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BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI

EA NO. 23/2024
IN
ORIGINAL APPLICATION NO. 295/2016

IN THE MATTER OF:

Amresh Singh

.... Applicant

Versus

Union of India & Ors.

....Respondents

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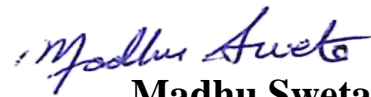
NDOH- 06.02.2025

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RESPONDENT NO.2

THROUGH



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Date: 30.01.2025

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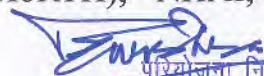
Union of India & Ors.

...Respondents

**COMPLIANCE REPORT ON BEHALF OF RESPONDENT NO.2/NHAI
IN TERMS OF ORDER DATED 15.07.2024 & 15.10.2024**

MOST RESPECTFULLY SHOWETH:

1. The present compliance report is being filed by the Answering Respondent/NHAI as directed in the Order dated 15.07.2024 & 15.10.2024 passed by this Hon'ble Tribunal in the present Execution Petition. This Hon'ble Tribunal vide Order dated 15.07.2024 was also pleased to issue Notice upon the Respondents. Further, This Hon'ble Tribunal vide Order dated 15.10.2024 had given the four weeks' time to the answering respondent to file the compliance affidavit.
2. The brief factual detail of the present matter is as under:
 - 2.1. On 24.05.2016, the Applicant filed OA No.295/2016 alleging rampant dumping of muck and debris in Rivers Chenab and Tawi during the process of construction of four laning of National Highway from Udhampur to Banihal in Jammu and Kashmir.
 - 2.2. On 30.05.2016, this Hon'ble Tribunal issued notice upon Ministry of Road, Transport and Highways (MoRTH), NHAI, M/s Gammon


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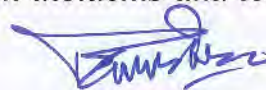
Engineers and Contractors Pvt. Ltd. (“GECPL”), M/s Hindustan Construction Company Ltd. (“HCC”) and restrained the Respondents from throwing any debris/muck resulting from the construction of the road from Udampur to Banihal in any of the rivers directly or indirectly.

2.3. On 21.10.2016, the Applicant filed an Execution Application No.32/2016 for execution of the Order dated 30.05.2016 alleging that the Order dated 30.05.2016 was not complied by the Respondents.

2.4. This Hon’ble Tribunal vide **Order dated 29.10.2021 (Pg.12-24/ Execution Application)** disposed of the Execution Application No.32/2016 in OA No.295/2016 filed by the Applicant and held as under:

“11. Accordingly, we direct NHAI to set apart amount of Rs. 129 crores, which is tentative cost for implementing environment management plan and cost of restoration of damage to the environment. NHAI is free to proceed against contractors, if permissible in terms of contractual rights but we do not express any view about such inter se dispute. NHAI may implement the Environment Management Plan which should include restoration of the damage caused during the course of construction of NHAI-44 so far. Restoration plan may be prepared within one month by the NHAI, which may be overseen by the monitoring Committee constituted by this Tribunal, with the assistance of any other expert/institution or otherwise. Thereafter, the same may be executed as far as possible within six months. NHAI will be bound by the direction of the Monitoring Committee subject to any objection against the same being agitated before this Tribunal. This covers past violations and in future all possible precautions be observed so as to maintain the environment free from damage.

12. In the light of experience in the present case, it will be appropriate that the NHAI sets up forthwith an inhouse environment compliance monitoring panel at the headquarters, reporting to the chairman, NHAI, to monitor compliance of EC/FC conditions for various developmental projects being executed by the NHAI to prevent recurrence of such incidents and to ensure protection of environment.”



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National Highway Authority of India, PIU, Ramban

- 2.5. On 03.03.2024, the Applicant submitted an RTI Application before the Answering Respondent seeking information regarding the compliance of the Order dated 29.10.2021 passed by this Hon'ble Tribunal.
- 2.6. The Answering Respondent replied to the RTI Application on 14.05.2024 (Pg.25-26/Execution Application) as stated below-
- An amount of Rs.129 Cr has been kept aside for the mitigation plan as per the direction issued by this Hon'ble Tribunal.
 - Immediate interim measures were taken by the Answering Respondent after tendering the work amounting to Rs.20.22 Cr at critical locations for slope stabilization works which were completed in June 2022.
 - In December 2021, the restoration plan was prepared by a DPR Consultant i.e. M/s ICT Pvt. Ltd. in JV with Altinok Consulting Inc. engaged by the Answering Respondent.
 - The balance restoration plan could not be completed due to the continuous construction undergoing in the vicinity of some dumping yards.
 - Substantial quantum of work has been completed and the same is being reassessed for requirement of restoration measures as per current site conditions.
 - Since the stretch of Ramban to Banihal is frequently prone to landslides during open excavation resulting in closure of NH-44, the Answering Respondent has realigned the maximum possible stretch from Ramban to Banihal through tunnels and viaduct for substantial reduction of quantum of muck generation, which is best eco-friendly infrastructure for conservation of the entire ecology of the landscape.



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2.7. On 20.05.2024, the Applicant filed the present Execution Application before this Hon'ble Tribunal seeking for action against the Respondents under Section 25 & 26 of NGT Act, for not complying with the final order dated 29.10.2021.

3. It is submitted that the Answering Respondent has duly complied with the Order dated 29.10.2021 passed by this Hon'ble Tribunal as detailed below-

3.1. ***NHAI to set apart amount of Rs.129 Cr which is tentative cost for implementing environment management plan and cost of restoration of damage to the environment***

The Answering Respondent has already considered the proportion of Rs.129 Cr. for implementing the environmental management plan and cost of restoration of damage to the environment as part of Counter Claim in the ongoing conciliation of M/s Gammon Engineers Contractors Pvt Ltd and M/s HCC Ltd. The restoration work of the dumping locations was started and completed by the respective contractors viz Gammon and HCC. Further, the Committee appointed by J&K PCC has also visited the site on 9th & 10th December 2024 and submitted their report on 10.01.2025 wherein it has been stated that most of the restoration work has been completed and the balance work will be completed after completion of construction at the respective location.

3.2. ***NHAI is free to proceed against contractors, if permissible in terms of contractual rights***

a. On 23.09.2021, the Answering Respondent terminated the Contract Agreement with M/s HCC Ltd. The Answering Respondent has also considered the amount of **Rs.79 Cr** and **Rs.41 Cr** as part of counter claim against M/s GECPL and M/s HCC Ltd respectively. True copy of the Termination Letter dated 23.09.2021 is annexed herewith and marked as **Annexure R-2/1**.



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- b. It may be noted that the dispute between the Answering Respondent and its Contractors is under Conciliation and the Answering Respondent has raised its Counter Claim before the Ld. Conciliator. True copy of the orders passed by the Ld. Conciliator is annexed herewith and marked as **Annexure R-2/2** and **Annexure R-2/3** respectively.

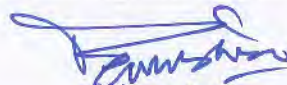
3.3. ***NHAI may implement the Environment Management Plan which should include restoration of damage caused during the course of construction of NH-44 so far. Restoration plan may be prepared within one month by the NHAI, which may be overseen by the Monitoring Committee constituted by this Hon'ble Tribunal. Thereafter the same may be executed as far as possible within 6 months.***

- a. In view of the termination of Contract Agreement with HCC, the Answering Respondent awarded the Contract Agreement on 03.12.2021 to M/s Tarmac Roof and Builders (“**TRB**”) for lifting of extra muck dumped between Nasri to Banihal (NH-44) in part portion along the bed of Chenab and it’s tributaries and dispose the same in designated dumping sites and slope protection through crates and hydro seeding/coir based turfing. It is pertinent to mention that the work was executed by TRB at the locations where the restoration was possible.

The work executed by TRB includes the followings:

- i. Removal of Muck from the Valley Side – **99,987 cum**
- ii. Installation of Gabion Wall all along the length – **17,259.16 cum**
- iii. Installation of Jute/Coir matting along with Hydroseeding – **1,07,441.2 sqm**

TRB executed the work on 30.06.2022 & completed **26 % of restoration** work at site for stabilizing the slopes in **2.43 km length**



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with net work done of **Rs.10,53,72,183/**. The section wise work which has been executed is as under:

- i. Nashri to Ramban – **Rs.8,68,24,878**
- ii. Ramban to Banihal – **Rs.1,85,47,305**

The site photographs of the Restoration work are annexed and marked as **Annexure R-2/4**.

- b. Thereafter, the Answering Respondent realigned/proposed value addition in around 18 km of the Project Highway in Ramban-Banihal by **designing tunnel (15.985 Km length two lane), viaduct (8.6km length two lane) & cut & cover/ canopy (870m length)**.
- c. In December 2021, the Answering Respondent awarded the work for preparation of proposal for Environmental Restoration Plan of Muck Dumping sites of Nasri-Banihal Section of NH-44 as Change of Scope to existing DPR consultant of Ramban-Banihal i.e. M/s ICT Pvt. Ltd. in JV with Altinok Consulting Engineer Inc. The DPR Consultant submitted the proposal of Environmental Restoration Plan for both sections i.e. Nashri to Ramban & Ramban to Banihal. True copy of the Environmental Restoration Plan is annexed and marked as **Annexure R-2/5**.
- d. As per Monitoring Committee Report and Hon'ble NGT Order, **27 nos. locations** were identified in **Nasri-Ramban Section** and **29 nos. locations** were identified in **Ramban-Banihal stretch** for the restoration. Apart from these sites, the DPR consultant of NHAI had also identified some other locations and a comprehensive list was prepared making it a total of **71 nos. locations**.



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- e. Based on the Environment Restoration Plan prepared by DPR Consultant, the respective Contractors viz HCC and Gammon have executed the restoration work by rolling & levelling of top surface, river bank & dumping yard protection by the installation of Gabion wall, Coir mat and bioengineering. Out of 71 sites, the restoration/ stabilization work has been completed on 63 no. of sites. However, JKPCC vide its report dated 10.01.2025 has certified completion/ stabilization of 41 no of sites & partial stabilization of 22 nos. of sites. It is pertinent to mention that even these 22 nos. of sites have been stabilized as vegetation has developed over entire slopes & sites have been closed for the last 3 years. Further intervention at these sites will cause disturbance to already such stabilized slopes. The remaining number of sites i.e. 08 are still active and will be restored after completion of civil work at the respective location. It is submitted that approximately 85% restoration work has been done and the balance shall be completed after completion of civil work at the respective location. True copy of the JKPCC site visit report dated 10.01.2025 is annexed and marked as **Annexure R-2/6**.
- f. As the restoration measures have been completed by Respondent Nos.5 & 6, they have submitted the expenditure incurred for the stabilization measures. The Respondent No.5 informed vide its Affidavit dated 09.10.2024 filed before this Hon'ble Tribunal wherein it has been stated that the Respondent No.5 has incurred an expenditure to the tune of **Rs.38.80 Cr** for the stabilization of dumping sites in the **Udhampur-Chenani Section** and **Rs.27.04 Cr** was spent in the stabilization of dumping sites in **Nasri-Ramban Section** which is part of the restoration measures proposed by Hon'ble NGT. While Respondent No.6 informed vide e-mail dated 22.10.2024 that it has incurred an



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expenditure to the tune of **Rs.41.71 crores** in the stabilization of dumping sites in **Ramban-Banihal section**, whereas, the Answering Respondent has already incurred an expenditure of Rs.10.54 crores through Third Party (TRB) whereas the estimate cost put to tender was **Rs.20.22 crores** i.e. there was tender savings of Rs.9.68 crores. Hence, till date, total cumulative expenditure incurred for the restoration of dumping sites in **Nasri-Banihal Section amounts to Rs.88.97 crores against the allotted cost of Rs.129 crores**. The remaining fund shall be utilized in the restoration of balance locations wherein the civil work is going on presently. True copy of e-mail dated 22.10.2024 is annexed herewith and marked as **Annexure R-2/7**.

- g. At present, open cutting is not being done and only the tunnel excavation is being done which is being dumped in the designated dumping yards duly following all the environmental norms.

3.4. *It will be appropriate that NHAI sets up forthwith an inhouse environment compliance monitoring panel at the headquarters, reporting to the chairman, NHAI, to monitor compliance of EC/FC conditions for various developmental projects being executed by NHAI to prevent recurrence of such incidents and to ensure protection of environment.*

It is to apprise that Answering Respondent is a ‘public authority’ responsible for development, maintenance and management of national highways in the country and is fully committed to protection and conservation of environment and forest and is proactively nurturing tenets of sustainable development.

It has a full-fledged ‘Environment and Green Highways Division’. It has engaged 25 retired senior forest officers in its 25 Regional Offices in the country which are in turn assisted by 27 Young Professionals (Plantations). Besides these, in order to fortify its ecology and environment portfolio, the


परियोजना निदेशक
Project Director

Answering Respondent is also engaging 27 Environment Associates in its Regional Offices and Headquarters. The Answering Respondent is also proactively pursuing its Green Highway Policy, 2015 and has till date planted more than 4 crore plants in country in its avenue and medians stretches to provide positive externality to the commuters.

Further, it has positioned a dedicated Joint Advisor (Environment & Plantation) for its Regional Office, Jammu, who is a retired senior forest officer, to oversee the statutory environmental compliances besides the plantation works.



RESPONDENT NO.2

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना इकाई रामबन
National Highway Authority of India, PIU, Ramban

THROUGH

Modhu Awate

Singhania & Partners LLP

Solicitors & Advocates

P-24, Green Park Extension

New Delhi-110016

Dated:30.01.2025

Place: New Delhi

**BEFORE THE NATIONAL GREEN TRIBUNAL
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...Applicant

Versus

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...Respondents



AFFIDAVIT

I, Purshotam Kumar, son of Sh. Jabro Ram, aged 57 years, working as Project Director at National Highways Authority of India, having office at National Highways Authority of India, Project Implementation Unit-Ramban C/o RO Jammu, House No. 315 Second Floor, Sector - 1 Channi Himmat, Jammu – 180015, do hereby on solemn affirmation state and submit as under:

That I am the Project Director with the Respondent No.2/NHAI and am fully conversant with the facts and circumstances of this case. I am duly authorised on behalf of the Respondent No.2/NHAI to sign, verify the accompanying report and hence, competent to swear this affidavit.

That the accompanying report has been drafted under my instructions and the facts stated therein are true and correct based on the records and that nothing material has been concealed therefrom.

3. That the annexures filed along with the present report are true copies of their respective originals.

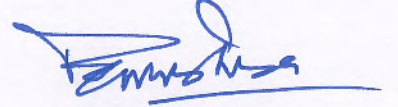
Affirmed
Solemnly Affirmed Hence Attested
NOTARY
District Ramban J&K

Amresh Singh
DEPONENT
परियोजना निदेशक
Project Director
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना इकाई रामबन
National Highway Authority of India, PIU, Ramban

NO:- 10-01-2025
DT:- 30-01-2025

VERIFICATION:

Verified at Ramban on this 30th day of January, 2025 that the contents of the above affidavit are true and correct to the best of my knowledge. No part of it is wrong and nothing material has concealed therefrom.

**DEPONENT**

परियोजना निदेशक
Project Director
भारतीय राष्ट्रीय राजमार्ग प्राधिकरण, परियोजना इकाई रामबन
National Highway Authority of India, PIU, Ramban





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भारतीय राष्ट्रीय राजमार्ग प्राधिकरण
(सड़क परिवहन और राजमार्ग मंत्रालय)
National Highways Authority of India

(Ministry of Road Transport and Highways)
जी-5 एवं 6, सेक्टर-10, द्वारका, नई दिल्ली-110075
G-5 & 6, Sector-10, Dwarka, New Delhi-110075

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दूरभाष / Phone : 91-11-25074100/25074200
फैक्स / Fax : 91-11-25093507 / 25093514

NHAI/11019/22/2011/RB

Date: 23.09.2021

To,

The Authorized Signatory
M/s Hindustan Construction Company Ltd.
Hincon House, Lal Bahadur Shastri Marg, Vikrohli(W)
Mumbai-400083, Maharashtra
Email: contactus@hccindia.com;
isaac.joseph@hccindia.com; contracts.nh44@hccindia.com

Sub: Four laning of Ramban to Banihal Section of NH-1A from KM 151.00 to Km 187.00 in the State of Jammu & Kashmir (Package no NHDP-Phase-II/BOT/III/J&K-Termination of Contract Agreement dated 13.10.2015 -Reg

Ref: (i) Authority's Cure Period Notice dated 04.05.2018
(ii) Contractor's reply dated 07.06.2018 to the Cure Period Notice
(iii) Authority's letter dated 21.06.2019 retaining the Cure Period Notice
(iv) Authority's letters dated 16.07.2020, 27.11.2020 & 19.04.2021 regarding no works on certain chainages/ realignment of existing highway
(v) Authority's letter dated 12.06.2021- slow progress
(vi) Authority's Intention to Terminate letter No. NHAI/RO-Jammu/2015/11071/R-B/442 dated 12.06.2021-
(vii) EPC Contractor M/s HCC letter No. HCC/RBRP/2020-21/3760 dated 21.06.2021

Sir,

The National Highways Authority of India is in receipt of your reply dated 21.06.2021 in response to the Intention to Terminate Notice dated 12.06.2021 issued by the Authority referred to at Serial No.(v) above. The reply sent by you vide your communication dated 21.06.2021 has been examined by the Authority and it has been found that you the Contractor instead of curing the defaults highlighted in the Cure period notice and reiterated by way of several correspondences issued by the Authority and Engineer has merely indulged in unnecessary verbosity and have failed to answer in any meaningful way the blatant violations of the provisions of the Contract Agreement and applicable law committed by the Contractor.

2. The contents of the Cure Period Notice dated 04.05.2018 and Intention to Terminate notice dated 12.06.2021 along with annexures appended thereto issued to the Contractor are to be read as part and parcel of the present notice which are not being repeated herein for the sake of brevity. Despite being put to repeated notices to cure the breaches of the terms of the Contract Agreement especially in relation to completion of project highway as well as taking up the maintenance of the project highway, the Contractor has failed to cure such breaches which are subsisting even till today.

3. The strategic and national importance of the Project Highway is fully within the knowledge of the Contractor as it is the only connecting link between Jammu to Srinagar and further to Ladakh. The speedy completion of the project highway is of paramount importance in view of the national security concerns abounding the region in which the highway is located. The Contractor has not only inordinately delayed the completion of the project highway but also failed to adequately maintain the existing highway which has resulted in converting the project highway to one way road for transit of commercial vehicles and inordinately delaying the crucial supply of essentials to the army guarding the borders of our country. Due to continuous disruption on the Project Highway owing to erratic and unscientific manner of execution of works, the transportation on the National Highway is severely impacted, besides resulting in loss of life and property.

4. It may be noted that the Authority has been constrained to issue instant Termination Notice primarily on account of the following reasons, apart from other defaults of the Contractor as recited in the Cure Period Notice and Intention to Terminate notice which are continuing and subsists till date:

- (i) Slow progress of works which is clearly suggestive of Contractor's intention to abdicate the completion of works in a time bound manner (**Annex-1**). Despite after lapse of more than 68 months time period from the appointed date, the present progress of project is still dismal more prominently of critical structures / bridges. This is in violation of Clause 8.3.2 read with Schedule J of the Contract.
- (ii) Gross violation of terms of the Contract Agreement viz. Clause 3.1.1, 10.3, 14, read with Schedule E of the Contract relating to maintenance of the Project Highway including the part of existing highway (**Annex-2**).
- (iii) Negligent approach towards safety of the road users which has resulted in frequent accidents at Project Site, the main reason for which is complete lack of maintenance. This is in violation of Clause 3.1.1, 10, 14, 16 read with Schedule H of the Contract.

5. The Contractor's reply dated 21.06.2021 is completely devoid of reasons and answers to the issues raised in the Notice of Intention to Terminate. The crucial issues raised in the Notice of Intention to Terminate particularly those which related to non-maintenance of the road endangering the safety and security of the users, as well as national security by leading to delays in army supplies, have not been dealt with at all. The Contractor has, without explaining its conduct for each of the above defaults, has merely brushed aside the issues raised by the Authority and has neither provided any meaningful reasoning nor taken any serious steps to cure the defaults which are evident from the condition prevailing at Site till date.

6. The reasoning for the slow progress of works set out in the Contractor's Reply dated 21.06.2021 at Para 4 is without any basis. None of the reasons as stated in reply to para 4 are hindering the execution of works on available fronts since the beginning of the construction period and there is no reason forthcoming from the



bare reading of the communication dated 21.06.2021 as to why the works on available work fronts were not completed within the stipulated period and extension thereof.

7. It is reiterated that as per the Contract, the work was to be completed before 1278th day from the Appointed Date i.e., 28.12.2015. Accordingly, Scheduled Completion date was determined as 26.06.2019, however, in complete disregard to the completion period, even after lapse of more than 68 months after Appointed Date, the work has not been completed at site and Contractor have failed to achieve the Project Milestones as per Schedule-J of Contract Agreement even after considering the effect of hindrances and other delays.

8. Moreover, the Contractor has also failed to achieve targets set by itself for June, July & August 2021 mainly due to inadequate deployment of effective/skilled manpower, complete lack of experience, poor site management, lack of cash flow and non-deployment of adequate resources etc. even as on today the physical progress of the work is still dismal as against the progress assured by the Contractor on whose behest the Authority had kept further action in pursuance to the cure period notice in abeyance for a period of six months. Despite granting the contractor ample opportunities to expedite the progress of works, the same have yielded no positive result on site. Instead of performing work on ground, the Contractor has indulged in protected communications in order to wriggle out of its contractual commitments. That the Contractor's defaults vis-à-vis delay in timely completion of the project and non-maintenance of the same has led to the deplorable condition of the site, which can be ascertained from the photographs which are annexed herewith as Annex-3.

9. As regards failure to maintain the Project Highway, the Contractor has attempted to twist and turn, otherwise unambiguous and clear terms of the Contract which cast an absolute obligation on the Contractor to maintain the Project Highway including the existing road traffic worthy and user friendly at all times during construction period. As has been repeated by the Authority time and again, the Contractor has failed to maintain the existing lane of Project Highway. In fact, the Authority has received several complaints from the commuters, public representatives and local bodies regarding the shoddy maintenance of the stretch under the Contract. Thus, no amount of longwinded communication would overturn the factual position as is appearing in the photographs of the Site which conclusively establish that there is nil maintenance of the Project Highway. The non-maintenance has led to stalling of the traffic at the Project Highway so much as that for travelling the stretch of Project Highway i.e. approximately 36 Kms, a commuter takes more than 3-4 hours, whereas in transiting the remaining Jammu-Srinagar Highway for a length of 190 Km, time consumed barely is 3-4 hours.

10. Furthermore, unscientific and unconventional hill cutting by the Contractor not only compromised the service level and safety of road users but also resulted in blockage of strategically important National Highway connecting Kashmir valley and

Ladakh. Despite repeated request by the Authority to comply with its maintenance obligations as per Contract, the contractor has failed to maintain the same. That because of Contractor's misrepresentation and breach in fulfillment of Contractor's various obligation and undertakings, the interest of Authority has been seriously prejudiced beside bringing disrepute to the organization. Nevertheless, Contractor's acts of omission and commission have led to deterioration of the National Highway causing anguish to the public in general and exposing the users to severe risk of life. It may not be out of place to mention here the main reason for risk to commuters is development of new landslide zones due to unscientific slope cutting by contractor & delay in slope protection works at vulnerable points. Due to continuous failure of the Contractor on this account, the maintenance works have been got executed at the risk and cost of the Contractor by the Authority being constrained by gross negligence and inactions at the end of the Contractor. For the purposes of record, it is stated that part maintenance which the Contractor avoided to take up for flimsy reasons has been successfully completed by the Authority, albeit through a third party.

11. Pertinently, during the site inspections for the work done, the Authority had notified to the Contractor defects in executed work and issued notices to maintain quality standards as per Contract specifications. However, despite repetitive requests, Non Conformity Reports and Show Cause Notices, the Contractor has abysmally failed to maintain the quality standards as per Contract Provisions and Good Industry Practices. As on date Contractor has failed to rectify the defects so observed and communicated. Also, various NCR's issued by AE has not been closed by the contractor even after the lapse of sufficient time.

12. The Contractor is required to do due diligence and intensive survey before even casting its bid and to make itself fully familiar to the terrain and risks and hazards that may arise in executing the works as indicated in the Schedules to the Contract Agreement. It may be noted that apart from the DPR Consultant, the Contractor is equally responsible for not highlighting the issues in the DPR prior to the bidding in terms of the requirement of the RFP and the Contract. Be that as it may, even after descoping of the work of approximately 16 Kms i.e. the re-aligned portion, the Contractor has failed to complete the balance works within the stipulated period as provided in the Contract, despite there being no impediment/hindrance. In this behalf, it is to be noted that the Contractor itself agreed to revision in DPR and gave its no objection to the same. Having accepted a particular decision, it cannot renege from the same and portray the same as the reason for overall and cascading delay in completion of work.

13. From the above facts and situation of work at Site which has been confirmed by the Engineer through various reports/communications/MPRs, the Authority is satisfied that the continuation of the Contract is not in the best interest of the Project of such national importance.

14. In nutshell, the Authority having examined the representation dated 21.06.2021 received from the Contractor and critically examined the same vis-à-vis situation prevailing at Site as well as taking into consideration the observations/point wise reply of the Engineer as communicated vide AE letter no 2552 dated 08.07.2021 (Annex-4) has found it to be devoid of any merit, unsubstantiated, contrary to the factual position and provisions of the Contract and hence, the same is not tenable. Moreover, enough time was given to you from the intention to terminate notice dated 12.06.2021, but unfortunately nothing has been done by you in the interregnum to cure the various defects and also failed to meet the timelines. Thus, the Authority concludes that the Contractor evidently has breached the terms and conditions of the Contract and forced the NHAI/Authority to take action under clause 23.1.2 of Contract. Since the Contractor has failed to maintain the requisite progress, take up the work in right earnest, maintain the project highway in a traffic worthy manner, take requisite steps towards user safety and expose the users to severe risk of life and property, the Authority has after considering the reply of the Contractor and his performance at site, has completely lost faith in the ability of the Contractor to complete the balance work of the Project Highway and hence, decided to terminate the Contract by way of the present notice with immediate effect.


15. In view of the aforesaid facts and circumstances and in consideration of the abnormally dismal rate of progress of the project/ non maintenance of Project Highway/poor quality of work executed at site and non-compliance of environmental mitigation plan, it is established, apparent and evident that the Contractor neither has the intention nor the resources to perform its obligations under the Contract and is in breach of its obligations set forth under Clause 3.1.2, Clause 23.1.1 (c), (d), (e), (f), (h) & (r) of the Contract Agreement. Hence, in terms of Clause 23.1.2 of Contract the Authority hereby terminates the Contract Agreement dated 13.10.2015 signed with M/s Hindustan Construction Company Ltd. for execution of the subject referred project.

16. This termination is issued on account Contractor's default and the Authority reserves its right to claim any sum/damages from the contractor as may be permissible in law along with interest in accordance with law.

17. This termination is issued without prejudice to any other right or remedy available with the Authority under the Contract and / or applicable law.

Yours faithfully,

Encl: as above


(Virender Sambyal)
General Manager (T) J&K/HP

Copy to:

- (i) RO Jammu
- (ii) PD PIU Ramban

10/10/24, 3:12 PM

Re: Court case before Hon'ble NGT - Counter claim details rega... - PIU Ramban

Re: Court case before Hon'ble NGT - Counter claim details regarding.

Agarwal Pranshu, Manager(T)

Thu 10/10/2024 2:48 PM

To:PIU Ramban <piuramban@nhai.org>;

Cc:RO Jammu <rojammu@nhai.org>; Asheesh Kumar Jain, In-charge CGM (Tech) <akjain@nhai.org>;

📎 8 attachments

HCC_Ramban-Banihal_1st meeting order_25.01.2022.pdf; HCC_Ramban-Banihal_2nd meeting order_18.04.2022.pdf; HCC_Ramban-Banihal_3rd meeting order_28.09.2022.pdf; HCC_Ramban-Banihal_4th meeting order_17.08.2023.pdf; HCC_Ramban-Banihal_5th meeting order_17.11.2023 (2).pdf; HCC_Ramban-Banihal_6th meeting order_23.02.2024.pdf; Gammon 09-04.2024 - MoM (Udhampur -Ramban).pdf; Gammon10.04.2024 - MoM (Udhampur -Ramban).pdf;

As discussed, please find enclosed the MOM of CCIE of both M/s HCC & M/s GECL.

From: PIU Ramban

Sent: Thursday, October 10, 2024 2:34 PM

To: Agarwal Pranshu, Manager(T); Asheesh Kumar Jain, In-charge CGM (Tech)

Cc: RO Jammu

Subject: Court case before Hon'ble NGT - Counter claim details regarding.

Sir,

This is in reference to the court case of Hon'ble NGT wherein the following details are required urgently to file the affidavit:

- (i) Present status of conciliation of M/s HCC & M/s GECPL.
- (ii) Latest MOM of CCIE of both M/s HCC & M/s GECL showing the details of counter claims.

It is requested to kindly provide the detail.

Project Director

परियोजना निदेशक

भारतीय राष्ट्रीय राजमार्ग प्राधिकरण

National Highways Authority of India,



भारत 2023 INDIA

वसुधैव कुटुम्बकम्

ONE EARTH • ONE FAMILY • ONE FUTURE

**Before the Conciliation Committee of Independent Experts (CCIE-I)
Comprising Sh. Pradeep Kumar, Sh. Y. S. Malik and Sh. S. P. S. Jain**

Subject: Four Laning of Udhampur - Ramban Section of NH-1A (now NH-44) from Km 67+000 to Km 89+000 and Km 130+000 to Km 151+000 on EPC mode in the state of Jammu & Kashmir under NHDP Phase II – reg.

In ref.

M/s Gammon Engineers and Contractors Pvt. Ltd.

&

National Highways Authority of India

Present (Through VC)

From NHAI	
(i)	Sh. Amarendra Kumar, CGM (T) – J&K
(ii)	Sh. A. K. Jain, GM (T) – J&K
(iii)	Sh. Ruchir Agarwal, Manager (T) – J&K
(iv)	Sh. P. Shiva Shankar, GM/RO - Jammu
(v)	Sh. Prushottam Kumar, PD PIU - Ramban
(vi)	Sh. Vikas Kohli, Coordinator, Authority Engineer
(vii)	Sh. Chandra Pal Singh, Consultant (Tech./Conciliation) – CMD

Minutes of Meeting

**Dt. 09.04.2024
(1stMeeting)**

1. Brief details of the projects:

Sr. No.	Particulars	Description
(i)	Name of Project	Four Laning of Udhampur - Ramban Section of NH-1A (now NH-44) from Km 67+000 to Km 89+000 and Km 130+000 to Km 151+000 on EPC mode in the state of Jammu & Kashmir under NHDP Phase II
(ii)	Name of Contractor	M/s Gammon Engineers and Contractors Pvt. Ltd.
(iii)	Total Length	40.07 Km
(iv)	Awarded Cost	Rs. 1709.99 Cr
(v)	LOA Date	23-09-2015
(vi)	Agreement Date	06-10-2015
(vii)	Actual Start Date/ Appointed Date	28-12-2015
(viii)	Scheduled Completion Date as per contract	27-12-2018
(ix)	Date of issuance of Provisional Completion Certificate for length of 34.788 Km	04-12-2023

2. Background

- (i) The project of "Four Laning of Udhampur - Ramban Section of NH-1A (now NH-44) from Km 67+000 to Km 89+000 and Km 130+000 to Km 151+000 in the state of Jammu & Kashmir under NHDP Phase-II was awarded to M/s Gammon Engineers and Contractors Private Limited at a contract price

**Before the Conciliation Committee of Independent Experts (CCIE-I)
Comprising Sh. Pradeep Kumar, Sh. Y. S. Malik and Sh. S. P. S. Jain**

of Rs 1709.99 crore. An Agreement to this effect was signed on 06-10-2015 with three years of completion time. Appointed Date was notified as 28.12.2015. The NHAI had handed over 90% of the Project land at the time of declaration of the Appointed Date.

- (ii) Immediately after the Appointed date was declared as on 28-12-2015, some of the land owners approached the Court against the compensation, resulting in stay being granted by the Hon'ble Court for about 18 km length.
- (iii) Due to very fragile geology, sliding and sinking zones developed at 5 locations i.e. Ch. 130+600 to 130+750, Ch. 131+170 to 131+763, Ch. 132+560 to 133+168, Ch. 133+590 to 133+743 and Ch. 147+877 to 148+715 in Nasri - Ramban section, requiring special construction. Accordingly, the works of M/s GECPL in these chainages were de-scoped and a separate study was conducted to find technical solution to the problem. NHAI's DPR consultant M/s ICT Pvt Ltd in JV with ALTINOK Consulting Engineer Inc. proposed viaducts at 4 locations and tunnel + Cut & cover at 5th location (Cafeteria Mor Ramban) to bypass these sinking & sliding zones.
- (iv) Subsequently, the work of construction of tunnels/ viaducts at these five identified sliding/ slip zones in Nashri - Ramban section of NH-44 was awarded to EPC Contractor M/s Bharat Constructions (India) Pvt. Ltd in JV with M/s Ram Kumar Contractors [BHARAT-RKC (JV)] at a cost of Rs 371 crores.
- (v) During the execution of works, certain disputes arose between the Contractor and the NHAI on account of alleged delay due to stay granted by the Hon'ble Court, the geological features of the area, slippages of slopes at a number of places, change in royalty on construction materials, de-scoping of works etc, the amount of claims being Rs 1881.82 crore. NHAI also raised a number of counter claims amounting to Rs 98.50 crore. The details of claims and counter claims are given in the subsequent paragraphs.
- (vi) NHAI referred the disputes to CCIE-1 vide its letter number CCIE-1/F/J&K/2023-24/14 (Comp. no. 237549)/ UPC No. N/02006/05001/JK, dated 30-01-2024.

3. Proceedings:

- (i) First meeting of CCIE was held with the representative of NHAI on 9-04-2024, primarily to understand the details of claims by the Contractor and the views of NHAI thereon. Shri Amarendra Kumar, CGM(T) J&K, submitted details of claims and the Counter-claims through a presentation according to which most of the claims were not acceptable to NHAI either in full or in part. Shri Amarendra Kumar also mentioned that they had not fully analyzed some of the claims and therefore the accepted amount as shown in the table against some of the claims was purely provisional at this stage and subject to detailed verification at their end. Details of claims from M/s Gammon and the counter-claims from NHAI including the tentative response of NHAI, as presented by the NHAI during its presentation, are given in the following tables.

Sr. No.	Contractor's Claim	Amount in Rs. Cr.	NHAI's comments	Amount recommended by NHAI
1	Claim against under-utilization	352.33	EOT has been granted up to 17.04.2023 to the EPC Contractor without any damages. Further,	

**Before the Conciliation Committee of Independent Experts (CCIE-I)
Comprising Sh. Pradeep Kumar, Sh. Y. S. Malik and Sh. S. P. S. Jain**

Sr. No.	Contractor's Claim	Amount in Rs. Cr.	NHAI's comments	Amount recommended by NHAI
	of resources during the original contract period		request for EOT up to 04.12.2023 has also been submitted which is being made a part of the settlement. The status of the land provided is as under: 2016 - 30.35%; 2017 - 36.10%; 2018 - 77.21%; 2019 - 84.83%; 2020 - 95.36 %; 2021 - 99.85 %; 2022 - 100 %	0.00
2.	Claim against Extended stay for the period 28.12.2018 to approved EoT up to 30.06.2023	524.35	The extended stay may be assessed after verification of the documents.	---
3	Release of interest recovered on mobilization advance during Extended duration	53.64	As per Cl. 19.2 of the CA, the Authority shall make payment of an interest free Mobilization Advance for 1 year (365 days) equal in amount to 10% of the Contract Price. The Contractor shall repay each installment of the Advance Payment on or before the due date of repayment. In the event of the Contractor's failure to make the repayment on time, the Authority shall be entitled to encash the Bank Guarantee for Advance Payment. For any delay in repayment of the Advance Payment, the Contractor shall pay interest to the Authority for each day of delay, such interest to be calculated at the rate of 18% (eighteen per cent) per annum. Due to cash flow issues, the Contractor had asked for Rs. 40. cr as additional support to facilitate its cash flows and NHAI had approved Rs. 38.98 Cr. on 5 th Nov'20 with interest from the availed date. In this regard, it may be noted that as the advance payment was made to the contractor to facilitate its mobilization, hence, the claim of contractor for release of interest recovered during extended stay may not be agreed to.	0.00
4	Payment towards losses suffered due to reduction	4.03	The work amounting to Rs 57.64 cr. was de-scoped from contractor's scope due to development of sliding/ sinking zones at 05 locations in Nasri-Ramban stretch over which the separate standalone contract for the construction of viaducts & tunnel has been awarded to	2.18

**Before the Conciliation Committee of Independent Experts (CCIE-I)
Comprising Sh. Pradeep Kumar, Sh. Y. S. Malik and Sh. S. P. S. Jain**

Sr. No.	Contractor's Claim	Amount in Rs. Cr.	NHAI's comments	Amount recommended by NHAI
			<p>M/s BHARAT-RKC (JV).</p> <ul style="list-style-type: none"> ❖ Value of Work Withdrawn as per CoS - Rs. 57.64 cr ❖ Fair value of work done prior to withdrawal and paid to Contractor - Rs. 35.75 Cr ❖ Net Balance – 10*(57.64-35.75) = Rs. 2.18 Cr. 	
5	Claim on Rehabilitation of existing highway	14.87	<p>Before the commencement of Shri Amarnath Ji Yatra 2019, several meetings took place with State Government wherein the State Govt. raised the requirement of special maintenance & formation of Quick Response Team to be deployed all along the stretch to address the maintenance and slide removal issue. The said rehabilitation work includes the reconstruction of base layers of the existing highway, bituminous layers which were beyond normal repair and maintenance works under CA. Accordingly, the special maintenance work was executed by the contractor based on the requirement of State Govt during April to June 2019 which has been assessed for an amount of Rs 5.48 crores. The same is hereby recommended for the payment to contractor.</p>	5.48 (subject to verification)
6	Maintenance in extended stay	15.15	<p>As per clause 10.4 of Contract agreement, during the Construction Period, the Contractor shall maintain, at its cost, the existing lane(s) of the Project Highway so that the traffic worthiness and safety thereof are at no time materially inferior as compared to their condition 10 (ten) days prior to the date of this Agreement, and shall undertake the necessary repair and maintenance works for this purpose.</p>	0.00
7	Payment towards preparation of design and drawings	1.01	<p>Contractor has claimed that he has paid an amount of Rs 0.29 cr as consultancy fee to IIT Bombay & Rs 0.72 cr towards design/ drawings preparation by the their design consultant. In this regard, it is submitted that contractor was having in-house design consultant, however, the fee paid to IIT Bombay amounting to Rs 0.29 cr may be reimbursed as the work was withdrawn from the contractor.</p>	0.29 (subject to verification)
8	Non-recovery of maintenance cost by third party at risk and cost of EPC	1.89	<p>GECPL has not been proactive in the routine maintenance works from time to time as per its Contractual Obligations. All expenditure Authority has incurred on maintenance of Project Highway by third party</p>	0.00

**Before the Conciliation Committee of Independent Experts (CCIE-I)
Comprising Sh. Pradeep Kumar, Sh. Y. S. Malik and Sh. S. P. S. Jain**

Sr. No.	Contractor's Claim	Amount in Rs. Cr.	NHAI's comments	Amount recommended by NHAI
	Contractor		and needs to be recovered from M/s GECPL.	
9	Release of amount deducted towards environmental compensation	7.76	It is to mention that Hon'ble NGT has imposed penalty and proposed to maintain a reserved amount against the protection of environment which has been formed as the part of counter claim.	0.00
10	Non recovery of dumping yard protection	8.68	Hon'ble NGT has directed the user agency i.e. NHAI to restore the damages done to the ecology on account of unscientific muck dumping/disposal done by the Contract Agency of NHAI. Accordingly NHAI had taken up the work at risk and cost of GECPL for restoration of dumping yard and these amount needs to be recovered from GECPL and hence has been made part of the counter claim.	0.00
11	Reimbursement of expenses for Masjid renovation near P7 foundation	0.15	This Masjid was required to be shifted but could not be shifted due to law-and-order issue. During a meeting held with Deputy Commissioner, Ramban on 04.04.2022, Contractor was directed to deposit an amount of Rs. 15 lacs to the Markazi Jamia Masjid, Ramban and accordingly GECPL had complied with the directions issued by the Deputy Commissioner. It is also to submit that the same could have been paid through NHAI Circular No. 7.1.51 dated 10.04.2017 under para 3(b) (compensation for common property resources), however, the same could not be paid as no estimate was prepared and vetted by the concerned competent Authority of Government.	0.15 (subject to verification)
12	Tree Cutting in RoW	0.10	M/s GECPL had provided the details of disposal of felled trees. The details provided was for 8322 quintal as per Udhampur Development Council certificate and accordingly an amount of Rs. 11,56,801 was released by Authority. Contractor has not submitted the certificate of the balance trees from Udhampur Development Council. Hence claim is not agreed.	0.00
13a	Amount to be reimbursed for increase in royalty rates under Cl. 19.17	0.88	Contractor's claim for reimbursement of additional cost due to increase in rates of royalty on minerals may be considered favorably as the additional cost has actually been incurred by the Contractor and this comes under change in law as per clause 19.17 of Contract Agreement.	0.88 (subject to verification)
13 b	Amount to be reimbursed for	0.47	Contractor is entitled to claim reimbursement of additional cost against Reimbursement of	0.47

**Before the Conciliation Committee of Independent Experts (CCIE-I)
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Sr. No.	Contractor's Claim	Amount in Rs. Cr.	NHAI's comments	Amount recommended by NHAI
	increase in Entry Tax under Cl.19.17		expenditure incurred on Entry Tax under Change in Law in accordance with the clause 19.17 of the contract agreement.	(subject to verification)
13 c	Amount to be reimbursed for increase in Labour Wages	109.51	Any change in Consumer price index for industrial workers is automatically covered in the escalation payable to the Contractor as adjusted in the IPC's from time to time. As such, the notice issued by the Contractor needs to be rejected as it is not entitled to any additional compensation on this account except for adjustments under Clause 19.10 of CA	0.00
14	Dismantling of 469 nos. of structures in Project	4.69	Item No. 1.3.4 (iv) under the category of "other works" in the Schedule - H of the Contract Agreement for 'Site clearance and dismantling of existing structures' covers payment for dismantling of all residential/ commercial structures along the Project Highway which the Contractor claims to have dismantled.	0.00
15	Emergency restoration of NB road at Ch. 130+600 by	2.91	Chainage 130+700 comes under Nashri area which is a landslide zone having very poor geology. Contractor has executed Protection measures by way of Micro-pilling etc. However, contract agreement does not provide any remedy for such incidental works.	0.00
16	Extra soil mass removal due to movement of hill at various locations in the Project Highway	93.59	Article 21 of CA enumerates all Force Majeure Events, which affect the performance of any party & has Material Adverse Effect on the Affected Party. The event of 'landslides' is covered under CA Clause 21.2 (a) Non-Political Event. CA Clause 21.6.1(a) Effect of Force Majeure Event on the Agreement states as under: <i>upon occurrence of a Non-Political Event, the parties shall bear their respective Force Majeure costs and neither Party shall be required to pay to the other Party any costs thereof;</i> So from above, it is explicitly clear that as the event of 'landslides' is a Non-Political Event, the costs for removal of same has to be borne by EPC Contractor.	0.00
17	Emergency road Restoration at KM 78+100 & KM 79+100 by clearing the hill mass (375230	89.57	Due to huge intensity of landslide & its multiple occurrence caused contractor to construct the pavement layers several times, which are beyond the routine maintenance to be done by the contractor as per clause 10.4 of Contract	1.84 (subject to verification)

**Before the Conciliation Committee of Independent Experts (CCIE-I)
Comprising Sh. Pradeep Kumar, Sh. Y. S. Malik and Sh. S. P. S. Jain**

Sr. No.	Contractor's Claim	Amount in Rs. Cr.	NHAI's comments	Amount recommended by NHAI
	Cum & 189944 Cum)		Agreement. Hence, the payment for the relaying of pavement layers may be paid to contractor which has been assessed as Rs 1.84 cr.	
18	Extra cutting beyond RoW for maintaining of slope angle in acquired additional RoW	482.23	At several places, it was not possible to protect the slope after excavation within the ROW due to poor geology of the area as the area passes through several thrust zones. Moreover, land has also been acquired beyond ROW at few locations also to facilitate the slope stabilization. Accordingly, the Contractor has to protect the slopes as per guidelines.	0.00
19	Amount to be reimbursed for realignment of Project Highway due to PMGSY road	53.19	AE has observed that earthwork quantity protection work involved at certain intersections vis-à-vis PMGSY road is substantial due to steep cut slopes. Subsequently Authority may take empathetic view on case to case basis. As per fair value of work done as assessed by the Authority Engineer for the following location has been considered for compensation. (a) 74+680 -74+920, (b) 86+900 - 87+200. (c) 133+190 - 133+385, (d) 137+380 - 137+700, (e) 144+480 - 144+800, (f) 146+520 - 146+700	20.65 (subject to verification)
20	Amount to be reimbursed for RCC retaining walls and embankment formation from Ch. 69+570 - 69+660	2.81	M/s GECPL as EPC Contractor has the obligation to undertake construction and maintenance of Project Highway as per Article 3. Further, it is its responsibility as an EPC Contractor to develop Design and Drawings in conformity with specifications and standards set forth in Schedule-D.	0.00
21	Reimbursement on account of repair/ renovation works for CRPF	0.38	As such no approval received till date. However, it may be considered as this expenditure was done as per the requirement of CRPF to relocate their premise from ROW to another suitable place identified by them. Hence, the claim of contractor may be agreed.	0.38 (subject to verification)
22	Amount to be reimbursed for RoW Pillars installation	0.17	The expenditure if any incurred by M/s GECPL in demarcation of RoW has to be considered incidental to EPC Contractor's survey work. As such cannot be considered reimbursable.	0.00

**Before the Conciliation Committee of Independent Experts (CCIE-I)
Comprising Sh. Pradeep Kumar, Sh. Y. S. Malik and Sh. S. P. S. Jain**

Sr. No.	Contractor's Claim	Amount in Rs. Cr.	NHAI's comments	Amount recommended by NHAI
23	Reimbursement of additional cost incurred towards Ventilation fan installation & Grid installation for tunnel lighting.	1.38	As per IRC:SP:91-2010, it is clear that contractor has to install the ventilation fans as the tunnel length is greater 500 m. Further, as per Annexure-D-II (pg-287 of CA) in Tunnel lighting, it is clearly mentioned that Power supply should be uninterruptible with alternative back-up source, e.g. generator. As per Clause 12.3.1 of IRC:SP:84-2014: <i>"The Concessionaire shall make suitable arrangements for procuring power supply to ensure uninterrupted lighting during night and when visibility is low, including provision of DG sets as standby arrangements. The Concessionaire shall bear all costs of procurement, installation, running and operation cost of all lighting, including cost of energy consumption specified in this Section"</i> . Hence, the claim of contractor is rejected.	0.00
24	Left-out Payments under Schedule-H	42.08	The components of Project Highway executed by GECPL have been duly certified/ paid for in full in line with relevant Schedule-H clauses and, as such, there is no unpaid amount for the executed works.	0.00
25	Release of amount towards Price Adjustment for CoS-1	13.56	Contractor had submitted the estimate for the work of tower protection in the month of march 2017 indexed up to March 2017 using J&K S.O.R 2012. The escalation amount over the approved estimate for the duration from March 2017 to March 2018 comes out to Rs. 2.16 Crores.	2.16 (subject to verification)
25 a	Release of amount towards design and drawing preparation of CoS-1	0.35	Preparation of Design and Drawings for any component of work with respect to the Project Highway is incidental to the said component of work. So on the same analogy charges for preparation of Design and Drawings for COS have to be considered incidental to the COS Works. As such, not reimbursable.	0.00
	Total	1881.83 Cr.		

Counter Claims from NHAI

Sr. No.	NHAI Counter Claims	Comments of NHAI	Amount in Cr
1	Damage to structures beyond RoW due to earth cutting by the contractor	Due to Damage to structures beyond RoW due to earth cutting by Contractors, EC NHAI approved to disburse one-time payment of Rs. 15.00 Cr. to the State Government for	20.00

**Before the Conciliation Committee of Independent Experts (CCIE-I)
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		disbursement of compensation to the beneficiaries. Out of the disbursed amount Rs 4.00 Cr was for Udampur-Chenani and Rs 11.00 Cr. was for Nasri-Banihal. Out of Rs 11.00 Cr earmarked for Nasri-Banihal, Rs 6.73 Cr was for Nasri-Ramban. Therefore, the amount w.r.t. Udampur-Ramban comes out to Rs 10.73 Cr. However, as per latest ground situation, beyond ROW damage cases are keeping on increasing for Nasri-Ramban section. Accordingly, a lump sum amount of Rs 20.00 Cr has been considered.	
2	Maintenance of Project Highway from Km 67.00 to Km 89.00 & Km 130.00 to Km 151.00 i.e Udampur Ramban Section of NH-44 by way of removal of slip material, filling potholes, overlay, construction of kuccha drain & installation of Retro Reflective Sign Boards etc. at the risk and cost of the Contractor	Work was executed by another contractor. M/S EIM SIM BABAS INFRASTRUCTURE PVT LTD	2.74
3	Maintenance of Project Highway from Km 67.00 to Km 89.00 & Km 130.00 to Km 151.00 i.e Udampur Ramban Section of NH-44 by way of removal of slip material, filling potholes, overlay, construction of kuccha drain & installation of Retro Reflective Sign Boards etc at the risk and cost of Contractor	Work was executed by another contractor. M/S New Chenab Enterprises	7.12
4	Amount to be recovered as per the direction of Hon'ble NGT for the protection of environment	-	41.00
5	Pvt. Dumping Yard acquired by NHAI Udampur to Ramban project which should have been acquired by Contractor	-	10.60
6	Deviation in slope protection work done by the contractor in respect of contract agreement	It was stated that as per CA Schedule B, Special protection to be done at site (in the form of installation of Rock bolts, wire mesh etc), however, at site Retaining wall and cladding wall has been constructed. Hence negative COS amounting to Rs. 15.44 Cr.	15.44
7	A tower at Km 83.200 was to be stabilized by the contractor under COS-1, however, even after protection done by the contractor, the tower cladding work got		1.64

**Before the Conciliation Committee of Independent Experts (CCIE-I)
Comprising Sh. Pradeep Kumar, Sh. Y. S. Malik and Sh. S. P. S. Jain**

	damaged after certain period due to which the tower was dismantled and additional 3 no new towers were erected in place of that tower. Accordingly, the cost of the cladding wall paid to the contractor need to be recovered.		
8	Valley side protection work (wall) was collapsed at few locations for which COS was given to contractor for the construction of friction slab along with micro pile. As per scope valley side walls were constructed by the contractor which were washed away in rainy season. Accordingly, the cost of valley side walls needs to be recovered from contractor as another stabilization measure in the form of friction slab with micro pile has been paid to him.		0.29
9	Impact of Negative change in law due to abolition of Lakhanpur state entry tax (Contractor has been asked to submit the details of input materials which has not been received yet. Therefore, this will be assessed after submission of details of input materials received from contractor)		--
		Total	98.50

- (ii) The CCIE noted that as against the Contract amount of Rs. 1709.99 Crore, works valuing about Rs. 57.00 Cr. were de-scoped, thus leaving a net contract amount of about Rs. 1653.00 Crore. As against this amount, M/s Gammon has raised claims for an amount of Rs. 1881.83 Crores.
- (iii) After hearing Shri Amarendra Kumar, he was advised to study and analyze the claims in greater details and take a view as to what extent the claims are justified and acceptable to the NHAI based on facts of events on the ground and the contractual provisions.

(Pradeep Kumar)	(Y. S. Malik)	(S. P. S. Jain)

Before the Conciliation Committee of Independent Experts (CCIE-2) Comprising of Justice I.P. Vasishth (Retd.), Sh. A.K. Upadhyay, IAS (Retd.) & Sh. V.V. Ranganathan

Through Video Conference

Sub: Four Laning of Ramban to Banihal Section of NH-1A from Km 151.00 to 187.00 on EPC mode in Jammu & Kashmir under NHDP Phase-II-reg.

In ref: M/s Hindustan Construction Company Ltd.

And

National Highways Authority of India

Following are present through Video Conference:

From Concessionaire:

Shri Gurudas Naik, Sr. Vice President
Shri Santosh Rai, Vice President
Shri Isaac Joseph, Project Director
Shri Ajith P, GM
Shri Deepak Ratra, DGM

From NHA:

Shri Amarendra Kumar, CGM (T)
Shri Virender Sambyal, GM (T)
Shri Dilip Gangadharan, Consultant (Tech/Conciliation)

1st Meeting: 25.01.2022

Order

1. NHA was heard, thereafter, both the Parties were heard together. The CCIE was briefed about the status of the project and nature of disputes.

2. Brief profile of the project

- i. Name of the project: 4-laning of Ramban-Banihal (J&K) section of NH 44.
- ii. Length: 36km
- iii. Mode of executed: EPC.
- iv. Project Cost: ₹1783.42 crores
- v. Appointed Date: 28.12.2015
- vi. SCOD: 28.6.2019
- vii. Present status: About 38% physical progress. Because of slow progress and other issues, NHA terminated the contract in September 2021, and with some additional scope, has rebid and awarded the remaining work in three packages to other contractors.

3. **Nature of disputes:** HCC has raised several claims amounting to ₹1922 crores, more than 100% of the total project cost. NHA has examined these claims and are willing to consider reasonable amounts for tangible work done by the contractor. NHA also have some counter claims relating to Liquidated Damages for failure to meet milestones, additional maintenance

Through Video Conference

which NHAI had to do through third party, overcutting in tunnel excavation, restoration of tunnel portals, huge penalties imposed by J&K Pollution Control Board and NGT for unscientific disposal of muck in non-designated places which has affected the ecology of Chenab Valley of Himalayan region.

4. **NHAI's submission:** NHAI submitted that this road project is a strategically important mission, but the Contractor's progress on this was very poor. This was due to a variety of reasons including their financial constraints and gross negligence by their sub-contractors, over whom the Contractor was not able to exercise the required supervision. They dumped the muck in non-designated places affecting the ecology of the Chenab Valley, rather than at 21 designated sites. J&K PCB and NGT took a serious view of this matter and directed NHAI to restore the damaged areas at its own cost, including levying substantial penalties. They also directed personal appearance of the Chairman, NHAI. This has inflicted huge costs on NHAI and loss of organisational prestige. This also contributed to NHAI's decision to terminate the project.

5. **Contractor's submission:** There were delays in handing over ROW and delays in utility shifting. Besides, Termination is seriously hampering their ability to take part in future RFPs/Bids/tenders. The Contractor requested for interim relief to remove the adverse effects of the Termination while the dispute is being conciliated.

6. **CCIE's observations:** CCIE observed that in conciliation proceedings it is not possible to give interim relief amounting to staying the Termination. The Committee tries to facilitate settlement of all the disputes presented before it. The Committee has settled many complex and large disputes in a quick time with the active support and participation of both the willing parties to a dispute. This dispute is capable of amicable settlement. The Parties have to enter into detailed discussions with regard to the final amount for settlement. Issues relating to Termination and LD would also be a part of final settlement.

7. Next meeting to be held on hearing from the Parties about the progress of their discussions.

(V.V. Ranganathan)

(A.K. Upadhyay)

(Justice I.P. Vasishth, Retd.)

The brief details of HCC claims vis-à-vis NHAI offer and agreed by HCC is as under:

SN	Details	HCC Original Claims (Rs in Cr)	RO/PIU recommendation	NHAI Proposal Amount (Rs in Cr)	Balance Payment as per NHAI proposal (Rs in Cr)
1	Cost of work executed as per Contract Agreement	8.93+145.31+11.58+3.08=168.90	96.16	81.50 +11.58 (pending/withheld bills) + 3.08 (utility) = 96.16	20.53
2	Cost of agreed work executed under Change of Scope	61.47+75.23+6.90+15.76 = 159.36	96.67	96.67	96.67
3	Cost of De-scope/ Withdrawal of Works	735.48	62.87	62.87	62.87
4	Release of BG & retention money as per CA	13.29 + BG	As per actual	As per actual	
5	Price Escalation as per CA	63.09	21.98	21.98	21.98
6	Interest on delay in release of mobilisation advised by CCIE	6.51	0.00	6.51*	6.51
7	Underutilization and extended stay	405.20+359.56 = 764.76	104.27	Nil	Nil
8	Construction material left at site + preparation of design drawings	4.60+6.25=10.85	0.00	Nil	Nil
	Total	1922.24	381.95	284.19	208.56

The brief details of counter claims of NHAI vis-à-vis final proposal of HCC is as under:

Sl. No	Details	Recommendation of RO/PIU	Final amount (in Rs. Cr.)
1	Liquidated damages	178.342	0
2	Restoration of tunnel portal	2.09	2.09
3	Cost of maintenance works executed at the risk and cost of Contractor	7.16	7.16
4	Executable quantity in compliance of NGT direction as estimated/ communicated by JKPCB	79.17	**Execution of the restoration work to the satisfaction of

			JKPCB/RO/PD is to be done by the Contractor.
5	Damages imposed by state forest authorities vide DFO, Ramban letter dated 08.09.2021	0.61	0.61
6	Disbursement of wages to the affected workers as per RLC and for JPDCL to clear pending dues/ liability	0.64	* 0.48 = (0.64-0.1574)
	Total	272.22	10.5

* The Dues of JPDCL amounting to Rs. 15.74 lakh has been paid in full by EPC contractor.

** Recently, the earlier complainant had once again filed the petition in Hon'ble court of NGT. Next date of hearing is 15.10.2024. (Copy enclosed)



Dumping Yard at Peerah Km 135+600



Dumping Yard at Mehar Km 145+570



Dumping Yard at Mehar Km 145+470



Dumping Yard at Kunfer Km 139+200



Dumping Yard at Trishul Morh Km 151+00



Dumping Yard at Karol Km 143+200

Environmental Restoration Plan of Muck Dumping Sites of Nasri-Banihal Section of NH-44

1.0 Project Road

National Highways Authority of India has undertaken 4 laning of (a) Nasri-Ramban (km 130 to km 151) and (b) Ramban-Banihal (km 151 to km 187) section of NH-44 in the Union Territory of Jammu & Kashmir under National Highways Development Program (NHDP) to facilitate existing road 2 lane road into an all-weather traffic worthy connectivity between Jammu & Srinagar, safe for operations by providing sustainable engineering solutions.

2.0 Parties involved in Construction

The road section has been divided in multiple construction packages for ease of construction. M/s Gammon India Limited was appointed as contractor for Nasri-Ramban Section and construction is underway. M/s Hindustan Construction Co. Ltd (HCCL) was appointed for Ramban-Banihal Section but has been terminated. This section has now been divided further into four construction packages, out of which contractors have been appointed for 3 packages till November 2021. Details of the packages and contractors are presented in Table 2.1.

Table 2.1 Construction Stretches & Contractors

SI	Road Stretch	Package	Contractor
1	Nasri-Ramban	-	M/s Gammon India Ltd
2	Ramban Banihal	I	Tata Projects Ltd in JV with CAI
		II	M/s CEIGALL India Ltd in JV with Patel infrastructure Pvt Ltd
		III	M/s CEIGALL India Ltd
		IV	M/s Dineshchandra R. Agarwal Infracon Ltd in JV with M/s ABCI Pvt Ltd

3.0 Litigations and NGT orders

Indiscriminate dumping of mucks in unsustainable manner in land and rivers by contractors / sub-contractors led to violation of environmental norms and the matter was heard before Honourable National Green Tribunal (NGT), Principal Bench, New Delhi. A monitoring committee (MC) was constituted headed by Justice J R Kotwal, a former judge of J&K High Court to give independent report on the matter. NGT passed series of orders for remedial actions which are summarized in Table 3.1.

Table 3.1 Summary of NGT Orders

Orders	Date	Summary
First Order	24.08.2018	Tribunal constituted a Monitoring Committee (MC) headed by Justice J.R. Kotwal to give an independent report in the matter.
Second Order	12.02.2019	In the light of preliminary report of the MC, the Tribunal directed M/s GIL and M/s HCCL to pay interim compensation for damage to the extent of Rs.1 Crore each and performance guarantee of same amount for improving the situation within next three months. The order was affirmed by the Hon'ble Supreme Court on 08.07.2019 in Civil Appeal No. 5113-14/2019.
Third Order	11.07.2019	The Tribunal considered the report filed on 09.07.2019 based on inspection conducted on 02.05.2019 and directed M/s GIL and M/s HCCL to furnish

Orders	Date	Summary
		performance guarantee of Rs.2 Crore each and NHAi to furnish performance guarantee of Rs.1 Crore to the satisfaction of CPCB for remedying the situation.
Fourth Order	09.01.2020	The fourth order also found that violations were continuing and remedial action was directed to be taken.
Fifth Order	20.03.2020	The Tribunal considered report dated 17.03.2020 by MC based on site inspection on 29 th – 31 st January 2020 and directed that the suggestions given by the MC to be acted upon by the project proponents, including methods for slope stabilization.
Sixth Order	28.09.2020	The Tribunal considered report dated 24.09.2020 by MC based on status reports dated 31.07.2020 and 17.09.2020 by J&K Pollution Control Board (J&KPCB) and directed PCB to take coercive measures including assessment and recovery of compensation and initiating prosecution against the violators. The MC was also requested to give a further report about status of compliance by 31.03.2021.
Seventh Order	28.06.2021	Since the violations were found to be continuing, the Tribunal directed taking coercive measures against the violators and also required MD of NHAi and Chairman of PCB to remain present in person by video conference with their action taken reports.
Final order	29.10.2021	<p>In pursuance of the above, Mr. Giridhar Aramane, Chairman NHAi and Dr. Neelu Gera, Chairperson J&K PCC were present in person.</p> <p>J&KPCC reported that prosecution has been initiated against NHAi and its contractors under Water Act 1974, Air Act 1981 and Environment (Protection) 1986 on 17.08.2021. Technical Advisory Committee of J&K PCC undertook field visits to study the extent of damage and assessed the amount of Rs. 129 core (approx.) for restoring the damage by way of execution of environment management plan.</p> <p>2% of the above amount was assessed as deterrent measure for environmental compensation which has been deposited. Stand of the NHAi is that action has been initiated for rehabilitation of dumping sites by way of civil work for which tender was floated and work will be awarded by first week of November 2021. Estimated cost of lifting the extra muck is 20.22 crores.</p> <p>Violations are by the contractors against whom action has been initiated. Contract of HCCI have been terminated and notice of termination has also been given to the Gammon Engineers and Contractors.</p> <p>Tribunal directed NHAi to set apart Rs 129 crore as tentative cost of implementing environment management plan. NHAi is free to proceed against contractors, if permissible in terms of contractual rights. NHAi may implement the EMP which should include restoration of damage during the course of construction of NH-44 so far. Restoration plan may be prepared within one month by NHAi which may be overseen by the monitoring committee constituted by this Tribunal, with the assistance of any other experts/institutions/or otherwise. Thereafter, the same may be executed as far as possible within 6 months. NHAi will be bound by the direction of the monitoring committee subject to any objection against the same being agitated before this Tribunal.</p>

4.0 Muck Disposal Sites

4.1 Comprehensive list of sites with dumped muck

The entire stretch between Nasri to Banihal was surveyed for all muck dumping sites (MDS) to collect primary data on sites where muck has been dumped. Based on the survey, a comprehensive list based on continuity of geographic location has been prepared. The list also includes locations where muck is dumped by other agencies in near vicinity of NH-44. List of muck dumping sites provided in the report of Monitoring Committee (dated 24.09.2020) appointed by National Green Tribunal has also been referred in the comprehensive list and a few additional sites were also observed and listed.

Muck has been dumped in total 66 locations from Nasri to Banihal stretch of NH-44. Out of the total, muck from 4 laning of NH-44 is dumped at 58 locations, while muck generated from railway project is dumped at 7 locations. At the remaining 1 location (MDS-23), one private organization has established a stone-chip making cum muck storage unit on Chenab river bed where large quantities of muck procured from contractors of NHAI are stored for reselling purpose. The list of muck disposal sites along with location coordinates are provided in **Table 4.1** below and shown maps in **Figure 4.1**.

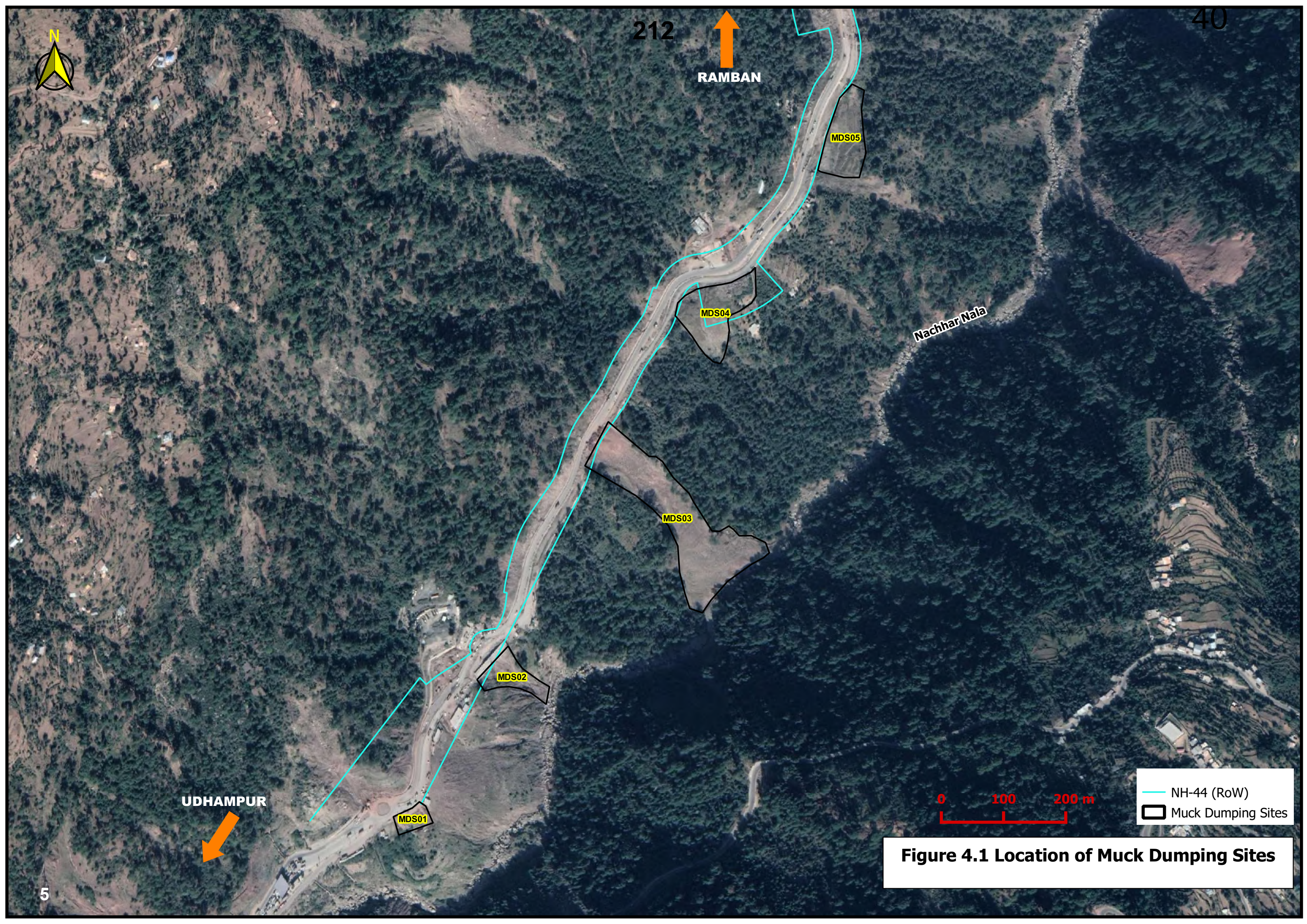
Table 4.1 List of Muck Dumping Sites

MDS No	NGT Site*	NHAI	Latitude	Longitude	Name of Site/Village	Section
MDS01	-	NHAI	33° 7' 53.484" N	75° 17' 47.016" E	Nashri (near tunnel)	Nashri-Ramban
MDS02	-	NHAI	33° 8' 0.886" N	75° 17' 53.196" E	Nashri (near check post)	
MDS03	1	NHAI	33° 8' 9.142" N	75° 18' 3.477" E	Nashri	
MDS04	-	NHAI	33° 8' 19.844" N	75° 18' 5.867" E	Nashri	
MDS05	2	NHAI	33° 8' 28.983" N	75° 18' 13.982" E	Nashri (near Lucky Dhaba)	
MDS06	3	NHAI	33° 9' 4.616" N	75° 18' 23.970" E	Sarga Temple	
MDS07	4	NHAI	33° 9' 14.162" N	75° 18' 31.750" E	Dhalwas	
MDS08	5-6	NHAI	33° 9' 30.752" N	75° 18' 31.698" E	Dhalwas (near school)	
MDS09	7	NHAI	33° 10' 11.784" N	75° 18' 21.355" E	Dhalwas Peerah	
MDS10	8	NHAI	33° 10' 11.440" N	75° 17' 57.568" E	Dhalwas Peerah	
MDS11	9	NHAI	33° 10' 14.051" N	75° 17' 54.521" E	Sawani	
MDS12	10	NHAI	33° 10' 25.405" N	75° 18' 10.370" E	Sawani	
MDS13	11	NHAI	33° 10' 26.482" N	75° 18' 21.576" E	Sawani (near Dam View hotel)	
MDS14	12	NHAI	33° 10' 52.369" N	75° 17' 58.319" E	Kunfer Nala (near T-I & T-2 tunnels)	
MDS15	13-16	NHAI	33° 12' 31.450" N	75° 16' 41.199" E	Chanderkote (Near 84 Bn CRPF Camp)	
MDS16	17	NHAI	33° 12' 50.759" N	75° 16' 22.221" E	Near Jaswal Bridge	
MDS17	18	NHAI	33° 13' 4.172" N	75° 16' 16.362" E	Kanathi Karol (Near Hotel Khana Khazana)	
MDS18	19-23	NHAI	33° 13' 24.029" N	75° 15' 52.885" E	Kanathi Karol (Near Kundi Nallah Bridge)	
MDS19	24-25	NHAI	33° 13' 47.591" N	75° 15' 5.866" E	Opp. Horticulture Office Gate	
MDS20	26	NHAI	33° 14' 3.685" N	75° 14' 43.997" E	Cafeteria Morh Ramban (Opp. Army Camp Maitra)	
MDS21	27	NHAI	33° 14' 23.580" N	75° 14' 1.056" E	Kowbagh, Ramban	
MDS22	1	NHAI	33° 14' 35.719" N	75° 13' 31.263" E	Seri -Chamba	Ramban Banihal
MDS23	2	PVT	33° 14' 44.261" N	75° 12' 59.747" E	Seri -Near Shiv Temple	
MDS24	-	NHAI	33° 14' 46.687" N	75° 12' 59.484" E	Seri -Near Shiv Temple	

Environmental Restoration Plan of Muck Dumping Sites
Udhampur-Banihal Section of NH-44

MDS No	NGT Site*	NHAI	Latitude	Longitude	Name of Site/Village	Section
MDS25	3	NHAI	33° 15' 8.910" N	75° 12' 17.098" E	Seri	Ramban Banihal
MDS26	-	NHAI	33° 15' 21.808" N	75° 11' 48.959" E	Seri	
MDS27	4	NHAI	33° 15' 26.123" N	75° 11' 45.083" E	Marog	
MDS28	5	NHAI	33° 15' 43.570" N	75° 11' 29.101" E	Marog (Near Tunnel T-2)	
MDS29	6	NHAI	33° 16' 3.834" N	75° 10' 55.638" E	Marog	
MDS30	7	NHAI	33° 16' 48.580" N	75° 10' 44.661" E	Battery Chashma	
MDS31	8	NHAI	33° 16' 59.839" N	75° 10' 42.143" E	Anokhe Fall	
MDS32	9	NHAI	33° 17' 20.227" N	75° 10' 34.137" E	Digdole	
MDS33	10-11	NHAI	33° 17' 49.183" N	75° 10' 45.341" E	Digdole	
MDS34	12	NHAI	33° 18' 29.091" N	75° 10' 47.893" E	Digdole	
MDS35	-	NHAI	33° 18' 57.975" N	75° 11' 32.451" E	Digdole	
MDS36	13	NHAI	33° 19' 17.034" N	75° 11' 50.452" E	Panthyal	
MDS37	14	NHAI	33° 19' 57.987" N	75° 11' 54.073" E	Mompassi	
MDS38	15	NHAI	33° 20' 8.400" N	75° 11' 40.687" E	Near Ramsu Bridge	
MDS39	-	NHAI	33° 20' 17.197" N	75° 11' 27.300" E	Near Ramsu Foot Bridge	
MDS40	16	NHAI	33° 20' 23.188" N	75° 11' 17.695" E	Near Ramsu Foot Bridge	
MDS41	17-18	NHAI	33° 20' 33.249" N	75° 11' 10.359" E	Ramsu	
MDS42	-	NHAI	33° 20' 42.488" N	75° 10' 59.167" E	Ramsu	
MDS43	-	NHAI	33° 20' 51.551" N	75° 10' 43.486" E	Ramsu	
MDS44	-	NHAI	33° 20' 56.736" N	75° 10' 45.236" E	Gangroo - Ramsu	
MDS45	-	NHAI	33° 21' 3.496" N	75° 10' 45.050" E	Ramsu	
MDS46	19	NHAI	33° 21' 14.730" N	75° 10' 17.600" E	Hingni	
MDS47	20	NHAI	33° 22' 3.401" N	75° 11' 17.399" E	Near Kishtwari Pathar	
MDS48	-	NHAI	33° 22' 23.616" N	75° 11' 43.680" E	Sherbibi	
MDS49	-	NHAI	33° 22' 32.929" N	75° 11' 52.100" E	Sherbibi	
MDS50	21	NHAI	33° 22' 42.848" N	75° 12' 0.987" E	Sherbibi	
MDS51	-	NHAI	33° 22' 46.476" N	75° 12' 1.787" E	Sherbibi	
MDS52	22	NHAI	33° 22' 58.115" N	75° 12' 1.791" E	Sherbibi	
MDS53	23	NHAI	33° 23' 19.594" N	75° 12' 6.783" E	Chamalwas	
MDS54	24	NHAI	33° 23' 21.072" N	75° 12' 1.645" E	Chamalwas	
MDS55	-	NHAI	33° 23' 34.115" N	75° 11' 50.710" E	Chamalwas	
MDS56	25-26	NHAI	33° 24' 26.245" N	75° 11' 56.104" E	Rattanwas	
MDS57	27	NHAI	33° 25' 22.295" N	75° 12' 14.862" E	Rattanwas	
MDS58	28	NHAI	33° 25' 28.253" N	75° 12' 15.112" E	Kharpora Banihal	
MDS59	29	NHAI	33° 25' 45.709" N	75° 12' 4.897" E	Banihal	
MDS60	-	Railway	33° 21' 18.130" N	75° 10' 15.742" E	Hingni	
MDS61	-	Railway	33° 22' 57.951" N	75° 11' 57.707" E	Sherbibi	
MDS62	-	Railway	33° 23' 34.707" N	75° 11' 37.395" E	Opp. Chamalwas	
MDS63	-	Railway	33° 23' 41.529" N	75° 11' 28.507" E	Opp. Chamalwas	
MDS64	-	Railway	33° 23' 52.115" N	75° 11' 33.367" E	Opp. Chamalwas	
MDS65	-	Railway	33° 24' 15.342" N	75° 11' 44.721" E	Ratanwas	
MDS66	-	Railway	33° 24' 35.308" N	75° 11' 53.328" E	Ratanwas	

* Site Number as per Monitoring Committee Report dated 24.09.2020 and NGT order dated 28.09.2020



212

40

RAMBAN

MDS05

MDS04

Nachhar Nala

MDS03

MDS02

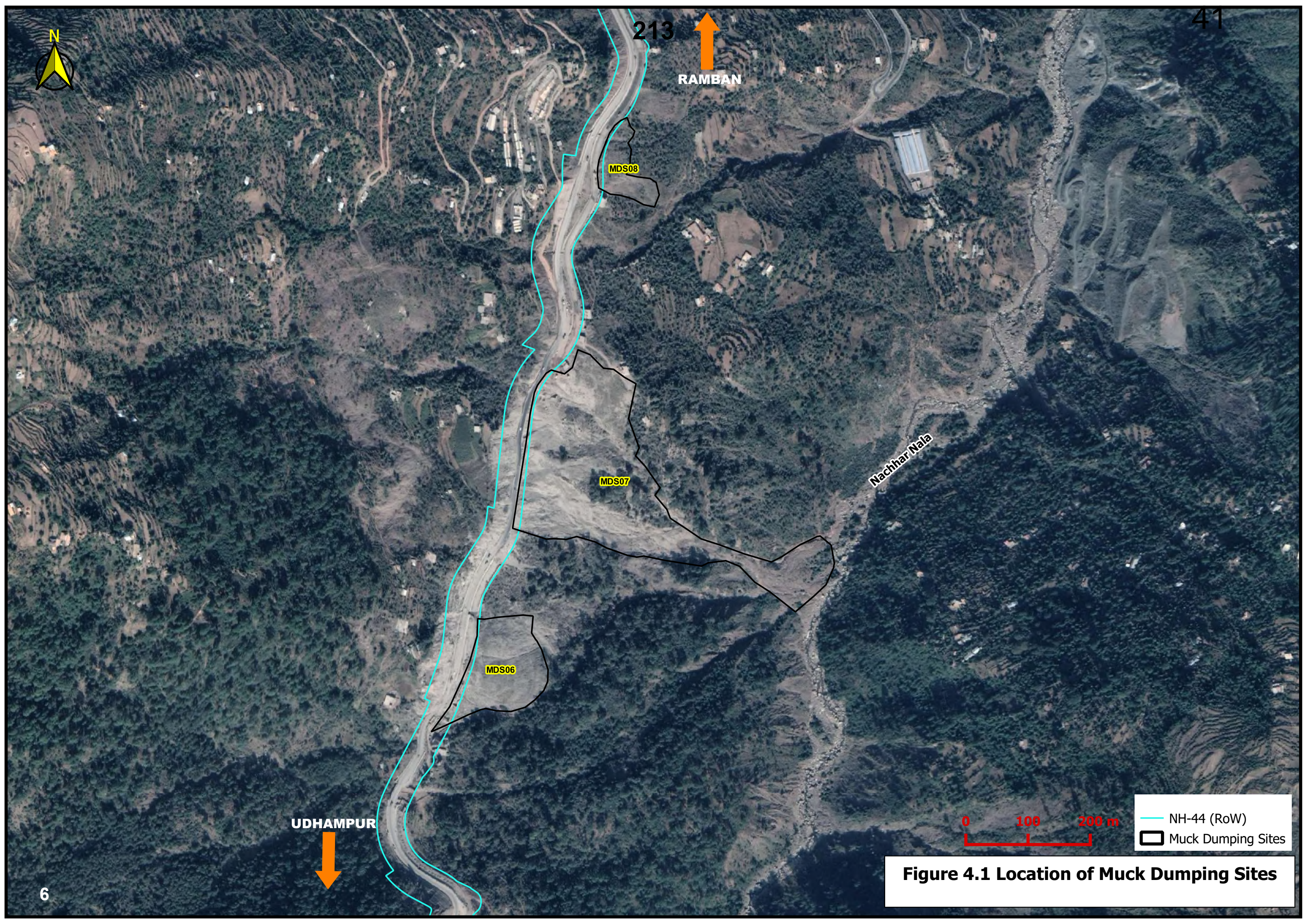
UDHAMPUR

MDS01

0 100 200 m

NH-44 (RoW)
Muck Dumping Sites

Figure 4.1 Location of Muck Dumping Sites



213

RAMBAN

MDS08

MDS07

MDS06

Nachhar Nala

UDHAMPUR

0 100 200 m

NH-44 (RoW)
Muck Dumping Sites

Figure 4.1 Location of Muck Dumping Sites





214



RAMBAN

Chenab River

Chenab River

Pira Nala

chhar Nala

MDS12

MDS13



MDS11

MDS10

MDS09

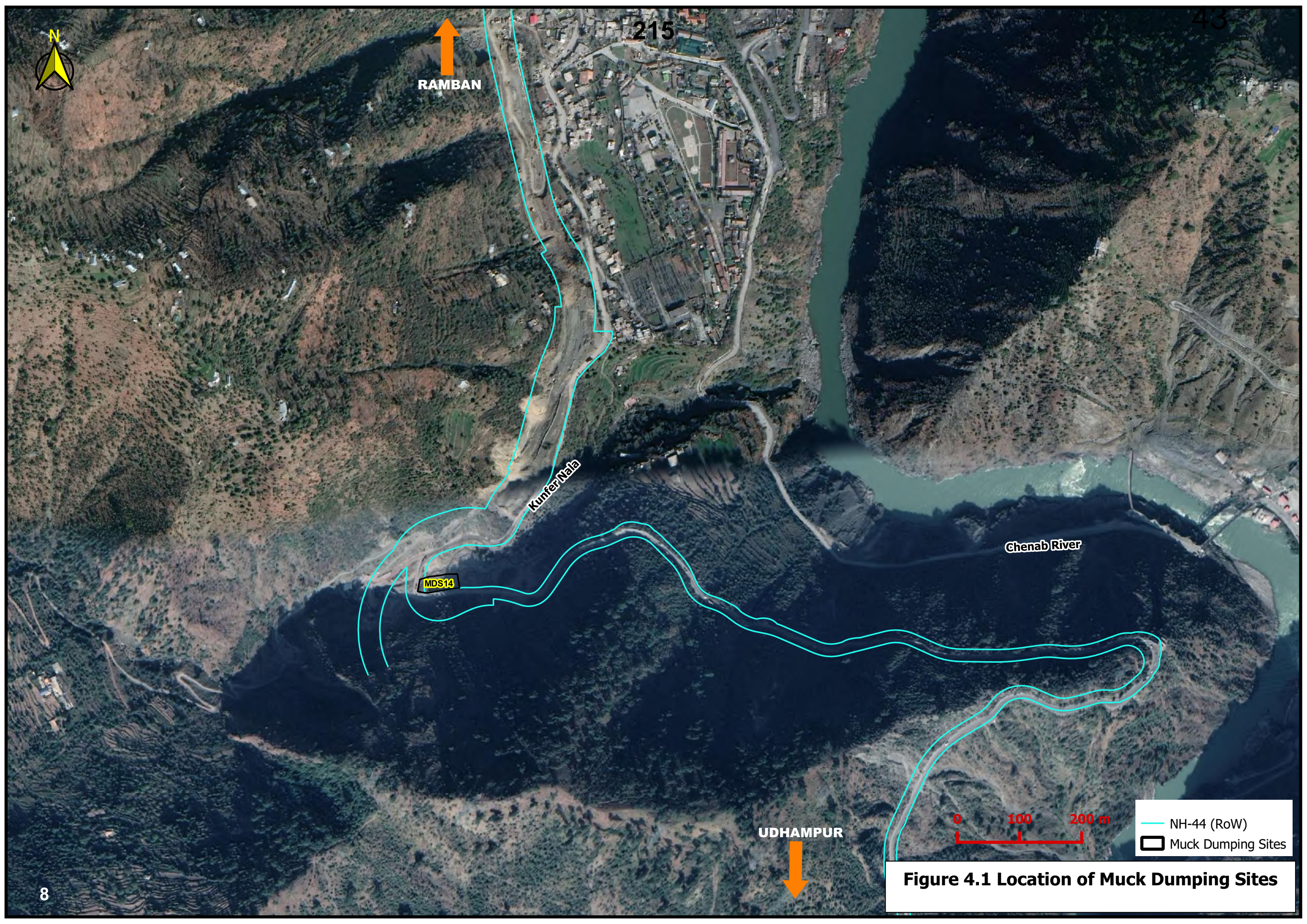
UDHAMPUR



-  NH-44 (RoW)
-  Muck Dumping Sites

0 100 200 m

Figure 4.1 Location of Muck Dumping Sites



RAMBAN

215

43

Kunfer Nala

Chenab River

MDS14

UDHAMPUR

0 100 200 m

— NH-44 (RoW)
▭ Muck Dumping Sites

Figure 4.1 Location of Muck Dumping Sites



Figure 4.1 Location of Muck Dumping Sites



BANIHAL

Nera Kanthi Nala

MDS18

Chenab River

MDS17

Karol Nala

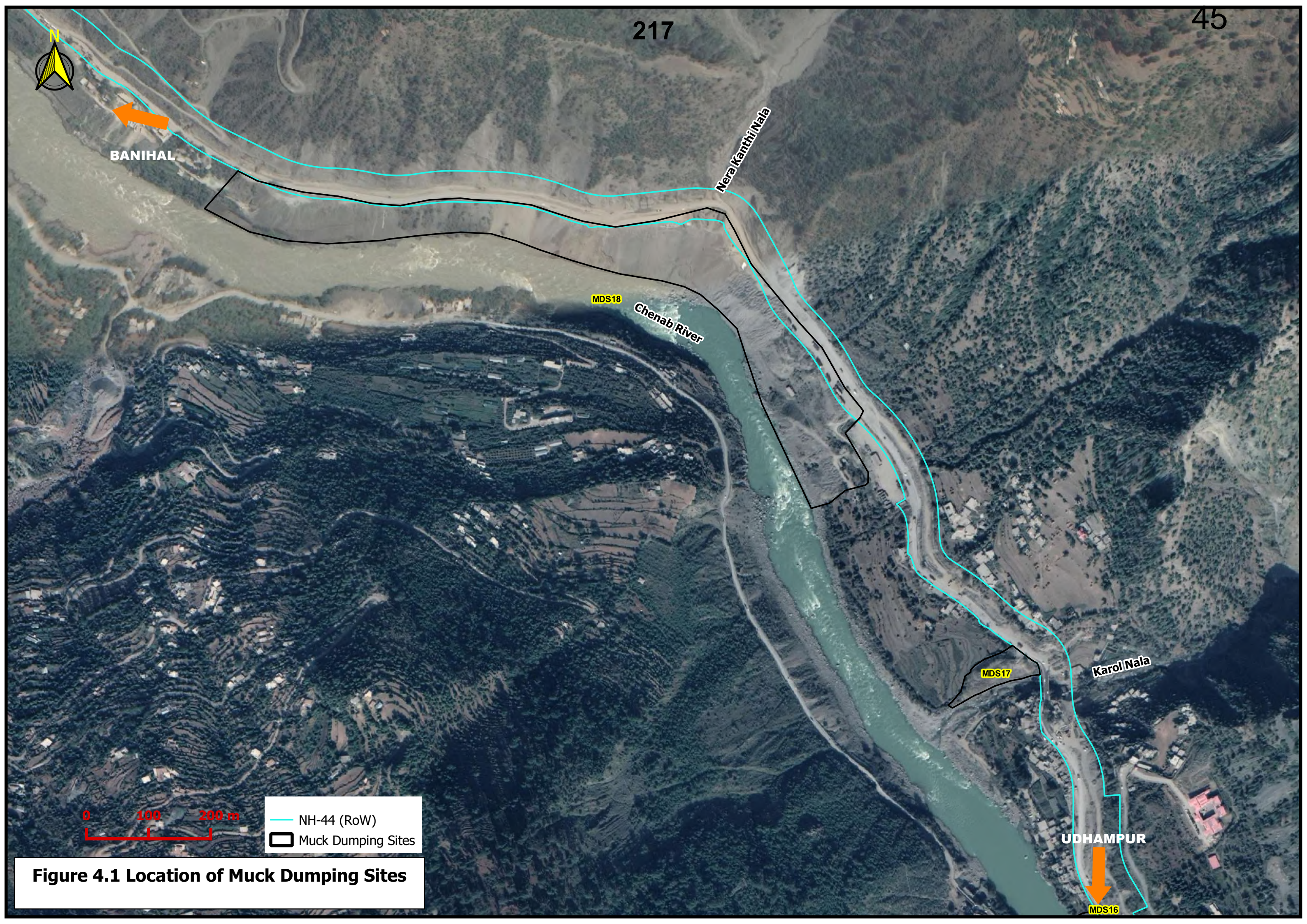
UDHAMPUR

MDS16



— NH-44 (RoW)
▭ Muck Dumping Sites

Figure 4.1 Location of Muck Dumping Sites



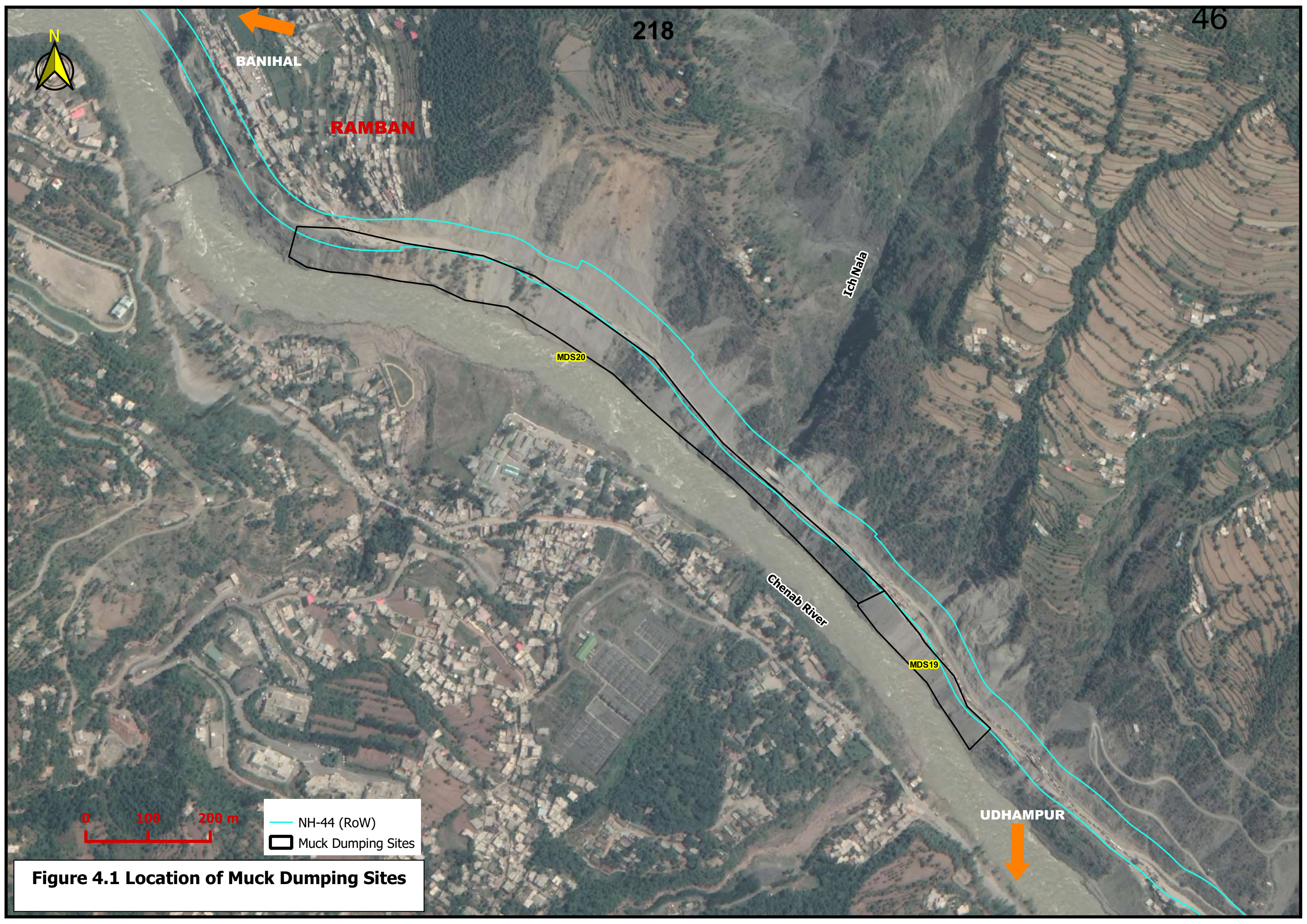


Figure 4.1 Location of Muck Dumping Sites



219

47



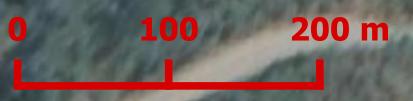
BANIHAL

Thairbas Nala

MDS21

Chenab River

RAMBAN



- NH-44 (RoW)
- Muck Dumping Sites

UDHAMPUR

Figure 4.1 Location of Muck Dumping Sites



BANIHAL



Chenab River

MDS22

RAMBAN

UDHAMPUR



— NH-44 (RoW)
▭ Muck Dumping Sites

Figure 4.1 Location of Muck Dumping Sites



Figure 4.1 Location of Muck Dumping Sites

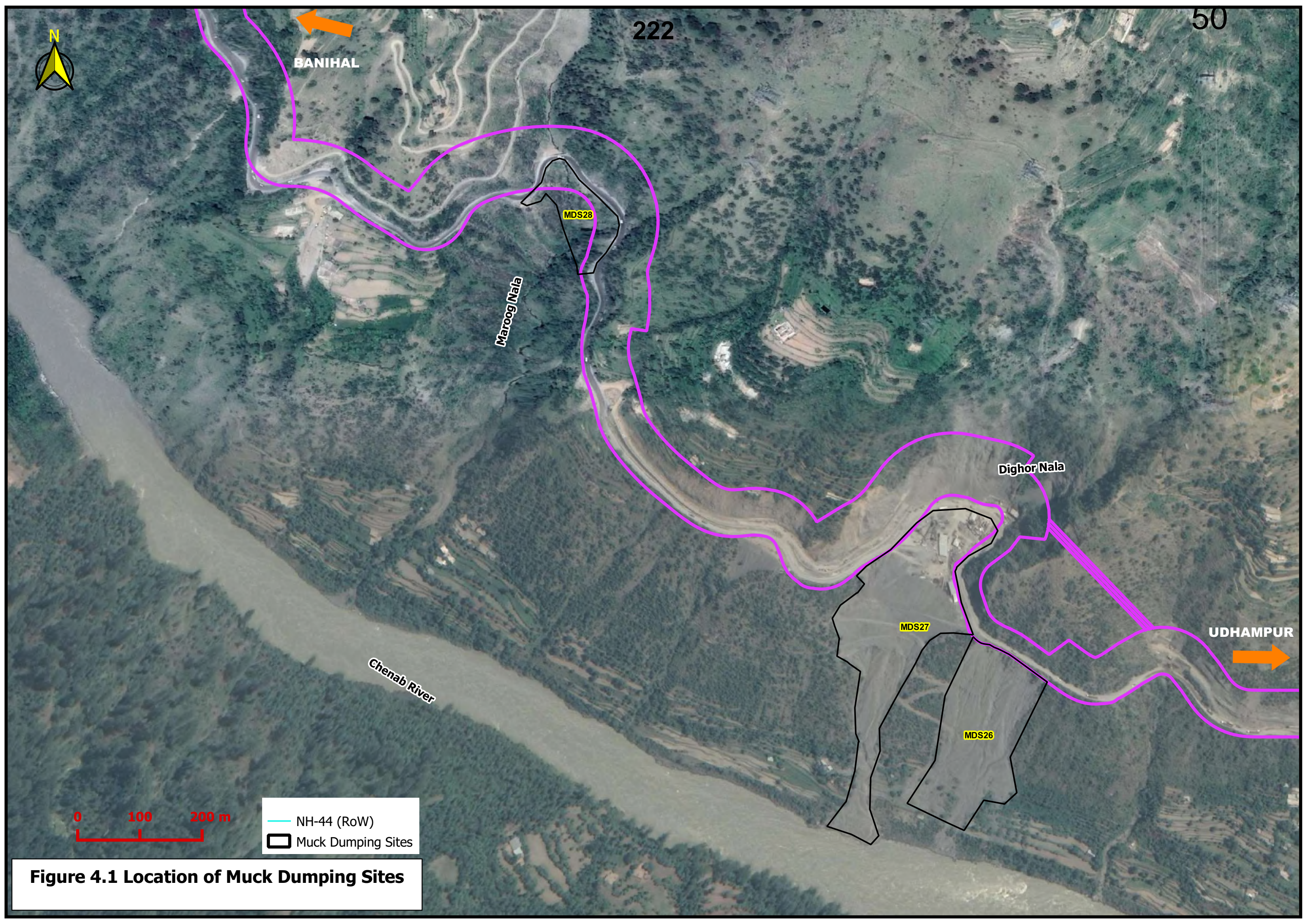


Figure 4.1 Location of Muck Dumping Sites



Figure 4.1 Location of Muck Dumping Sites



BANIHAL

Kharar Nala

MDS31

Bishlari River

MDS30

Battery Chaisma Nala

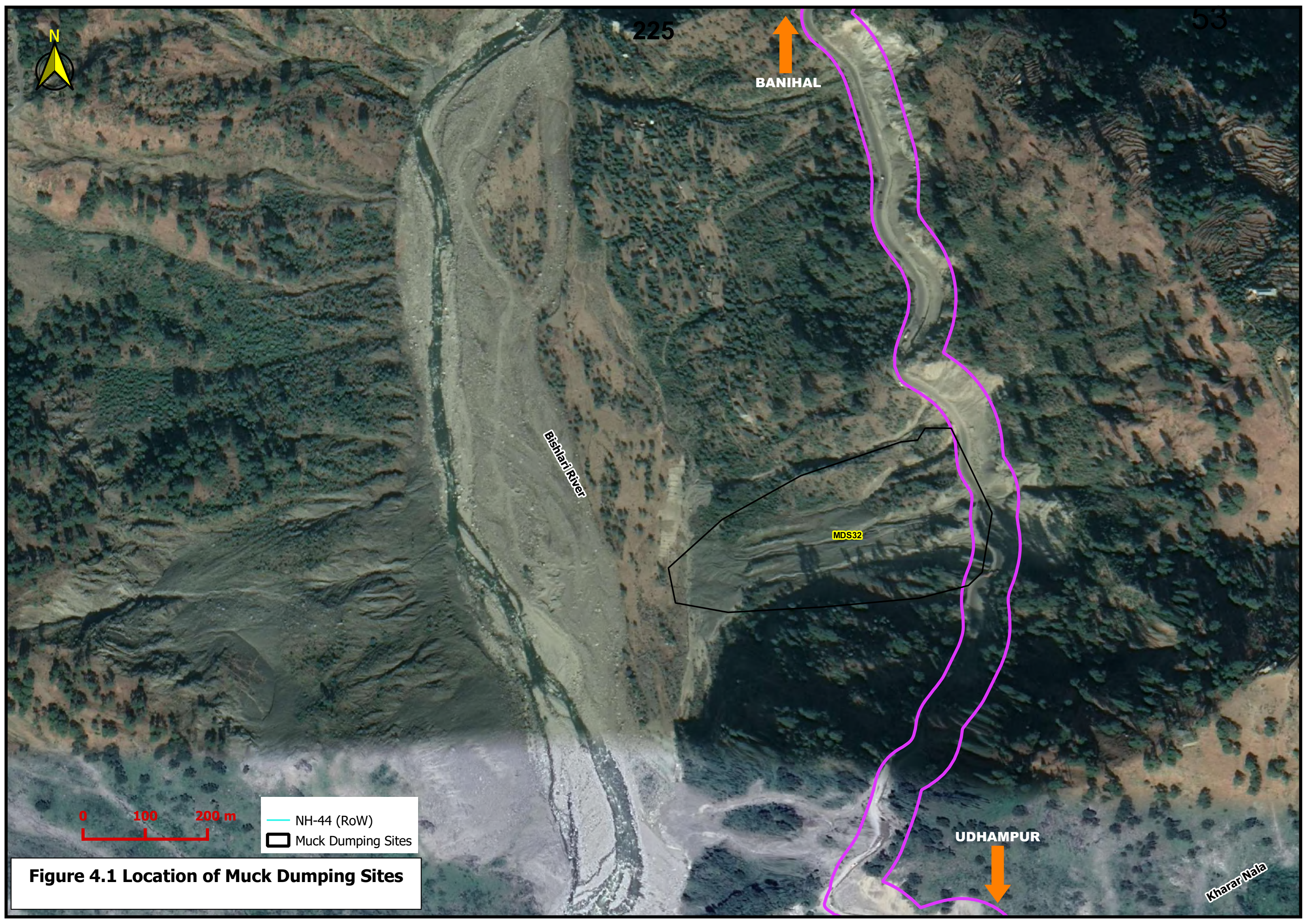
UDHAMPUR



- NH-44 (RoW)
- Muck Dumping Sites

Figure 4.1 Location of Muck Dumping Sites





225

53



BANIHAL

Bishari River

MDS32

UDHAMPUR

Kharar Nala

0 100 200 m

— NH-44 (RoW)
▭ Muck Dumping Sites

Figure 4.1 Location of Muck Dumping Sites

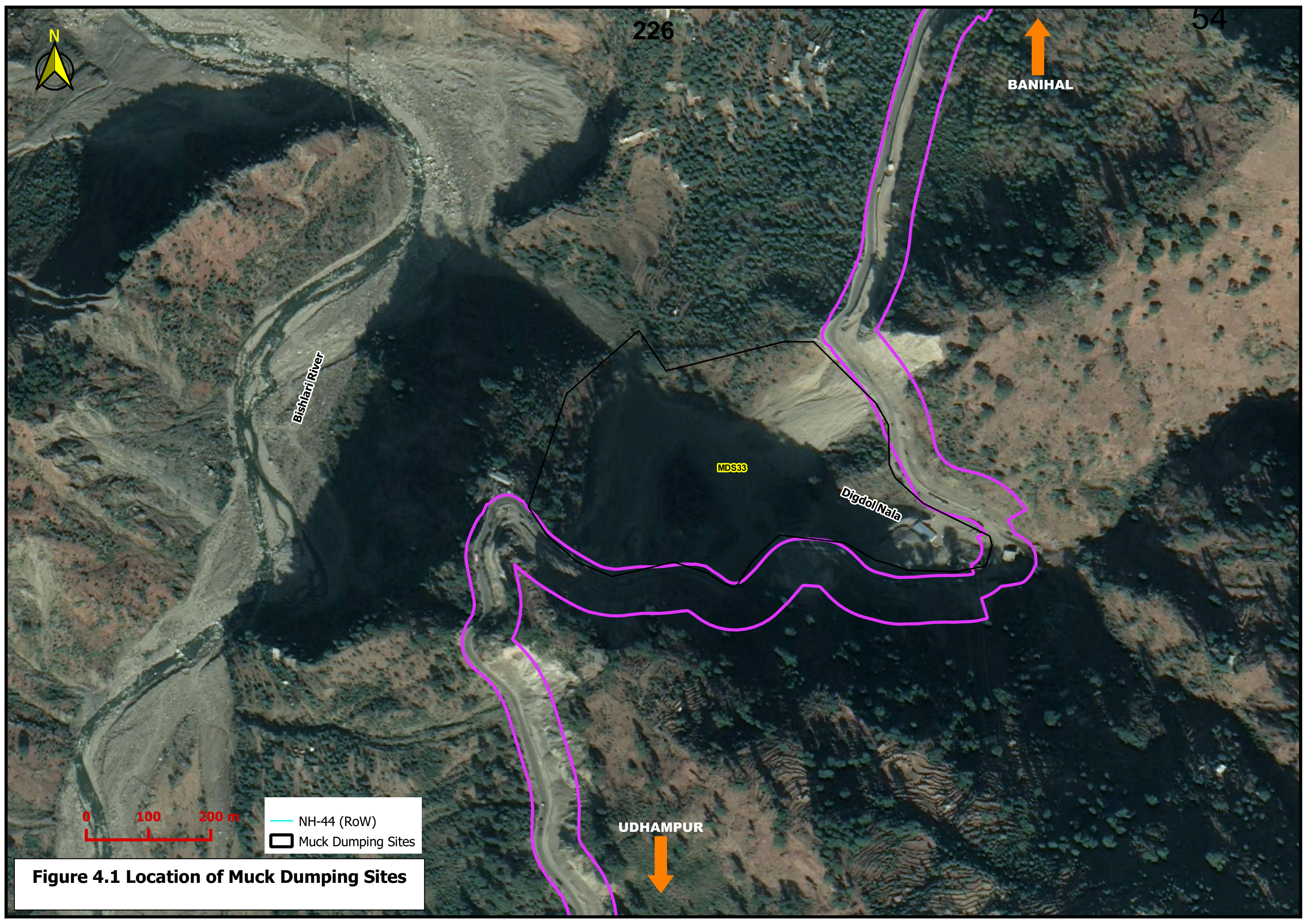


Figure 4.1 Location of Muck Dumping Sites



227



BANIHAL

55

Bishlari River

MDS34

UDHAMPUR



- NH-44 (RoW)
- Muck Dumping Sites

Figure 4.1 Location of Muck Dumping Sites

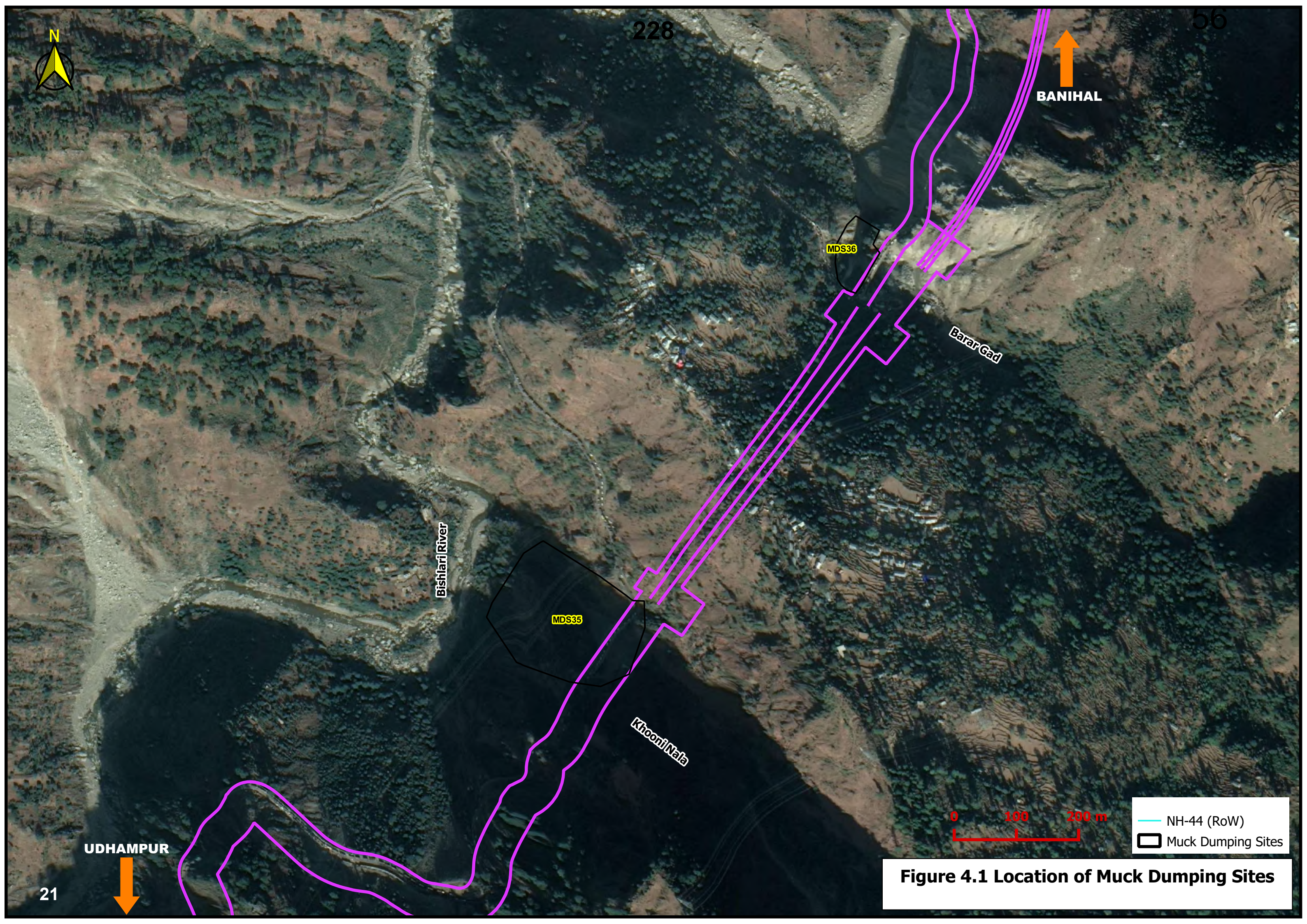
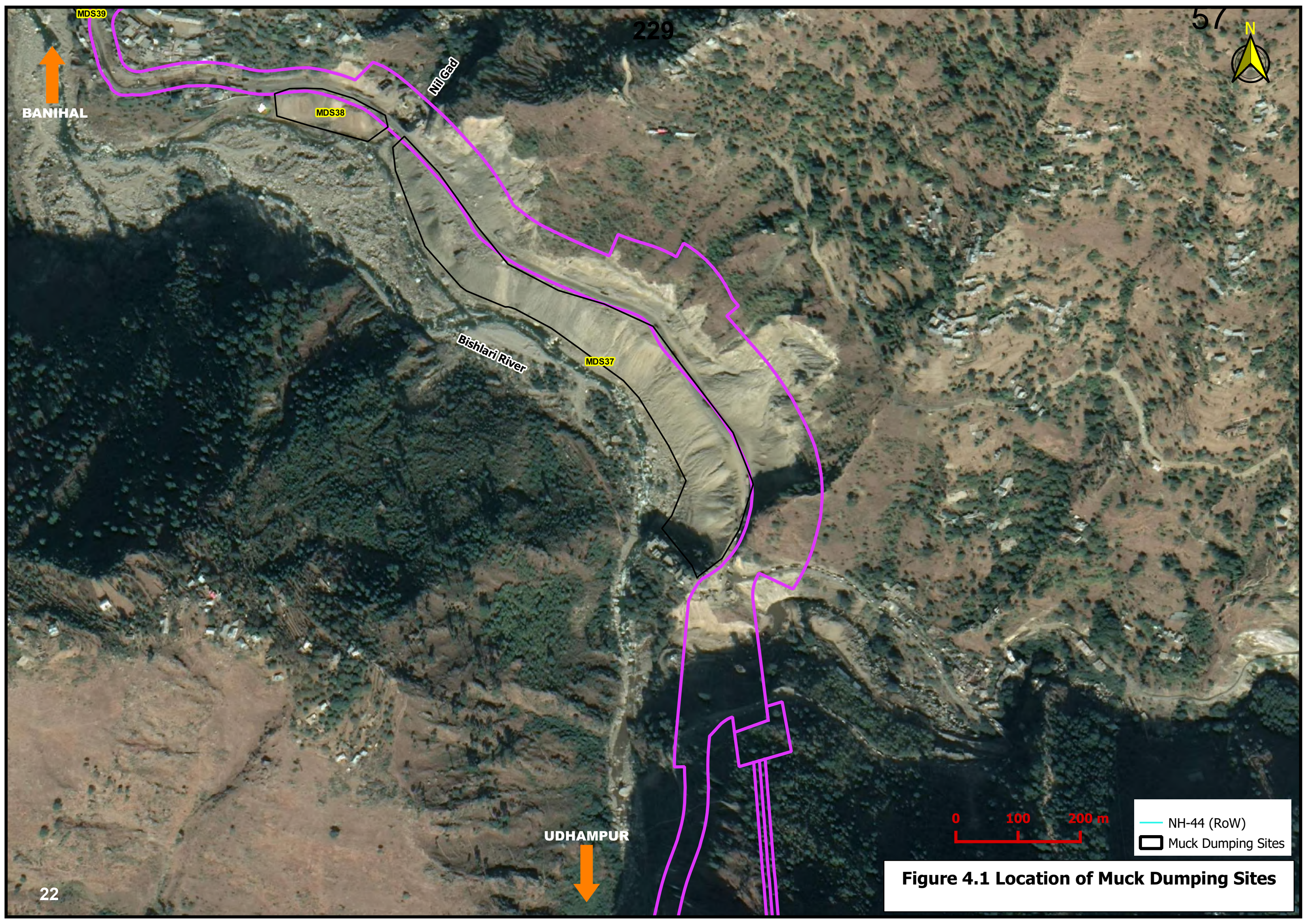


Figure 4.1 Location of Muck Dumping Sites



BANIHAL



229

57



MDS38

Nij Gad

Bishlari River

MDS37

UDHAMPUR



- NH-44 (RoW)
- Muck Dumping Sites

Figure 4.1 Location of Muck Dumping Sites

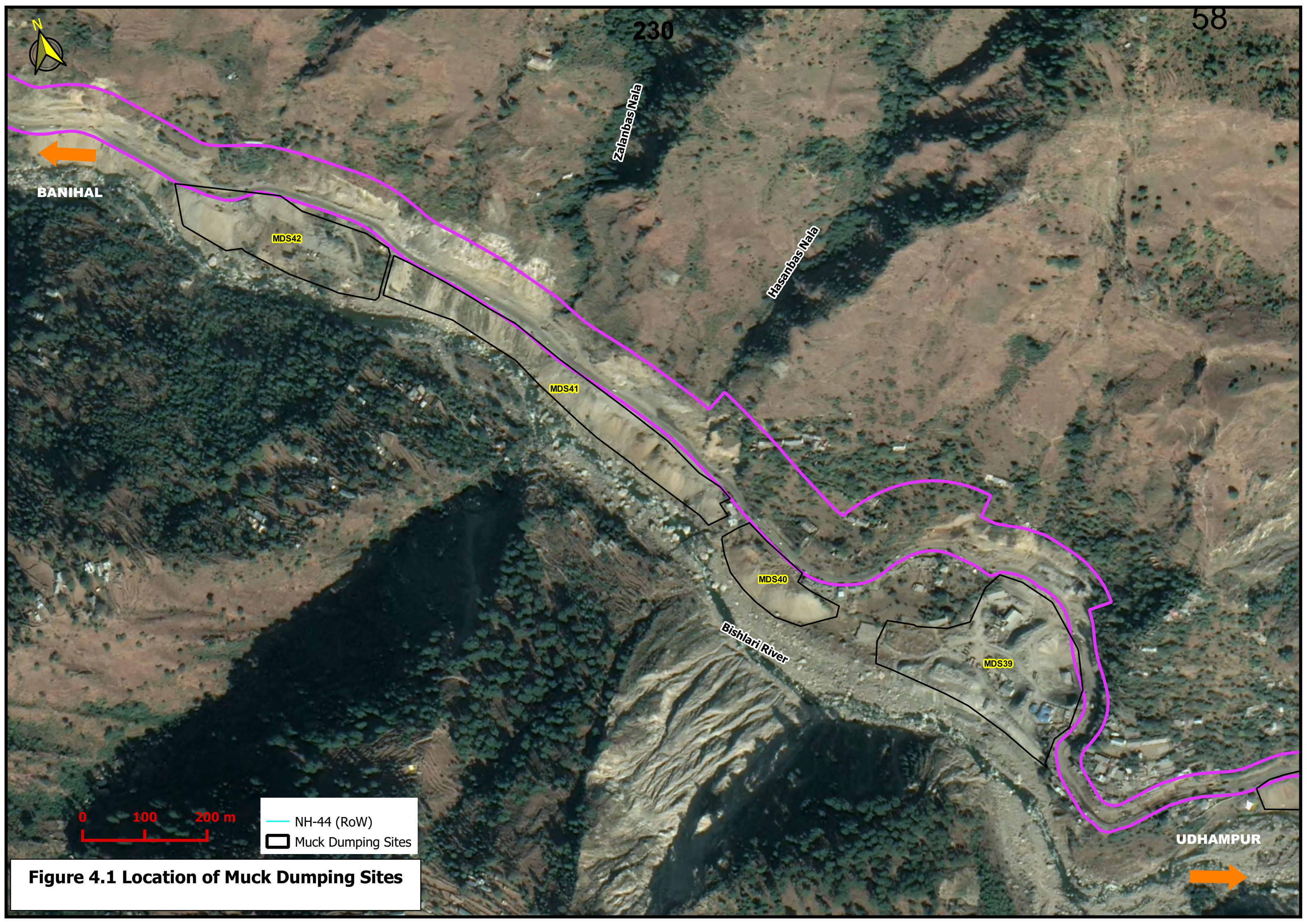
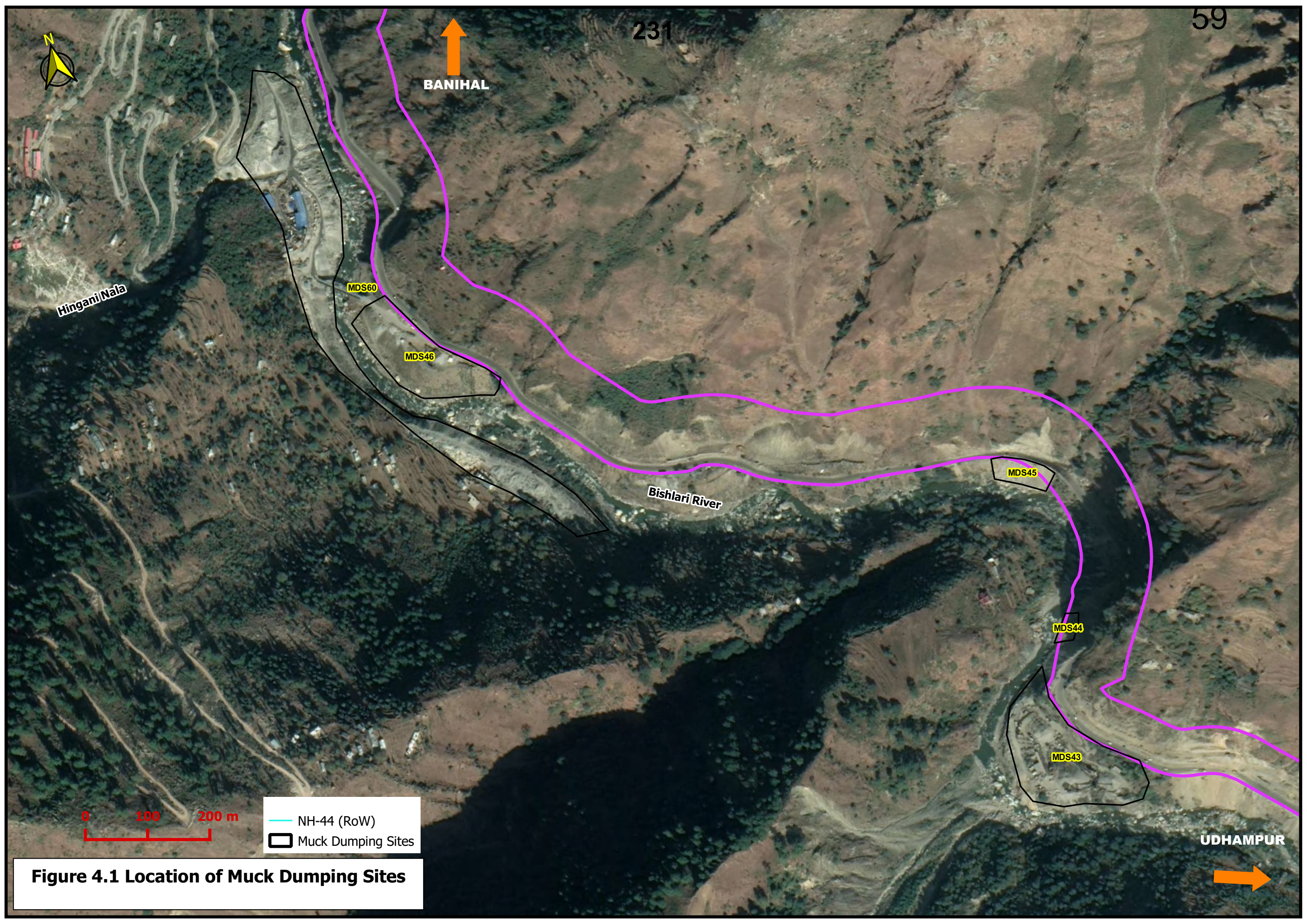


Figure 4.1 Location of Muck Dumping Sites



231

59

BANIHAL



Hingani Nala

MDS60

MDS46

Bishlari River

MDS45

MDS44

MDS43

UDHAMPUR



- NH-44 (RoW)
- Muck Dumping Sites

Figure 4.1 Location of Muck Dumping Sites

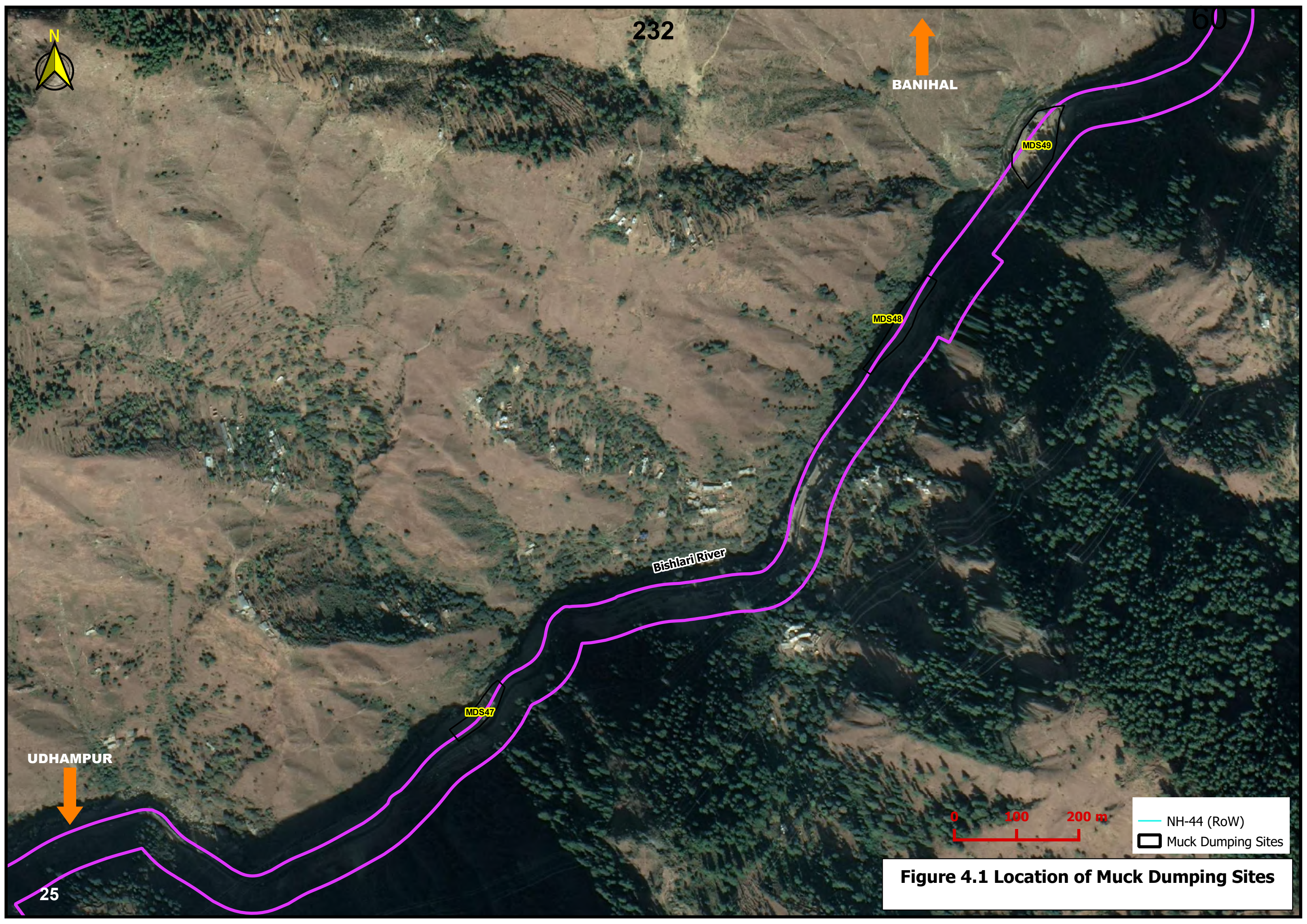
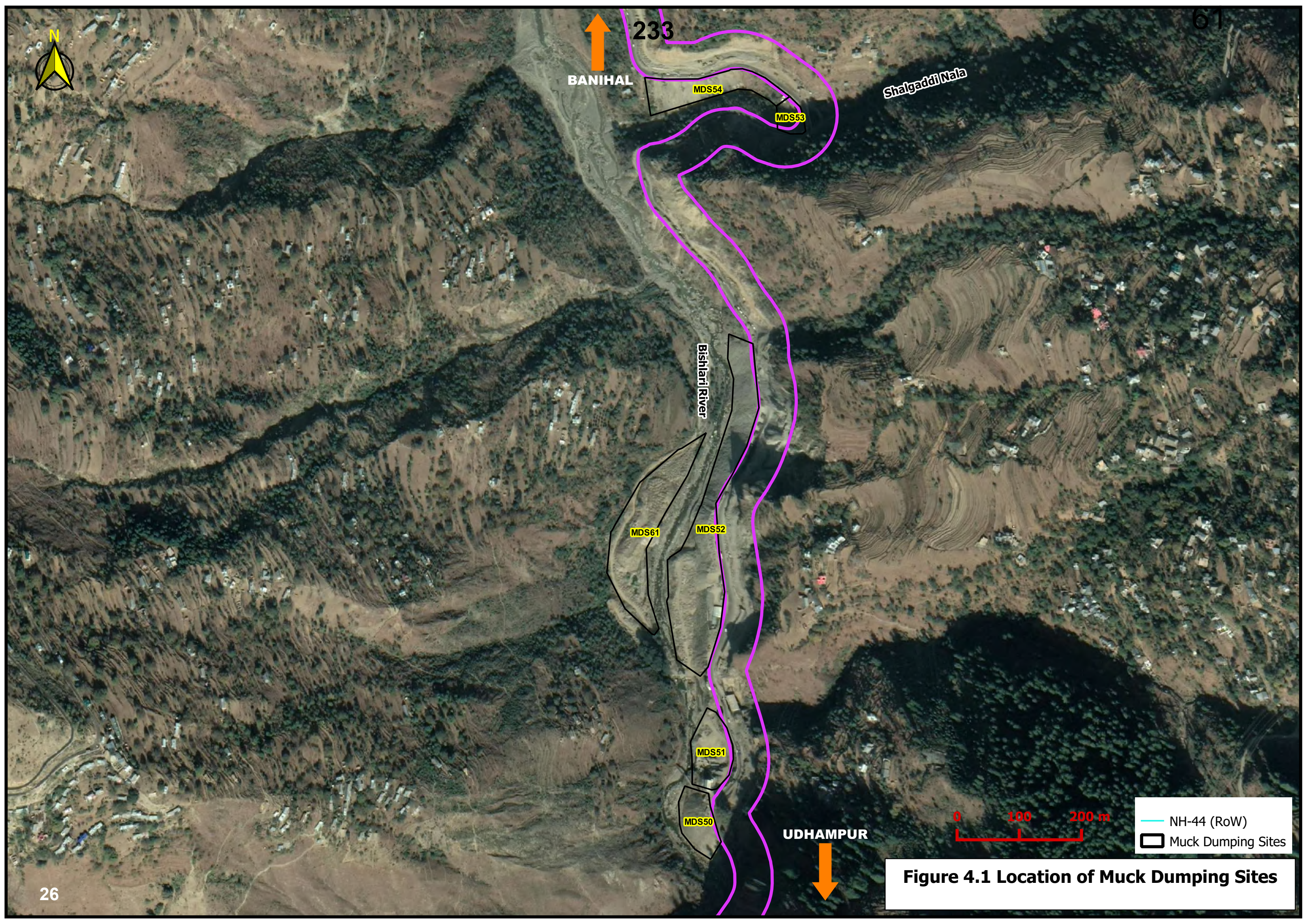


Figure 4.1 Location of Muck Dumping Sites



↑
BANIHAL

233

Shalgaddi Nala

MDS54

MDS53

Bishari River

MDS61

MDS52

MDS51

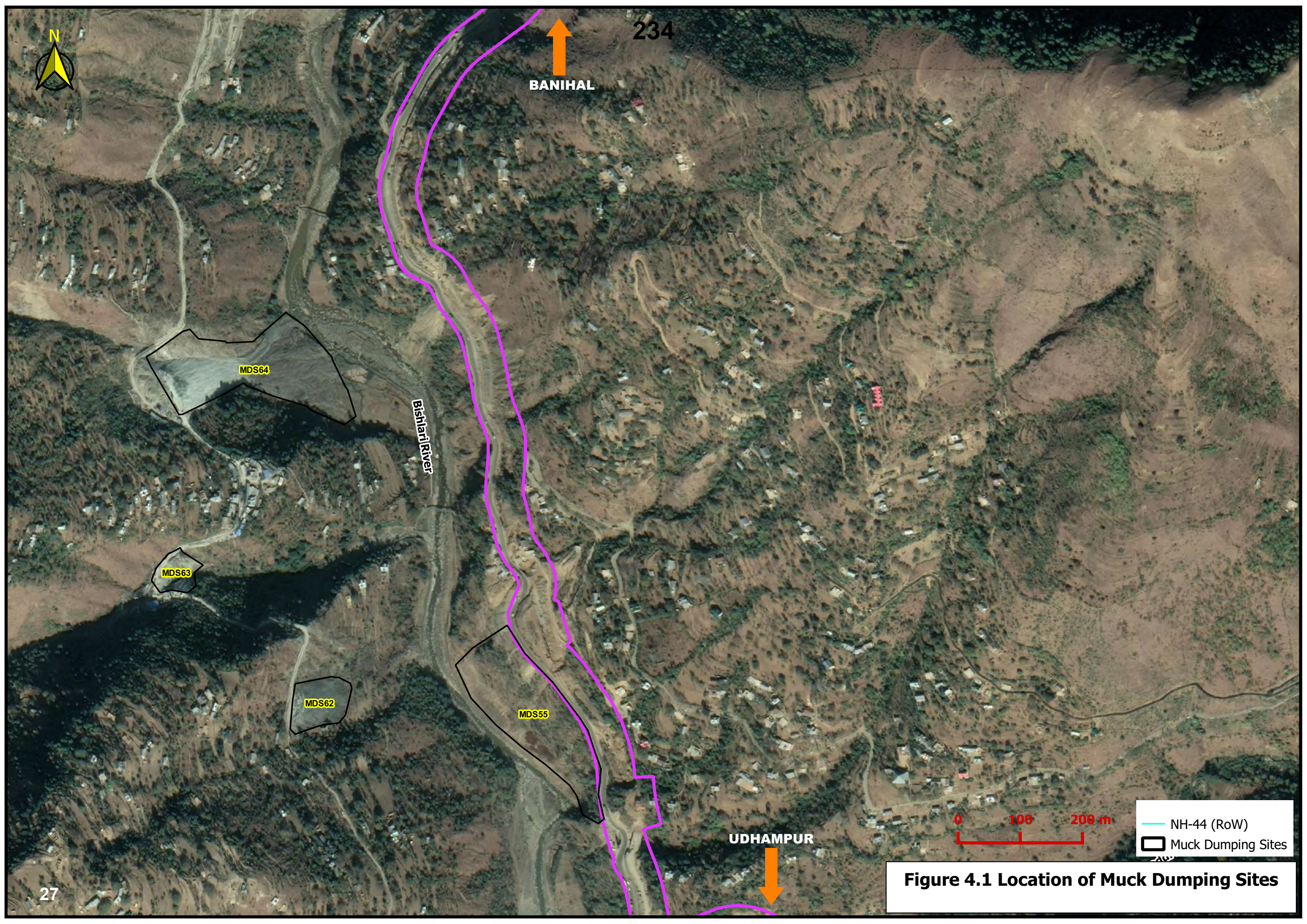
MDS50

UDHAMPUR



- NH-44 (RoW)
- Muck Dumping Sites

Figure 4.1 Location of Muck Dumping Sites



234

BANIHAL

MDS64

Bishari River

MDS63

MDS62

MDS55

UDHAMPUR

0 100 200 m

NH-44 (RoW)
Muck Dumping Sites

Figure 4.1 Location of Muck Dumping Sites

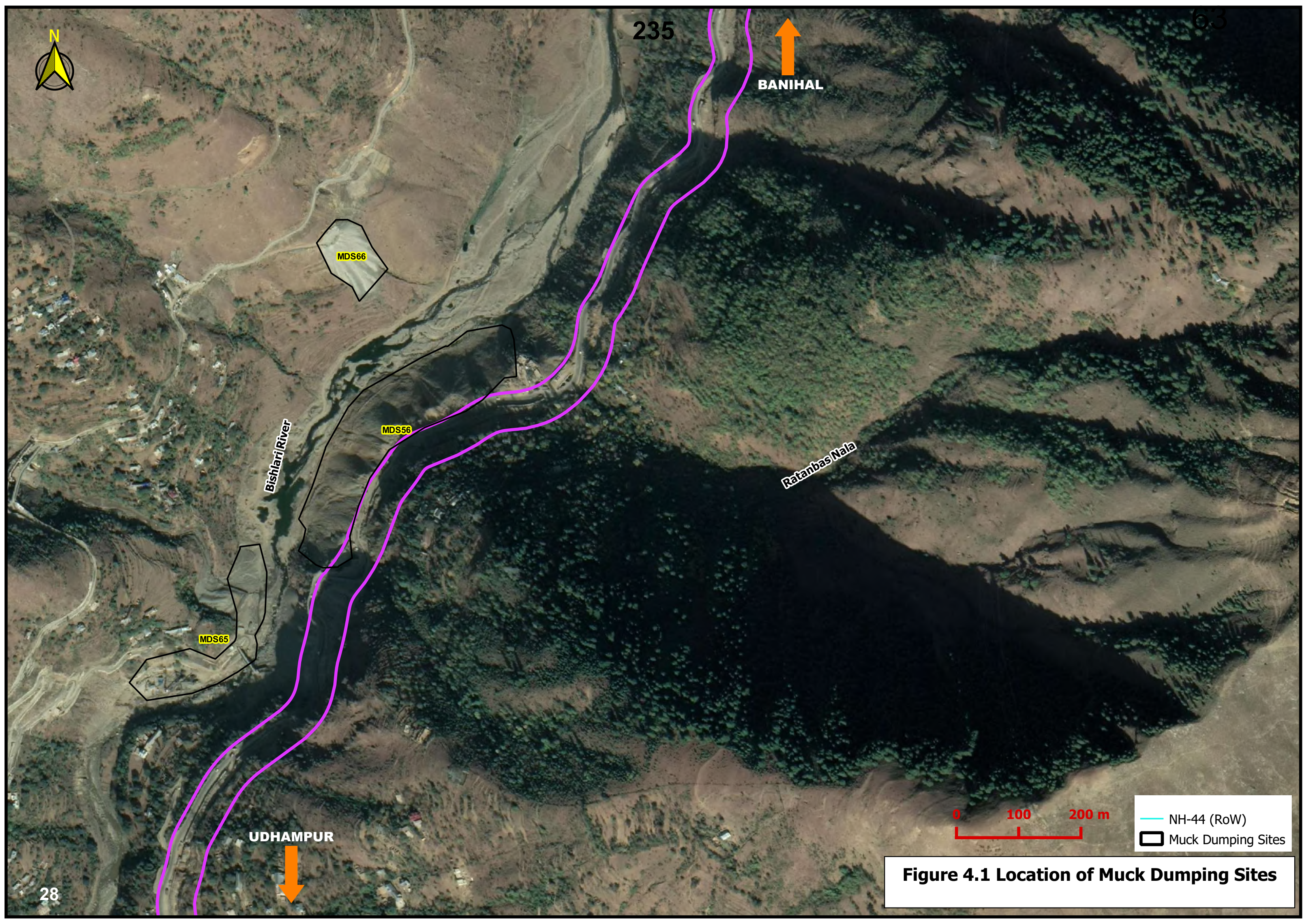
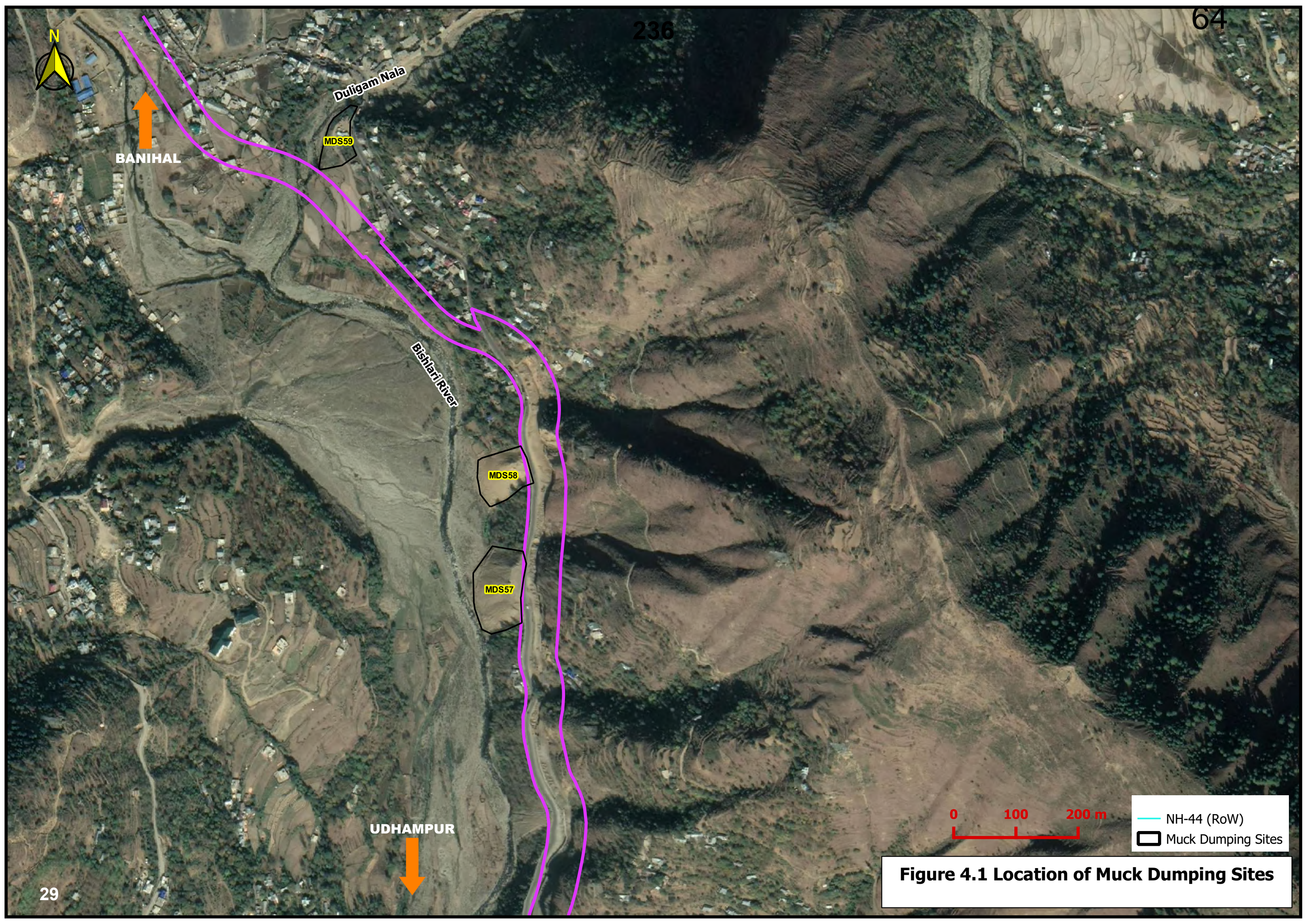


Figure 4.1 Location of Muck Dumping Sites



BANIHAL

Duligam Nala

MDS59

Bishari River

MDS58

MDS57

UDHAMPUR



- NH-44 (RoW)
- Muck Dumping Sites

Figure 4.1 Location of Muck Dumping Sites

4.2 Present Condition of disposal sites

The present conditions of 59 muck disposal sites are where muck generated from 4 laning of NH-44 are listed in **Table 4.2**, where higher environmental sensitivity has been marked red for ease of presentation (direct dumping into river, presence of brooks (nala/stream) within MDS, unstable slopes and lack of vegetative cover has been marked red). Photographs of few disposal sites are presented in subsequent section.

Table 4.2 Present Status of Muck Disposal Sites

MDS No	Usage	Debris Category	Direct dumping into River	Brook within MDS	Slope Condition	Green Cover in slopes
MDS01	Closed	Muck	No	No	Stable	Yes
MDS02	Closed	Slide Debris	Nachhar Nala	No	Unstable	No
MDS03	Open	Slide Debris	Nachhar Nala	No	Unstable	No
MDS04	Closed	Muck	No	No	Stable	Partial
MDS05	Closed	Muck	No	No	Stable	Yes
MDS06	Closed	Muck	No	2 Nalas (Either sides)	Stable	Partial
MDS07	Open	Slide Debris	Nachhar Nala	Nala (Within)	Unstable	No
MDS08	Closed	Muck	No	No	Stable	Partial
MDS09	Closed	Muck	Pira Nala	No	Stable	Yes
MDS10	Open	Muck	Pira Nala	No	Unstable	No
MDS11	Open	Muck	Pira Nala	No	Unstable	No
MDS12	Open	Muck	No	No	Unstable	No
MDS13	Open	Muck	No	No	Unstable	Yes
MDS14	Open	Muck	Kunfer Nalla	No	Unstable	No
MDS15	Open	Muck	Chenab River	No	Unstable	No
MDS16	Closed	Muck	Chenab River	No	Stable	Partial
MDS17	Closed	Muck	Karol Nala	Karol Nala (Side)	Stable	Yes
MDS18	Open	Muck	Chenab River	Nera Kanthi Nala (Within)	Unstable	No
MDS19	Open	Muck	Chenab River	No	Unstable	No
MDS20	Open	Muck	Chenab River	Ich Nala (Within)	Unstable	No
MDS21	Closed	Muck	Chenab River	Thalibas Nala (Side)	Unstable	No
MDS22	Open	Muck	Chenab River	No	Unstable	No
MDS23	Open	Muck	Chenab River	Nala (Within)	Unstable	No
MDS24	Closed	Muck	No	Nala (Side)	Unstable	No
MDS25	Closed	Muck	Chenab River	No	Stable	Partial
MDS26	Open	Slide Debris	Chenab River	No	Unstable	No
MDS27	Open	Muck	Chenab River	Dighor Nala (Within)	Unstable	No
MDS28	Open	Muck	Maroog Nala	Maroog Nala (Within)	Unstable	No
MDS29	Open	Slide Debris	No	Pasari Nala (Within)	Unstable	No
MDS30	Closed	Muck	Battery Chaisma	Battery Chaisma (Within)	Stable	Partial
MDS31	Closed	Muck	Kharar Nala	Kharar Nala (Within)	Unstable	No
MDS32	Open	Slide Debris	Bichlari River	No	Unstable	No
MDS33	Open	Muck	Bichlari River	Digdaul Nala (Within)	Unstable	No
MDS34	Open	Muck	Bichlari River	No	Stable	Yes
MDS35	Open	Slide Debris	Bichlari River	Khooni Nala (Within)	Unstable	No
MDS36	Open	Muck	Barar Gad	Barar Gad (Within)	Unstable	No
MDS37	Closed	Muck	Bichlari River	Nil Gad (Within)	Stable	No
MDS38	Open	Muck	Bichlari River	Nil Gad (Side)	Stable	No

MDS No	Usage	Debris Category	Direct dumping into River	Brook within MDS	Slope Condition	Green Cover in slopes
MDS39	Open	Muck	Bichlari River	No	Stable	No
MDS40	Open	Muck	Bichlari River	No	Unstable	No
MDS41	Open	Muck	Bichlari River	Hasanbas Nala (Within) Zalanbas Nala (Within)	Unstable	No
MDS42	Open	Muck	Bichlari River	No	Unstable	No
MDS43	Open	Muck	Bichlari River	No	Unstable	No
MDS44	Open	Muck	Bichlari River	No	Unstable	No
MDS45	Open	Slide Debris	Bichlari River	No	Unstable	No
MDS46	Open	Muck	Bichlari River	No	Unstable	No
MDS47	Open	Muck	Bichlari River	No	Unstable	No
MDS48	Open	Muck	Bichlari River	No	Unstable	No
MDS49	Open	Muck	Bichlari River	No	Stable	No
MDS50	Open	Muck	Bichlari River	No	Unstable	No
MDS51	Open	Muck	Bichlari River	Nala	Stable	No
MDS52	Open	Muck	Bichlari River	2 Nalas (Either sides)	Unstable	No
MDS53	Closed	Muck	Shalgaddi Nala	No	Stable	Partial
MDS54	Closed	Muck	Shalgaddi Nala	No	Unstable	No
MDS55	Open	Muck	Bichlari River	No	Unstable	No
MDS56	Open	Muck	Bichlari River	Ratanbas Nala (Side)	Unstable	No
MDS57	Open	Muck	Bichlari River	No	Unstable	No
MDS58	Open	Muck	Bichlari River	No	Unstable	No
MDS59	Closed	Muck	Duligam Nala	Duligam Nala (Side)	Stable	Partial



MDS 15
Dumping into Chenab River



MDS 18
Dumping into Chenab River



MDS 19 & 20
Dumping into Chenab River





MDS 21
Dumpd in Chenab Riverbed



MDS 23
Stone crushing and storage of Muck Debris in Chenab riverbed



MDS 29
Landslide debris



MDS 30 Green cover & Stable slopes in Closed MDS



MDS 50 Dumping into Bichlari River



MDS 56 Dumping into Bichlari River

4.3 Analysis of Present Site Conditions

4.3.1 Dumping into River

It has been observed that out of the total of 59 sites, 50 muck dumping sites are located in land adjoining various rivers and nalas, i.e., edge of the MDS(s) are located either on river bank or river bed. Out of these 50 sites, 12 are closed and 38 are still in use. There are only 9 sites which do not share common boundary with the river channels as summarized in Table 4.3.

Table 4.3 Usage status and dumping area wise classification of MDS

Usage Status	Direct Dumping into River		Total No of Sites
	No	Yes	
Closed	6	12	18
Open	3	38	41
Total	9	50	59

The list of rivers with number of open and closed muck dumping sites located on their banks is provided in **Table 4.4**. 24 disposal sites are adjacent to Bichlari River, out of which 23 are in use, while 11 sites are located on the bank / bed of Chenab River with 8 active sites.

Table 4.4 List of rivers with number of open and closed muck dumping sites

S. No	River / Nala	No of Muck Disposal Sites		Total
		Closed	Open	
1	Barar Gad	-	1	1
2	Battery Chaisma	1	-	1
3	Bichlari River	1	23	24
4	Chenab River	3	8	11
5	Duligam Nala	1	-	1
6	Karol Nala	1	-	1
7	Kharar Nala	1	-	1
8	Kunfer Nalla	-	1	1
9	Maroog Nala	-	1	1
10	Nachhar Nala	1	2	3
11	Pira Nala	1	2	3
12	Shalgaddi Nala	2		2
	Grand Total	12	38	50

4.3.2 Slope conditions & Green Cover

Slopes of few muck dumping sites have stabilized over the time and green cover has come up. As provided in **Table 4.5** and **Table 4.6**, 13 out of 18 closed MDS have stable slopes and 4 of them has good green cover, while another 8 closed sites have partial green cover and remaining 1 site does not have any green cover. 4 closed sites still have unstable slopes and all of them are devoid of any green cover.

Out of the total of 41 in-use sites, muck was disposed at 34 locations while debris from landslides was disposed at 7 locations. Out of these 34 locations, 29 sites have unstable slopes while all of the 7 slide debris disposal sites have unstable slopes.

Table 4.5 Debris Type, slope condition & dumping area wise classification of MDS

Usage Status	Debris Type	Slope Condition	Direct Dumping into River		Total
			No	Yes	
Closed	Muck	Stable	5	8	13
		Unstable	1	3	4
	Slide Debris	Unstable	-	1	1
Sub Total			6	12	18
Open	Muck	Stable	-	5	5
		Unstable	2	27	29
	Slide Debris	Stable	-	-	-
		Unstable	1	6	7
	Sub Total			3	38
Total			9	50	59

Table 4.6 Debris Type, slope condition & green cover wise classification of MDS

Usage Status	Slope Condition	Green Cover in Slopes			Total
		No	Partial	Yes	
Closed	Stable	1	8	4	13
	Unstable	5	-	-	5
	Sub Total		6	8	4
Open	Stable	4	-	1	5
	Unstable	35	-	1	36
	Sub Total		39	-	2
Total		45	8	6	59

4.3.3 Brooks within Muck disposal sites

Many of the muck disposal sites have small nala / brooks, which are located either within the site or on the sides as outlined in **Table 4.7**. MDS-6 and MDS-52 have 2 brooks located on either sides of the site while MDS-41 has two brooks located within the site. 20 muck disposal sites have only 1 brook, out of which 8 sites have brooks located at the edge (side) while 12 sites have brooks located in the middle of the site. Site-wise details of the location, numbers and name of these channels are detailed in Table 4.2.

Table 4.7 Brooks within Muck Disposal Sites

Usage Status	No of MDS with 1 channel	No of MDS with 2 channels	No Brooks	Total
Closed	7	1	10	18
Open	13	2	26	41
Total	20	3	36	59

5.0 Environmental Impacts of Improper Muck disposal

The dumping of rock spoil can potentially be a cause for environmental problems and land degradation. It may cause landslides if not disposed properly and be an aesthetical damage to the natural landscape. Improper muck dumping without slope protection measures results in wash away into the river causing siltation and blockage of natural channels. The trees and undergrowth vegetation of the dumping sites are also affected due to change in land use. Further, when stacked without adequate stabilisation measures, muck moves along with runoff and creates landslides.

6.0 Environmental Safeguard Measures

6.1 Environment Management Plan

The environment management plan for rehabilitation / restoration of muck disposal sites has been formulated specific to be site based on individual site condition, location and distance of water channels from the sites, slopes and green cover. The mitigation measures include but not limited to construction o gabion walls with gravel riprap for bank protection, rolling and landscaping of top surface so that land can be used for utilities or other purposes, re-channelization of brooks located within the muck disposal sites and bio-engineering techniques for eco-restoration etc. Length of the walls to be constructed for bank and slope protection as well as terracing requirement have also been specified, though it may vary to some extent as per site conditions or accessibility of site of construction. (as many sites have steep slopes). The formulated mitigation measures for all 50 muck disposal sites are provided in **Table 6.1** and also summarized with coloured index in **Table 6.2**. Component-wise quantification of suggested mitigation measures are provided in **Table 6.3**.

Table 6.1 Environment Management Plan of Muck Dumping Sites

MDS No	Improvement Proposal
MDS01	Rolling & levelling of top surface can restore about 1446 sq. m land. As this land is under forest division, it may be used for public green space.
MDS02	Natural slope failure. Debris dumped Nachhar Nala. River Bank protection measures for Nachhar Nala. slope stabilization & eco-restoration through bioengineering.
MDS03	River Bank protection measures for Nachhar Nala. Slope protection by 5 gabion walls. Slope stabilization & eco-restoration through bioengineering.
MDS04	Rolling & levelling of top surface can restore 2346 sq. m of land for amenities (Toilet block already under construction). Slope stabilization & eco-restoration through bioengineering.
MDS05	As the site now sunk due to natural compression of muck, a portion of this land (about 1000 sq m) can be restored by dumping additional muck, followed by levelling and landscaping. 4 gabion walls are required at toe line for slope protection.
MDS06	This site has potential to accommodate additional muck. 3 gabion walls are to be reconstructed for enhanced stabilization. The site has brooks on both sides, which are to be protected through stepped gabion wall for entire length within the site. Bio-engineering methods required for eco-restoration.
MDS07	This site has potential to accommodate additional muck. Bank protection measures for Nachhar Nala required. Slope protection by 7 gabion walls with terracing. Brook flowing through site to be re-channelized through stepped gabions for its entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS08	Rolling & levelling of top surface can restore about 1500 sq. m of land for amenities. The slope has become stable and green cover is coming up. Hence, no other measures are required.
MDS09	River bank protection measures required at toe line in Pira Nala side. The slope has become stable and green cover is coming up through CAMPA Plantation. Hence, no other measures are required.
MDS10	River bank protection measures required at toe line in Pira Nala side. Slope protection by 1 gabion wall with terracing. Slope stabilization & eco-restoration through bioengineering.
MDS11	Rolling & levelling of top surface can restore about 2570 sq. m of land for amenities. River bank protection measures required at toe line in Pira Nala side. Slope protection by 1 gabion wall with terracing. Slope stabilization & eco-restoration through bioengineering.
MDS12	Slope protection by 3 gabion walls with terracing. Slope stabilization & eco-restoration through bioengineering.
MDS13	This site has potential to accommodate additional muck. Rolling and levelling of top surface can restore about 4324 sq. m of land for amenities. Slope protection by 2 gabion walls with terracing as required. Slope stabilization & eco-restoration through bioengineering.
MDS14	River bank protection measures required in both sides of Kunfer Nala. Slope stabilization & eco-restoration through bioengineering.
MDS15	River bank protection measures required for bank (dumped side) of Chenab River. Slope stabilization & eco-restoration through bioengineering.
MDS16	Rolling & levelling of top surface can restore about 1000 sq. m of land for amenities. Slope protection by 1 gabion wall at toe line. No terracing is required. Slope stabilization & eco-restoration through bioengineering.

MDS No	Improvement Proposal
MDS17	Rolling & levelling of top surface can restore about 2000 sq. m of land for amenities. Bank side protection required for Karol Nala. Slopes stabilized, so terracing or Gabion walls are not required. Green cover has come up, eco-restoration measures are not required.
MDS18	River bank protection measures required for bank (dumped side) of Chenab River. Nera Kanthi Nala is flowing through the site; therefore, it is required to be channelized through stepped gabion wall for entire length within the site. Slope stabilization & eco-restoration through bioengineering. A Hindu crematorium is located below the muck dumping site, which is getting affected due to dumping of muck from top. Gabion wall is required to protect the site and access road (pedestrian walkway) to this place is required to be provided.
MDS19	River bank protection measures required for bank (dumped side) of Chenab River. Slope stabilization & eco-restoration through bioengineering.
MDS20	River bank protection measures required for bank (dumped side) of Chenab River. Ich Nala is flowing through the site, and is required to be channelized through stepped gabion wall for entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS21	Muck to be removed from river bed.
MDS22	River bank protection measures required for bank (dumped side) of Chenab River. Slope stabilization & eco-restoration through bioengineering.
MDS23	River bank protection measures required for bank (dumped side) of Chenab River. The tiny brook within the site to be re-channelized through stepped gabions for its entire length within the site. Excess muck in river bed to be removed and no further storage/dumping should be allowed.
MDS24	This site has potential to accommodate additional muck. Rolling & levelling of top surface can restore about 250 sq. m of land for amenities. Slope protection by 2 gabion walls with terracing. The tiny brook within the site to be re-channelized through stepped gabion wall for its entire length within the site.
MDS25	River bank protection measures required for bank (dumped side) of Chenab River. Slope stabilization & eco-restoration through bioengineering.
MDS26	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS27	River bank protection measures required for bank (dumped side) of Chenab River. Slope protection by 6 gabion walls with terracing is required. Dighor Nala is flowing through the site; therefore, it is required to be channelized through stepped gabion wall for entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS28	This site has potential to accommodate additional muck. Slope protection by 6 gabion walls with terracing. Maroog Nala is passing through the site and is required to be re-channelized through stepped gabion for its entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS29	Rolling & levelling of top surface can restore about 3000 sq. m of land for amenities. Slope protection by 4 gabion walls with terracing. Pasari Nala is flowing through the site, therefore it is required to be channelized through stepped gabion wall for entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS30	Rolling & levelling of top surface can restore about 2015 sq. m of land for amenities. Slope protection by 7 gabion walls with terracing. Battery Chaisma Nala is flowing through the site and is required to be re-channelized through Hume pipe for its entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS31	This site has potential to accommodate additional muck. Slope protection by 8 gabion walls with terracing is required. Kharar Nala is flowing through the site, therefore it is required to be channelized through stepped gabion wall for entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS32	This site has potential to accommodate additional muck. Slope protection by 13 gabion walls with terracing is required. Slope stabilization & eco-restoration through bioengineering.
MDS33	This site has potential to accommodate additional muck. Slope protection by 5 gabion walls with terracing is required. Digdaul Nala is flowing through the site, therefore it is required to be channelized through stepped gabion wall for entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS34	Slope protection by 3 gabion walls with terracing is required. Slope stabilization & eco-restoration through bioengineering.
MDS35	This site has potential to accommodate additional muck. River bank protection measures required for bank (dumped side) of Bichlari river. Slope protection by 8 gabion walls with terracing is required. Khooni nala is flowing through the site, therefore it is required to be channelized through stepped gabion wall for entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS36	Slope protection by 4 gabion walls with terracing is required. Barar Gad brook is flowing through the site; therefore, it is required to be channelized through stepped gabion wall for entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS37	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.

MDS No	Improvement Proposal
MDS38	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS39	Part of this site was earlier used by IRCON for construction of Banihal-Katra rail link. Presently this site has construction camps of contractors of NHAI. There is no dumping at present. Muck is dumped in haphazard manner. More muck can be dumped to make the land even and restore the land for other uses after construction of NH is completed. Rolling & levelling of top surface can restore about 33,768 sq. m of land. River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS40	Rolling & levelling of top surface can restore about 3013 sq. m of land for amenities. River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS41	Rolling & levelling of top surface can restore about 1573 sq. m of land for amenities. River bank protection measures required for bank (dumped side) of Bichlari river. Hasanbas and Zalanbas Nala are flowing through the site and is required to be re-channelized through stepped gabion for their entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS42	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS43	Presently crusher plant is located over dumped muck without appropriate river bank protected measures. Rolling & levelling of top surface can restore about 17,204 sq. m of land for amenities. River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS44	River bank protection measures required for bank (dumped side) of Bichlari river.
MDS45	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS46	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS47	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS48	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS49	Presently crusher plant is located over dumped muck without appropriate river bank protected measures. Rolling & levelling of top surface can restore about 6,368 sq. m of land for amenities. River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS50	Rolling & levelling of top surface can restore about 1762 sq. m of land for amenities. River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS51	Rolling & levelling of top surface can restore about 6640 sq. m of land for amenities. River bank protection measures required for bank (dumped side) of Bichlari river. Brook flowing through the site is required to be channelized through stepped gabion wall for entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS52	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS53	Slope protection by 1 gabion wall without terracing is required. Slope stabilization & eco-restoration through bioengineering.
MDS54	Slope protection by 3 Gabion walls without terracing is required. Slope stabilization & eco-restoration through bioengineering.
MDS55	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS56	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS57	Rolling & levelling of top surface can restore about 820 sq. m of land for amenities. River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS58	Rolling & levelling of top surface can restore about 400 sq. m of land for amenities. River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS59	Slope protection by 1 Gabion wall without terracing is required. Slope stabilization & eco-restoration through bioengineering.

Table 6.2 Index of Environment Management Plan of Muck Dumping Sites

MDS No	A	B	C	D	E	F	G
MDS01	X	X	X	X	X	X	X
MDS02	X	✓	X	X	X	✓	X
MDS03	X	✓	✓	X	X	✓	X
MDS04	✓	X	X	X	X	✓	X
MDS05	✓	X	✓	X	X	X	X
MDS06	X	X	✓	✓	X	✓	X
MDS07	X	✓	✓	✓	X	✓	X
MDS08	✓	X	X	X	X	X	X
MDS09	X	✓	X	X	X	X	X
MDS10	X	✓	✓	X	X	✓	X
MDS11	✓	✓	✓	X	X	✓	X
MDS12	X	X	✓	X	X	✓	X
MDS13	✓	X	✓	X	X	✓	X
MDS14	X	✓	X	X	X	✓	X
MDS15	X	✓	X	X	X	✓	X
MDS16	✓	X	✓	X	X	✓	X
MDS17	✓	✓	X	X	X	X	X
MDS18	X	✓	✓	✓	X	✓	X
MDS19	X	✓	X	X	X	✓	X
MDS20	X	✓	X	✓	X	✓	X
MDS21	X	✓	X	X	X	X	✓
MDS22	X	✓	X	X	X	✓	X
MDS23	X	✓	X	✓	X	X	✓
MDS24	✓	X	✓	✓	X	X	X
MDS25	X	✓	X	X	X	✓	X
MDS26	X	X	✓	X	X	✓	X
MDS27	X	✓	✓	✓	X	✓	X
MDS28	X	X	✓	✓	X	✓	X
MDS29	✓	X	✓	✓	X	✓	X
MDS30	✓	X	✓	X	✓	✓	X
MDS31	X	X	✓	✓	X	✓	X
MDS32	X	X	✓	X	X	✓	X
MDS33	X	X	✓	✓	X	✓	X
MDS34	X	X	✓	X	X	X	X
MDS35	X	✓	✓	✓	X	✓	X
MDS36	X	X	✓	✓	X	X	X
MDS37	X	✓	X	X	X	✓	X
MDS38	✓	✓	X	X	X	✓	X
MDS39	✓	✓	X	X	X	✓	X
MDS40	✓	✓	X	X	X	✓	X
MDS41	✓	✓	X	✓	X	✓	X
MDS42	X	✓	X	X	X	✓	X
MDS43	✓	✓	X	X	X	✓	X
MDS44	X	✓	X	X	X	X	X
MDS45	X	✓	X	X	X	✓	X
MDS46	X	✓	X	X	X	✓	X
MDS47	X	✓	X	X	X	✓	X
MDS48	X	✓	X	X	X	✓	X
MDS49	✓	✓	X	X	X	✓	X
MDS50	✓	✓	X	X	X	✓	X
MDS51	✓	✓	X	✓	X	✓	X
MDS52	X	✓	X	X	X	✓	X
MDS53	X	X	✓	X	X	✓	X
MDS54	X	X	✓	X	X	✓	X
MDS55	X	✓	X	X	X	✓	X
MDS56	✓	✓	X	X	X	✓	X
MDS57	✓	✓	X	X	X	✓	X
MDS58	✓	✓	X	X	X	✓	X
MDS59	✓	✓	✓	X	X	X	X

Notes:

- A**- Rolling & Landscaping of top surface; **B**-Gabion Wall with Gravel Riprap at base for River Bank Protection
 - C**-Gabion Wall with terracing, as applicable for Slope Protection; **D**-Stepped Gabion Wall for Brook channelization
 - E**-Re-Channelization of Brook by Hume Pipes; **F**-Bio-engineering Techniques for Slope Stabilization & Eco-restoration;
 - G**-Removal of Dumped Muck from River Bed
- ✓ Measures to be adopted

Table 6.3 Component-wise details of all Environment Management measures

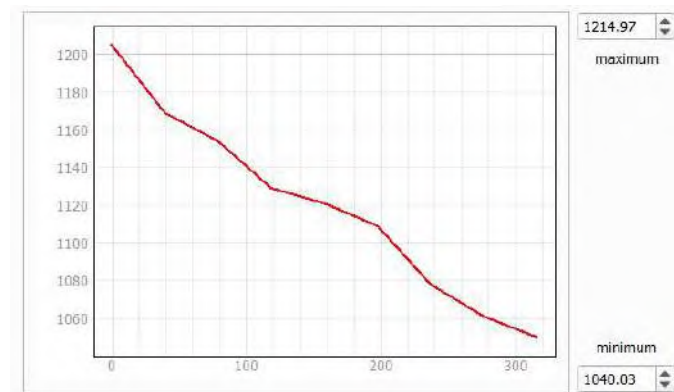
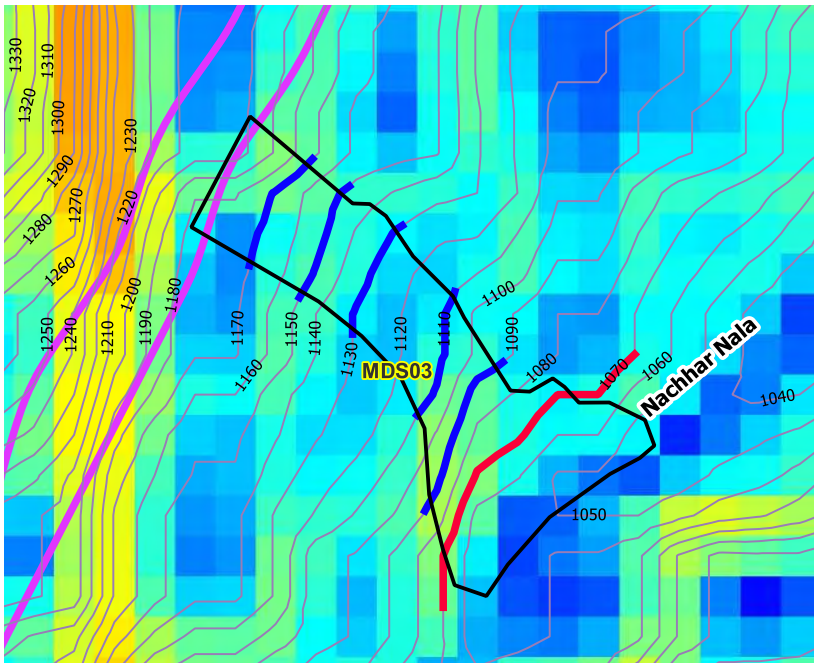
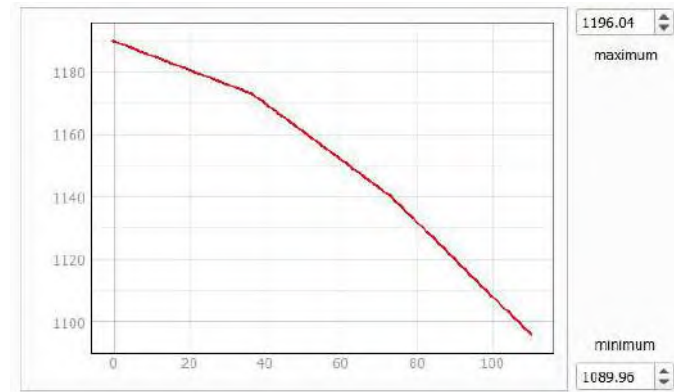
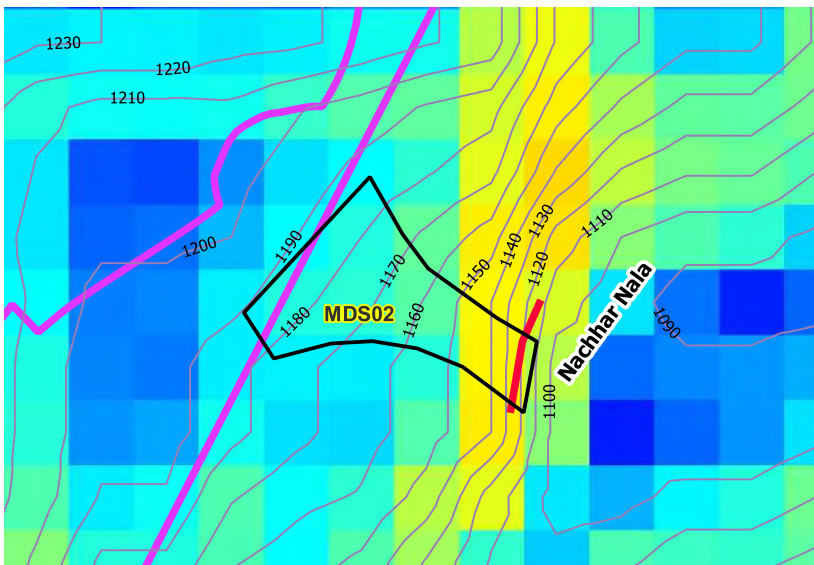
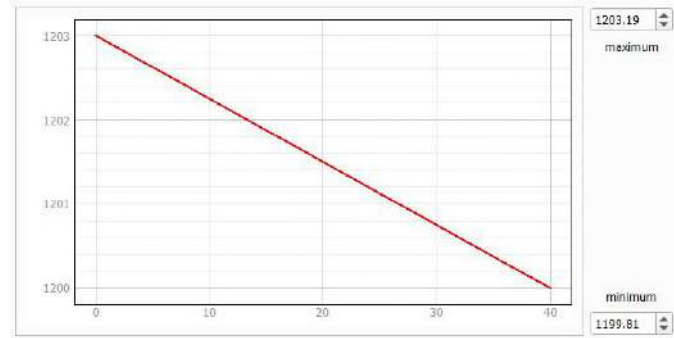
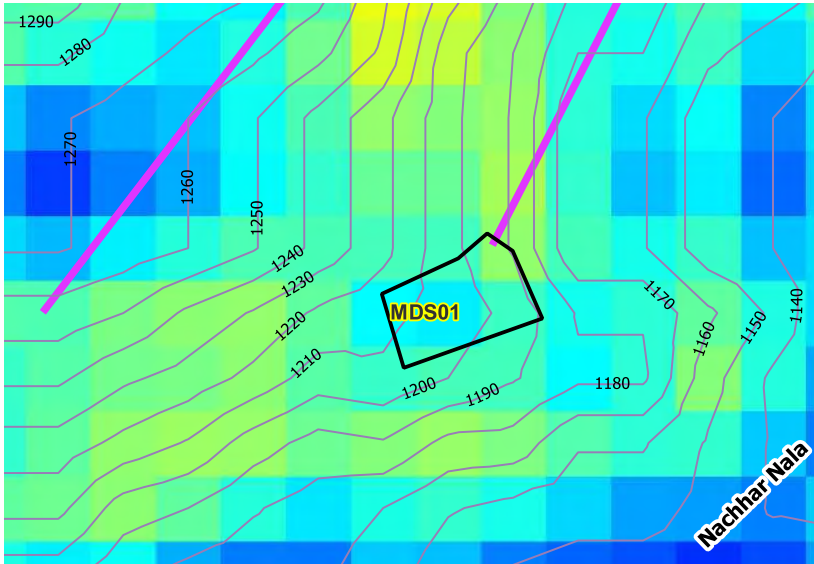
MDS No	A	B	C	D	E	F	G
MDS01	-	-	-	-	-	-	-
MDS02	-	44	-	-	-	4322.27	-
MDS03	-	224	438	-	-	25749.25	-
MDS04	2436	-	-	-	-	9769.31	-
MDS05	1000	-	574	-	-	-	-
MDS06	-	-	503	762	-	18373.14	-
MDS07	-	245	1141	716	-	70642.64	-
MDS08	1500	-	-	-	-	-	-
MDS09	-	335	-	-	-	-	-
MDS10	-	454	344	-	-	39776.08	-
MDS11	2570	367	204	-	-	14557.97	-
MDS12	-	-	408	-	-	20651.29	-
MDS13	4324	-	409	-	-	32831.7	-
MDS14	-	141	-	-	-	1535.02	-
MDS15	-	1186	-	-	-	51617.42	-
MDS16	1000	-	91	-	-	2595.05	-
MDS17	2000	159	-	-	-	-	-
MDS18	-	1220	43	199	-	107324.73	-
MDS19	-	322	-	-	-	12540.39	-
MDS20	-	1196	-	97	-	60391.11	-
MDS21	-	644	-	-	-	-	91000

MDS No	A	B	C	D	E	F	G
MDS22	-	1007	-	-	-	40426.83	-
MDS23	-	327	-	38	-	-	90000
MDS24	250	-	60	45	-	-	-
MDS25	-	455	-	-	-	22604.1	-
MDS26	-	-	331	-	-	23181.04	-
MDS27	-	53	571	411	-	33671.04	-
MDS28	-	-	1389	381	-	7985.36	-
MDS29	3000	-	786	271	-	15168.48	-
MDS30	2015	-	936	-	374	24409.43	-
MDS31	-	-	1038	397	-	19811.57	-
MDS32	-	-	2428	-	-	64642.57	-
MDS33	-	-	2162	655	-	121297.51	-
MDS34	-	-	265	-	-	-	-
MDS35	-	741	1417	326	-	39067.7	-
MDS36	-	-	390	289	-	-	-
MDS37	-	798	-	-	-	48031.27	-
MDS38	1115	169	-	-	-	6231.66	-
MDS39	33768	258	-	-	-	33768	-
MDS40	3013	240	-	-	-	9327.09	-
MDS41	1573	578	-	166	-	23832.08	-
MDS42	-	290	-	-	-	21216.77	-
MDS43	17204	340	-	-	-	17204.52	-
MDS44	-	41	-	-	-	-	-
MDS45	-	93	-	-	-	2325.41	-
MDS46	-	287	-	-	-	11780.03	-
MDS47	-	134	-	-	-	2819.29	-
MDS48	-	183	-	-	-	4077.63	-
MDS49	6368	146	-	-	-	6368.64	-
MDS50	1762	215	-	-	-	5203.2	-
MDS51	6640	129	-	60	-	6640.48	-
MDS52	-	584	-	-	-	28064.15	-
MDS53	-	-	44	-	-	2090.23	-
MDS54	-	-	437	-	-	8436.07	-
MDS55	-	517	-	-	-	29809.93	-
MDS56	3460	573	-	-	-	46162.39	-
MDS57	820	238	-	-	-	9518.19	-
MDS58	400	116	-	-	-	5887.28	-
MDS59	2400	811	130	-	-	-	-
	98618	15860	16539	4813	374	1213738.31	181000

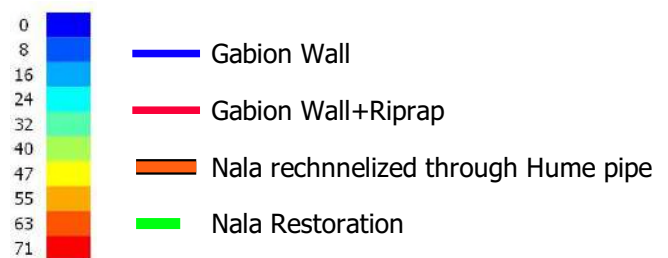
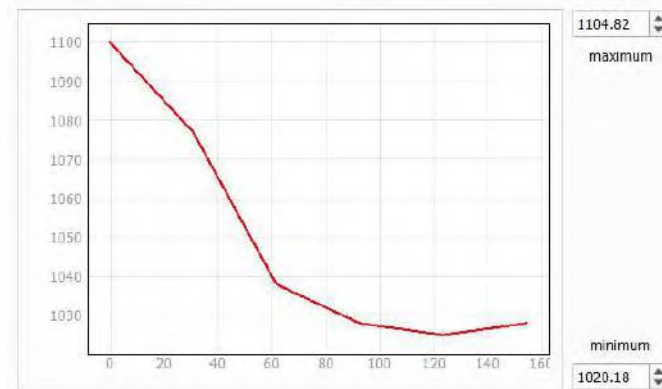
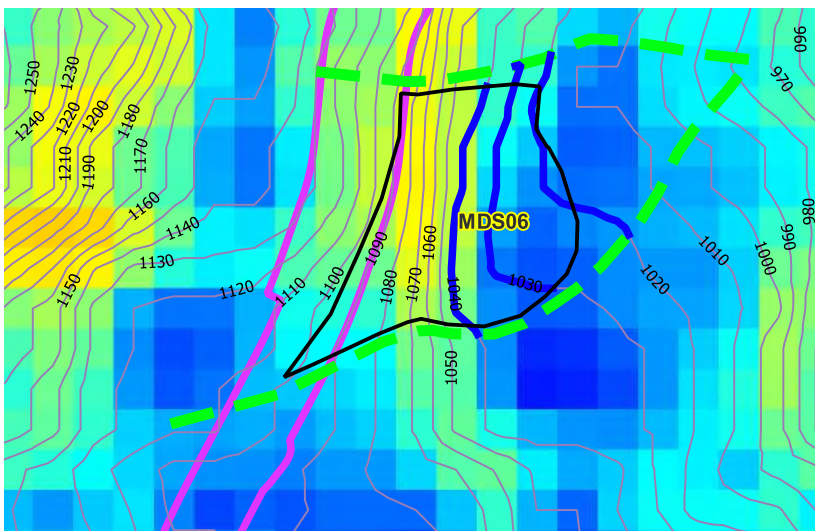
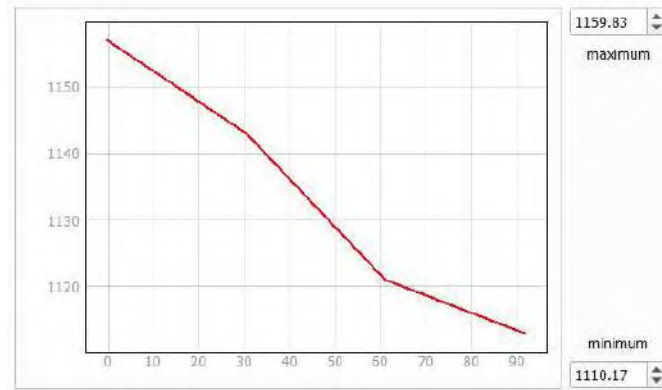
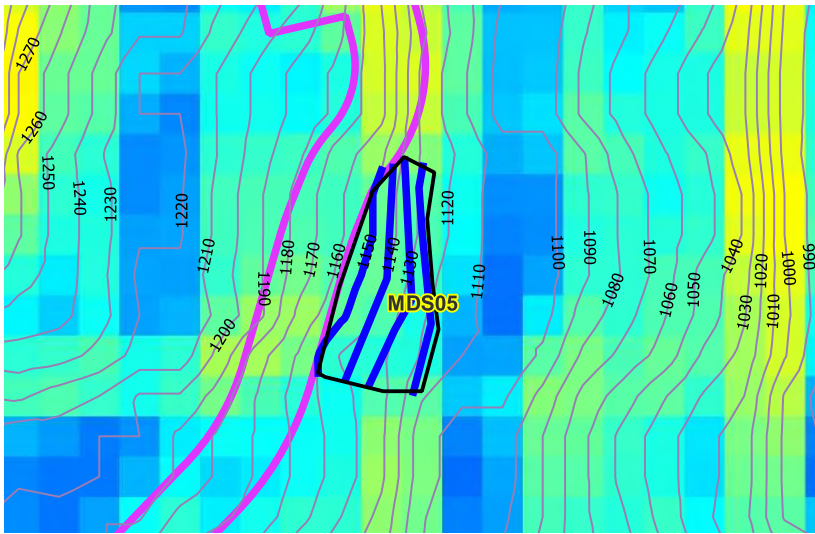
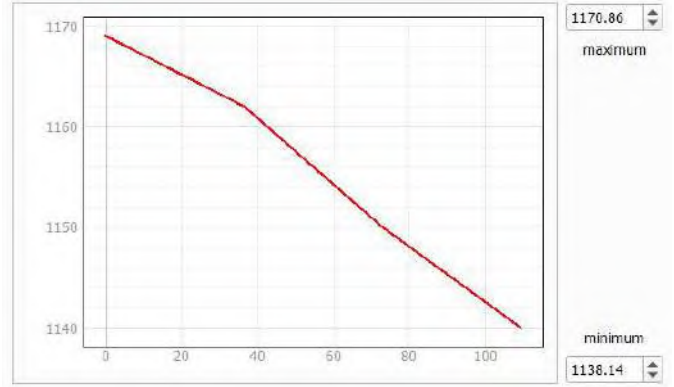
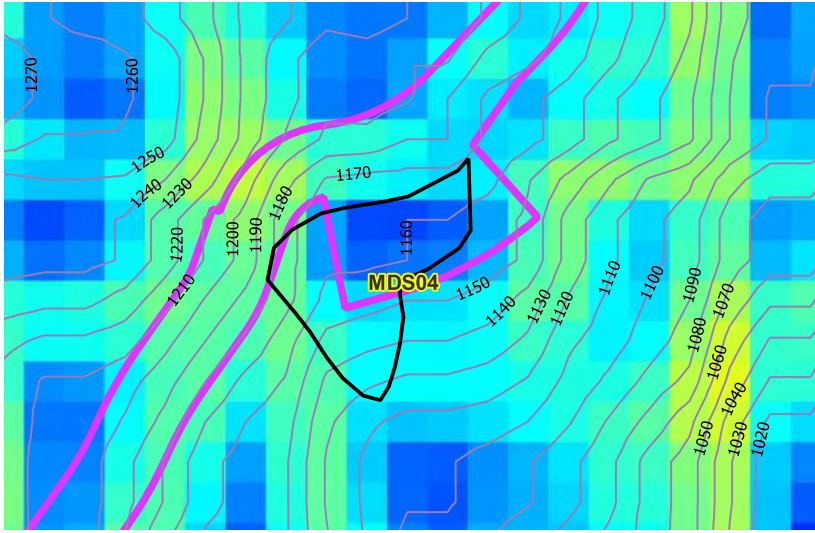
Notes: **A**- Rolling & Landscaping of top surface; **B**-Gabion Wall with Gravel Riprap at base for River Bank Protection **C**-Gabion Wall with terracing, as applicable for Slope Protection; **D**-Stepped Gabion Wall for Brook channelization **E**-Re-Channelization of Brook by Hume Pipes; **F**-Bio-engineering Techniques for Slope Stabilization & Eco-restoration; **G**-Removal of Dumped Muck from River Bed

6.2 Digital Elevation Models

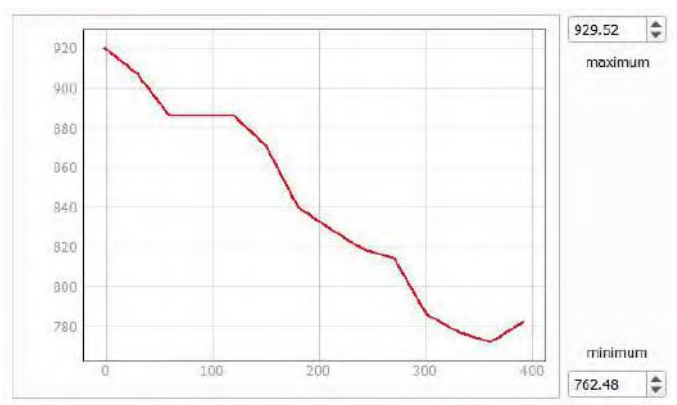
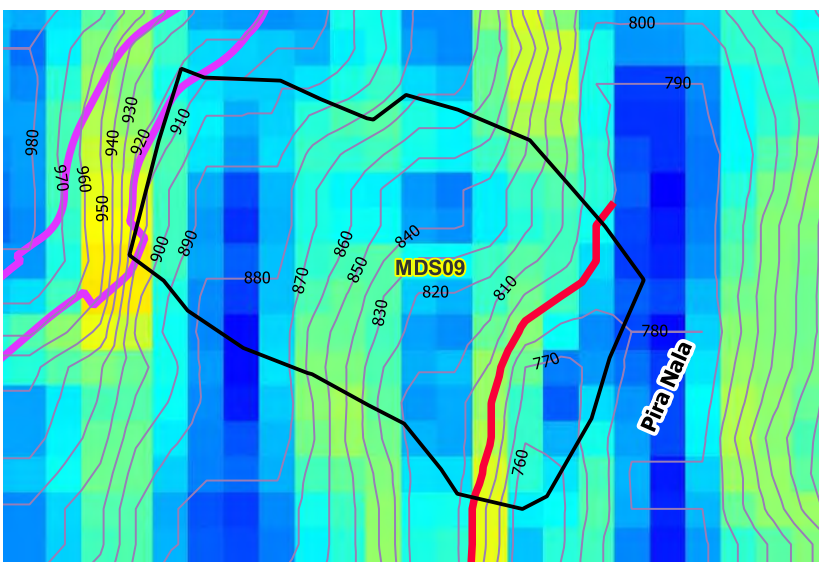
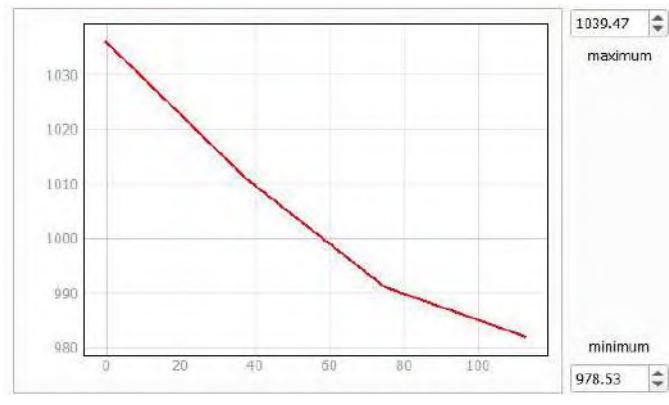
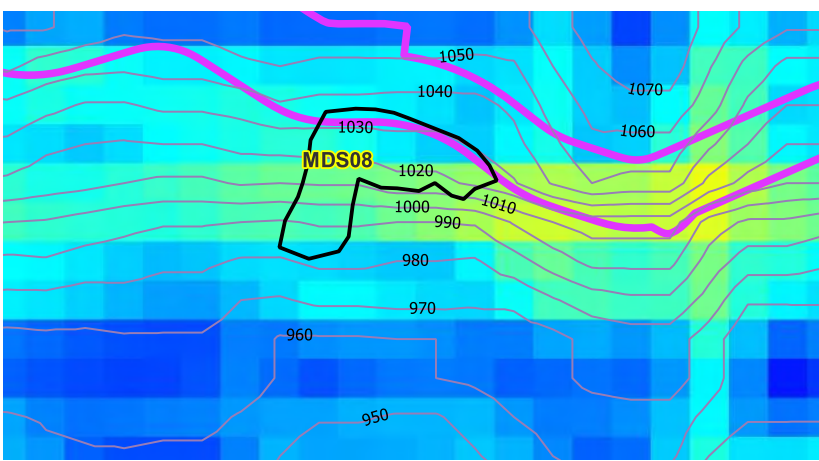
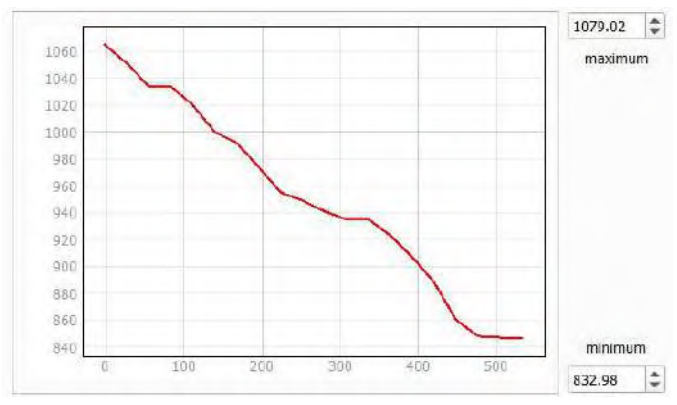
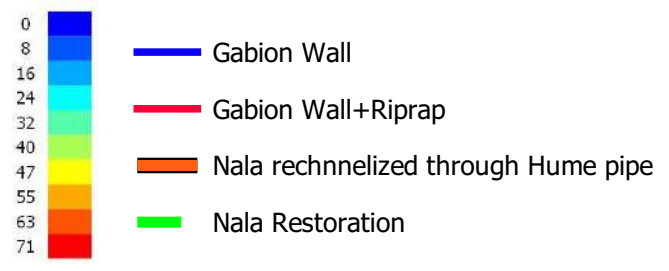
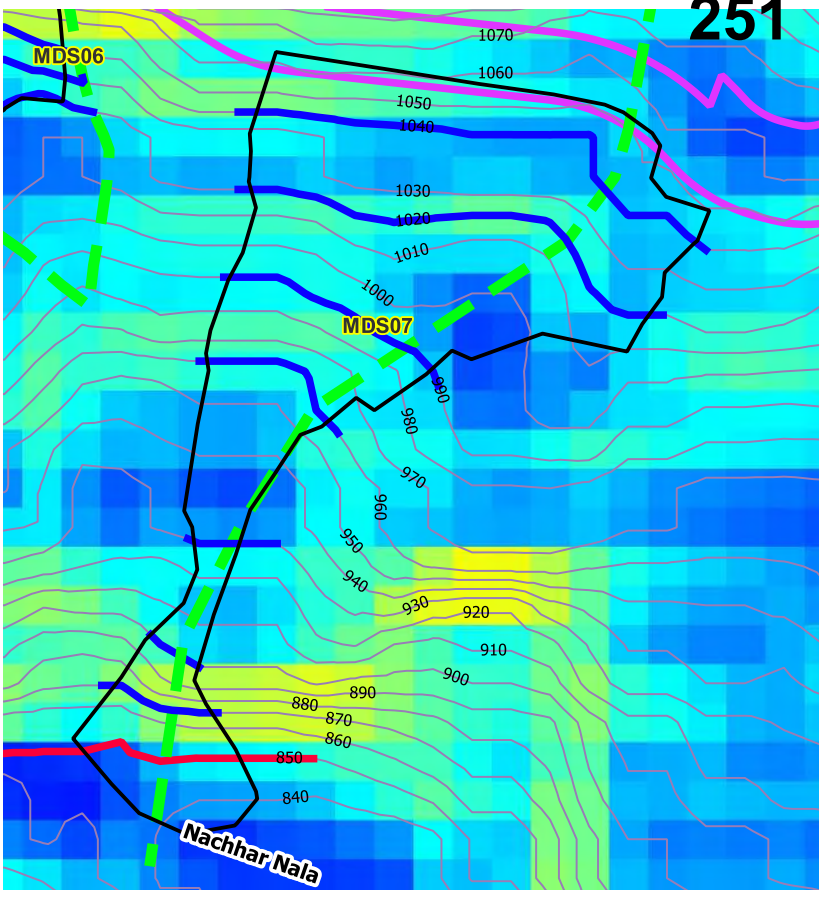
Digital elevation models of each site have been prepared where slope contours based on the elevation were prepared and provided in this section. Locations of the structures as suggested in Section 6.1 above are also shown in the elevation models. The blue colour in the model indicates lower slope (which are mostly at the river / stream banks while the red colour indicates high hill slopes. The extent of dumping in the river bed of muck disposal sites can be visualized from this elevation models. The slope of the disposal site as well as brook / stream located within the site are shown in the elevation graphs provided adjacent to the model output.

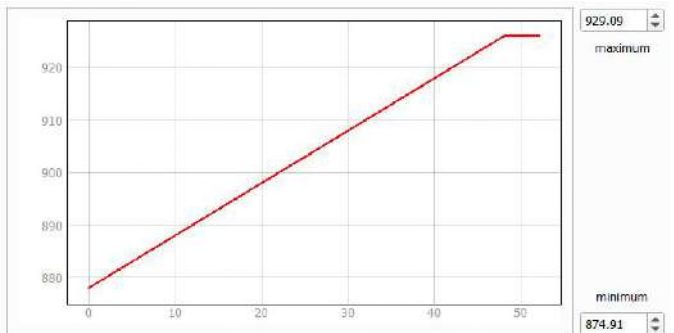
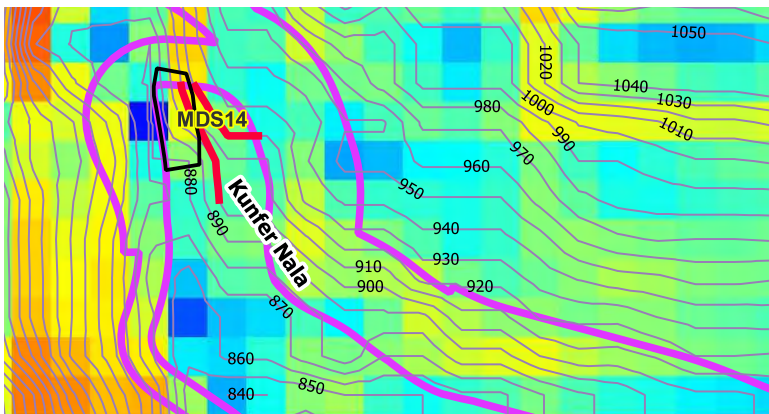
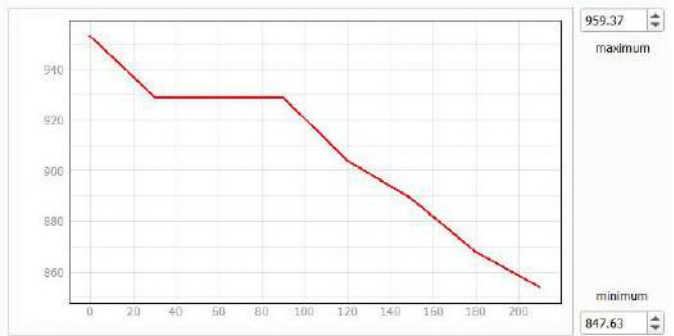
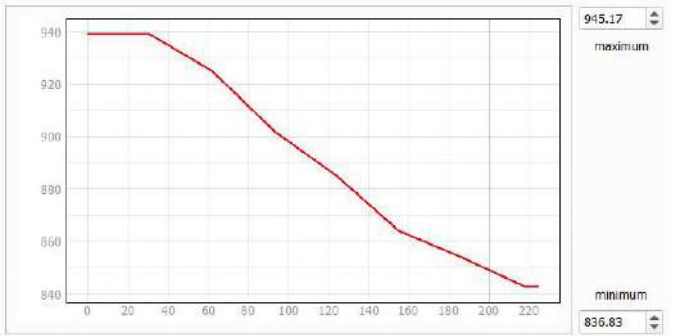
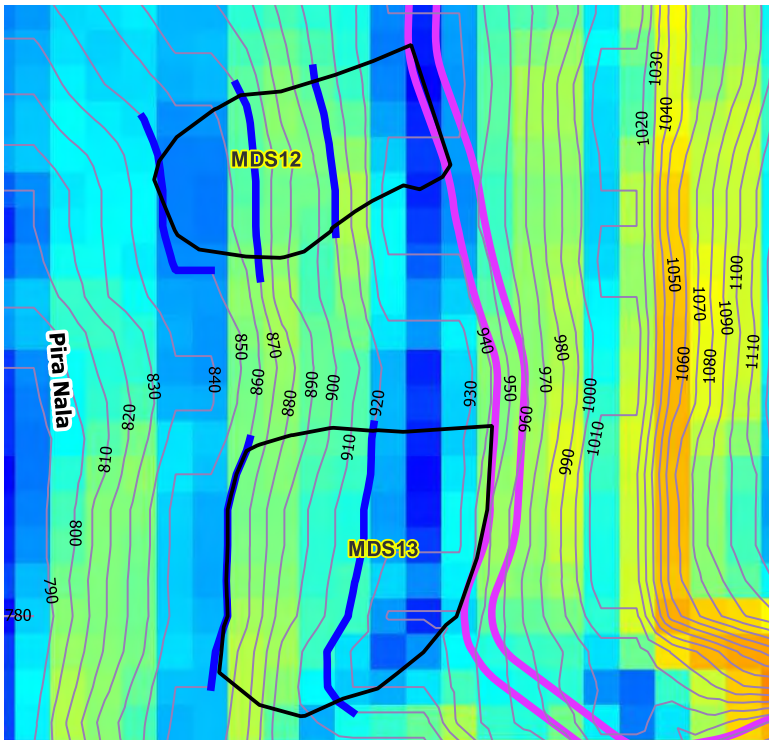
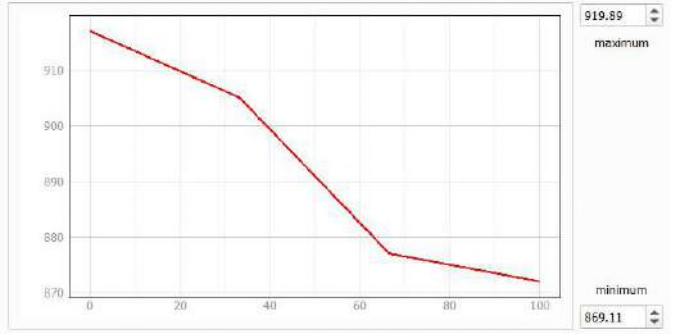
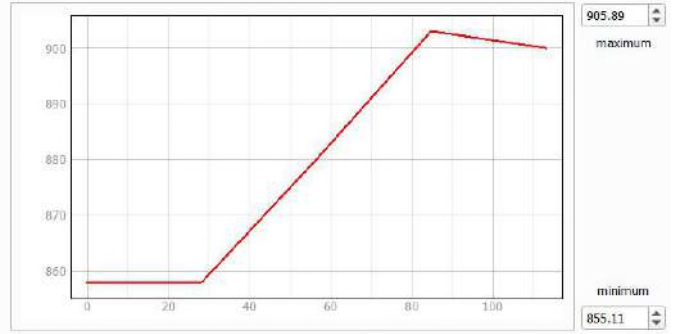
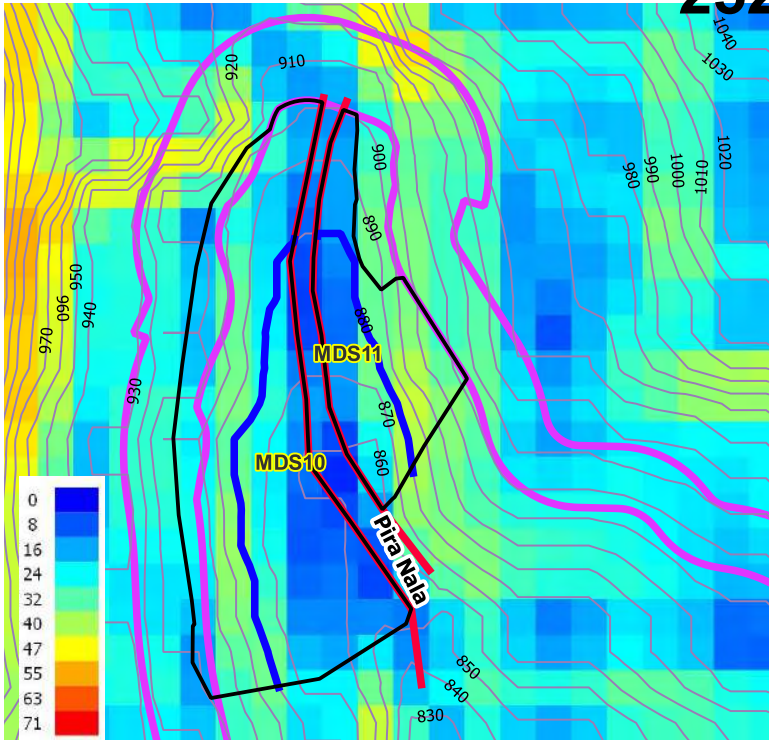


- 0
 - 8
 - 16
 - 24
 - 32
 - 40
 - 47
 - 55
 - 63
 - 71
- Gabion Wall
 - Gabion Wall+Riprap
 - Nala rechnnelized through Hume pipe
 - Nala Restoration

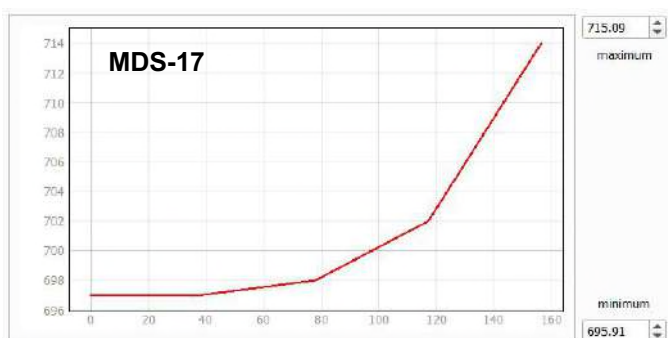
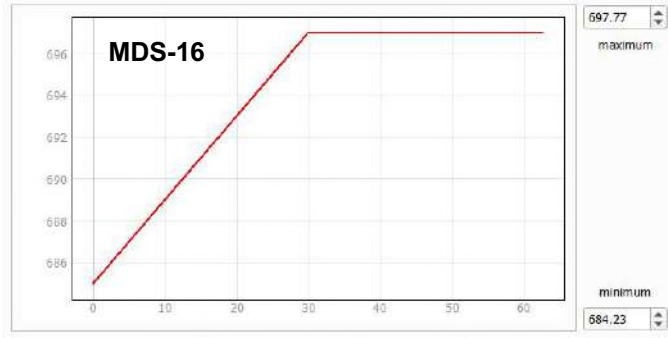
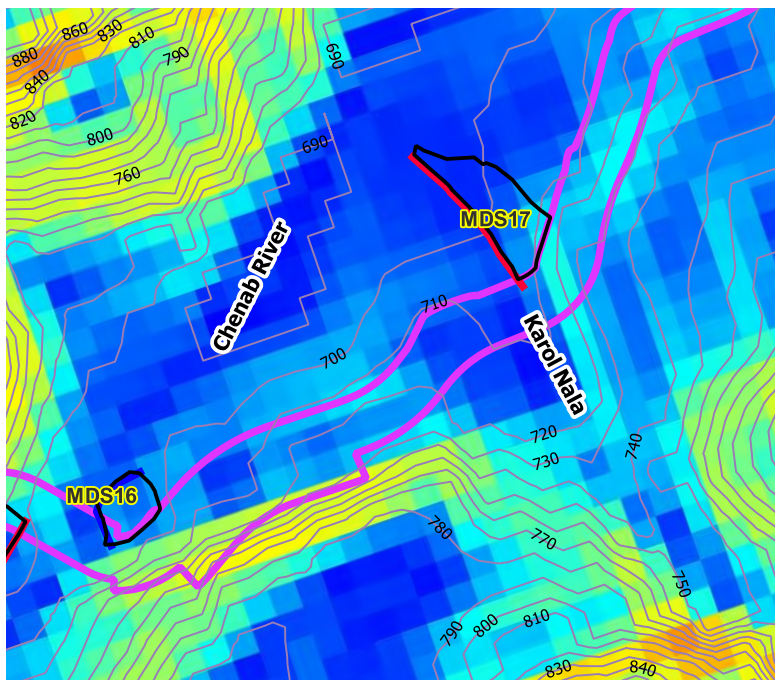
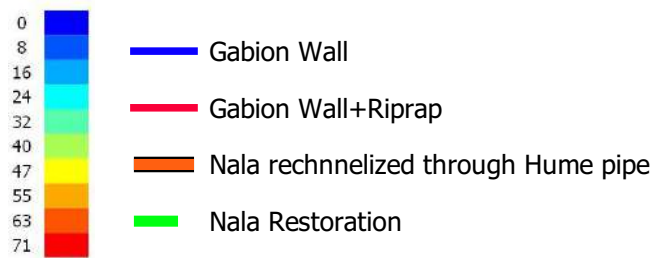
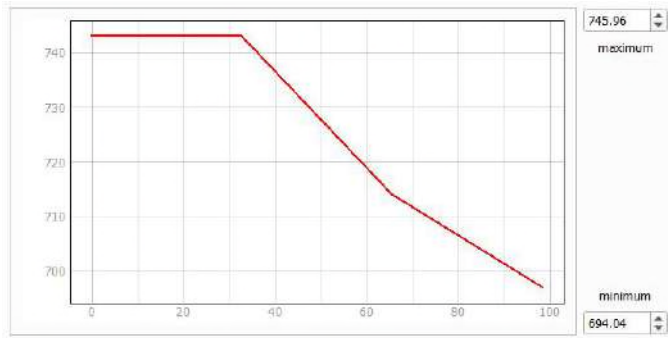
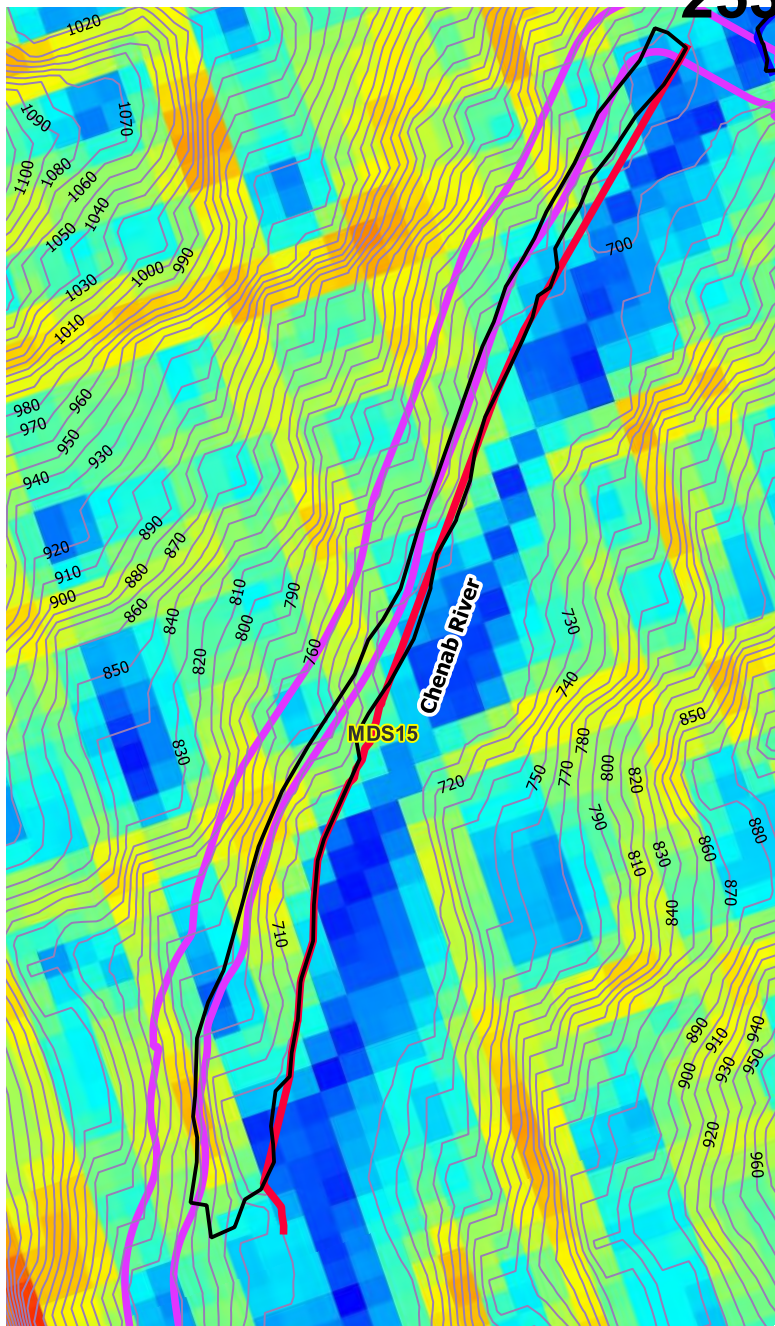


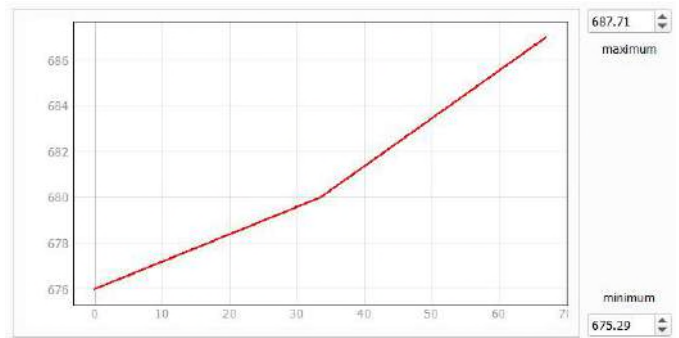
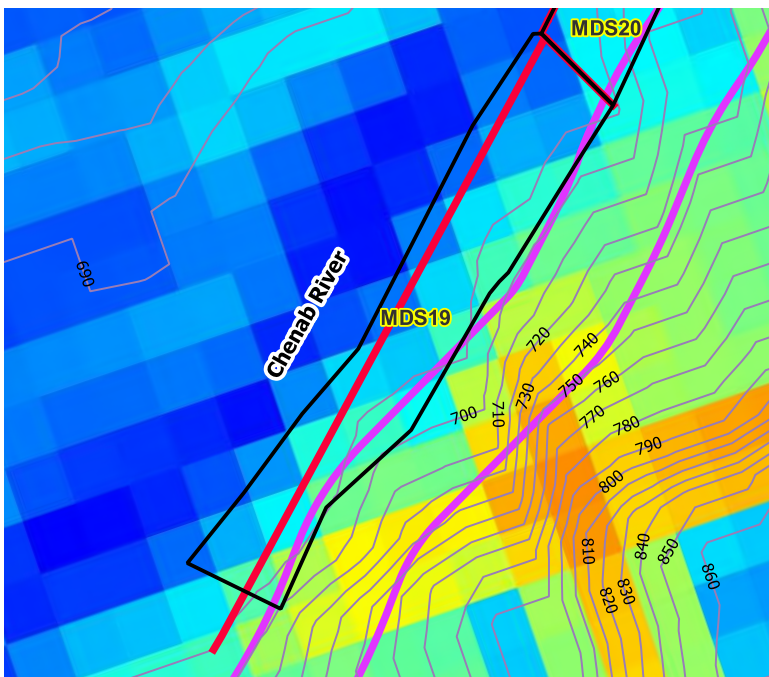
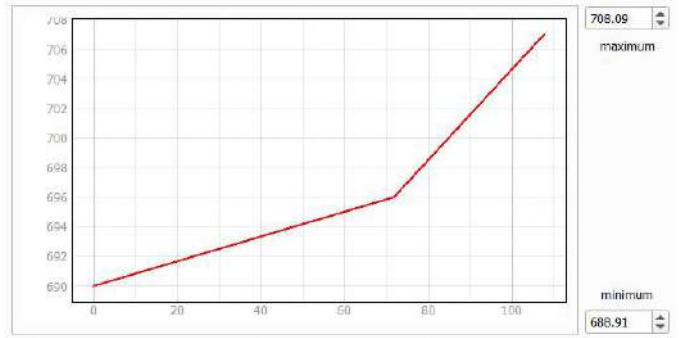
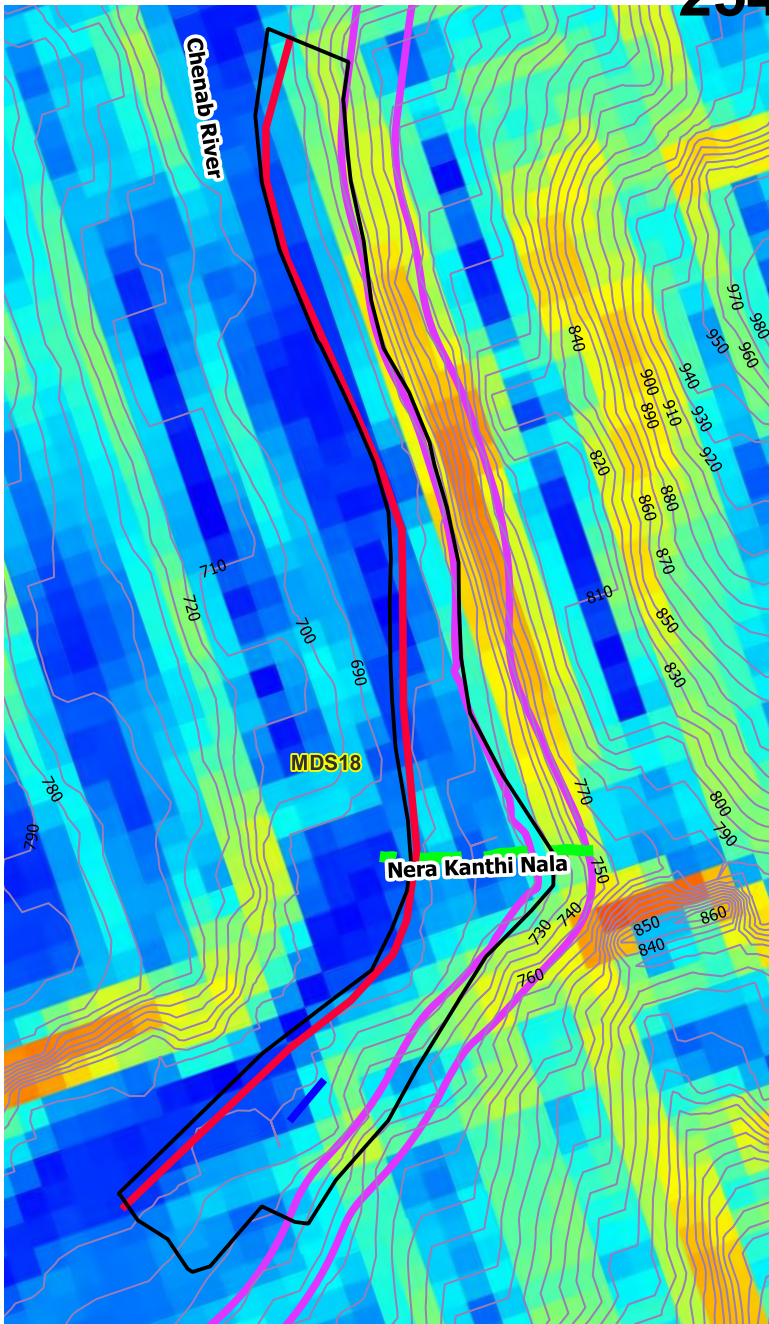
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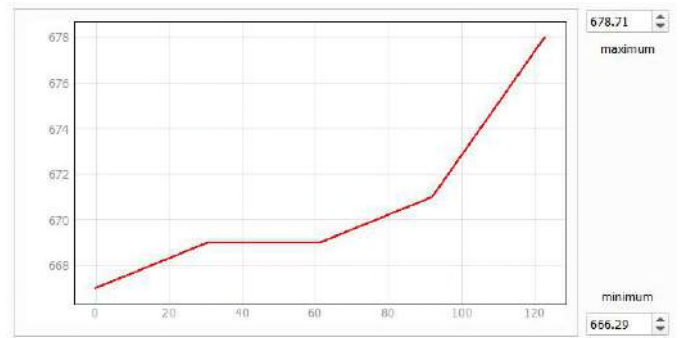
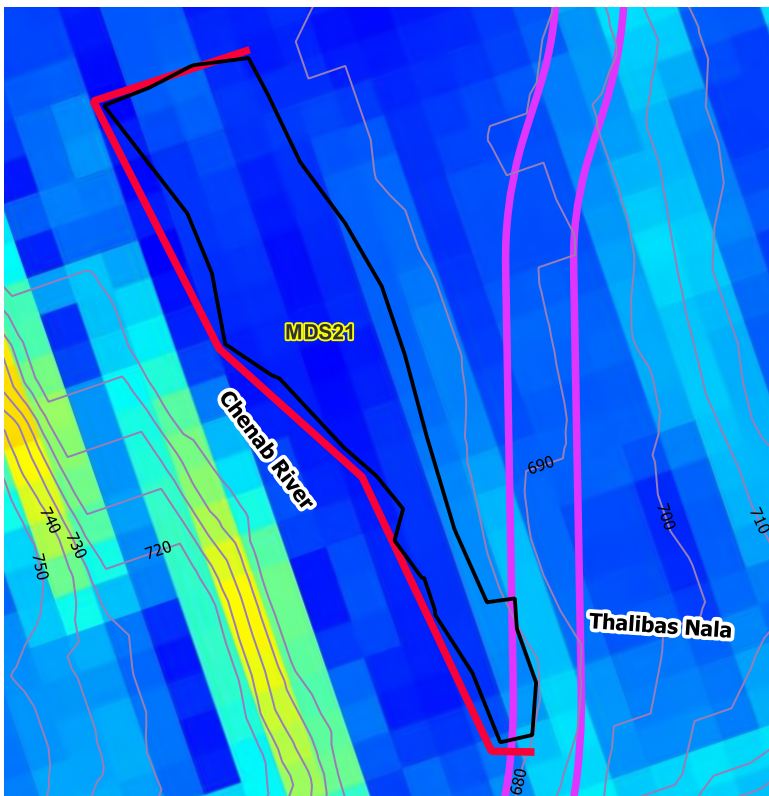
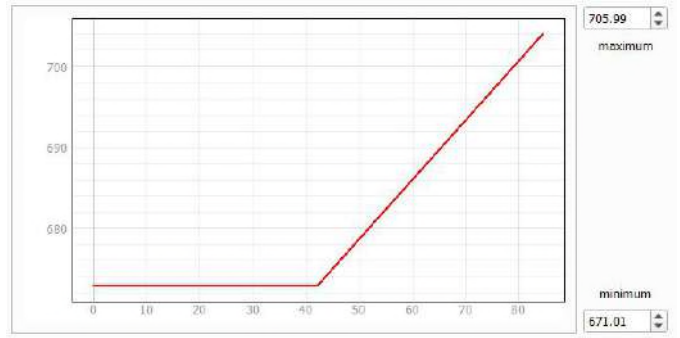
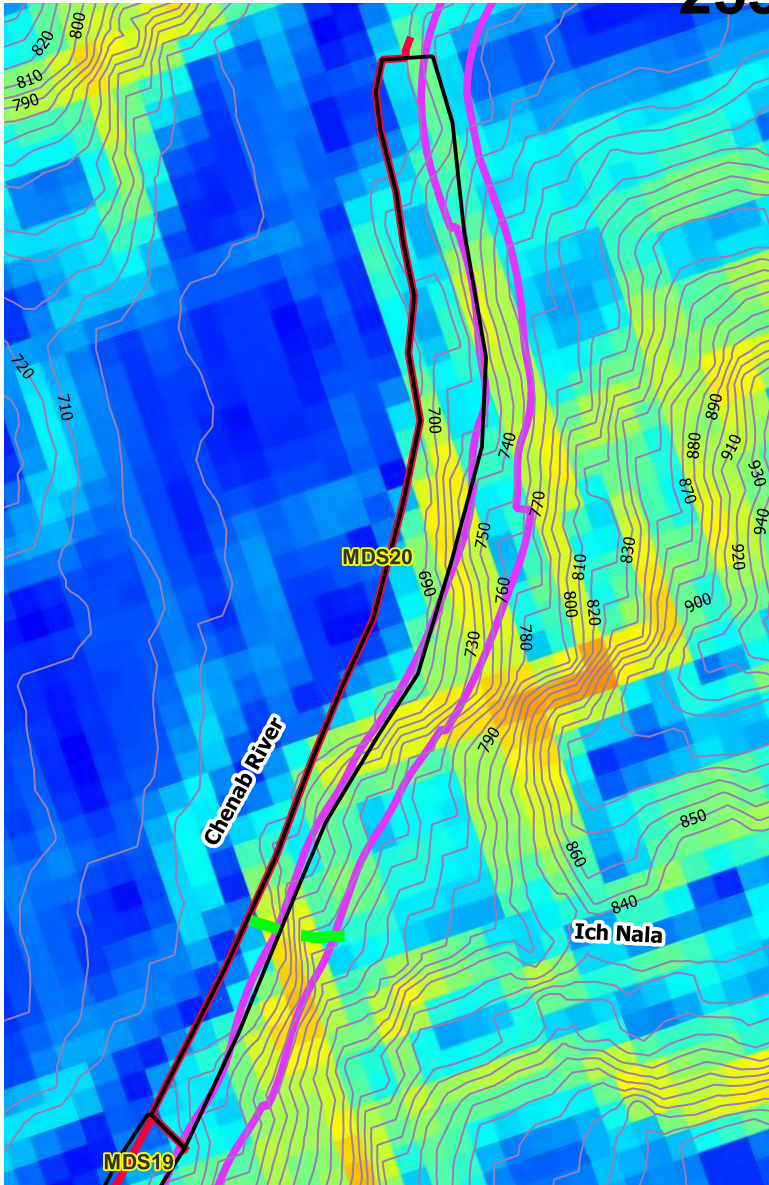




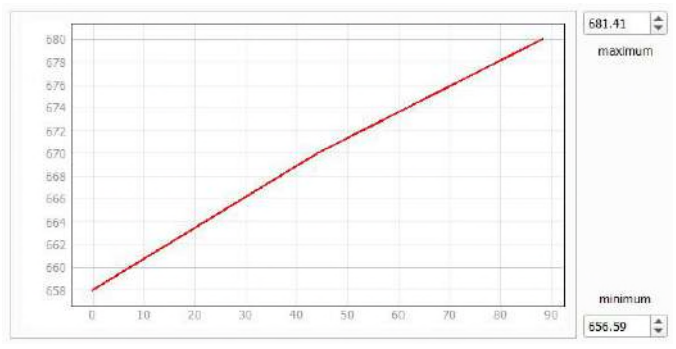
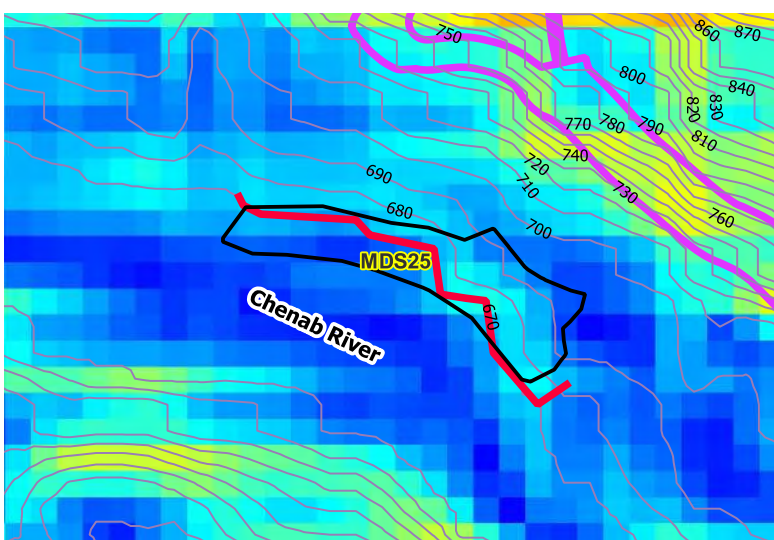
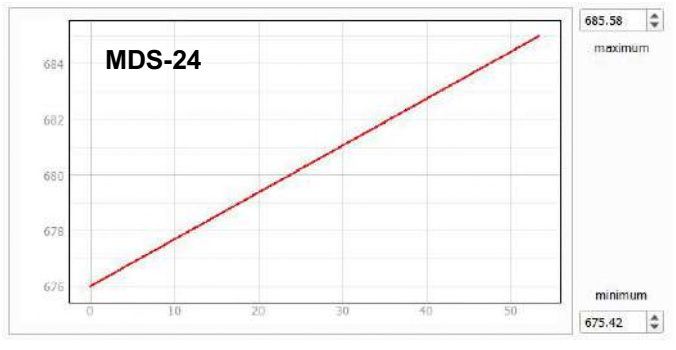
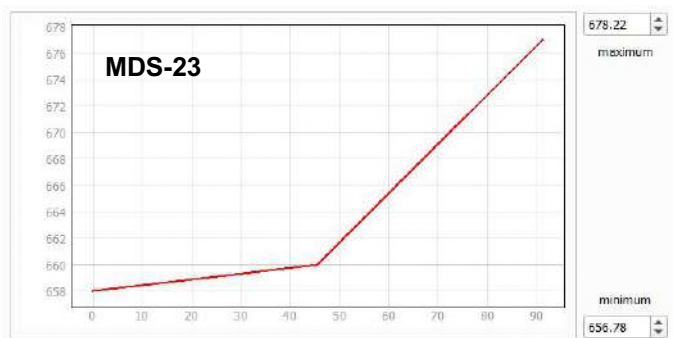
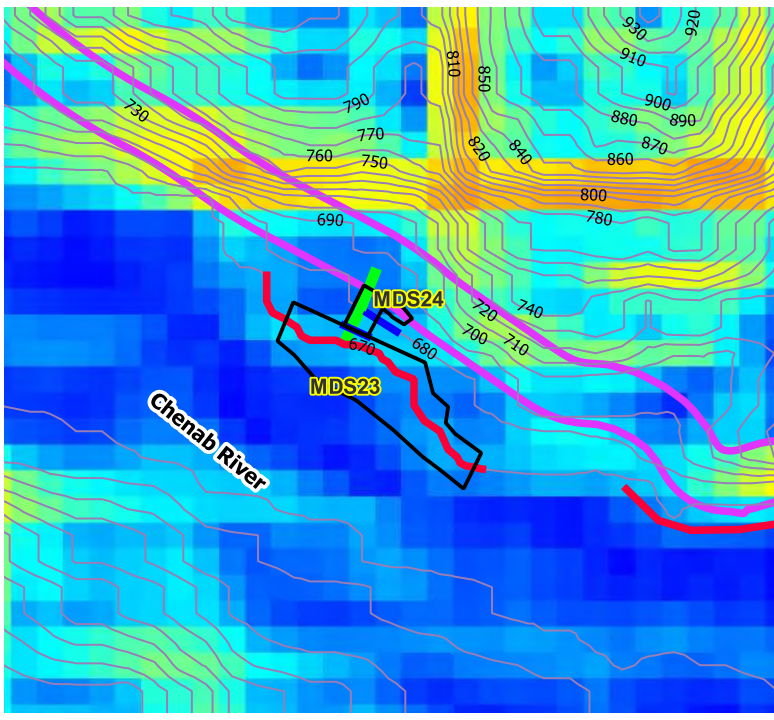
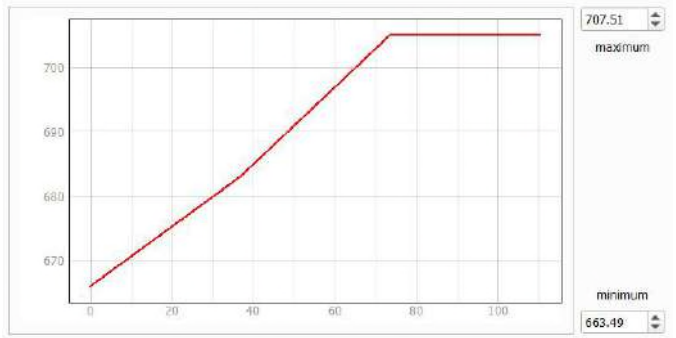
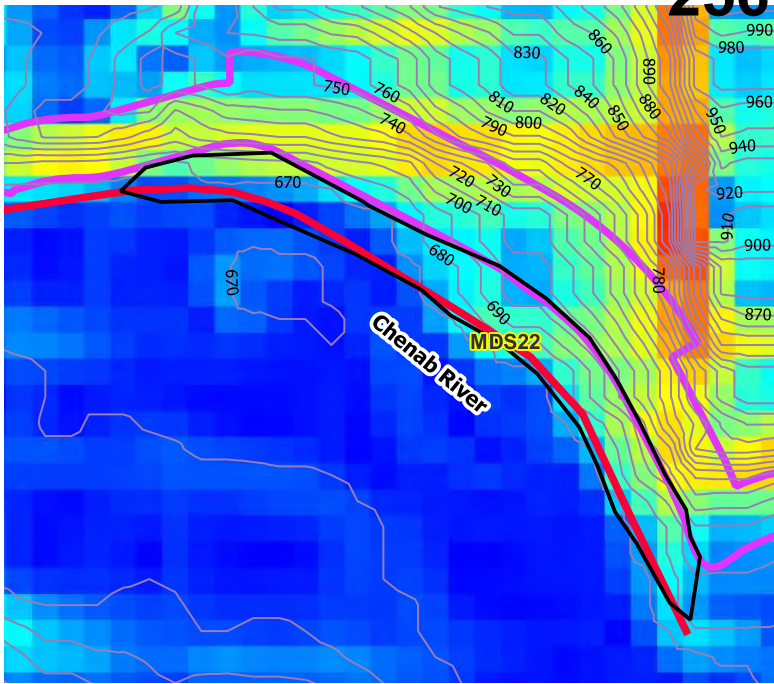
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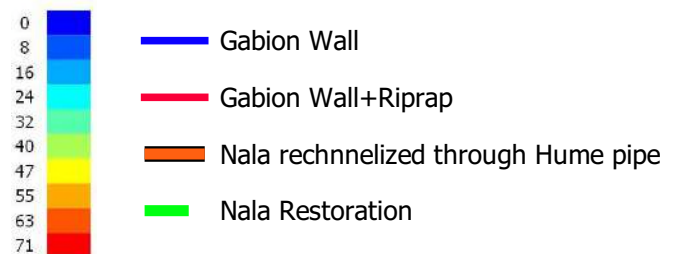
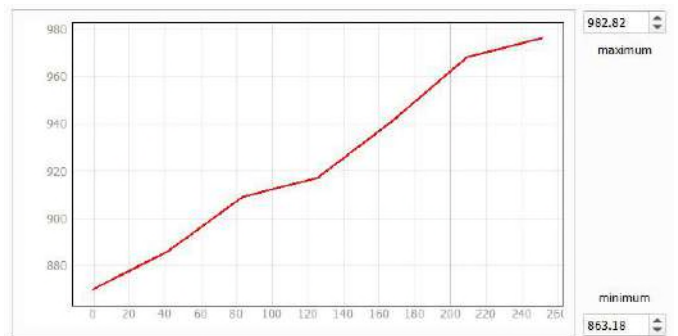
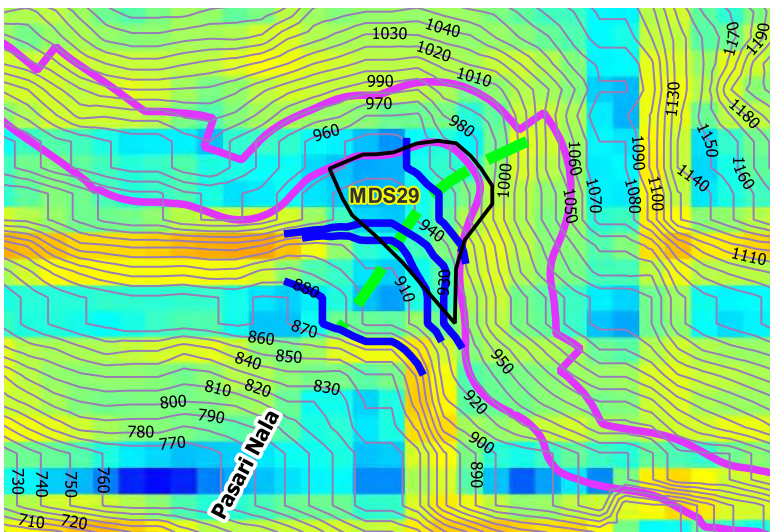
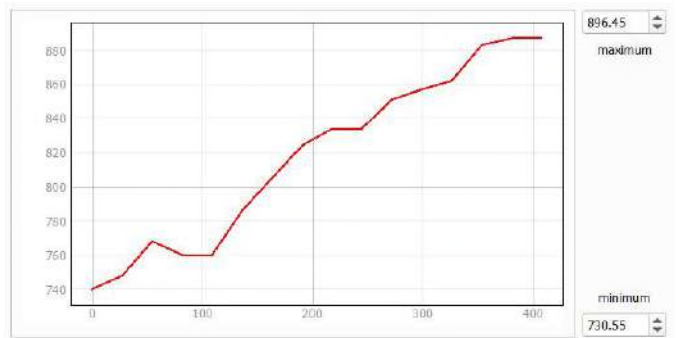
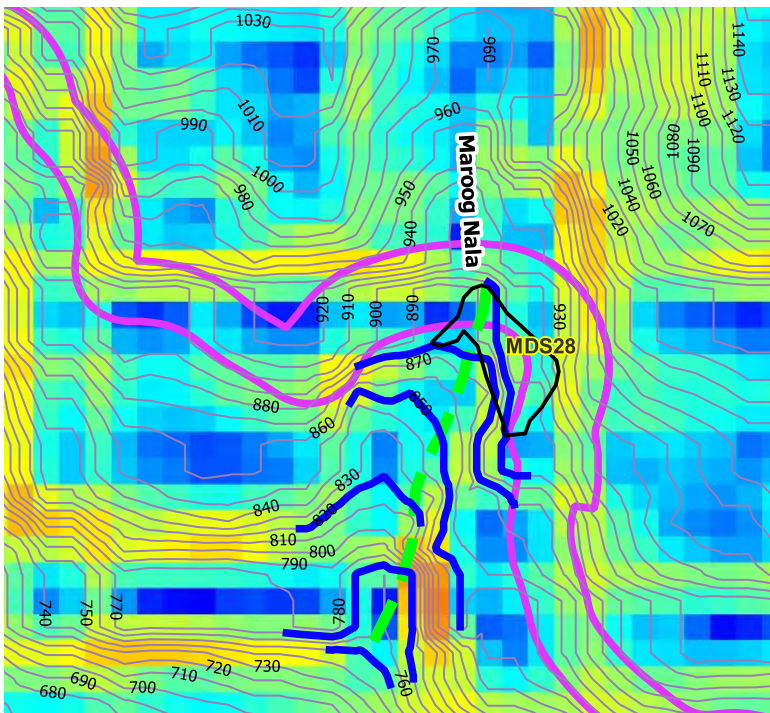
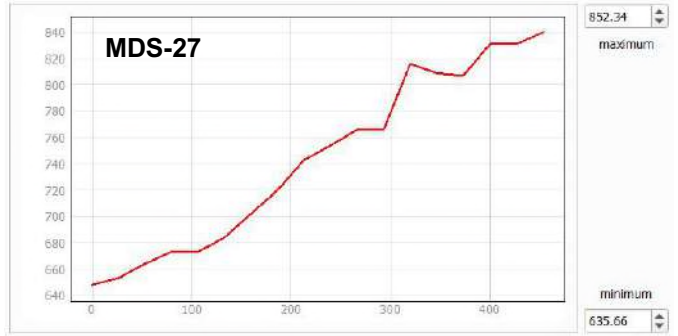
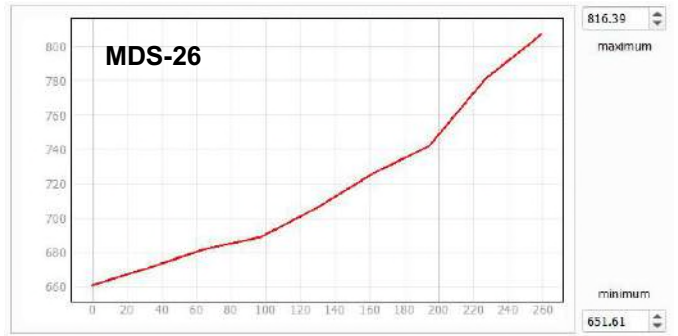
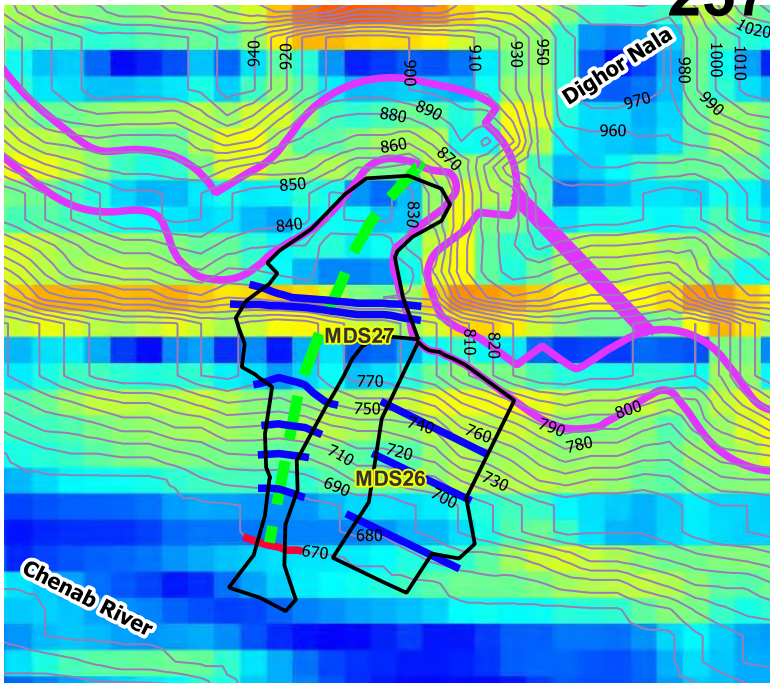




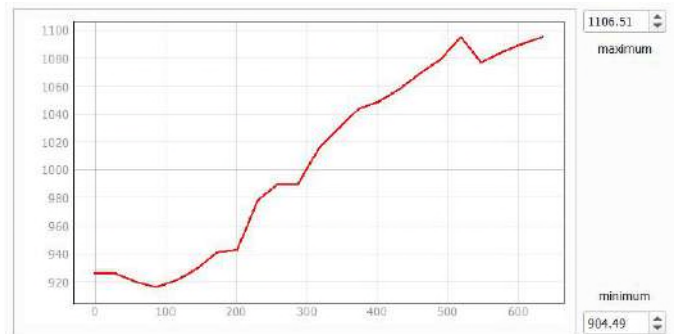
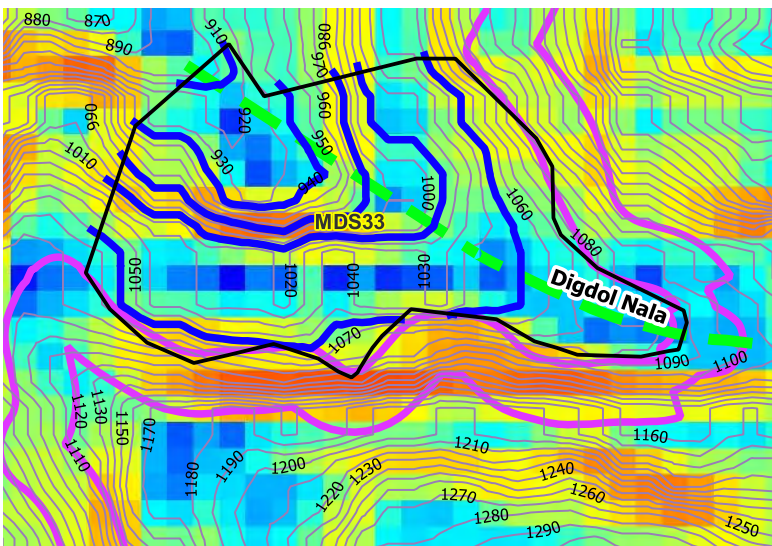
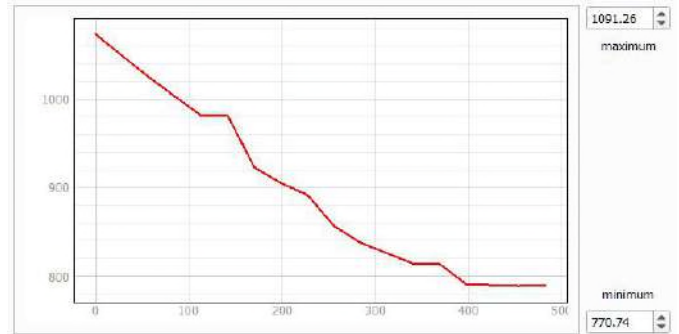
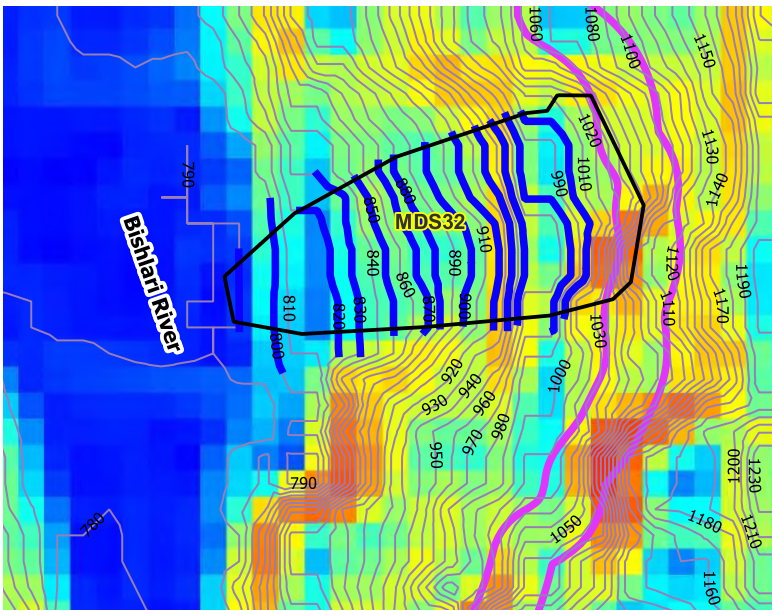
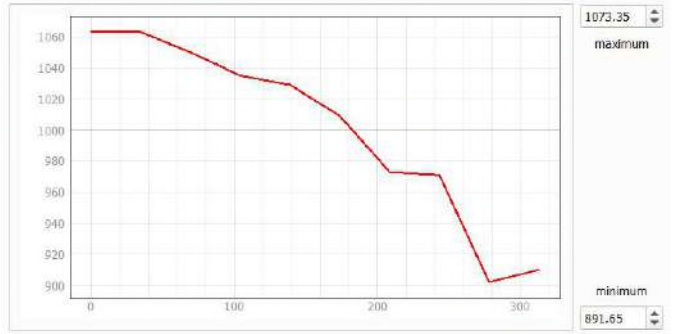
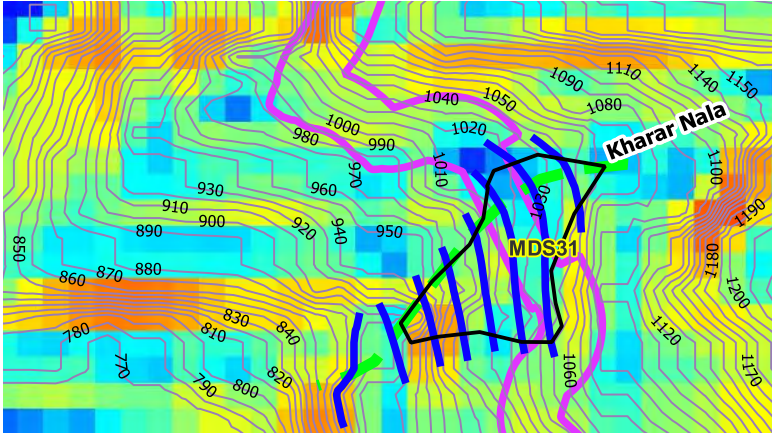
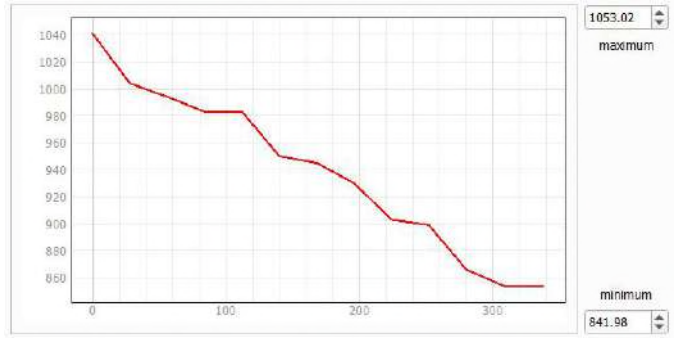
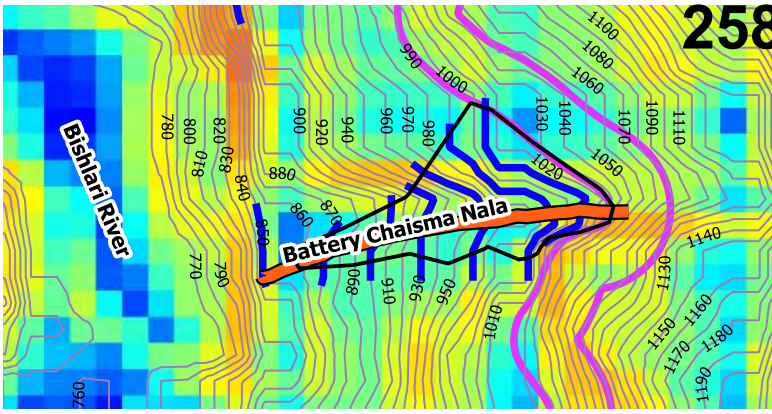
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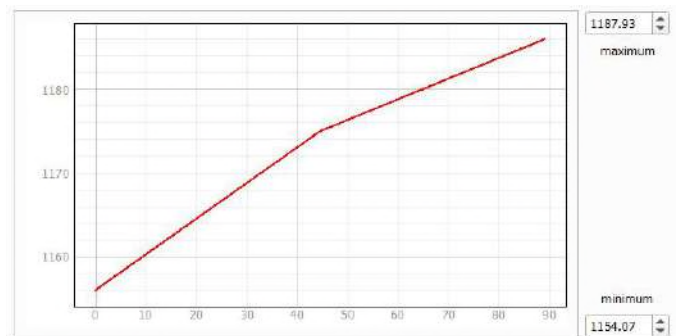
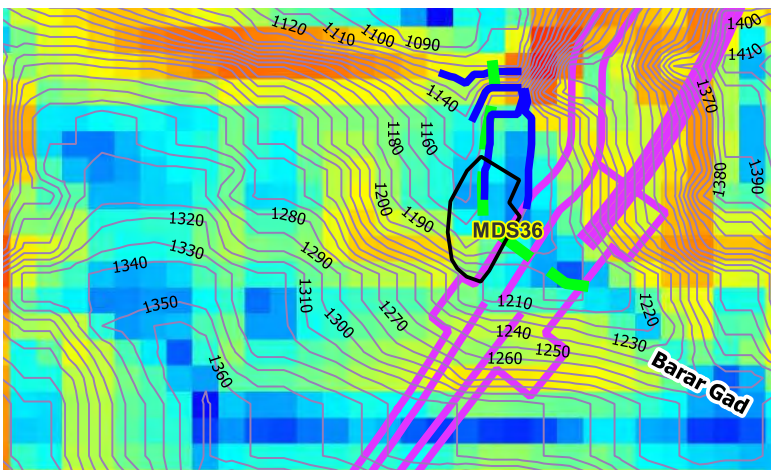
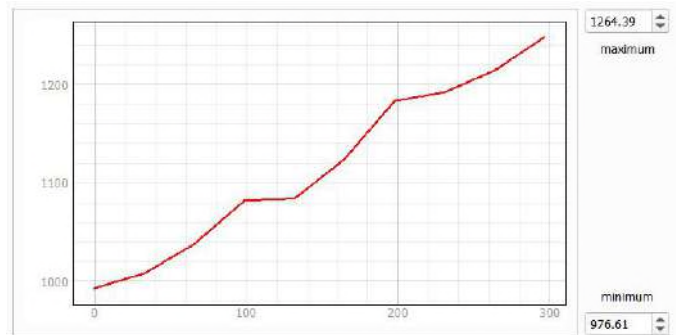
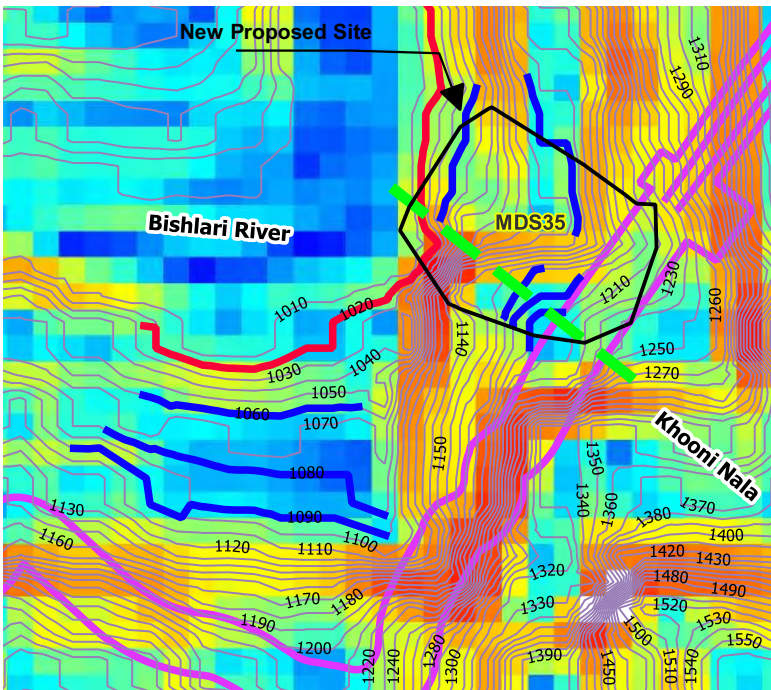
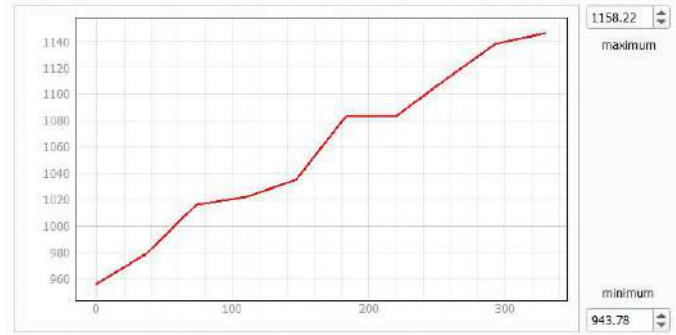
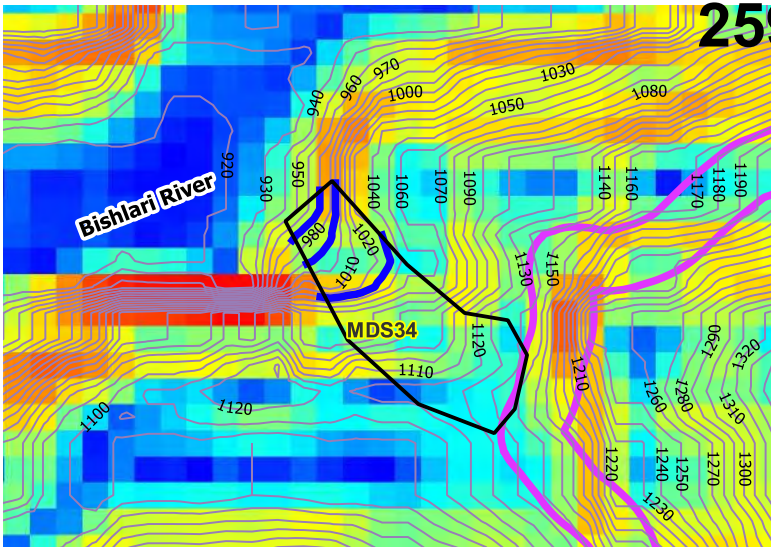
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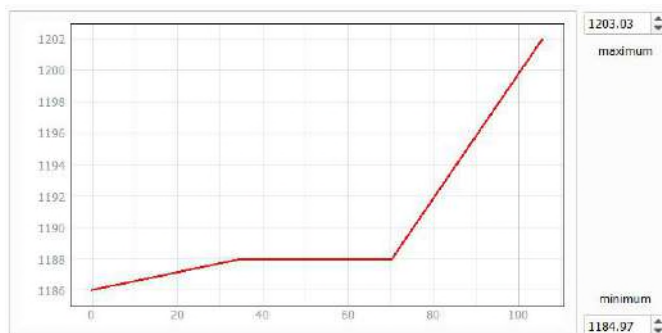
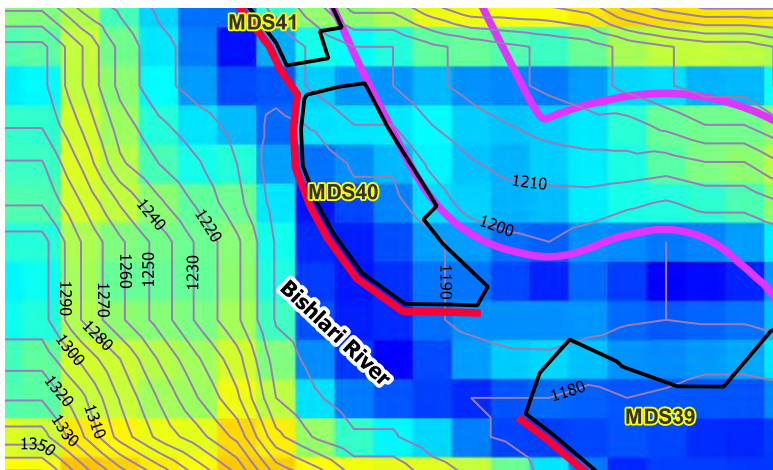
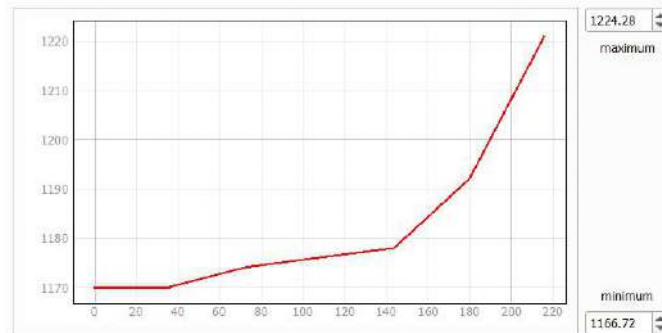
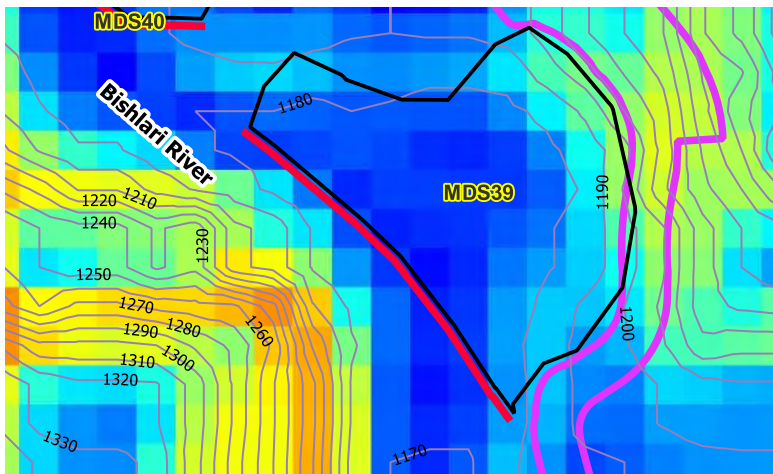
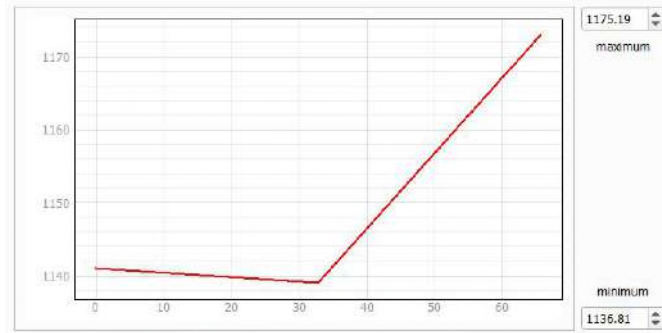
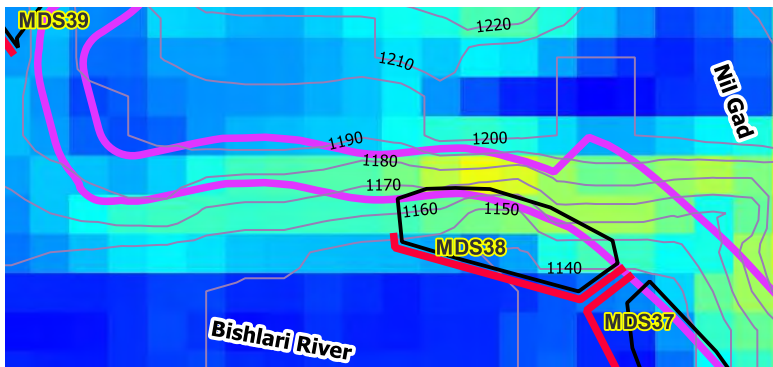
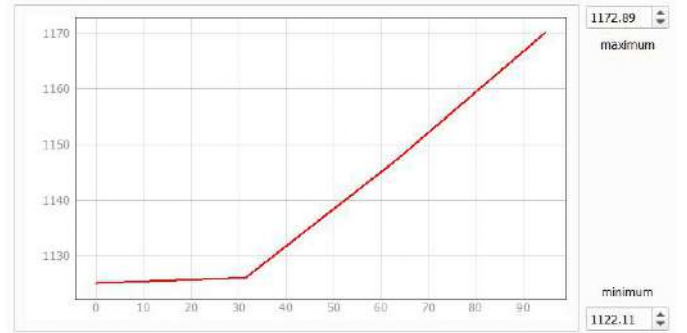
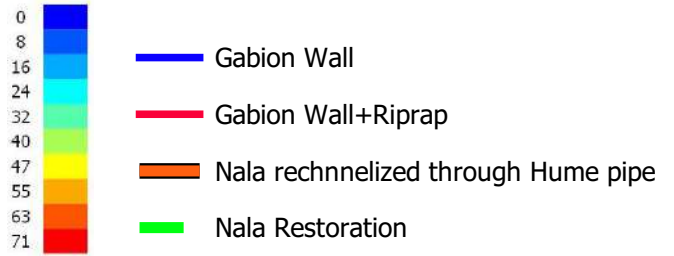
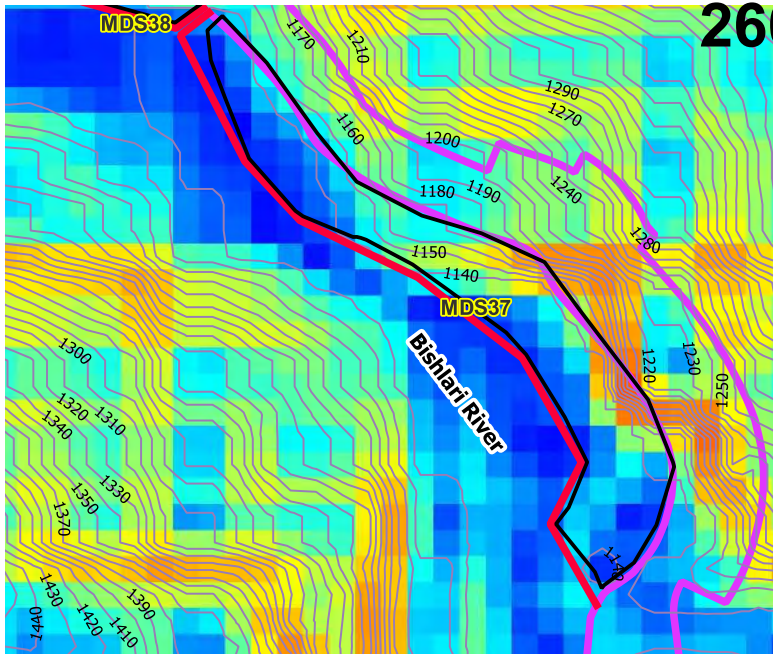
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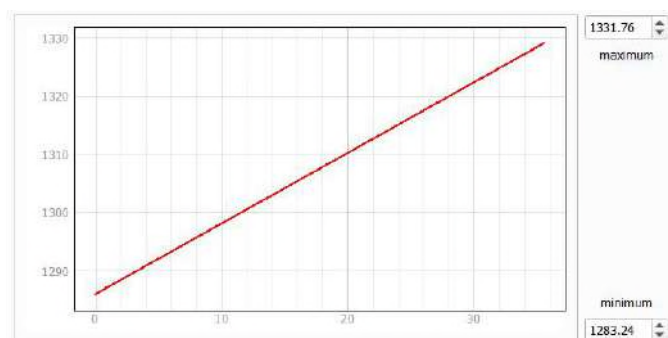
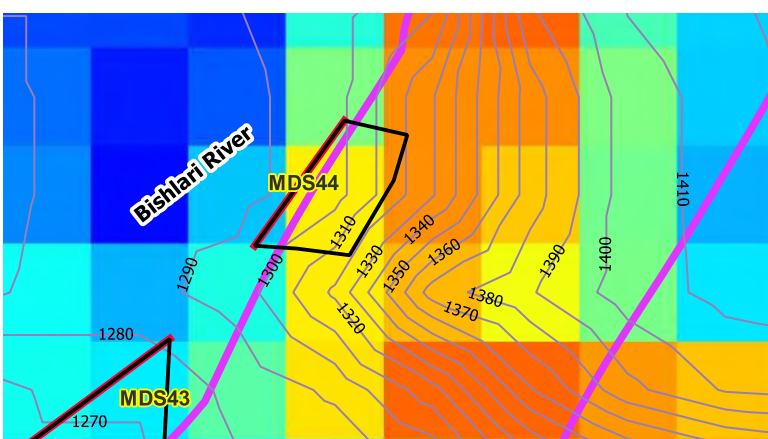
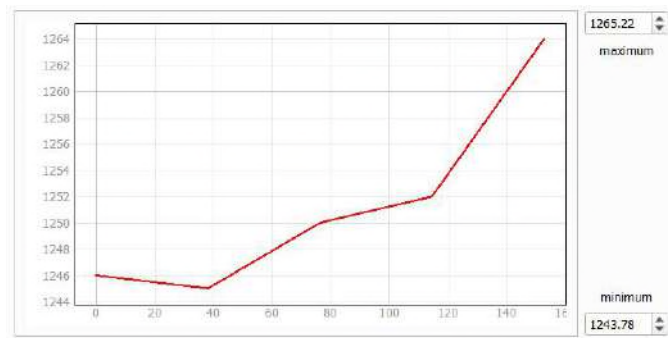
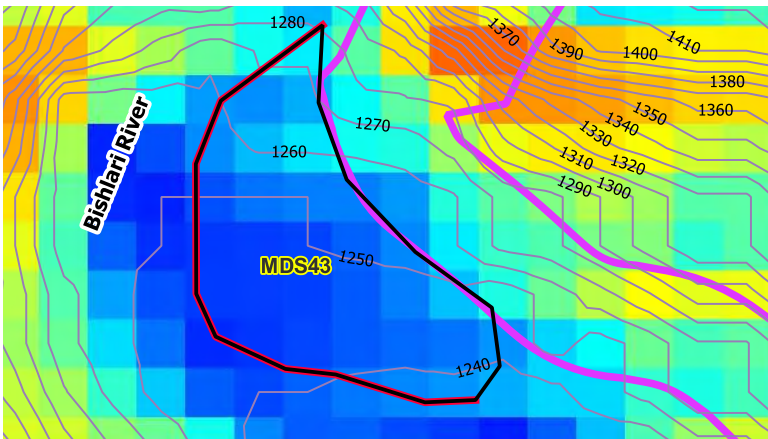
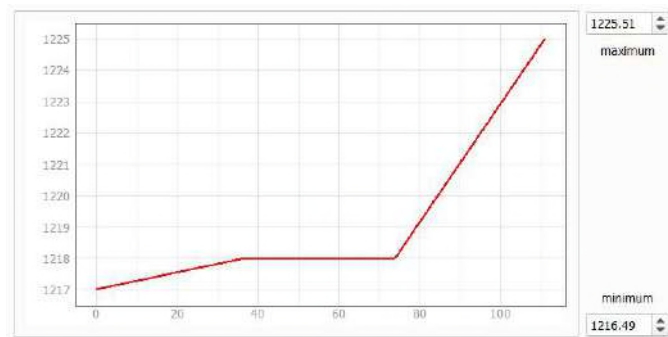
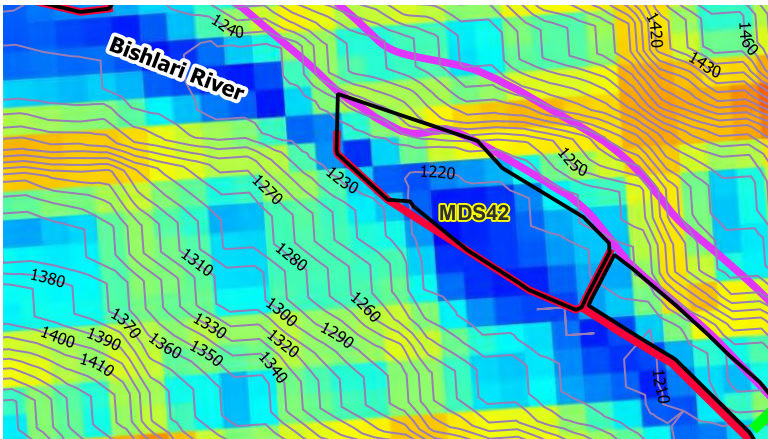
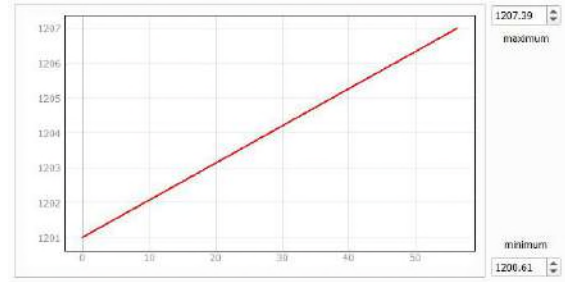
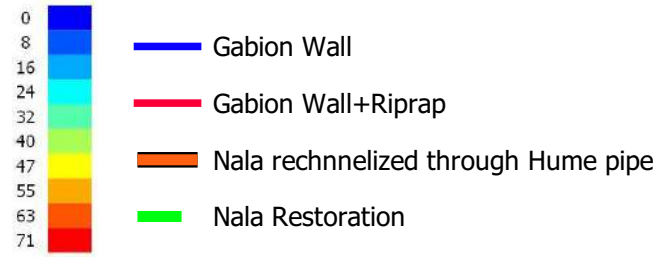
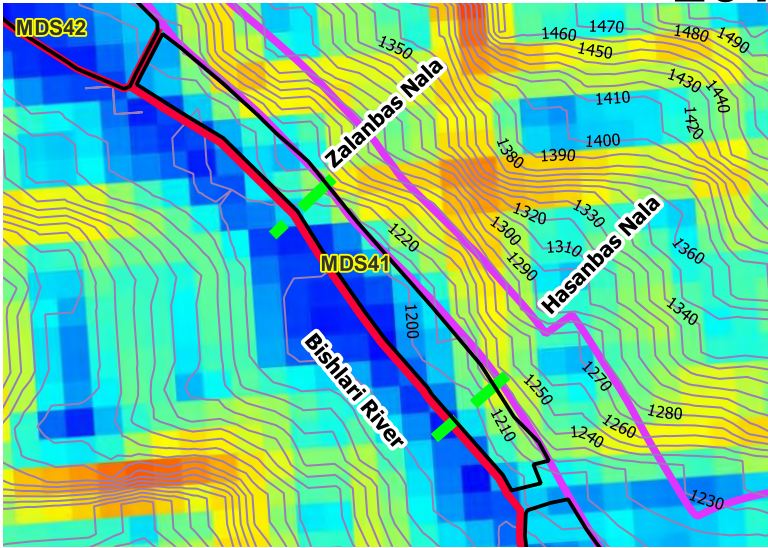


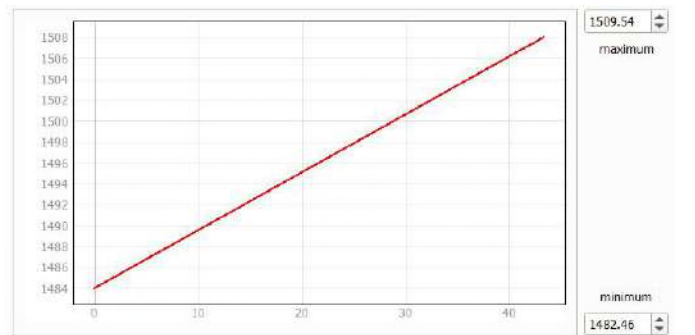
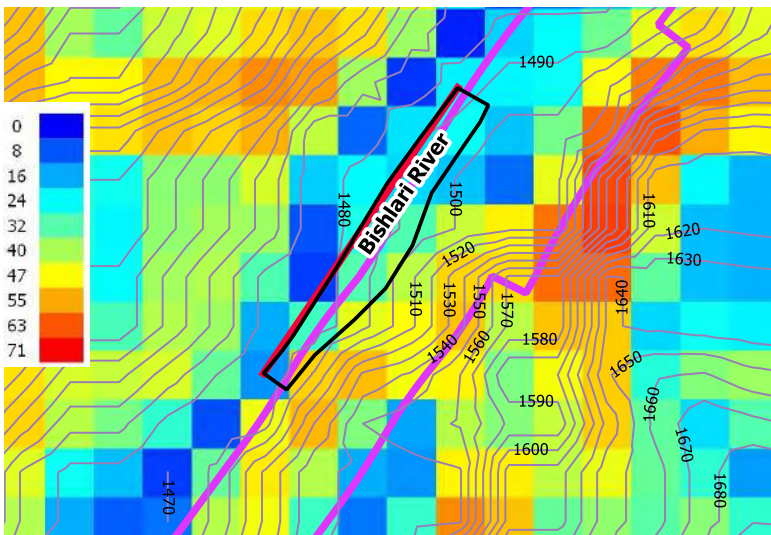
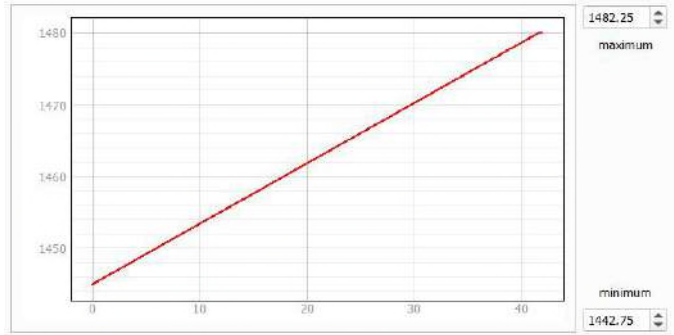
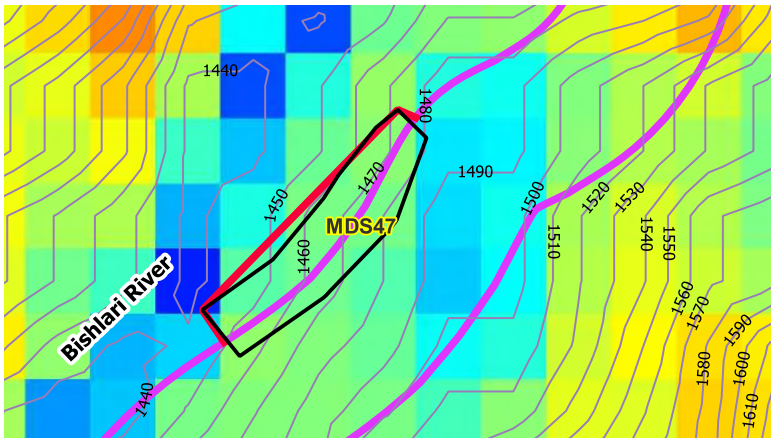
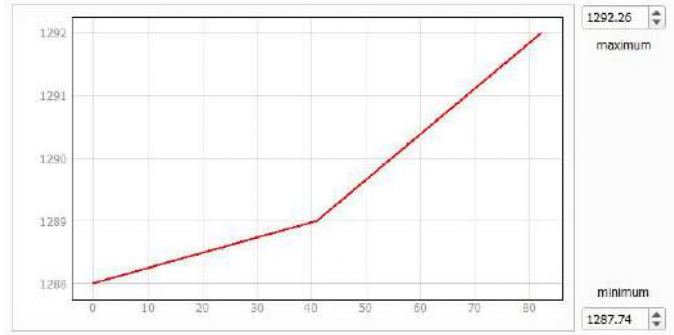
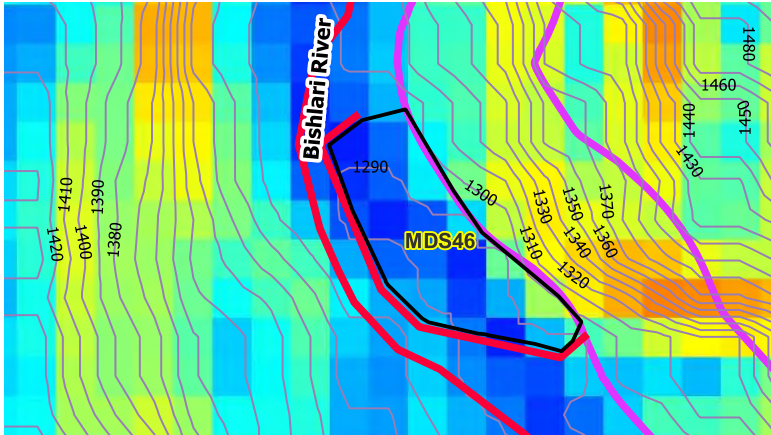
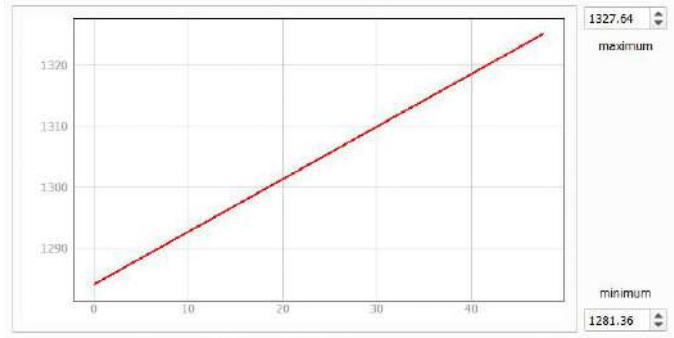
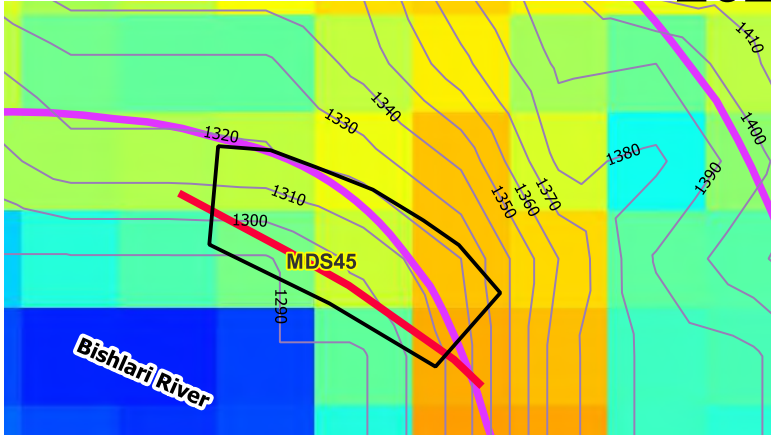
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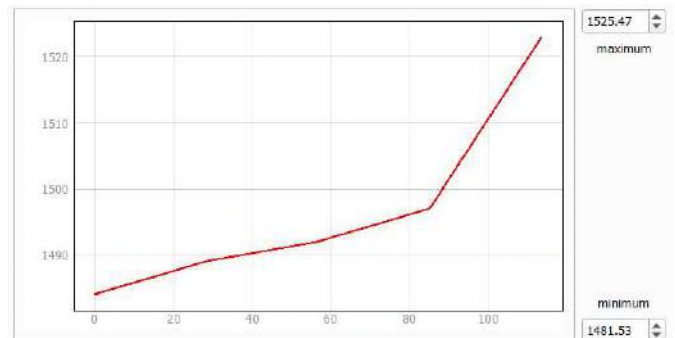
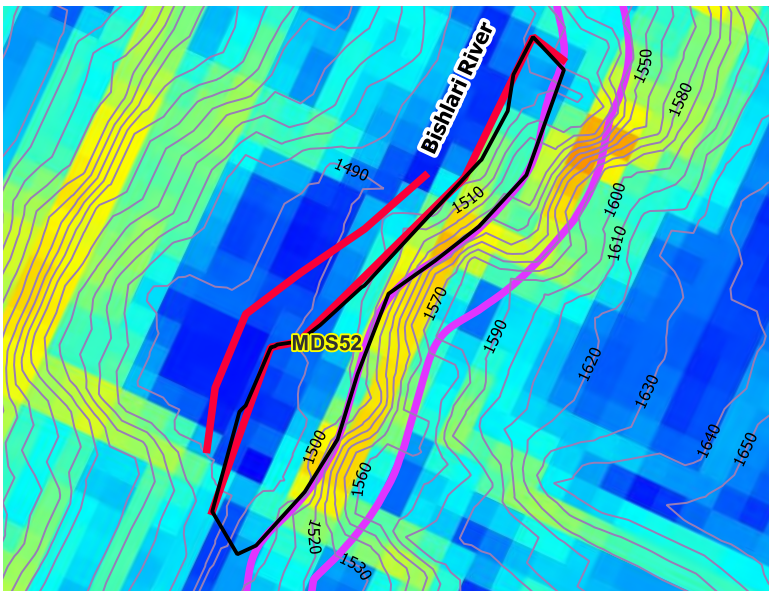
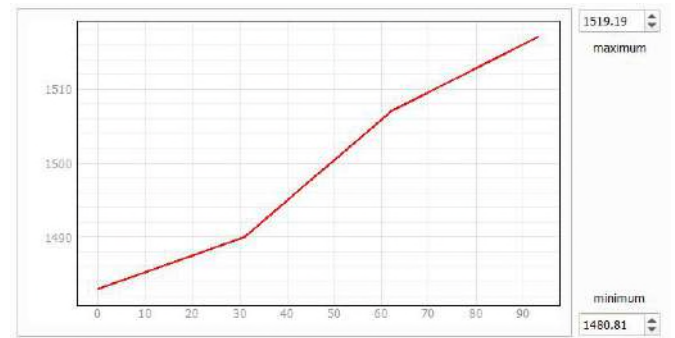
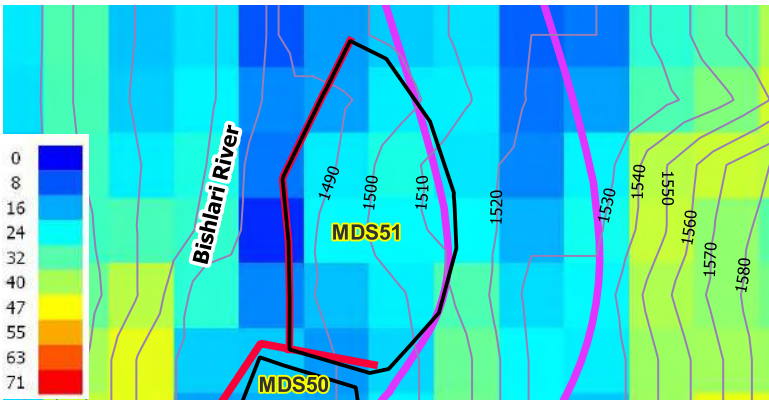
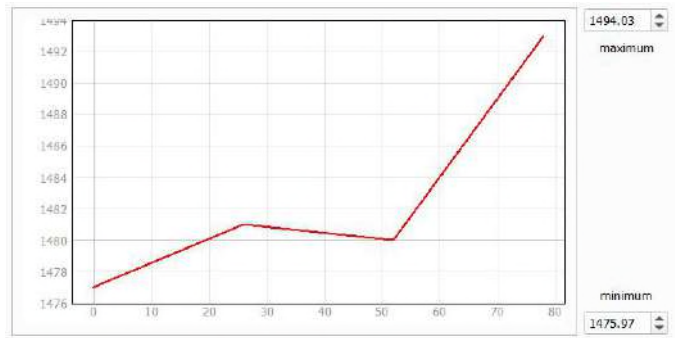
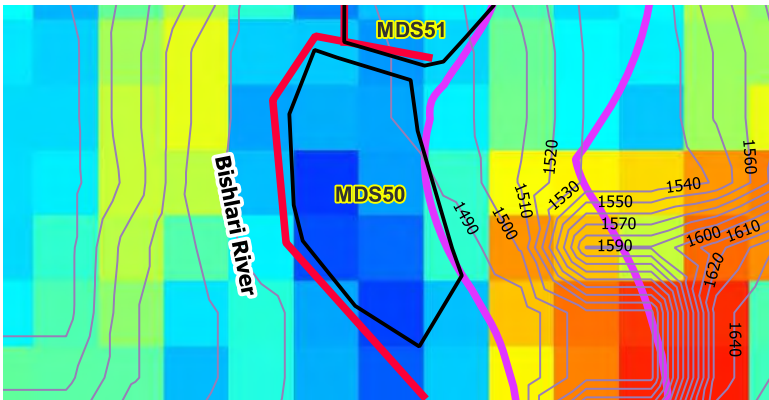
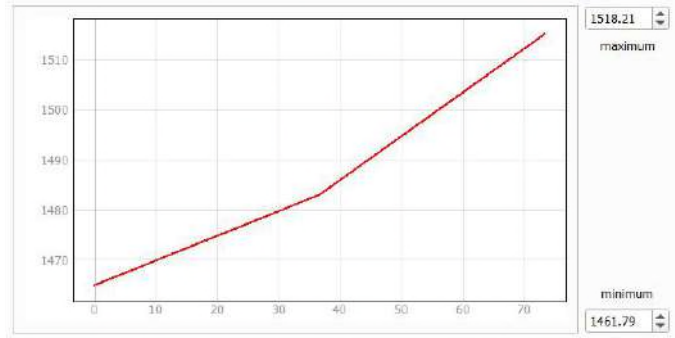
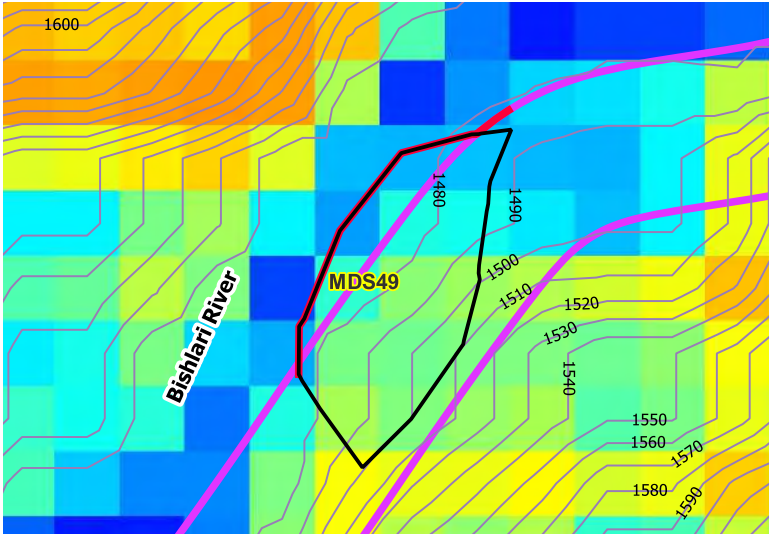
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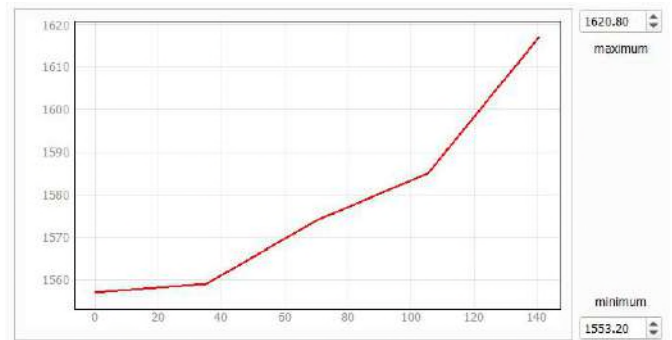
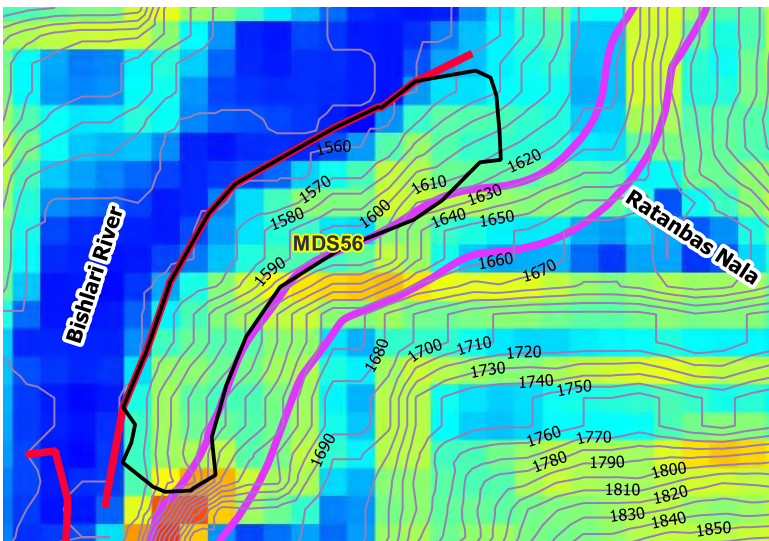
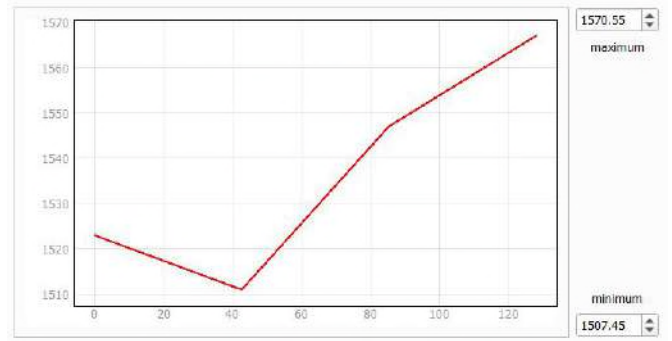
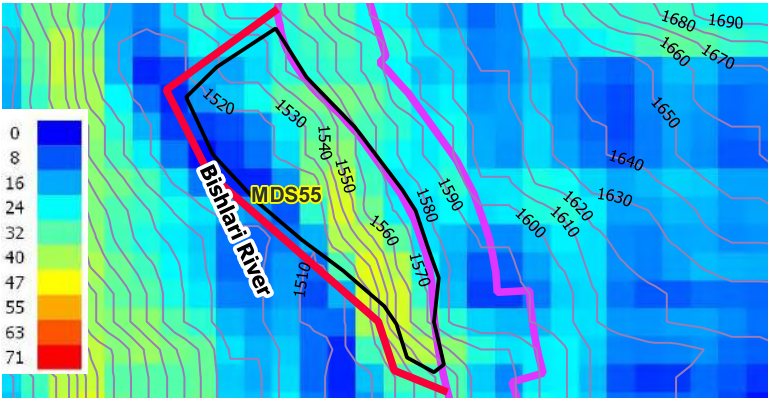
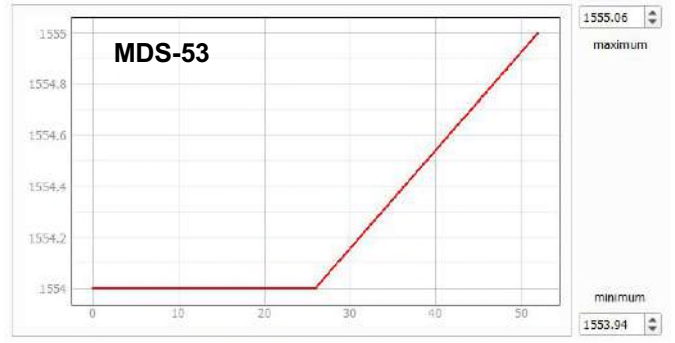
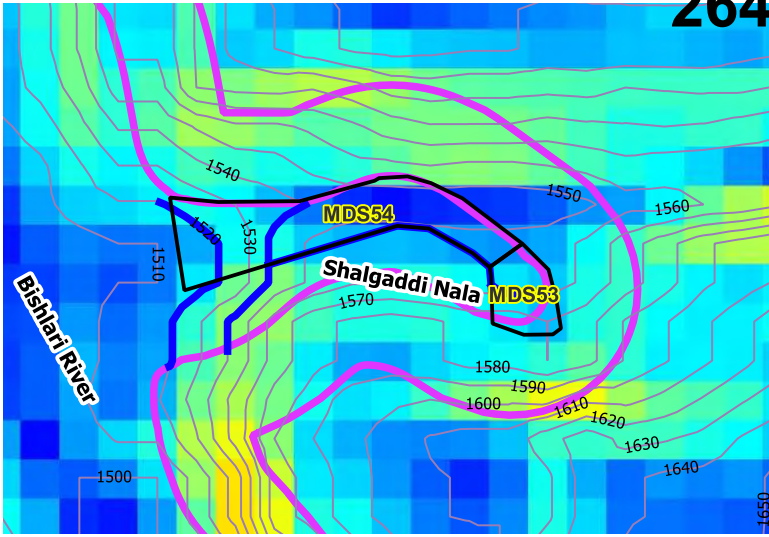




- 0
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 - 16
 - 24
 - 32
 - 40
 - 47
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 - 63
 - 71
- █ Gabion Wall
 - █ Gabion Wall+Riprap
 - █ Nala rechnnelized through Hume pipe
 - █ Nala Restoration

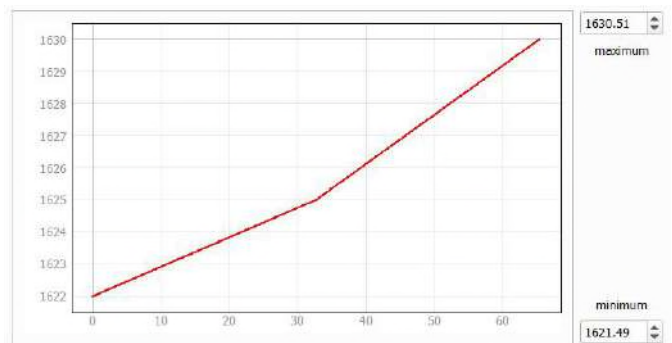
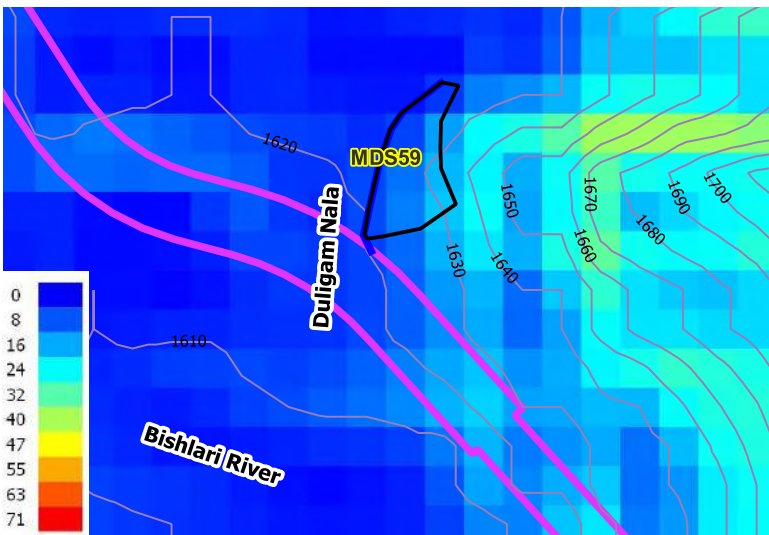
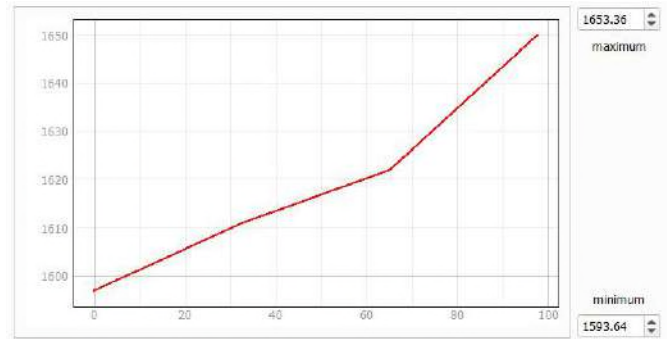
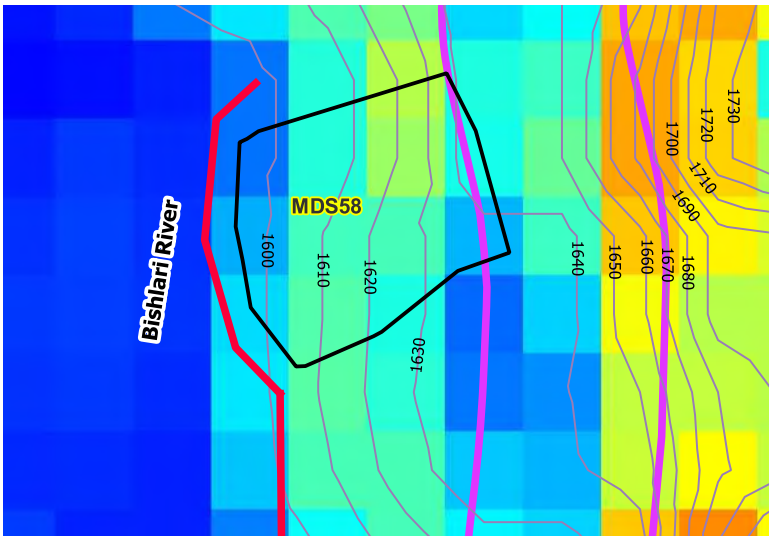
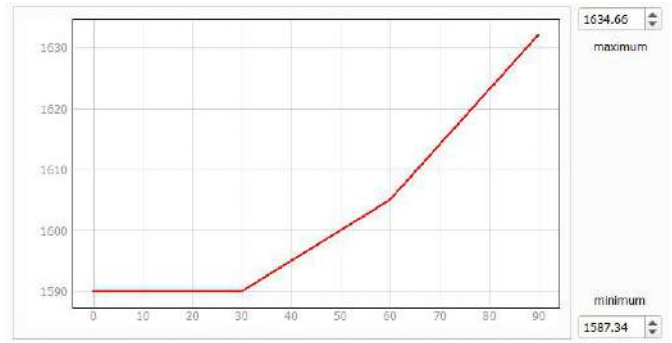
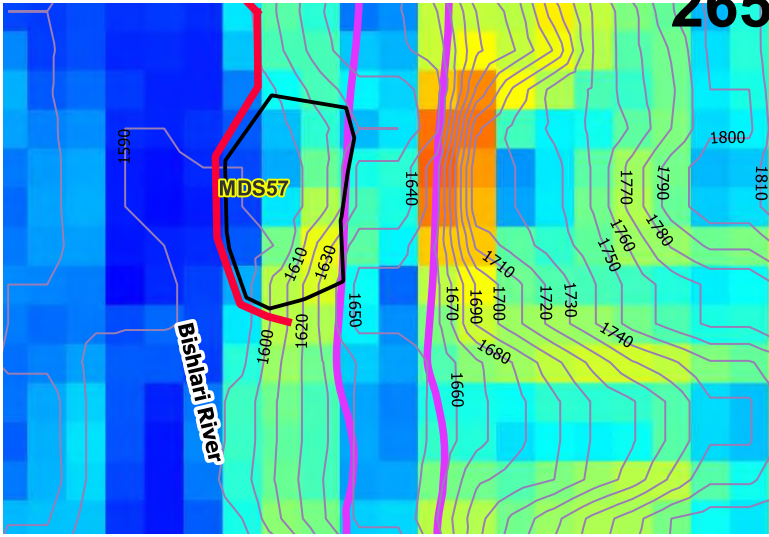


- 0
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 - 16
 - 24
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 - 40
 - 47
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 - 63
 - 71
- Gabion Wall
 - Gabion Wall+Riprap
 - Nala rechnnelized through Hume pipe
 - Nala Restoration



- 0
 - 8
 - 16
 - 24
 - 32
 - 40
 - 47
 - 55
 - 63
 - 71
- Gabion Wall
 - Gabion Wall+Riprap
 - Nala rechnnelized through Hume pipe
 - Nala Restoration

265



- 0 — Blue
 - 8 — Blue
 - 16 — Blue
 - 24 — Cyan
 - 32 — Cyan
 - 40 — Green
 - 47 — Yellow
 - 55 — Orange
 - 63 — Orange
 - 71 — Red
- Gabion Wall
 - Gabion Wall+Riprap
 - Nala rechnnelized through Hume pipe
 - Nala Restoration

6.3 Guidelines of Muck Management

A substantial quantity of boulders and gravels available from generated muck can be used in construction in accordance with their material properties, which reduced the quantity of muck to be disposed. Preferably, muck dumping sites are identified close to the muck generating locations to avoid air pollution due to dust generation and transportation but it must be away from rivers to avoid rolling of mucks into the river course. Hence utmost care is needed in planning and implementation of site-specific engineering and biological measures for proper muck management.



Before muck is disposed at identified locations, it is necessary to ensure that the sub-stratum has enough shear strength to sustain the load without creating a slip hazard. Two forces work on the slope of a muck dump, i.e., driving force and a restraining force. This can be achieved when the downstream slope of the muck dump does not exceed 35°. Generally, it is suggested to maintain the slope of muck dump within the range of 20° - 30° (about 26° or 1:2) to keep the restraining force greater than the driving force. The gabion / protection walls are necessarily be constructed along the contours for better stability. Simultaneous compaction and narrow terracing by mechanical or vegetative means can increase the restraining force. The restoration plan employing integrated bioengineering approaches for fully utilized muck dump sites must include analysis of dump material for its physical and chemical properties to assess soil fertility. This will help to judiciously apply the required quantity of manures, bio-fertilizers and fertilizers for supporting faster growth of vegetation. Plantation of local species is preferred for rehabilitation of muck dump sites. For this purpose, help to local knowledge and involvement of forest department would yield better results. Grass and shrubs are always preferred over trees to restore such degraded areas.

- Muck should be dumped in sites through bottom-up approach; i.e., lowest portion of the disposal sites should be filled first with gradual rise to top level. No muck should be dumped from the higher elevation as rolling boulders tend to spill outside the boundary of disposal sites due to higher momentum. In cases where dumping from top is unavoidable, muck materials should be channelized through semi-circular iron /metal conveyors which as equal or greater width than the dumper so that unloaded materials does not spill outside the conveyor channel.
- Stepwise consolidation is required from bottom to top of muck disposal sites
- Downstream slope of the muck dump should be kept within the range of 20° - 30°
- Boulders, lumps of inert materials and rock fragments should be removed from the surface. These materials can be used in strengthening or constructing the toe wall or contour stone barriers.
- Foundation of toe / contour stone wall should be kept in originally existing land condition.
- Ratio of height and bottom width of toe / contour stone wall should be maintained around 1:2/3.
- Contour stone barrier may be provided at 3-4 m vertical interval but their foundation should be kept in originally existing land condition and not on loose muck dump.
- Drainage facility should be provided in muck disposal sites.
- A layer of top soil (about 5 cm thick), if available, to be spread over smoothed surface of muck dump. Good native soil will not only be having plant nutrients and organic matter but also be serving as seed bank for native vegetation.
- Fertility can be improved by application of manures, bio-fertilizers and fertilizers. This will promote quick vegetation establishment. These things should be applied in contour furrow (15-20 cm deep) open at about 1 m spacing.

6.4 Stabilization of Muck through Engineering Solutions

The engineering solutions recommended for the muck disposal sites are summarized in **Table 6.4** and site specific applicable of the same has been elaborated in Section 6.1 of this report.

Table 6.4 Stabilization of Muck through Engineering Solutions

Type	Description	Good Practices
A	Rolling & Landscaping of top surface	-
B	Gabion Wall with Gravel Riprap at base for River Bank Protection	
C	Gabion Wall with terracing, as applicable for Slope Protection	
D	Stepped Gabion Wall for Brook Channelization	
E	Re-Channelization of Brook by Hume Pipes	
F	Bio-engineering Techniques for Slope Stabilization & Eco-restoration	Refer Section 6.5 of this report

6.5 Stabilization of Muck through Bio-Engineering

The proposed muck disposal sites are located in Ramban district, which is situated in Pir Panjal range of middle Himalayas on the banks of river Chenab in Jammu & Kashmir State. The District is all mountainous and has a tough terrain. River Chenab passes through the lower part of the district in between steep mountain ranges. The occurrence of land slide is quite widespread phenomenon in this region. Failure of muck slope, often the result of weather events, can block roads, damage pavement and pose numerous safety hazards. Therefore, bio-engineering has been proposed for stabilization & restoration of muck slope.

Components of bio-engineering

1. Geo-nets, Geo-composites Drain
2. Geotextile
3. Hydro-seeding

1. **Geo-nets / Geo-composites and Micro Siphon Drain**

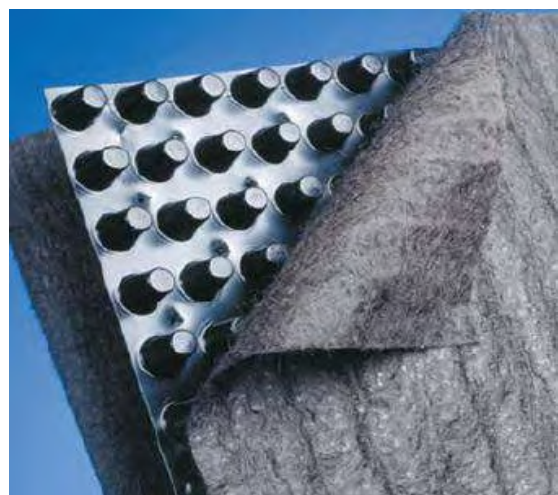
Drainage using geo-synthetics is usually designed with either geo-nets or with a geo-composite. These hybrid geo-synthetics are made by combining different types of geo-synthetics components and serve the purpose of providing both filtration and drainage.

Geo-nets are typically formed by two biplanar sets of relatively thick, parallel, polymeric ribs bounded in such a way that the two planes of strands intersect at a constant acute angle, forming a diamond-shaped pattern. In order to prevent soil / muck intrusion into the voids, geo-nets are generally used in conjunction with geotextiles and / or geomembranes.

Where larger drainage volumes are required, geo-composites consist of corrugated, "waffle" type or "dimpled" geomembrane cores with large porosity, attached to a geotextile for filtration and to prevent soil intrusion. Geo-composite drains may be configured to act as a central drain where a geotextile fabric fully wraps a plastic core.



Geonet geo-composite drain



Geo-composite "waffle" sheet drain

2. Geotextile

Geotextile are continuous sheets of woven, nonwoven, knitted or stitched fibres. They may be made of a variety of types of fibres, including natural yarns or polymeric fibres.

Coir Geotextile: Coir is a biodegradable organic fibre material which is coarse, rigid and strong. Coir geotextiles are made from coconut fibre extracted from the husk of coconut. Coir fibre is weather resistant and resistant to fungal and bacterial decomposition. The rate of decomposition of coir is much less than any other natural fibre. These characteristics are attributed due to the high lignin content in the fibre. Coir in the form of woven mesh mattings or non-woven stitch bonded blankets are used in engineering applications in the geotechnical field.



Advantages of Coir Geotextile

- The high tensile strength of coir fibre protect steep surface from heavy flows and debris movement
- Easy to install and huge contour of the soil surface due to its heavy weight and ability to absorb water
- Biodegradable, 100% natural
- Water absorbent, thus act as mulch on the surface and as a wick in the soil mantle
- Environmental friendly and aesthetically pleasing and nonpolluting
- Provides excellent microclimate for plant establishment and healthy growth
- The thick and protruding fibers from the yarn render an extra protection against soil erosion and provide roughness to the surface floor and hold the soil particles in place.
- Holds the seeds and saplings in place
- Allows sunlight to pass through

Coir Geotextile is laid on the shoulder and slope surface helped retain the soil particles and prevented detachment of soil particles from the prepared slope. Establishment of vegetation ensured stabilization of the soil on the slope surface. It is a bio-degradable natural geotextile, can conveniently be used for controlling surface soil erosion and help growth of vegetation as a bio-engineering measure. After biodegradation coalesces with the soil and adds nutrient to the soil and fosters growth of vegetation.

3. Hydro-seeding

Hydro-seeding is a planting process that uses slurry of seed and mulch. A mixture of selected grass seeds, fertilizers, soil binders, mulch, soil ameliorants, organic supplements and water is hydraulically sprayed onto prepared surfaces at high pressure and volume. The soil binders and mulch binds the surface, creating a microclimate that will permit seed germination to

take place when the soils moisture and temperature conditions are favourable. Vegetation establishment will be visible within 3-5 days.

The hydro-seeding slurry is transported in a tank, either truck-mounted or trailer-mounted and sprayed over prepared ground. It is an alternative to the traditional process of broadcasting or sowing dry seed.



Hydro-seeding is ideal for steep slope

Role of Vetiver Grass in Slope Stabilization

- Vetiver grass (*Chrysopogon zizanioides*) is native to India. It has been shown to be a simple and economical method to conserve soil by slowing the velocity of water and trapping sediment, filtering out nutrients, and stabilizing steep slopes.
- Vetiver grass does not have stolons or rhizomes. Unlike most grasses, it does not form a horizontal mat of roots; rather, the roots grow almost exclusively downward, 2–4 m, which is deeper than some tree roots. This makes vetiver an excellent stabilizing hedge.
- Highly resistant to pests, diseases and fire.
- A dense hedge is formed when planted close together acting as a very effective sediment filter and water spreader.
- Tolerance to extreme climatic variation such as prolonged drought, flood, submergence and extreme temperature from **-14°C to +55°C**.
- Tolerance to wide range of soil pH from 3.3 to 12.5 without soil amendment.
- High level of tolerance to herbicides and pesticides.
- When planted closely together, Vetiver plants form dense hedges that reduce flow velocity, spread and divert runoff water and create a very effective filter that controls erosion.



Coir Geotextile with Vetiver grass for stabilizing steep slopes

6.6 Budgetary Estimate for EMP Implementation

A capital cost provision of about Rs. 76 crore has been kept towards implementation of environmental management plan for Nasri-Ramban Section (Referred as PKG-I) while the same for Ramban Banihal Section (Referred as PKG II) is 128 crores. Summary of environmental budgets is presented in **Table 6.4**

Table 6.4 Budgetary Estimate for EMP Implementation

S No.	Descriptions	PKG I (₹)	PKG II (₹)	Total (₹)
A	Rolling and Landscaping of top surface	593200	3351520	3944720.00
B	Gabion wall with gravel Rip-Rap on slope at base for protection of River Bank	210860741	300727350	511588091.00
C	Gabion wall with terracing as applicable for slope protection.	112675290	335829312	448504602.00
D	Stepped Gabion wall for the channelization of Brook.	90892664	155706204	246598868.00
E	Re-channelization of brooks by Hume Pipe.	0	16135385	16135385.00
F	Stabilization of slope and Eco-restoration of disposed muck with Bio-Engineering techniques	283606422	444635964	728242386.00
G	Removal of dumped muck from the River beds	5005000	4950000	9955000.00
H	Water Quality Analysis	3024000	5472000	8496000.00
I	Air and Noise Quality monitoring	1400000	1400000	2800000.00
	Total Cost (RS.)	708057317	1268207735	1976265052
	Add GST @ 12%	84966878.04	152184928.20	237151806.24
	Total Cost including GST (RS.)	793024195.04	1420392663.20	2213416858.24
	Say (Crs)	79	142	221

* Location and sampling frequency to be finalized during implementation of EMP

**Jammu and Kashmir
Pollution Control Committee**

chairman87jkspcb@gmail.com
membersecretaryjkspcb@gmail.com

0191 – 2472881, 2476925



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Annexure R-2/6

101



Parivesh Bhavan, Forest Complex
Transport Nagar, Jammu, 180006
Silk Factory Road
Rajbagh, Srinagar, 190 008

Project Director,
(National Highway Authority of India)
PIU, Ramban, J&K.

No: - JKPCC/NGT/OA-295-2016/ **1663**

Dated: **10** -01-2025

**Subject: Hon'ble NGT order dated 24-07-2024 in OA No. 295/2016 titled
Amresh Singh V/s Union of India & Ors.**

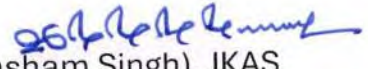
Sir,

Please refer to your office letter No. NHAI/PIU-Ramban/2024-25/11001/11100 dated 07-11-2024 on the above captioned subject. In this connection, I am to convey that the committee of the officers of the J&K Pollution Control Committee was deputed to verify the present status of restoration works on NHIA stretch from Nashri to Banihal. The report of the committee is enclosed for reference and record.

You are advised to undertake necessary steps for restoration of the ecology and stabilization of dumping sites as recommended in the report.

Yours faithfully,

Encl: - Report dated 08-01-2025.


(Ghansham Singh), JKAS
Member Secretary, **10.1.25**
J&K PCC



Government of Jammu and Kashmir
JK Pollution Control Committee
Jammu

The Member Secretary,
J&K Pollution Control Committee,
Jammu.

No:- JKPCC/EE/NGT-23/NH1A/2025/250-53

Dated:- 8 -01-2025

Sub:- *Hon'ble National Green Tribunal order dated 24-07-2024 in EA No. 23/2024 in OA No. 295/2016 titled Amresh singh Vs Union of India & Ors. – Constitution of Committee, thereof.*

Ref. :- *JKPCC Order no. JKPCC/PS/MS/24/294-300 dated 01.08.2024.*

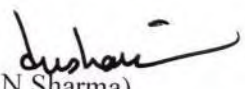
Sir,

With reference to the subject cited above, kindly find enclosed herewith report of the committee constituted for submission of the current status of the restoration work of dumping sites along the NH44 in stretch from Nashri to Banihal. The committee has framed report along with the Project Director, NHIA, Ramban along with his teams who accompanied the JKPCC committee.

The report is enclosed for kind reference and approval for further necessary action.

Encl: a/a

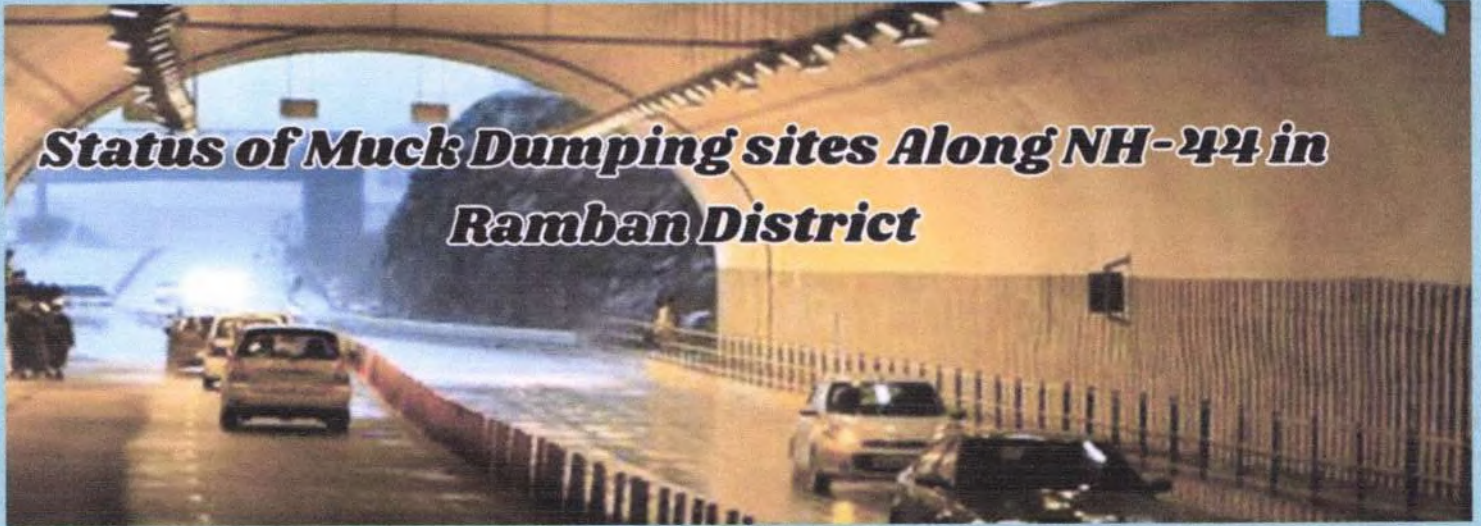
Yours faithfully,


(J N Sharma)
Environmental Engineer
JK Pollution Control Committee,

Copy to:

- 1- PA to Chairman for information of the Worthy Chairman, JKPCC, Jammu
- 2- All Committee Members for information

Status of Muck Dumping sites Along NH-44 in Ramban District



Sub: Hon'ble National Green Tribunal order dated 24-07-2024 in EA No. 23/2024 in OA No. 295/2016 titled Amresh Singh V/s Union of India & Ors. – Constitution of committee, thereof.

The committee constituted vide under Order No. JKPC/PS/MS/24/294-300 dated 1.8.2024 and order No. JKPC/NGT/OA 295-2016/1347-49 dated 12.11.2024, was directed to inspect the site along the National Highway from **Nashri to Banihal** with following terms of reference (TOR):

- i) Status of implementation of Environment Management Plan (EMP) by NHAI.***
- ii) Steps taken to restore the damages caused to the environment during the course of construction of NH-44.***

The committee constituted vide order no JKPC/PS/MS/24/294-300 dated 1.8.2024 comprises of Sh. Angrez Singh, AEE, J&KPC Jammu, Sh. Sanjay Rathore, Divisional Officer PCC, Jammu-South and Sh. Anupam Kaul, Technical Officer, Regional Office PCC, Jammu visited the National highway on 29.08.2024 & 30.08.2024 and submitted its interim report. The constituted committee was asked to revisit the site as per letter No. JKPC/NGT/OA 295-2016/1347-49 issued dated 12.11.2024.

Sh. J.N. Sharma Environmental Engineer, J&K PCC, Jammu was also directed by the authorities to supervise the overall inspection of the site as he was already a part of the earlier committee which recommended for re-framing of EMP in said O.A. Divisional Officer, JKPC Ramban was also the part of the committee during field visits being the concerned officer of the area.

Hon'ble NGT while disposing the original application had issued following directions in the case OA No. 295/2016 vide its order dated 29.10.2021: -

"Accordingly, we direct NHAI to set apart amount of Rs. 129 crores, which is tentative cost for implementing environment management plan and cost of restoration of damage to the environment. NHAI is free to proceed against contractors, if permissible in terms of contractual rights but we do not express any view about such inter se dispute. NHAI may implement the Environment Management Plan which should

include restoration of the damage caused during the course of construction of NHAI-44 so far. Restoration plan may be prepared within one month by the NHAI, which may be overseen by the monitoring Committee constituted by this Tribunal, with the assistance of any other expert/institution or otherwise. Thereafter, the same may be executed as far as possible within six months. NHAI will be bound by the direction of the Monitoring Committee subject to any objection against the same being agitated before this Tribunal. This covers past violations and in future all possible precautions be observed so as to maintain the environment free from damage. "

"In the light of experience in the present case, it will be appropriate that the NHAI sets up forthwith an in-house environment compliance monitoring panel at the headquarters, reporting to the chairman, NHAI, to monitor compliance of EC/FC conditions for various developmental projects being executed by the NHAI to prevent recurrence of such incidents and to ensure protection of environment."

The current report prepared by the committee constituted by the J&KPCC under the overall supervision of the Environmental Engineer Sh. J.N. Sharma is with regard to the work done by NHAI along the National Highway stretch between Nashri and Banihal, which is part of NH-44 and its present status.

Status of Muck Dumping Sites:-

S.No	NH-44 Stretch	Number of Sites	Restored closed sites	Partially Restored Closed site	Operational Sites (yet to be restored)
1.	Nashri to Ramban section				
	a) Initial/Old Sites	27	17	07	03
	b) Additional/Other Sites	03	02	01	0
2.	Ramban to Banihal section				
	a) Initial/Old Sites	29	15	10	04
	b) Additional/Other Sites	12	07	04	01
	Total	71	41	22	08

The detailed status along with photographs of each muck dumping site is enclosed as **Annexure-I &II.**

Observations of the Committee during Field visit:

- a) The committee after field visit found that there are 30 numbers of sites in the stretch between **Nashri to Ramban** (26 kms approx), Out of which 27 are Initial/Old sites and 03 are Additional/Other sites. Out of 27 Initial/Old sites, 19 sites have been by and large restored, 08 sites are **partially** restored and some plantation has come up in these sites due to which the total restoration work couldn't be ascertained. The other 03 sites are active as excavated material is being dumped in these sites due to the construction activity going on. Further, NHAI Team which accompanied the committee needs to provide their remarks on the partially restored sites on the basis of work executed as per the EMP and drawings of the site.
- b) The committee after field visit found that there are 41 number of sites in a stretch between **Ramban to Banihal** (43 kms approx), Out of which 29 are Initial/Old sites and 12 are Additional/Other sites. Out of 29 Initial/Old sites 22 sites have been by and large restored, 14 sites are **partially** restored and some plantation has come up in these sites due to which the total restoration work couldn't be ascertained. The other 05 sites are active as excavated material is being dumped in these sites due to the construction activity going on. Further, NHAI Team which accompanied the committee needs to provide their remarks on the partially restored sites on the basis of work executed as per the EMP and drawings of the site.

Recommendation of the committee:-

1. The NHAI authorities may also submit EMP which envisages for the restoration work of the dumping sites as the plan submitted is after work done (Envt. Restoration Plan)
2. The NHAI may also submit detailed plan of restoration of new alignment section of NH-44 including its restoration on the dumping sites (old and new) where construction of tunnels and viaducts etc is in progress and sites are actively being used for dumping the excavated material.

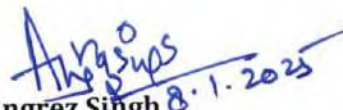
The restoration work include such as:- i) Reforestation or compensatory afforestation to make up for green cover/vegetation loss; ii) Restoring or stabilizing lands affected by landslides or soil erosion due to construction activities along NH-44 in new alignment; iii) Rehabilitate the natural

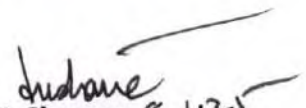
Nalahs/streams by properly channelizing the flow of water where muck dumping has been done or under progress by various engineering methods; iv) Rebuilding any damaged ecosystems, ensuring the reintroduction of native species, and controlling invasive species; v) Installing permanent sign/information boards at each dumping site displaying complete detail of the dumping site which may include chainage, area, capacity, quantity dumped, Available capacity and restoration work done.


Anupam Kaul
Technical Officer

Chander Kotwal
Divisional Officer
Ramban

Sanjay Rathore
Divisional Officer
Jammu-South


Anrez Singh 8.1.2025
Asstt. Env. Engineer(HQ)
PCC,Jammu


J.N. Sharma 8.1.25
Environmental Engineer(HQ)
J&K PCC Jammu

ANNEXURE-1

Status of Restoration Work done on Muck Dumping Sites from Nashri to Banihal

Nashri - Ramban section

S. No.	Initial/ Old Site No.	Name of Site / Village	Site GPS Coordinate s submitted to NGT	Landfill- Designated / Non- Designated (Forest / Rev. Pvt.)	Area (in Hectares)	Status (Closed / Operational)	Restoration Work
1	1	Nashri (130+690 - 130+800)	3308'13"N 75017'59"E	Forest Land Designated	1	Operational	Slope has been stabilized by providing Gabion & Coir Matting.
2	2	Nashri (Near Lucky Dhaba) (131+280 - 131+350)	3308'29"N 75018'13"E	Pvt. Land designated	0.61	Closed	Gabion walls have been provided after making bench and natural Vegetation has grown along slopes.
3	3	Sarga Temple (132+400 - 132+500)	3309'03"N 75018'22"E	Forest Land Designated	1.2	Closed	Gabion walls have been provided after making bench and natural Vegetation has grown along slopes.
4	4	Dhalwas (132+700 - 133+100)	330 9'18"N 75018'26" E	Non Designated		Operational	Construction of New bridge and Viaduct found in progress. The slope protection work needs to be taken up after completion of above work.

5	5	Dhalwas-1 (133+350 - 133+400)	3309'30''N 75018'31'' E	NHAI Acquired	0.98	Closed	Natural Vegetation has grown up along slopes. Gabion structures need to be provided.
6	6	Dhalwas- II Near School (133+420 - 133+460)	3309'33''N 75018'32'' E	NHAI Acquired	1.01	Closed	Natural vegetation found grown at site.
7	7	Dhalwas- Peerah- I (134+770 - 134+820)	33010'6''N 75018'20'' E	Forest Land Designated	5.07	Closed	Site restored by Forest Department under CAMPA as informed.
8	8	Dhalwas- Peerah- II (135+300 - 135+350)	33010'10'' N 75018'2''E	Forest Land Designated	7.55	Closed	Site restored by Forest Department under CAMPA as informed
9	9	Sawani- I (135+900 - 135+940)	33010'14'' N 75017'52'' E	NHAI Acquired	1.76	Closed	Slopes found stabilized by way of providing Jute matting and gabion wall.
10	10	Sawani- II (136+760 - 136+810)	33010'28'' N 75018'11'' E	NHAI Acquired	2.83	Closed	Natural vegetation has developed on the slopes and gabion provided.
11	11	Sawani -III Peerah Near Dam View Hotel (138+050 - 138+100)	33010'28'' N 75018'23'' E	Private Designated	1.89	Closed	Natural vegetation has developed on the slopes, without benching and gabion provided at bottom.

12	12	Near T-1, T- 2 Kunfer Nallah 139+297 - 139+319	330 10'52''N 75017'57'' E	Tunnel Site	0.2	Closed	The slopes found stabilized by providing Jute matting. Gabion constructed along nallah in major portion but needs to be extended upto the bridge.
13	13	Chanderkote (141+200 - 141+320)	33012'23'' N 75016'52'' E	Private Designated	1.76	Closed	The sites seems to be stable with partial vegetation cover developed on slopes. Gabions not provided along river Chenab.
14	14	Near 48 Bridge Chanderkote (143+360 - 143+380)	33012'25'' N 75016'47'' E	Non Designated		Closed	
15	15	Near 48 Bridge Chanderkote (143+400 - 143+420)	33012'27'' N 75016'45'' E	Non Designated		Closed	
16	16	Near 48 Bridge Chanderkote (143+720 - 143+740)	33012'27'' N 75016'45'' E	Non Designated		Closed	
17	17	Near Jaswal Bridge (144+500 - 144+520)	330 12'53''N 750 16'20''E	Private Designated		Closed	Small duping site, the Slope stabilized and natural vegetation grown on slope.

18	18	Kanthen (Karol-I) Bridge 51 (Near Hotel Khana Khazana) 144+950 - 144+970	330 13'5''N 750 16'18''E	Private Designated	0.48	Closed	Slope stabilized, Gabion wall provided along nallah.
19	19	Kanthen - Karol- II Near Kundi Nallah Bridge-53 145+440 - 145+500)	330 13'25''N 750 16'1''E	Private Designated	0.78	Closed	Natural vegetation has developed on slopes, Gabion walls exists for stabilizing slopes in major portion but needs to be provided in washed portion of about 150 meter length along river Chenab.
20	20	Kanthen (145+520 - 145+620)	33013'27'' N 750 15'56''E	Private Designated	1.76	Closed	
21	21	Kanthen (145+620 - 145+850)	330 13'12''N 750 16'4''E	Non Designated		Closed	
22	22	Ramban Near Kundi Nallah Bridge 53 (145+850 - 145+900)	33013'27'' N 750 16'0''E	State Land		Closed	
23	23	Kanthen- Karol (Near Amar Punjabi Dhaba) 146+094 - 146+180)	33013'14'' N 75015'51'' E	State Land		Closed	

24	24	Opp. Horticulture Office Gate (146+200 - 146+230)	33013'21'' N 75015'53'' E	Non Designated		Closed	Slope stabilized, Jute matting provided with Gabion walls, Natural vegetation developed on slopes. Gabion in about 50 meter length along river Chenab required.
25	25	Neera (Opp. PHE Water Filling Station) (147+225 - 147+525)	33013'44'' N 75015'10'' E	State Land		Closed	
26	26	Cafeteria Morh Ramban (Opp. Army Camp Maitra) (147+850 - 148+700)	33014'01'' N 75014'51'' E	State Land		Operational	Sliding area, where Realignment under progress by way of cut & Cover and Tunnel at this location. Restoration of slope required if any is to be done after completion of work.
27	27	Kowbagh, Ramban	33013'10'' N 75012'06'' E	Forest Land Designated	1.55	Closed	Gabion walls along with Jute matting provided at site

Ramban - Banihal Section

28	1	Seri-Chamba	33° 14'58" N 75° 13'33" E	State - Non Designated		Closed	Slope stabilized, natural vegetation exists and Gabion wall needs to be provided along Chenab in major portion.
29	2	Seri - near Shiv Temple	33° 15'25" N 75° 12'16" E	State - Non Designated		Closed	No dumped material at site.
30	3	Seri -village	33° 14'58" N 75° 13'02" E	Private Land - Designated	2.16	Closed	Gabion walls & Jute Matting have been provided for stabilizing the slope. Natural vegetation developed on slopes.
31	4	Maroog- I	33° 15'27" N 75° 11'45" E	Forest - Designated	0.14	Closed	Gabion walls & Jute Matting provided for stabilizing of slope. Channelization of cross drain/nallah also done.
32	5	Maroog- II (Near T-2)	33° 15'47" N 75° 11'29" E	Forest - Designated	2.15	Closed	Gabion walls & Jute Matting have been provided for stabilizing the slope. Channelization of cross drain/nallah also done at site.
33	6	Maroog- III	33° 15'17" N 75° 17'06" E	Forest - Designated		Closed	Gabion walls & Coir Matting have been provided for stabilizing the site by forest department.

34	7	Battery Cheshma	33° 16'48" N 75° 10'48" E	Forest - Designated	0.18	Closed	Gabion walls & Jute Matting have been provided for stabilizing the slope. Natural vegetation developed on slopes.
35	8	Anokhi Fall	33° 16'49" N 75° 10'43" E	Forest - Designated	0.3	Operational	Site needs restoration.
36	9	Digdole	33° 17'22" N 75° 10'40" E	Forest - Designated		Operational	No dumping is done presently but as informed, 60 kanals of additional land acquired for dumping of tunnel muck, if required. NHAI needs to provide proper protection before start of dumping further.
37	10	Digdole - I	33° 17'45" N 75° 10'38" E	Forest - Designated	4.7	Operational	As informed, additional Forest land acquired for dumping of tunnel muck in realigned section. Gabions walls constructed at toe and at intermediate portion in parts. NH needs to completely protect the dumping site and to properly channelize the nallah after completion of work.
38	11	Digdole - II	33° 17'45" N 75° 10'52" E	Forest - Designated	1.1	Operational	
39	12	Digdole - III	33° 18'27" N 75° 10'52" E	Forest - Designated	1.4	Closed	Slope stablized and Natural vegetation developed on slope.
40	13	Panthiyal	33° 19'18" N 75° 11'49" E	Forest - Designated	0.26	Closed	Toe of the slope have been protected by providing Gabion wall and natural vegetation have also occurred on slope.

41	14	Moumpassi	33° 19'18" N 75° 11'49" E	Private/State Designated	0.47	Closed	Change in alignment and Viaducts under construction at the site. Natural vegetation developed on slopes and the toe protection to be done by NH on completion of Via duct work.
42	15	Ramsoo	33° 20'43" N 75° 11'13" E	Private Land - Designated	2.13	Closed	Slope Stabilized and vegetation developed on slope.
43	16 & 17, 18	Gangroo Ramsoo	33° 20'45" N 75° 10'56" E	Private Land - Designated			Gabion walls & Jute Matting have been provided for stabilizing the site.
							Gabion walls & Jute Matting have been provided for stabilizing the site. Natural vegetation has also grown at the site. Cross drainage/Nallah also channelized.
44	19	Hingni	33° 21'15" N 75° 10'19" E	State + Private + Forest - Designated	1.3	Closed	Gabion wall provided. Change in alignment and Viaducts under construction at the site. This dumping also the part of road realignment.
45	20	Kishtwari Pathar	33° 22'02" N 75° 11'16" E	Forest		Closed	Gabion walls & Jute Matting have been provided for stabilizing the site.

46	21 & 22	21 & 22 Sherbibi- Shalgadi Nallah	33° 12'22" N 75° 12'2" E	Private Land - Designated	9.4	Closed	Gabion walls & Jute Matting have been provided for stabilizing the site. Natural vegetation has also grown on the site.
47	23 & 24	23 & 24 Chamalwas I	33° 23'20" N 75° 12'7" E	Private Land - Designated	0.15	Closed	Gabion walls have been provided for stabilizing the site.
							Site stabilized. Natural vegetation grown at site along bisleri Nallah.
48	25	Rattanwas I	33° 24'23" N 75° 11'54" E	Private Land - Designated	2.3	Closed	Gabion walls & Jute Matting have been provided for stabilizing the site. Channelization of cross drainage/nallah done.
49	26	Rattanwas II	33° 24'23" N 75° 12'4" E	Private Land - Designated			
50	27	Rattanwas III	33° 25'23" N 75° 12'17" E	Private Land - Designated	0.93	Closed	Gabion walls & Jute Matting have been provided for stabilizing the site Natural vegetation has also grown on the site.
51	28	Kharpora Banihal	33° 25'23" N 75° 12'17" E	Private		Closed	Gabion walls have been provided for stabilizing the site. Natural vegetation has also grown on the site.
52	29	Banihal - I & II	33° 25'46" N 75° 12'15" E	Private Land - Designated	2.5	Closed	Gabion walls & Jute Matting have been provided for stabilizing the site. Natural vegetation has also grown on the site.

Besides above Initial/Old sites, other/additional (old and new) muck dumping sites were also inspected and the observations made are submitted as under:

Nashri - Banihal section						
MDS no.	Name of Site / Village	Site GPS Coordinate s submitted to NGT	Landfill- Designated / Non- Designated (Forest / Rev. Pvt.)	Area (in Hectares)	Status (Closed / Operational)	Restoration Work
1	Nashri Nashri-Batote Road		Forest Land		Closed	Slope has been stabilized by providing Gabion & Plantation done
2	Nashri				Closed	Slope protection done and natural vegetation developed.
4	Dalwas		Forest Land Designated		Closed	Natural Vegetation has grown along slopes.
24	Sei-Ramban	33.245864 75.21675			Closed	Gabion provided, Jute matting done.

26	Adhwa-Marog	33.257184 75.196843			Closed	Gabion provided, Jute matting done. Natural Vegetation has grown up along slopes.
	Khuni Nallah near New Under Construction Tunnel Portal		Forest Land		Operational	No protection work found
35	Khuni Nallah				No dumping done	Sliding area.
39	Ramsu Near SDM office	33.338679 75.191835			Closed	Slopes found stabilized and natural vegetation developed on slopes.
42	Ramsu	33.335791 75.194482			Closed	Natural vegetation has developed on the slopes and gabion provided.
43	Hingni-I	33.347826 75.177918			Closed	Gabion provided at bottom.
45	Hingni-II	33.351318 75.178498			Closed	Realignment, Via-duct under construction



48	Dolegam	33.368234 75.188967			Closed	Gabion wall provided, Jute matting provided and vegetation cover developed on slopes.
49	Sherbibi	33.375435 75.197807			Closed	Gabion wall and jute matting provided.
51	Sherbibi near Chinar Tree	33.378886 75.200364			Closed	Gabion wall provided along nallah.
55	Chamalbass	33.392662 75.198453			Closed	Gabion walls provided for stabilizing slopes, jute matting done.



ANNEXURE-II

(Photographs of
Muck Dumping Sites)

**Report of status of Restoration of Dumping Sites Between Nashri -
Ramban, NH-44**

1. Nashri - Ramban Section

MDS - 01 (NGT Site no. nil)

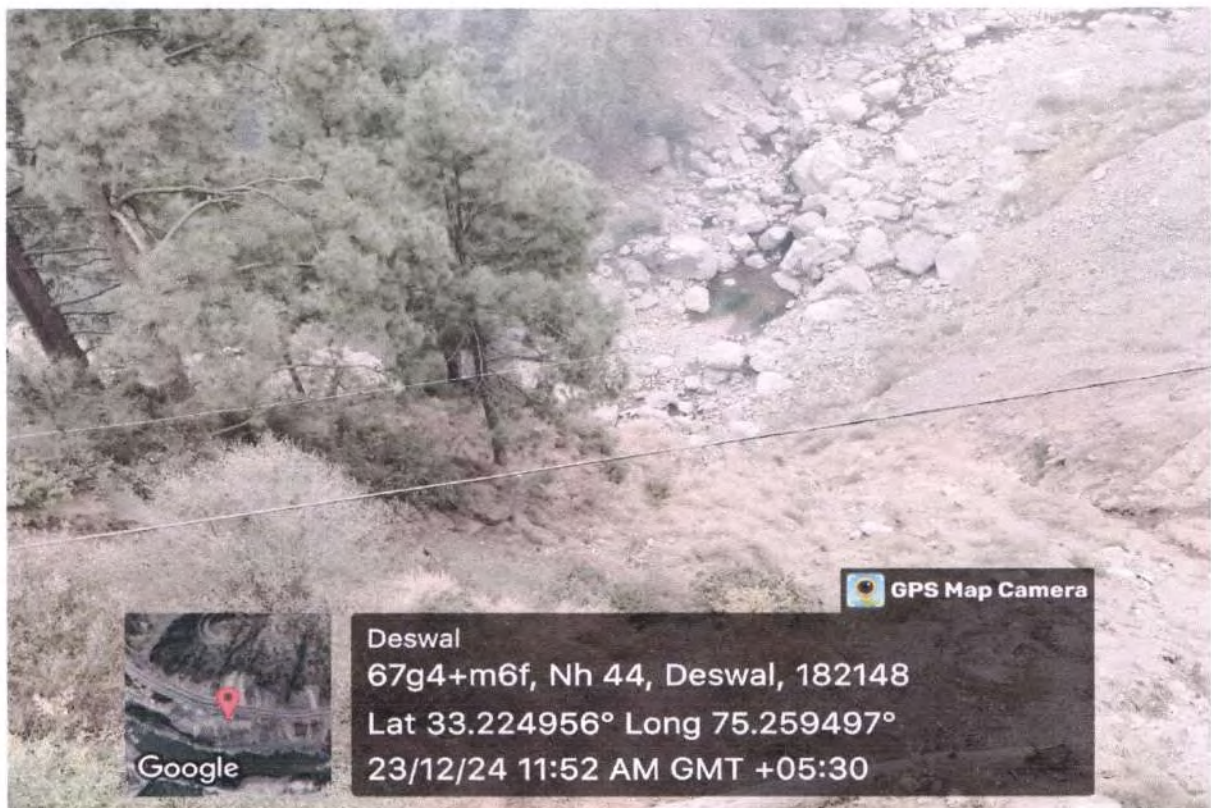
Location: Nashri, Ramban



Details of Work done for Restoration: The site is stabilized with vegetation over the slope. No further restoration is required.

MDS - 02 (NGT Site no. nil)

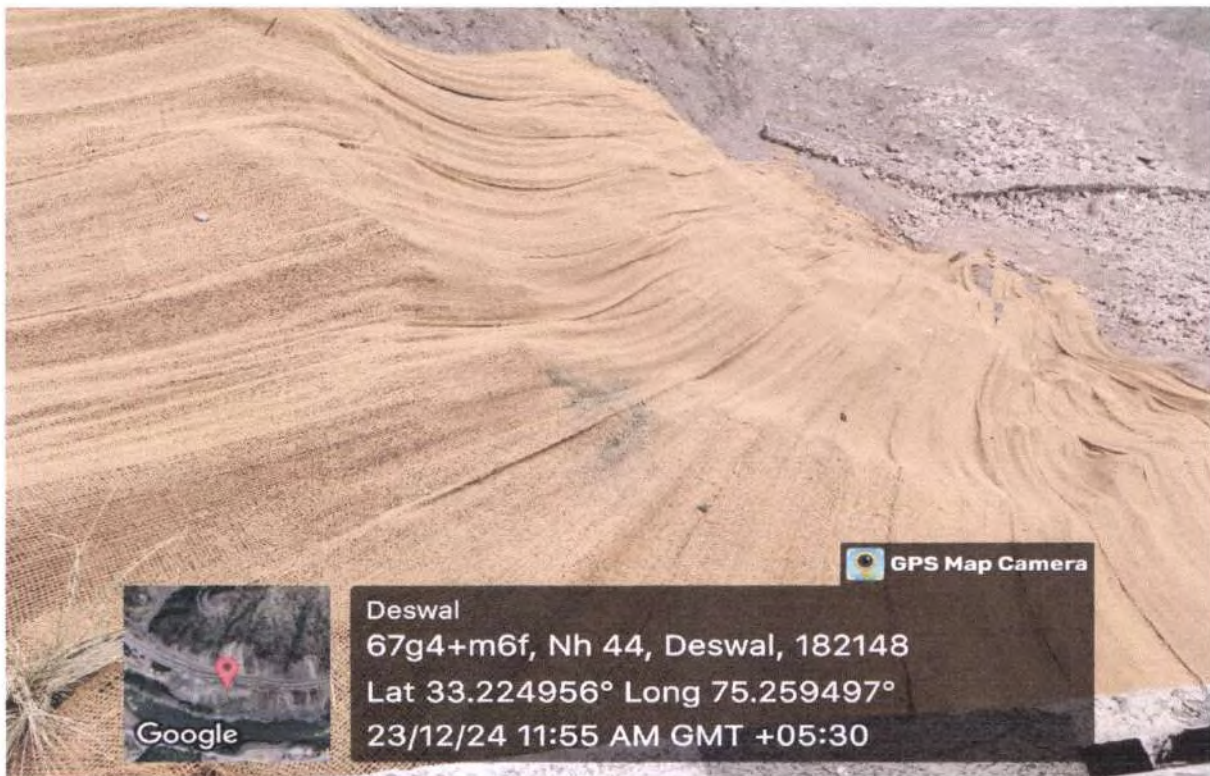
Location: Nashri, Ramban



Details of Work done for restoration: Slope protection through coir mat & hydroseeding has been done and no additional stabilization measure is required.

MDS - 03 (NGT Site no. 01)

Location: Nashri, Ramban



Details of Work done for restoration: Slope has been stabilized by providing Gabion & Coir Matting.

MDS - 04 (NGT Site no. nil)
Location: Dhalwas, Ramban



Details of Work done for restoration: Natural Vegetation has occurred and no further treatment is required.

MDS - 05 (NGT Site no. 02)

Location: Dhalwas, Ramban



Details of Work done for restoration: Gabion walls have been provided after making bench and natural Vegetation has occurred and no further treatment is required.

MDS - 06 (NGT Site no.3)**Location: Dhalwas, Ramban**

Details of Work done for restoration: Natural Vegetation has occurred and no further treatment is required.

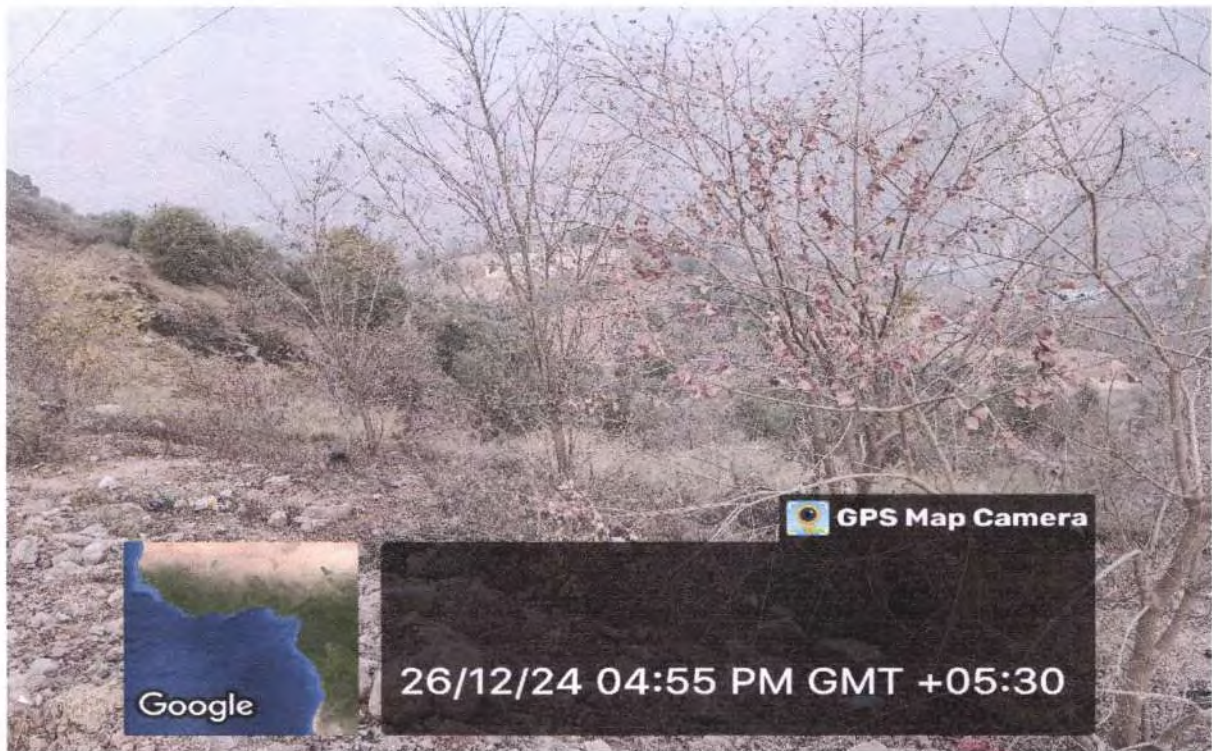
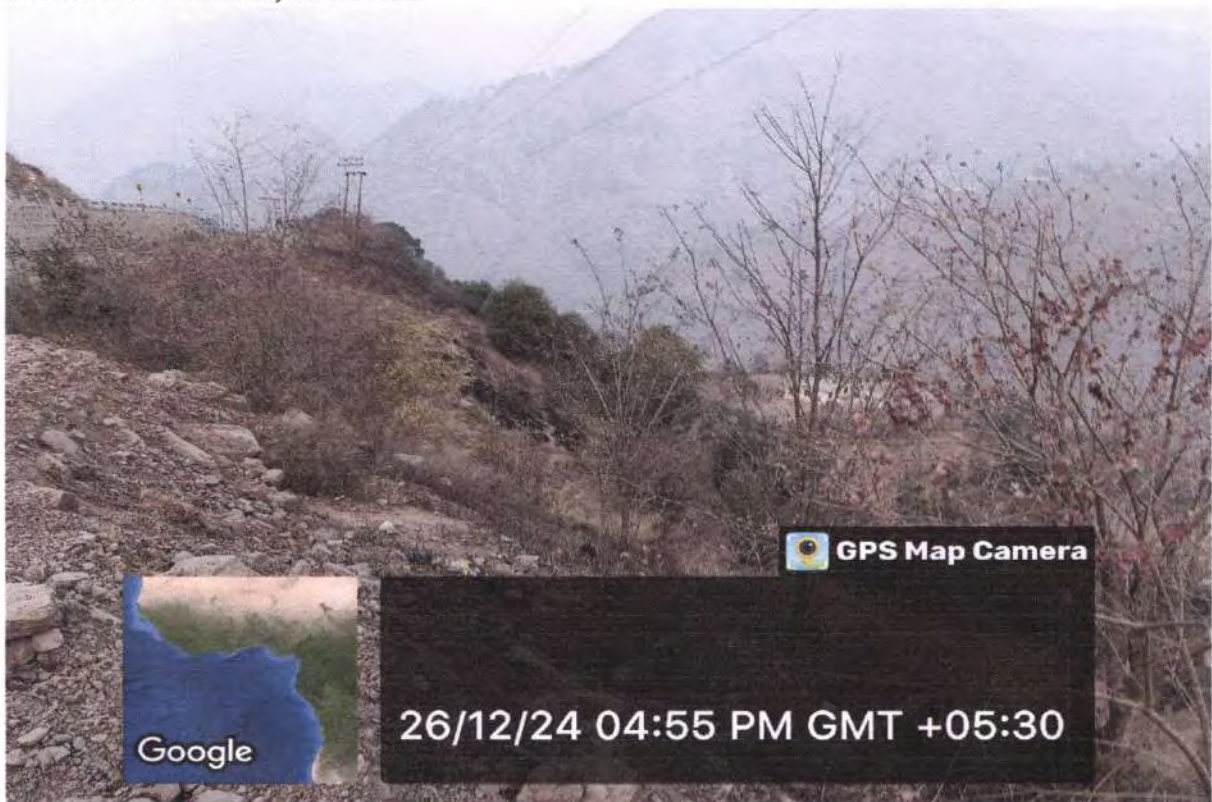
MDS - 07 (NGT Site no. 04)
Location: Dhalwas, Ramban



Details of Work done for restoration: A massive slide occurred in march 2020 in which about 800 metres road from hill side washed away. New bridge proposed which is under construction. Complete protection of slope in the scope of contractor and will be completed after completion of Viaduct.

MDS - 08, (NGT Site no. 5 & 6)

Location: Dhalwas, Rambam



Details of Work done for restoration: Natural Vegetation has occurred and no further treatment is required.

MDS - 09, (NGT Site no. 7)

Location: Dhalwas, Ramban



Details of Work done for restoration: Site restored by Forest Department under CAMPA. Slopes are stable with Green Cover.

MDS - 10, (NGT Site no. 8)

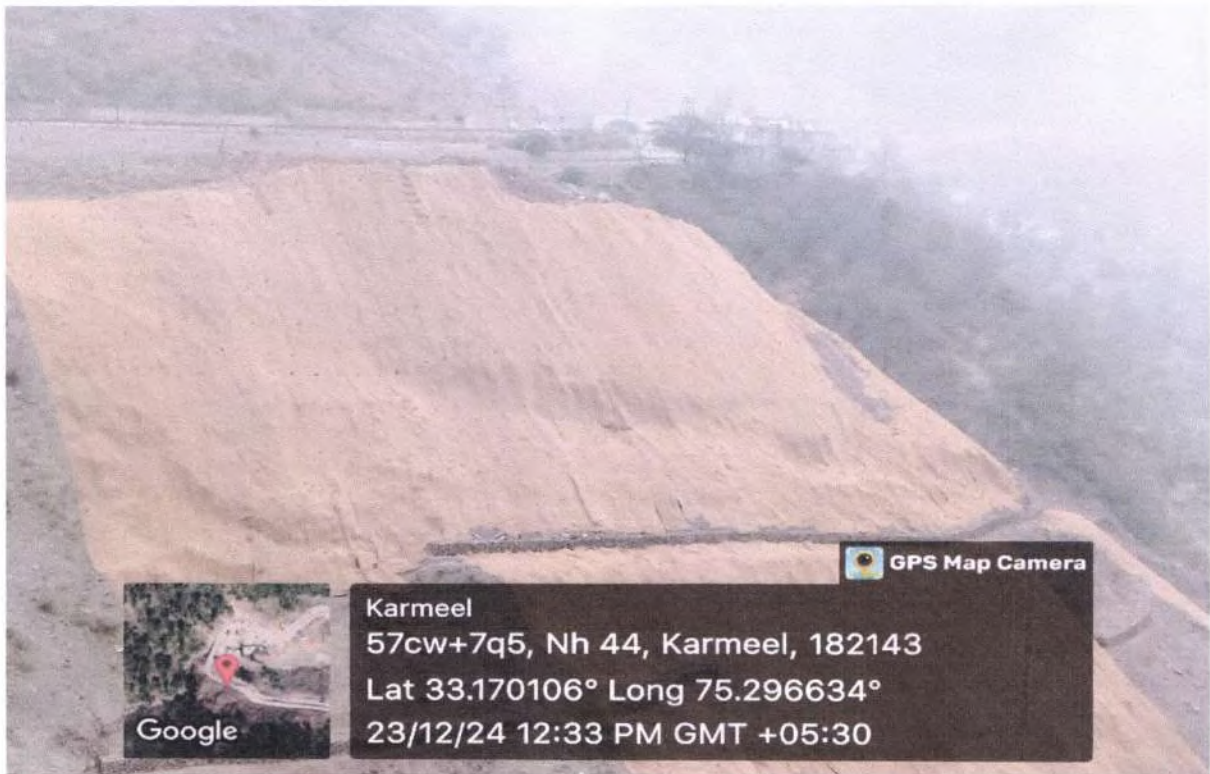
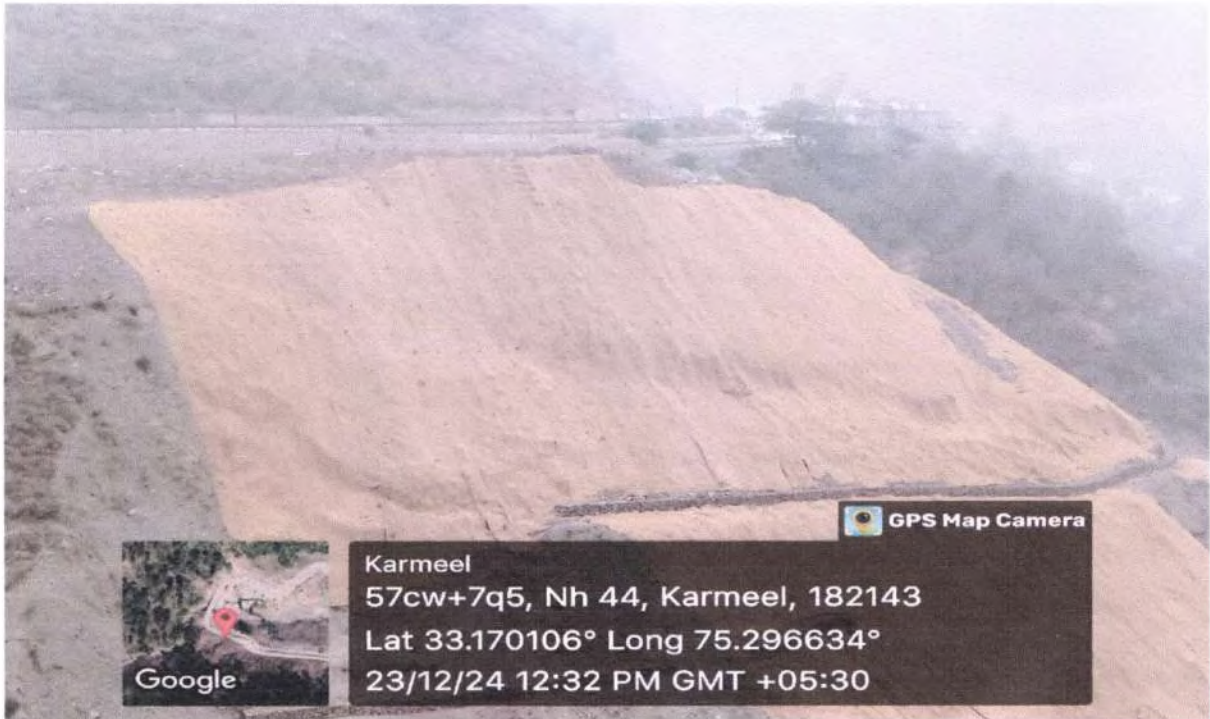
Location: Peerah, Ramban



Details of Work done for restoration: Site restored by providing Gabion wall & Coir mat Slopes are stable with Green Cover.

MDS - 11, (NGT Site no. 09)

Location: Peerah, Ramban



Details of Work done for restoration: Slopes have been stabilized by providing Coir Matting and Gabion Wall after benching. No further restoration is required.

MDS - 12, (NGT Site no. 10)

Location: Peerah, Ramban



Details of Work done for restoration: Natural green cover has developed on the slopes and hence the slopes are stable.

MDS - 13, (NGT Site no. 11)

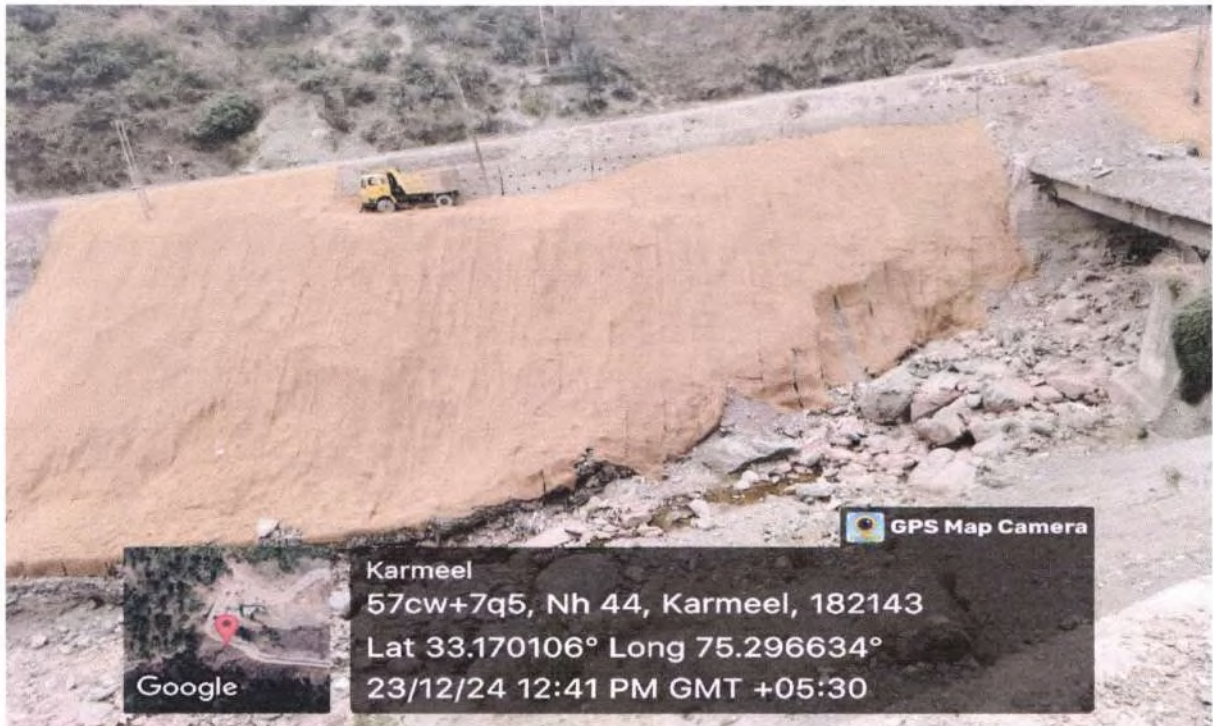
Location: Dam View-Peerah, Ramban



Details of Work done for restoration: The slopes have been stabilized by providing Coir matting and Gabion wall and natural green cover have developed on the slopes and hence the slopes are stable.

MDS - 14, (NGT Site no. 12)

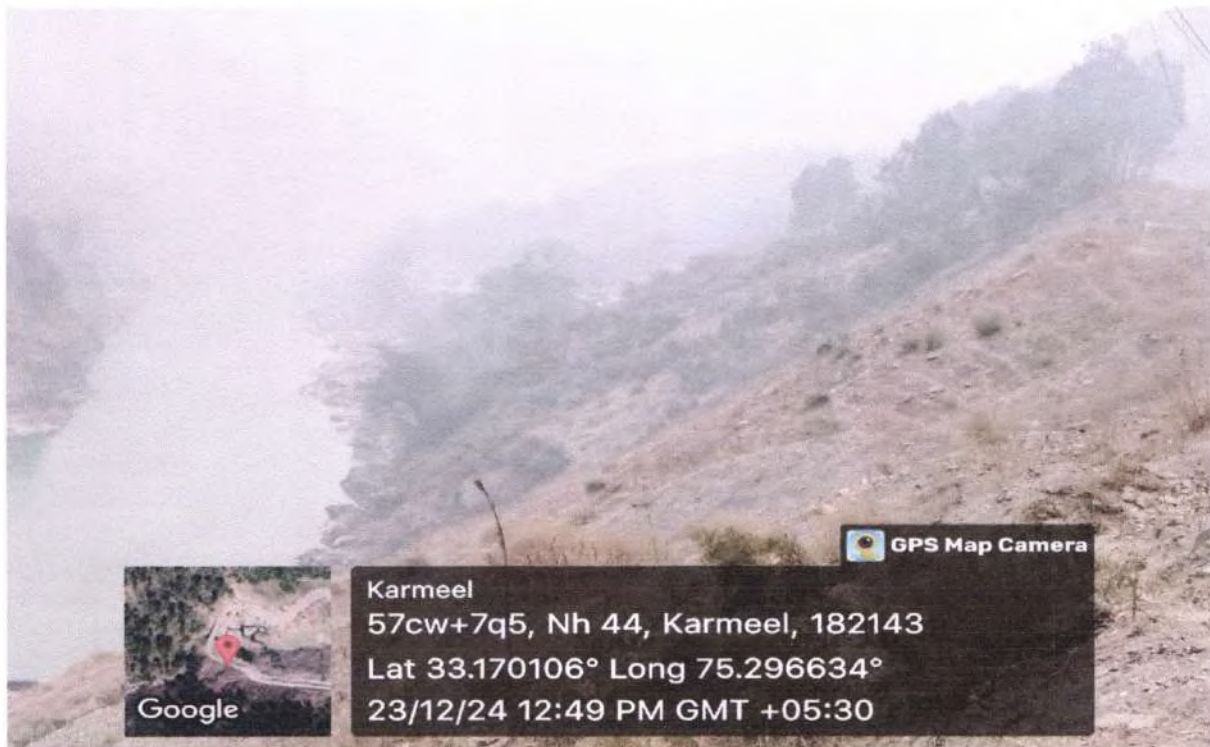
Location: Kunfer Naalah, Chanderkote Ramban



Details of Work done for restoration: The site has been stabilized by providing Coir matting and Gabion.

MDS - 15, (NGT Site no. 13 - 16)

Location: Duggi Pulli Chanderkote, Ramban



Details of Work done for restoration: The sites have become stable with partial green cover on slopes and toe line of the river Chenab is naturally protected by rocks and boulders.

MDS - 16, (NGT Site no.17)**Location: Jaswal Bridge, Ramban**

Details of Work done for restoration: site stabilized and natural vegetation grown on slope.

MDS - 17, (NGT Site no.18)**Location: Karol Nallah, Ramban**

Details of Work done for restoration: Gabion walls have been provided for stabilizing the site.

MDS - 18, (NGT Site no. 19-23)

Location: Neera, Kanthi Naalah, Ramban



Details of Work done for restoration: Gabion walls have been provided for stabilizing the site.

MDS - 19, (NGT Site no. 24-25)

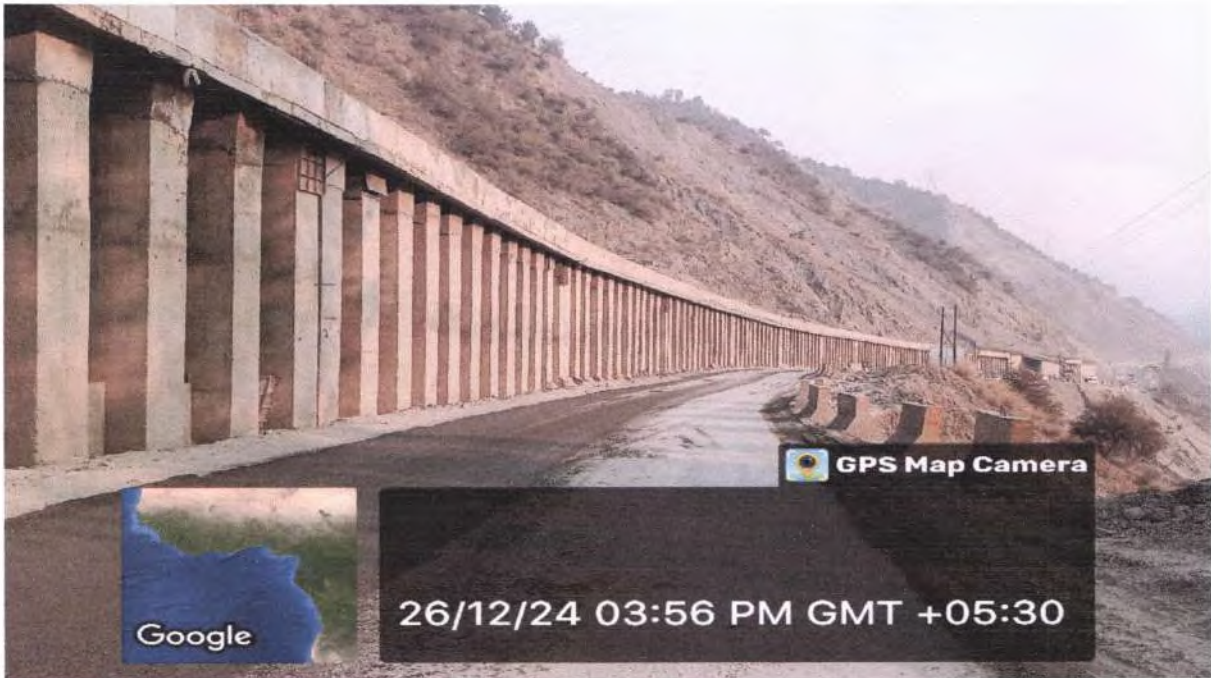
Location:



Details of Work done for restoration: Coir mat along with Gabion walls have been provided for stabilizing the site. Natural Green cover also developed on slopes.

MDS - 20, (NGT Site no. 26)

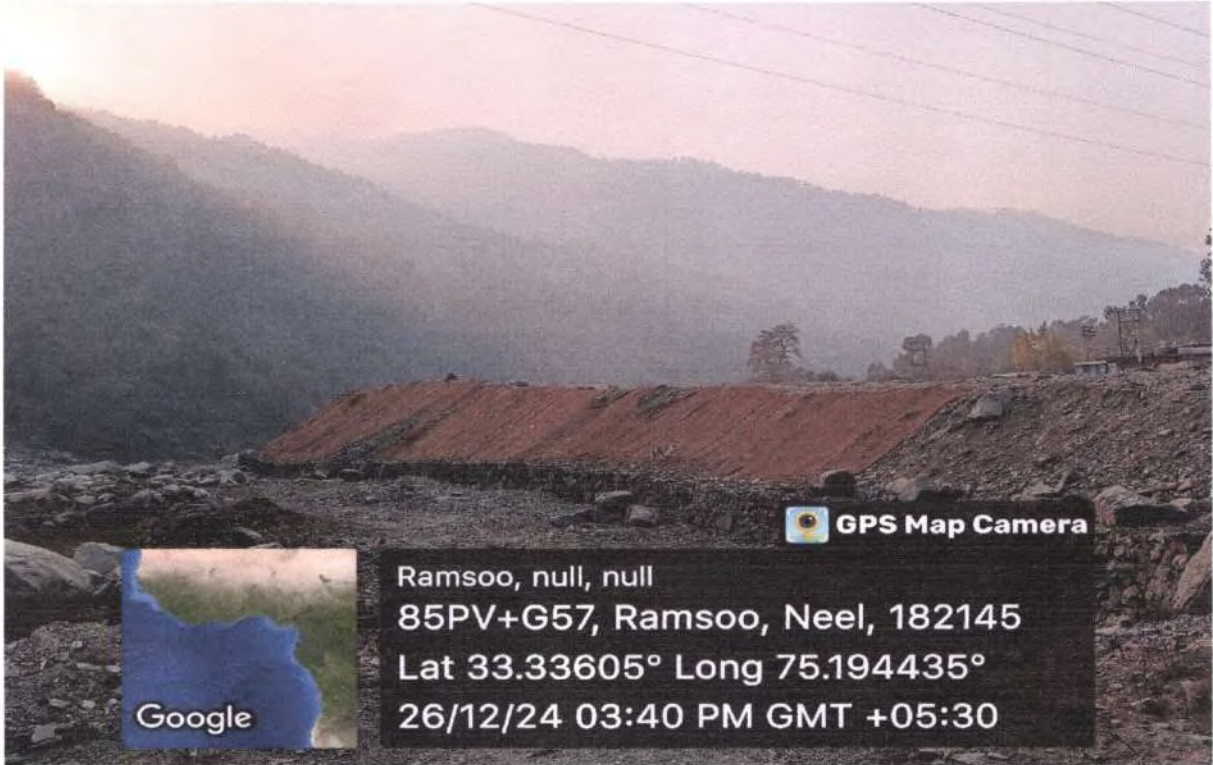
Location: Cafeteria Canopy structure Ramban



Details of Work done for restoration: Gabion walls have been provided for stabilizing the site. Realignment proposed by way of cut & Cover and Tunnel at this location to avoid further destabilization of hill/cutting.

MDS - 21, (NGT Site no. 27)

Location: Kohu Bagh, Ramban

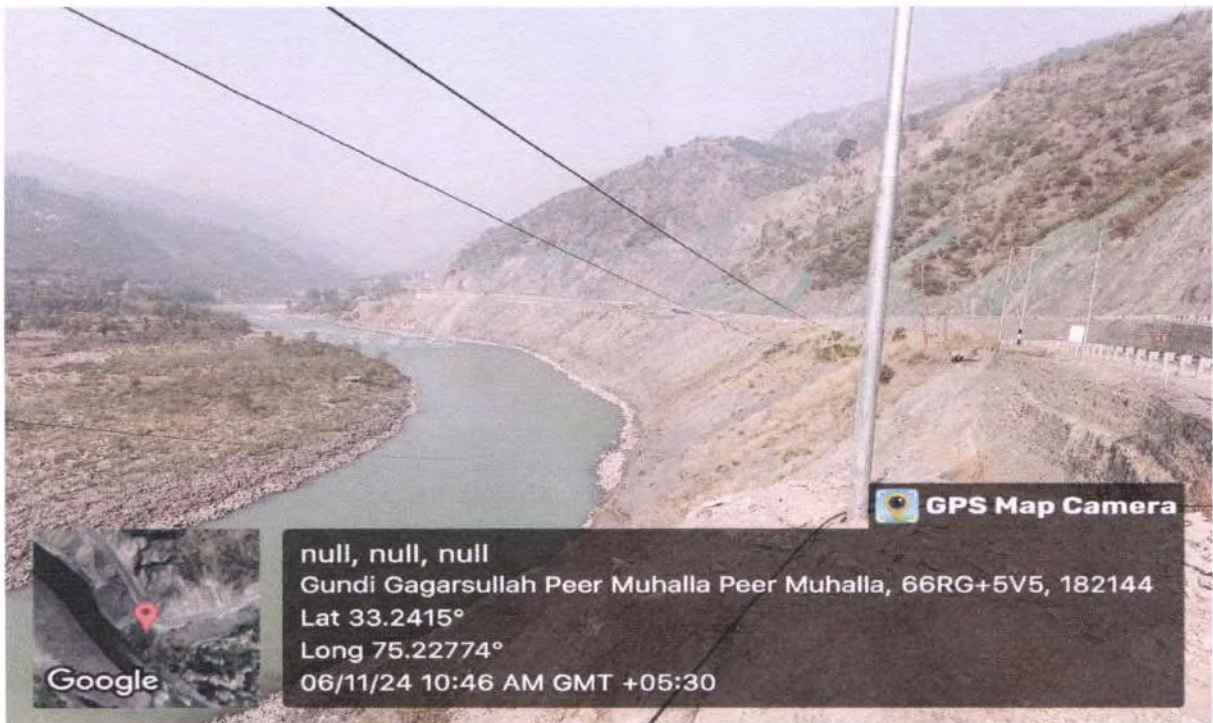


Details of Work done for restoration: Gabion walls along with coir mat provided for stabilizing the site.

2. Ramban - Banihal Section

MDS - 22, (NGT Site no.1)

Location: Seri, Ramban



Details of Work done for restoration: Coir mat along with Gabion walls provided.
No further protection required.

MDS - 23, (NGT Site no. 02)**Location: Seri, Ramban**

Details of Work done for restoration: Gabion walls have been provided for stabilizing the site.

MDS - 24, (MDS Site no. nil)

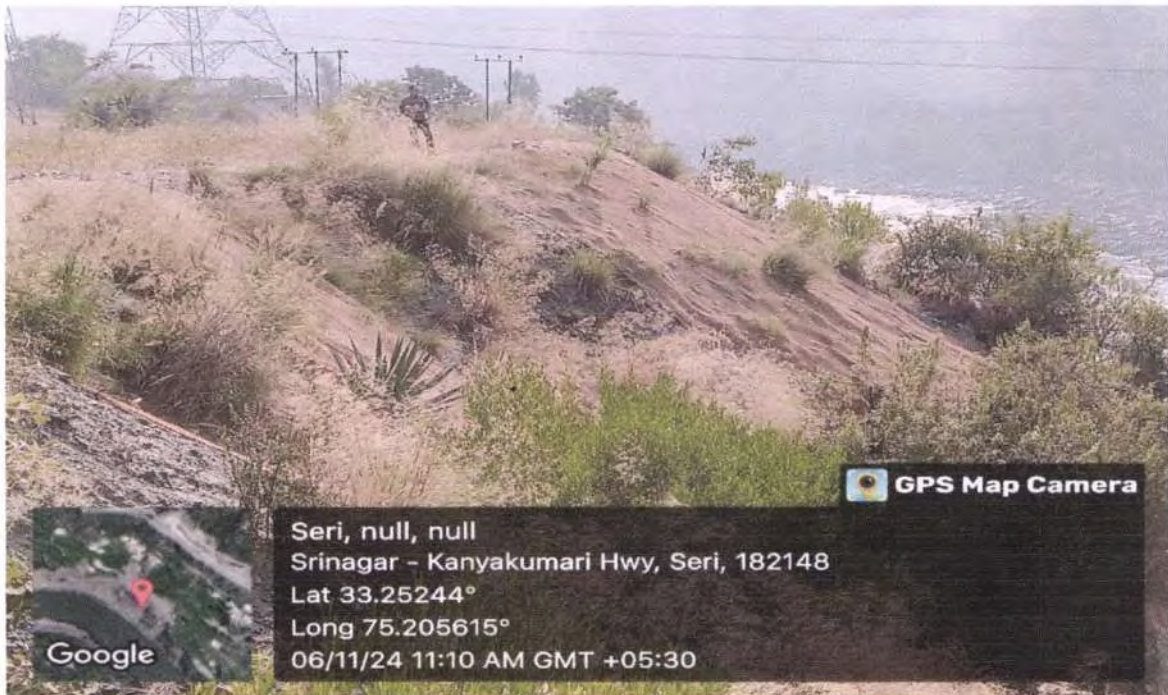
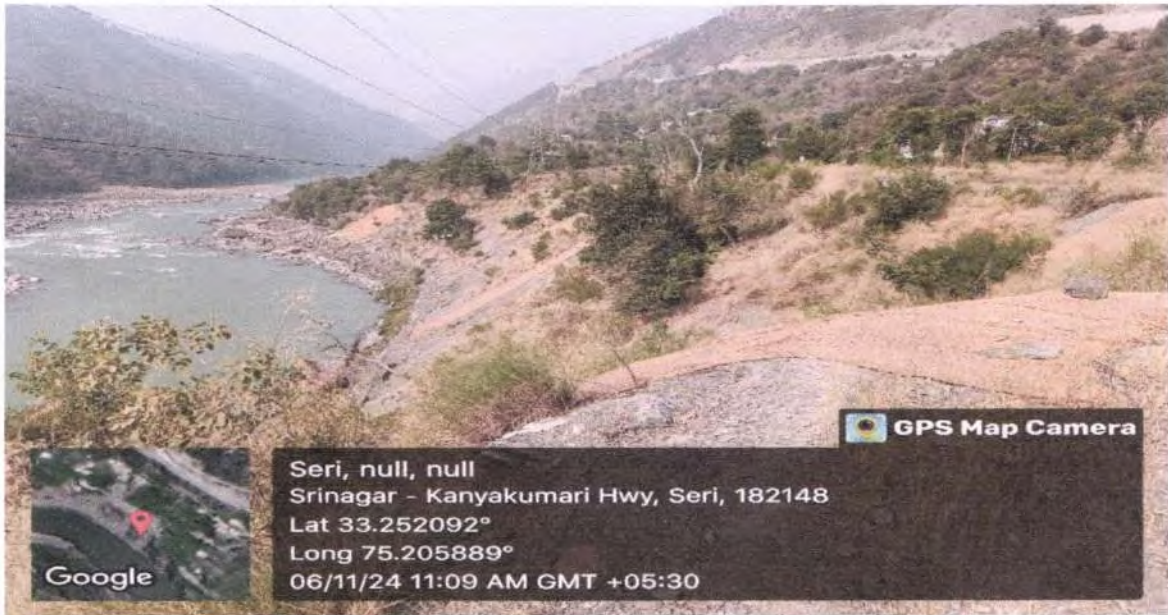
Location: Seri, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site.

MDS - 25, (NGT Site no. 03)

Location: Seri, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site. Natural vegetation on slopes.

MDS - 26, (NGT Site no. nil)
Location: Ahdwa, Ramban





Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site. Natural vegetation on slopes.

MDS - 27, (NGT Site no. 04)
Location: Ahdwa, Ramban



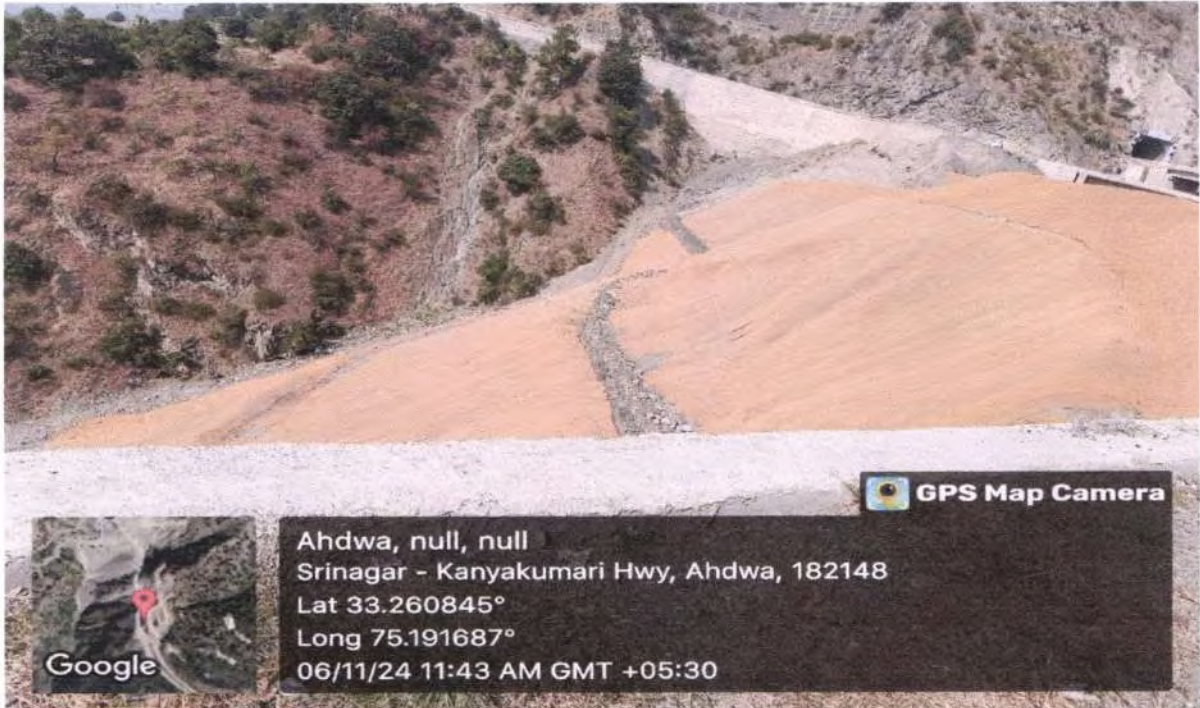




Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site. Channelization of nallah also done.

MDS - 28, (NGT Site no. 05)

Location: Ahdwa, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site. Channelization of nallah also done at site.

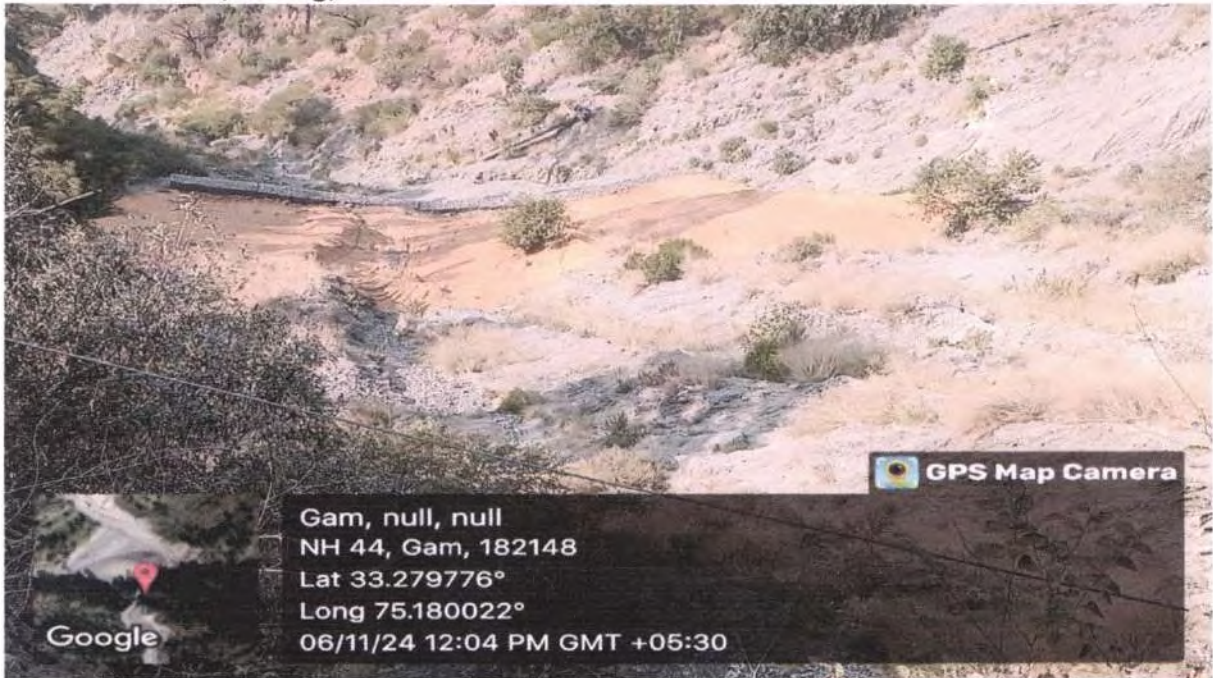
MDS - 29, (NGT Site no. 06)

Location: Ahdwa, Ramban



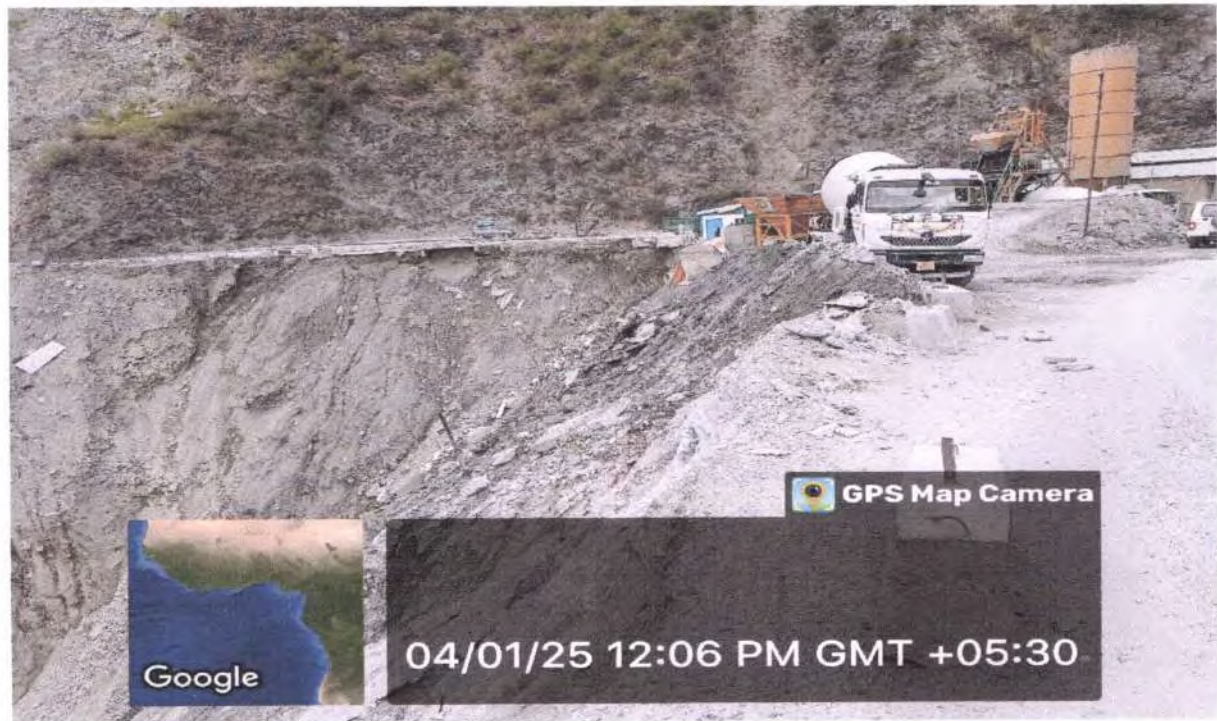
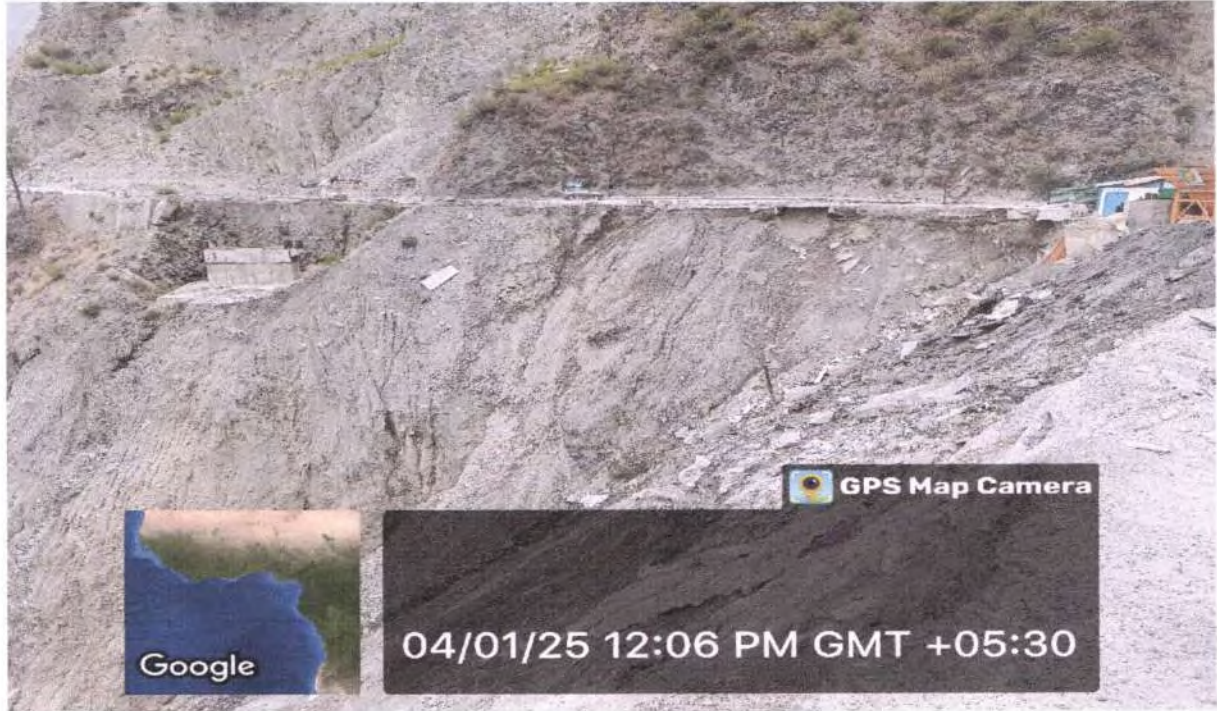
Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site by forest department.

MDS - 30, (NGT Site no. 07)
Location: Gam, Marog, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site. Natural vegetation on slopes.

MDS - 31, (NGT Site no. 08)
Location: Anokhi Fall, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site.

MDS - 32, (NGT Site no. 09)

Location: Battery Chashma, Ramban

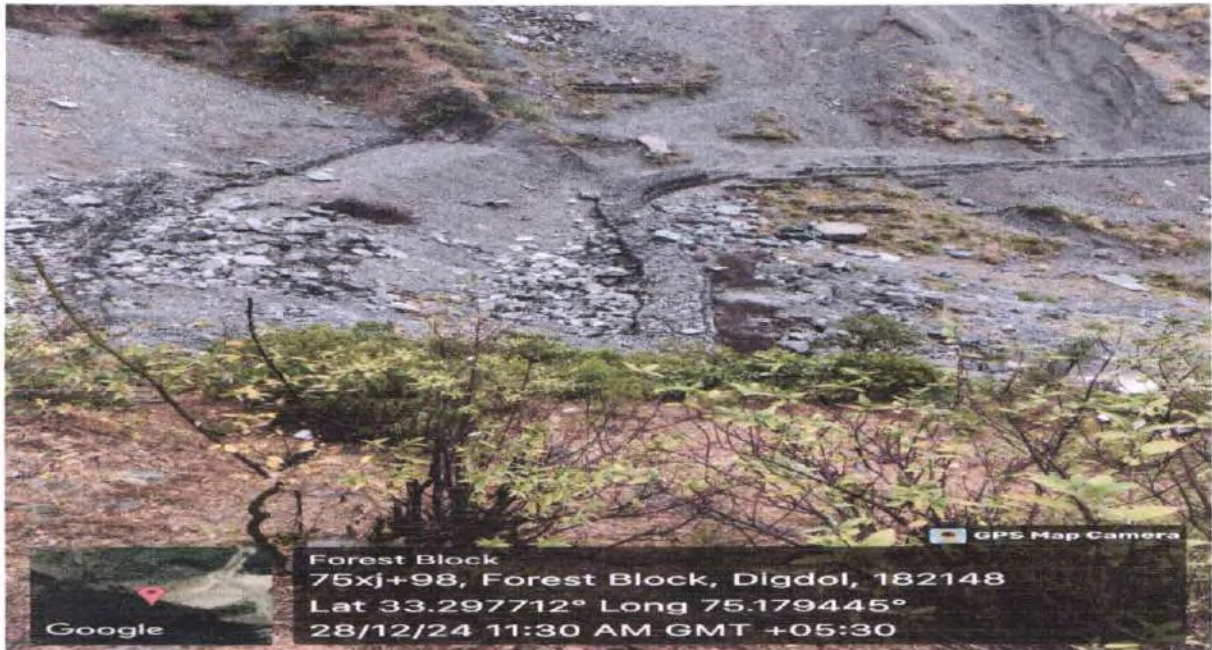


Details of Work done for restoration: More area about 60 kanals acquired for dumping of tunnel muck. New dumping will start only after proper protection.

MDS-33, (NGT Site no. 10-11)

Location: Digdole

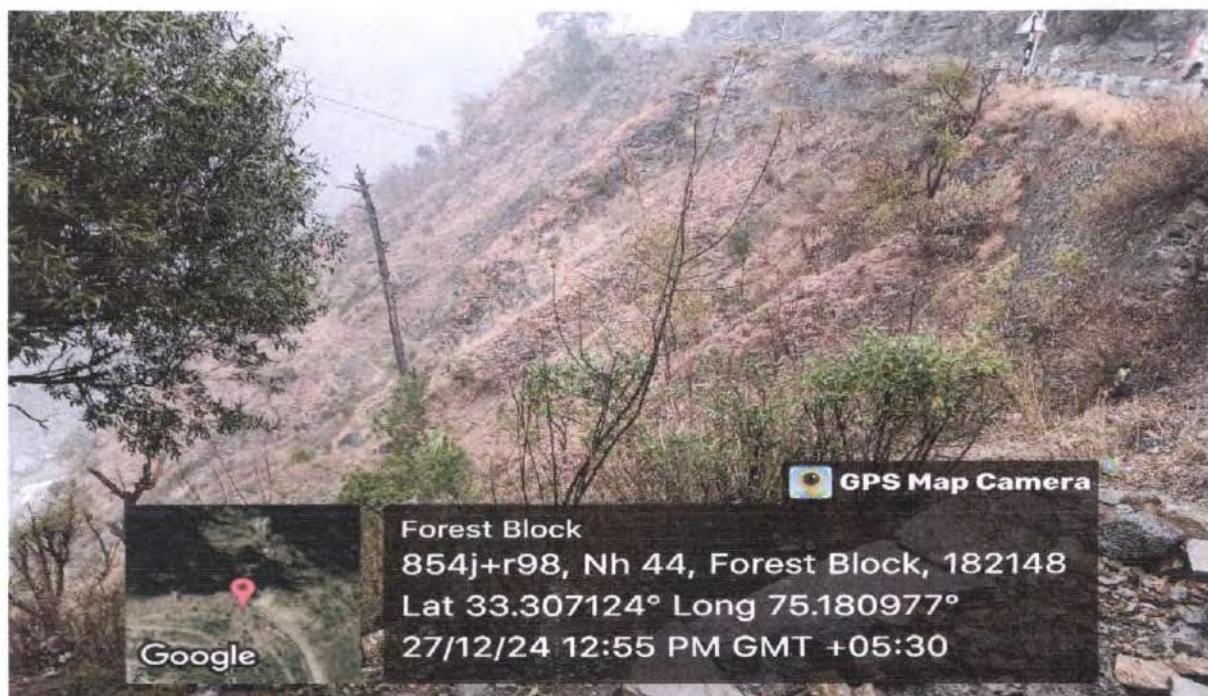




Details of Work done for restoration: Additional Forest land acquired for dumping of tunnel muck in realigned section. Gabions walls constructed at toe and completion will be done after completion tunnel excavation.

MDS - 34, (NGT Site no. 12)

Location:



Details of Work done for restoration: Natural vegetation available on slope. No further protection required.

MDS - 35 (NGT Site no. nil)

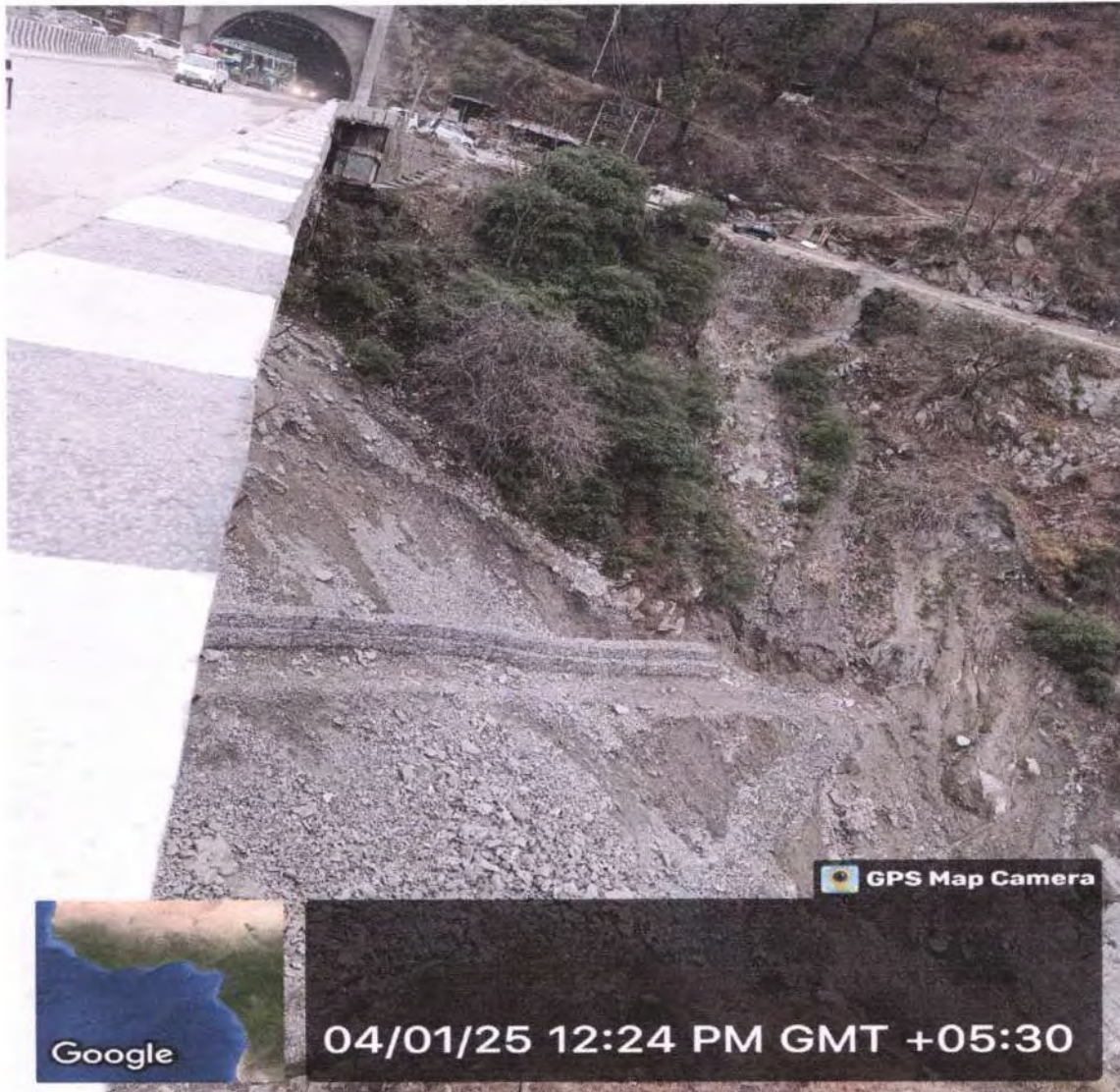
Location: Khooni Naalah



Details of Work done for restoration: No mulba dumped but mulba available along slopes is due to natural slides. Protection measure is not possible due to steep slope.

MDS - 36, (NGT Site no. 13)

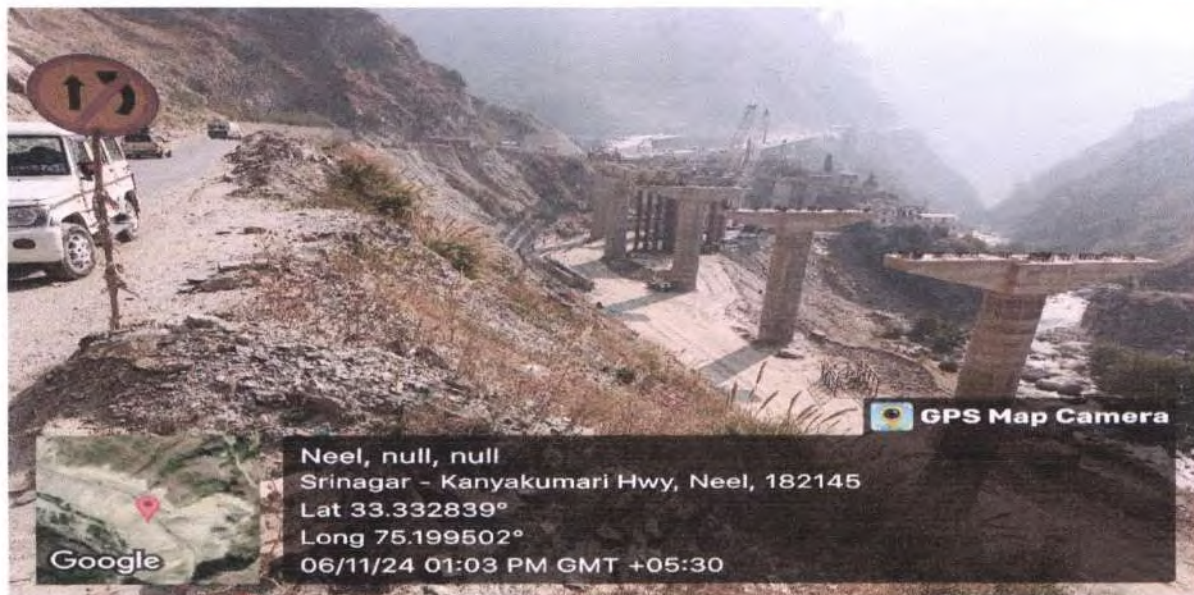
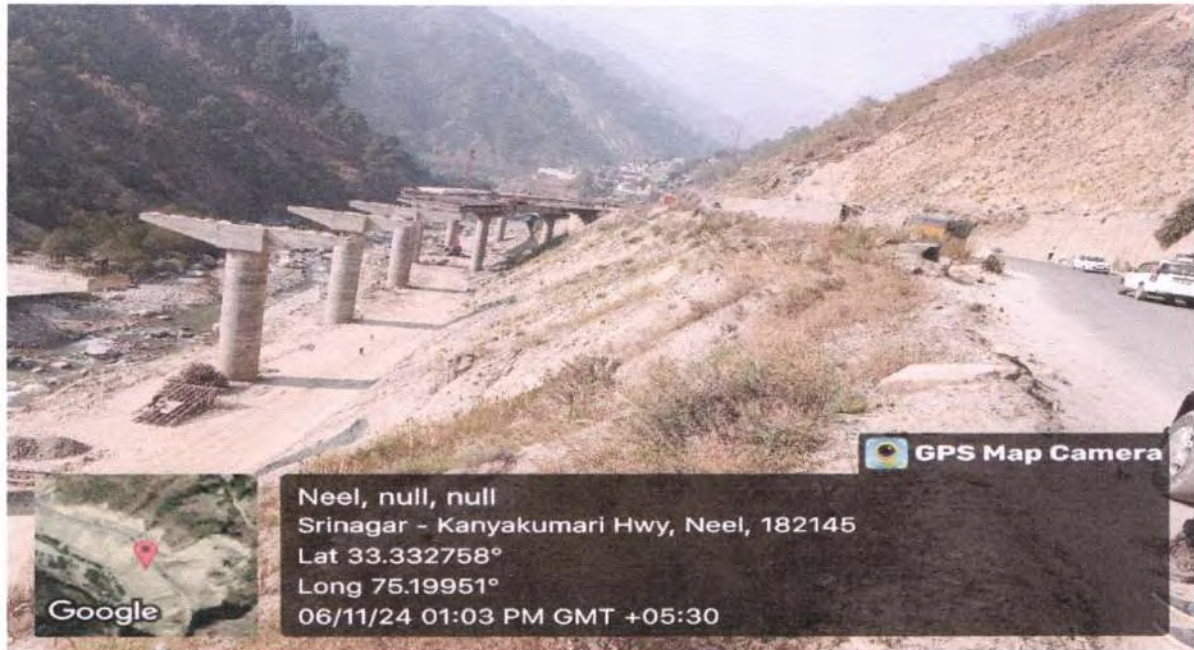
Location: Chak Narwah, Near North Portal of T3



Details of Work done for restoration: Toe of the slope have been protected by providing Gabion wall and natural vegetation have also occurred on slope.

MDS - 37, (NGT Site no. 14)

Location: Ramsoo, BDO Morh, Ramban



Details of Work done for restoration: Hill cutting has been stopped so as to reduce impact on the environment and the alignment has been changed by introducing viaducts which are under construction. Complete protection of bridge in the scope of contractor and will be completed after completion of Viaduct.

MDS - 38, (NGT Site no. 15)

Location: Ramsoo, Ramban



Details of Work done for restoration: Already stabilized and vegetation on slope.

MDS - 39, (NGT Site no. nil)

Location: Ramssoo, Behind SDM Office



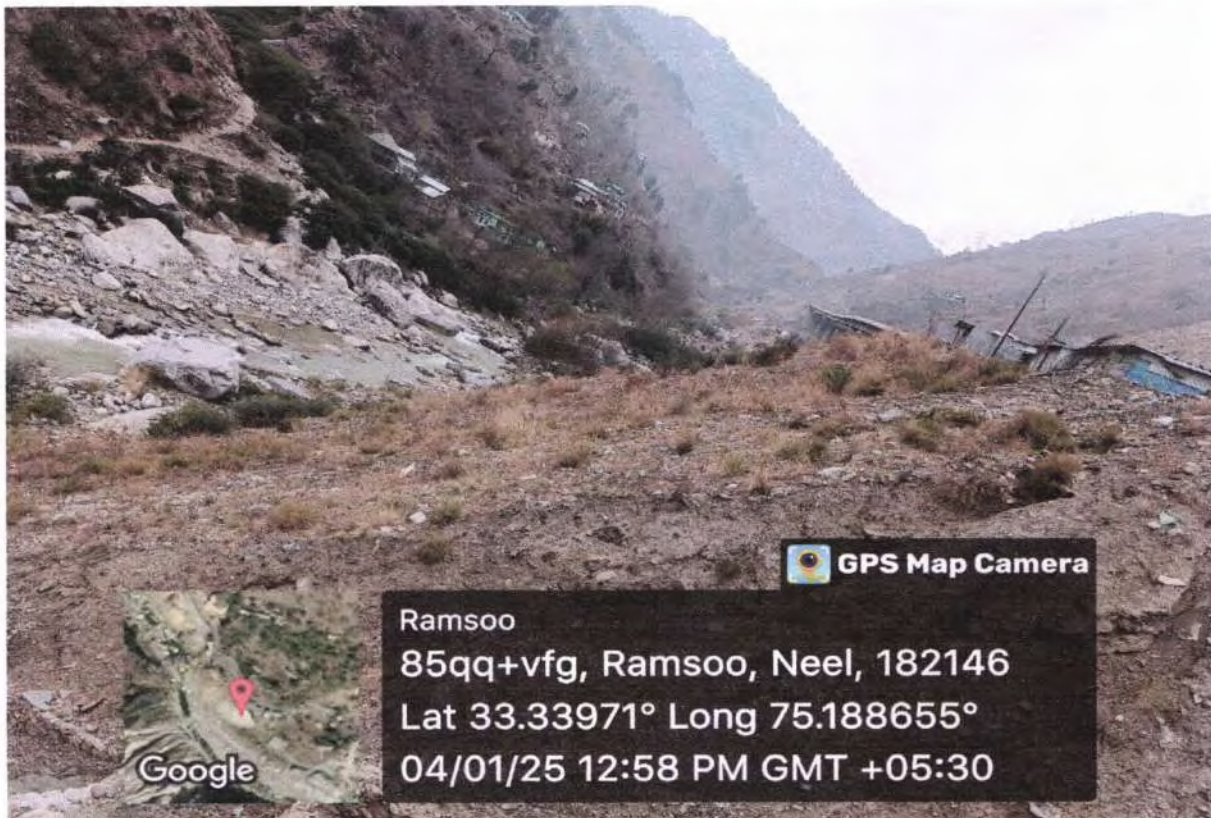
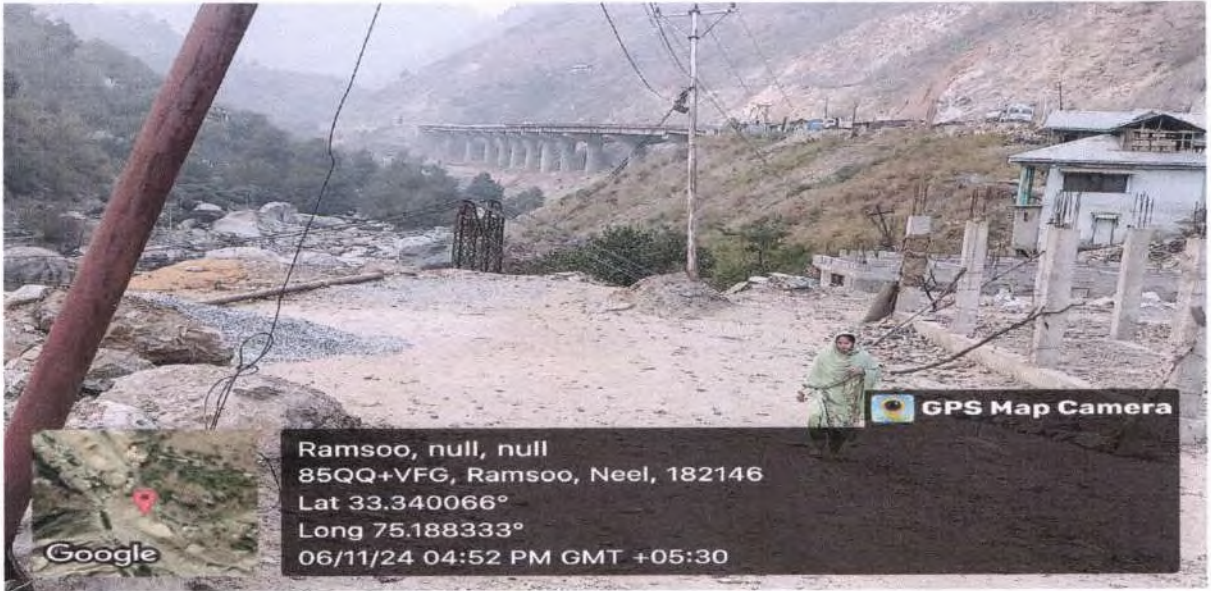
Details of Work done for restoration: site stabilized and vegetation on slope.

MDS - 40, (NGT Site no. 16)
Location: Ramsoo



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site.

MDS - 41, (NGT Site no. 17-18)
Location: Ramsoo near Viaduct-2





Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site. Natural vegetation has also grown on the site making it more stable.

MDS - 42, (NGT Site no. nil)

Location: Ramsoo, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site. Natural vegetation has also grown on the site making it more stable.

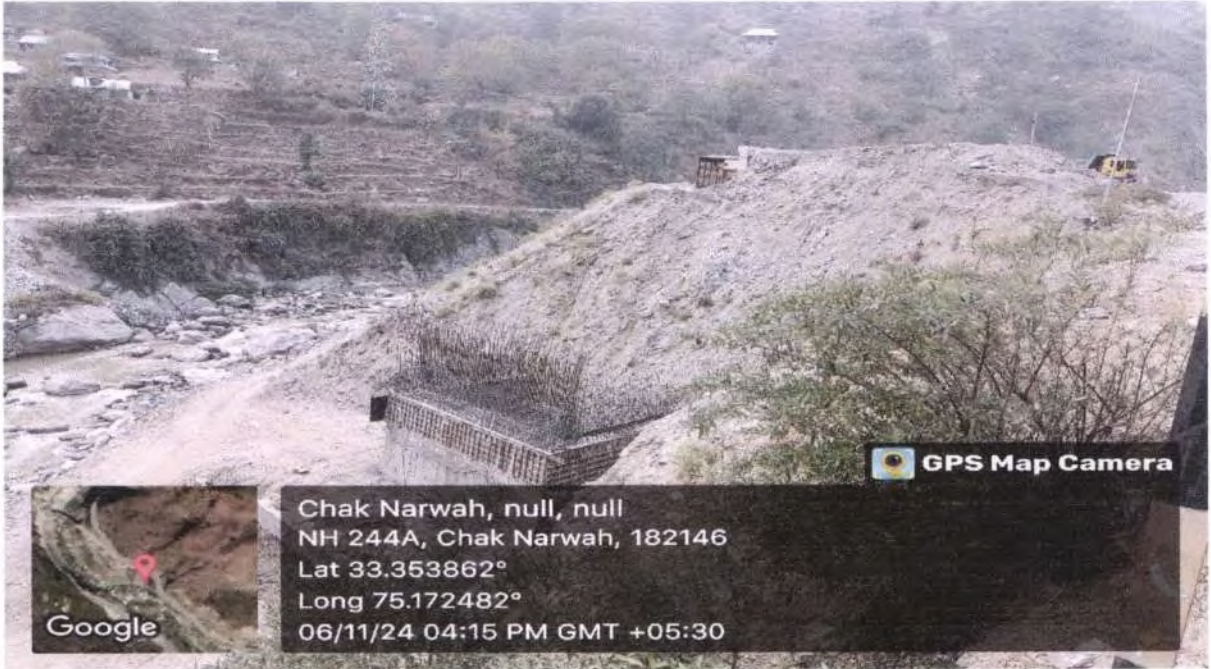
MDS - 45, (NGT Site no. nil)

Location: Hingni, Ramsoo, Ramban



Details of Work done for restoration: stabilized and vegetation on slope. To avoid cutting realignment by providing viaduct and is under construction.

MDS - 46, (NGT Site no. 19)
Location: Hingni, Ramssoo, Ramban





Details of Work done for restoration: Gabion wall provided. This dumping also the part of road in realignment.

MDS - 47, (NGT Site no. 20)

Location: Kishtawari Patthar, Nachalana, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site.

MDS - 48, (NGT Site no. nil)

Location: Dolegam, Sherbibi, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site. Natural vegetation has also grown on the site making it more stable.

MDS - 49, (NGT Site no. nil)

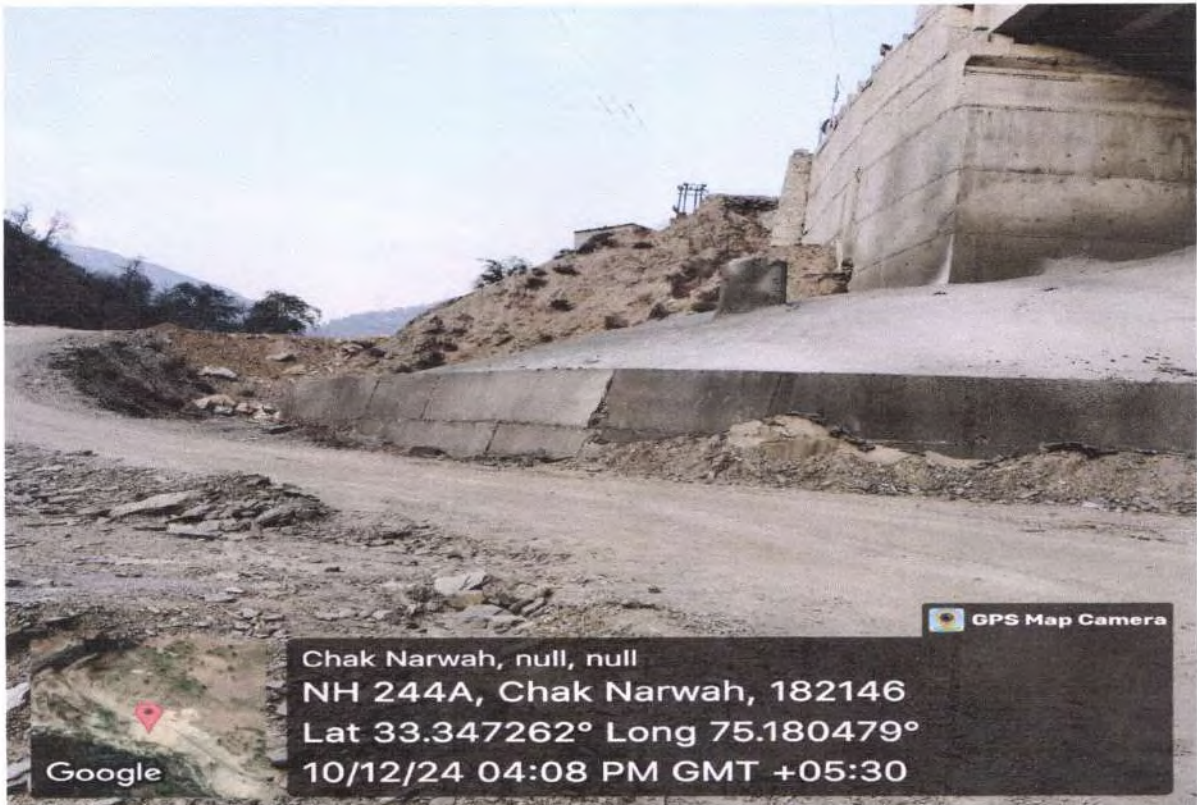
Location: Dolegam, Sherbibi, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site. Natural vegetation has also grown on the site making it more stable.

MDS - 50, (NGT Site no. 21)

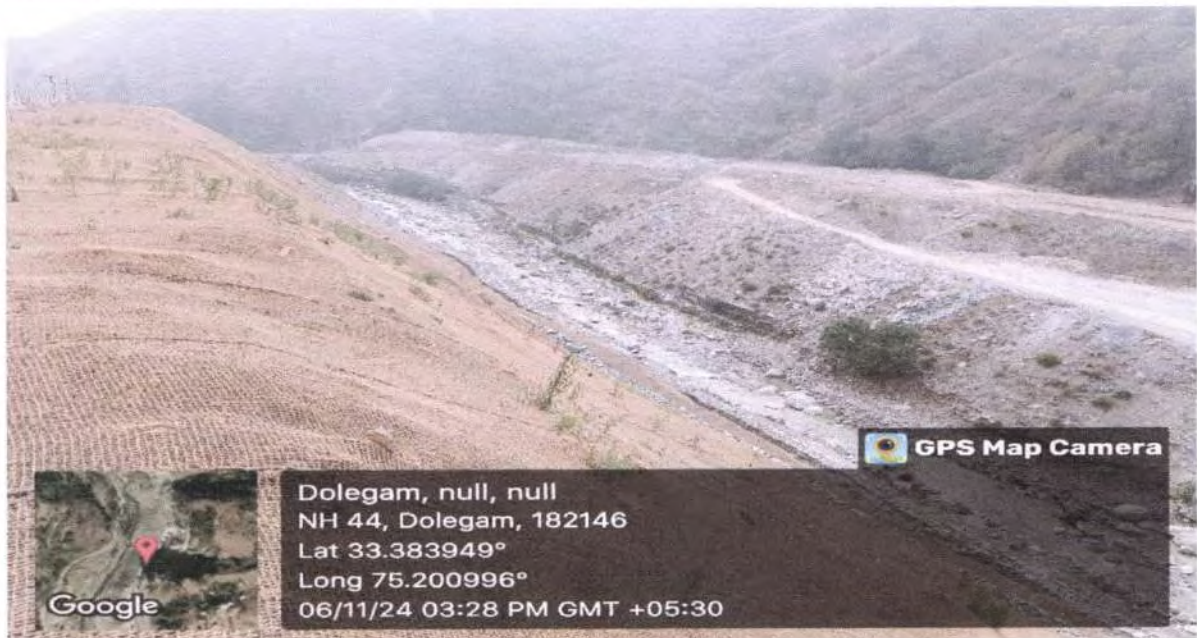
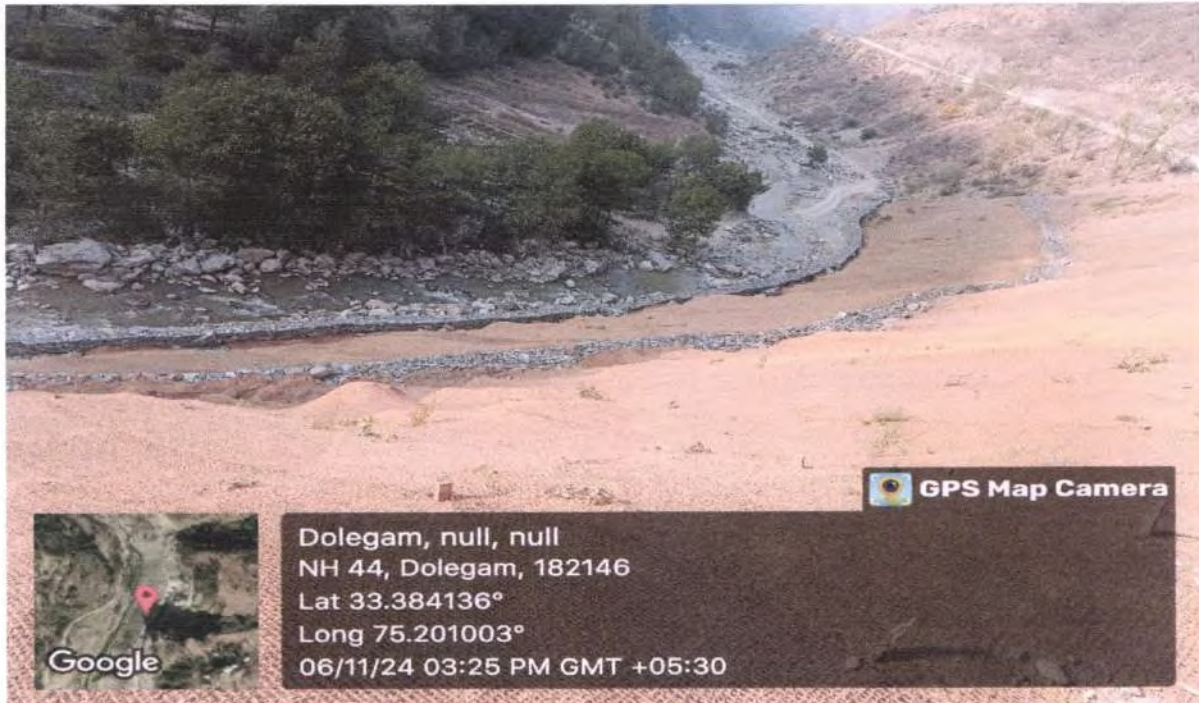
Location: Dolegam, Near Chinar tree Sherbibi, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site. Natural vegetation has also grown on the site making it more stable.

MDS - 52, (NGT Site no. 22)

Location: Shalgarhi Naalah near NT-2, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site. Natural vegetation has also grown on the site making it more stable.

MDS - 53, (NGT Site no. 23)

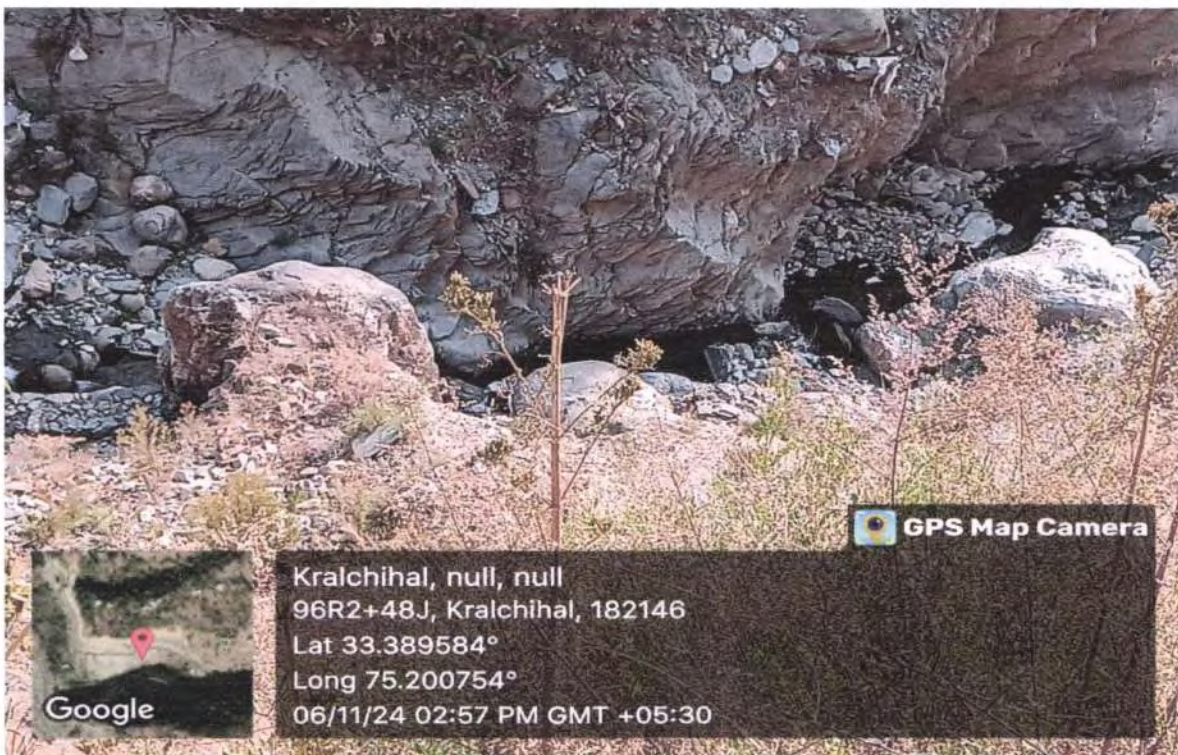
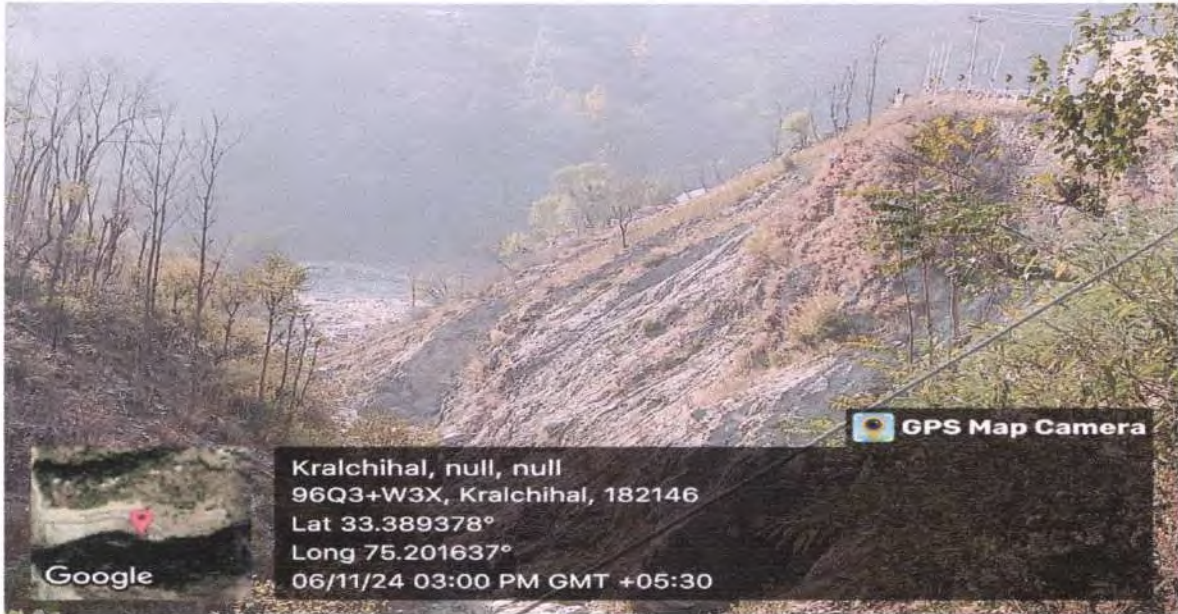
Location: Shalgarhi Naalah, Near MNB 21



Details of Work done for restoration: Gabion walls have been provided for stabilizing the site.

MDS - 54, (NGT Site no. 24)

Location: Kralchihal, Chamalwas, Ramban



Details of Work done for restoration: Site fully stabilized. Natural vegetation also occurred.

MDS - 55, (NGT Site no. nil)

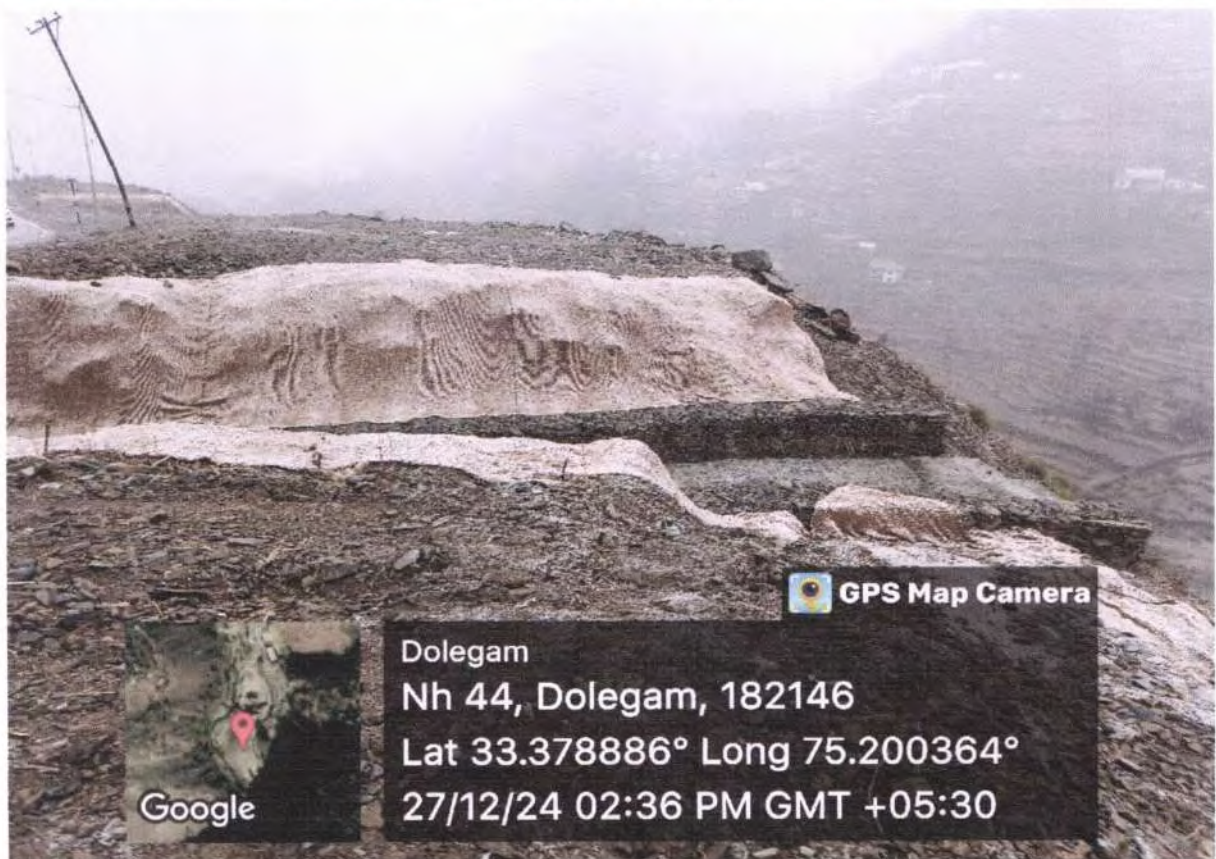
Location: Kralchihal, Chamalwas, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site.

MDS - 56, (NGT Site no. 25-26)

Location: Shabanbas, Chamalwas, Ramban





Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site. Channelization also nallah also done.

MDS - 57, (NGT Site no. 27)

Location: Banihal, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site Natural vegetation has also grown on the site making it more stable.

MDS - 58, (NGT Site no. 28)

Location: Banihal, Ramban



Details of Work done for restoration: Gabion walls have been provided for stabilizing the site. Natural vegetation has also grown on the site making it more stable.

MDS - 59, (NGT Site no. 29)

Location: Banihal, Ramban



Details of Work done for restoration: Gabion walls & Coir Matting have been provided for stabilizing the site. Natural vegetation has also grown on the site making it more stable.

11/5/24, 4:54 PM

Gmail - HCC letter _ HCC-RBRP-2024-25-24025 Dated 11-10-2024 - Regarding Restoration of Chenab River and tributaries to...



PIU RAMBAN <piuramban@gmail.com>

HCC letter _ HCC-RBRP-2024-25-24025 Dated 11-10-2024 - Regarding Restoration of Chenab River and tributaries to reinstate the valley slopes pertaining to Ramban Banihal project.

KANKREJ Swapnil /OPERATIONS/H.O. <Swapnil.Kankrej@hccindia.com>

Tue, Oct 22, 2024 at 11:37 AM

To: PIU RAMBAN <piuramban@gmail.com>

Cc: "RAI Santosh /OPERATIONS & CBO/H.O." <santosh.rai@hccindia.com>, RATRA Deepak /BUSINESS DEVELOPMENT/DELHI OFFICE <Deepak.Ratra@hccindia.com>, "MASCARENHAS Martha /BUSINESS DEVELOPMENT/H.O." <Martha.Mascarenhas@hccindia.com>, HCC-CPPPL DumpingYard <hcc.cpppldumpingyard@gmail.com>

Dear Sir,

Please find enclosed environmental Management plan for Dumping Site restoration for Ramban Banihal Project and location wise length of the same in which restoration has been completed.

Formal letter shall be submitted shortly.

With Regards,

SWAPNIL KANKREJ | DGM - Operations

HINDUSTAN CONSTRUCTION COMPANY LTD


Hincon House | [LBS Marg](#) | [Vikhroli West](#) | [Mumbai 400 083](#) | [India](#)

Tel: 91 22 25751000 / 1342 | Fax: 91 22 25777564 | Mob : 9920790303

Email : swapnil.kankrej@hccindia.com | Website : www.hccindia.com

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2 attachments **Dumping sites.pdf**
496K **ERP-jammu road rev.pdf**
8466K

ENVIRONMENTAL REHABILITATION PLAN (ERP)

**Muck Dumping Sites of Ramban-Banihal (km
151 to km 187) section of NH-44**

EPC Contractor

Hindustan Construction Co. Ltd. (HCCL)

PREPARED BY



SES TEST HOUSE, JAIPUR

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CHAPTER 1- INTRODUCTION

1.0 INTRODUCTION

National Highways Authority of India has undertaken 4 laning of Ramban-Banihal (km 151 to km 187) section of NH-44 in the Union Territory of Jammu & Kashmir under National Highways Development Program (NHDP) to facilitate existing road 2 lane road into an all-weather traffic worthy connectivity between Jammu & Srinagar, safe for operations by providing sustainable engineering solutions.

This Environmental Rehabilitation Plan (ERP) has been prepared for the Road Ramban-Banihal (km 151 to km 187) section of NH-44 to define the Environmental Management requirements of the muck disposal sites to ensure environmental safe guards.

Indiscriminate dumping of mucks in unsustainable manner in land and rivers by contractors / sub-contractors led to violation of environmental norms and the matter was heard before Honourable National Green Tribunal (NGT), Principal Bench, New Delhi. A monitoring committee (MC) was constituted headed by Justice J R Kotwal, a former judge of J&K High Court to give independent report on the matter. NGT passed series of orders for remedial actions. Hence as per the directions of Hon'ble NGT the Contractor Hindustan Construction Co. Ltd. (HCCL) have implement the restoration of disposal site. This ERP document is prepared by SES Test House, Jaipur to provide a framework for the effective restoration of muck disposal sites and to keep in check the Environmental Pollution.

The Environmental Rehabilitation Plan comprises site wise details of restoration measures identified for each muck disposal site and its implementation status. This Plan also Provides the activity-wise Budgetary details incurred upon the restoration of Muck disposal sites used by Contractor Hindustan Construction Co. Ltd. (HCCL).

1.1 ENVIRONMENTAL ASSESSMENT (EA) PROCESS

The site-specific issues are addressed in the Environmental Rehabilitation Plan (ERP). The ERP reports identify the environmental damage incurred due to indiscriminate dumping of muck disposal and incorporate the necessary mitigation measures required to minimise those impacts as well as to enhance the positive factors. All environmental mitigation costs have been included in the Table 4.1 Titled 'Expenditure done towards the Restoration of Muck disposal sites.

This Environmental Rehabilitation Plan has been compiled within the context that the proposed remedial measures have evaluated, planned, constructed and operated so as to reduce adverse social and environmental impacts and to meet or exceed requirements set out in applicable laws, regulations and standards. Hindustan Construction Co. Ltd. (HCCL) have applied cost effective good management practices to protect the social and biophysical environments

1.2 OBJECTIVES OF ENVIRONMENTAL REHABILITATION PLAN (ERP)

During the preparation and review of rehabilitation plans, a number of different factors have been considered which may influence decisions in selecting a rehabilitation strategy. These include:

- Return the disturbed areas to an acceptable state;
- Ensure all areas are stable, and there is no risk of erosion;
- Prevent alien plant invasion on the site and allow for the establishment of indigenous plant communities; and
- Ensure that all areas are free-draining and non-polluting.
 - To protect and control soil erosion
 - To create greenery in the muck disposal areas
 - To ensure maximum utilization of muck for the construction purpose
 - To develop the muck disposal sites/ dumping yards to blend with the surrounding landscape and to minimize damages due to the spoilage of muck in the project area.

1.3 ENVIRONMENTAL REGULATIONS APPLICABLE TO THE PROJECT

Summary of environmental clearances/ permits/ approvals required for the project is presented in **Table 1.1**. During the pre-construction stage, the responsibility of obtaining clearances from concerned authority lies with NHAI/Contractors. Those clearances which needs to be obtained during construction phase, but prior to work initiation lies with the contractor.

Table 1.1. List Of Environmental Regulations Applicable To The Project

Sl. No	Type of Clearance	Statutory Authority	Applicability	Project Stage	Responsibility
1.	Tree felling permission	District Collector & Forest Department	Felling of avenue trees	Pre construction	NHAI
2.	Consent to Establish under the Air (Prevention & Control of Pollution) Act, 1981 and The Water (Prevention & Control of Pollution) Act, 1974.	State Pollution Control Board	For establishing hot mix plants, crushers and batching mix plant	Construction (Prior to work initiation)	Concessionaire / Contractor
3.	Consent to Operate under the Air (Prevention & Control of Pollution) Act, 1981 and The Water (Prevention & Control of Pollution)	State Pollution Control Board	For operating hot mix plants, crushers and batching mix plant	Construction (Prior to work initiation)	Concessionaire / Contractor

Arshad M.

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*Environmental Rehabilitation Plan of Muck Dumping Sites
 Ramban-Banihal Section of NH-44*

4.	Permission to store Hazardous Materials under Hazardous Waste (Management and Handling) Act 1989	State Pollution Control Board	Storage and Transportation of Hazardous Materials and disposal of	Construction (Prior to work initiation)	Concessionaire / Contractor
5.	Explosive license under The Explosives Act (& Rules), 1884 (revised in 1983)	Chief Controller of Explosives, petroleum & Explosive Safety Organisatio	Storage of explosive materials and petroleum oils	Construction (Prior to work initiation)	Concessionaire / Contractor
6.	PUC for vehicles for construction under Central Motor and	Transport Department of Tamil Nadu	For all construction vehicles	Construction (Prior to work initiation)	Concessionaire / Contractor
7.	Quarry lease deeds and license under The Mines Act, 1958	Mines and Geology Department of Tamil Nadu	Quarrying and borrowing operations	Construction (Prior to work initiation)	Concessionaire / Contractor

Arshad M.

CHAPTER-2 PROJECT DESCRIPTION

2.0 PROJECT DETAILS

National Highways Authority of India has undertaken 4 laning of Ramban-Banihal (km 151 to km 187) section of NH-44 in the Union Territory of Jammu & Kashmir under National Highways Development Program (NHDP) to facilitate existing road 2 lane road into an all-weather traffic worthy connectivity between Jammu & Srinagar, safe for operations by providing sustainable engineering solutions.

The road section has been divided in multiple construction packages for ease of construction. M/s Gammon India Limited was appointed as contractor for Nasri-Ramban Section and construction is underway. M/s Hindustan Construction Co. Ltd (HCCL) was appointed for Ramban-Banihal Section but has been terminated. This section has now been divided further into four construction packages, out of which contractors have been appointed for 3 packages till November 2021. Details of the packages and contractors are presented in Table 2.1.

Table 2.1 Construction Stretches & Contractors

Sr. No	Road Stretch	Package	Contractor
1	Nasri-Ramban	-	M/s Gammon India Ltd
2	Ramban Banihal	I	Tata Projects Ltd in JV with CAI
		II	M/s CEIGALL India Ltd in JV with Patel infrastructure Pvt Ltd
		III	M/s CEIGALL India Ltd
		IV	M/s Dineshchandra R. Agarwal Infracon Ltd in JV with M/s ABCI Pvt Ltd

2.1 PROPOSED PROJECT IMPROVEMENTS

Study mandates the improvement of the project road to 4 lanes with paved shoulder standards with other improvements to make the road a standard facility. Improvement proposals formulated are based on the IRC guidelines and site-specific requirements. The proposed improvements are aimed at easing traffic congestion, reducing the road accidents by improving physical characteristics of the road, which includes geometry, pavement strength, drainage, and enhancing the aesthetics. General philosophy followed in formulating the improvement proposals are:

- Limit the improvements within the land identified for the project.
- Introduce transition to all the curves along the alignment
- Utilize the available Right of Way to the maximum extent possible so as to avoid additional land acquisitions
- Improve and introduce the project facilities
- Improvement of road safety features

Accordingly, the following optimum level of improvements is proposed:

- Widening of the project road as the traffic warrants;
- Strengthening/reconstruction of the existing pavement for the entire length;

- Provision of open lined drain at village areas;
- Improving / redesigning sharp curves;
- Widening/ reconstruction of existing culverts and provision of additional culverts depending on the cross-drainage requirements;
- Bridge and cross drainage rehabilitation, widening and reconstruction.
- Junction improvements;
- Provision for pedestrian crossing facilities;
- Street lights will be provided at urban and village areas;
- Provision of traffic signs

2.2 NGT ORDERS

Indiscriminate dumping of mucks in unsustainable manner in land and rivers by contractors / sub-contractors led to violation of environmental norms and the matter was heard before Honourable National Green Tribunal (NGT), Principal Bench, New Delhi. A monitoring committee (MC) was constituted headed by Justice J R Kotwal, a former judge of J&K High Court to give independent report on the matter. NGT passed series of orders for remedial actions.

Table 3.1 Summary of NGT Orders

Orders	Date	Summary
First Order	24.08.2018	Tribunal constituted a Monitoring Committee (MC) headed by Justice J.R. Kotwal to give an independent report in the matter.
Second Order	12.02.2019	In the light of preliminary report of the MC, the Tribunal directed M/s GIL and M/s HCCL to pay interim compensation for damage to the extent of Rs.1 Crore each and performance guarantee of same amount for improving the situation within next three months. The order was affirmed by the Hon'ble Supreme Court on 08.07.2019 in Civil Appeal No. 5113-14/2019.
Third Order	11.07.2019	The Tribunal considered the report filed on 09.07.2019 based on inspection conducted on 02.05.2019 and directed M/s GIL and M/s HCCL to furnish
Orders	Date	Summary
		performance guarantee of Rs.2 Crore each and NHAI to furnish performance guarantee of Rs.1 Crore to the satisfaction of CPCB for
Fourth	09.01.2020	The fourth order also found that violations were continuing and remedial action was directed to be taken.
Fifth Order	20.03.2020	The Tribunal considered report dated 17.03.2020 by MC based on site inspection on 29th – 31st January 2020 and directed that the suggestions
Sixth Order	28.09.2020	The Tribunal considered report dated 24.09.2020 by MC based on status reports dated 31.07.2020 and 17.09.2020 by J&K Pollution Control Board
Seventh	28.06.2021	Since the violations were found to be continuing, the Tribunal directed taking coercive measures against the violators and also required MD of

Final order	29.10.2021	<p>In pursuance of the above, Mr. Giridhar Aramane, Chairman NHAi and Dr. Neelu Gera, Chairperson J&K PCC were present in person.</p> <p>J&KPCC reported that prosecution has been initiated against NHAI and its contractors under Water Act 1974, Air Act 1981 and Environment (Protection) 1986 on 17.08.2021. Technical Advisory Committee of J&K PCC undertook field visits to study the extent of damage and assessed the amount of Rs. 129 core (approx.) for restoring the damage by way of execution of environment management plan.</p> <p>2% of the above amount was assessed as deterrent measure for environmental compensation which has been deposited. Stand of the NHAI is that action has been initiated for rehabilitation of dumping sites by way of civil work for which tender was floated and work will be awarded by first week of November 2021. Estimated cost of lifting the extra muck is 20.22 crores.</p> <p>Violations are by the contractors against whom action has been initiated. Contract of HCCI have been terminated and notice of termination has also been given to the Gammon Engineers and Contractors.</p> <p>Tribunal directed NHAI to set apart Rs 129 crore as tentative cost of implementing environment management plan. NHAI is free to proceed against contractors, if permissible in terms of contractual rights. NHAI may implement the EMP which should include restoration of damage during the course of construction of NH-44 so far. Restoration plan may be prepared within one month by NHAI which may be overseen by the monitoring committee constituted by this Tribunal, with the assistance of any other experts/institutions/or otherwise. Thereafter, the same may be executed as far as possible within 6 months. NHAI will be bound by the direction of the monitoring committee subject to any objection against the same being agitated before this Tribunal.</p>
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*Environmental Rehabilitation Plan of Muck Dumping Sites
Ramban-Banihal Section of NH-44*

2.3 LIST OF DUMPED MUCK SITES BY HCCL

The entire stretch between Ramban to Banihal was surveyed for all muck dumping sites (MDS) to collect primary data on sites where muck has been dumped. Based on the survey, a comprehensive list based on continuity of geographic location has been prepared. The details of Dumping Sites restored by HCCL is given below:

Table 2.1 Dumping Sites restored by HCCL

S.No	MDS No	Name of the Site/ Village	Chainage SB/NB	GPS Coordinates	Status
1.	MDS 25	Seri	152+800	33° 14'58" N 75°13'02" E	Rehabilitation work completed by HCC Ltd
2.	MDS 26	Maroog - I	154+000 to 154+200	33° 15'27" N 75°11'45" E	Rehabilitation work completed by HCC Ltd
3.	MDS 27	Maroog II (Near Tunnel- T2)	155+000 to 155+100	33° 15'47" N 75°11'29" E	Rehabilitation work completed by HCC Ltd
4.	MDS 30	Battery Cheshma	158+710 to 158+960	33° 16'48" N 75°16'48" E	Rehabilitation work completed by HCC Ltd
5.	MDS34	Digdole - III	163+200 to 163+290	33° 18'27" N 75°10'52" E	Rehabilitation work completed by HCC Ltd
6.	MSD 40	Ramsoo	168+680 to 169+100	33° 20'43" N 75°11'13" E	Rehabilitation work completed by HCC Ltd
7.	MDS 52	Sherbibi	175+400 176+200	33° 12'22" N 75°12'2" E	Rehabilitation work completed by HCC Ltd
8.	MDS 55	Chamalwas	177+000to177+050	33° 23'20" N75°12'7" E	Rehabilitation work completed by HCC Ltd
9.	MDS 57	Rattanwas III	181+580 to 181+650	33° 25'23" N 75°12'17" E	Rehabilitation work completed by HCC Ltd
10.	MDS59	Banihal - I & II		33° 25'46" N 75°12'15" E	Rehabilitation work completed by HCC Ltd
11.	MDS22	Seri-Chamba	150+330 to	33° 14'58" N 75°13'33" E	Rehabilitation

*Environmental Rehabilitation Plan of Muck Dumping Sites
Ramban-Banihal Section of NH-44*

			150+900		work completed by HCC Ltd
12.	MSD 28	Maroog- III	155+760 to 155+870	33° 15'17" N 75°17'06" E	Rehabilitation work completed by HCC Ltd
13.	MSD 47	Kishtwari Pathar	173+530 to 173+800	33° 22'02" N 75°11'16" E	Rehabilitation work completed by HCC Ltd
14.	MDS58	Kharpora Banihal	181+690 to 181+740	33° 25'23" N 75°12'17" E	Land owner proposal for Petrol Pump

Note: Please refer Annexure-1 for Location map

CHAPTER 3- STABILIZATION OF MUCK DISPOSAL SITES

3.1 Introduction

Based on the geological nature of the rocks and engineering properties of the soil, a part of the muck generated can be used as construction material. The balance needs to be suitably disposed. Normally, muck is disposed in low-lying areas or depressions. Trees, if any, are cut before muck disposal, however, shrubs, grass or other types of undergrowth in the muck disposal sites perish. The muck disposal sites will be suitably stabilized on completion of the muck disposal.

- Muck disposal can lead to impacts on various aspects of environment. Normally, the land is cleared before muck disposal. During clearing operation trees are cut, but undergrowth perishes as a result of muck disposal.
- In many of the sites, muck is stacked without adequate stabilization measures. In such a scenario, the muck moves along with runoff and creates landslide like situations. Many a times, boulders/large stone pieces enter the river/water body, affecting the benthic fauna, fisheries and other components of aquatic biota.
- The increased vehicular movement near muck disposal sites lead to adverse impacts on ambient air quality as well. However, increase in vehicular traffic is not significant to cause major impact on ambient air quality.
- Normally muck disposal is done at low lying areas, which gets filled up due to stacking of muck. This can sometimes affect the natural drainage pattern of the area leading to accumulation of water or partial flooding of some area which can provide ideal breeding habitat for mosquitoes.

Thus, it is necessary to develop a proper Rehabilitation plan for amelioration of above referred impacts

The proposed muck disposal sites are located in Ramban district, which is situated in Pir Panjal range of middle Himalayas on the banks of river Chenab in Jammu & Kashmir State. The district is all mountainous and has a tough terrain. River Chenab passes through the lower part of the district in between steep mountain ranges. The occurrence of land slide is quite widespread phenomenon in this region. Failure of muck slope, often the result of weather events, can block roads, damage pavement and pose numerous safety hazards. Therefore, Engineering Solutions along with bio-engineering has been proposed for stabilization & restoration of muck slope.

3.2 Stabilization of Muck through Engineering Solutions

A. Rolling & Landscaping of top surface:

The muck is properly roller compacted and dumped on slopes and treated to mix and match with the surrounding environment with least change in landscape.

B. Gabion Wall with Gravel Riprap at base for River Bank Protection

Gabion are wire-stone element in the shape of hexagonal or cuboids made of wire mesh with double or triple twisting, filled with local stone or quarry using for retaining wall, sea walls, mechanically stabilized earth MSE walls, hydraulic works and channels lining or revetments. The primary purpose of gabion retaining wall is to provide lateral movement of soil or rock in order to control the active earth pressure and also resist the transverse load in case of gravity retaining wall which are settled and stabilized by their weight. Gabion walls are GI wire mesh tested by laboratory to verify their galvanizing and gauge properties having hexagonal and certainly may be rectangular in structure with double or triple twisting should be given in order to enhance strength property. The wire mesh containers or mattresses are properly filled by local boulders or stones approved from different quarries sources depending upon the size and shape.



C) Gabion Wall with terracing, as applicable for Slope Protection

Gabion walls are a popular choice for terracing sloped land because they provide structural support and a natural look. Gabion walls are also used for slope protection in many other ways, including:

- Erosion control

Gabion walls are effective at preventing soil erosion, especially in hilly or sloped areas.

- Landslide mitigation

Gabion walls can be placed on soil to create a check dam that slows and directs water flow, preventing landslides.

- Roadway stabilization

Gabion walls can reinforce roads built on steep terrain to ensure their safety and longevity.

- Riverbank and shoreline protection

Gabion walls can protect riverbanks and shorelines from erosion while allowing for natural vegetation growth.

- Aesthetic landscaping

Gabion walls can be used to create garden features, seating areas, or boundary walls

D. Stepped Gabion Wall for Brook Channelization

Gabion wall have been used widely in the world and more than a century in numerous erosion control projects, soil reclamation work, stream channels construction and retaining structures

They are permeable structures, capable of collecting and transporting groundwater and therefore, able to attenuate a principal cause of soil instability. The drainage function is further augmented by evaporation generated by the natural circulation on air through the voids in the fill.

They are easily installed, i.e. that deployment is possible without the aid of special equipment of highly trained personnel. This aspect is notably important in river and marine reclamation, where rapid intervention to retain soil is often necessary and/or when post-deployment modifications are necessary



E. Re-Channelization of Brook by Hume Pipes

Reinforced Cement Concrete (RCC) Spun / Hume Pipes are generally used for water drainage, sewerage, culverts and irrigation. RCC Pipes are very much preferred for such usage because they are leak proof, are easily repairable and are non-reactive to sewerage toxins. Concrete Pipes has been estimated to easily last around 100 years and as such they are fit and forget solution which is why they are preferred over other materials for such usage



3.3 Stabilization of Muck through Bio-Engineering

The proposed muck disposal sites are located in Ramban district, which is situated in Pir Panjal range of middle Himalayas on the banks of river Chenab in Jammu & Kashmir State. The District is all mountainous and has a tough terrain. River Chenab passes through the lower part of the district in between steep mountain ranges. The occurrence of land slide is quite widespread phenomenon in this region. Failure of muck slope, often the result of weather events, can block roads, damage pavement and pose numerous safety hazards. Therefore, bio-engineering has been proposed for stabilization & restoration of muck slope.

Components of bio-engineering

1. Geo-nets, Geo composites Drain
2. Geotextile
3. Hydro-seeding

1. Geo-nets / Geo-composites and Micro Siphon Drain

Drainage using geo-synthetics is usually designed with either geo-nets or with a geo-composite. These hybrid geo-synthetics are made by combining different types of geo-synthetics components and serve the purpose of providing both filtration and drainage.

Geo-nets are typically formed by two biplanar sets of relatively thick, parallel, polymeric ribs bounded in such a way that the two planes of strands intersect at a constant acute angle, forming a diamond-shaped pattern. In order to prevent soil / muck intrusion into the voids, geo-nets are generally used in conjunction with geotextiles and / or geomembranes.

Where larger drainage volumes are required, geo-composites consist of corrugated, “waffle” type or “dimpled” geomembrane cores with large porosity, attached to a geotextile for filtration and to prevent soil intrusion. Geo-composite drains may be configured to act as a central drain where a geotextile fabric fully wraps a plastic core.



Geonet geo-composite drain



Geo-composite “waffle” sheet drain

2. Geotextile

Geotextile are continuous sheets of woven, nonwoven, knitted or stitched fibres. They may be made of a variety of types of fibres, including natural yarns or polymeric fibres.

Coir Geotextile: Coir is a biodegradable organic fibre material which is coarse, rigid and strong. Coir geotextiles are made from coconut fibre extracted from the husk of coconut. Coir fibre is weather resistant and resistant to fungal and bacterial decomposition. The rate of decomposition of coir is much less than any other natural fibre. These characteristics are attributed due to the high lignin content in the fibre. Coir in the form of woven mesh mattings or non-woven stitch bonded blankets are used in engineering applications in the geotechnical field.



Advantages of Coir Geotextile

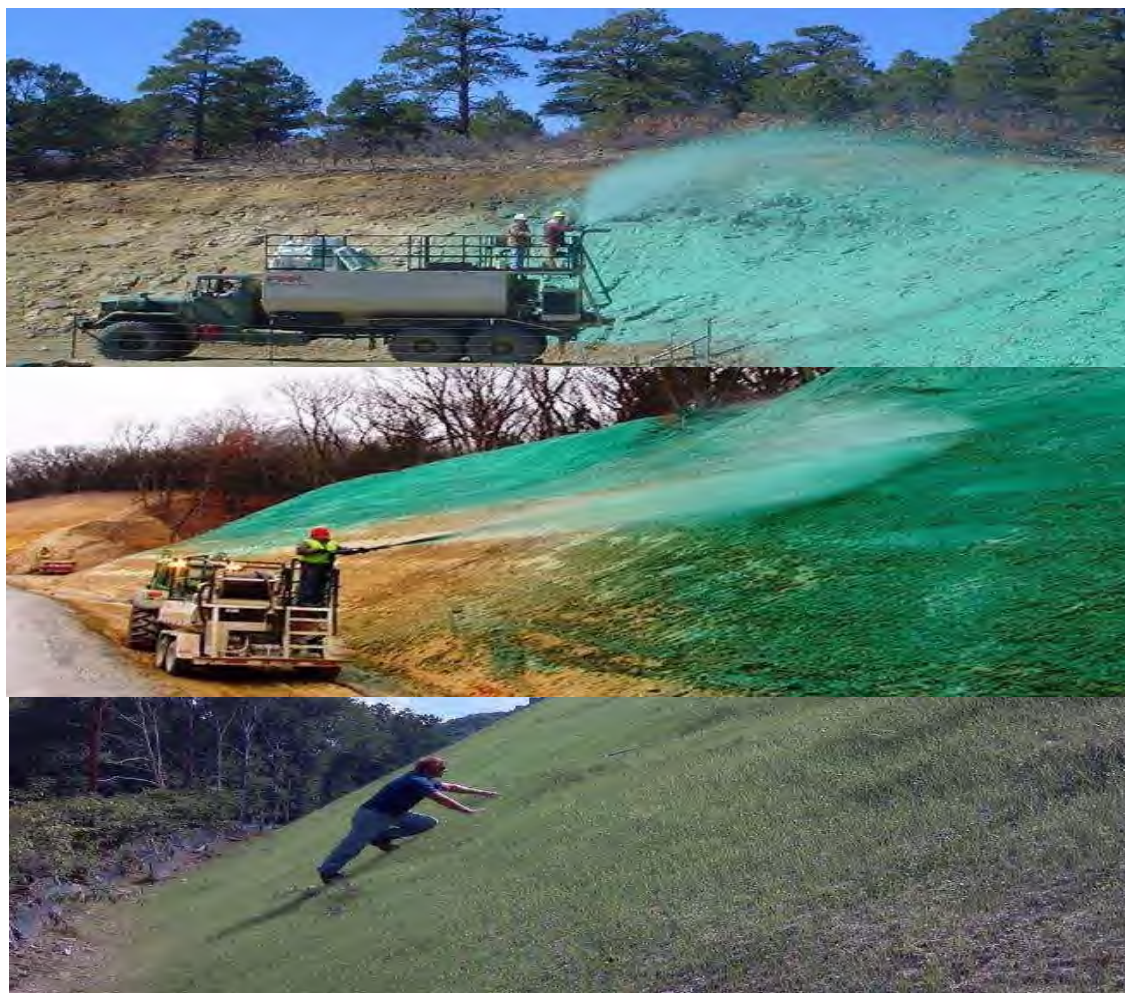
- The high tensile strength of coir fibre protects steep surface from heavy flows and debris movement
- Easy to install and huge contour of the soil surface due to its heavy weight and ability to absorb water
- Biodegradable, 100% natural
- Water absorbent, thus act as mulch on the surface and as a wick in the soil mantle
- Environmentally friendly and aesthetically pleasing and nonpolluting
- Provides excellent microclimate for plant establishment and healthy growth
- The thick and protruding fibers from the yarn render an extra protection against soil erosion and provide roughness to the surface floor and hold the soil particles in place.
- Holds the seeds and saplings in place
- Allows sunlight to pass through

Coir Geotextile is laid on the shoulder and slope surface helped retain the soil particles and prevented detachment of soil particles from the prepared slope. Establishment of vegetation ensured stabilization of the soil on the slope surface. It is a bio-degradable natural geotextile, can conveniently be used for controlling surface soil erosion and help growth of vegetation as a bio-engineering measure. After biodegradation coalesces with the soil and adds nutrient to the soil and fosters growth of vegetation.

2. Hydro-seeding

Hydro-seeding is a planting process that uses slurry of seed and mulch. A mixture of selected grass seeds, fertilizers, soil binders, mulch, soil ameliorants, organic supplements and water is hydraulically sprayed onto prepared surfaces at high pressure and volume. The soil binders and mulch bind the surface, creating a microclimate that will permit seed germination to take place when the soils moisture and temperature conditions are favourable. Vegetation establishment will be visible within 3-5 days

The hydro-seeding slurry is transported in a tank, either truck-mounted or trailer-mounted and sprayed over prepared ground. It is an alternative to the traditional process of broadcasting or sowing dry seed.



Role of Vetiver Grass in Slope Stabilization

- Vetiver grass (*Chrysopogon zizanioides*) is **native to India**. It has been shown to be a simple and economical method to conserve soil by slowing the velocity of water and trapping sediment, filtering out nutrients, and stabilizing steep slopes.
- Vetiver grass does not have stolons or rhizomes. Unlike most grasses, it does not form

a horizontal mat of roots; rather, the roots grow almost exclusively downward, 2–4 m, which is deeper than some tree roots. This makes vetiver an excellent stabilizing hedge

- Highly resistance to pests, diseases and fire
- A dense hedge is formed when planted close together acting as a very effective sediment filter and water spreader
- Tolerance to extreme climatic variation such as prolonged drought, flood, submergence and extreme temperature from -14°C to $+55^{\circ}\text{C}$
- Tolerance to wide range of soil pH from 3.3 to 12.5 without soil amendment
- High level of tolerance to herbicides and pesticides
- When planted closely together, Vetiver plants form dense hedges that reduce flow velocity, spread and divert runoff water and create a very effective filter that controls erosion



CHAPTER-4 ENVIRONMENTAL REHABILITATION PLAN

4.1 Rehabilitation Measures

The dumping of rock spoil can potentially be a cause for environmental problems and land degradation. It may cause landslides if not disposed properly and be an aesthetical damage to the natural landscape. Improper muck dumping without slope protection measures results in wash away into the river causing siltation and blockage of natural channels. The trees and undergrowth vegetation of the dumping sites are also affected due to change in land use. Further, when stacked without adequate stabilisation measures, muck moves along with runoff and creates landslides.

The environment management plan for rehabilitation / restoration of muck disposal sites has been formulated specific to be site based on individual site condition, location and distance of water channels from the sites, slopes and green cover. The mitigation measures include but not limited to construction of gabion walls with gravel riprap for bank protection, rolling and landscaping of top surface so that land can be used for utilities or other purposes, re- channelization of brooks located within the muck disposal sites and bio-engineering techniques for eco-restoration etc. Length of the walls to be constructed for bank and slope protection as well as terracing requirement have also been specified, though it may vary to some extent as per site conditions or accessibility of site of construction. (as many sites have steep slopes). The formulated mitigation measures for all 16 muck disposal sites are provided in Table 4.1 and also summarized with coloured index in Table 4.2. Component-wise quantification of suggested mitigation measures are provided in Table 4.3.

Table 4.1: site specific measures taken for restoration of Muck Dumping Sites

MDS No	Improvement Proposal
MDS22	River bank protection measures required for bank (dumped side) of Chenab River. Slope stabilization & eco-restoration through bioengineering.
MDS25	River bank protection measures required for bank (dumped side) of Chenab River. Slope stabilization & eco-restoration through bioengineering.
MDS26	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS27	River bank protection measures required for bank (dumped side) of Chenab River. Slope protection by 6 gabion walls with terracing is required. Dighor Nala is flowing through the site; therefore, it is required to be channelized through stepped gabion wall for entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS28	This site has potential to accommodate additional muck. Slope protection by 6 gabion walls with terracing. Maroog Nala is passing through the site and is required to be re-channelized through stepped gabion for its entire length within the site. Slope stabilization & eco-restoration through bioengineering.
MDS30	Rolling & levelling of top surface can restore about 2015 sq. m of land for amenities. Slope protection by 7 gabion walls with terracing. Battery Chaisma Nala is flowing through the site and is required to be re-channelized through Hume pipe for its entire length within the site. Slope stabilization & eco- restoration through bioengineering.
MDS34	Slope protection by 3 gabion walls with terracing is required. Slope stabilization & eco-restoration through bioengineering.

MDS40	Rolling & levelling of top surface can restore about 3013 sq. m of land for amenities. River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco- restoration through bioengineering.
MDS47	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco- restoration through bioengineering.
MDS52	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco- restoration through bioengineering.
MDS55	River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco- restoration through bioengineering.
MDS57	Rolling & levelling of top surface can restore about 820 sq. m of land for amenities. River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS58	Rolling & levelling of top surface can restore about 400 sq. m of land for amenities. River bank protection measures required for bank (dumped side) of Bichlari river. Slope stabilization & eco-restoration through bioengineering.
MDS59	Slope protection by 1 Gabion wall without terracing is required. Slope stabilization & eco-restoration through bioengineering.

Table 4.2 Index of Rehabilitation Plan of Muck Dumping Sites

MDS No	A	B	C	D	E	F	G
MDS22	x	✓	x	x	x	✓	x
MDS25	x	✓	x	x	x	✓	x
MDS26	x	x	✓	x	x	✓	✓
MDS27	x	✓	✓	✓	x	✓	✓
MDS28	x	x	✓	✓	x	✓	✓
MDS30	✓	x	✓	x	✓	✓	✓
MDS34	x	x	✓	x	x	x	x
MDS40	✓	✓	x	x	x	✓	x
MDS47	x	✓	x	x	x	✓	✓
MDS52	x	✓	x	x	x	✓	x
MDS55	x	✓	x	x	x	✓	✓
MDS57	✓	✓	x	x	x	✓	x
MDS58	✓	✓	x	x	x	✓	✓
MDS59	✓	✓	✓	x	x	x	x

Notes:

A- Rolling & Landscaping of top surface; **B-**Gabion Wall with Gravel Riprap at base for River Bank Protection
C-Gabion Wall with terracing, as applicable for Slope Protection; **D-**Stepped Gabion Wall for Brook channelization,
E-Re-Channelization of Brook by Hume Pipes; **F-**Bio-engineering Techniques for Slope Stabilization & Eco-
restoration; **G-**Removal of Dumped Muck from River Bed; ✓ – Measures to be adopted ; x- Measures not
applicable

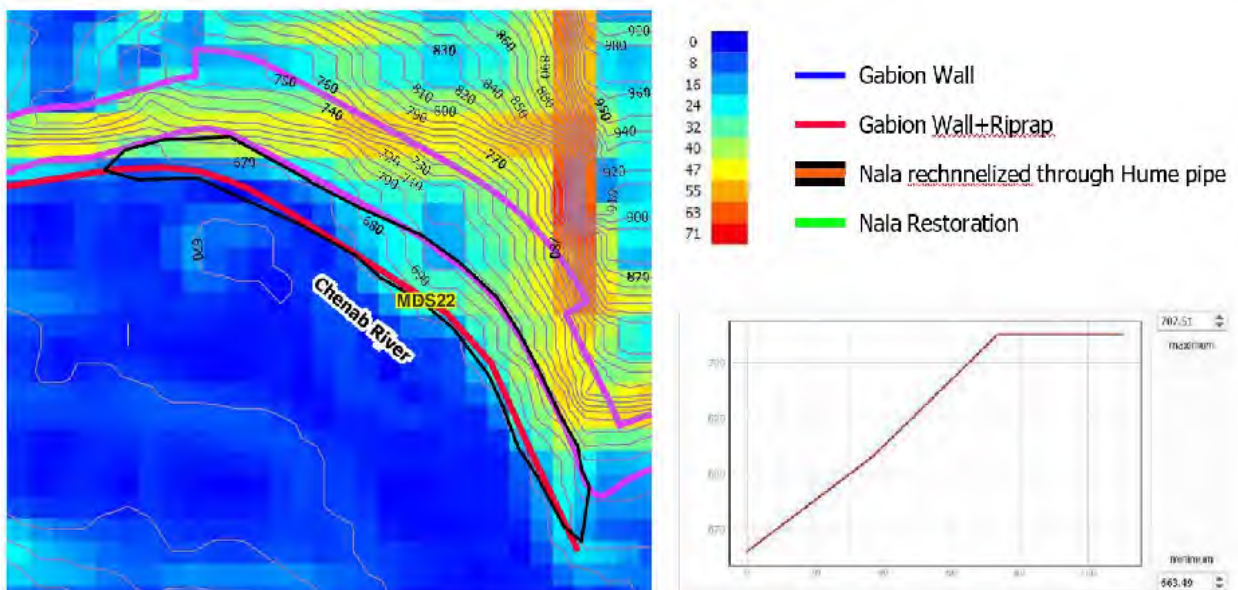
Table 4.3 Component-wise details of all Rehabilitation measures

MDS No	A (SQM)	B (SQM)	C (SQM)	D (SQM)	E (SQM)	F (SQM)	G (CUM)
MDS22	-	1007	-	-	-	40426.83	-
MDS25	-	455	-	-	-	22604.1	-
MDS26	-	-	331	-	-	23181.04	40,000
MDS27	-	53	571	411	-	33671.04	50,000
MDS28	-	-	1389	381	-	7985.36	10,000
MDS30	2015	-	936	-	374	24409.43	10,000
MDS34	-	-	265	-	-	-	-
MDS40	3013	240	-	-	-	9327.09	-
MDS47	-	134	-	-	-	2819.29	10,000
MDS52	-	584	-	-	-	28064.15	-
MDS55	-	517	-	-	-	29809.93	5000
MDS57	820	238	-	-	-	9518.19	-
MDS58	400	116	-	-	-	5887.28	5000
MDS59	2400	811	130	-	-	-	-
	8648	4155	3622	792	374	2,37,703.73	1,30,000

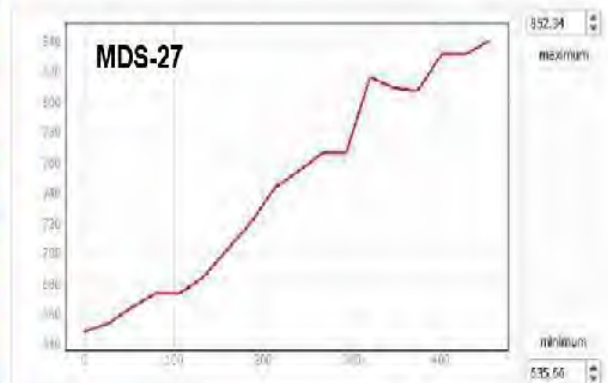
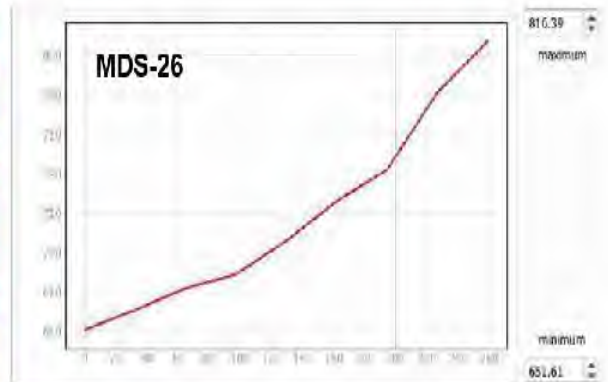
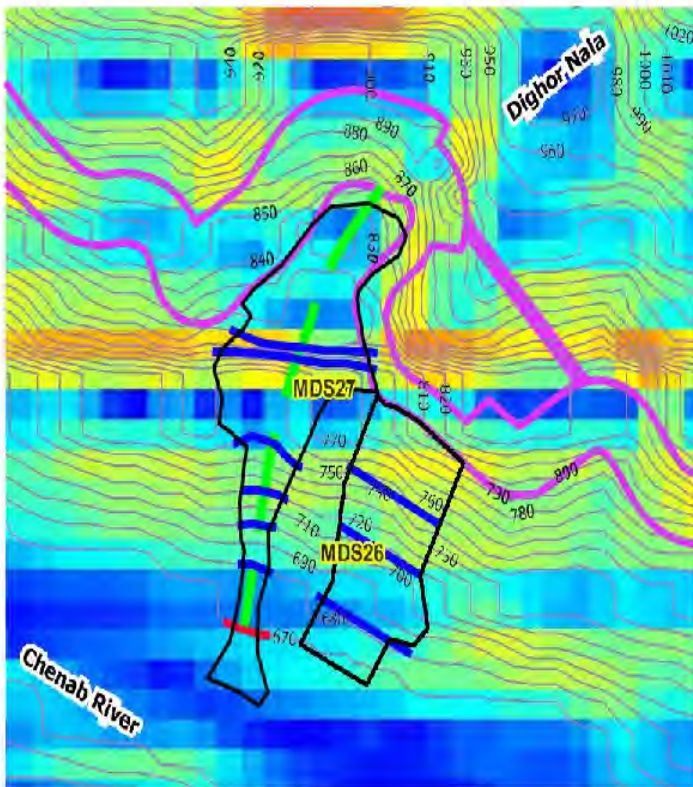
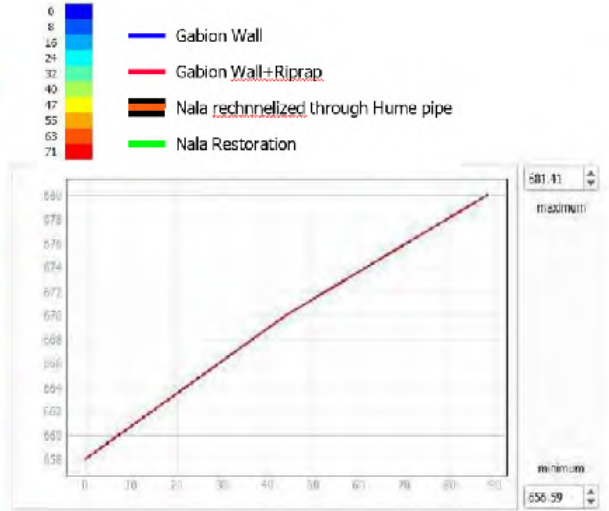
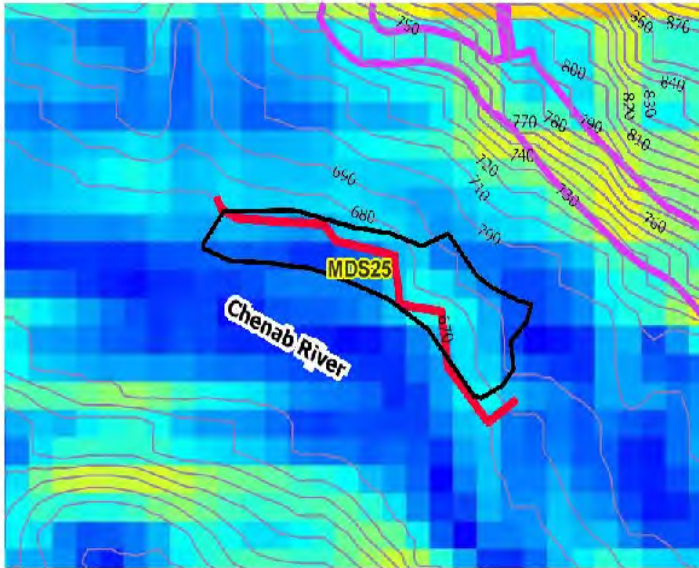
Notes: **A**- Rolling & Landscaping of top surface; **B**-Gabion Wall with Gravel Riprap at base for River Bank Protection **C**-Gabion Wall with terracing, as applicable for Slope Protection; **D**-Stepped Gabion Wall for Brook channelization **E**-Re-Channelization of Brook by Hume Pipes; **F**-Bio-engineering Techniques for Slope Stabilization & Eco-restoration; **G**-Removal of Dumped Muck from River Bed

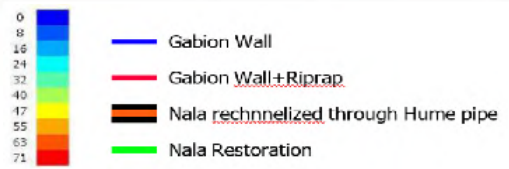
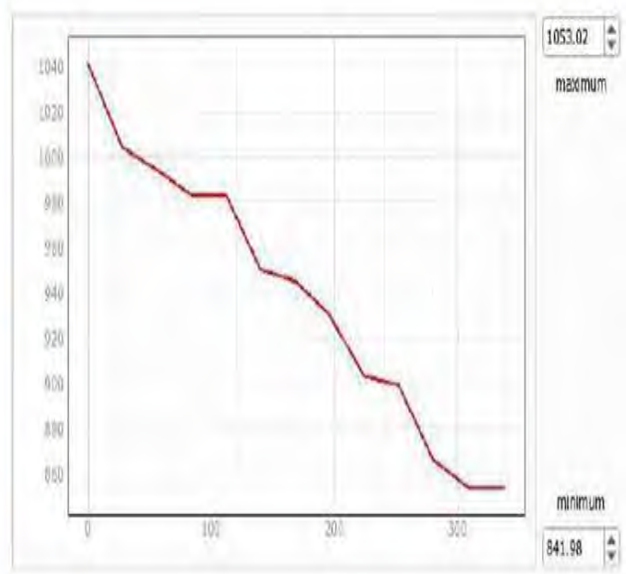
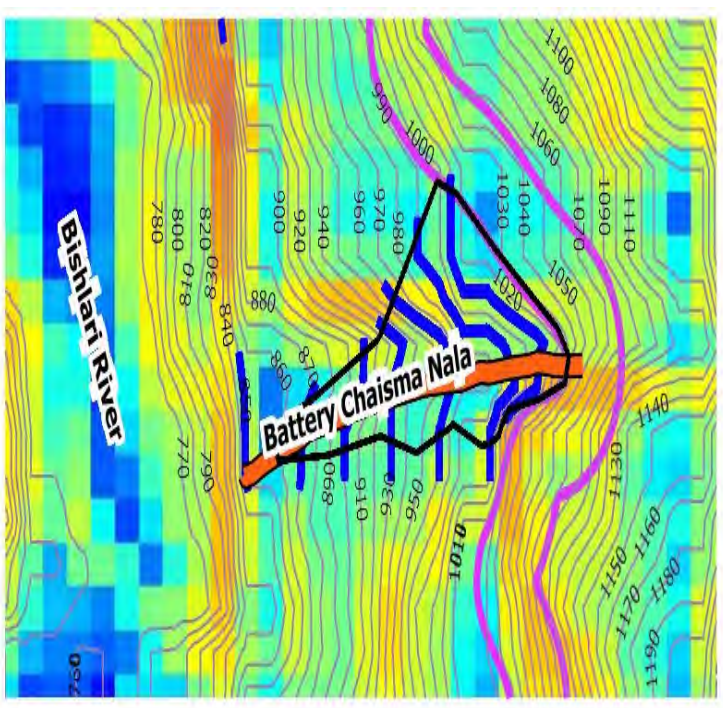
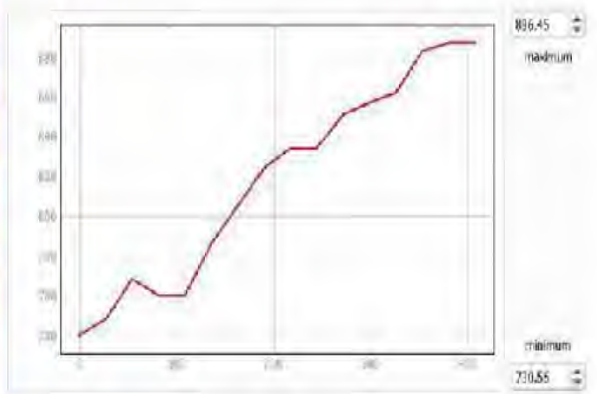
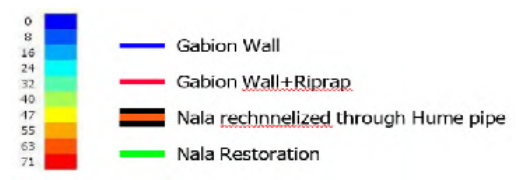
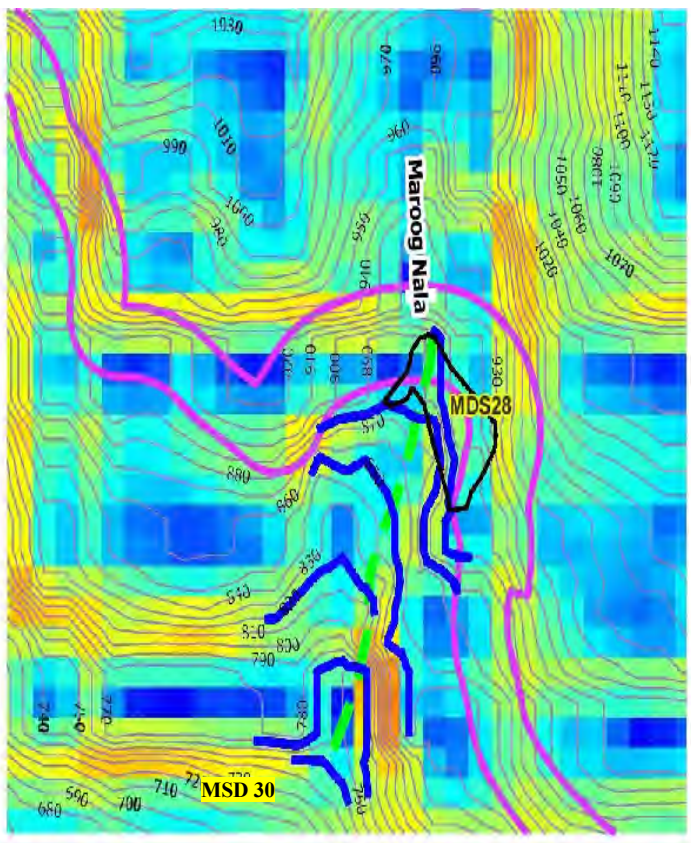
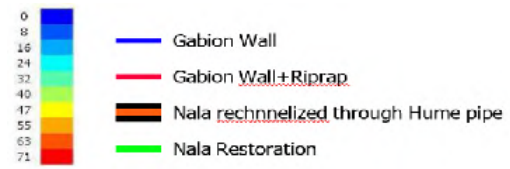
4.2 Digital Elevation Models

Digital elevation models of each site have been prepared where slope contours based on the elevation were prepared and provided in this section. Locations of the structures as suggested in Section 6.1 above are also shown in the elevation models. The blue colour in the model indicates lower slope (which are mostly at the river / stream banks while the red colour indicates high hill slopes. The extent of dumping in the river bed of muck disposal sites can be visualized from this elevation models. The slope of the disposal site as well as brook / stream located within the site are shown in the elevation graphs provided adjacent to the model output



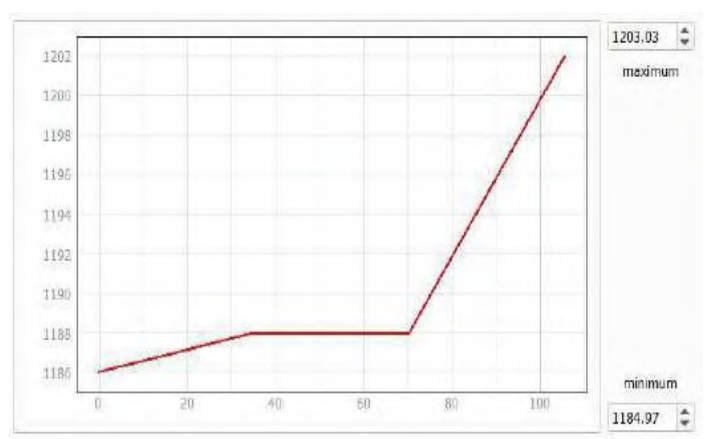
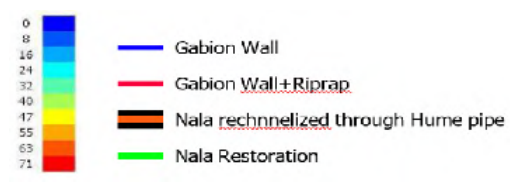
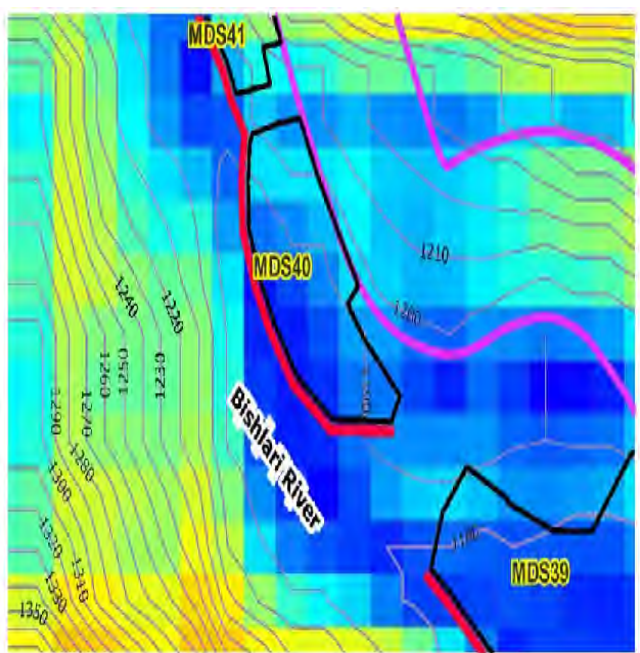
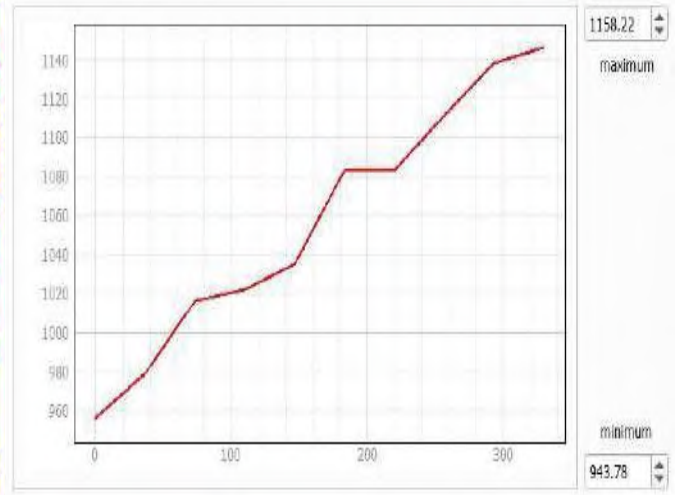
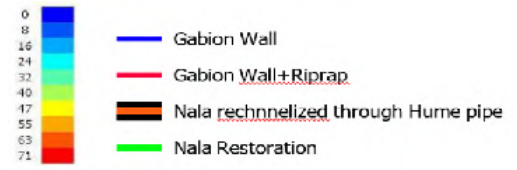
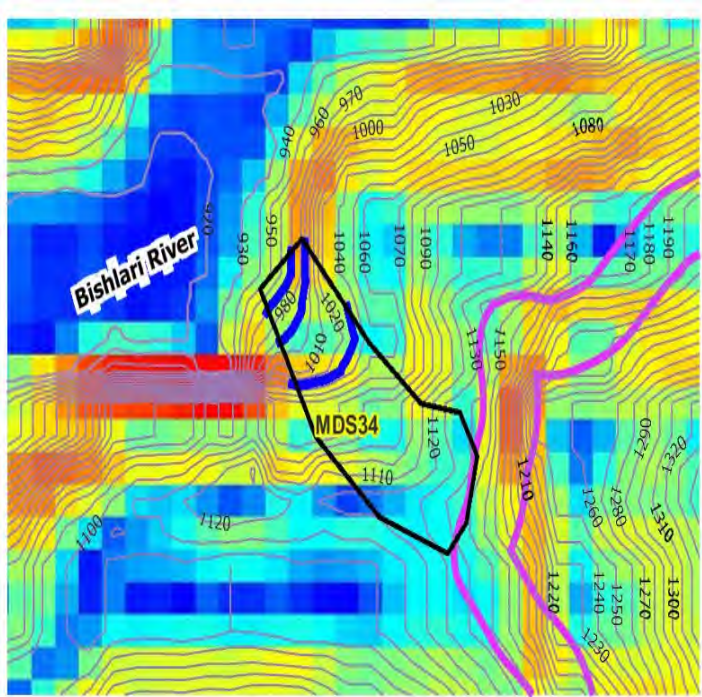
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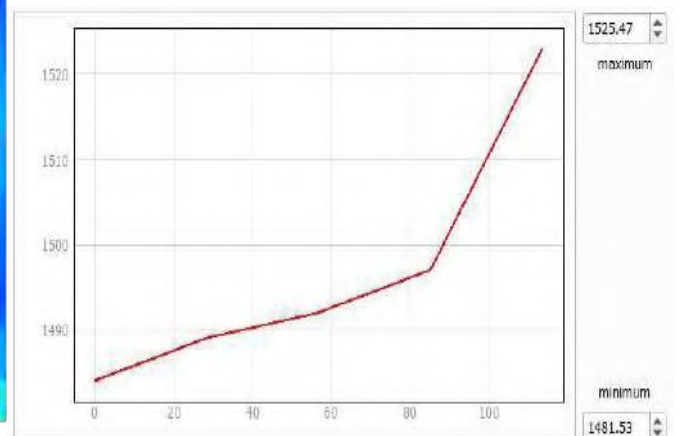
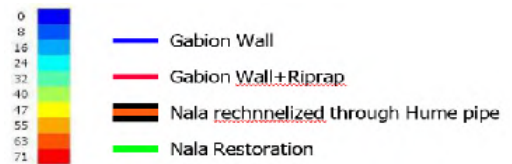
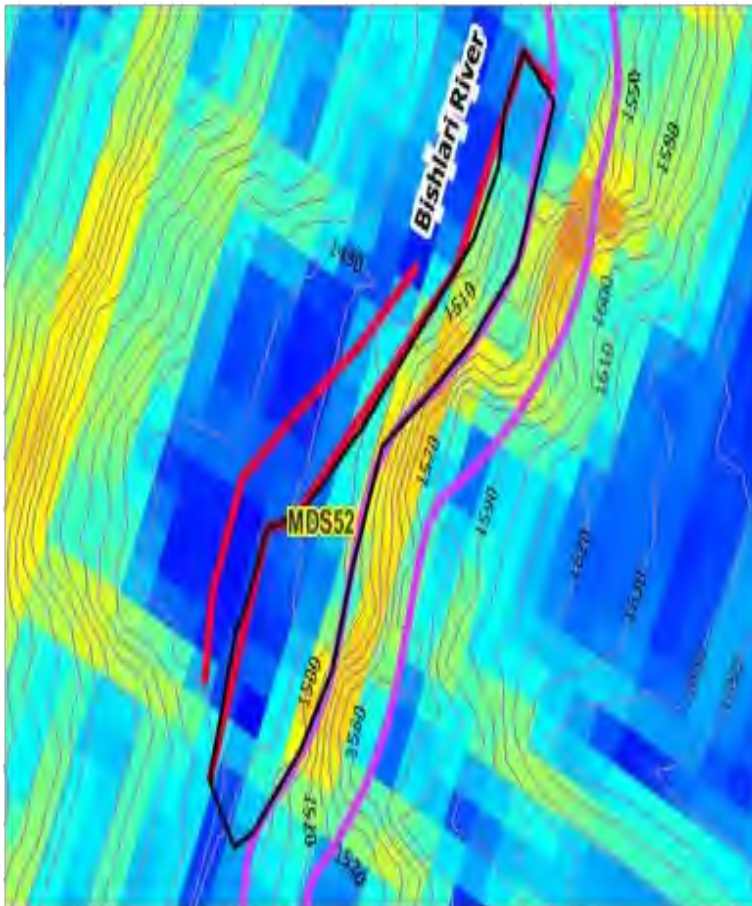
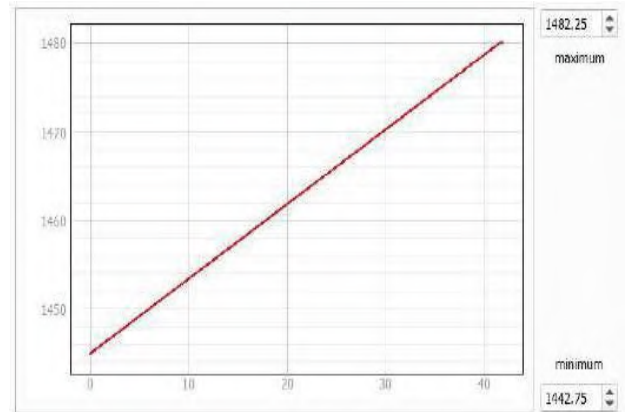
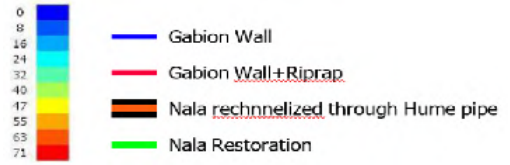
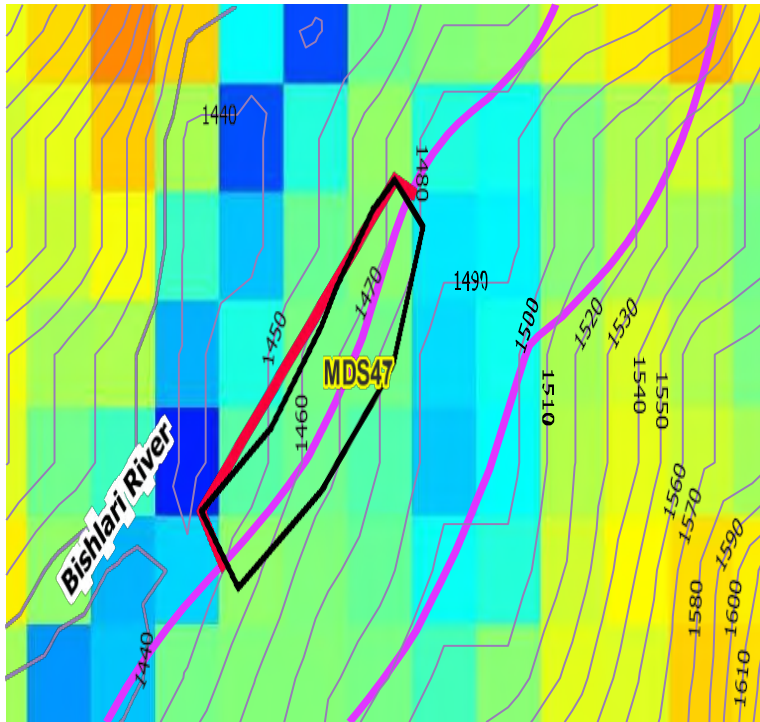




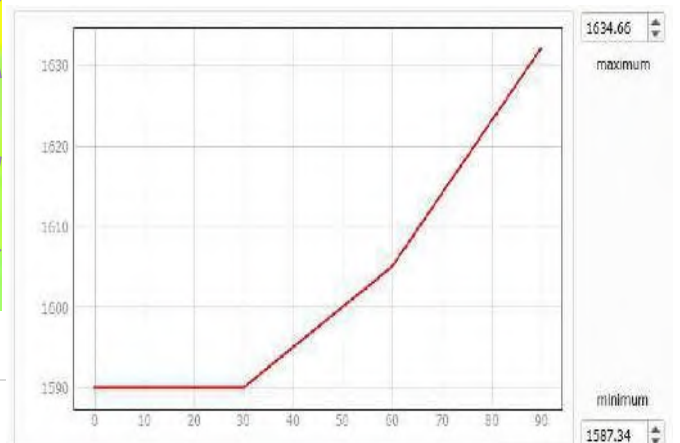
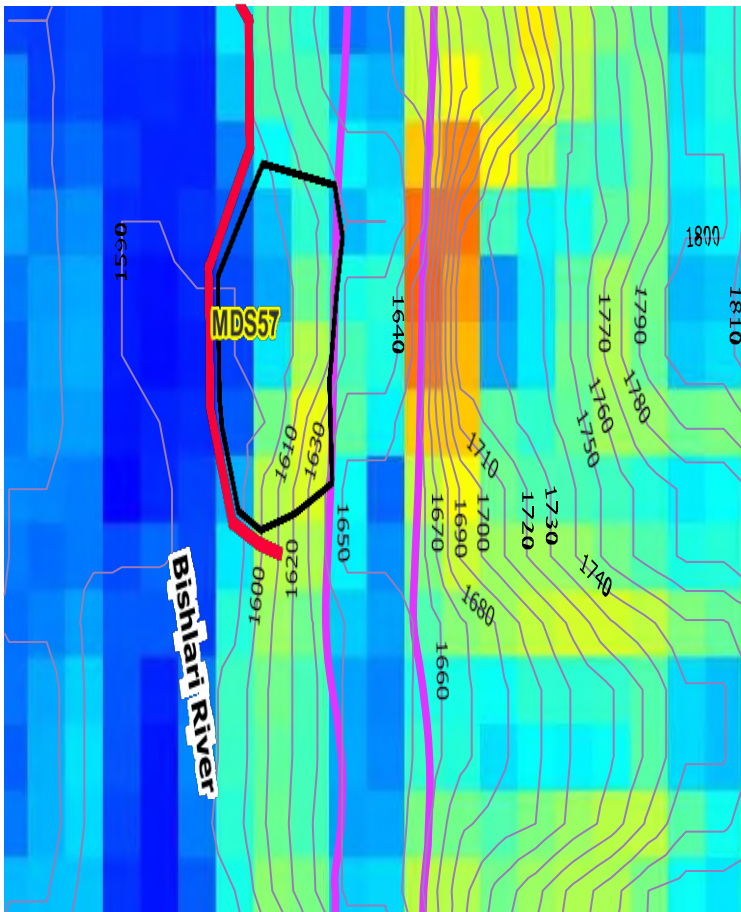
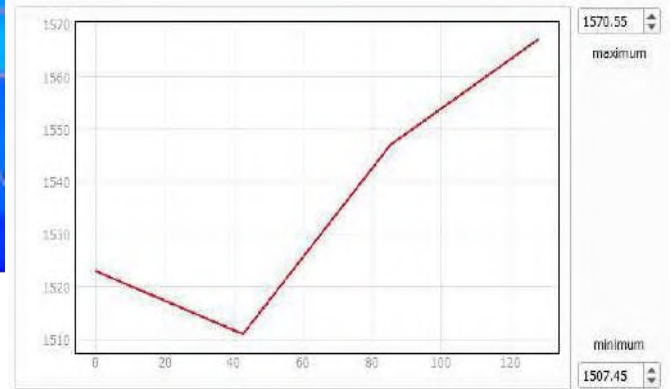
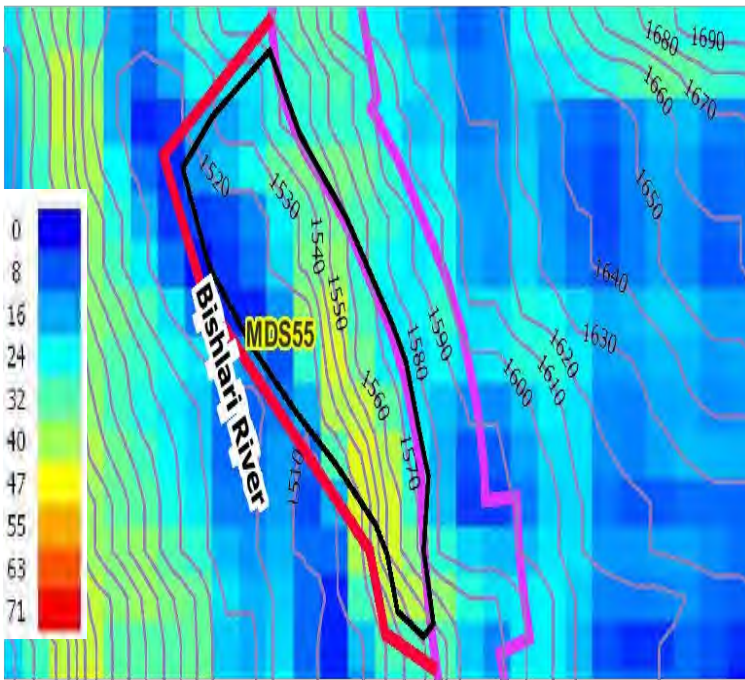
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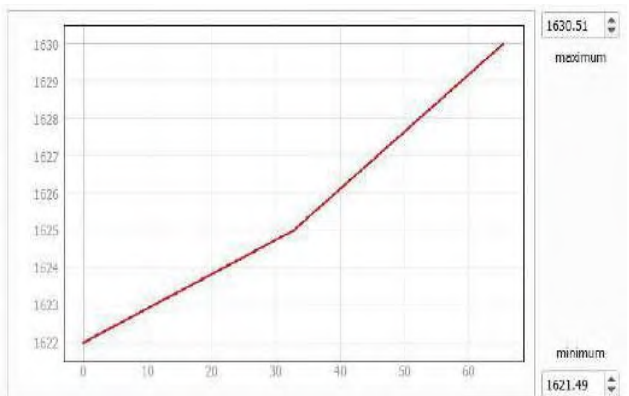
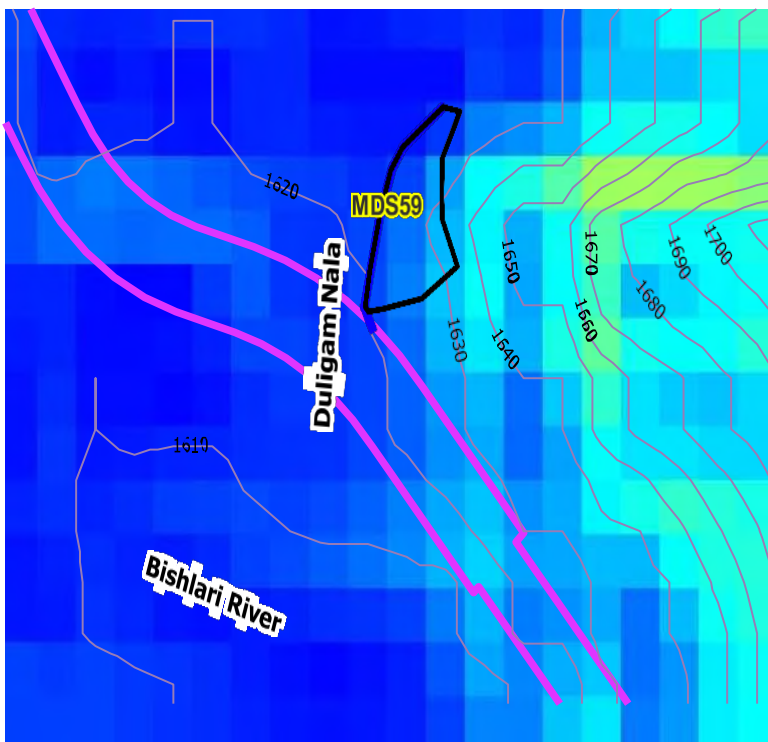
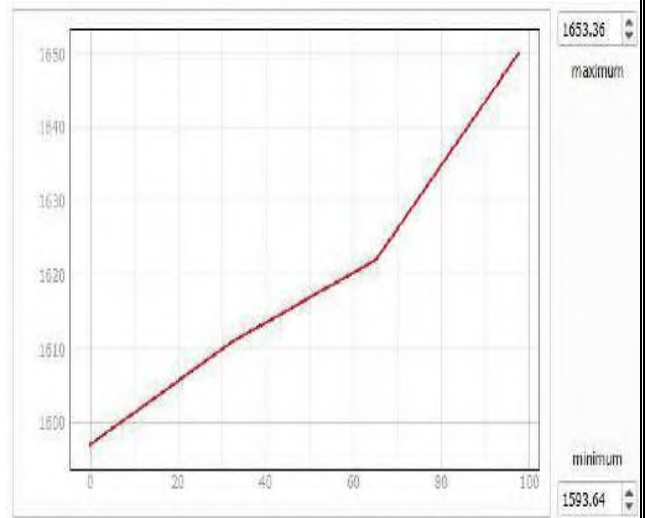
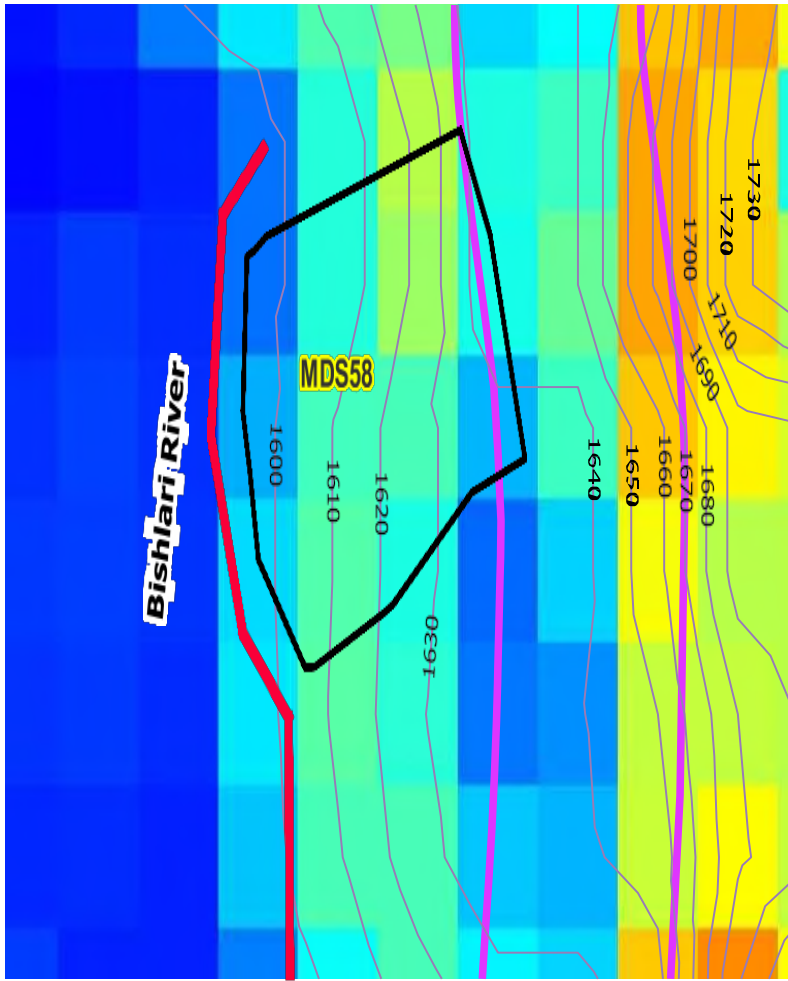
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CHAPTER 4- ENVIRONMENTAL REHABILITATION BUDGET

Budgetary estimates for environmental Rehabilitation/restoration undertaken by HCCL at the muck disposal sites including all items envisaged as part of the ERP report. The environment Rehabilitation budget includes provisions for various environmental management measures (other than measures considered under good engineering practices).

Table 4.1 Expenditure done towards the Restoration of Muck disposal sites

S No.	Descriptions	Total (in Lakhs)
A	Rolling and Landscaping of top surface	150.00
B	Gabion wall with gravel Rip-Rap on slope at base for protection of River Bank	900.00
C	Gabion wall with terracing as applicable for slope protection.	800.00
D	Stepped Gabion wall for the channelization of Brook.	900.00
E	Re-channelization of brooks by Hume Pipe.	75.00
F	Stabilization of slope and Eco-restoration of disposed muck with Bio-Engineering techniques	500.00
G	Removal of dumped muck from the River beds	200.00
H	Water Quality Analysis	3.00
I	Air and Noise Quality monitoring	7.00
	Total Cost (in Lakhs))	3535
	Add GST @ 18%	636.3
	Total Cost including GST (in Lakhs.)	4171.3
	Say (Crs)	41.713

Note: The Expenditure includes all the disposal sites used by HCCL as per Monitoring Committee Report dated 24.09.2020 and NGT order dated 28.09.2020

ANNEXURE-1
LOCATION MAPS OF MUCK DISPOSAL SITES

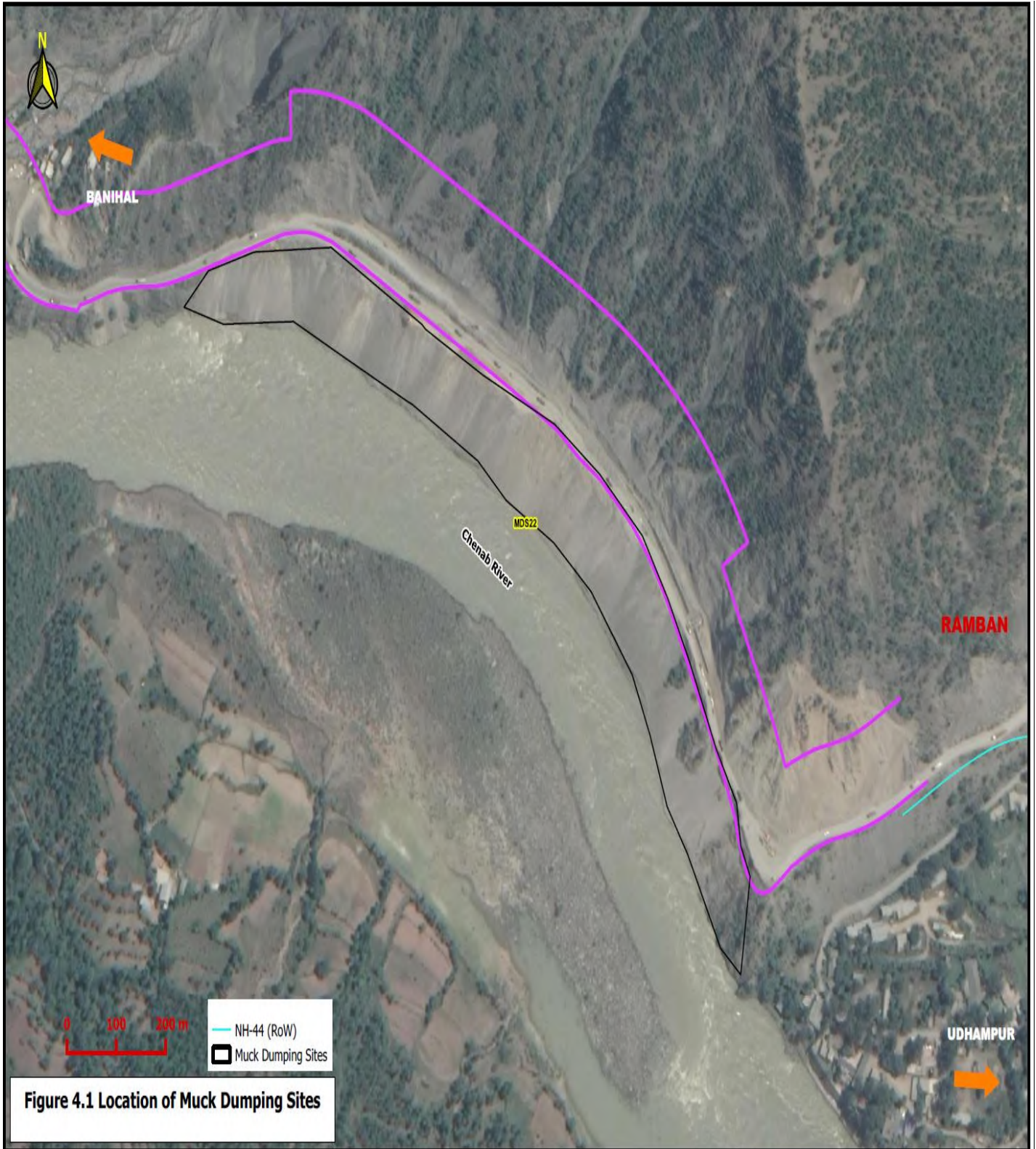


Figure 4.1 Location of Muck Dumping Sites

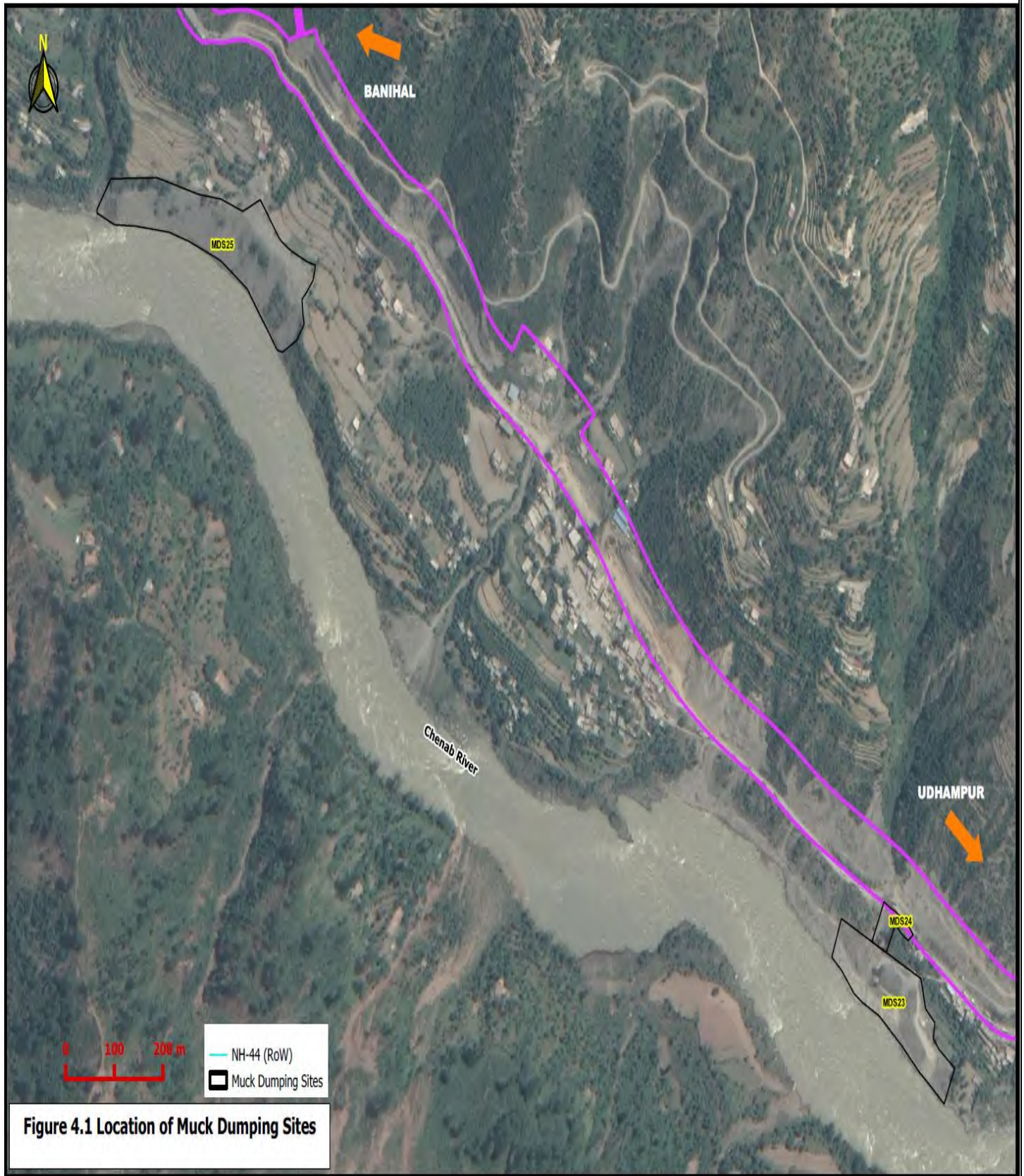
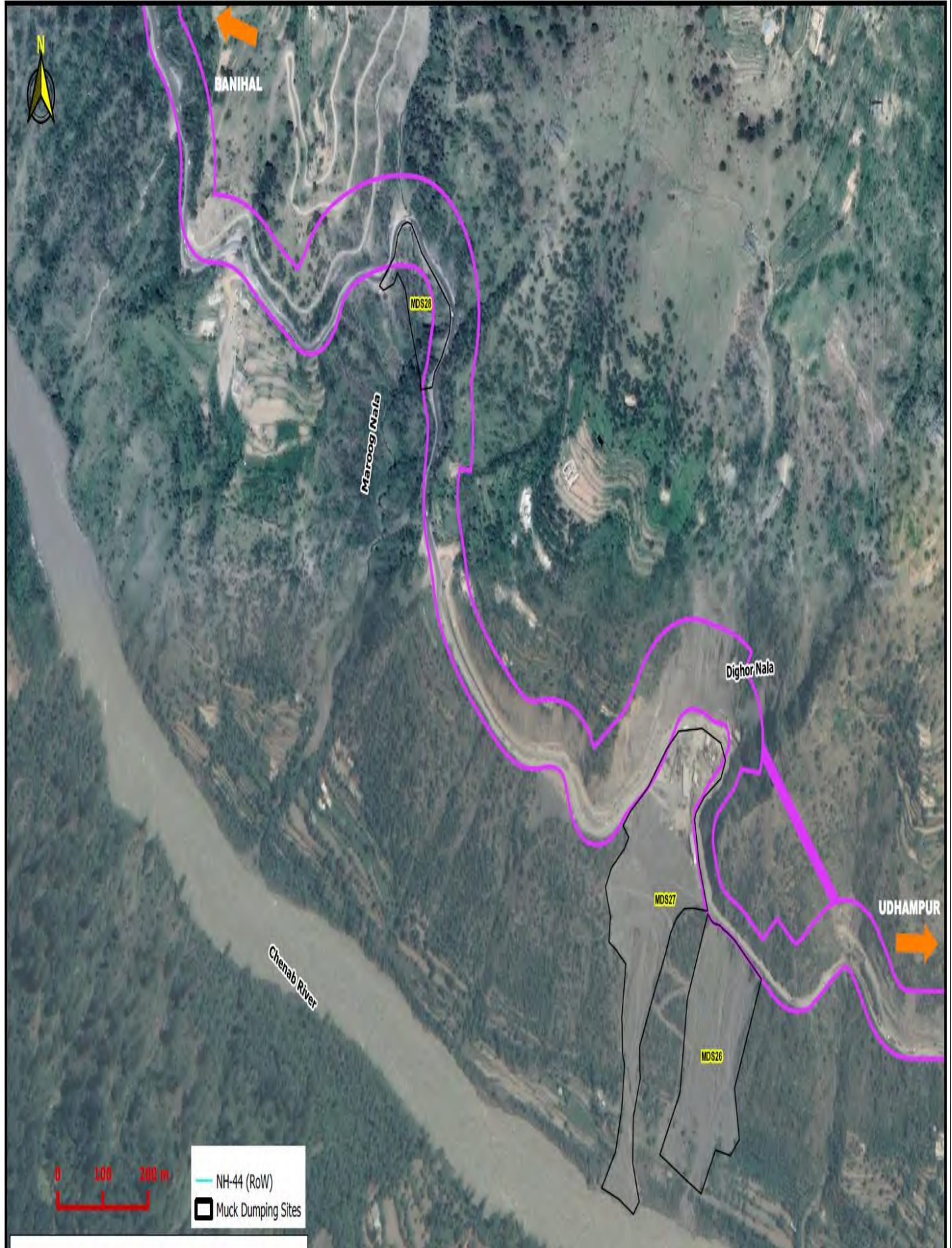


Figure 4.1 Location of Muck Dumping Sites



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Figure 4.1 Location of Muck Dumping Sites

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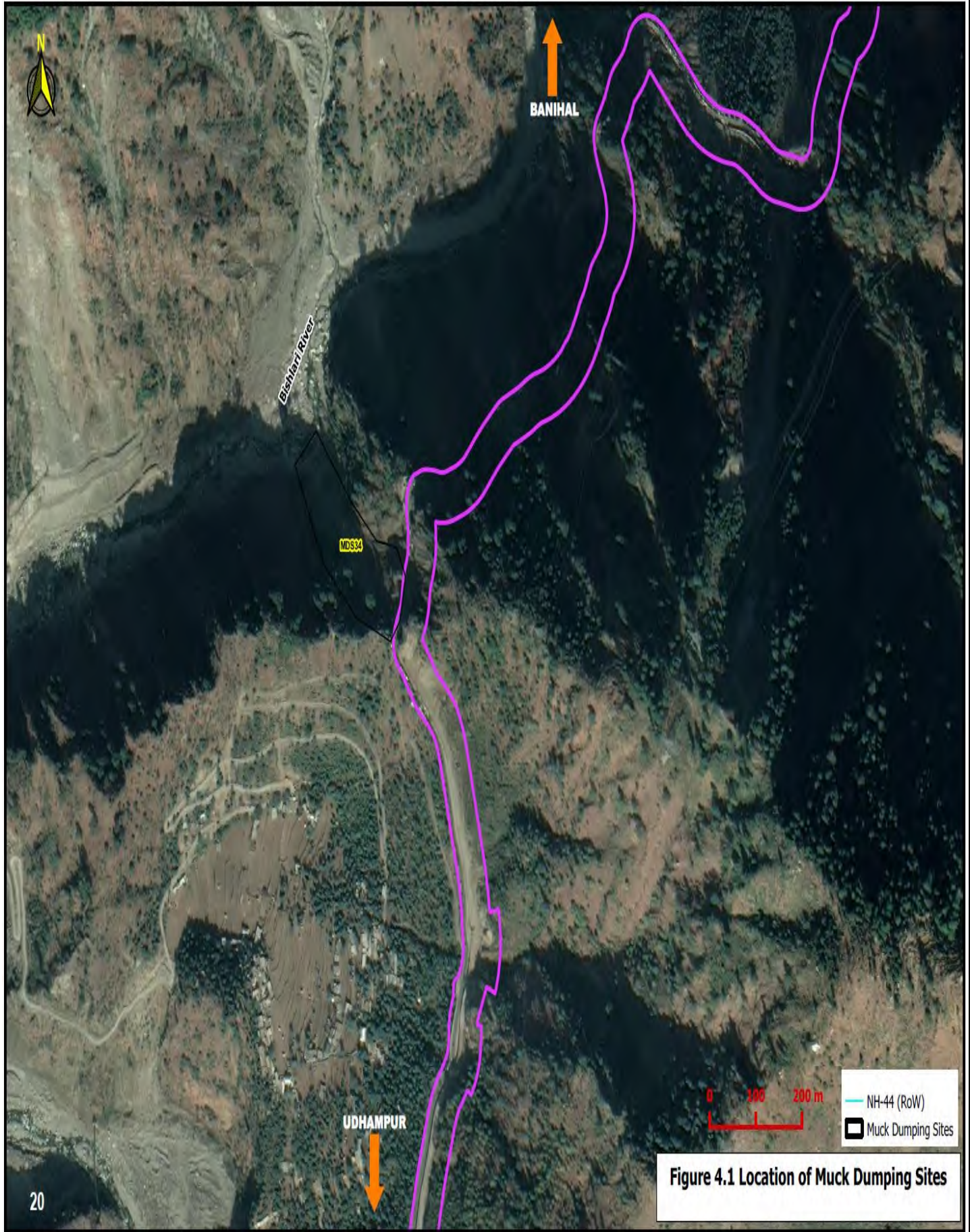


Figure 4.1 Location of Muck Dumping Sites



Figure 4.1 Location of Muck Dumping Sites

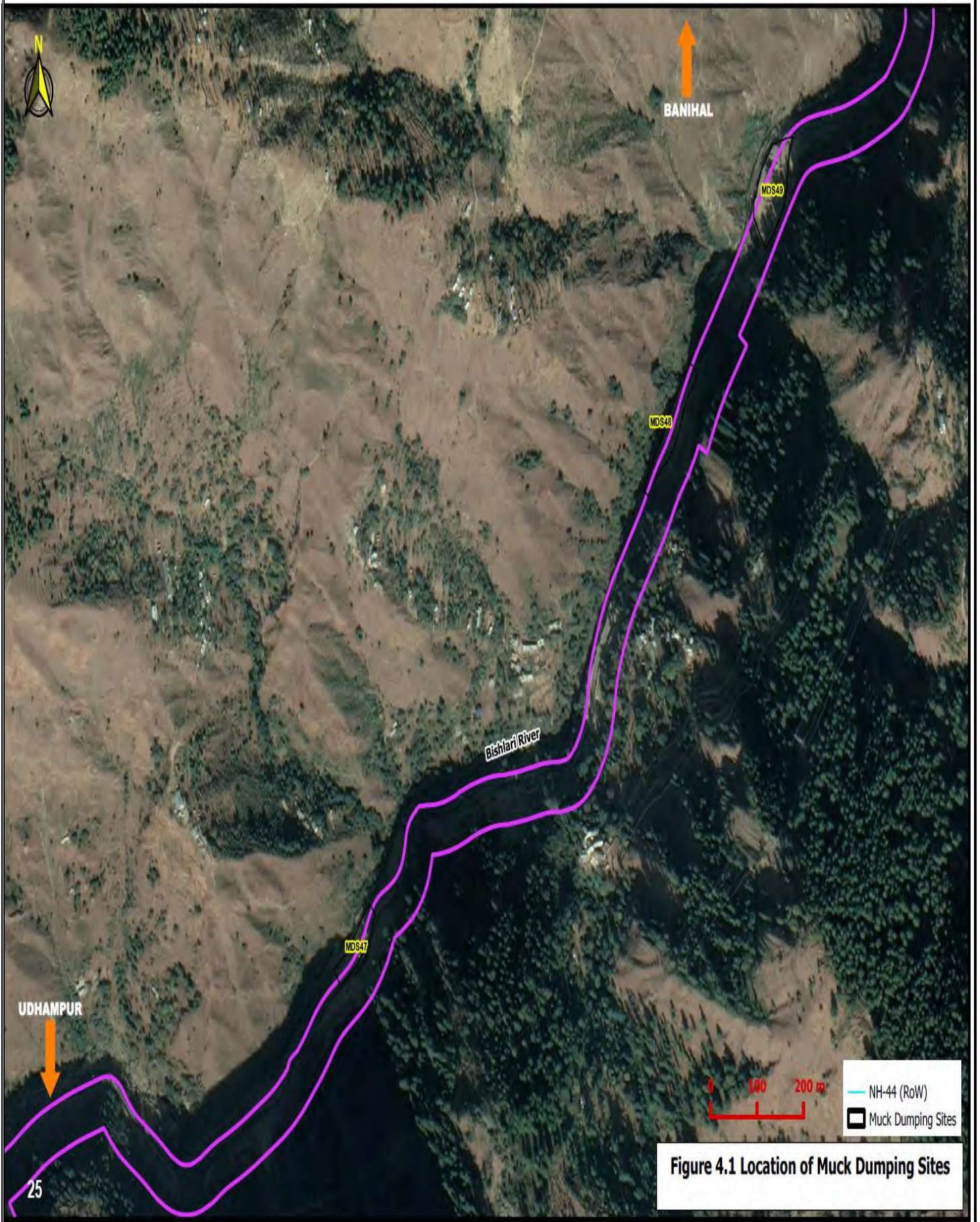


Figure 4.1 Location of Muck Dumping Sites

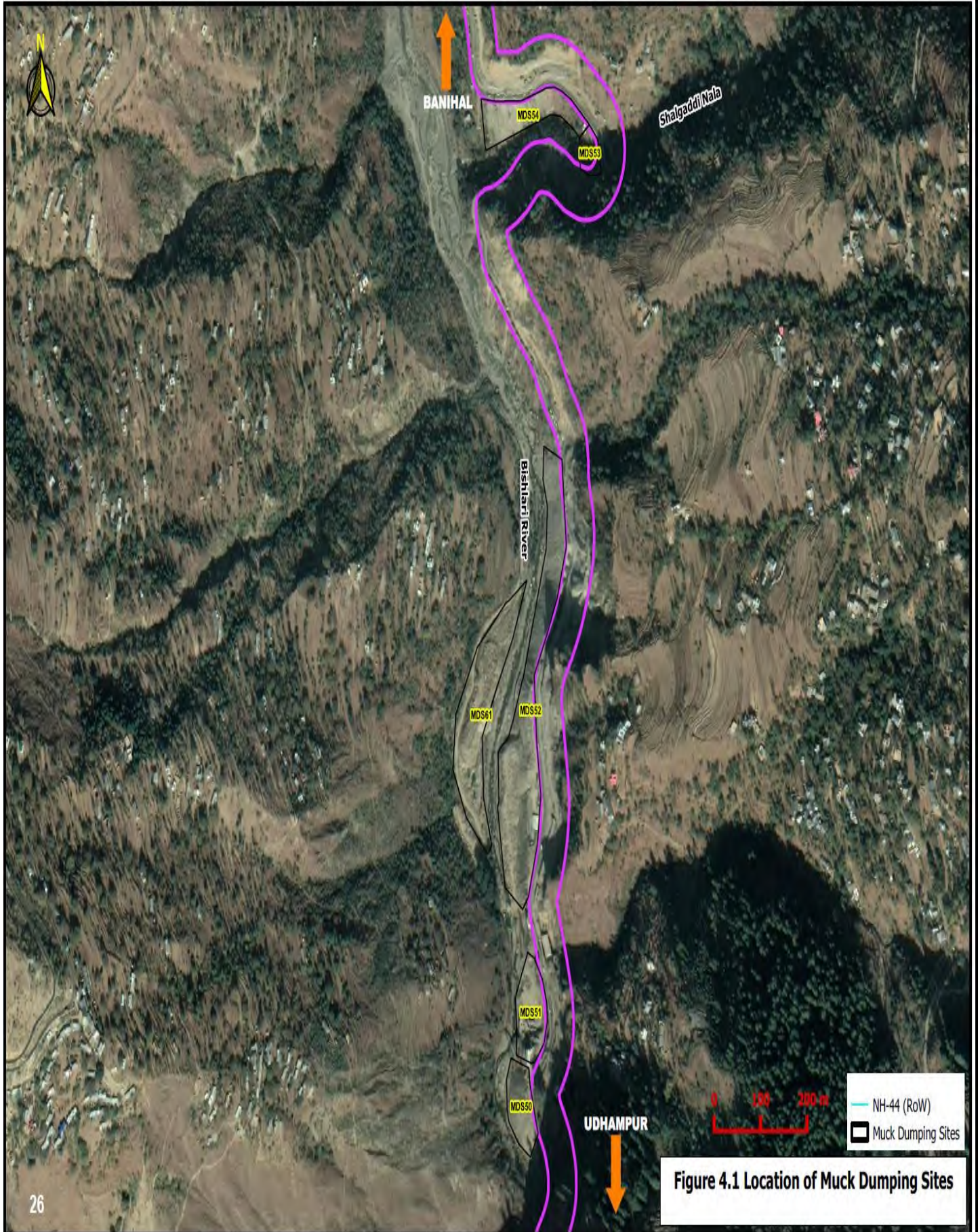


Figure 4.1 Location of Muck Dumping Sites

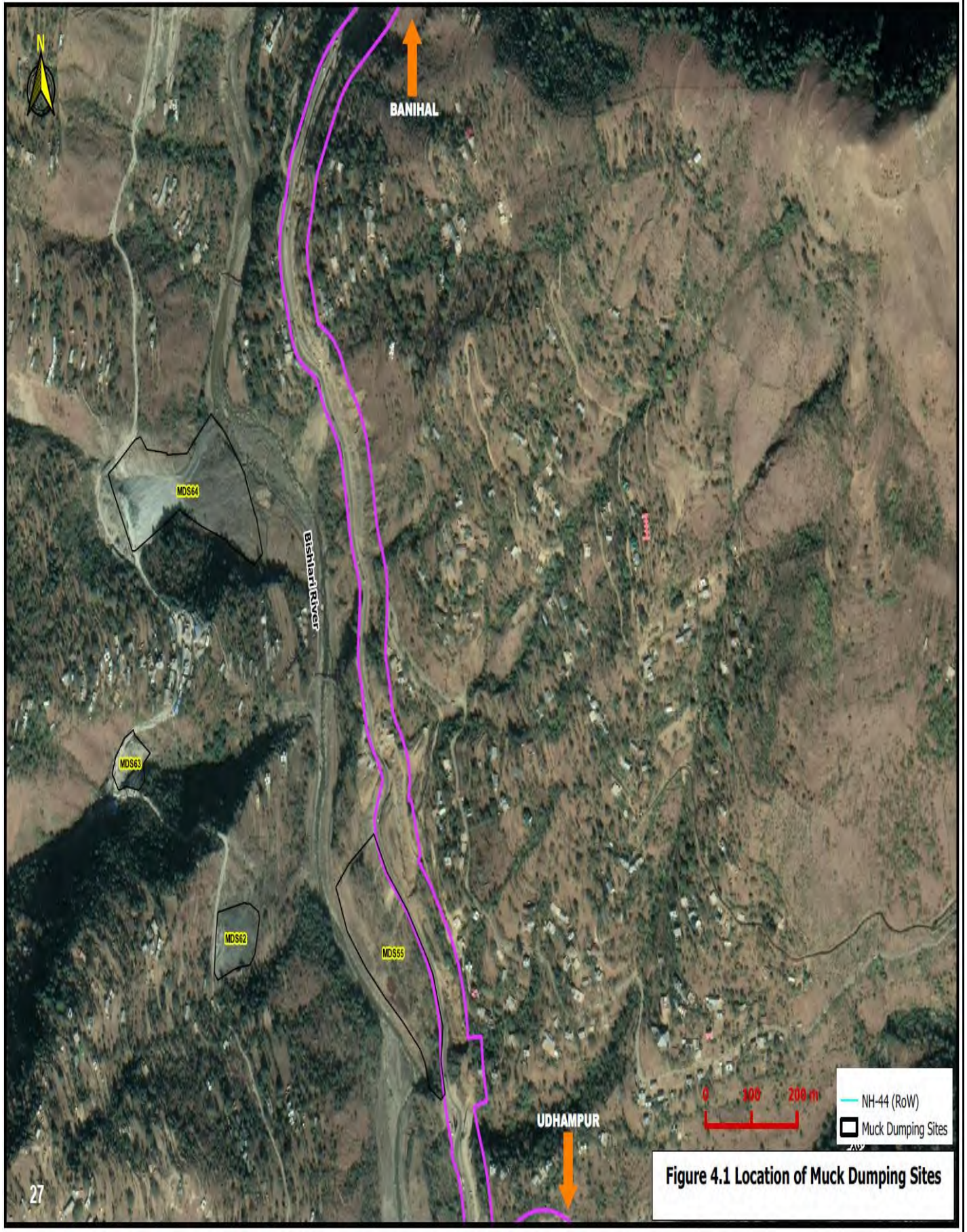
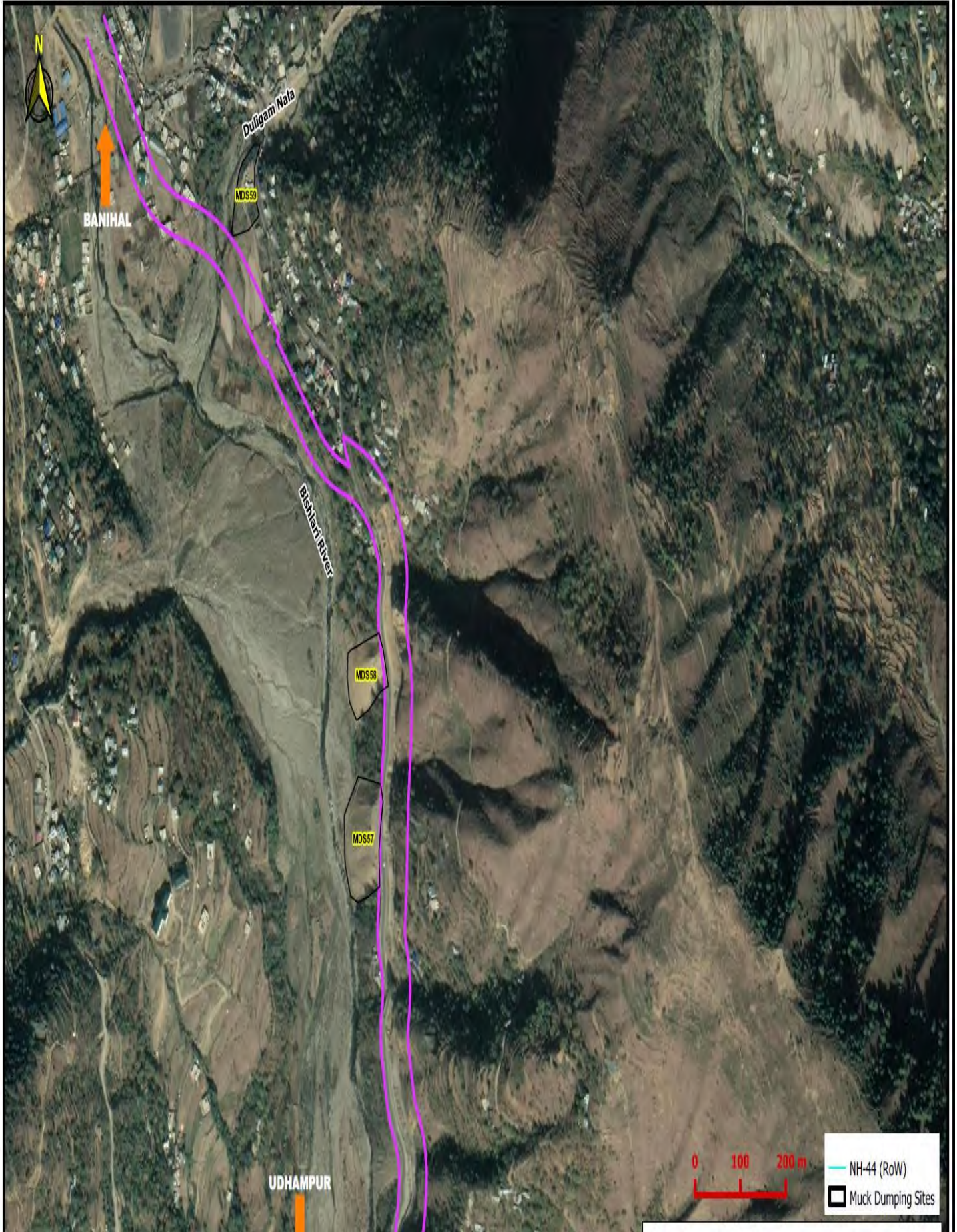


Figure 4.1 Location of Muck Dumping Sites



Annexure-2

Photographs of Rehabilitation of Dumping sites by HCCL

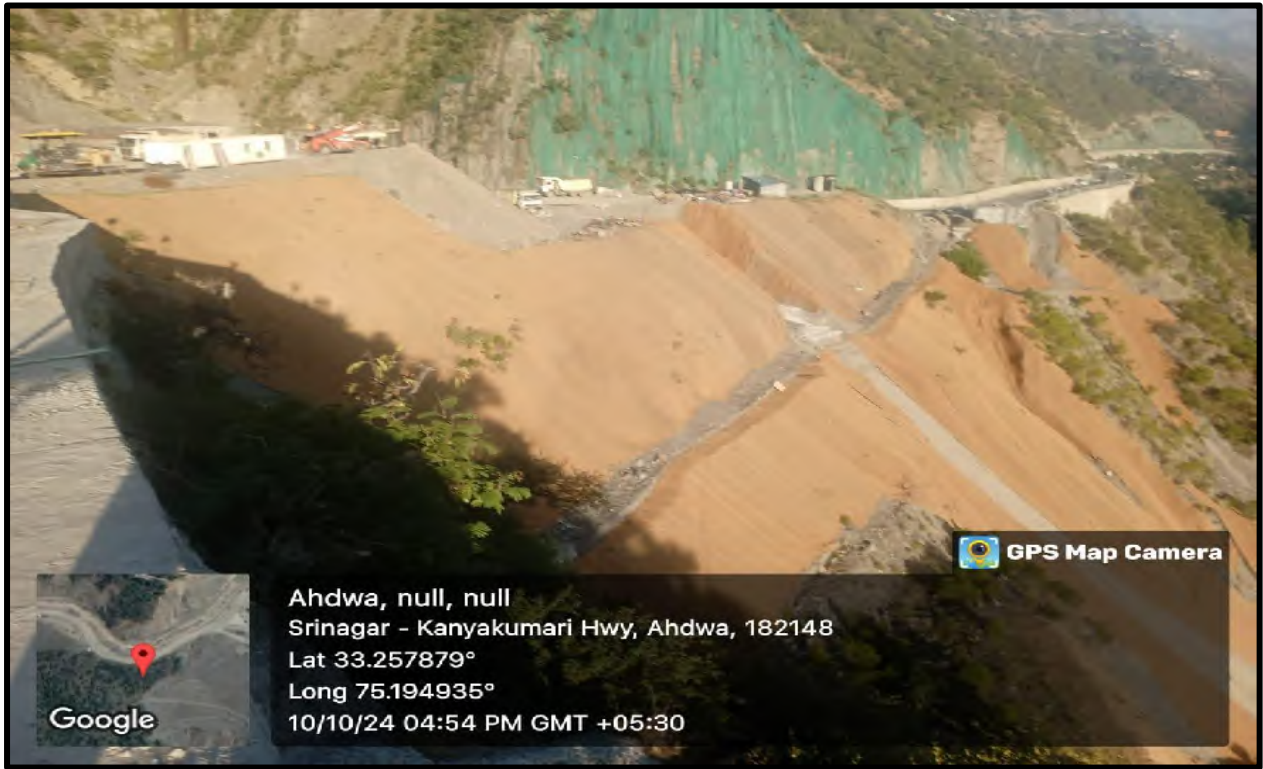


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Designated - Dumping Yard (as per JKPCB)											
Total No of Dumping Sites/ Slopes stabilized by HCC	MDS No	Name of the Site/ Village	Chainages by NGT		Total Length of Dumping Sites in which Environmental reotation has been executed. In Mtrs	Chainages by Our office		Side	Total Length of Dumping Sites in which Environmental reotation has been executed In Mtrs	Detiled quantity (in Cum) of muck removed by HCC	Remarks
1	MDS 25	Seri	152+670	152+870	200	150+670	150+870	NB	200	-	
2	MDS 26	Maroog - I	154+000	154+200	200	152+020	152+100	NB	80	40,000.00	
3	MDS 27	Maroog II (Near Tunnel- T2)	155+000	155+100	100	152+180	152+500	NB	320	50,000.00	
4	MDS 30	Battery Cheshma	158+710	158+960	250	157+100	157+200	NB	100	10,000.00	
5	MDS34	Digdole - III	163+200	163+290	90	163+200	163+290	SB	90	-	
6	MSD 40	Ramsoo	168+680	169+000	320	166+940	167+000	NB	60	-	
7	MDS 52	Sherbibi	175+400	176+200	800	174+200	174+800	NB	600	-	
8	MDS 55	Chamalwas	177+000	177+050	50	175+980	176+110	NB	130	5,000.00	
9	MDS 57	Rattanwas III	181+580	181+650	70	179+980	180+050	SB	70	-	
10	MDS 59	Banihal - I & II			50				50	-	
		Total Length			2130				1700	1,05,000.00	
Non Designated - Dumping Yard (as per JKPCB)											
1	MDS 24	Near Shiv Temple Chamba	149+460	149+500	50	149+460	149+500	NB	50	1,000.00	
2		Maroog- II	154+420	154+470	50	152+690	152+730	NB	40	-	
3	MDS 28	Maroog- III	155+760	155+870	110	153+120	153+300	NB	180	10,000.00	
4	MDS 32	Digdole I	159+390	159+500	110	159+390	159+500	NB	110	-	Benching work & Gabion work done (50 Gabions placed) stopped by NHAI - handover dumping another company
5	MDS 47	Kishtwari Pathar	173+530	173+800	270	172+050	172+300	NB	250	10,000.00	
6	MDS 48	Sherbibi Before MNB 10	173+100	173+200	100	173+100	173+200	NB	100	3,000.00	
7	MDS 49	Sherbibi HMP	173+450	173+550	100	173+450	173+550	NB	100	1,000.00	
8	MDS 54	After MNB 21 & MNB 13	175+470	175+480	10	175+470	175+480	NB	10	-	
9	MDS58	Kharpora Banihal	181+690	181+740	50	180+180	180+240	NB	60	5,000.00	
10		Total Length			850				900	30,000.00	
Grand Total					2980				2600	1,35,000.00	

Rajesh Kumar

From: Rajesh Kumar
Sent: Thursday, January 30, 2025 5:14 PM
To: swarnkishore07@gmail.com
Cc: Madhu Sweta; Yash Kapoor
Subject: RE: Advance Service in the matter of Amresh Singh vs. Union of India & Ors., E.A. No.23/2024 - National Green Tribunal, New Delhi

Dear Sir,

Please find attached herewith Compliance Report alongwith Application seeking condonation of delay, being filed on behalf of the Respondent No.2/NHAI in the subject matter.

Copy of the same can be accessed from the Dropbox link given below-

Compliance Report

<https://www.dropbox.com/scl/fi/s09zjmpzpjna1q2pseq12/Compliance-Report-by-NHAI.pdf?rlkey=43dvagyqooeo7hrrabe6osh98&dl=0>

Application seeking condonation of delay

<https://www.dropbox.com/scl/fi/nb05glz3ogcq09md0uiom/Delay-App-for-Compliance-Report-by-NHAI.pdf?rlkey=8uccugeo4i24t6srefzwbv9fd&dl=0>

Best Regards,

Rajesh | Executive Assistant



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SOLICITORS AND ADVOCATES

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