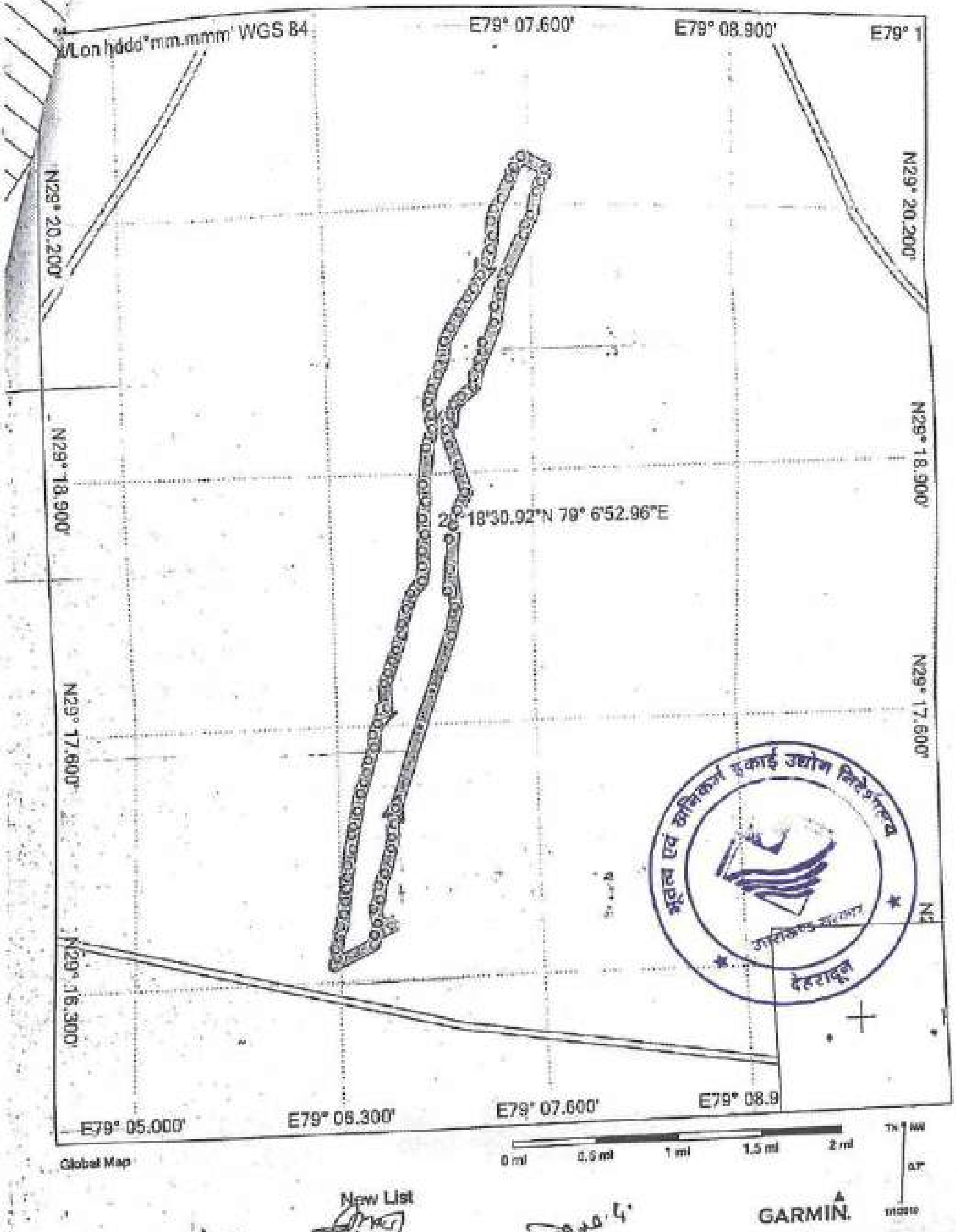
वन क्षेत्राधिकारी
रामनगर वन क्षेत्र
तराई पश्चिमी वन प्रभाग, रामनगर

पत्रांक / दिनांकित

प्रतिलिपि प्रभागीय प्रबंधक, उत्तराखण्ड वन विकास निगम, रामनगर को उपरोक्तानुसार सूचनार्थ एवं कार्यवाही हेतु प्रेषित।

वन क्षेत्राधिकारी
रामनगर वन क्षेत्र
तराई पश्चिमी वन प्रभाग, रामनगर

Annexure-4



वन क्षेत्राधिकारी
रामनगर रेन्ज
रामनगर नैनीताल

Scanned with CamScanner

कार्यालय अपर प्रमुख वन संरक्षक एवं नोडल अधिकारी, वन संरक्षण,
इन्दिरानगर फॉरेस्ट कालोनी, उत्तराखण्ड, देहरादून।

पत्रांक:- /1जी-2757 (नैनी0) दिनांक:देहरादून 09 अक्टूबर, 2012

सेवा में,

सहायक वन महानिरीक्षक,(एफ0सी0)
भारत सरकार ,पर्यावरण एवं वन मंत्रालय,
पर्यावरण भवन सी0जी0ओ0, काम्पलेक्स,
लोदी रोड, नई दिल्ली

2264
1-7(3)
12-10-12

विषय:-जनपद-नैनीताल के अन्तर्गत वन भूमि से बहने वाली कोसी नदी से उप-खनिजों के चुगान हेतु 254 है0 (संशोधित-91है0) वन भूमि में उत्तराखण्ड वन विकास निगम को आगामी वर्षों हेतु अनुमति दिये जाने के सम्बन्ध में।

सन्दर्भ:-भारत सरकार, पर्यावरण एवं वन मंत्रालय, नई दिल्ली की पत्र संख्या 8-61/1999 (पार्ट-1) एफ0सी0 दिनांक 8-4-2011 एवं पत्र दिनांक 18-4-2011,

महोदय,

उपरोक्त विषयक संदर्भित पत्रों द्वारा विवक्षित प्रकरण में भारत सरकार, पर्यावरण एवं वन मंत्रालय, नई दिल्ली की पत्र संख्या 8-61/1999 एफ0सी0 दिनांक 8-4-2011 एवं पत्र दिनांक 18-4-2011 के द्वारा निर्गत स्वीकृतियों में अधिरोपित शर्तों की अनुपालन आख्या वन संरक्षक, परिमण्डल, नैनीताल एवं प्रबन्ध निदेशक, उत्तराखण्ड वन विकास निगम, देहरादून द्वारा इस कार्यालय को उपलब्ध करायी गई है। भारत सरकार द्वारा लगाई गई शर्तों की अनुपालन आख्या निम्नानुसार संलग्न कर प्रेषित किया जा रहा है :-

शर्त संख्या-1 प्रभागीय वनाधिकारी, तराई पूर्वी वन प्रभाग, हल्द्वानी द्वारा अवगत कराया गया है कि वन भूमि के वैधानिक स्थिति में कोई परिवर्तन न करने सम्बन्धी शर्त का अनुपालन किया जायेगा। (संलग्नक-1 क्र0 सं0-i पर अंकित)

शर्त संख्या-2 व 3 के अनुपालन में प्रभागीय वनाधिकारी, तराई पूर्वी वन प्रभाग, हल्द्वानी द्वारा अवगत कराया गया है कि दुधवे वन क्षेत्र में क्षतिपूरक वृक्षारोपण हेतु दस वर्ष की विस्तृत क्षतिपूरक वृक्षारोपण योजना निर्धारित मानकों के अनुसार तैयार की गई है। क्षतिपूरक वृक्षारोपण की मद में वसूल की जा रही धनराशि से प्रस्तावित क्षेत्र में क्षतिपूरक वृक्षारोपण कार्य किया जायेगा। (संलग्नक-1 क्र0 सं0- ii व iii पर अंकित)

शर्त संख्या-4 व 5 के अनुपालन में एन0पी0ए0 की देयता के सम्बन्ध में माo उच्चतम न्यायालय के आदेश दिनांक 5-02-2009 के क्रम में निदेशक, उत्तराखण्ड वन विकास निगम द्वारा आवश्यक प्रमाण-पत्र प्रस्तुत किया गया है। (संलग्नक-2)

शर्त संख्या-6 के सम्बन्ध में सम्बन्धित प्रभागीय वनाधिकारी द्वारा अवगत कराया गया है कि [illegible] मदों यथा रिवर ट्रेनिंग/अभियांत्रिक कार्य, क्षतिपूरक वृक्षारोपण एवं सीमांकन, जलौनी लकड़ी से [illegible] की जा रही धनराशि को कैम्पा मद में जमा करने कि कार्यवाही की जा रही है। (संलग्नक-1 क्र0 सं0 [illegible] पर अंकित है)

शर्त संख्या-7 के अनुपालन में वन विकास निगम द्वारा भारत सरकार वन एवं पर्यावरण मंत्रालय द्वारा स्वीकृति प्राप्त की गई है। (संलग्नक-4)

शर्त संख्या-8 के अनुपालन में भारतीय वन्य जीव संस्थान, देहरादून की टीम द्वारा किये गये अध्ययन की रिपोर्ट संलग्न कर प्रेषित की जा रही है। (संलग्नक-5)

शर्त संख्या-9 के क्रम में अवगत कराना है कि नन्धौर एवं पायलगढ़ को वन्य जीव अभ्यारण्य अधिसूचित किये जाने का प्रस्ताव राज्य सरकार के स्तर पर विचाराधीन है व इस प्रस्ताव पर निर्णय होने में समय लगने की सम्भावना है। राज्य सरकार द्वारा इस बिन्दु पर लिये गये निर्णय के सम्बन्ध में भारत सरकार को पृथक से अवगत कराया जायेगा।

उत्तराखण्ड उद्योग निदेशालय
उत्तराखण्ड सरकार
देहरादून

शर्त संख्या–10 व 11 वन विकास निगम द्वारा अवगत कराया गया है कि निगम द्वारा नि... पालन किया जा रहा है। (संलग्नक–3 क0स0–x, xi)

शर्त संख्या–12 का अनुपालन किया जायेगा।

शर्त संख्या–13 राज्य सरकार द्वारा कम्पंसा फन्ड स्थापित करने हेतु उत्तराखण्ड शासन के शासन संख्या–177/X-3–12–8(14)/2009 दिनांक 30–05–2012 के द्वारा शासनादेश निर्गत किया गया (संलग्नक–6)

शर्त संख्या–14 प्रभागीय वनाधिकारी द्वारा अवगत कराया गया है कि मुख्य वन्य जीव प्रतिपा... उत्तराखण्ड की संस्तुति के अनुसार रामनगर से ग्राम मदनपुर कूर्मी तक उप खनिज क्षेत्रफल प्रतिबन्धित व... पर अनुमानित क्षेत्रफल 181 है0 में उप खनिज धुगान की कार्यवाही की जा रही है। इससे वास्तविक ह... 14.47 लाख घन मीटर पुनरीक्षित किया गया है। (संलग्नक–7)

शर्त संख्या–15 प्रभागीय वनाधिकारी द्वारा अवगत कराया गया है कि नदी के मध्य भाग में धुगान क... हेतु एवं नदी के दोनों किनारों में 25–25 प्रतिशत क्षेत्र को धुगान हेतु प्रतिबन्धित क्षेत्र घोषित किया गया... प्रतिबन्धित क्षेत्र को चिन्हित करने हेतु पीलरों द्वारा सीमांकन किया गया है। मुख्य वन्य जीव प्रतिपालक उत्तराखण्ड की संस्तुति के अनुसार रामनगर से ग्राम मदनपुर कूर्मी तक उप खनिज क्षेत्रफल प्रतिबन्धित कर... पर अनुमानित क्षेत्रफल 181 है0 में नदी के दोनों ओर 25 प्रतिशत भाग छोड़ने पर लगभग 91 है0 शुद्ध वन क्षे... में उप खनिज धुगान की कार्यवाही की जा रही है। (संलग्नक–1 क0स0–xv)

शर्त संख्या–16 वन विकास निगम द्वारा निर्देशों का पालन किया जा रहा है। (संलग्नक–क0स0–xvi)

शर्त संख्या–17 सम्बन्धित प्रभागीय वनाधिकारी द्वारा अवगत कराया गया है कि कौसी नदी से उप खनिज की निकासी नियत्रण हेतु 4 गेट स्थापित किये गये हैं, निर्धारित गेटों से ही निकासी की जा रही है (संलग्नक–1 क0स0–xvii)

शर्त संख्या–18 इस शर्त के सम्बन्ध में प्रभागीय वनाधिकारी द्वारा अनुरोध किया गया है कि आगामी स्वीकृति में उक्त नदियों से उप खनिजों के धुगान हेतु अवधि 1 अक्टूबर से 31 मई तक निर्धारित की जाय। (संलग्नक–1 क0स0–xviii)

शर्त संख्या–19 व 20 सम्बन्धित प्रभागीय वनाधिकारी द्वारा शर्तों के अनुपालन हेतु वन विकास निगम को निर्देशित किया गया है। (संलग्नक–1 क0स0–xix, xx)

शर्त संख्या–21 व 23 वन विकास निगम द्वारा अवगत कराया गया है कि उनके द्वारा भारत सरकार की शर्तों का पालन किया जा रहा है। (संलग्नक–3 क0स0–xxi,xxii व xxiii)

शर्त संख्या–24 भारत सरकार द्वारा दिये गये निर्देशों के क्रम में प्रभागीय वनाधिकारी द्वारा अवगत कराया गया है कि खनन हेतु चिन्हित क्षेत्र को सी0सी0 पीलर के माध्यम से चिन्हित किया गया है। स्थापित पीलरों की स्थिति हेतु अक्षांश व देशान्तर की रीडिंग जी0पी0एस0 से लेकर अभिलेख संधारित किये जा रहे हैं। (संलग्नक–1 क0स0–xxiv)

शर्त संख्या–25 प्रभागीय वनाधिकारी द्वारा अवगत कराया गया है कि मुख्य वन्य जीव प्रतिपालक, उत्तराखण्ड की संस्तुति के अनुसार रामनगर से ग्राम मदनपुर कूर्मी तक उप खनिज क्षेत्रफल प्रतिबन्धित करने पर अनुमानित क्षेत्रफल 181 है0 में नदी के दोनों ओर 25 प्रतिशत भाग छोड़ने पर लगभग 91 है0 शुद्ध वन क्षेत्र में उप खनिज धुगान की कार्यवाही की जा रही है। (संलग्नक–1 क0स0–xv)

शर्त संख्या–26 प्रभागीय वनाधिकारी द्वारा अवगत कराया गया है कि निर्धारित क्षेत्रों से उप खनिजों का समस्त कार्य ही किया जा रहा है। उल्लिखित वन भूमि का अन्य उपयोग भारत सरकार, पर्यावरण एवं वन मन्त्रालय के बिना नहीं किया जायेगा।(संलग्नक–1 क0स0–xxv)

शर्त संख्या–27 प्रभागीय वनाधिकारी द्वारा अवगत कराया गया है कि उपरोक्त क्षेत्र में कोई भी अनुसूचित जन-जाति एवं परम्परागत वनवासी निवास नहीं कर रहें है एवं इस सबंध में कोई दावा भी Recognition of forest Rights Act, 2006 के अन्तर्गत वन विभाग के समक्ष अब तक प्रस्तुत नहीं किया गया है।(संलग्नक–1,क्रमांक– xxvi पर अंकित)

शर्त संख्या–28 प्रभागीय वनाधिकारी द्वारा अवगत कराया गया है कि अन्य शर्तें निर्धारित होने पर आवश्यक कार्यवाही की जायेगी। (संलग्नक–1 क्रमांक– xxvii पर अंकित)

शर्त संख्या–29 सम्बन्धित प्रभागीय वनाधिकारी द्वारा अवगत कराया गया है कि समस्त निर्धारित शर्तें एवं दिशा–निर्देश का पालन किया जा रहा है व इस सम्बन्ध में वन विकास निगम को भी निर्देशित किया गया है। (संलग्नक–1 क्रमांक– xxviii पर अंकित)

अतः अनुरोध है कि विषयांकित प्रकरण की महत्ता एवं सामयिकता को दृष्टिगत रखते हुए प्रकरण पर वन (संरक्षण) अधिनियम, 1980 के अन्तर्गत शेष अवधि के लिये उक्त नदी से उप खनिज चुगान की स्वीकृति राज्य सरकार को प्रदान किये जाने पर विचार करने का कष्ट करें।

संलग्न–यथोपरि।

भवदीय,

(राजेन्द्र कुमार)
अपर प्रमुख वन संरक्षक एवं नोडल अधिकारी

संख्या– 877 /1जी–2757 (नैनी0) दिनांकित।

प्रतिलिपि निम्नलिखित को को सूचनार्थ एवं आवश्यक कार्यवाही हेतु, प्रेषित :–

1. प्रमुख वन संरक्षक, उत्तराखण्ड, देहरादून।
2. प्रमुख वन संरक्षक, वन्य जीव, उत्तराखण्ड।
3. प्रबन्ध निदेशक, उत्तराखण्ड वन विकास निगम, देहरादून।
4. वन संरक्षक, पश्चिमी वृत्त, उत्तराखण्ड, नैनीताल।
5. प्रभागीय वनाधिकारी, तराई पश्चिमी वन प्रभाग, रामनगर।

(राजेन्द्र कुमार)
अपर प्रमुख वन संरक्षक एवं नोडल अधिकारी

Annexure-5

REPORT

ON

Assessment of extractable river bed material from river Kosi for the year 2020-21

FOR

Uttarakhand Forest Developmet Corporation (UKFDC), Ramnagar, Nainital (Uttarakhand)

BY

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(December, 2020)

Executive Summary

A study on consultancy basis was undertaken by ICAR-IISWC (formerly CSWCRTI), Dehradun during 2020 entitled "Assessment of extractable river bed material from river Kosi for the year 2020-21" for the UKFDC, Ramnagar, Nainital (Uttarakhand). The study area was river Kosi downstream to the barrage on Ramnagar – Haldwani highway at Ramnagar under jurisdiction of RM, UKFDC covering a length of 07 km. The area was critically examined for the entire length and the cross-sections were taken at the locations mentioned in the Fig. 2.

Based on the survey conducted and volume calculation for permissible extraction of deposited RBM is worked out **455628.94 cum**. It is also suggested that for estimation of RBM in the following year, a reassessment study will be required to be conducted during the post monsoon period.

It is recommended to confine the extraction of RBM from middle half of the river width in order to channelize the flow and for protecting the adjoining land from flood damages. The various depths of cut at different distance from the bank of the river have been mentioned in Table 3, which is strictly required to be followed for safe passage of river flow.

Hence, it is strongly recommended that extraction of RBM should be undertaken in a scientific and regulated manner by marking the extraction boundaries in order to improve the safe passage of flow and to protect the river ecosystem.

On request from UKFDC, Ramnagar, Nainital consultancy project was undertaken by IISWC, Dehradun to conduct a study on river Kosi with following objectives.

Objectives

1. Study the morphological profile (Cross section) of river Kosi for defined river reach.
2. Estimation of river bed material removal to improve the river flow passage.

Assessment of extractable river bed material from river Kosi for the year 2020-21

Introduction

The Mountain Rivers of Himalayas bring down huge quantity of sediment material (sand, bajri, gravel and stones) from hilly catchments while flowing with high velocity on steep slopes. The river bed material (RBM) rolls over the surface and gets deposited while coming to the foothills with mild slopes due to reduction in flow velocity.

The RBM deposited on the river bed in the form of mounds/islands causes braiding of flow (i.e. flow through several small streams instead of confined one) and meandering of the river course. This process continues and the river encroaches on adjoining lands thus increasing the total width of the river, though the required width for actual flow is much less. Further, the encroachment of river along the banks damages valuable property, agricultural lands and forests during the monsoon period.

The extraction/removal of this erratic deposited material, therefore, needs to be done periodically from the river bed in order to channelize the flow and consequently prevent bank erosion and flood damages along the banks.

River Kosi

The river Kosi originates from the hills of Kausani and Binsar in Almora district of Uttarakhand and flows down in the foothills near Ramnagar, district Nainital in the area under jurisdiction of Uttrakhand Forest Development Corporation, Ramnagar, Uttarakhand. The river carries sediment/river bed material (RBM) consisting of sand, bajri, gravel and stones during every monsoon season.

The monthly discharges from the barrage are decreasing over the years resulting into reduction in quantity of RBM. Monthly discharges, as provided, from the barrage is presented Table :1

The Study Area

The study area is located at Ramnagar, district, Nainital (Uttarakhand) (Fig.1). It is situated at about 07 Km downstream of Kosi barrage in river Kosi, under jurisdiction of UKFDC near Ramnagar and extends up to a river length of 07 km (Fig. 2).

Methodology

A team from ICAR-IISWC, Dehradun consisting of Dr. P.R. Ojasvi, Director ICAR IISWC, Er. S.S. Shrimali, Sr. Scientist, , Scientist, Er. S.K. Sharma, ACTO, Sh. H.S. Bhatia, Technical Officer, Er. Amit Chauhan, Senior Technical Officer, the detailed data analysis. The project site near Ramnagar was visited during December, 2020 to conduct a detailed survey of the study area. The officials of UKFDC accompanied the team during the survey.

The study was divided into different segments having different length to get the cross-sections for estimation of RBM. . Depth of fresh sediment brought by the river was determined by its distinguishable attributes such as; color, density and packing of the sediment. It is recommended that 25 per cent of the river bed width along each bank of river would be left untouched for extraction in order to protect the land adjoining the banks. Therefore, volume of extractable sediment within the middle 50 per cent of river width was worked out based on the average width of the segment and deposited sediment depth between pre and post monsoon surveys.

Analysis, Results and Discussion

1. The cross-section of river Kosi at different locations is shown in Fig.3. It is seen from the cross-sections that the sediment deposits occurring in the middle portion of the river (shown by hatched portion between $R_1 - L_1$) may be removed for the safe passage of flow in the middle of the stream.
2. The quantity of scientifically extractable RBM in different segments of the study area is shown in Table-2. The extractable quantity has been worked out as **455628.94** cum.
3. The deposition of RBM has raised the river bed and its haphazard deposition has resulted in overtopping of flow during the monsoon season and consequently scouring of the banks and flooding of the adjoining lands. Bank erosion was also seen at several places.

4. The recommended depths in respect of different locations as mentioned in Table 3 should be strictly monitored during extraction of RBM.
5. Suitable river training measures need to be taken for prevention of bank erosion and protection of adjoining lands from flood damages.
6. Other environmental concerns may be addressed in consultation with relevant state Agencies.

Recommendations

1. The estimated quantity of extractable RBM from allowable river bed area is **455628.94** cum.
2. The RBM deposited in the form of mounds/islands should be extracted (shown by hatched portion in Fig. 2) for maintaining a proper river course in order to channelize the river flow.
3. The extraction of RBM should be done from the middle 50% portion of the river width, leaving 25 per cent width on either side; up to the depth of sediment deposition i.e. recommended depths as shown in the Table 3.
4. Permanent RCC pillars should be established at every km length to mark the allowable area for extraction of RBM. They would be total of 4 in numbers across each cross-section, 2 along the banks and 2 indicating the middle 50 per cent portion of the river i.e. extraction zone. They should be marked as 1/1, 1/2, 1/3, 1/4; 2/1, 2/2, 2/3, 2/4.....for easy identification.
5. Extraction should be carried out in such a way that ultimately a safe and smooth river course is maintained. Towards this goal, maximum depth of cut should be in the middle of the river course and it should be nil at the boundary of middle half of the river (Fig.4 a&b). Following this approach, the river would take a parabolic shape in the long run, which is an ideal cross-section for the river flow.
6. Suitable river training measures need to be taken wherever required for prevention of bank erosion and protecting the adjoining lands from flood damages.

Acknowledgements

The project team is grateful to Director, IISWC, Dehradun for approving this project and providing necessary support and facilities.

The team is thankful to, Regional Manager UKFDC, for sponsoring this project and providing all help and facilities for timely completion of this study. The logistics and field assistance provided by the officers and staff of Uttarakhand Forest Corporation is thankfully acknowledged.

The help rendered by the Division of Hydrology & Engineering officers and staff on preparation of the project report is duly acknowledged.

(S S Shrimali)
Project Leader
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Dehradun (Uttarakhand)

Table 1 : Discharge at Kosi Barrage, Ramnagar from 2007-2016 (in cusec)

Years	Months											
	January	February	March	April	May	June	July	August	September	October	November	December
2007	4026	11382	26952	8806	5832	12327	48799	144767	122988	60056	17044	9880
2008	8987	5115	4248	4404	3536	20156	97340	115373	81092	28081	12038	9048
2009	6268	6536	4394	4321	3777	3184	11686	48000	102418	41408	12871	9052
2010	5982	8616	4018	2515	2553	3619	65368	156172	322616	54232	17248	12336
2011	13687	8237	6238	5206	4413	15700	88664	258273	83590	25770	10828	8969
2012	9704	6665	5786	4027	3436	2025	28214	104032	70473	19841	8147	6508
2013	10172	26751	10625	5483	3238	74580	114256	102277	46006	22248	9400	6552
2014	9881	14139	21900	6117	5869	4628	127397	99751	45072	18652	7868	16289
2015	15441	7966	27549	19570	9136	16238	140220	89326	30606	16696	7617	6250
2016	5516	4236	5668	3378	4466	13607	91599	128777	41445	20448	7386	5295
2017	780	0	456	1707	47323	73152	86316	15295	-	-	-	-

Note: Discharge recorded at Kosi Barage, Ramnagar
Source: Assistant Engineer-I, Kosi Construction Division-II, Ramnagar (Nainital)

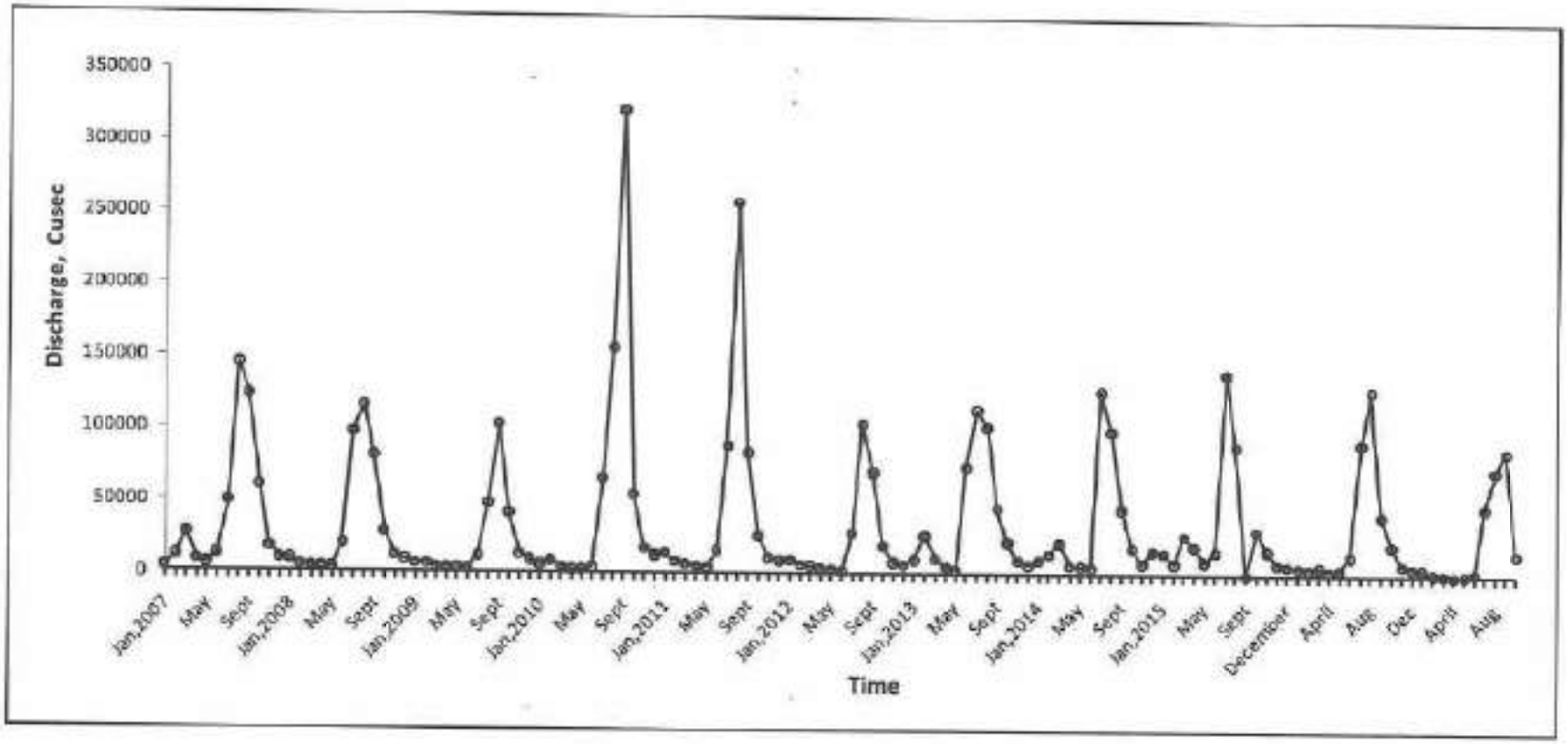


Fig.: Temporal variation of discharges after Barrage in River Kosi

Table 2: Estimation of the extractable RBM for the defined river reach of River Kosi

Volume of safely extractionable RBM from River Kosi

Location *	Length Segment(m)	Width of the river (m)	Extractionable width (m)	Average Depth of Extraction	Cross Section (m^2)	Average Cross section, (m^2)	Volume (m^3)	Cumulative Volume (m^3)
CS1	0.00	461.01	230.5	0.33	76.07	**0**	**0**	**0**
CS2	1682	407.47	156.95	0.45	70.63	73.35	123368.39	123368.39
CS3	1783	462.98	231.49	0.41	94.91	82.77	147577.48	270945.88
CS4	995	560.63	150.04	0.48	72.02	83.47	83047.72	353993.60
CS5	1755	505.92	168.47	0.33	55.60	63.81	111981.55	465975.15
CS6	1520	629.44	192.07	0.42	80.67	68.13	103561.02	569536.17
							Total Volume	569536.17
							Recommended volume of extraction (80% of total volume)	**455628.94**

Table 3: Distance and extraction depth across width

CS1	Distance	115.25	126.20	153.82	226.51	276.48	316.99	345.76				**230.50**
	Depth	0.21	0.16	0.03	0.18	0.53	0.72	0.48				**0.33**
CS2	Distance	148.65	172.90	193.01	203.74	214.55	239.31	261.20	289.54	305.60		**156.95**
	Depth	0.00	0.10	0.21	0.55	0.90	1.00	0.70	0.40	0.21		**0.45**
CS3	Distance	115.74	132.84	150.02	174.56	207.40	230.93	266.13	300.12	329.02	347.23	**231.49**
	Depth	0.33	0.38	0.52	0.35	0.03	0.90	0.30	1.13	0.07	0.06	**0.41**
CS4	Distance	130.27	140.16	159.80	190.65	233.71	263.47	280.32				**150.04**
	Depth	0.28	0.84	0.40	0.44	0.78	0.61	0.00				**0.48**
CS5	Distance	210.97	219.66	248.32	252.96	275.32	317.54	347.38	379.44			**168.47**
	Depth	0.00	0.37	0.31	0.36	0.61	0.80	0.05	0.13			**0.33**
CS6	Distance	280.01	299.87	314.72	379.33	409.54	457.46	472.08	192.07			**192.07**
	Depth	0.00	0.22	0.45	1.06	0.48	0.45	0.30	0.42			**0.42**

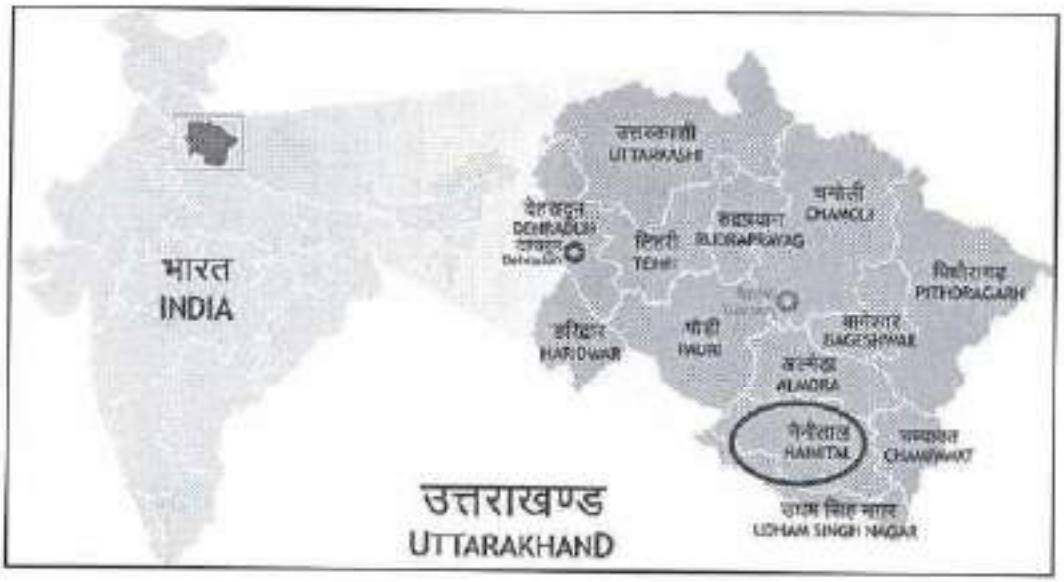


Fig.1: Location of the study area

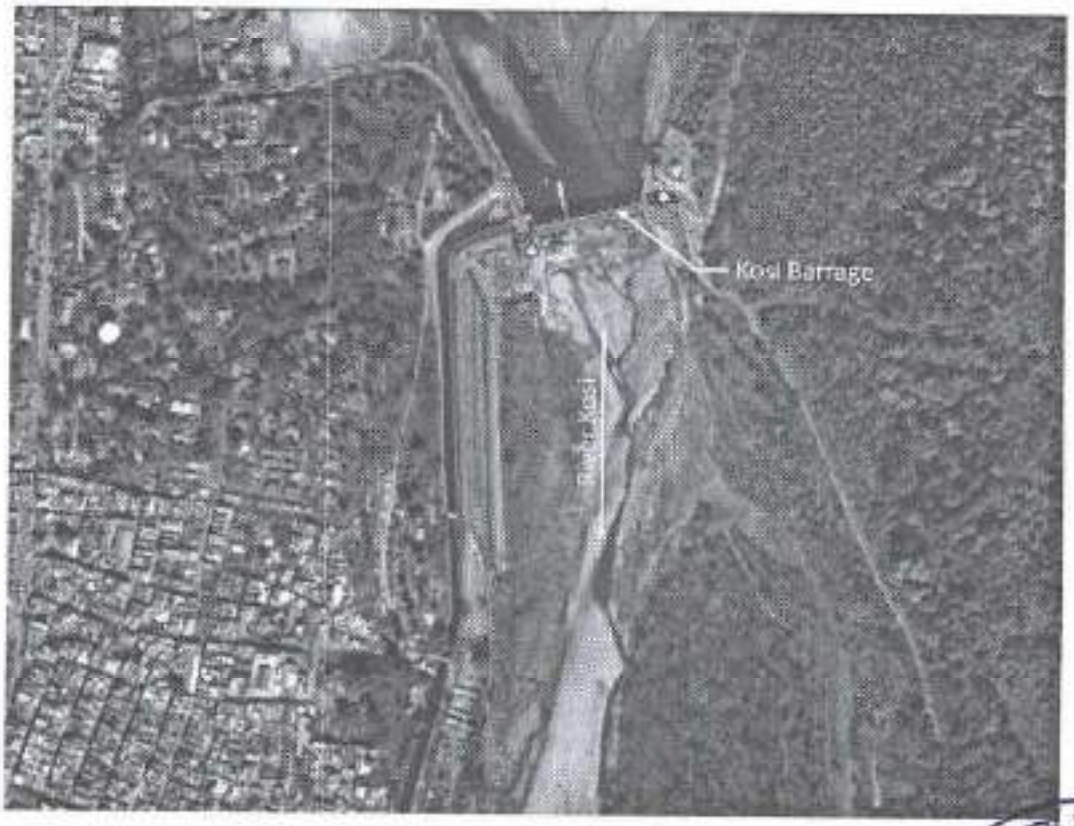
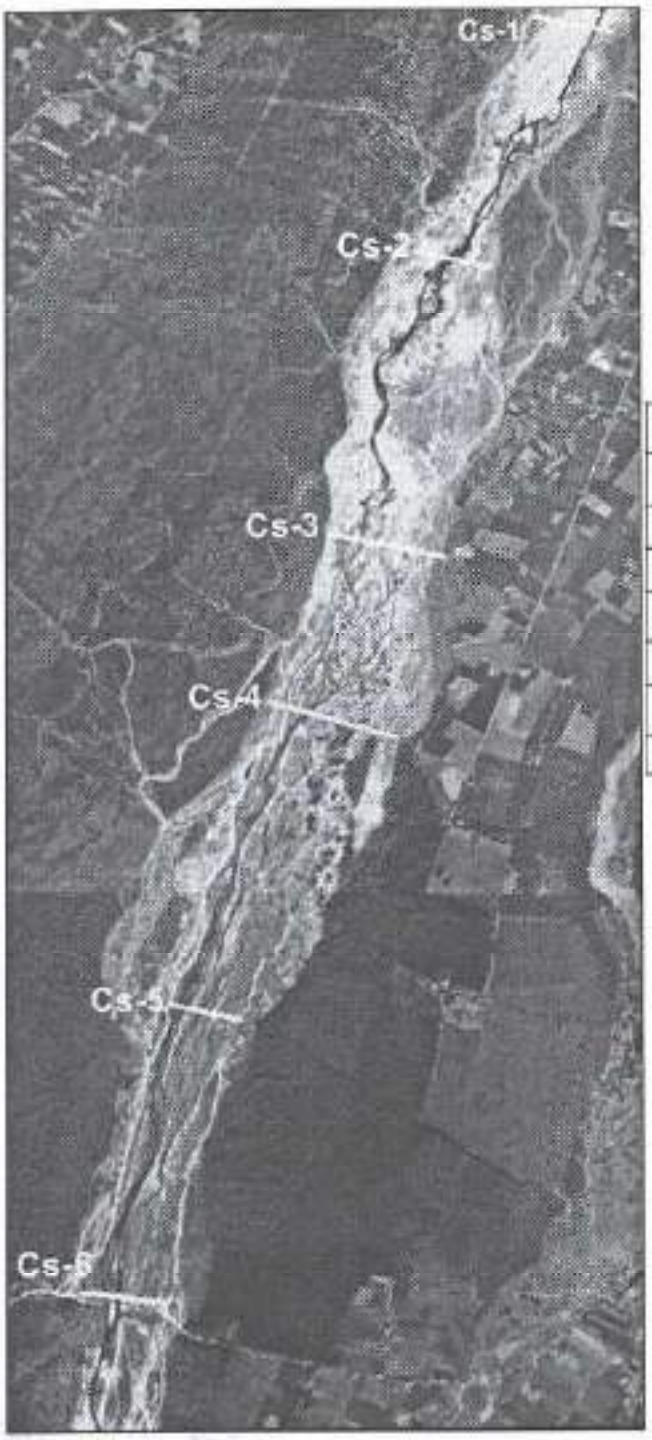
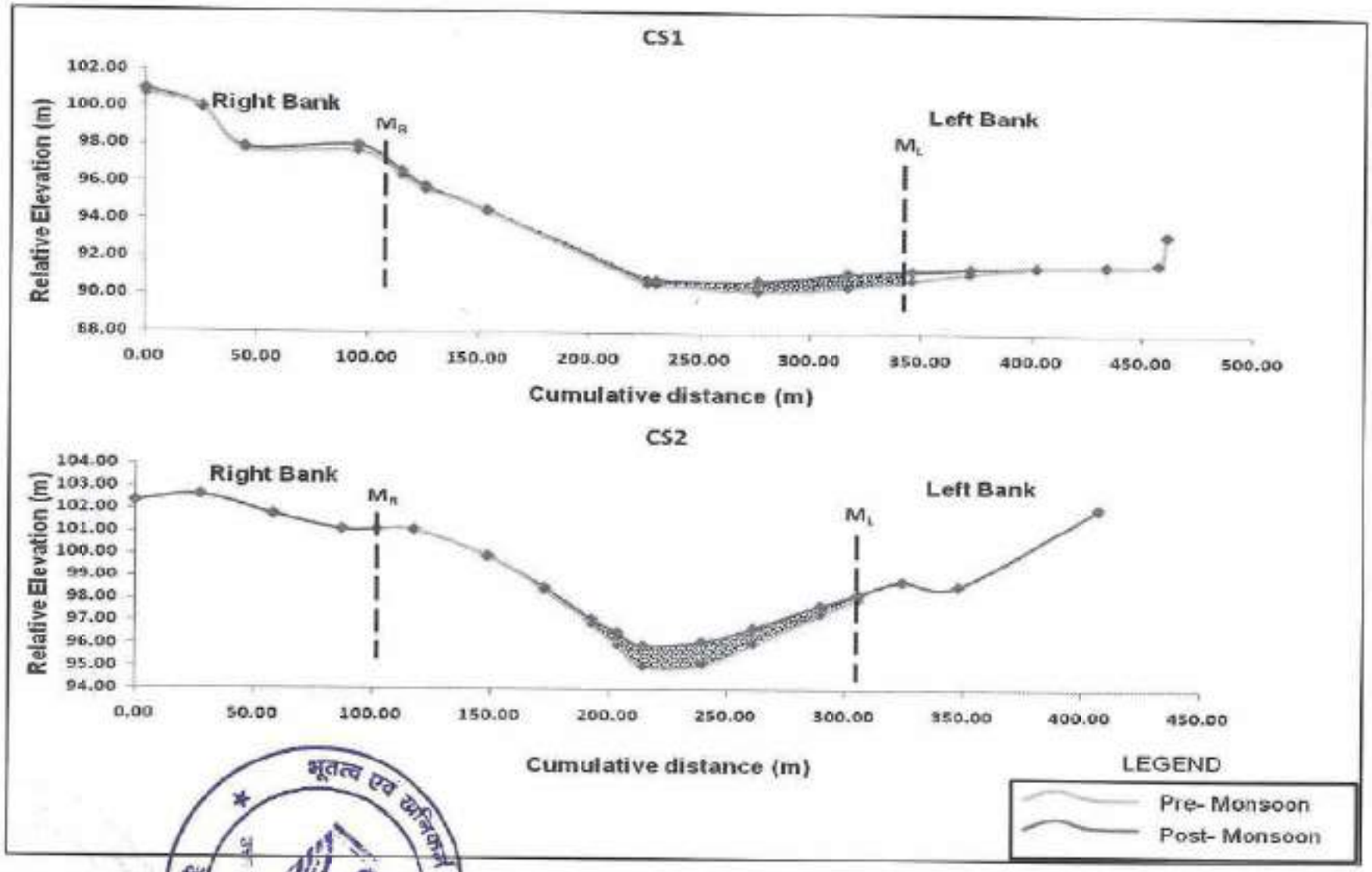


Fig. 1: Study Area



No. C S	Coordinates	
	Latitude	Longitude
CS1	29°20'28.82"N	79° 7'29.99"E
CS2	29°19'38.61"N	79° 7'11.86"E
CS3	29°18'41.89"N	79° 6'54.34"E
CS4	29°18'8.37"N	79° 6'45.29"E
CS5	29°17'13.78"N	79° 6'28.57"E
CS6	29°16'23.73"N	79° 6'16.67"E

Fig. 2: Location of various cross sections along the river reaches


CS1
Relative Elevation (m)
102.00
100.00
98.00
96.00
94.00
92.00
90.00
88.00
Right Bank
M_R
Left Bank
M_L
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
500.00
Cumulative distance (m)
CS2
Relative Elevation (m)
104.00
103.00
102.00
101.00
100.00
99.00
98.00
97.00
96.00
95.00
94.00
Right Bank
M_R
Left Bank
M_L
0.00
50.00
100.00
150.00
200.00
250.00
300.00
350.00
400.00
450.00
Cumulative distance (m)
LEGEND
Pre- Monsoon
Post- Monsoon

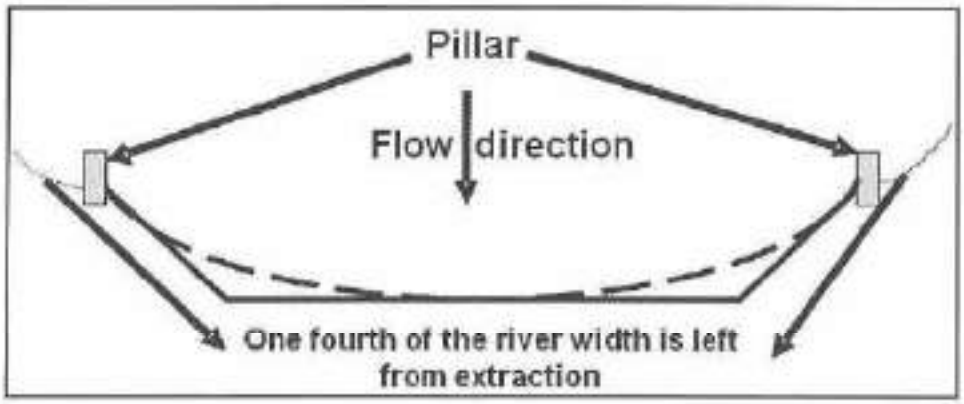


Fig. 4 (a): Procedure of extraction of river bed material

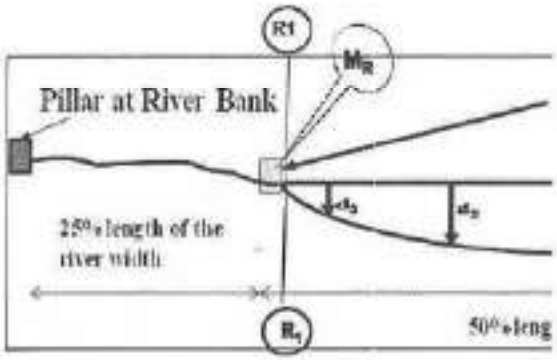


Fig. 4 (b): Anticipated shape of the river after proper extraction of river bed material

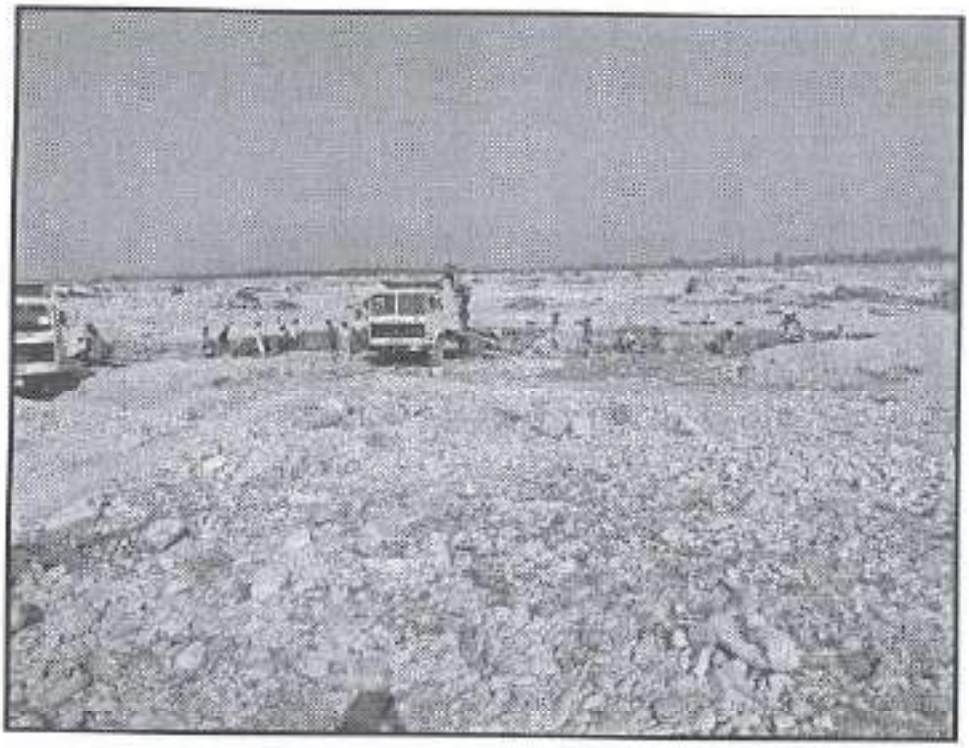


Photo Deposition of RBM in surveyed reach of river Kosi

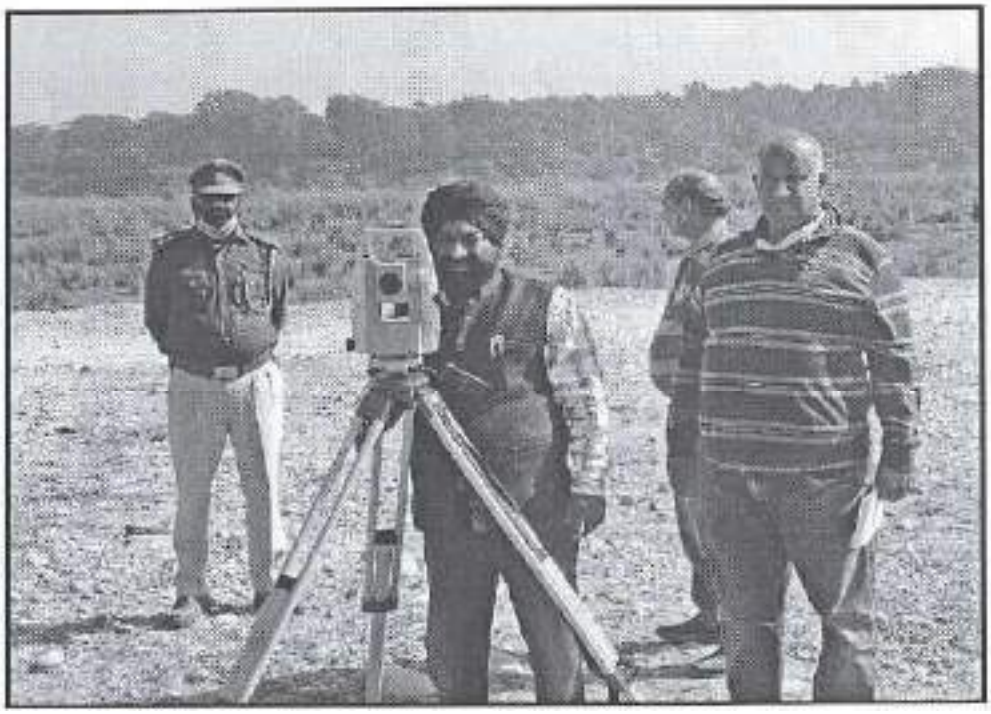


Photo: Survey of RBM estimation

Photo : Extraction of deopsited RBM

Photo: Constituents of RBM

Annexure – 6

No. J-11015/360/2009-IA.II(M)
Government of India
Ministry of Environment and Forests
IA Division

Paryavaran Bhawan
CGO Complex, Lodhi Road,
New Delhi-110 003

Dated the 13th April, 2011

To

M/s Uttaranchal Forest Development Corporation,
Aranya Vikas Bhawan,
73, Nehru Road,
Dehradun-248 001
E-mail: uafdemd@yahoo.com
Vanvikas12@gmail.com

Subject: Collection of Reta, Bajri And Boulder (Minor Mineral) from the River Bed of Kosi River by M/s Uttaranchal Forest Development Corporation, located in Tarai West Forest Division, Ramnagar, District Nainital, Uttaralchand - environmental clearance regarding.

Sir,

This has reference to your letter No. U-2982/Environmental clearance dated 09.09.2010 and subsequent letters dated 15.11.2010 and 14.01.2011 on the subject mentioned above. The project was earlier prescribed Terms of Reference (TORs) by the Ministry of Environment and Forests on 15.02.2010 for undertaking detailed EIA study for the purpose of obtaining environmental clearance. The proposal is for extraction of 36.54lakh tonnes per annum (LTPA) of reta, bajri and boulder (minor mineral) from the river bed of Kosi River in District Nainital, Uttarakhand.

2. The total mine lease area of the project is 254ha, which is a forestland falling under the Tarai West Forest Division, Ramnagar in Nainital District. It was stated by the proponent that although the lease has been granted to them in perpetuity, however, since the forestry clearance is for a period of 10 years, the environmental clearance may also be granted for a maximum period of 10 years to make it co-terminus with the forestry clearance. The total length of Kosi River under Tarai West Forest Division being proposed under the project is approximately 11km. Out of the total allotted area of 254ha, the minor mineral collection will be carried out from 50% of the total area i.e. 127ha leaving 25% area on each side of the river bank. The area available for mining would therefore be 127ha along the centre of the river flow, which is devoid of any flora

3. The Jim Corbett National Park is reported to be located within buffer zone of the mine at a distance 6.2km NW from the mine lease boundary. The project area falls under the Shivalik Elephant Reserve. The Chief Wildlife Warden, Government of Uttarakhand vide letter No.1192/[illegible] dated 08.12.2010 accorded NOC for collection of minor mineral from the Kosi

..2/-

ver in an area of 254ha. An authenticated map has also been submitted. It as stated that the forest working plan, being implemented by State Forest Department include protection of wildlife and this would be duly taken care of while picking up of reta, bajri and sand. Ten Protected Forests namely the Upper Kosi PF, the Papri PF, the Jalaban PF, the Barua PF, the Gabua PF, the Jurka PF, the Belparao PF, the West Chandni PF, the East Chandni PF and the Kusughera PF are reported to be located in the buffer zone of the mine. In addition, five Reserve Forests namely the Kota RF, the Malani RF, the Ampukhera RF, the West Dechauri RF and the Sawaldeh RF are reported to be located in the buffer zone of the mine.

4. The mine working will be opencast by manual method without involving drilling and blasting. The mining is confined to extraction of sand, reta and bajri from the river bed. The reta and bajri will be collected by sieving of river bed material using hand tools like shovel, pan, sieve etc. Mining will be carried out only during the day time. Extraction of river bed material will be completely stopped during the monsoon season. The targetted production capacity of the mine is 36.54Lakh TPA (20.3Lakh m^3 per annum) of riverbed material. The river bed material will be replenished during the monsoon season every year. The mined out material will be transported to their respective uses locations via private agencies using their own transport. Computerized weigh bridges have been installed in order to check and monitor moment of material. The proposed mining area is reported to lies between $29^0$23'33.66" to $29^0$16'59.32" N Latitude and $79^0$08'04.01" to 79^0 06'33.24" E Longitude in topo sheet No. 53 O/3 and O/4. The elevation from the sea level of the proposed area is reported as 356m Mining will be carried out upto a depth of 1.5m.The quantity of mineral to be removed has been fixed based on replenishment rate.

5. The public hearing of the project was held on 16.08.2010 for lease area of 254ha from the Kosi River. The Principal Secretary, Government of Uttarakhand vide letter No.2536/VII-I/163-KHA/2009/10 dated 23.10.2010 informed that collection of minor mineral from the river bed does not require mine plan approval under Uttarakhand Minor Mineral Concession Rules 2001. The Ministry of Environment and Forests has accorded Stage-I approval under Forest (Conservation) Act, 1980 for diversion of 254ha forestland on 08.04.2011 for collection of stone, boulders and other minor minerals from the river bed of Kosi River in the District Nainital. The proponent has stated that there is no court case to the project or related activity.

The Ministry of Environment and Forests has examined the application in accordance with the EIA Notification, 2006 and hereby accords environmental clearance under the provisions thereof to the above mentioned Minor Mineral (reta, bajri and boulder) Mining Project of M/s Uttaranchal Forest Development Corporation for an annual collection of 36.54lakh tonnes of reta, bajri, boulder (minor minerals) from the Kosi River bed by the opencast manual method involving total mining lease area of 254ha, for a period of 10 years or till the forestry clearance, whichever is earlier subject to implementation of the following conditions and environmental safeguards.

23/-

A. Specific conditions

(i) The project proponent shall obtain Consent to Establish and Consent to Operate from the Uttarakhand Environment Protection & Pollution Control Board and effectively implement all the conditions stipulated therein.

(ii) The environmental clearance is subject to grant of forestry clearance.

(iii) The project proponent shall ensure that wherever deployment of labour attracts the Mines Act, the provision thereof shall be strictly followed.

(iv) Requisite prior clearance from the Standing Committee of the National Board for Wildlife shall be obtained due to location of the Jim Corbett National Park in the buffer zone of the mine and also location of the Shivalik Elephant Reserve within the core zone and buffer zone of the mine, before starting any activity relating to the project at site. All the conditions stipulated by the Standing Committee shall be effectively implemented in the project. It shall be noted that this clearance does not necessarily implies that wildlife clearance shall be granted to the project and that your proposal for wildlife clearance shall be considered by the competent authorities on its merit and decision taken. The investment made in the project, if any based on environmental clearance granted to the project, in anticipation of the clearance from wildlife clearance shall be entirely at the cost and risk of the project proponent and Ministry of Environment and Forests shall not be responsible in this regard in any manner.

(v) Environmental clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No. 460 of 2004, as may be applicable to this project.

(vi) Environmental clearance is subject to obtaining clearance under the Wildlife (Protection) Act, 1972 from the competent authority, as may be applicable to this project.

(vii) The project proponent shall prepare the plan of mining in conformity with the mine lease conditions and the Rules prescribed in this regard clearly showing the no work zone in the mine lease i.e. the distance from the bank of river to be left un-worked, distance from the bridges etc. It shall be ensured that no mining shall be carried out during the monsoon season.

(viii) The project proponent shall identify the degraded forest area within the mine lease in consultation with the State Forest Department and undertake plantation/afforestation work by planting the native species.

84/-

(ix) Effective safeguard measures, such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of particulate matter such as loading and unloading point and all transfer points. Extensive water sprinkling shall be carried out on haul roads. It should be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.

(x) The project proponent shall undertake adequate safeguard measures during extraction of river bed material and ensure that due to this activity the hydro-geological regime of the surrounding area shall not be affected. Regular monitoring of ground water level and quality shall be carried out around the mine lease area by establishing a network of existing wells and installing new piezometers during the mining operation. The periodic monitoring [(at least four times in a year- pre-monsoon (April-May), monsoon (August), post-monsoon (November) and winter (January); once in each season)] shall be carried out in consultation with the State Ground Water Board/Central Ground Water Authority and the data thus collected may be sent regularly to the Ministry of Environment and Forests and its Regional Office Lucknow, the Central Ground Water Authority and the Regional Director, Central Ground Water Board. If at any stage, it is observed that the groundwater table is getting depleted due to the mining activity, necessary corrective measures shall be carried out.

(xi) The project proponent shall obtain necessary prior permission of the competent authorities for drawl of requisite quantity of water (surface water and groundwater), if any, required for the project.

(xii) Appropriate mitigative measures shall be taken to prevent pollution of the river in consultation with the State Pollution Control Board. It shall be ensured that there is no leakage of oil and grease in the river from the vehicles used for transportation.

(xiii) Vehicular emissions shall be kept under control and regularly monitored. The mineral transportation shall be carried out through the covered trucks only and the vehicles carrying the mineral shall not be overloaded.

(xiv) No drilling and blasting operation shall be carried out.

(xv) Mineral handling area shall be provided with the adequate number of high efficiency dust extraction system. Loading and unloading areas including all the transfer points should also have efficient dust control arrangements. These should be properly maintained and operated.

(xvi) Periodical medical examination of the workers engaged in the project shall be carried out and records maintained. For the purpose, schedule of health examination of the workers should be drawn and followed accordingly.

/as/-

(xvii) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

(xviii) Digital processing of the entire lease area using remote sensing technique should be done regularly once in three years for monitoring the change of river course, if any and report submitted to the Ministry of Environment and Forests and its Regional Office located at Lucknow.

(xix) The project proponent shall take all precautionary measures during mining operation for conservation and protection of endangered fauna namely leopard, tiger, leopard cat, fishing cat, elephant etc. found in the study area. Action plan for conservation of flora and fauna shall be prepared in consultation with the State Forest and Wildlife Department. All the safeguard measures brought out in the Wildlife Conservation Plan so prepared specific to this project site shall be effectively implemented. Necessary allocation of funds for implementation of the conservation plan shall be made and the funds so allocated shall be included in the project cost. A copy of action plan shall be submitted to the Regional Office of the Ministry of Environment and Forests, Lucknow.

(xx) The critical parameters such as RSPM (Particulate matter with size less than 10micron i.e., PM_{10}) and NO_X in the ambient air within the impact zone shall be monitored periodically. Further, quality of discharged water shall also be monitored [(TDS, DO, PH, Fecal Coliform and Total Suspended Solids (TSS)]. The monitored data shall be uploaded on the website of the company as well as displayed on a display board at the project site at a suitable location near the main gate of the Company in public domain. The Circular No. J-20012/1/2006-IA.II(M) dated 27.05.2009 issued by Ministry of Environment and Forests, which is available on the website of the Ministry www.envfor.nic.in shall also be referred in this regard for its compliance.

(xxi) The project proponent shall get a siltation study carried out within one year through some Expert Agency like Central Water Commission to determine the siltation load in the river bed so that there is no over exploitation of river bed material at any point of time. The mineral to be removed shall be determined based on siltation load. A copy of siltation study so carried out shall be submitted to the Ministry of Environment and Forests and its Regional Office Lucknow.

B. General conditions

(i) No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.

(ii) No change in the calendar plan including excavation, quantum of mineral reta, bajri and boulder (minor mineral) and waste should be made.

Annexure- 7
kosi

कार्यालय, प्रभागीय वनाधिकारी, तराई पश्चिमी वन प्रभाग, रामनगर (नैनीताल)

Tel./Fax No- 05947-251475, e-mail: dfotw @ rediffmail.com

पत्रांक 1340 /9-1(3) दिनांक, रामनगर 29/6/2020

कोसी नदी उपखनिज चुगान कार्यादेश

चुगान सत्र (2020-21)

भारत सरकार, पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय ,नई दिल्ली के पत्रांक F. No. 8-61/1999--FC (pt-1) दिनांक 15-02-2013 तथा उत्तराखण्ड शासन औद्योगिक विकास अनुभाग देहरादून के शासनादेश संख्या 350/VII-1/22 ख-/2013 दिनांक 19-02-2013 से कोसी नदी में उपखनिज चुगान की अनुमति प्राप्त है। जिलाधिकारी नैनीताल ने पत्रांक 1519/30-जी0सी0/2020 दिनांक 16-10-2020 से जनपद नैनीताल की कोसी नदी में उपखनिज चुगान की अनुमति प्रदान की है। उक्त के आलोक में वन संरक्षण अधिनियम 1980 की धारा-2 के अन्तर्गत कोसी नदी आरक्षित वन क्षेत्र से उप खनिज चुगान की अनुमति निम्न वर्णित शर्तो के अधीन कार्यदायी संस्था उत्तराखण्ड वन विकास निगम को प्रदान की जाती है। निम्नलिखित शर्तो का अनुपालन उत्तराखण्ड वन विकास निगम को दी जाती है:-

1- कार्यादेश की निर्धारित अवधि दिनांक 31.05.2021 तक अथवा भारत सरकार पर्यावरण वन मंत्रालय द्वारा निर्धारित मात्रा जो भी सर्वप्रथम पूर्ण होगा, रहेगी।

2- उत्तराखण्ड वन विकास निगम कोसी नदी के उप खनिज विदोहन क्षेत्र की सीमा पंजिकाओं में हस्ताक्षर करने के उपरान्त ही कार्य प्रारम्भ कर सकेगा।

3- उप खनिज विदोहन कार्य करने से पूर्व प्रत्येक प्रवेश एवं निकासी गेट पर आवश्यक जॉच चौकी/कॉटे स्थापित करने होगें एवं उप खनिज चुगान उपरान्त एकत्रित तथा निकासी किये गये उप खनिज का आवश्यक अभिलेख रखना होगा।

4- आरक्षित वन क्षेत्र की वैधानिक स्थिति में कोई परिवर्तन नहीं होगा।

5- उपखनिज का विदोहन सीमा पिलर द्वारा सीमांकित क्षेत्र में ही किया जायेगा, सीमांकित क्षेत्र से बाहर चुगान होने पर कार्यदायी संस्था उत्तराखण्ड, वन विकास निगम, उत्तरदायी होगी।

6- उपखनिज चुगान कार्य सूर्योदय एवं सूर्यास्त के मध्य ही किया जायेगा।

7- उप खनिज चुगान कार्य में लगाये गये श्रमिकों द्वारा आरक्षित वन क्षेत्र में कैम्प नहीं किया जायेगा। अगर श्रमिकों द्वारा आरक्षित वन क्षेत्र में अस्थाई कैम्प किया जाता है तथा उसके चलते कोई दुर्घटना होती है उसकी सम्पूर्ण जिम्मेदारी कार्यदायी संस्था उत्तराखण्ड वन विकास निगम की होगी।

8- उप खनिज चुगान कार्य में केवल हाथ से प्रयुक्त उपकरणों का प्रयोग किया जायेगा एवं इस कार्य हेतु किसी भी स्थिति में विस्फोटक पदार्थ तथा स्वचालित मशीनों यथा जे0सी0बी0/पोकलैण्ड का उपयोग प्रतिबन्धित होगा।

9- बोल्डर तोड़ने का कार्य आरक्षित वन की सीमा से बाहर करना होगा।

10- आरक्षित वन क्षेत्र के अन्तर्गत उपखनिज चुगान क्षेत्र का उपयोग कार्यदायी संस्था द्वारा किसी अन्य प्रयोजन हेतु नहीं किया जायेगा।

11- उपखनिज चुगान कार्य से पूर्व नदी में प्रवेश करने वाले वाहनों की सूची तथा वाहन स्वामियों के नाम का विवरण अधोहस्ताक्षरी को उपलब्ध कराना होगा।

12- उत्तराखण्ड, वन विकास निगम द्वारा प्रत्येक धर्नकॉटे पर एवं निकासी चौकी के भीतर दो-दो सी0सी0टी0वी0 कैमरे स्थापित किये जाने होंगे।

13- निकासी गेटों पर 50 मीटर परिधि में उप खनिज निकासी करने वाले वाहन चालकों के अतिरिक्त बाहरी व्यक्तियों की उपस्थिति तथा वाहनों की उपस्थिति वर्जित होगी।

14- वन विभाग द्वारा स्थापित उपकरणों की सुरक्षा का दायित्व कार्यदायी संस्था उत्तराखण्ड वन विकास निगम को होगा।

15– नदी एवं उसके समीपवर्ती आरक्षित वनों का वन विभाग एवं वन निगम द्वारा प्रत्येक माह में 1 व 16 तारीख को संयुक्त निरीक्षण कर अवैध खनन के सम्बन्ध में रिपोर्ट तैयार की जायेगी। उत्तराखण्ड वन विकास निगम के संयुक्त निरीक्षण में उपस्थित न होने की स्थिति में एक तरफा पी०डी० जारी कर दी जायेगी।

16– प्रतिबन्धित क्षेत्र से उप खनिज विदोहन कार्य किसी भी स्थिति में नहीं किया जायेगा। उप खनिज विदोहन हेतु प्रतिबन्धित क्षेत्र निम्न प्रकार होगें–

1– नदी के दोनों किनारें से नदी की चौड़ाई का (1/4) चौथाई भाग।
2– टापुओं के चारों ओर 30 मीटर क्षेत्र।
3– मोटर मार्गो/रास्तों के दोनों ओर 50 मीटर तक का क्षेत्र ।
4– पुलों के दोनों ओर एक–एक कि०मी० तक का चिन्हित क्षेत्र।
5– नदी में गिरने वाले नाले का क्षेत्र।
6– प्राकृतिक पुनरोत्पादन वाले क्षेत्र।

17– शासन एवं वन विभाग द्वारा निर्धारित क्षतिपूरक वनीकरण, रिवर ट्रेनिंग, सीमाकंन, जलौनी तथा कार्पस फण्ड हेतु समस्त देयक वन विकास निगम द्वारा केता से वसूल कर वन विभाग के पक्ष में जमा किया जायेगा तथा प्रत्येक माह इसका लेखा–जोखा अधोहस्ताक्षरी को प्रस्तुत किया जायेगा।

18– भारत सरकार पर्यावरण एवं वन मंत्रालय द्वारा इन्वायरमेन्ट क्लियरेन्स में जो भी शर्त लगायी गयी है उसका पालन कार्यदायी संस्था उत्तराखण्ड वन विकास निगम को करना होगा। यदि इन्वायरमेन्ट क्लियरेन्स 31–05–2021 से पूर्व समाप्त हो जायेगा तो ऐसी स्थिति में चुगान/निकासी कार्य उक्त तिथि (जिस तिथि में इन्वायरमेन्ट क्लियरेन्स समाप्त हो जायेगा) तक ही की जाने की अनुमति प्रदान की जा रही है।

19– उप खनिज का चुगान नदी के मध्य भाग से शुरू करते हुए दोनों किनारों की ओर सीमांकित क्षेत्र में किया जायेगा एवं चुगान कार्य नदी के मध्य में 3.00 मी० से अधिक गहराई में नहीं किया जायेगा। अगर नदी के मध्य या किसी अन्य स्थान पर मानकों से अधिक गहराई में चुगान किया जाता है तो ऐसी स्थिति में कार्यदायी संस्था उत्तराखण्ड वन विकास निगम उत्तरदायी होगी।

20– उप खनिज विदोहन का समस्त लेखा–जोखा वन विकास निगम द्वारा संकलित कर रख–रखाव किया जायेगा, आवश्यकतानुसार वन विभाग को अभिलेख उपलब्ध कराया जायेगा।

21– उप खनिज चुगान से सम्बन्धित मा० उच्च न्यायालय द्वारा जारी विभिन्न आदेश, प्रमुख सचिव औद्योगिक विकास विभाग द्वारा जारी आदेश, वन विभाग, भारत सरकार पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय तथा भारत सरकार पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय के क्षेत्रीय कार्यालयों द्वारा समय समय पर जारी समस्त आदेश एवं निर्देशों का कड़ाई से पालन किया जायेगा।

22– यदि खनन सत्र में, उपरोक्त क्षेत्र जिसमें भारत सरकार द्वारा उपखनिज चुगान की अनुमति प्रदान की गयी है उसमें अवैध चुगान होता है यथा प्रतिबन्धित क्षेत्र में चुगान होता है अथवा मानको से अधिक गहराई में चुगान होता है या नियमानुसार चुगान नहीं होता है तो ऐसी स्थिति में प्रभाग द्वारा वन विकास निगम के विरूद्ध अवैध चुगान के सापेक्ष नियमानुसार पी०डी० जारी की जायेगी। यदि देय पी०डी० के सम्बन्ध में कोई विवाद उत्पन्न होता है तो ऐसी स्थिति में वन संरक्षक, पश्चिमी वृत्त उसके अपीलीय अधिकारी होंगे तथा उनके द्वारा लिया गया निर्णय दोनो पक्षों को सर्वथा मान्य होगा तथा बाध्यकारी होगा।

23– जिला खनन समिति द्वारा दिये गये समस्त निर्देशों का अनुपालन सुनिश्चित किया जाये।

24– कार्यदायी संस्था उत्तराखण्ड वन विकास निगम प्रत्येक दिन सांयकाल ई–मेल के माध्यम से यह सूचना इस कार्यालय को प्रेषित करेगा कि उक्त दिवस में कितनी मात्रा में उपखनिज का चुगान किया गया है तथा कितने वाहनों ने नदी में प्रवेश किया है।

25– नदी में चुगान हेतु जाने वाले वाहनों पर आर०एफ०आई०डी० चिप लगी होनी चाहिए तथा उत्तराखण्ड वन विकास निगम द्वारा प्रत्येक 15 दिन में आर०एफ०आई०डी० के डाटा के अनुसार नदी में प्रवेश किये हुये खनिज तथा वाहनों की ई–रवन्ना के माध्यम से हुई निकासी की सूची से मिलान किया जायेगा तथा उक्त सूची को इस कार्यालय को प्रेषित किया जायेगा एवं उसमें अगर कोई विसंगति हो तो उसे अधोहस्ताक्षरी के संज्ञान में लाया जायेगा।

26– यदि कार्यदायी संस्था उत्तराखण्ड वन विकास निगम द्वारा गौला कार्पस, क्षतिपूरक वनिकरण तथा रिवर ट्रेनिंग, सुरक्षा एवं सीमांकन मदो में एकत्रित की गयी धनराशि को वन विभाग को जमा किये जाने में विलम्ब किया जाता है तथा जिसके चलते उक्त धनराशि को कैम्पा मद में तथा गौला कार्पस मद में अथवा वन जमा में जमा करने में विलम्ब होता है तो ऐसी स्थिति में कार्यदायी संस्था से नियमानुसार ब्याज की वसूली भी की जा सकती है।

27– उत्तराखण्ड वन विकास निगम द्वारा चुगान निकासी गेट पर लगे कैमरों को ऑनलाईन करना होगा।

28– उत्तराखण्ड वन विकास निगम द्वारा चुगान निकासी गेट पर लगे वन विभाग कम्प्यूटर को निःशुल्क इन्टरनेट की सुविधा उपलब्ध करायी जायेगी।

29– कोविड–19 के दृष्टिगत उपखनिज चुगान कार्य को कोविड–19 की सभी गाईड लाईन्स के अनुरूप तथा सोशल डिस्टेन्सिंग एवं मास्क को अनिवार्य करते हुए चुगान कार्य सम्पन्न कराने की जिम्मेदारी कार्यदायी संस्था, उत्तराखण्ड वन विकास निगम की होगी।

30– अधोहस्ताक्षरी को यह अधिकार होगा कि वह समय–समय पर चुगान सत्र के दौरान कुछ अन्य आवश्यक निर्देश भी कार्यदायी संस्था को जारी कर सकते है, जिन्हें इस कार्यादेश का भाग माना जायेगा।

उत्तराखण्ड वन विकास निगम द्वारा उपखनिज से सम्बन्धित विभिन्न नियम/अधिनियम एवं दिशा–निर्देशों का कडाई से पालन सुनिश्चित किया जाय।

(हिमांशु बागरी)
प्रभागीय वनाधिकारी
तराई पश्चिमी वन प्रभाग, रामनगर

पत्रांक 1340 / दिनांकित
प्रतिलिपि निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषितः–

1. वन संरक्षक, पश्चिमी वृत्त, उत्तराखण्ड, हल्द्वानी।
2. जिलाधिकारी, नैनीताल।
3. क्षेत्रीय प्रबन्धक (पश्चिमी क्षेत्र) उत्तराखण्ड वन विकास निगम, रामनगर।
4. प्रभागीय प्रबन्धक, खनन, उत्तराखण्ड वन विकास निगम, रामनगर।
5. उप निदेशक, भूतत्व एवं खनिकर्म इकाई, हल्द्वानी।
6. उप प्रभागीय वनाधिकारी रामनगर ।
7. वन क्षेत्राधिकारी, रामनगर।

भूतत्व एवं खनिकर्म निदेशालय उत्तराखण्ड सरकार देहरादून

(हिमांशु बागरी)
प्रभागीय वनाधिकारी
तराई पश्चिमी वन प्रभाग, रामनगर

कार्यालय
प्रभागीय प्रबन्धक खनन
उत्तराखण्ड वन विकास निगम,
रामनगर
पत्र संख्या 161 /खनन-2020-21/दिनांक 07-11-2020
प्रतिलिपि :- समस्त अनुभाग अधिकारी कोसी अनुभाग को सूचनार्थ एवं इस निर्देश के साथ कि कार्यादेश में दी गई शर्तों का अनुपालन सुनिश्चित कराये, ध्यान रहे नदियों में अवैध खनन न होने पाये, अन्यथा की स्थिति में जिम्मेदारी नियत की जायेगी।

प्रभागीय प्रबन्धक खनन

Annexure-8

कार्यालय क्षेत्रीय प्रबन्धक (प0क्षे0) उत्तराखण्ड वन विकास निगम रामनगर।

AUTHORISATION LETTER

Date: 11/11/2020

M/s Uttarakhand Forest Development Corporation (UKFDC), Aamdanda Ramnagar, Distt. Nainital (Uttarakhand) has execute work order no. 3493/Mining Plan /Kosi & Dabka River dated 10/11/2020 with M/s KainGeotech, 3/1 Ekta Enclave, Near Hotel Sun Park Inn, GMS Road, Dehardun to preparation of mining plan in respect of Kosi River, over an area of 254 ha as per work order for minor mineral, falls under forest land at Kosi River, Tehsil-Ramnagar, Distt. – Nainital (Uttarakhand). UKFDC authorizes M/s KainGeotech representative Shri Harish Kainthola, RQP registration No. मु0खा0/05/खनन/RQP/2015-16 & Kailash Chandra RQP registration No.ROP/UKGMU/NO012/Year 2019 to prepare the mining plan of Kosi River.

UKFDC request the Director, Geology and Mining Unit, Directorate of Industry, Govt. of Uttarakhand, Dehradun to make further correspondence regarding modification and collection of the aforesaid Mining Plan with the said recognized person on his following address:

Correspondence address:
3/1 Ekta Enclave,
(Way to Seemadwar –ITBP)
Opp. Hotel Sun Park Inn,
GMS Road, Dehradun
Telephone: 08755182584,
E- mail: ksati84@gmail.com

(B.D HARBOLA)
Regional Manager (Western) Ramnagar
Uttarakhand Forest Development Corporation
(UKFDC),
Aamdanda Ramnagar, Distt. Nainital
(Uttarakhand)

KAINGEOTECH

(Engineering Geological - Geotechnical Solutions & Consultancy in Underground & Surface Excavation, Dams, Slope Stability, Remote Sensing-GIS, Site Identification, Feasibility Investigation, DPR, Mining Plan, Environment Clearance, Rock & Soil Testing, Hydrology Surveying)

Ref: KG (MP)UKFDC-L/0227-D.Dun20-21Kosi River **Date: 11/12/2020**

ACCEPTANCE

On the basis of MoU dated 10/12/2020 by M/s Uttarakhand Forest Development Corporation (UKFDC), Aamdanda Ramnagar, Distt. Nainital (Uttarakhand) has authorized me to prepare Mining Plan of minor mineral (Sand, *Bajri* and Boulder) in Kosi River, over an area of 181 ha., falls under forest land in Tehsil- Ramnagar, Distt. – Nainital (Uttarakhand).

The provisions of Uttarakhand Minor Mineral Concession Rules, 2001 and Uttarakhand minor mineral policy 2015 have been observed in the Mining Plan for Kosi River, Sand, *Bajri* and Boulder Mine, over an area of 181 ha. and wherever specific permission are required the applicant will approach the concerned authorities of Director, Geology and Mining Department, Dehradun.

Place: Dehradun

(Harish Kainthola)
Geologist, RQP (GMU-UK)
RQP/DDN/141/2002-A

Legend

- Lease Boundary
- Aproch Road

Road Coordinates

Pillar	Latitude	Longitude
ARP1	N 29°16'34.22"	E 79°05'01.23"
ARP2	N 29°17'55.70"	E 79°06'17.82"
ARP3	N 29°20'03.41"	E 79°07'04.81"

DGPS Coordinates

Pillar	Latitude	Longitude
W1	N 29°20'25.89"	E 79°07'33.57"
W10	N 29°19'51.74"	E 79°07'17.50"
W20	N 29°19'11.10"	E 79°06'56.99"
W30	N 29°18'17.70"	E 79°06'48.21"
W45	N 29°17'18.30"	E 79°06'27.80"
W60	N 29°16'28.00"	E 79°06'15.90"
E1	N 29°20'22.20"	E 79°07'42.60"
E10	N 29°19'48.9"	E 79°07'24.70"
E20	N 29°19'14.10"	E 79°07'06.10"
E30	N 29°18'18.10"	E 79°07'02.60"
E45	N 29°17'16.10"	E 79°6'43.40"
E60	N 39°16'21.30"	E 79°06'28.00"

Scale

0 0.35 0.7 1.4 2.1 2.8

Kilometers

Georeferenced Map of the Lease area

In Kosi River, Area 4.24 ha
Tarai Western Forest Division,
Tehsil-Ramnagar, Distt.- Nainital

M/s Uttarakhand Forest Development Corporation (UKFDC)

Prepared BY- HIMGEO
Consultancy Services

Annexure- II

8704

कोषागार-प्रपत्र सं0-209(A) (संशोधित)

वित्तीय नियम संग्रह खण्ड–5 भाग–2

प्रपत्र संख्या–43 ए (1)

(प्रस्तर 417 एवं 475 देखिए)

धनराशि जमा करने का चालान फार्म

उपकोषागार (नॉन बैंकिंग) बैंक का नाम व शाखा – भारतीय स्टेट बैंक ,रामनगर (नैनीताल)।

1. जिस व्यक्ति (पदनाम यदि आवश्यक हो) या संस्था के नाम से धनराशि जमा की जा रही है उसका नाम– प्रभागीय प्रबन्धक (खनन) उत्तराखण्ड वन विकास निगम,खनन प्रभाग–रामनगर।
2. पता– उत्तराखण्ड वन विकास निगम,खनन प्रभाग– रामनगर (नैनीताल) उत्तराखण्ड।
3. पंजीकरण संख्या/पक्ष का नाम वाद संख्या (यदि आवश्यक हो)
4. जमा की जा रही धनराशि का पूर्ण विवरण (धनराशि किस हेतु जमा की जा रही है। तथा किस विभाग के पक्ष में जमा की जा रही है) तराई पश्चिमी वन प्रभाग–रामनगर (नैनीताल) के आरक्षित वन क्षेत्र जनपद नैनीताल की कोसी नदी में उत्तराखण्ड वन विकास निगम द्वारा प्रस्तावित खनन कार्य के लिये खनन योजना आवेदन शुल्क का भुगतान।
5. चालान की सकल (Gross)राशि – रु 50,000/–
6. चालान की निवल (Net) राशि – रु 50,000/– 0853-अलौह खनन एवं धातु कर्मशोधन उत्तराखण्ड।
7. लेखा शीर्षक का पूर्ण विवरण/लेखा शीर्षक की मुहर 102-खनन रियायतों शुल्क किराया और रक्षव शुल्क उत्तराखण्ड 01-खनन रियायतों शुल्क किराया और रक्षव शुल्क उत्तराखण्ड
8. लेखा शीर्षक का 13 डिजिट कोड

मुख्य लेखा शीर्षक	उप मुख्य–शीर्षक	लघु शीर्षक	उप–शीर्षक	ब्यौरेवार– शीर्षक	धनराशि (अंकों में)
0853	00	102	01	00	50000.00
					50000.00

धन राशि (शब्दों में) – पचास हजार मात्र।

चालान में लेखा शीर्षक की पुष्टि करने वाले विभागीय अधिकारी के हस्ताक्षर मुहर सहित

26 FEB 2021

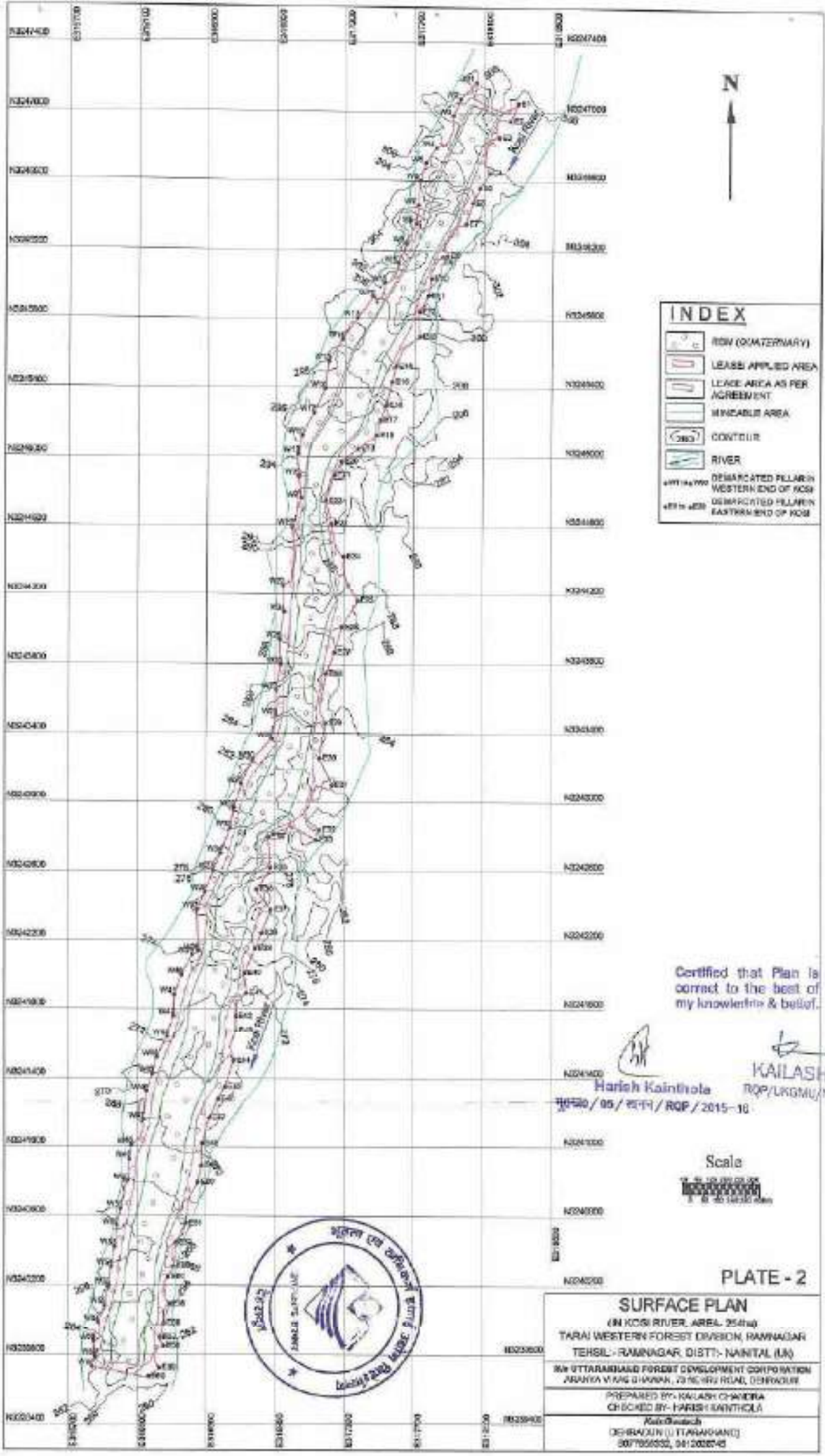
26 FEB 2021

भूतत्व एवं खनिकर्म इकाई उद्योग निदेशालय उत्तराखण्ड सरकार देहरादून

Divisional Manager
जमाकर्ता का नाम व हस्ताक्षर
Khanan Div. Ramnagar

Harish Kainthola
मु0खा0 / 05 / खनन / RQP / 2015–16

KAILASH CHANDRA
RQP/UKGMU/No.012/YEAR 2019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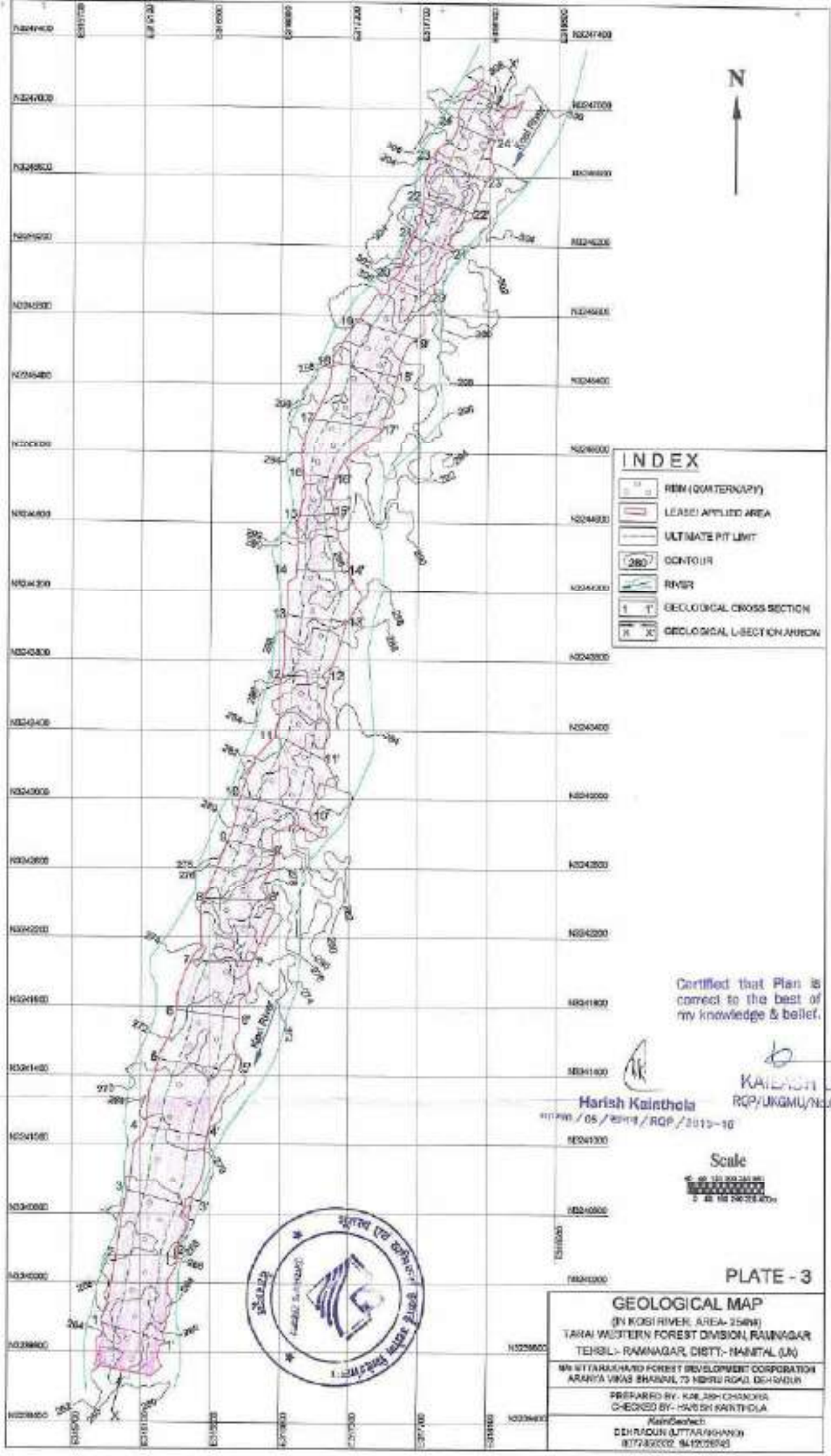
DEMARCATED PILLARS IN WESTERN END OF KOSI
DEMARCATED PILLARS IN EASTERN END OF KOSI
Kosi River
Certified that Plan is correct to the best of my knowledge & belief.
Harish Kainthola
KAILASH CHANDRA
RQP/UKSMU/No.012/YEAR 2015
Scale
PLATE - 2
SURFACE PLAN
(IN KOSI RIVER, AREA: 254ha)
TARAI WESTERN FOREST DIVISION, RAMNAGAR
TEHSIL:- RAMNAGAR, DISTT:- NAINITAL (UK)
M/s UTTARAKHAND FOREST DEVELOPMENT CORPORATION
ARANYA VIHAR DHARAK, 23 NEHRU ROAD, DEHRADUN
PREPARED BY:- KAILASH CHANDRA
CHECKED BY:- HARISH KAINTHOLA
DEHRADUN (UTTARAKHAND)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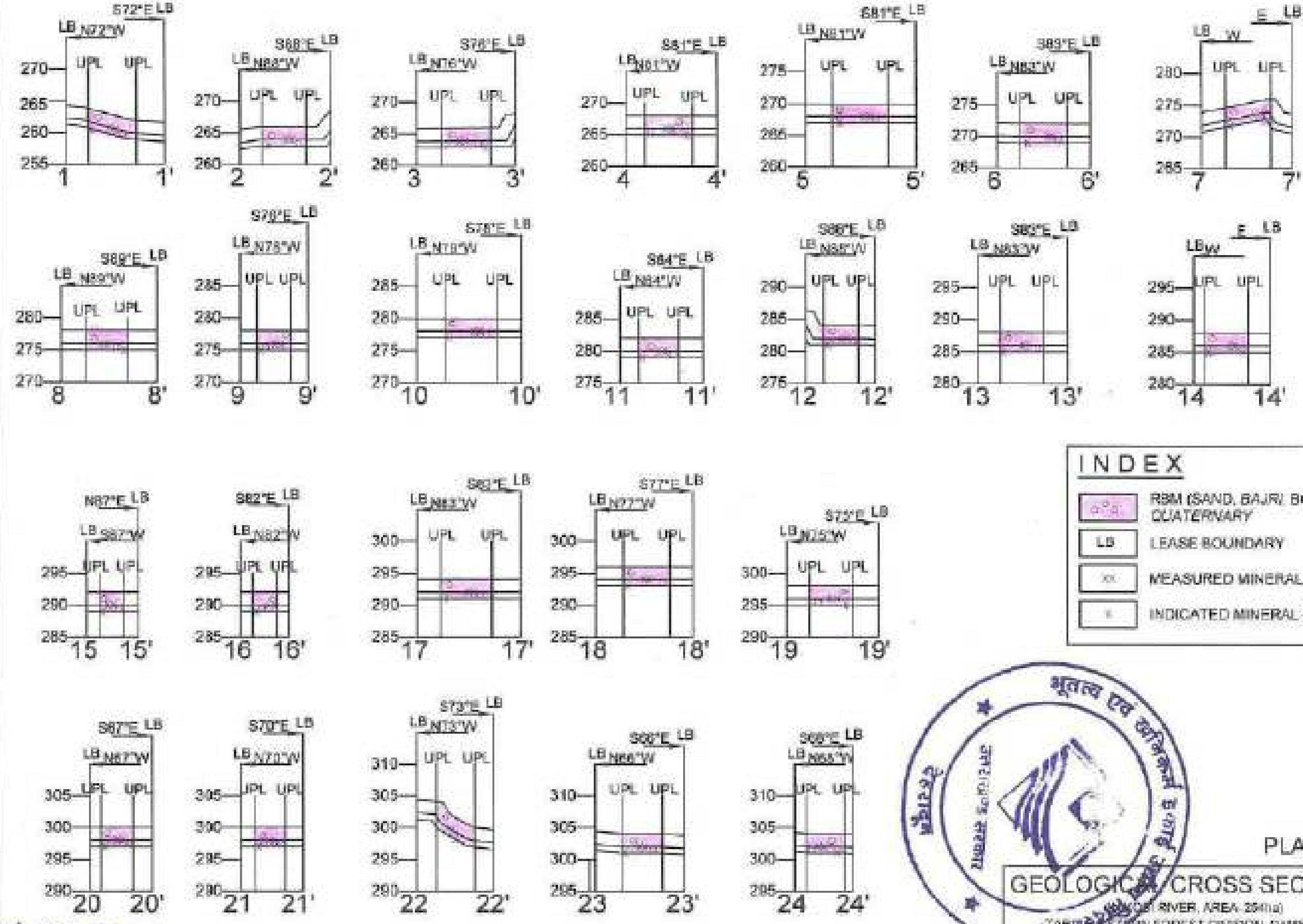
GEOLOGICAL L-SECTION ARROW
Kosi River
Certified that Plan is correct to the best of my knowledge & belief.
Harish Kainthola
KAILASH CHANDRA
RQP/UKGMU/No.012/YEAR 2019
Scale
PLATE - 3
GEOLOGICAL MAP
(IN KOSI RIVER AREA- 25HA)
TARAI WESTERN FOREST DIVISION, RAMNAGAR
TEHSIL:- RAMNAGAR, DISTT:- NAINITAL (UK)
M/s UTTARAKHAND FOREST DEVELOPMENT CORPORATION
ARANYA VIKAS BHAWAN, 73 NEHRU ROAD, DEHRADUN
PREPARED BY:- KAILASH CHANDRA
CHECKED BY:- HARISH KAINTHOLA
KainSeotech
DEHRADUN (UTTARAKHAND)



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Symbol	Description
(pink)	RBM (SAND, BAJRI, BOULDER) QUATERNARY
LB	LEASE BOUNDARY
xx	MEASURED MINERAL CONTACT
x	INDICATED MINERAL CONTACT

Scale

10 0 10 20 30 40 50m

PLATE - 4

GEOLOGICAL CROSS SECTIONS

KOSI RIVER, AREA: 294(ha)
TERN FOREST DIVISION, RAMNAGAR
TEHSIL- RAMNAGAR, DISTT.- NAINITAL (Uk)

M/s UTTARAKHAND FOREST DEVELOPMENT CORPORATION
ARANYA VIKAS BHAWAN, 73 NEHRU ROAD, DEHRADUN

PREPARED BY- KAILASH CHANDRA
CHECKED BY- HARISH KAINTHOLA

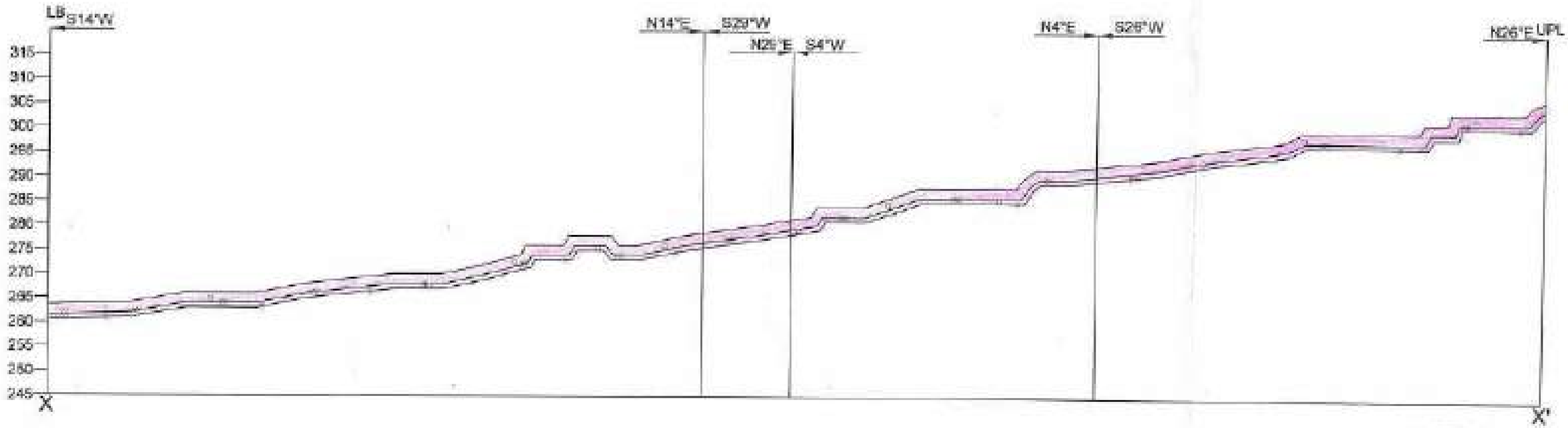
KainGeotech
DEHRADUN (UTTARAKHAND)
9077866332, 9412028745

भूतत्व एवं खनिकर्म इकाई उद्योग निदेशालय
उत्तराखण्ड सरकार
देहरादून

Certified that Plan is correct to the best of my knowledge & belief.

Harish Kainthola
मु०ख० / 05 / खनन / RQP / 2015–16

KAILASH CHANDRA
RQP/UKGMU/No.012/YEAR 2019



Certified that Plan is correct to the best of my knowledge & belief.

Harish Kainthola
भू०वि०/05/रा०प०/RQP/2015-16

KAILASH CHANDRA
RQP/UKGMU/No.012/YEAR 2019

Scale

10 0 10 20 30 40 50m

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RBM (SAND, BAJRI, BOULDER) QUATERNARY

LB LEASE BOUNDARY

MEASURED MINERAL CONTACT

INDICATED MINERAL CONTACT

PLATE - 5

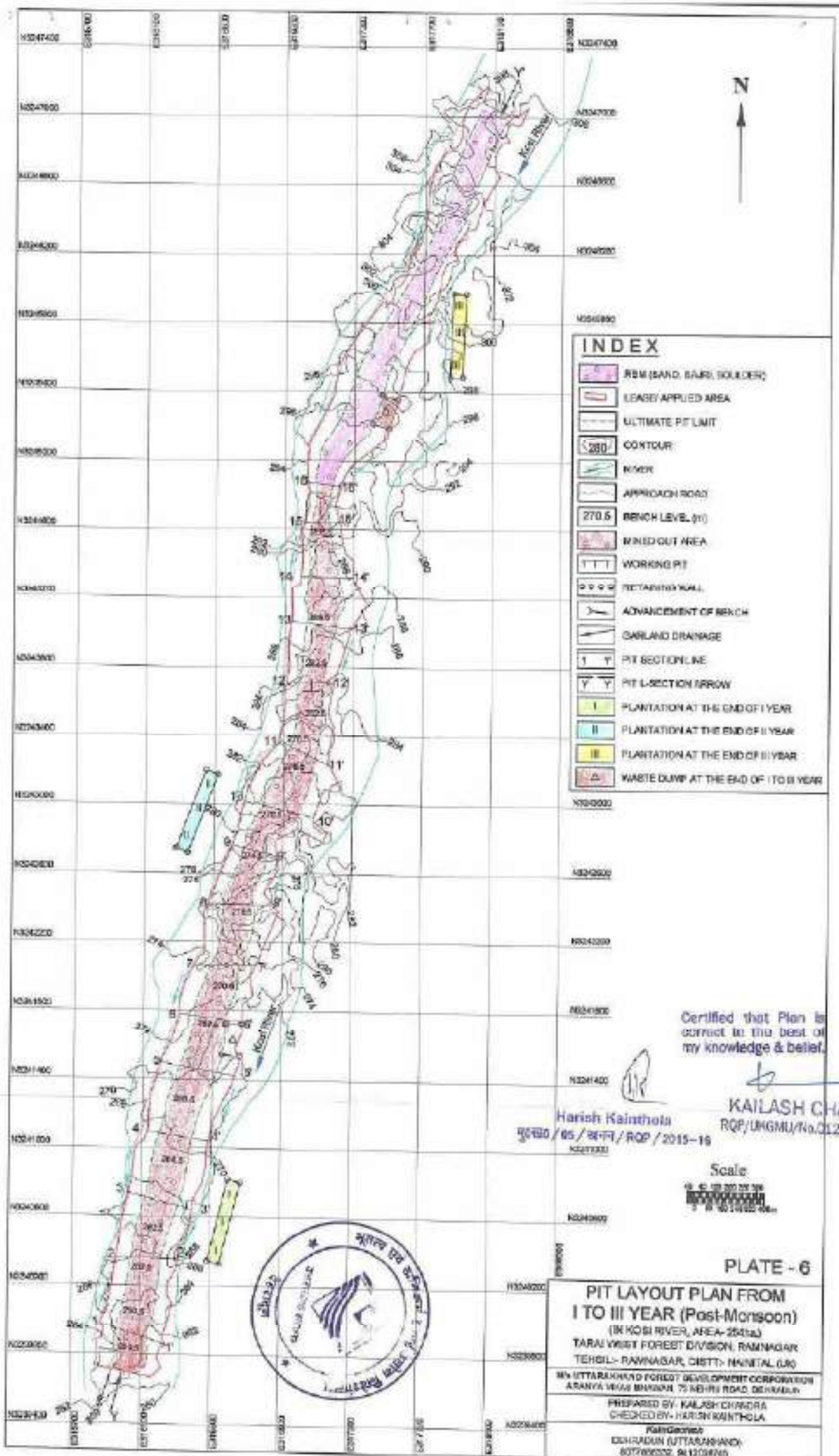
GEOLOGICAL L- SECTION

TEHSIL - RAMNAGAR, DIST. - NAINITAL (U)

M/s UTTARAKHAND FOREST DEVELOPMENT CORPORATION

PREPARED BY: KAILASH CHANDRA
CHECKED BY: HARISH KAINTHOLA

DEHRADUN (UTTARAKHAND)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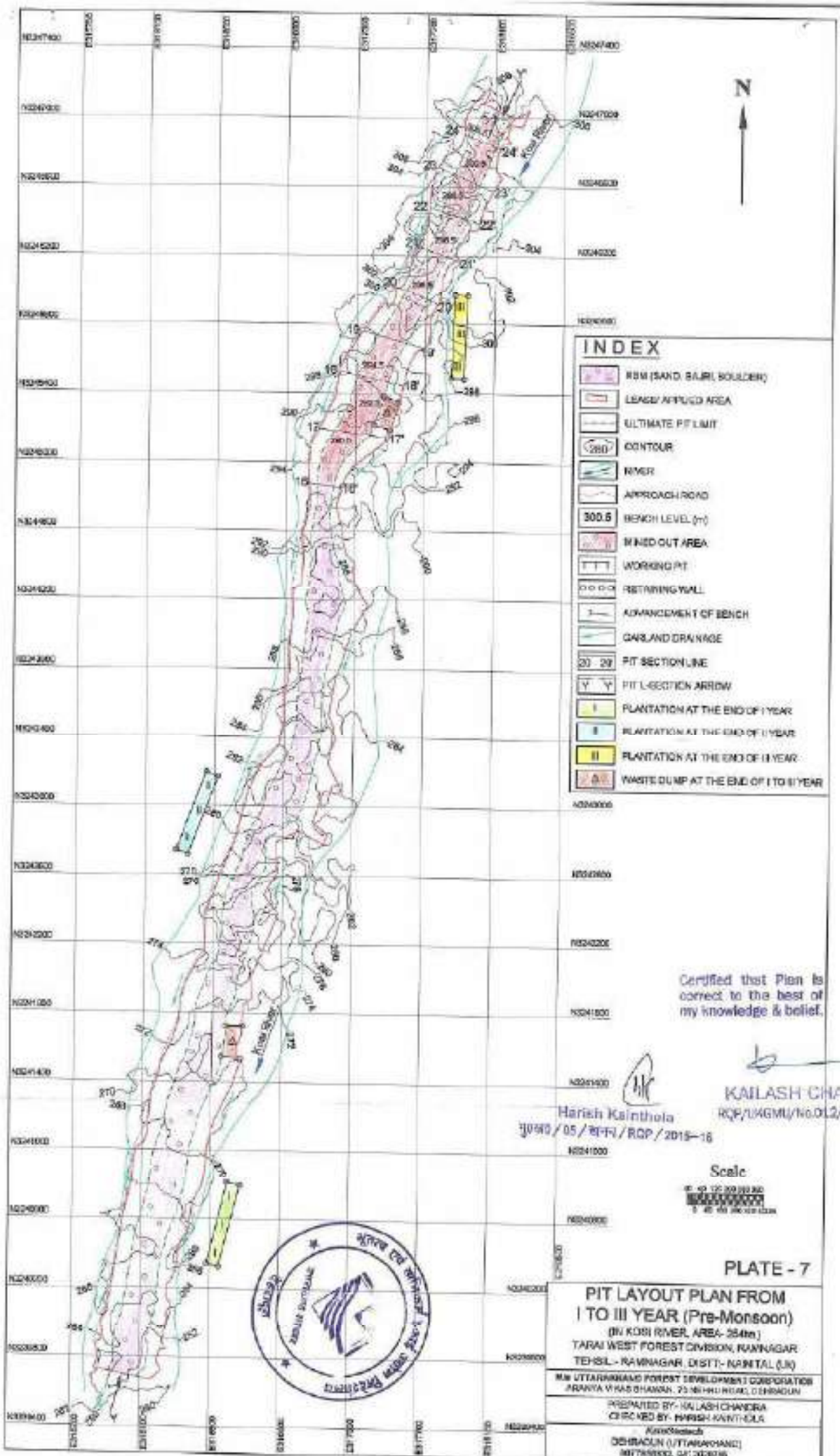
PIT L-SECTION ARROW
PLANTATION AT THE END OF I YEAR
PLANTATION AT THE END OF II YEAR
PLANTATION AT THE END OF III YEAR
WASTE DUMP AT THE END OF I TO III YEAR
Certified that Plan is correct to the best of my knowledge & belief.
Harish Kainthola
KAILASH CHANDRA
RQP/UMGMU/No.012/YEAR 2019
Scale
PLATE - 6
PIT LAYOUT PLAN FROM I TO III YEAR (Post-Monsoon)
(IN KOSI RIVER, AREA- 254ha)
TARAI WEST FOREST DIVISION, RAMNAGAR
TEHSIL:- RAMNAGAR, DISTT:- NAINITAL (UK)
M/s UTTARAKHAND FOREST DEVELOPMENT CORPORATION
ARANYA VIKAS BHAWAN, 75 NEHRU ROAD, DEHRADUN
PREPARED BY:- KAILASH CHANDRA
CHECKED BY:- HARISH KAINTHOLA
KairGeomap
DEHRADUN (UTTARAKHAND)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GARLAND DRAINAGE
PIT SECTION LINE
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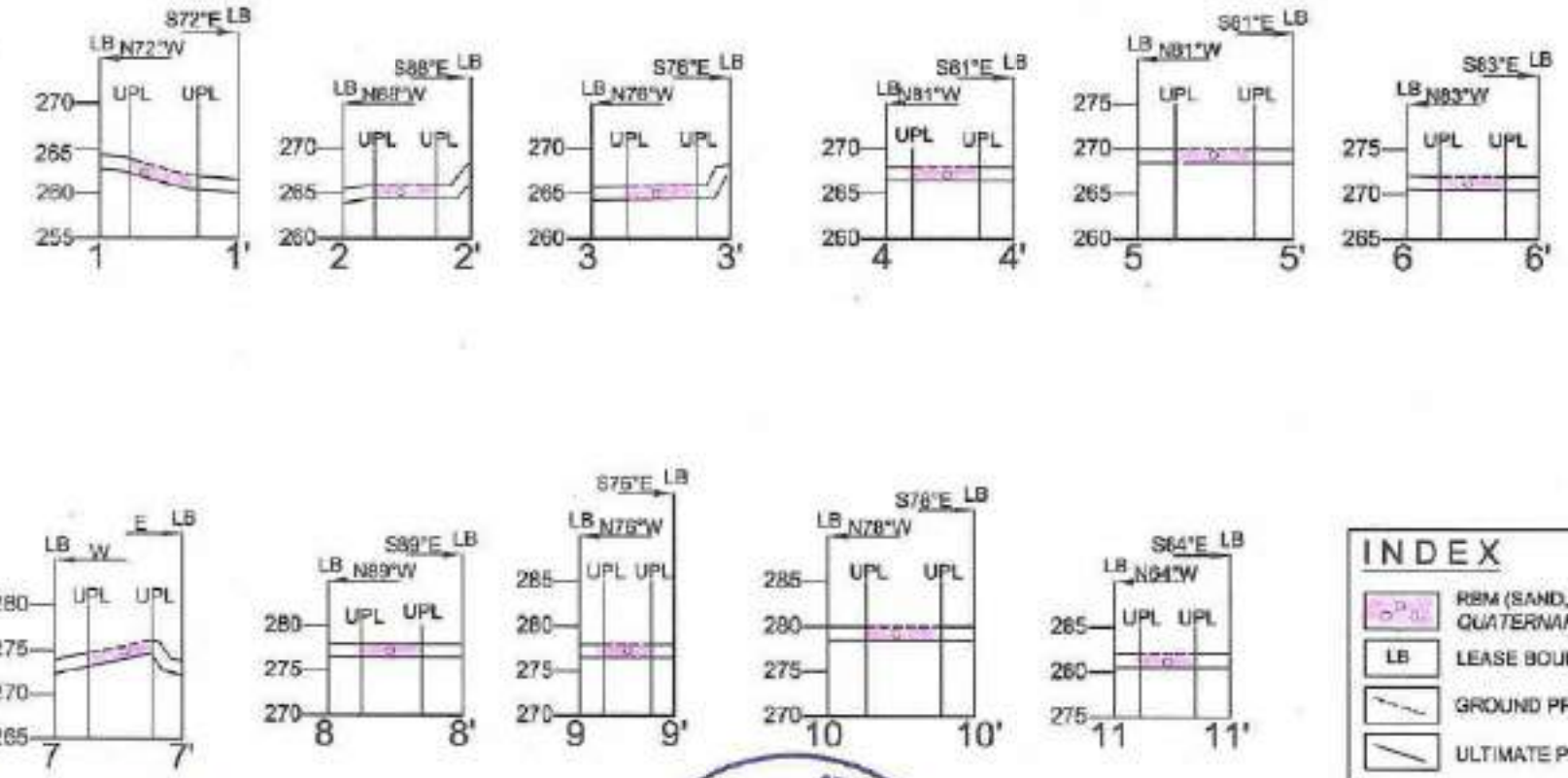
PLANTATION AT THE END OF I YEAR
PLANTATION AT THE END OF II YEAR
PLANTATION AT THE END OF III YEAR
WASTE DUMP AT THE END OF I TO III YEAR
Certified that Plan is correct to the best of my knowledge & belief.
KAILASH CHANDRA
RQP/UKGMU/No.012/YEAR 2019
Harish Kainthola
Scale
PLATE - 7
PIT LAYOUT PLAN FROM I TO III YEAR (Pre-Monsoon)
(IN KOSI RIVER, AREA- 264ha.)
TARAI WEST FOREST DIVISION, RANIKHET
TEHSIL - RANIKHET, DISTT.- NAINITAL (UK)
M/s UTTARAKHAND FOREST DEVELOPMENT CORPORATION
ARANYA VIKAS BHAWAN, 23 NEHRU ROAD, DEHRADUN
PREPARED BY:- KAILASH CHANDRA
CHECKED BY:- HARISH KAINTHOLA
DEHRADUN (UTTARAKHAND)



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- RBM (SAND, BAJRI, BOULDER) QUATERNARY
- LB — LEASE BOUNDARY
- GROUND PROFILE
- ULTIMATE PIT DEPTH

Certified that Plan is correct to the best of my knowledge & belief.

KAILASH CHANDRA
RQP/UKGMU/No.012/YEAR 2019

Harish Kainthola
मुख्य0 / 05 / खनन / RQP

Scale
10 1 10 30 50m
0 20 40

PLATE - 8

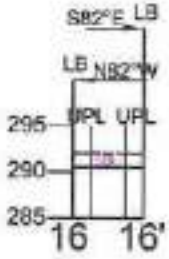
PIT SECTION- I TO III YEAR
(Post-Monsoon)

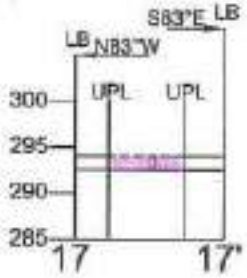
(IN KOSI RIVER, AREA- 254ha)
TARAI WESTERN FOREST DIVISION, RAMNAGAR
TEHSIL- RAMNAGAR, DISTT:- NAINITAL (UK)

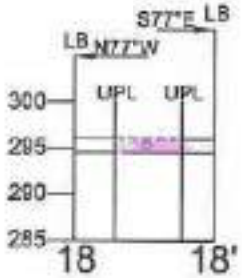
M/s UTTARAKHAND FOREST DEVELOPMENT CORPORATION
ARANYA VIKAS BHAWAN, 73 NEHRU ROAD, DEHRADUN

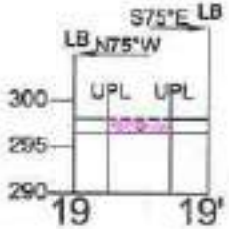
PREPARED BY- KAILASH CHANDRA
CHECKED BY- HARISH KAINTHOLA

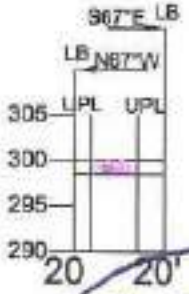
KaleGeotech
DEHRADUN (UTTARAKHAND)
8077656332, 9412028745

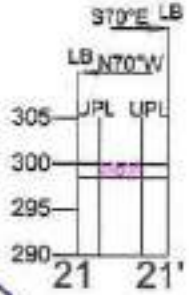


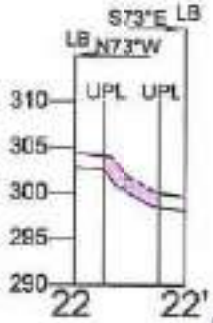


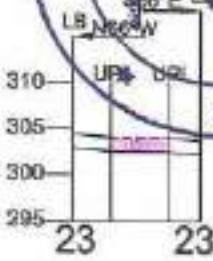


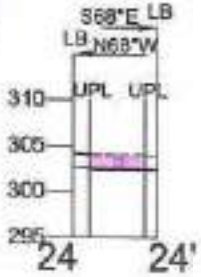












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- RBM (SAND, BAJRI, BOULDER) QUATERNARY
- LB — LEASE BOUNDARY
- GROUND PROFILE
- ULTIMATE PIT DEPTH

Certified that Plan is correct to the best of my knowledge & belief.

KAILASH CHANDRA
RQP/UKGMU/No.012/YEAR 2019

Harish Kainthola
भूतत्व/05/खनन/RQP/2015-16

Scale
10 0 10 20 30 40 50m

PLATE - 9

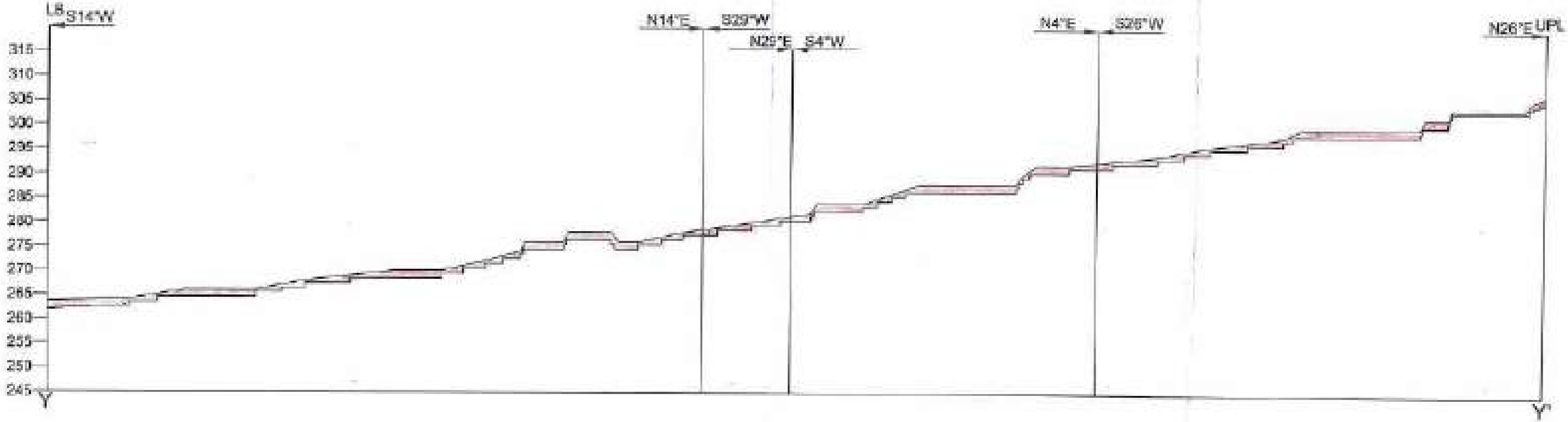
PIT SECTION- I TO III YEAR
(Pre-Monsoon)

(IN KOSI RIVER, AREA- 254ha)
TARAI WESTERN FOREST DIVISION, RANNAGAR
TEHSIL:- RAMNAGAR, DISTT.- NAINITAL (UK)

M/s UTTARAKHAND FOREST DEVELOPMENT CORPORATION
ARANYA VIKAS BHAWAN, 73 NEHRU ROAD, DEHRADUN

PREPARED BY- KAILASH CHANDRA
CHECKED BY- HARISH KAINTHOLA

KaloGeotech
DEHRADUN (UTTARAKHAND)
8077855332, 9412028745



Certified that Plan is correct to the best of my knowledge & belief.

Harish Kainthola
पु०सं०/05/सं०पी/ROP/2015-16

KAILASH CHANDRA
RQP/UKDMU/No.012/YCU/2020

Scale

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	RBM (SAND, BAJRI, BOULDER) QM.TERNARY
LB	LEASE BOUNDARY
	GROUND PROFILE
	ULTIMATE PIT DEPTH

PLATE - 10

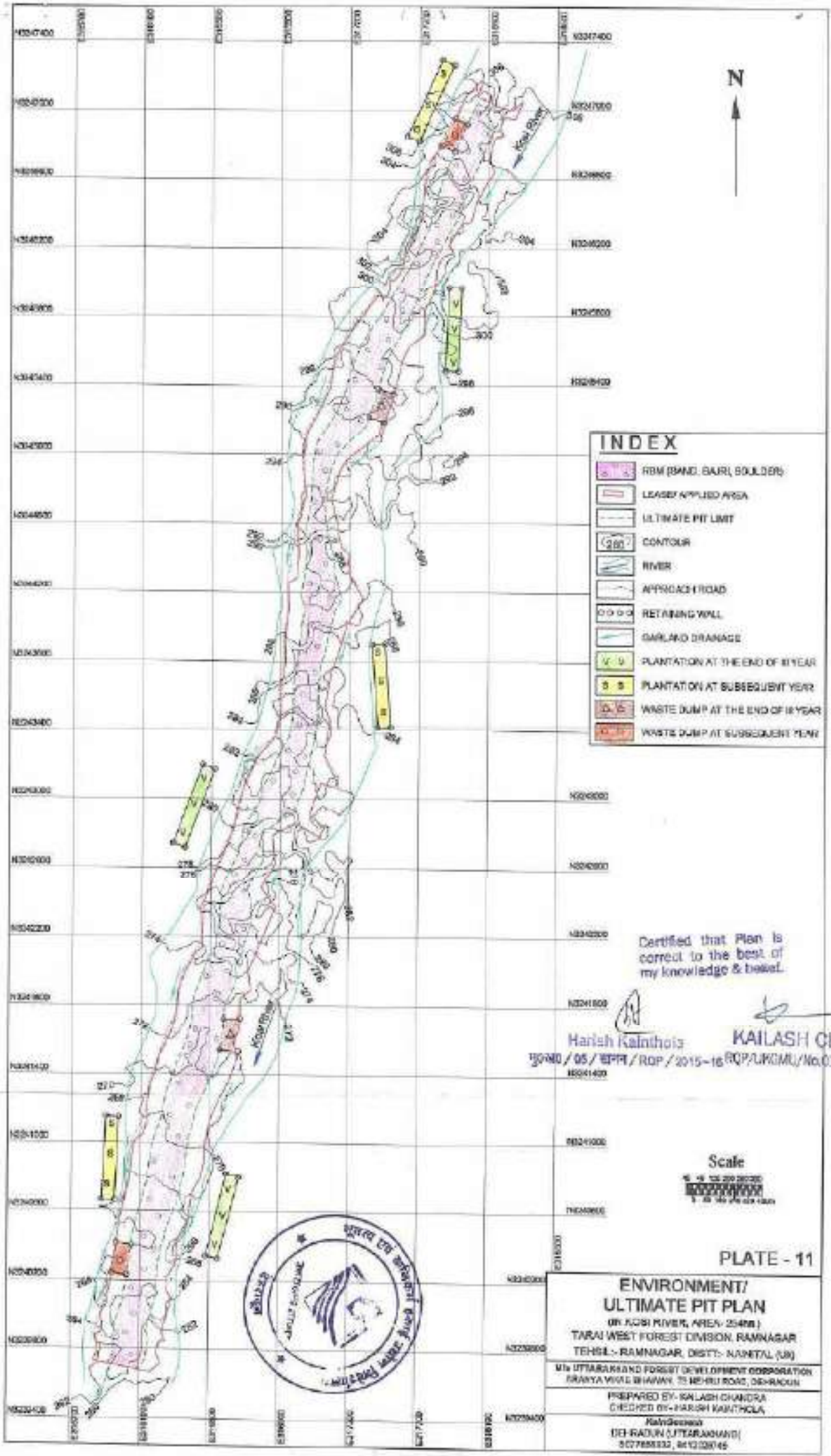
PIT L- SECTION

IN KOSI RIVER, AREA-25ha
TARAI WESTERN FOREST DIVISION RAMNAGAR
TEHSIL- RAMNAGAR, DISTT.- NAINITAL (UK)

M/s UTTARAKHAND FOREST DEVELOPMENT CORPORATION
ARANYA VIKAS BHAWAN, 73 NEHRU ROAD, DEHRADUN

PREPARED BY: KAILASH CHANDRA
CHECKED BY: HARISH KAINTHOLA

KainGeotech
DEHRADUN (UTTARAKHAND)
8077898332, 9412928746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RETAINING WALL
GARLAND DRAINAGE
PLANTATION AT THE END OF III YEAR
PLANTATION AT SUBSEQUENT YEAR
WASTE DUMP AT THE END OF III YEAR
WASTE DUMP AT SUBSEQUENT YEAR
Certified that Plan is correct to the best of my knowledge & belief.
Harish Kainthola
KAILASH CHANDRA
UKMO / 05 / EPR / ROP / 2015-16
ROP/UKMO/No.012/YEAR 2019
Scale
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ENVIRONMENT/
ULTIMATE PIT PLAN
(IN KOSI RIVER, AREA- 254ha.)
TARAI WEST FOREST DIVISION, RAMNAGAR
TEHSIL :- RAMNAGAR, DISTT:- NAINITAL (UK)
M/s UTTARAKHAND FOREST DEVELOPMENT CORPORATION
PRANYA VIKAS BHAWAN, 75 NEHRU ROAD, DEHRADUN
PREPARED BY- KAILASH CHANDRA
CHECKED BY- HARISH KAINTHOLA
KaiGeosys
DEHRADUN (UTTARAKHAND)