

कार्यालय प्रभागीय वनाधिकारी केदारनाथ वन्यजीव प्रभाग, गोपेश्वर।

Office of Divisional Forest Officer Kedarnath Wildlife Division, Gopeshwar.

Phone @ Fax No&01372252149

Email- dfokedarnath@gmail.com

पत्रांक:-
सेवा में,

6434 /12-1 गोपेश्वर,

दिनांक 16/06/2023

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

द्वारा :-

मुख्य वन संरक्षक/निदेशक, नन्दादेवी बायोस्फियर रिजर्व गोपेश्वर।

विषय:-

माननीय मुख्यमंत्री घोषणा संख्या 281/2017 के अन्तर्गत जनपद चमोली के गैरसैण शहर एवं एडज्वार्निंग आबादी में पेयजल आपूर्ति हेतु रामगंगा नदी पर बांध निर्माण कार्य हेतु 4.95 हे० वन भूमि का गैर वानिकी कार्य हेतु सिंचाई विभाग को प्रत्यावर्तन। (Online proposal no FP/UK/Water/144831/2021)

संदर्भ:-

भारत सरकार पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय, एकीकृत क्षेत्रीय कार्यालय देहरादून के पत्रांक 8 वीं/यू.सी.पी.09/44/2023/एफ.सी/98 दिनांक 28.04.2023

महोदय,

उपरोक्त विषयक के सम्बन्ध में अवगत करना है कि भारत सरकार पर्यावरण एवं वन मंत्रालय क्षेत्रीय कार्यालय देहरादून के उक्त संदर्भित पत्र द्वारा निर्गत आपत्तियों की बिन्दुवार निराकरण आख्या निम्न प्रकार प्रस्तुत है-

क्र० सं०	आपत्तियां	निराकरण
1	The Justification provided to locate the project in forest area is vague and does not elucidate on the technical reasons for locating the project in the forest area. Further, no alternatives have been explored for the project. The State Government is required to provide detailed justification based on technical parameters and establish the inescapability of locating the project on the proposed site.	Justification Report based on technical grounds showing the compulsion of locating the project in the proposed forest area is enclosed and it has been uploaded accordingly. Based on the above technical reports many other alternative sites were taken under consideration but not found suitable for the project.
2	State Govt. is requested to submit necessary comments as par ministry guidelines dated 24.01.2022 regarding non site-specific activity.	Guideline dated 24.01.2022 of MoEF for non- site-specific projects states that – utilization of forest area for establishing industries, construction of residential colonies, institutes, disposal of fly ash,

		<p>rehabilitation of displaced persons etc. are non-site- specific activities and cannot be considered on forest land as a rule. As the present project is proposed for the construction of a dam for the supply of drinking water to the increasing population of Gairsain and Bararisain towns. It is also clarified here that apart from increasing population of Gairsian town Bararisain town is a newly established summer capital of Uttarakhand State so the need of drinking water has been increased for multiple times of present need and the present drinking water supply facility is not able to meet the demand of drinking water of present time. As the Proposed Project is not for the establishment of industries, construction of residential colonies, institutes, disposal of fly ash, rehabilitation of displaced persons but it is for the basic need of huge population of above-mentioned towns. Hence, it is humbly requested to the ministry to accept this proposal for forest land transfer under the provisions of Forest Conservation Act 1980.</p>
3	<p>It is observed from the DSS analysis of the area proposed for diversion that KML file of 3.97 ha is uploaded instead of 4.95 ha. The State Govt. is requested to upload the correct KML file.</p>	<p>The necessary correction on KML file has been done as per the actual need of forest land area and the corrected KML file has been uploaded by the user agency.</p>
4	<p>Area proposed for muck dumping is mentioned as 0.22 ha in the component wise breakup at Para b 2.4 in part I. However, in the muck disposal plan area is mentioned to be 0.15 ha. The State Govt. is requested to</p>	<p>The Correction in Muck Disposal Plan has been done and revised muck disposal plan has been uploaded & attached.</p>

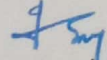
	comment on this discrepancy and make necessary corrections.	
5	In the component wise break-up 0.03 ha area is mentioned against the component named "others". It is requested to submit the clear details in this regard.	The Area mentioned in component wise breakup "others" will be used for the Control Room area 0.02 hec.& Inspection Room area 0.01hec. total 0.03hec..
6	In the component wise break-up details of how the water stored or impounded shall be carried to the beneficiaries is not mentioned. The State Govt. is requested to provide information in this regard.	The present proposal is a part of entire Drinking Water supply project. The second phase of proposal has to be submitted by Jal Nigam Utrakhand Karnaparyag in which total details of uplifting and supply mechanism of water will be given.
7	NPV is found calculated as per old rates in NPV sheet. State Govt. is requested to provide/upload the NPV calculation sheet as per the new rates.	The NPV has been revised as per latest prevailing Rates and revised NPV sheet has been uploaded.
8	It is seen that 955 trees are affected by the proposal. The State Govt. is requested to provide detail of the trees falling in the permanent submergence zone and those falling in the temporary submergence zone. The Forest department may also work out the number of trees which could be saved in the temporary submergence zone. Also, the trees which are required for wildlife purposes viz snags could also be listed by the forest department.	The proposed reservoir is of permanent submerging nature and there is no provision of temporary submergence zone in the project. Hence, the total number of trees i.e., 955 mentioned in proposal have to be felled.
9	The detail provided in the part II of the proposal indicate the presence of wildlife in and around the proposed area. Hence detail of the impact of the project on wildlife and suggestive imitative measures is requested to be provided.	Prospective impacts on wildlife of the area and its mitigation plan is enclosed here and it has been uploaded on portal.

10	The proposal affects large number of Oak. Hence the State Govt. is requested to provide its comment if the CA area is suitable for planting oak plants.	It is certified that the proposed CA area is quite suitable for planting Oak plants. And it will be ensured that maximum number of oak plants will be planted in this CA area.
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अतः अनुरोध है कि विषयांकित प्रकरण में अग्रेत्तर कार्यावाही करने की कृपा करे।

संलग्न:- उपरोक्तानुसार

भवदीय,



(इन्द्र सिंह नेगी)

प्रभागीय वनाधिकारी,

केदारनाथ वन्यजीव प्रभाग, गोपेश्वर।

संख्या

दिनांकित

प्रतिलिपि:- अधिशासी अभियन्ता, सिंचाई खण्ड थराली को सूचनार्थ प्रेषित।

(इन्द्र सिंह नेगी)

प्रभागीय वनाधिकारी,

केदारनाथ वन्यजीव प्रभाग, गोपेश्वर।

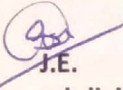
Justification for site selection

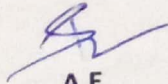
Gairsain is a town and Nagar Panchayat in district Chamoli of Uttarakhand State and has been notified as the summer Capital of the State vide notification dated 08.06.2020. It is about 262 km away from Dehradun, the winter Capital of Uttarakhand State. Its average elevation from MSL is 1650.00 m. The annual average temperature and rainfall of the town is around 15°C and 1435 mm respectively. It is located almost in the centre of the Garhwal and the Kumaon regions of the State which is the major aspect such as easy accessibility of the people of both regions Garhwal and the Kumaon to Gairsain, to be selected as State's summer Capital. Legislative Assembly Building of the has already been constructed at Gairsain in 2013.

At present, the domestic water demand is met out from the natural water streams originating from the mountains which got almost dried from the month of December onwards. Due to very less availability of water in the natural streams between the months of January to mid of July there is a severe scarcity of drinking water. On the other hand, drafting of water from ground water source is practically not feasible due to availability of ground water at long depth in this hilly area. Water has to be supplied through tankers in lean period i.e. in the months of March, April, May, June and mid of July, in order to solve the above problems of domestic supply at Gairsain town, Gairsain Drinking Water Project, Chamoli is proposed to be constructed 34.30 high dam (from foundation level) having live storage of 0.35 MCM across river Ramganga near Gairsain to meet the drinking water requirement of 7 MLD to Gairsain town as its increasing demand of domestic water due to development in political & official activities at Gairsain. But, after declaration of Gairsain town as 'Summer Capital' of the State, future demand of domestic water supply increased to 7 MLD as assessed by Pey Jal Niman Nigam, Uttarakhand for year 2070. Also, to cater the growing demand of drinking water of Gairsain town and nearby areas, Hon'ble Chief Minister, Govt. of Uttarakhand has announced (C.M. announcement no. 281/2017 dated 21/07/2017) to create a reservoir in Gairsain for drinking water purpose for Gairsain town and adjoining areas.

For site selection of the storage structure i.e. the dam, a Committee comprising of Forest Department, Revenue Department, Pey-Jal Nirman Nigam and Irrigation Department of the State of Uttarakhand were jointly investigated the various possible sites (joint survey, comparison of site reports attached) and finally found two sites for further assessment. After detail comparison (report attached), site on Ramganga river in the upstream of Government Polytechnic College, Gairsain finalised for further investigations. The proposed site found suitable for construction of dam/reservoir according to detail Geological investigation such as uniaxial compression test, rock profile, geological log, permeability test reports etc. Geologist (Report attached) also recommends selected site for construction of dam.

Valley width is 8 mt. on proposed site which is minimum among all possible site, hard rock with no overburden riverbed material found on site. Sufficient space available upstream and downstream of selected site. In the context of overall biodiversity of the region, the impact will be very low owing to nature of project.


J.E.
Irrigation subdivision
Gairsain


A.E.
Irrigation subdivision
Gairsain

दिनांक 09/07/2018 को गैरसैंण शहर हेतु जल आपूर्ति के सम्बन्ध में सम्पन्न हुयी

वैठक का कार्यवृत्त।

पत्रांक 688 / सिं.ख.थ / बैराज / थराली /

दिनांक : 09/07/2018।

उपरोक्त संदर्भित पत्रांक के क्रम में दिनांक 09/07/2018 को हुयी बैठक में निम्न विभागों के प्रतिनिधि उपस्थित हुए।

1- श्री हरिश नेगी वन क्षेत्राधिकारी वन विभाग गैरसैंण।

2- श्री शान्ती प्रसाद डिमरी उपराजस्व गैरसैंण।

3- श्री महेन्द्र कुमार अपर सहायक अभियन्ता पेयजल निगम कर्णप्रयाग।

बैठक में उपस्थित सभी प्रतिनिधियों से विचार विमर्श किया गया जिसमें दो स्थान ऐसे पाये गये जो गैरसैंण शहर की औसत उचाई से अधिक उचाई पर स्थित हैं:

1- ग्राम कनखवाली में रामगंगा नदी जोकि गैरसैंण शहर से लगभग 13.00 कि०मी० दूरी पर स्थित है।

2- ग्राम मेहर गांव रामडा में स्थित सिलकोट गेदेरा जोकि गैरसैंण 11.00 कि०मी० दूरी पर स्थित है।

उपरोक्त दोनों स्थानों से ग्रीष्म काल को छोड़कर बाकी के दिनों में गैरसैंण को पानी की आपूर्ति की जा सकती है। ग्रीष्म काल के दिनों में उपरोक्त दोनों स्थानों में पानी की मात्रा इतनी कम हो जाती है की गैरसैंण शहर को पानी की आपूर्ति हो पाना सम्भव नहीं है क्योंकि कुछ पानी जीव जन्तुओं की आवश्यकता हेतु भी उपरोक्त दोनों स्थानों पर उपलब्ध रहना आवश्यक है। ऐसी स्थिति में ग्रीष्म काल में गैरसैंण की आबादी को पानी की आपूर्ति के लिए स्टोर रिजर्वायर बनाया जाना आवश्यक है। ग्रीष्म काल के अलावा बाकी के दिनों में उपरोक्त दोनों स्थानों से ग्रेविटी द्वारा पानी की आपूर्ति की जा सकती है।

यह भी देखा गया कि दूसरे बेसिन से भी पानी की सम्भावना तलासी गयी जिसमें आटा गाढ बेसिन से भी पानी की आपूर्ति हेतु विचार विमर्श किया गया। विचार विमर्श के पश्चात यह पाया गया की आटा गाढ नाले का ढाल रिज लाइन से कर्णप्रयाग की तरफ है एवं उक्त नाले का निस्सर्ण प्रयाप्त नहीं है।

बैठक में उपस्थित सभी प्रतिभागीयों से विचार विमर्श के पश्चात यह निष्कर्ष निकाला गया की कनखवाली में रामगंगा नदी एवं मेहर गांव रामडा में स्थित सिलकोट नाले से ग्रीष्म काल को छोड़कर बाकी के दिनों में गैरसैंण शहर को ग्रेविटी के माध्यम से जल की आपूर्ति की जा सकती है (जैसा की पेयजल निगम के प्रतिनिधि द्वारा बताया गया) ग्रीष्म काल में पालिटोटेक्निक कालेज गैरसैंण के पास रामगंगा नदी पर स्टोर रिजर्वायर बनाकर लिफ्ट के माध्यम से गैरसैंण शहर को पानी की आपूर्ति की जायेगी।

श्री हरिश नेगी
वन क्षेत्राधिकारी
वन विभाग गैरसैंण

कनिष्ठ अभियन्ता

सिंचाई उपखण्ड गैरसैंण

शान्ती प्रसाद डिमरी
राजस्व उपनिरीक्षक गैरसैंण

सहायक अभियन्ता
सिंचाई उपखण्ड गैरसैंण

महेन्द्र कुमार
अपर सहायक अभियन्ता
पेयजल निगम कर्णप्रयाग
अधिशारी अभियन्ता
सिंचाई खण्ड थराली

COMPARISON OF SITE NO. 1 & 2

SR. NO.	PARTICULARS	SITE NO. 1 (i.e. D/S OF GOVT. POLYTECHNIC COLLEGE GAIRSAIN)	SITE NO. 2 (i.e. U/S OF GOVT. POLYTECHNIC COLLEGE GAIRSAIN)	REMARK
1	Valley width at river bed	20.00 M	8.00 M	Cost of construction will be less in site no 2 as compared to site no 1
2	River bank condition	Hard rock is not exposed on any bank of the river	Hard rock is exposed on both banks of the river	-
3	River bed condition	Heavy over-burden river bed material consisting of heavy boulders is present therefore the bed rock would be available at greater depth	No over-burden river bed material and bed rock is exposed on the surface	i) Site no. 2 – no need of deep foundation ii) Site no. 1– may require deep foundation
4	Contamination	Contamination from the municipal solid waste	No any contamination from the municipal solid waste	Quality of water available for drinking purpose at site no 2 is better as compared to site no 1.
5	Geological aspect	Not suitable for the construction of reservoir as fissured weak rock is present	Suitable for the construction of reservoir as granite rock is present	Prof. M.P.S. Bisht, Director, Uttarakhand Space Application Center, Dehradun has recommended site no 2 for reservoir construction
6	Availability of space for water treatment plant and muck disposal	Not sufficient space available in nearby area.	Sufficient space available nearly 150 m d/s of the site on the right bank of river	-
7	Lift	High lift required	Low lift required	Less energy consumption
8	Rehabilitation	Rehabilitation required	Rehabilitation not required	-
9	Connectivity	Approach road of approx. 300 m length is required	Approach road of approx. 1400 m length is required	-

Considering above points, site no 2 is more suitable as compared to site no 1.

(Signature)
Assistant Engineer
Irrigation Sub Division
Gairsain (Chamoli)

(Signature)
वन क्षेत्र अधिकारी
लोहवा वन क्षेत्र गैरसैण

(Signature)
दुर्गा प्रसाद कपूर
राज्य निरीक्षक
सहस्रील...
जनपद, चमोली

(Signature)
बहसिलदार
गैरसैण

Name of the Work- Construction of Dam Across Ramganga River For Drinking Water Supply of Gairsain Town and adjoining population in District Chamoli

Comparison between identified alignment of approach road

S. No.	Variables	Alignment No-1	Alignment No-2
1	Topography	Mountainous	Mountainous
2	Length of Road	1.300 km	1.500 km
3	Bridging requirement No. and Length	Nil	Nil
4	Geometric		
	(a) Gradients	01:20	01:20
	(b) Curves, H.P Bends	00 numbers of H.P. Bends	02 numbers of H.P. Bends
5	Existing Means of communication, mule path, jeep, Tracks etc.	By mule path	By mule path
6	Right of way, bringing out. construction on account of built up areas, monuments and other structures.	Right of way is available for carrying out the construction work. There are no built up area, monuments or other important structures along this alignment	Right of way is available for carrying out the construction work. There are no built up area, monuments or other important structures along this alignment
	(a) Terrain & Soil Condition.	The terrain is hilly and the soil is a mix of Earth and Boulders, Soft Rock and Hard Rock.	The terrain is hilly and the soil is a mix of Earth and Boulders, Soft Rock and Hard Rock.
	(i) Cliffs and gorges.	(i) None	(i) None
7	(ii) Drainage characteristics of the area including susceptibility to flooding.	(ii) The natural Drainage characteristics of the area is good and there is no susceptibility to flooding	(ii) The natural Drainage characteristics of the area is good and there is no susceptibility to flooding.

S. No.	Variables	Alignment No-1	Alignment No-2				
	(iii) General elevation of the road indicating maximum and minimum height negotiated by main ascends and descends.	(iii) The General elevation of the road is 1590 m. The elevation at the starting point of the road is 1585 m and the elevation at the end point of the road is 1594 m.	(iii) The General elevation of the road is 1610 m. The elevation at the starting point of the road is 1623 m and the elevation at the end point of the road is 1594 m.				
	(iv) Variations extant and types.	50/100 (Attached after comprative)	50/100 (Attached after comprative)				
Climate Condition:							
8	(a) Temperature Monthly max. & min. reading.	(a) Temperature Monthly max. & min. reading (Avg. data of 12 years)	(a) Temperature Monthly max. & min. reading (Avg. data of 12 years)				
		Temperature (in °C)		Temperature (in °C)			
		Month	Max.	Min.	Month	Max.	Min.
		January	18	-1	January	18	-1
		Feb.	22	7	Feb.	22	7
		March	27	13	March	27	13
		April	33	18	April	33	18
		May	35	20	May	35	20
		June	32	21	June	32	21
		July	31	21	July	31	21
		August	30	23	August	30	23
		September	30	21	September	30	21
		October	29	17	October	29	17
		November	26	12	November	26	12
December	21	-1	December	21	-1		
	(b) Rainfall data average annual peak intensities monthly distribution (to the extent available).	(b) Rainfall data average annual peak intensities monthly distribution	(b) Rainfall data average annual peak intensities monthly distribution				
		Month	Average Rainfall Data (in mm)	Month	Average Rainfall Data (in mm)		
		January	21	January	21		
		Feb.	7	Feb.	7		
		March	32	March	32		
		April	36	April	36		

S. No.	Variables	Alignment No-1		Alignment No-2	
		May	89	May	89
		June	194	June	194
		July	302	July	302
		August	264	August	264
		September	189	September	189
		October	2	October	2
		November	2	November	2
		December	23	December	23
	(c) Snowfall data average annual peak intensities monthly distribution (to the extent available).	(c) Snowfall occurs in the month of December and January upto 30 cm in depth on an average.		(c) Snowfall occurs in the month of December and January upto 30 cm in depth on an average.	
	(d) Wind direction and velocities.	(d) Owing to the nature of terrain local affect are pronounced and when the general prevailing winds not too strong to mask these effect, there is a tendency for diurnal reversal of winds, the flow being anabatic during the day and katabatic at night, the latter being of considerable force.		(d) Owing to the nature of terrain local affect are pronounced and when the general prevailing winds not too strong to mask these effect, there is a tendency for diurnal reversal of winds, the flow being anabatic during the day and katabatic at night, the latter being of considerable force.	
	(e) Fog Condition.	(e) Generally there are no fog conditions in the area. However, during the month of December and January, slight foggy conditions prevail during night, with clear sky in the day.		(e) Generally there are no fog conditions in the area. However, during the month of December and January, slight foggy conditions prevail during night, with clear sky in the day.	
	(f) Exposure to sun.	(f) The site is exposed to sun throughout the year.		(f) The site is exposed to sun throughout the year.	
	(g) Unusual weather condition like cloud burst etc.	(g) There is no record of unusual weather condition like cloud burst in the area where the site is located.		(g) There is no record of unusual weather condition like cloud burst in the area where the site is located.	
Facilities resources.					
	(a) Landing ground.	(a) None		(a) None	

S. No.	Variables	Alignment No-1	Alignment No-2
9	(b) Dropping Zone.	(b) None	(b) None
	(c) Food stuffs.	(c) <i>Haldi, Adrak, Mirch, Lehsoon, Dhan, Ghehun, Aloo</i> etc.	(c) <i>Haldi, Adrak, Mirch, Lehsoon, Dhan, Ghehun, Aloo</i> etc.
	(d) Labour local availability and need for import.	(d) Local labour is available for construction work.	(d) Local labour is available for construction work.
	(e) Construction material (Timber, Bamboo, Sand, Stone, Shingle etc. extent of their availability and lead involved.	(e) Stone required for the construction work shall be made available locally as it shall be obtained from hill side cutting. However, sand required for the construction work shall be procured from the approved quarry with a distance of 40 km.	(e) Stone required for the construction work shall be made available locally as it shall be obtained from hill side cutting. However, sand required for the construction work shall be procured from the approved quarry with a distance of 40 km.
10	Value of land, agricultural land, Irrigated land, built up land, forest land etc,	Value of the land required for the construction of the road in this alignment is as under-	Value of the land required for the construction of the road in this alignment is as under-
		Van panchayat land, 4.950 hectare @ Rs. <i>584.00/sq</i> = Rs.	Van panchayat land, 5.50 hectare @ Rs. <i>584.00/sq</i> = Rs.
		Thus total value of land = Rs. <i>28908000.00</i>	Thus total value of land = Rs. <i>32120000.00</i>
11	Approximate Const. Cost.	Rs. 6535.64 lacs	Rs. 7000.00 lacs
12	Access point indicating possibility of induction of equipment.	Access point available for induction of equipment	Access point available for induction of equipment
13	Period required for construction.	24 months	24 months
14	Strategic Consideration.	Deployment of skilled manpower and efficient equipment / machinery shall be made for completion of the project.	Deployment of skilled manpower and efficient equipment / machinery shall be made for completion of the project.

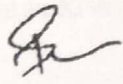
S. No.	Variables	Alignment No-1	Alignment No-2
15	Important villages, towns and markets centers to be connected.	The road shall provide connectivity to proposed Dam.	The road shall provide connectivity to proposed Dam.
16	Recreational potential.	Nil	Nil
17	Economic Factors:		
	(a) Population served by the alignment.	(a) 251 numbers	(a) 251 numbers
	(b) Agricultures and economic potential of the area.	(b) Water will be supplied to cultivations by gravitational means (i.e.. Through channel) shall enhance the economical condition of the people residing in this area. Potential of the development of pisciculture in lake and tourism also.	(b) Water will be supplied to cultivations by gravitational means (i.e.. Through channel) shall enhance the economical condition of the people residing in this area. Potential of the development of pisciculture in lake and tourism also.
18	Other major development projects being taken up electric projects etc.	None	None
19	(i) Misc. Such as camping sites	(i) Camping sites to be located along the alignment of the road.	(i) Camping sites to be located along the alignment of the road.
	(ii) Law and other problem	(ii) There is no significant law and order problem in the area and the local administration takes care of such matters.	(ii) There is no significant law and order problem in the area and the local administration takes care of such matters.
	(iii) Royalty	(iii) Royalty is paid to the Revenue Department.	(iii) Royalty is paid to the Revenue Department.
	(iv) Availability of contractors for collection and carriage of construction material	(iv) Available	(iv) Available
	(v) Working period available for construction of work.	(v) 09 months in a year	(v) 09 months in a year

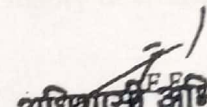
S. No.	Variables	Alignment No-1	Alignment No-2
20	Total No. of trees to be removed .	955 numbers	Approximately 1100 numbers.
21	Average Density of forest cover .	.	.
22	Total No. of Merits	.	.
23	Total No. of Demerits	.	.


RECOMMENDATIONS:

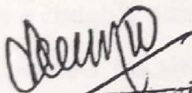
Alignment no. -1 is Recommended for approval being more economical, useful & technically



I.E.

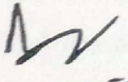

Assistant Engineer
Irrigation Sub Division
Gairsain (Chamoli)


अधिसायी अभियन्ता
सिपाई ब्रिग, यराली


वन क्षेत्राधिकारी
लोहवा वन क्षेत्र मैरसैण


दुर्गा प्रसाद कपर्दवाण
रा०उ०निरीक्षक
तहसील...
जनपद...


तहसील...
मैरसैण


प्रभागीय वनाधिकारी
केदारनाथ वन्य जीव प्रभाग
गोपेश्वर।

5 GEOLOGY AND GEOTECHNICAL INVESTIGATIONS

5.1 INTRODUCTION

Gairsain Dam is proposed to be located on Ramganga River in Chamoli district of Uttarakhand. As per information provided by the project authorities, the latitude and longitude of the proposed dam site are $30^{\circ}03'48.4''\text{N}$ and $79^{\circ}17'03.2''\text{E}$. The catchment area upto Gairsain dam site has been estimated as 31.44 sqkm using ArcGIS. As per the project proposal, Gairsain dam is proposed to store 0.35 MCM of water of Ramganga River for domestic water supply of Gairsain town.

5.2 GENERAL ASSESSMENT OF TERRAIN ON BASIS OF DRILL HOLES GEOMORPHOLOGY AND GEOLOGY OF AREA

The Ramganga River flows in a roughly straight course, with minor bends towards $\text{N}110^{\circ}$ in the dam site area. This direction persists for about 70 m distance in the downstream and upstream directions of the proposed dam axis. The river has a fairly tight valley, with consistent slope of about 40 to 45° . On the other hand, the right bank has a steep to very steep slope ($65^{\circ}/70^{\circ}$). The right bank slope is uneven with a few breaks in the slope. Growth of plants could be seen on the entire right bank slope. On the left bank, the slope profile raises gradually up with a smooth slope. Similar conditions persist for more than 50 meters above the river bed inclined at 65° to 70° toward $\text{N}20^{\circ}$. Since the valley slopes are nearly controlled by foliation planes, they show a smooth consistent slope surface. On the other hand, the right bank slopes are rugged in nature with uneven surface extending for more than 50m above the river bed. The foliation dip into the hill on the right bank.

The rocks exposed in the area include granitic gneisses, which are generally moderately weathered on surface. The rock surface on left bank has a thin debris cover in higher levels at places though continuous rock exposure could be seen on the bank. The rock surface on right bank has thin to thick debris cover at places, with thick vegetation cover occupying a major part. The rocks are more weathered on the right bank as compared to left bank. Open joints are seen in many places on the right bank. The gneisses rock seen on the right bank seem to be dislocated with open joints at many places. The granite gneisses are exposed on the right and left banks with no exposure seen within the river bed. The thickness of debris/RBM is of the order of 1.5m to 2.0m. The granitic gneisses

seen on the banks are medium to coarse grained compacted, well foliated, grey coloured with weathering impacts seen on surface. The alternating layers of leucocratic light coloured minerals and dark coloured mica minerals define the foliation planes, which are wavy, undulatory and discontinuous in nature. The leucocratic minerals include Quartz, feldspar and other light minerals. The shining black mica could be conspicuously seen on the broken rock surfaces. In addition to foliation, two sets of joints can be seen which are generally widely spaced in nature. The following are the structural discontinuities observed in the area:

Type	Strike	Dip
Foliation(F)	N80°	N25°-35° towards N170°
Joint (J1)	N210°	N65° -70° towards N300°
Joint (J2)	N310°	N70° -80° towards N40°

The foliation is the major geological discontinuity of the area. It is variations due to mineral composition. It is an important geological discontinuity. The slope surfaces on the left bank are controlled by the foliation planes, while on the right bank they dip into the hill, the foliation planes show appreciable variations at places. The joint J1 shows long strike continuity on the right bank, with joint planes conspicuously running across the slope and nearly parallel to the dam axis. The joints are tight with undulatory rough surfaces. They dip at fairly steep angles towards upstream direction. The joint J2 is a cross joint striking nearly at right angle to J1 with strike direction running nearly parallel to river course. These joints dip at steep angles towards left bank. Though thin debris cover is seen at few places on the left bank, they can be seen commonly at many places with intermittent rock exposures on the right bank. The rock seen on the left bank is slight to moderately weathered, and the rocks of the right bank show moderate grade of weathering with supporting vegetation cover. The thickness of river bed material may range from 1.5m to 2m.

5.3 ENGINEERING GEOLOGICAL ASSESSMENT OF SITE FOR PROPOSED DAM

- 1) The dam axis is located on a nearly straight section of the river with the axis trending roughly perpendicular to river course.

- 2) The rocks exposed at the dam site are hard, compact, foliated Granitic gneiss. Since the rocks are dominantly composed of leucocratic minerals including quartz and feldspar with minor soft mica in between the rocks are expected to have good bearing capacity. Since the height of the dam is only 21m, these rocks may provide good foundation base.
- 3) The foliation being the major geological discontinuity, dips at shallow to moderate angles toward the right bank. Since they control the slopes on left bank, any foundation excavation on left bank may lead to instability of the hill slope. This problem shall be adequately taken care during abutment striping.
- 4) The joints are generally steeply dipping and are tight in nature on the left bank. However, on the right bank, many joints are open in nature with dislocated rock blocks at places. It is essential to remove the dislocated rock blocks/ weathered rock blocks in order to expose the fresh rocks for laying foundation.
- 5) In order to design the striping limit to expose the fresh rock, it is suggested to excavate an exploratory drift on both the banks. These drifts may be located at middle levels along the dam axis just above the HFL for a depth of about 20m.
- 6) Based on the striping limit obtained from these drifts, a realistic striping excavation plan shall be made.
- 7) In the bore holes drilled at the site, six no. permeability tests were carried out at 3m and 6m depth as indicated. The results of permeability are in order of 1 to 3 lugeon indicating impervious nature of the material.

Chart showing the range of permeability of rock/soil

Permeability (lugeon)	Nature
1-3	Impervious
Up to 10	Pervious
10-30	Very pervious
More than 30	Highly Pervious

- 8) The results of permeability is in order of 1 to 3 lugeon However, based on the nature of the rock type and joint pattern, it is assessed to have fairly good subsurface seepage after impoundment. As such, the following treatments shall be required for the safety of the dam.

- a) Provision for a suitably designed high pressure consolidation grouting –
- helps to consolidate and increase the shear strength at the base of dam.
 - helps to fuse the dam with the foundation rocks below.
 - helps to prevent subsurface seepage at the base of the dam.
- b) Provision for a suitably designed curtain grouting - it is a deep level grouting which mainly aimed to control the seepage of water through the foundation rock at shallow levels, it may progress down up to 10m.
- 9) During foundation excavation of the left bank, since the slopes are controlled by the foliations dipping at shallow angles, it may lead to instability of hill slopes. These probability during the excavation shall be taken care suitably
- 10) Since the narrow stream course has steep bed gradients in the upstream area, it may be useful to construct 3 to 4 check dams above the reservoir itself across the river course. This will help to prolong the life of the reservoir. The height of the check dams shall be kept at 2m, and spaced at a minimum of 250m between each of them.

5.4 CONCLUSIONS AND RECOMMENDATIONS

- 1) The dam axis is located on a nearly straight section of the river with the axis trending roughly perpendicular to river course.
- 2) The value of uniaxial compressive strength varies from 250MPa to 359MPa.
- 3) Along the foliation, value of $C = 6 \text{ T/m}^2$ and $\Phi^0 = 38.5^\circ$ respectively.
- 4) The foliation being the major geological discontinuity, dips at shallow to moderate angles toward the right bank. Since they control the slopes on left bank, any foundation excavation on left bank may lead to instability of the hill slope. This problem shall be adequately taken care during abutment striping.
- 5) The joints are generally steeply dipping and are tight in nature on the left bank. However, on the right bank, many joints are open in nature with dislocated rock blocks at places. It is essential to remove the dislocated rock blocks/weathered rock blocks in order to expose the fresh rocks for laying foundation.
- 6) In order to design the striping limit to expose the fresh rock, it is suggested to excavate an exploratory drift on both the banks. These drifts may be located at middle levels along the dam

axis just above the HFL for a depth of about 20m.

7) Based on the striping limit obtained from these drifts, a realistic striping excavation plan shall be made.

However, based on the nature of the rock type and joint pattern, it is assessed to have fairly good subsurface seepage after impoundment. As such, the following treatments shall be required for the safety of the dam.


a) Provision for a suitably designed high pressure consolidation grouting – helps to consolidate and increase the shear strength at the base of dam; helps to fuse the RC dam with the foundation rocks below; helps to prevent subsurface seepage at the base of the dam.

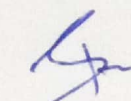
b) Provision for a suitably designed curtain grouting - it is a deep level grouting which mainly aimed to control the seepage of water through the foundation rocks at shallow levels, it may progress down up to 10m.

8) During foundation excavation of the left bank, since the slopes are controlled by the foliations dipping at shallow angles, it may lead to instability of hill slopes. These probability during the excavation shall be taken care suitably.

9) Since the narrow stream course has steep bed gradients in the upstream area, it may be useful to construct 3 to 4 check dams above the reservoir itself across the river course. This will help to prolong the life of the reservoir. The height of the check dams shall be kept at 2m, and spaced at a minimum of 250m between each of them.

The reports on Engineering Geological Evaluation submitted by Irrigation Division, Chamoli which is prepared by concerned consultant are enclosed herewith in annexure I, II & III.


JE


(A.E)
I.S.D.
(Gairsain)


परियोजना का नाम:- माननीय मुख्यमंत्री जी की घोषणा संख्या 281 / 2017 के अन्तर्गत नदी चमोली के गैरसैण शहर एवं एडजवाइनिंग आबादी में पेयजल आपूर्ति हेतु रामगंगा नदी पर बांध निर्माण कार्य के लिए 4.95 हे० वन भूमि का सिंचाई विभाग को हस्तांतरण प्रस्ताव ।

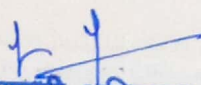
Detail of Muck Dumping Yard

S.No	Locational of Dumping	Area In Sqm	Type of Land	Capacity of Dumping Yard Cum	Latitude"N"	Longitude"E"
1	0.200 to 0.400	30.00x16.00x3.00	Van Panchayat Land	1440	30°03'34.41"	79°16'59.7"
2	0.500 to 0.700	40.00x16.00x2.50	Van Panchayat Land	1600	30°03'38.5"	79°16'53.9"
3	1.000 to 1.100	60.00x18.00x2.00	Van Panchayat Land	2160	30°03'46.2"	79°17'00.5"
Total Capacity of Dumping Yard				5200		

Summary of Debris Disposal

S.No.	Total Debris	Disposal during construction	Re-Used material for Road Construction	Total Disposal	Balance Debris
1	28381.80	1333.01	27048.79	1333.01	0


(A.B.
(I.S.D. Gairasain)


अधिरासी अभियन्ता
सिंचाई खण्ड थराली

Wildlife Mitigation Plan for Dam Construction on Ram Ganga river.

Likely Impact of the Project on Protected Area (PA)

As the proposed site for the construction of reservoir is situated in Nail Lagga Farkanda and Talgaon Vanpanchayat forest which is an Oak forest. This construction site is situated 40.9 km distance from the boundary of Kedarnath Wildlife Sanctuary so there will not any adverse impact of the project on Protected Area (PA) i.e., core zone of Kedarnath Wildlife Sanctuary but it cannot denied that there will be some adverse impacts on the wildlife of adjoining forests which can be addressed through proper mitigation measures as recommended below.

Proposed Mitigation Measures

As per the Guide line dated 16.01.2023, the User Agency shall pay 2% of project cost for wildlife management and 0.50% of project cost for Soil and Water conservation works. **As the project cost of this Proposed project is only 119.43 lac, which 2% and 0.5% of project cost come only Rs. 2,38,860 and Rs 59715/- respectively.** Hence, Funds of Rs. 238860/- shall be deposited by the User Agency for the implementation of Habitat improvement works like eradication of weeds, water hole construction and fodder grass plantation in adjoining forest areas and Rs. 59715/- for soil and water conservation works around the reservoir.

It is also intimated that following mitigation measures are proposed to be adopted by the User Agency for Safeguard of Wildlife Passage during execution of the project:

- Use of explosives in road cutting and other construction work will remain completely restricted during construction work, so that disturbances to wildlife could be prevented.
- Construction work will not permissible after the sun set. It is permissible only in day time i.e, between sun rise to sunset.
- Before starting the work, the User Agency will make clear demarcation of the project area by constructing sufficient number of RCC pillars on its cost so that excess cutting of forest land could be avoided.
- Alteration in sanctioned design of project structure and use of diverted forest land will not be permissible in any condition.
- During reservoir construction, except the sanctioned trees in forest land transfer proposal, no extra tree should be felled or damaged so that minimum damage to wildlife habitat could be maintained.
- The User Agency will remain bounded to make proper treatment of excavated areas, created during construction work, on its cost. For this purpose, Sufficient number of

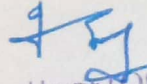
Retaining wall and Breast wall will be constructed by the User Agency so that land slide due to earth excavation works could not take place.

- Muck, produced during the construction works, should be properly dumped only at the places which are sanctioned in forest land diversion proposal. Unregulated spreading of muck will be completely restricted and punishable.
- On the accomplishment of construction works, proper treatment of muck dumping sites should be done by the User Agency on its cost.
- Compliance of Wildlife Protection Act 1972 and Indian Forest Act 1927 and instruction of Hon'ble N.G.T., National/ State Pollution Control Board and directions/ guidelines from National Board for Wildlife and Chief Wildlife Warden of Uttarakhand must be ensured by the User Agency.

General Mitigation Measures for Protection of Wildlife

In addition to the aforementioned specific measures for animals and birds, the following mitigation measures shall be adopted by the User Agency during execution of the project for protection of forest and wildlife:

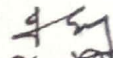
- Before start of work awareness campaign will be taken up by the User Agency in association with Forest Department to create maximum awareness among the construction workers regarding safeguard of forest and wildlife.
- User agency shall comply with all conditions stipulated in forest clearance under Forest (Conservation) Act 1980.
- Land shall not be used for any other purpose other than specified in the proposal.
- The instruction/orders passed by the State Government/Central Government and the directions passed by Hon'ble Court/Supreme/ NGT and directions/ guidelines issued by the CWLW of Uttarakhand from time to time regarding such project shall be complied with.
- User agency will ensure that the project personnel engaged in the project shall comply the provisions of the Indian Forest Act 1927, Wildlife (Protection) Act 1972 & Rules made thereafter.
- Tree felling will be minimized and only those trees which are unavoidable for reservoir construction will be felled under the supervision of Forest Department.
- Construction waste materials will not be thrown inside the forest land.
- No labour camp shall be established inside the forest land.
- Use of fuel wood for cooking purpose will not be allowed. The user agency will manage alternative energy for their labourers.
- There will be no permission to carry ammunition and explosives inside the forest area.


Divisional Forest Officer
Kedarnath Wildlife Division
Gopeshwar
A

जनना का नाम :-मा. मुख्यमंत्री जी की घोषणा संख्या 281/2017 के अन्तर्गत जनपद चमोली के गैरसेंण शहर एवं एडज्वाइनिंग आबादी में पेयजल आपूर्ति हेतु रामगंगा नदी पर बाँध निर्माण हेतु 4.95 है० वन भूमि हस्तान्तरण प्रस्ताव ।

एन०पी०वी० की धनराशि का आंकलन।

1- इको-क्लास की श्रेणी-	V
2- हरियाली का धनत्व-	0.6
3- एन०पी०वी० की दर -	रु० 14,36,670.00 प्रति है०
4-आवेदित वन भूमि का क्षेत्रफल-	4.95 है०
5-कुल देय एन०पी०वी०-	रु० 71,11,516.00


(इन्द्र सिंह नेगी)
प्रभागीय वनाधिकारी,
केदारनाथ वन्यजीव प्रभाग, गोपेश्वर।

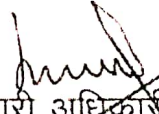
कार्यालय जिलाधिकारी चमोली।
 छत्तीस-एम0वी0(2020-2021) गोपेश्वर: दिनांक: 03 फरवरी, 2021

आशासी अनियन्ता,
 मवाई खण्ड, थराली।


विषय: विकास खण्ड गैरसैण में मा0 मुख्यमंत्री घोषणा के अन्तर्गत गैरसैण में पेयजल आपूर्ति हेतु रामगंगा नदी पर नदी पर बांध निर्माण कार्य (क्षति0वृ0हेतु सिविल सोयम भूमि) के सम्बन्ध में।

कृपया उपरोक्त विषयक उप जिलाधिकारी थराली ने अपने पत्र सं0-54/एस0टी0-भूमि अधिग्रहण(2020-2021) दिनांक 21 जनवरी 2021 के द्वारा विकास खण्ड गैरसैण में मा0 मुख्यमंत्री घोषणा के अन्तर्गत गैरसैण में पेयजल आपूर्ति हेतु रामगंगा नदी पर बांध निर्माण कार्य हेतु ग्राम केरा के खसरा सं0-1015 रकबा 1.730 है0, खसरा सं0 1016 रकबा 4.755 है0 मध्ये 4.704 है0, एवं खसरा सं0-1017 रकबा 4.685 है0 अर्थात् कुल 11.119 है0 भूमि पुनः क्षतिपूर्ति वृक्षारोपण हेतु प्रस्तावित कर प्रस्तावित भूमि का नक्शा, खसरा एवं खतौनी इस कार्यालय को प्रेषित किया गया है, जिसे संलग्न कर आवश्यक कार्यवाही हेतु प्रेषित किया जा रहा है।

संलग्नक - पथोपरि।


 प्रभारी अधिकारी,
 कृते-जिलाधिकारी, चमोली।

प्रतिलिपि:- 1. जिलाधिकारी महोदया चमोली के अवलोकनार्थ ।

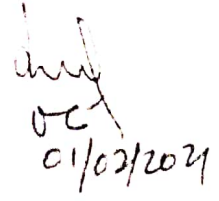

 प्रभारी अधिकारी,
 कृते-जिलाधिकारी, चमोली।

प्रेषक-

उप जिलाधिकारी,
थराली।

LAC-I

सेवा में-

जिलाधिकारी,
चमोली।


01/02/2021

संख्या 54 / एस0टी0-भूमि अधिग्रहण(2020-2021)दिनांक: थराली, 9/1 जनवरी 2021

विषय:- जनपद चमोली के विकास खण्ड गैरसँण में मा0 मुख्यमंत्री जी की घोषणा के अन्तर्गत जलाशय निर्माण के गठन के सम्बन्ध में।

महोदया,

कृपया उपरोक्त कृपया अपने कार्यालय पत्र संख्या-1122/छब्बीस-एम0वी0(2018-19), दिनांक 06 नवम्बर, 2020 का संदर्भ ग्रहण करने का कष्ट करें। जिसके द्वारा अधिशासी अभियन्ता, सिंचाई खण्ड थराली के पत्र संख्या-609/सि0ख0थ0/पी0-03 देराज दिनांक 04.11.2020 की प्रति संलग्न करते हुए विकास खण्ड गैरसँण में मा0 मुख्यमंत्री घोषणा के अन्तर्गत जलाशय निर्माण हेतु 2.90 है0 भूमि उपलब्ध कराते हुए प्रस्तावित भूमि का नक्शा, खसरा एवं खतौनी जाँच आख्या के साथ उपलब्ध कराये जाने के निर्देश दिये गये हैं।

विषयगत प्रकरण में जिलाधिकारी महोदया द्वारा दिये गये मौखिक निर्देश के क्रम में अधोहस्ताक्षरी द्वारा वन क्षेत्र अधिकारी, मध्य पिंडर रेंज थराली एवं तहसीलदार थराली एवं राजस्व उप निरीक्षक डुंग्री के माध्यम से प्रस्तावित भूमि की जाँच करायी गयी तथा संयुक्त जाँच आख्या प्राप्त की गयी। प्रकरण में वन क्षेत्र अधिकारी, मध्य पिंडर रेंज थराली द्वारा अपने पत्र संख्या-449/12 दिनांक 15 जनवरी, 2021 से अवगत कराया गया है कि जनपद चमोली के विकासखण्ड गैरसँण के अन्तर्गत रामगंगा नदी पर जलाशय निर्माण हेतु क्षतिपूरक वृक्षारोपण के लिये प्रस्तावित 11.17 है0 भूमि के सम्बन्ध में तहसीलदार, थराली, राजस्व उप निरीक्षक डुंग्री व स्थानीय ग्राम वासियों के साथ अनुभाग अधिकारी थराली द्वारा उक्त प्रस्तावित भूमि का संयुक्त निरीक्षण किया गया। उनके द्वारा प्रेषित संयुक्त निरीक्षण रिपोर्ट के अनुसार राजस्व उप निरीक्षक डुंग्री द्वारा तीन पैचों में प्रस्तावित भूमि दिखायी गयी। जिसकी आख्या निम्नानुसार है:-

पैच संख्या-01- जिसका कुल सकल क्षेत्रफल 5.00 है0 है, जिसमें 40 प्रतिशत भाग चट्टानी है। अतः उक्त पैच में 60 प्रतिशत भाग (3.00 है0) पर ही वृक्षारोपण कार्य सम्भव है।

पैच संख्या-02- जिसका कुल सकल क्षेत्रफल 5.00 है0 है, जिसमें 20 प्रतिशत भाग चट्टानी है। अतः उक्त पैच में 80 प्रतिशत भाग (4.00 है0) पर ही वृक्षारोपण कार्य सम्भव है।

पैच संख्या-03- जिसका कुल सकल क्षेत्रफल 5.25 है0 है, जिसमें 20 प्रतिशत भाग चट्टानी है। अतः उक्त पैच में 80 प्रतिशत भाग (4.20 है0) पर ही वृक्षारोपण कार्य सम्भव है।

उपरोक्तानुसार कुल तीनों पैचों में $(3.00+4.00+4.20)=11.20$ है0 उपलब्ध भूमि जिसके कुछ भाग में स्थानीय ग्रामवासियों द्वारा वर्षाकाल में घास इत्यादि भी उगाया जाता है उनके द्वारा कहा गया है कि उन्हें इस क्षेत्र में वृक्षारोपण करने में कोई आपत्ति नहीं है।

प्रकरण में वन क्षेत्र अधिकारी, मध्य पिंडर रेंज, थराली द्वारा उक्त प्रस्तावित 11.17 है० भूमि में क्षतिपूरक वृक्षारोपण करने हेतु अपनी संस्तुति आख्या प्रेषित की गयी है। (प्रति संलग्न)

इसी प्रकार प्रकरण में तहसीलदार थराली द्वारा अपने वन संख्या-90/र०का०-क्ष०पू०/2021 दिनांक 19 जनवरी, 2021 से अवगत कराया गया है कि उक्त प्रस्तावित भूमि का वन कार्मिकों के साथ गहनता से निरीक्षण कर प्रस्तावित भूमि को 03 भौगोलिक भागों में बांटा गया। इन 03 भागों के मध्य में कहीं-कहीं पर पथरीला भाग भी स्थित है। इन पथरीले हिस्सों को छोड़कर अन्य भाग पर वृक्षारोपण किया जा सकता है। उक्त भौगोलिक क्षेत्र के बारे में स्थानीय ग्रामवासियों से वार्ता की गयी तो ग्रामवासियों द्वारा बताया गया कि बरसात के दिनों में उक्त प्रस्तावित क्षेत्र में धारा इत्यादि काटा जाता है। ग्रामवासियों को उक्त प्रस्तावित क्षेत्र में वृक्षारोपण होने में कोई आपत्ति नहीं है। प्रस्तावित क्षेत्र ग्राम कंरा के अन्तर्गत खसरा नम्बर 1015 रकवा 1.730 है०, खसरा नम्बर 1016 रकवा 4.755 है० मध्ये 4.704 है० एवं खसरा नम्बर 1017 रकवा 4.685 है०, कुल 11.119 है० में स्थित है। (प्रति संलग्न)

प्रकरण में प्रस्तावित भूमि का नक्शा, खसरा एवं स्वतौंगी की नकल पूर्व में जॉच रिपोर्ट के साथ संलग्न कर प्रेषित की जा चुकी है।

अतः उपरोक्तानुसार वन क्षेत्र अधिकारी, मध्य पिंडर रेंज थराली / तहसीलदार थराली की संयुक्त जॉच आख्या के अनुसार प्रस्तावित 11.17 है० भूमि में क्षतिपूरक वृक्षारोपण किये जाने हेतु आख्या संस्तुति सहित महोदय की सेवा में आवश्यक कार्यवाही हेतु सादर प्रेषित की जा रही है।

संलग्नक - यथोपरि।


भवदीय,

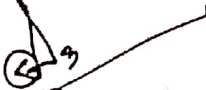



(सुधीर कुमार)
उप जिलाधिकारी,
थराली।


संयुक्त निरीक्षण रामगंगा नदी पर जलाशय निर्माण हेतु (क्षतिपूरक वृक्षारोपण)


माननीय मुख्यमंत्री जी की घोषणा संख्या-281/2017 के अन्तर्गत जलाशय निर्माण हेतु सिविल सौयम भूमि जिसमें कि वन पंचायत की 4.95 है० वन भूमि डूब में आनी प्रस्तावित है, जिसमें पूर्व में प्रस्तावित 3.50 है० वन भूमि भी सम्मिलित है। जिस सम्वन्ध में उप जिलाधिकारी थराली द्वारा उक्त भूमि में प्रस्तावित वन भूमि 3.50 है० के सापेक्ष ग्राम केरा राजस्व उप निरीक्षक क्षेत्र दुग्री तहसील थराली में क्षतिपूरक वृक्षारोपण हेतु खसरा संख्या 1016 रकवा 4.755 है० एवं खसरा संख्या 1017 रकवा 4.685 है० कुल रकवा 9.440 है० भूमि क्षतिपूर्ति वृक्षारोपण हेतु चिन्हित की गयी थी जिसका संयुक्त निरीक्षण दिनांक 05/01/2020 को किया गया था। किन्तु जलाशय का परिकल्प परीक्षण केन्द्रीय जल आयोग द्वारा कराया गया, जिसमें जलाशय की ऊँचाई वृद्धि हेतु निर्देशित किया गया। फलस्वरूप जलाशय के जल भराव एवं स्ट्रक्चर सहित अन्य कार्य के लिए 4.95 है० वन भूमि की आवश्यकता होगी, जिसमें पूर्व में प्रस्तावित 3.50 है० वन भूमि भी सम्मिलित है। जिस सम्वन्ध में उप जिलाधिकारी थराली द्वारा पूर्व में चिन्हित 9.44 है० के अतिरिक्त 1.00 हेतु उपरोक्त उल्लेखित राजस्व ग्राम में क्षतिपूरक वृक्षारोपण हेतु खसरा संख्या 1015 रकवा 1.730 है० भूमि क्षतिपूर्ति वृक्षारोपण हेतु प्रस्तावित किया जा रहा है, जिसका निरीक्षण दिनांक 25.09.2020 को निम्न अधिकारियों / कर्मचारियों द्वारा किया गया है।

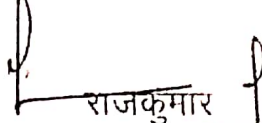

RAJ KUMAR SIDDWAN
REVENUE SUB INSPECTOR
राजकुमार सिद्धवान
राजस्व निरीक्षक, दुग्री
TEH.....
DISTRICT- CHAMOLI


तहसीलदार
थराली


राकेश गुसाई
वन-बीट अधिकारी थराली


जसपाल सिंह
अभिगणना अधिकारी
सिवाई (खुसाल) थराली
सिवाई खण्ड थराली


राजेन्द्र प्रसाद पेटवाल
जिलाधिकारी
सिवाई खण्ड थराली


राजकुमार
सहायक अभिगणना अधिकारी
सिवाई खण्ड थराली

मकल खतीनी (कब खिडाए)

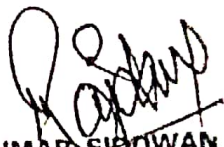
ग्राम - कैरा


वा.व.नि. क्षेत्र - कुशी

तहसील - धराली जिला - चमो

1	2	3	4	5	6	7	8
35	चहान	-	1016	4.755	-	-	-
35	चहान	-	1017	4.685	-	-	-
35	बजर	-	1015	1.730	-	-	-

नोट:- बसरा सँ 1016 व 1017 खेती 1014 मे दर्ज ह्ये
 • बसरा सँ 1015 खेती 9(3) मे दर्ज ह्ये।
 • बसरा सँ 1016 मे 0.05 हे भूमि फिदाशको के नाम स्वीकृत ह्ये


सिद्धानिनि
 RAJ KUMAR SIDDWAN
 REVENUE SUBINSPECTOR
 CIRCLE.....
 TEH.....
 DISTRICT - CHAMOLI


 21/9/2022
 तहसीलदार
 धराली