DISTRICT SURVEY REPORT OF DARJEELING DISTRICT

(For mining of minor minerals)
As per Notification No.S.O.141 (E) New Delhi Dated 15th of January 2016, S.O.3611 (E) New Delhi Dated 25th of July 2018 and Enforcement & Monitoring Guidelines for Sand Mining (EMGSM) January 2020, Issued by Ministry of Environment, Forest and Climate Change (MoEF&CC)

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PREPARED BY
Department of Industry, Commerce & Enterprises
Government of West Bengal

GOVERNMENT OF WEST BENGAL
DIRECTORATE OF MINES & MINERALS
4, ABANINDRANATH TAGORE ROAD
KOLKATA-700016

No. 1333 MD

Kolkata, 6th January, 2022.

TO WHOM IT MAY CONCERN

This is to certify that DSRs of concerned districts of West Bengal have been duly validated by respective district authorities and their suggestions/inputs, if any, have been duly incorporated in the DSRs. The DSRs have been finally scrutinised and accepted by the scrutiny committee of DMM, WB and the same have been forwarded to the Dept. of Industry, Commerce and Enterprises along with respective scrutiny reports for onward transmission to SEAC for necessary action.

Director of Mines and Minerals

Govt. of West Bengal

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Abbreviations

% DEP – Departures

° C – Degree Centigrade

BGL – Below Ground Level

CD - Community Development

Cft- Cubic Feet

CGWB - Central Ground water Board

CRIS - Customized Rainfall Information System

Cum - Cubic meter

DGMS - Directorate General of Mines Safety

DGPS - Differential Global Positioning system.

DL&LRO - District Land & Land Reform officer

DSR - District Survey Report

EC – Environmental Clearance

EIA- Environment Impact Assessment

EMGSM - Enforcement and Monitoring Guideline for Sand Mining

ENVIS - Environmental Information System

ft – Feet

GIS - Geographical Information System

GMEC - Global Management and Engineering Consultant

GSI - Geological Survey of India

Ha – Hectare

hr - Hour

IMD – Indian Meteorological Department

ISRO - The Indian Space Research Organization

KM - Kilometer

LISS - Linear Imaging Self-Scanning Sensor

LOI - Letter of Intent

LULC - Land Use Land Cover

m^2 - Square meter

MBT - Main Boundary Thrust

MCT - Main Central Thrust

MFT - Main Frontal Thrust

Mcum – Million Cubic Meters

MMDR - Mines & Minerals (Development and Regulation) Act

MMR - Metalliferous Mines Regulation

MOEF & CC - Ministry of Environment, forest & Climate Change

Mph- miles per hour

M-Sand - Mineral Sand

MSME - Micro, Small & Medium Enterprises

Mt - Metric Ton

MT – Million Tons

NGT - National Green Tribunal

NH – National Highway

NIC - National Informatics Centre

OC - Officer In Charge

OGL - Original Ground level

PSU - Public Sector Unit

R/F – Rain Fall

SSMG - Sustainable Sand Mining Guidelines

WBMDTCL- West Bengal Mineral Development and Trading Corporation Limited

The WBMMCR 2016 – The West Bengal Minor Mineral Concession Rules, 2016

Definitions

Riverbed: A riverbed is the area between two banks of river where sediment deposited. During the normal flow period, river water is contained in and flows along the riverbed. However, during a flood, the river overflows the riverbed and flows onto the floodplain.

Sandbars: The sandbar is the ridge of sand or coarse sediment that is built over a period of time.

Pre monsoon Sandbars: Sandbars which are identified from satellite imagery of pre monsoon period.

Post monsoon Sandbars: Sandbars which are identified from satellite imagery of post monsoon period.

Restricted Area: Sandbars or part of sandbars which are falling within restricted area. As per the Enforcement & Monitoring Guidelines for Sand Mining (EMGSM) 2020 the restricted zone for mining is a distance from the bank is ¼th of river width and not be less than 7.5 meters. Also, there is a no mining zone up to a distance of 1 kilometre (1 km) from major bridges and highways on both sides, or five times (5x) of the span (x) of a bridge/public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side. No mining zone has been marked for an area up to a width of 100 meters from the active edge of embankments.

Potential Zone: Sandbars which are falling within the central 3/4th part of the riverbed and which are not falling within the restricted area.

Potential Block: Each individual sand bars of potential zone is Potential Block.

River bed occurrence: River bed occurrence means sand, stone, boulder, pebbles, gravel accumulated in the river bed by natural phenomenon.

Replenishment: Quantum of sand deposited in a mined out void during monsoon period.

Aggradations: Aggradation (or alluviation) is the term used in geology for the increase in land elevation, typically in a river system, due to the deposition of sediment. Aggradation occurs in areas in which the supply of sediment is greater than the amount of material that the system is able to transport.

Act: It means the Mines and Minerals (Development and Regulation) Act, 1957(67 of 1957), as subsequently amended.

Mineral: It means minor minerals as defined in clause (e) of section 3 of the Act.

Sand: A natural resource, is a minor mineral as defined under S 3(e) of the Mines and Minerals (Development and Regulation) Act, 1957 (" MMDR Act").

Lease: It means a mining lease granted under West Bengal Minor Mineral Concession Rules, 2016.

Mining: Excavation of mineral by manual method or using machineries.

EXECUTIVE SUMMARY

Darjeeling District is the northernmost district of the state of West Bengal. The district is famous for its hill station and Darjeeling tea. Geographically, the district can be divided into two broad divisions: the hills and the plains. The hilly region covers three subdivisions namely, Darjeeling, Kurseong and Mirik, while the Siliguri subdivision comprises the plain land of the district. According to Census (2011), the district is having a total population of 18,46,823 distributed over 92-gram panchayats. The district covers around 2090 sq. km area covering the Teesta and the Jaldhaka watersheds. The district is having enriched biodiversity and its temperate climate favours agro-horticultural activities. The district has rich and diverse forest resources. Extensive tea plantation in the district along with the forest resources generates considerable amount of revenue every year.

Drainage system of Darjeeling district is highly topographic controlled, numerous rivulets coming down from the mighty Himalayas in the North and flowing to the Terai region in the South and South-East. The major rivers of the district are Teesta and Mahananda. Mechi, Rangeet, and Balason are the other prominent rivers in the district. The district witnesses several landslides and flooding during monsoons because of its hilly topography.

The district falls under Zone IV as per the earthquake zonation map of India. Most of the downhill areas are susceptible to landslides because of the predominance of weathered and soft formations. Therefore, mining in the hilly areas should be taken with utter most care for sustainable development.

Geologically the district is made up of rocks ranging from pre-Cambrian to Quaternary ages. The Sub-Himalaya is made up of Siwalik deposits of the Tertiary age. The geological formation of Darjeeling District indicates the presence major minerals which include coal, limestone, graphite, talc, mica, lead, zinc, copper, nickel and iron ore. Minor minerals available include building and silica sand. However, mineral resources of the district need to be studied further through detail exploration. About 15 million tonne of inferred resources of coal has been identified in Dalingkot coalfield. A talc lens sandwiched between overlying Daling quartzite and underlying Daling phyllite has been identified at village Singla. GSI has also established copper deposits at Peshok in Darjeeling district.

The district is currently generating revenue from mining of minor minerals such as sand and gravels from the riverbed. However, in-stream mining directly alters the channel geometry and bed elevation. Therefore, mining of riverbed should be carried out scientifically and based on statutory guidelines for conservation of land, river channels and sustainable development of the society.

As per the data received from Department of Mines and Minerals, Siliguri, 75 blocks have been allotted for mining of river sand in the district. Out of which 34 blocks are allotted in Balason, 12 blocks are allotted in Mahananda, 12 blocks in Mechi, 12 blocks in Chengi and 05

blocks are allotted on Chenga and Teri rivers. Total allotted area for 75 blocks is 279.12 ha and estimated reserve is around 9375933.87 cum. Revenue generated in the district of Darjeeling from minor minerals during the period of April 2017 to March 2020 was Rs. 23.56 crores.

The occurrence of riverbed sand and gravel in the district has been established by the Directorate of Mines and Minerals, Government of West Bengal and others in previous instances. It requires further systematic and scientific approach to quantify the resource along with their grade assessment. This report also recommends undertaking detail exploration (G1 and G2 level) program to assess the mineral occurrences in the major rivers of the district and should have a proper development and production plan for the mineral specified. The potential sand mining zones are identified and shown in the relevant section of the report.

1 Preface

The need for District Survey Report (DSR) have been necessitated by Ministry of Environment, Forest and Climate Change (MoEF&CC) vide there Notification No. 125 (Extraordinary, Part II Section 3, Sub-section ii), S.O. 141 (E), dated 15th January 2016. The notification was addressed to bring certain amendments with respect to the EIA notification 2006 and in order to have a better control over the legislation. District level committee's have been introduced in the system. As a part of this notification, preparation of District Survey Reports has been introduced. Subsequently, MoEF&CC has published Notification No. 3611 (E), dt. 25th July, 2018 regarding inclusion of the "Minerals Other than Sand" and format for preparation of the DSR has been specified. Monitoring Guidelines for Sand Mining (EMGSM) January 2020, Issued by MoEF&CC is prepared in consideration of various orders/directions issued by Hon'ble NGT in matters pertaining to illegal sand mining and also based on the reports submitted by expert committees and investigation teams. This DSR has been prepared in conformity with the S O 141 (E), S O 3611 (E) and other sand mining guidelines published by MoEF&CC time to time as well as the requirement specified in WBMMCR, 2016.

The purpose of DSR is to identify the mineral potential areas where mining can be allowed; and also to distinguish areas where mining will not be allowed due to proximity to infrastructural structures and installations, areas of erosion, areas of environmental sensitivities etc. The DSR would also help to estimate the annual rate of replenishment wherever applicable.

Preparation of this DSR involved both primary and secondary data generation. The primary data generation involved the site inspection, survey, ground truthing etc. while secondary data has been acquired through various authenticated sources and satellite imagery studies. The secondary data related to district profile, local geology, mineralization and other activities are available in rather a piecemeal fashion.

The DSR of Darjeeling district describes the general geographical profile of the district, distribution of natural resources, livelihood, climatic condition, inventory of minor minerals and revenue generation.

2 Introduction

The District Survey Report of Darjeeling District has been prepared as per the guide line of Ministry of Environment, Forests and Climate Change (MoEF&CC), Government of India vide Notification S.O.-1533(E) dated 14th Sept, 2006 and subsequent MoEF&CC Notification S.O. 141(E) dated 15th Jan, 2016. This report shall guide systematic and scientific utilization of natural resources, so that present and future generation may be benefitted at large. Further, MoEF&CC published a notification S.O. 3611(E) Dated 25th July, 2018 and recommended the format for District Survey Report.

The main objective of DSR is identification of areas of aggradations or deposition where mining can be allowed; and identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited and calculation of annual rate of replenishment and allowing time for replenishment after mining in that area. The DSR would also help to calculate the annual rate of replenishment wherever applicable and allow time for replenishment. Besides the sand mining, the DSR also include the potential development scope of in-situ minor minerals.

The objectives of the District Survey Report are as follows:

1. To identify and quantify minor mineral resources for its optimal utilization.
2. To regulate sand and gravel mining, identification of site specific end-use consumers and reduction in demand and supply gaps.
3. To facilitate use information technology (IT) for surveillance of the sand mining at each step.
4. To enable environmental clearance for cluster of sand and gravel mines.
5. To restrict illegal mining.
6. To reduce occurrences flood in the area.
7. To maintain the aquatic habitats.
8. To protect ground water in the area by limiting extraction of material in riverbeds to an elevation above the base flow.
9. To maintain data records viz. details of mineral resource, potential area, lease, approved mining plan, co-ordinates of lease hold areas, and revenue generation.
10. To design a scientific mining plan and estimate ultimate pit limit.
11. To frame a comprehensive guideline for mining of sand and other minor minerals.

The District Survey Report (DSR) comprises secondary data on geology, mineral resources, climate, topography, land form, forest, rivers, soil, agriculture, road, transportation, irrigation etc of the district collected from various published and un-published literatures and reports as well as various websites. Data on lease and mining activities in the district, revenue etc. have been collected from the DL&LRO office of the district and from West Bengal Mineral Development Corporation Limited.

2.1 Statutory Framework

2.1.1 Evolution of the Environmental Regulatory Framework:

Ministry of Environment, Forest and Climate Change (MoEF&CC) has published several notifications time to time to formulate and implement the District Survey Report (DSR) for every district. Statutory Framework and its legal aspect with respect to DSR are tabulated in Table 2.1.

Table 2.1: Requirement of District Survey Report and its year wise modification of Guidelines

Year	Particulars
1994	The Ministry of Environment, Forest and Climate Change (MoEF&CC) published Environmental Impact Assessment Notification 1994 which is only applicable for the Major Minerals more than 5 ha.
2006	In order to cover the minor minerals also into the purview of EIA, the MoEF&CC has issued EIA Notification SO 1533 (E), dated 14th September 2006, made mandatory to obtain environmental clearance for both Major and Minor Mineral more than 5 Ha.
2012	Further, Hon'ble Supreme Court wide order dated the 27th February, 2012 in I.A. No.12- 13 of 2011 in Special Leave Petition (C) No. 19628-19629 of 2009, in the matter of Deepak Kumar etc. Vs. State of Haryana and Others etc., ordered that "leases of minor minerals including their renewal for an area of less than five hectares be granted by the States/Union Territories only after getting environmental clearance from MoEF"; and Hon'ble National Green Tribunal, order dated the 13th January, 2015 in the matter regarding sand mining has directed for making a policy on environmental clearance for mining leases in cluster for minor Minerals.
2016	The MoEF&CC in compliance of above Hon'ble Supreme Court's and NGT'S order has prepared "Sustainable Sand Mining Guidelines (SSMG), 2016" in consultation with State governments, detailing the provisions on environmental clearance (EC) for cluster, creation of District Environment Impact Assessment Authority, preparation of District survey report and proper monitoring of minor mineral. There by issued Notification dated 15.01.2016 for making certain amendments in the EIA Notification, 2006, and made mandatory to obtain EC for all minor minerals. Provisions have

Year	Particulars
	been made for the preparation of District survey report (DSR) for River bed mining and other minor minerals.
2016	The West Bengal Minor Minerals Concession Rules, 2016 amended the Mines and Minerals (Development and Regulation) Act, 1957 (Act 67 of 1957), to make the rules regulating the grant of mining licenses, prospecting license-cum-mining leases and mining leases in respect of minor minerals by auction process. The rule also incorporates EIA 2016 also includes SSMG 2016 for minor mineral mining.
2018	MoEF&CC published a notification S.O. 3611(E) Dated 25th July, 2018 and recommended the format for District Survey Report .The notification stated about the objective of DSR i.e "Identification of areas of aggradations or deposition where mining can be allowed; and identification of areas of erosion and proximity to infrastructural structures and installations where mining should be prohibited and calculation of annual rate of replenishment and allowing time for replenishment after mining in that area".
2020	Enforcement and Monitoring Guidelines for Sand Mining (EMGSM) 2020 has been published modifying Sustainable sand Mining Guidelines, 2016 by MoEF&CC for effective enforcement of regulatory provisions and their monitoring. The EMGSM 2020 directed the states to carry out river audits, put detailed survey reports of all mining areas online and in the public domain, conduct replenishment studies of river beds, constantly monitor mining with drones, aerial surveys, ground surveys and set up dedicated task forces at district levels. The guidelines also push for online sales and purchase of sand and other riverbed materials to make the process transparent. They propose night surveillance of mining activity through night-vision drones.

2.1.2 Other Guidelines for Sand Mining in India:

The West Bengal Minor Minerals Concession Rules (WBMMCR), 2016

1) (a) No person shall undertake mining operation in any area prohibited by the 'Stale Government in the public interest by notification in the *Official Gazette*.
Provided that nothing in the sub-rule shall affect any mining operation undertaken in any area in accordance with the terms and conditions of a mining lease or mineral concession already granted.
(b) No person shall transport or store or cause to be transported or stored any mineral otherwise than in accordance with the provisions of these rules and the West Bengal Minerals (Prevention of Illegal Mining, Transportation and Storage) Rules, 2002.

(2) No minor mineral coming out in course of digging of wells or excavation of tanks Shall be disposed of by the person digging or excavating without informing the District Authority as well as the Executive Officer of the *Panchayat Samiti* or the Executive Officer of the Municipality concerned, as the case may be, about such occurrence.
Provided that disposal of such minor mineral may be allowed on pre-payment of prices of such minor mineral at the prevailing market rate as determined on the basis of the rates published by the Public Works Department / concerned department of the State Government for the concerned area from time to time.

(3) No mining of river bed occurrences shall be allowed within 300 meters, upstream and downstream, measured from the centre line of any bridge, regulator or similar hydraulic structure and from the end point of bank protection works.

(4) No river bed mining shall be allowed beneath 3 meters of the river bed or ground water level, whichever is less.

(5) No mining operation in case of river bed occurrence shall be done within a distance of three (3) kilometers of a barrage axis or dam on a river unless otherwise permitted by the concerned Executive Engineer or Revenue Officer or authorized officer and such distance shall be reckoned across an imaginary line parallel to the 'barrage, or dam axis, as the case maybe.

(6) No extraction of river bed occurrence shall 'be allowed beyond the central one third of the river bed, or keeping a distance of 100 meter from the existing bank line whichever is less, unless otherwise permitted by the concerned Executive Engineer or Revenue Officer.

(7) No extraction of minerals other than river bed occurrence shall be allowed within fifty (50) meters from any road, public structure, embankment, railway line, bridge canal, road and other public works or buildings.

(8) No mining lease shall be granted without proof of existence of mineral contents in the area for which the application for a mining lease has been made in accordance with such parameters as may be prescribed by the Government from time to time.

N.B- The aforesaid application for mining lease shall succeed the competitive bidding for mining lease for a specified mineral(s).

Sustainable Sand Mining Management Guidelines (SSMMG), 2016 by MoEF&CC.

The sustainable sand Mining Management Guidelines 2016 has been prepared after extensive consultation with the States and Stakeholders over a period of one year. The main objective of the Guideline is to ensure sustainable sand mining and environment friendly management practices in order to restore and maintain the ecology of river and other sand sources.

a) Parts of the river reach that experience deposition or aggradation shall be identified first. The Lease holder/ Environmental Clearance holder may be allowed to extract the sand and gravel deposit in these locations to manage aggradation problem.

b) The distance between sites for sand and gravel mining shall depend on the replenishment rate of the river. Sediment rating curve for the potential sites shall be developed and checked against the extracted volumes of sand and gravel.

c) Sand and gravel may be extracted across the entire active channel during the dry season.

d) Abandoned stream channels on terrace and inactive flood plains be preferred rather than active channels and their deltas and flood plains. Stream should not be diverted to form inactive channel.

e) Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.

f) Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.

g) Segments of braided river system should be used preferably falling within the lateral migration area of the river regime that enhances the feasibility of sediment replenishment.

h) Sand and gravel shall not be extracted within 200 to 500 meter from any crucial hydraulic structure such as pumping station, water intakes, and bridges. The exact distance should be ascertained by the local authorities based on local situation. The cross-section survey should cover a minimum distance of 1.0 km upstream and 1.0 km downstream of the potential reach for extraction. The sediment sampling should include the bed material and bed material load before, during and after extraction period. Develop a sediment rating curve at the upstream end of the potential reach using the surveyed cross- section. Using the historical or gauged flow rating curve, determine the suitable period of high flow that can replenish the extracted volume. Calculate the extraction volume based on the sediment rating curve and high flow period after determining the allowable mining depth.

h) Sand and gravel could be extracted from the downstream of the sand bar at river bends. Retaining the upstream one to two thirds of the bar and riparian vegetation is accepted as a method to promote channel stability.

Flood discharge capacity of the river could be maintained in areas where there are significant flood hazard to existing structures or infrastructure. Sand and gravel mining may be allowed to maintain the natural flow capacity based on surveyed cross- section history.

i) Alternatively, off-channel or floodplain extraction is recommended to allow rivers to replenish the quantity taken out during mining.

j) The Piedmont Zone (Bhabhar area) particularly in the Himalayan foothills, where riverbed material is mined, this sandy-gravelly track constitutes excellent conduits and holds the greater potential for ground water recharge. Mining in such areas should be preferred in locations selected away from the channel bank stretches.

k) Mining depth should be restricted to 3 meter and distance from the bank should be 3 meter or 10 percent of the river width whichever less.

The borrow area should preferably be located on the river side of the proposed embankment, because they get silted up in course of time. For low embankment less than 6 m in height, borrow area should not be selected within 25 m from the toe/heel of the embankment. In case of higher embankment the distance should not be less than 50 m. In order to obviate development of flow parallel to embankment, cross bars of width eight times the depth of borrow pits spaced 50 to 60 meters centre-to-centre should be left in the borrow pits.

l) Demarcation of mining area with pillars and geo-referencing should be done prior to start of mining.

Enforcement and Monitoring Guidelines for sand Mining, 2020 (MoEF&CC)

The Ministry of Environment Forest and Climate Change formulated the Sustainable Sand Management Guidelines 2016 which focuses on the Management of Sand Mining in the Country. But in the recent past, it has been observed that apart from management and systematic mining practices there is an urgent need to have a guideline for effective enforcement of regulatory provision and their monitoring. Section 23 C of MMDR, Act 1957 empowered the State Government to make rules for preventing illegal mining, transportation and storage of minerals. But in the recent past, it has been observed that there was large number of illegal mining cases in the Country and in some cases, many of the officers lost their lives while executing their duties for curbing illegal mining incidence. The illegal and uncontrolled illegal mining leads to loss of revenue to the State and degradation of the environment.

a) Parts of the river reach that experience deposition or aggradation shall be identified. The Leaseholder/ Environmental Clearance holder may be allowed to extract the sand and gravel deposit in these locations to manage aggradation problem.
b) The distance between sites for sand and gravel mining shall depend on the replenishment rate of the river. Sediment rating curve for the potential sites shall be developed and checked against the extracted volumes of sand and gravel.
c) Sand and gravel may be extracted across the entire active channel during the dry season.
d) Abandoned stream channels on the terrace and inactive floodplains be preferred rather than active channels and their deltas and flood plains. The stream should not be diverted to form the inactive channel.
e) Layers of sand and gravel which could be removed from the river bed shall depend on the width of the river and replenishment rate of the river.
f) Sand and gravel shall not be allowed to be extracted where erosion may occur, such as at the concave bank.
g) Segments of the braided river system should be used preferably falling within the lateral migration area of the river regime that enhances the feasibility of sediment replenishment.
h) Sand and gravel shall not be extracted up to a distance of 1 kilometre (1 km) from major bridges and highways on both sides, or five times (5x) of the span (x) of a bridge/public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.
i) The sediment sampling should include the bed material and bed material load before, during and after the extraction period. Develop a sediment rating curve at the upstream end of the potential reach using the surveyed cross-section. Using the historical or gauged flow rating curve, determine the suitable period of high flow that can replenish the extracted volume.

Calculate the extraction volume based on the sediment rating curve and high flow period after determining the allowable mining depth.

j) Sand and gravel could be extracted from the downstream of the sand bar at river bends. Retaining the upstream one to two-thirds of the bar and riparian vegetation is accepted as a method to promote channel stability.

k) The flood discharge capacity of the river could be maintained in areas where there is a significant flood hazard to existing structures or infrastructure. Sand and gravel mining may be allowed to maintain the natural flow capacity based on surveyed cross-section history. Alternatively, off-channel or floodplain extraction is recommended to allow rivers to replenish the quantity taken out during mining.

l) The Piedmont Zone (Bhabhar area) particularly in the Himalayan foothills, where riverbed material is mined, this sandy-gravelly track constitutes excellent conduits and holds the greater potential for groundwater recharge. Mining in such areas should be preferred in locations selected away from the channel bank stretches.

m) Mining depth should be restricted to 3 meters and distance from the bank should be ¼th or river width and should not be less than 7.5 meters.

n) The borrow area should preferably be located on the riverside of the proposed embankment because they get silted in the course of time. For low embankment, less than 6 m in height, borrow area should not be selected within 25 m from the toe/heel of the embankment. In the case of the higher embankment, the distance should not be less than 50 m. In order to obviate the development of flow parallels to the embankment, crossbars of width eight times the depth of borrow pits spaced 50 to 60 meter center-to-center should be left in the borrow pits.

o) Demarcation of mining area with pillars and geo-referencing should be done prior to the start of mining.

p) A buffer distance /un-mined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed/prescribed by the regulatory authority shall be maintained.

q) A buffer distance /unmined block of 50 meters after every block of 1000 meters over which mining is undertaken or at such distance as may be the directed/prescribed by the regulatory authority shall be maintained.

r) River bed sand mining shall be restricted within the central 3/4th width of the river/rivulet or 7.5 meters (inward) from river banks but up to 10% of the width of the river, as the case may be and decided by regulatory authority while granting environmental clearance in consultation with irrigation department. Regulating authority while regulating the zone of river bed mining shall ensure that the objective to minimize the effects of riverbank erosion and consequential channel migration are achieved to the extent possible. In general, the area for removal of minerals shall not exceed 60% of the mine lease area, and any deviation or relaxation in this regard shall be adequately supported by the scientific report.

s) Mining Plan for the mining leases(non-government) on agricultural fields/Patta land shall only be approved if there is a possibility of replenishment of the mineral or when there is no riverbed mining possibility within 5 KM of the Patta land/Khatedari land. For government projects mining could be allowed on Patta land/Khatedari land but the mining should only

be done by the Government agency and material should not be used for sale in the open market.

The minerals reserve for riverbed area is calculated on the basis of maximum depth of 3 meters and margins, width and other dimensions as mentioned in para (s) above. The area multiplied by depth gives the volume and volume multiplied with bulk density gives the quantity in Metric Ton. In case of riverbed, mineable material per hectare area available for actual mining shall not exceed the maximum quantity of 60,000 MT per annum.

2.2 Methodology of DSR Preparation

The steps followed during the preparation of District Survey Report are given in Figure 2.1. The individual steps are discussed in following paragraphs.

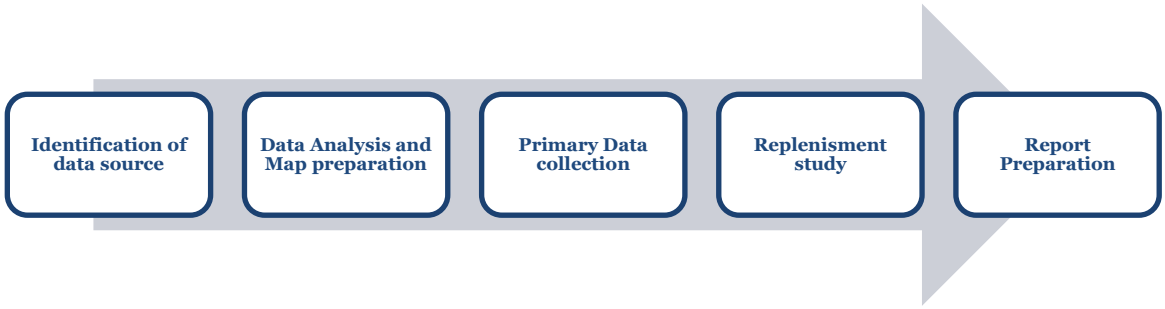


Figure 2.1: Steps followed in preparation of DSR

Data source Identification: District Survey Report has been prepared based on the Primary data base and secondary data base collected and collated from different sources. This is very critical to identify authentic data sources before compiling the data set. The secondary data sources which are used in this DSR are mostly taken from public domain and or from the published report in reputed journal. Information related to district profile has been taken from District Census report, 2011 and District Statistical Handbook published by the Govt. of West Bengal. Potential mineral resources of the district have been described based on the published report of Geological Survey of India (GSI) or any other govt. agencies like MECL etc. List of Mining lease, name of lease holder, lease/Block area, resource in already allotted mining lease, revenue from minor mineral sector etc. have been collected from the concern DL&LRO offices of the district. Satellite images have been used for map preparation related to physiography and land use/land cover of the district.

Data Analysis and Map preparation: Dataset which are captured during the report preparation, are gone through detail analysis work. District Survey Report involves the analytical implication of the captured dataset to prepare relevant maps.

Methodology adopted for preparation of relevant maps is explained below.

Land Use and Land Cover Map: Land Use and Land Cover classification is a complex process and requires consideration of many factors. The major steps of image classification may include determination of a suitable classification system via Visual Image Interpretation, selection of training samples, Satellite image (FCC-False Colour Composite) pre-processing, selection of suitable classification approaches, post-classification processing, and accuracy assessment.

Here LISS-III satellite Imagery has been taken for Supervised Classification as supervised classification can be much more accurate than unsupervised classification, but

depends heavily on the training sites, the skill of the individual processing the image, and the spectral distinctness of the classes in broader scale.

According to the Visual Image Interpretation (Tone, Texture, Colour etc.) training set of the pixel has been taken. Pictorial descriptions of Land Use classification are explained in Figure 2.2.

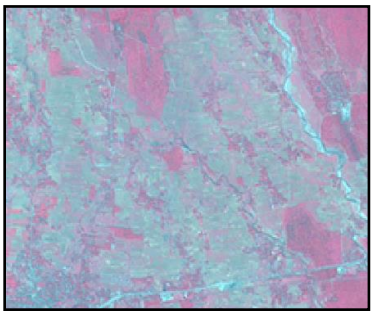
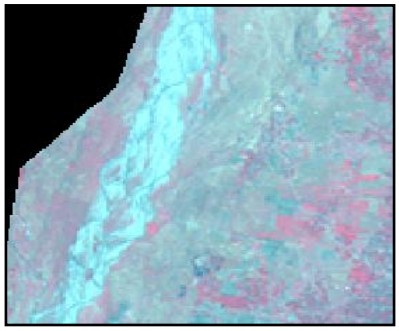
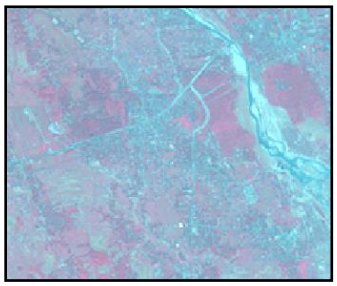
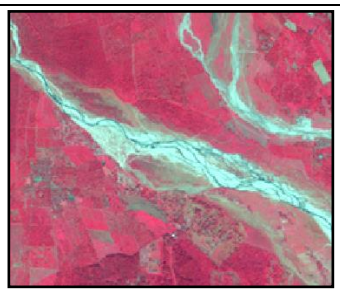
Agricultural Land - Based on their Geometrical shape, Red and Pink colour tone, Agricultural Land has been identified.	**Vegetation Covered Area** - Based on their continuous Red colour tone, Vegetation Covered Area has been identified.
	
Agricultural Fallow Land - Based on their Geometrical shape, Light and dark cyanwith light pink colour tone, Agricultural Land has been identified.	**Badland Topography**- Light Yellowish mixed with cyan colour has been identified as Bad Land Topography.
	
Settlement – Area with Cyan Colour including geometrical shape has been recognized as Settlement Area.	**Water Bodies –** Dark blue colour has been classified as Water Bodies.

Figure 2.2: Pictorial description of Land Use Classification methods

Geomorphological Map: The major steps of preparing Geomorphological Map is identifying features like – Alluvial Fan, Alluvial Plain, Hilly Region etc. from Satellite Imagery (FCC-False Colour Composite) via Visual Image Interpretation and then digitisation has been taken into the consideration to prepare map including all the Geomorphological features according to their location. Pictorial descriptions of Geomorphological unit's classification are explained in Figure 2.3.

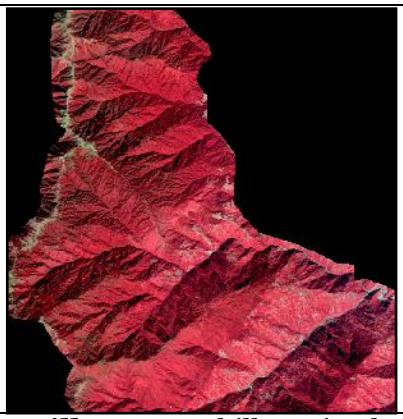
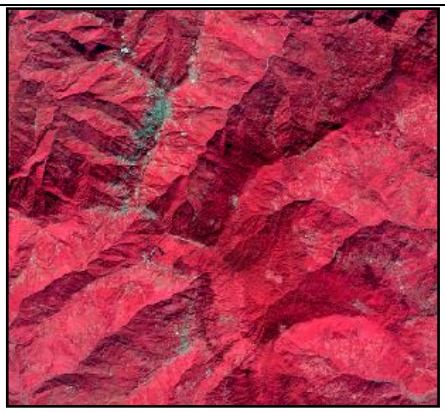
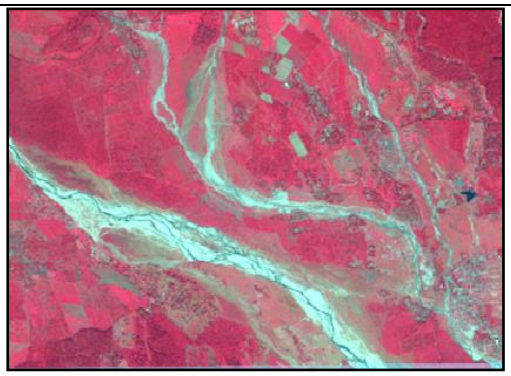
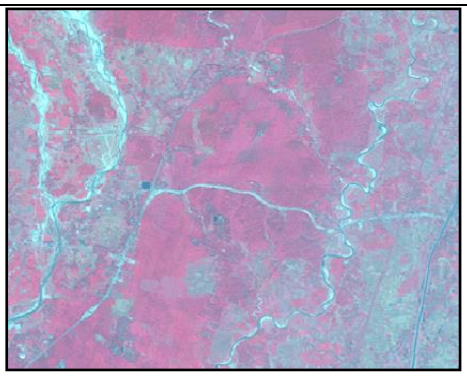
	
Upper Hills – Upper hilly region has been identified based on their high elevation and sharp edges of the land.	**Lower Hills** – Lower hilly has been identified based on their elevation and sharp edges which is comparatively less in height than upper hilly region.
	
Alluvial Fan- A fan-based deposition formed by stream where the velocity is abruptly decreased. In Satellite Imagery the flat area has been identified as Alluvial Fan just below the Lower hilly region.	**Alluvial Plain**- Alluvial plain is a largely flat landform created by the deposition of sediment over a long period. In satellite Imagery the flat land just below the Alluvial Fan has been identified as Alluvial Plain.

Figure 2.3: Pictorial description of Geomorphological Units Classification methods

Physiographical Map: The major step of preparing Physiographical Map is generating contour at a specific interval to show the elevation of the area using Cartosat DEM.

Block Map/Transportation Map/Drainage Map:

- Raw Data collected from **National Informatics Centre (NIC Website) during Sept 2020.**
- Data has been geo-referenced using GIS software.
- Digitization of block boundary, district boundary, state boundary, international boundary, and district headquarter, sub –district headquarter, places, road, railway, river, nala etc.
- Road name, River name, Railway name has been filled in attribute table of the Layers
- Final layout has been prepared by giving scale, legend, north arrow, etc.

Earthquake Map:

- Raw data collected from **Ministry of Earth Science.**
- Data has been geo-referenced using GIS software.
- Digitization of Earthquake zone and superimposed it over Block Boundary.
- Zone name has been filled in attribute table of the Layers
- Final layout has been prepared by giving scale, legend, north arrow, etc.

Soil Map:

- Raw data collected from **National bureau of soil survey and land use planning during Sept 2020.**
- Data has been geo-referenced using GIS software.
- Digitization of Soil classification zone and superimposed it over District Boundary.
- Soil classification has been filled in attribute table of the Layers.
- Final layout has been prepared by giving scale, legend, north arrow, etc.

Wildlife Sanctuary and National Park location Map:

- Raw data collected from **ENVIS Centre on Wildlife and Protected Areas during August 2020.**
- Data has been geo-referenced using GIS software.
- Digitization of Wildlife Sanctuary and National Park and superimposed it over Block Boundary.
- Wildlife Sanctuary and National Park name has been filled in attribute table of the Layers

  Final layout has been prepared by giving scale, legend, north arrow, etc.

Primary Data Collection: To prepare DSR, capturing primary data or field data has also been carried out in the district. Field study involves assessment of the mineral resources of the district by means of pitting / trenching in specific interval. This provides clear picture of mineral matters characterization and their distribution over the area.

Replenishment study: One of the principal causes of environmental impacts from in-stream mining is the removal of more sediment than the system can replenish. It is therefore need for replenishment study for riverbed sand in order to nullify the adverse impacts arising

due to excess sand extraction. The annual rate of replenishment carried out on every river of the district to have proper assessment of the sand reserve for mining purposes.

Physical survey has been carried out by GPS/DGPS/ Total Station to define the topography, contours and offsets of the riverbed. The surveys clearly depict the important attributes of the stretch of the river and its nearby important civil and other feature of importance. This information will provide the eligible spatial area for mining.

Report Preparation: The district survey report portrays general profile, geomorphology, land use pattern and geology of the district. The report then describes the availability and distribution of riverbed sands and other minor minerals in the district. Apart from delineation the potential mining blocks, the report also includes inventorization of the minerals, recent trends of production of minor minerals and revenue generation there from. Annual replenishment of the riverbed sand has been estimated using field observation, satellite imagery and empirical formula. The road network connecting arterial road to potential mining blocks has been identified. Potential environmental impacts of mining of these minerals, their mitigation measures along with risk assessment and disaster management plan have also been discussed. Finally the reclamation strategy for already mined out areas is also chalked out.

Demand and Utilisation of Sand

Sand is a multi-purpose topographical material. It is known as one of the three fundamental ingredients in concrete. The composition of sand is diverse. Mostly sand is made of silica which is a common element. It can also come from another source of minerals like quartz, limestone, or gypsum.

From beds to flood plains to coastlines- we can find the sand at almost everywhere. The robustness of sand has played a significant role in everyday life. We use sand practically every other day.

Sand extraction from river beds and brick earth mining for making raw bricks are the main mining activities in the district. With a spurt in construction of real estate sectors and various govt. sponsored projects, the demand for both sand and bricks has increased manifold. The extraction of sand is carried out either manually or through semi- mechanized system. The depth of mining for both river bed sand and brick earth is restricted due to statutory provision in the regulations pertaining to conservation and development of minor minerals.

River sand mining is a common practice as habitation concentrates along the rivers and the mining locations are preferred near the markets or along the transportation route, for reducing the transportation cost.

In the real world, there are a lot of situations where we can find uses of sand. Followings are the common sand uses.

1. While bunging metal, we can mix sand with clay binder for frameworks used in the foundries.
2. Sand can be used for cleaning up oil leak or any spill by dredging sand on that spill. The material will form clumps by soaking up, and we can quickly clean the mess.
3. Sand can be used as a road base which is a protective layer underneath all roads
4. Industrial sand is used to make glass, as foundry sand and as abrasive sand.
5. One creative usage of sand is serving as a candle holder. We can try putting some sand before pouring tea light or any candle in a glass. It holds the candle still and refrain the candle from rolling by giving it an excellent decoration.
6. Adds texture and aesthetic appeal to space.
7. Sand is mostly pure to handle, promptly available and economically wise.
8. We use sand in aquariums, fabricating artificial fringing reefs, and in human-made beaches
9. Sandy soils are ideal for growing crops, fruits and vegetables like watermelon, peaches, peanuts, etc.
10. Sand can light a path by filling mason jars with sand and tea light which is another inexpensive way to make a walkway glow.
11. Sand helps to improve resistance (and thus traffic safety) in icy or snowy conditions.
12. Sand is needed in the beaches where tides, storms or any form of preconceived changes to the shoreline crumble the first sand.
13. Sand containing silica is used for making glass in the automobile and food industry- even household products for the kitchen.
14. Sand is a strong strand which is used for plaster, mortar, concrete, and asphalt.
15. The usual bricks formulated of clay only is way weaker and lesser in weight than blocks made of clay mixed with sand.

3 General Profile of the district

3.1 General Information

The district of Darjeeling is the northern most district of the State of West Bengal. Lying on the foot hills of the Himalayas, the district is the gateway to the State of Sikkim and the bordering countries of Bhutan and Nepal. Geographically, the district can be divided into two broad divisions: the hills and the plains. The entire hilly region covers the three hill subdivisions of Darjeeling, Kurseong and Mirik. The foothill of Darjeeling Himalayas, which comes under the Siliguri subdivision, is known as the Terai (http://wbnorthbengaldev.gov.in/htmlpage/about_darjeeling.aspx).

Darjeeling district is bounded on the north by the State of Sikkim, on the south by Uttar Dinajpur district; on the east by Kalimpong district of west Bengal and on the west by Nepal. Geographically the district is situated between 26°27' and 27°13' N and between 87°59' and 88°30'E (Figure 3.1). The district covers an area of 2090 sq.km. (https://en.wikipedia.org/wiki/Darjeeling_district)

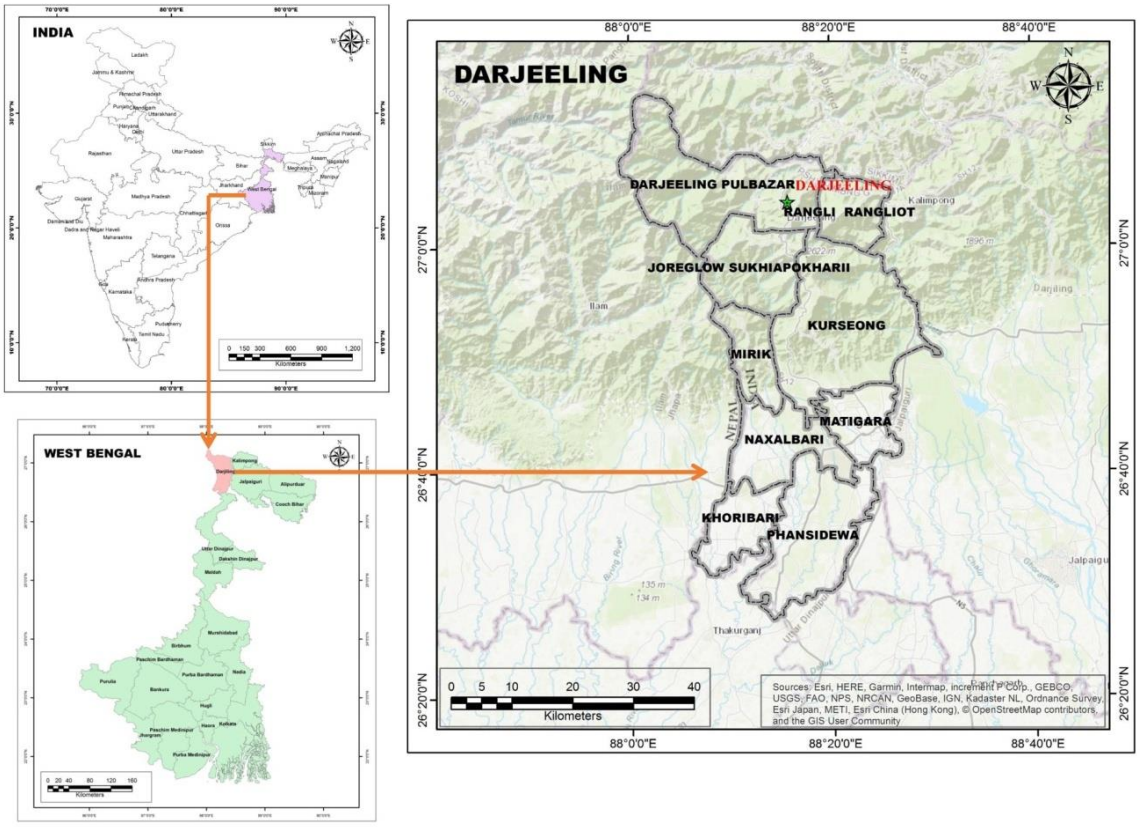


Figure 3.1: Location Map of Darjeeling
(Source: National Informatics Centre and ESRI Base Map)

Darjeeling district comprises of four sub-divisions, namely Sadar sub-division, Kurseong sub-division, Mirik and Siliguri sub-division (Table 3.1). The Darjeeling hills area is spread over the first three sub-divisions. Siliguri subdivision is in the plains. Darjeeling is the district headquarters. There are 9 block in the district. Sadar sub-division is divided in three blocks, namely Darjeeling - Pulbazar, Rangli - Rangliot and Jorebunglow-Sukhiapokharii. Siliguri sub-division has four blocks, Matigara, Naxalbari, Khoribari and Phansidewa. Other two blocks are Kurseong and Mirik (Figure 3.2) (https://darjeeling.gov.in/administrative-setup/).

Table 3.1: Block distribution of Darjeeling District

Sub-Division	CD block	Headquarters	Distance from District HQ (km)	No of Gram Panchayat	Area (km²)
Sadar Sub-Division	Darjeeling Pulbazar	Bijanbari	7.94	23	416.00
	Jorebunglow-Sukhiapokhri	Sukhiapokhri	10.94	16	222.12
	Rangli-Rangliot	Takdah	9.35	11	272.99
Kurseong Sub-Division	Kurseong	Kurseong	17.85	14	377.35
Mirik Sub-Division	Mirik	Mirik	19.13	6	125.68
Siliguri Sub-division	Naxalbari	Naxalbari	40.75	6	181.88
	Kharibari	Kharibari	55.05	4	144.88
	Phansidewa	Phansidewa	51.15	7	312.15
	Matigara	Bairatisal	36.95	5	143.00

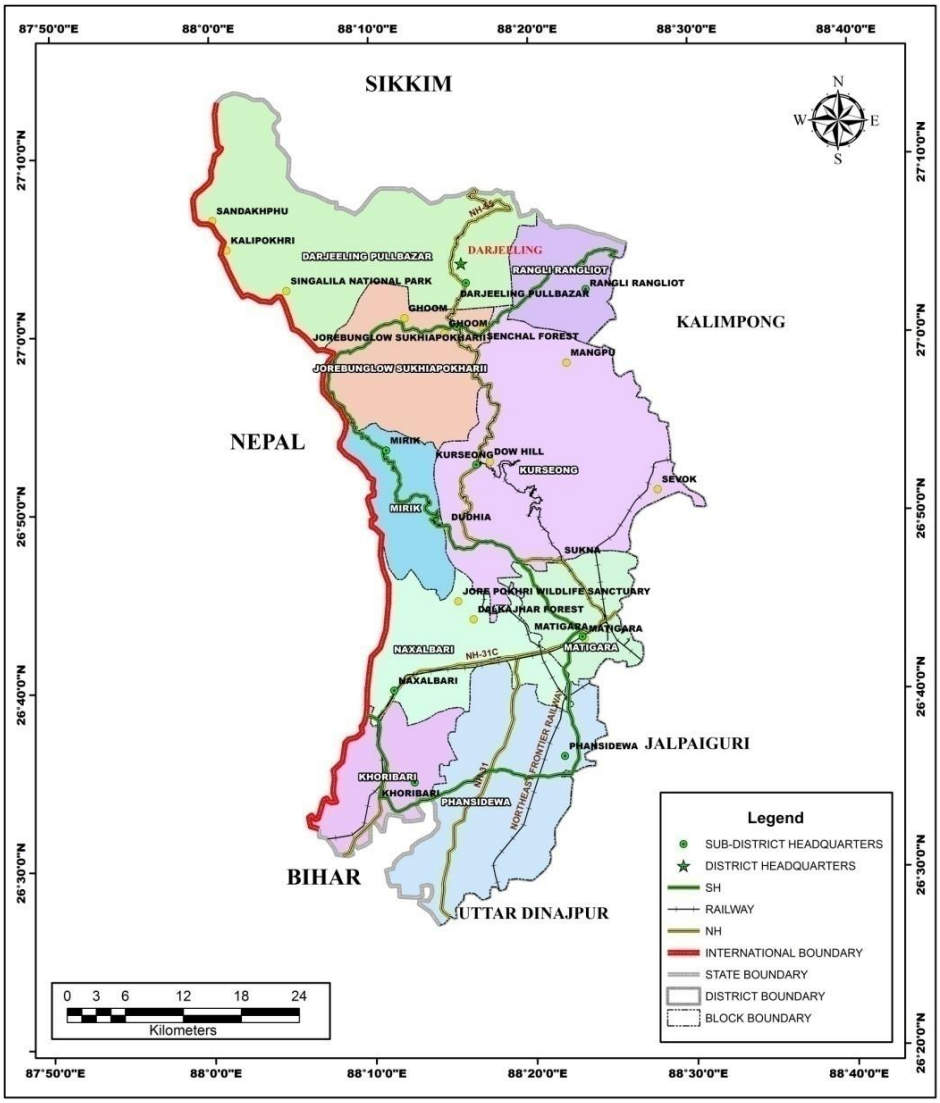


Figure 3.2: Block divisional map of Darjeeling

(Source: National Informatics Centre)

3.2 Climate Condition

Darjeeling district has two different climatic conditions due to its distinctive topographical features having hills in a larger portion of the district and plain-lands of Terai towards South and South-Eastern part. The Hills have a temperate weather condition, with pleasant summer and cold winter with occasional snowfall. On the other hand, the marshy tract of Terai is humid and warm, showing typical Tropical and Sub-Tropical climatic conditions depending upon the elevation. (https://www.imdpune.gov.in/library/public/Climate%20of%20WestBengal.pdf).

3.2.1 Temperature

The temperature in the hilly areas of Darjeeling district varies from 25°C to near freezing points. The maximum temperature is usually reached during monsoon and the lowest temperature is reached during the cold winter, between December to March. The lowest temperature of the district remains around 10°C to (-) 3°C, depending on elevation (Census, 2011).

The average maximum and minimum temperature recorded around Darjeeling Town during preceding five years is given in Table 3.2.

Table 3.2: Monthly average temperature distribution of Darjeeling District

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Avg. Temperature (°C)	6.6	8.1	11.7	14.7	16.1	17.3	17.8	17.8	17.5	15.3	11.5	8.4
Min. Temperature (°C)	3.3	4.6	7.9	10.9	13	14.9	15.5	15.5	14.8	11.6	7.5	4.6
Max. Temperature (°C)	9.9	11.6	15.5	18.6	19.2	19.7	20.2	20.2	20.2	19	15.6	12.3

(Source: Climate-Data.Org)

3.3 Rainfall and Humidity

The rainy season in the district commence from June and lasts till September. The average annual rainfall is 2973 mm (Figure 3.3). The maximum rainfall in the area as per IMD data was recorded in the month of July followed by August and September. The following table shows the annual total rainfall recorded for Darjeeling district along with the month(s) while maximum precipitation is recorded over 5 years from 2016-2020 (Table 3.3) (https://hydro.imd.gov.in/hydrometweb/(S(qeibst3a31didm55ibkikcry))/DistrictRaifall.aspx).

Table 3.3: Annual rainfall in mm recorded in Darjeeling District

Month	2016	2017	2018	2019	2020	Average
	Rainfall in mm					
Jan	6.5	0.9	0.7	0.4	31.9	8.08
Feb	3	4.6	6	26.7	40.9	16.24
Mar	46.3	79.1	40.4	46.6	62.2	54.92
Apr	34	61.3	79.9	129.1	124	85.66
May	191.4	276.1	241.9	141	214.2	212.92
Jun	727.9	531	408.2	260.3	693.5	524.18
Jul	1168.3	760.2	592.9	1069.2	1065.6	931.24

Month	2016	2017	2018	2019	2020	Average
	Rainfall in mm					
Aug	310.9	767.9	558.7	487.4	644	553.78
Sept	535	531	579.7	669.4	827	628.42
Oct	306.2	63.8	59.4	74.4	91.2	119
Nov	0	7.6	1.7	7.7	1.8	3.76
Dec	0	0	11.3	2.4	2.8	3.3
Yearly Total	3329.5	3083.5	2580.8	2914.6	3799.1	3141.5

Source: Website of Indian Meteorological Department, Govt. of India

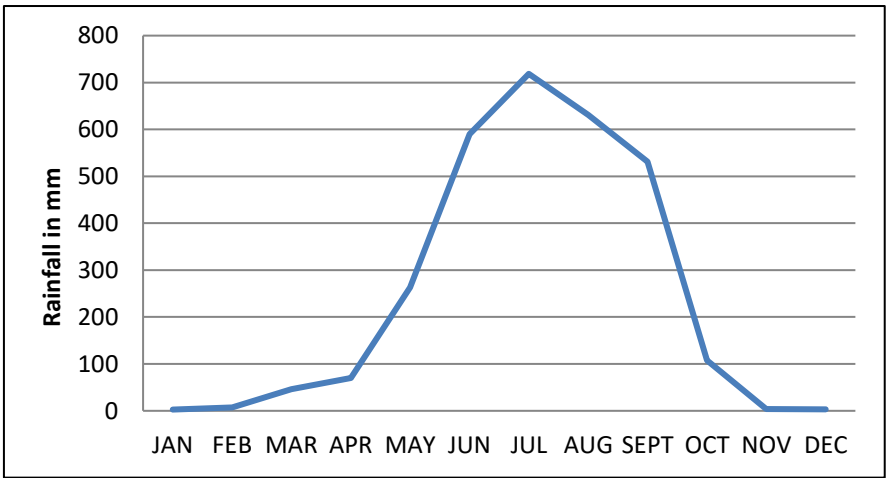


Figure 3.3: Graphical representation of Darjeeling District Rainfall

3.3.1 Relative Humidity, Wind speed and Wind direction

The entire Darjeeling Himalaya experiences a high relative humidity that is spread uniformly. Generally the north facing slopes are colder and remain humid throughout the whole year. The relative humidity is higher towards the higher altitudes (above 2000 m) ranging from 85% - 99% during the monsoons, and the relative humidity generally decreases towards the lower elevations. The drier months of March and April are less humid with the relative humidity ranging between 45% - 60%.

The winds over the Himalaya are predominantly westerly during November to May. At the upper level, these winds are invariably strong and may attain to the intensity hurricane. With the setting in of the Monsoon (in early June), the westerly wind is replaced by the South and S.E. monsoon winds.

Surface winds of Darjeeling District are generally from the east. But during winter months the prevailing wind direction is E-NE. During the monsoon (June to September), the prevailing direction is from E-SE. At Darjeeling, the average wind speed does not generally exceed 10 Km/hour. The mean velocity is lower in the Terai. Local storms, however, occur in all parts of the District.

3.4 Topography and Terrain

Physiographically Darjeeling district can be broadly divided into Hills and Plain land (Figure 3.4). The natural slope of the land is from North to South. Numerous rivers and springs flow South-wards emerging from the hills at the North, the most important being river Teesta. The district further sub divided into region based on topography.

Darjeeling Himalayas region bears the highest elevation and lies at the Northern-most portion of the district. The Singalila range is the highest mountain range of district Darjeeling lies in this region. The two highest peaks of West Bengal lie in the Singalila Range which are Sandakphu with an elevation of 3,636 metres and Phalut with an elevation of 3,600 metres. Tonglu (3,036 metres) and Sabargram (3,543 metres) are two other important peaks (Census, 2011).

Western Dooars region is mainly spread over the foot-hills of the Himalayas and primarily is a plain land gently sloping from North to South. General elevation of land is 80 metres to 300 metres. Mahananda Tract, known as Terai region, is the primarily plan land of the district situated to the South of Western Dooars and having elevation of 100-150 m (Census, 2011).

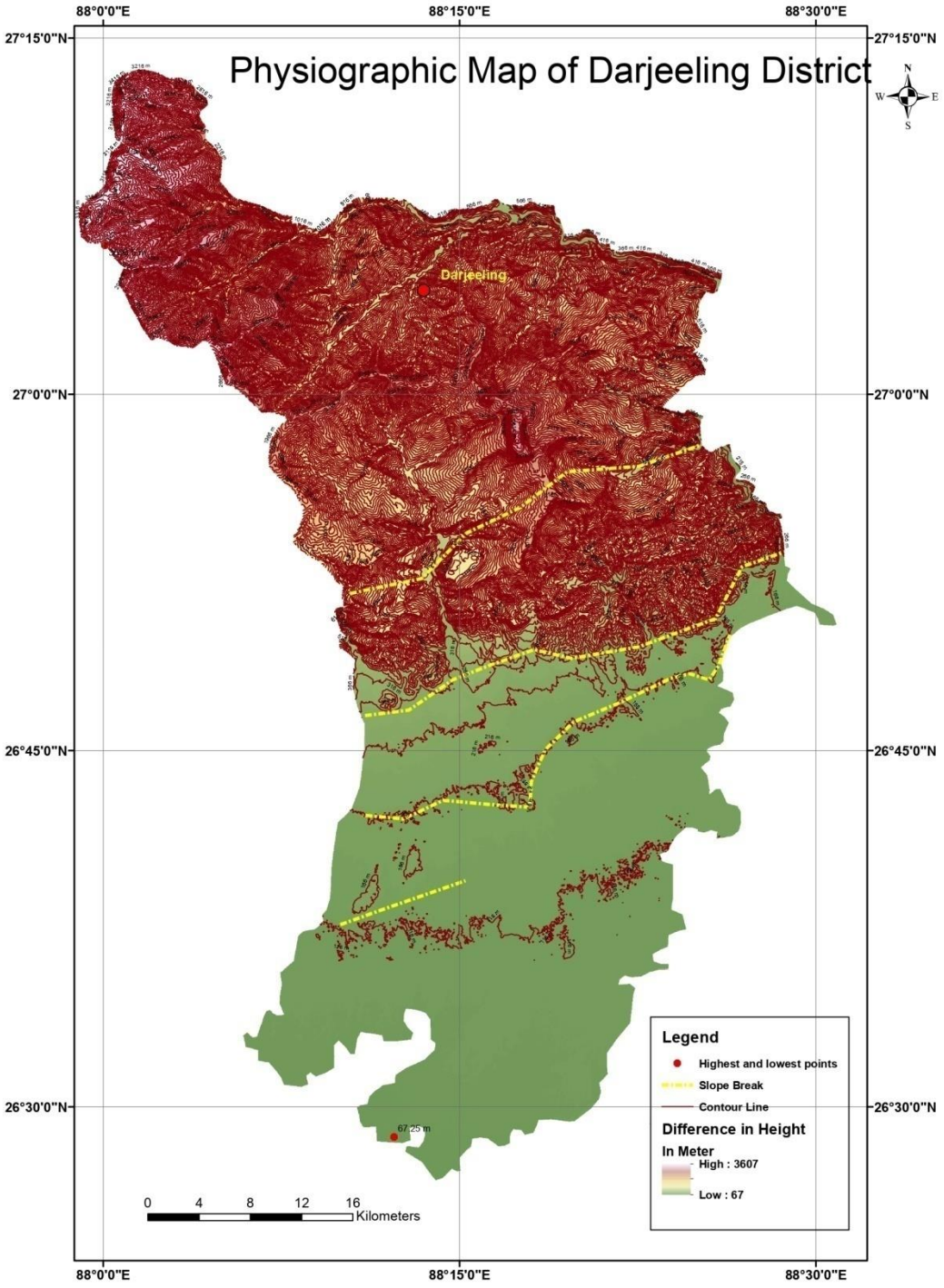


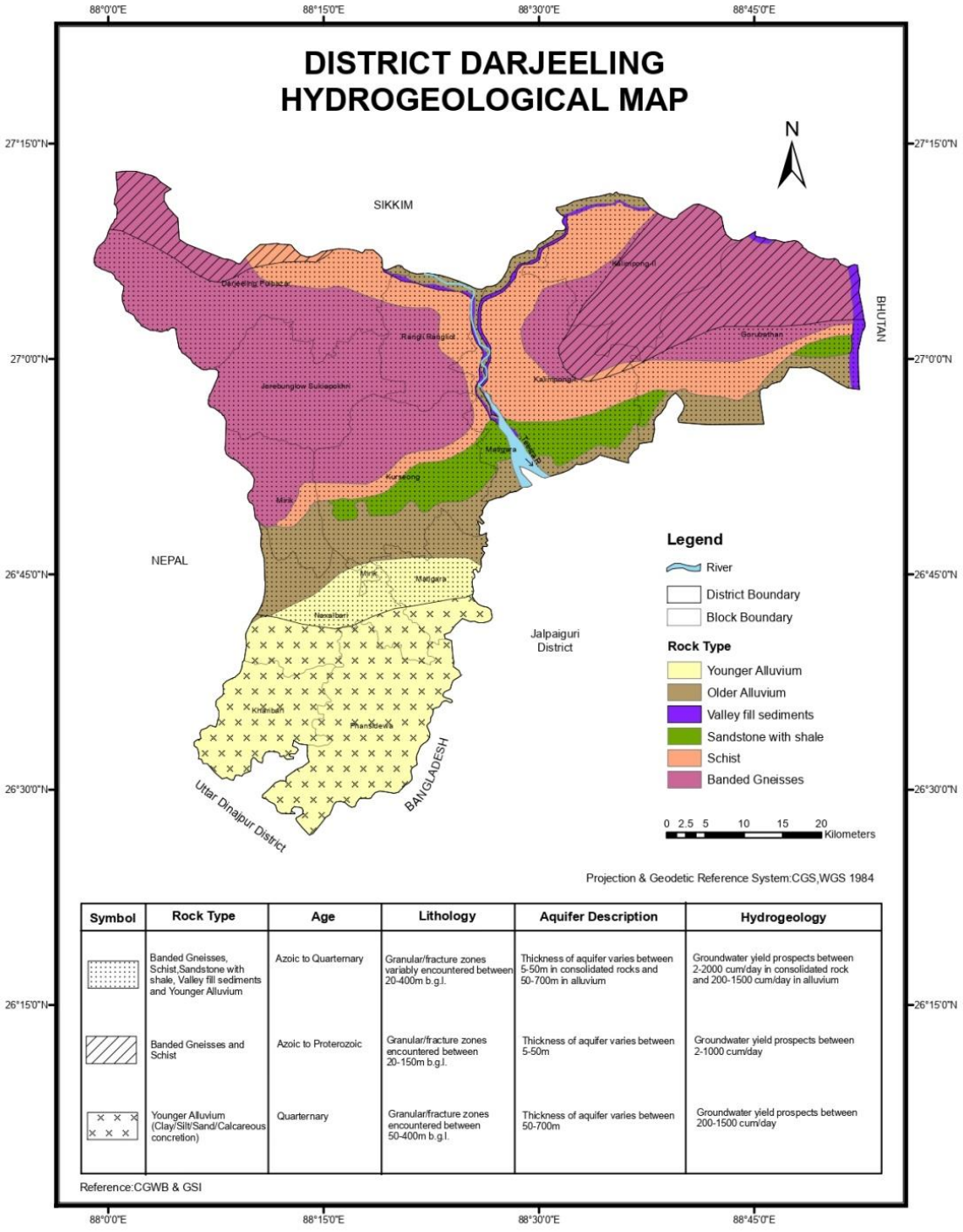
Figure 3.4: Physiographic map of Darjeeling District
(Source: Cartosat-1, Bhuvan India)

3.5 Water courses and Hydrology

The district is covered by three major geological formations viz, the Precambrian crystallines, the Vindhyans and the Gondwanas. Besides, the tertiary laterite and alluvium also covers part of the district. Ground water occurs mostly under phreatic condition in all the lithological units and locally under semi-confined and confined condition (Census, 2011).

Figure 3.5 represents hydrogeological map of the district which includes Kalimpong district. Rock type of the Darjeeling district mainly consist of Banded Gneisses, Schist, Sandstone with shale, valley fill sediments and younger Alluvium of Azoic to Quaternary age. This rock group chiefly comprises the district profile. Northern hilly and doors region is the part of this. Thickness of the aquifer varies between 5 to 50m in consolidated rocks which poses yield of 2-2000 cum/day and the thickness of alluvium in this part varies between 50-700m. Groundwater yield of the alluvium is 200-1500 cum/day. (http://wbwridd.gov.in/swid/mapimages/DARJEELING.pdf)

Sothern flat land of the district comprises mainly of younger Alluvium of Quaternary age. Thickness of the rock type varies between 50 to 700m and having yield value of 200-1500 cum/day.



Symbol	Rock Type	Age	Lithology	Aquifer Description	Hydrogeology
	Banded Gneisses, Schist,Sandstone with shale, Valley fill sediments and Younger Alluvium	Azoic to Quarternary	Granular/fracture zones variably encountered between 20-400m b.g.l.	Thickness of aquifer varies between 5-50m in consolidated rocks and 50-700m in alluvium	Groundwater yield prospects between 2-2000 cum/day in consolidated rock and 200-1500 cum/day in alluvium
	Banded Gneisses and Schist	Azoic to Proterozoic	Granular/fracture zones encountered between 20-150m b.g.l.	Thickness of aquifer varies between 5-50m	Groundwater yield prospects between 2-1000 cum/day
	Younger Alluvium (Clay/Silt/Sand/Calcareous concretion)	Quarternary	Granular/fracture zones encountered between 50-400m b.g.l.	Thickness of aquifer varies between 50-700m	Groundwater yield prospects between 200-1500 cum/day

Reference:CGWB & GSI

Figure 3.5: Hydrogeological map of undivided Darjeeling district

3.6 Ground water development

Depth of water in wells measured by CGWB at 32 locations in district varied from 1.46 to 14.24 m bgl during pre-monsoon period with an average of 4.6m and 1.01 to 9.6 m bgl during post-monsoon period with an average of 3.2m in the year 1996 to 2018. Figure 3.6 represents water level fluctuation graph for two CGWB monitor wells, one from Bagdogra area and another from Phansidewa area (https://indiawris.gov.in/wris/#/groundWater%20(CGWB%20website%20for%20Ground%20water%20data).

Over all stage of ground water development in the area is 6% indicating sufficient scope of development (CGWB, 2017).

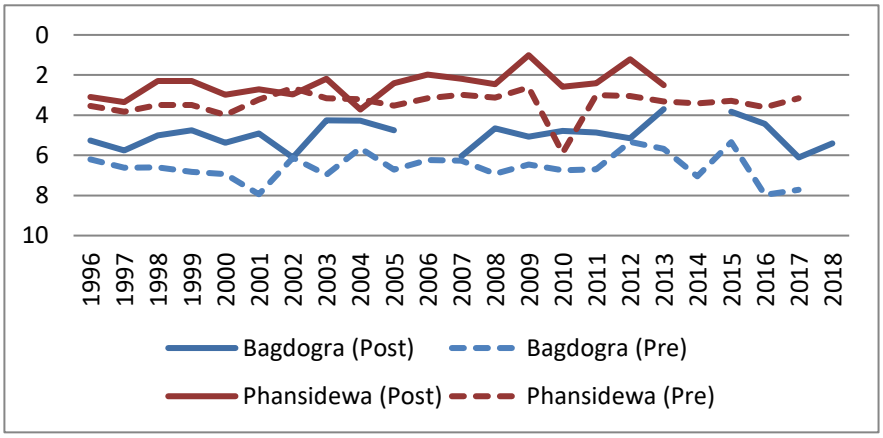
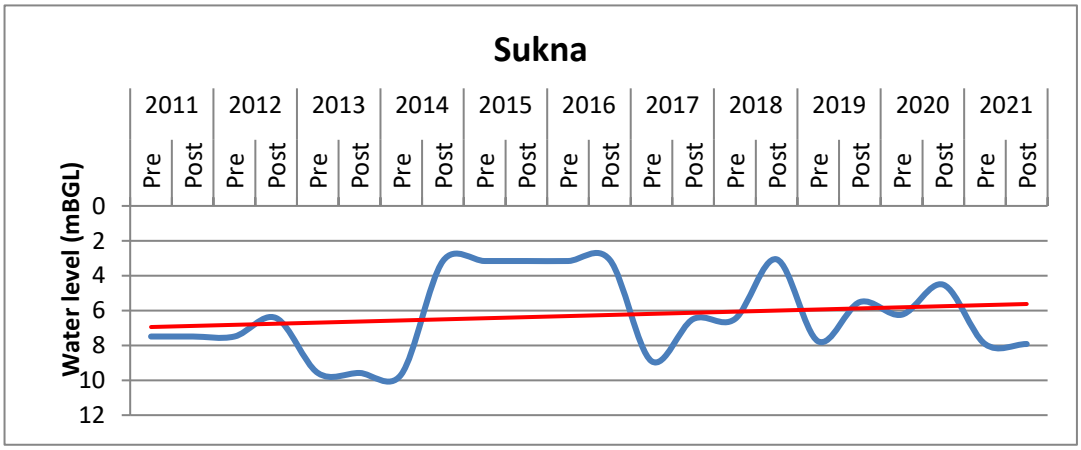


Figure 3.6: Graphical representation of pre-monsoon and post-monsoon data of two wells

Hydrographs showing variation in water level observed in between 2011 to 2021 in the district is given in Figure 3.7.



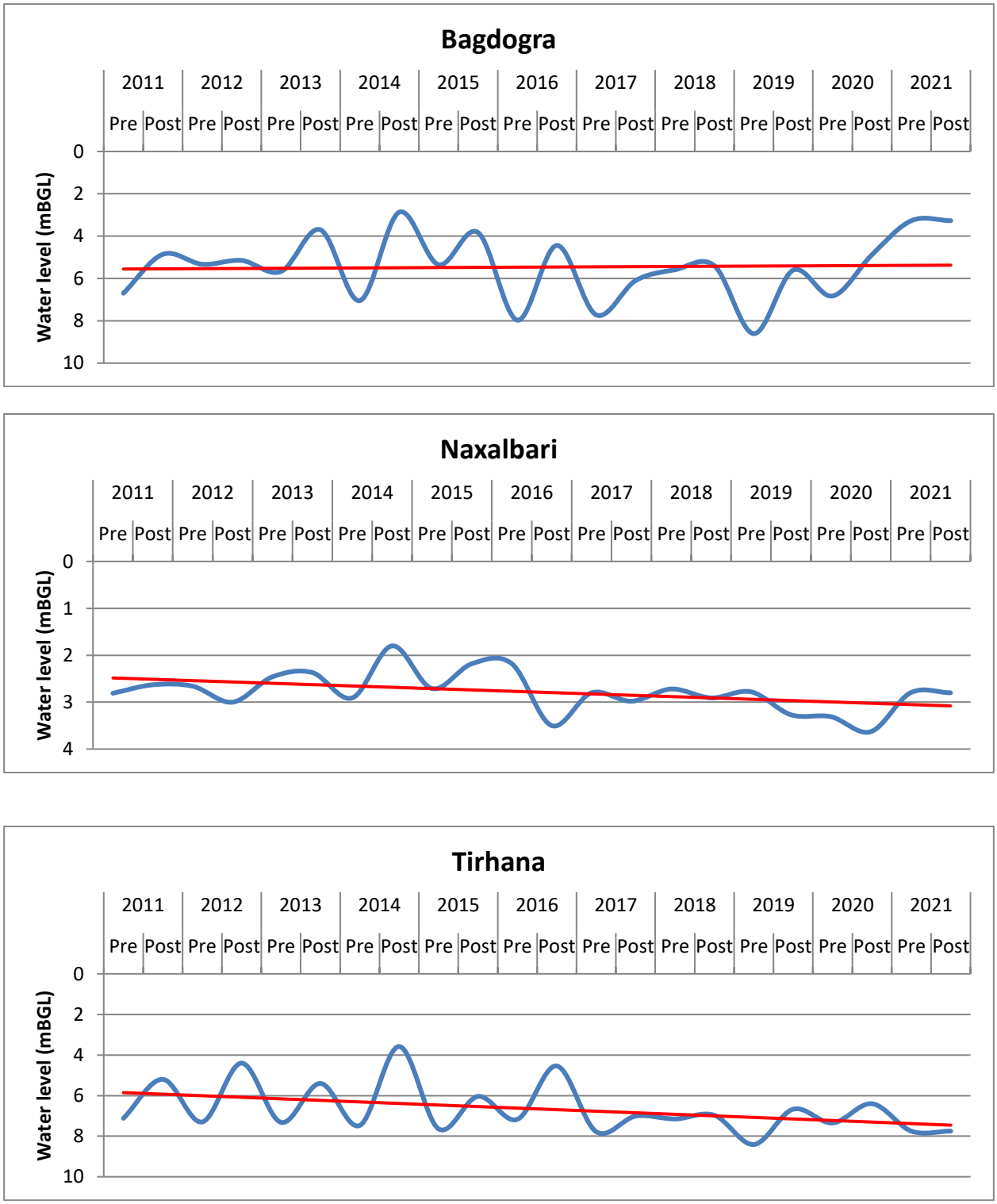


Figure 3.7: Block wise Hydrograph showing variation of water level during 2011 to 2021

3.7 Drainage System

Mahananda, Teesta, Mechi, Rangeet, and Balasan are the prominent rivers draining the district (Figure 3.8). Tributaries of Teesta namely Lish, Mauza, Taipu, Lachka, etc. flow through the district in different ways. All the major rivers originate from the Himalayas and are perennial in nature, being fed by the melting snow of the glaciers. Due to shallow beds, they become turbulent during the monsoons, after heavy precipitation in catchment areas (District Industry profile, MSME, GoI).

The drainage system of the district consists of two major watersheds, namely, the Brahmaputra and the Ganga the two most important drainage basins (Table 3.4). The Brahmaputra system is represented in the area by its Teesta sub-system and the Ganga system is represented by the Mahananda sub-system. Drainage system of Darjeeling is further explained in Chapter 7.2.

Table 3.4: Rivers and tributaries in Darjeeling District

Watershed	Sub-Watershed	Flow Regime	Rivers and Tributaries	Length in Darjeeling (km)
Brahmaputra	Teesta	Middle	Teesta	37
			Rangeet	18.57
			Rammam	39.78
			Rangpoo	9.66
Ganga	Mahananda	Upper	Mahananda	91.70
			Balason	48.40
			Mechi	63.21

Source: Cajee L, 2018

Drainage map of Darjeeling District is furnished as Figure 3.8 and in Plate 1A.

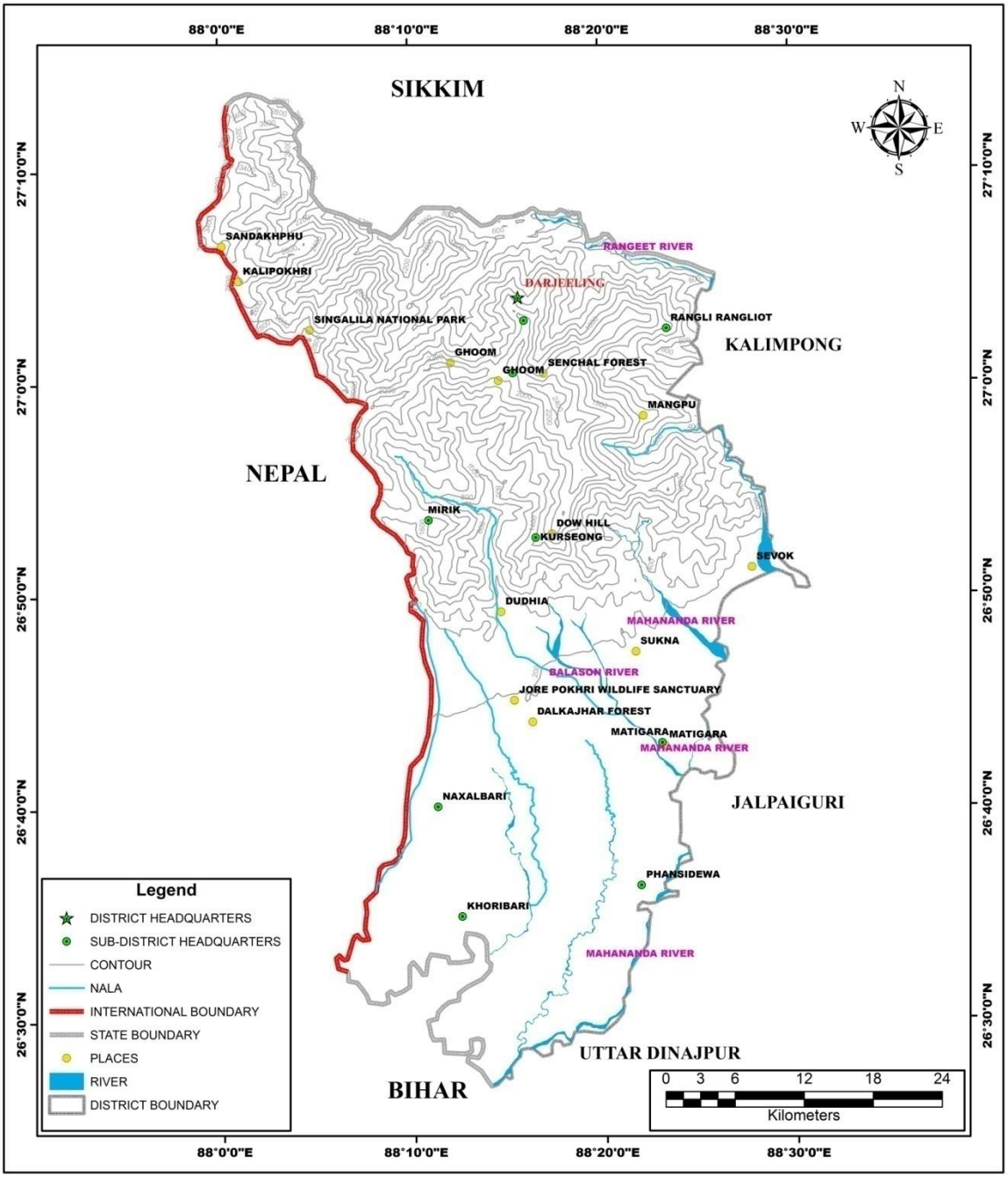


Figure 3.8: Drainage map of Darjeeling District

(Source: National Informatics Centre)

3.8 Demography

According to 2011 census, the district encompasses a geographical area of 3149 sq km and has a population of 18,46,823 (persons) including 9,37,259 (males) and 9,09,564 (females). The district has a sex ratio of 970 (females for every 1000 males). The major religions in the district are Hindu (74.00%) and Buddhist (11.33%) of the total population respectively. The literacy rate in the district is 79.56% (persons), 85.61% (males) and 73.33% (females).

In 2014, Kalimpong sub-division of Darjeeling district has been declared as Kalimpong district. The demographic profile of Darjeeling district based on 2011 census is represented in Table 3.5. Total area of district is 2232.31 sq.km and total population of the district is 1595181. Among the four block of the district, Darjeeling Sadar is highest in literacy rate. Based on census 2011, Darjeeling Municipality area is having 93.85% literacy rate. Figures 3.9 and 3.10 representing block wise population distribution and literacy rate respectively for Darjeeling district.

Table 3.5: Demographic distribution of Darjeeling District

Sub-Division/ C.D.Block/MC/M	Area (Sq.Km.)	Number of households	Male	Female	Population	Literacy (%)	Percent of population to district population
Sadar Sub-Division	**918.25**	**90024**	**214272**	**215109**	**429381**	**84.89**	**26.92**
Darjeeling (M)	7.43	21,782	59,187	59,618	1,18,805	93.85	7.45
Darjeeling Pulbazar	416	27,470	63,828	63,107	1,26,935	80.78	7.96
JorebunglowSukiapokhri	221.83	25,468	56,232	57,284	1,13,516	82.54	7.12
RangliRangliot	272.99	15,304	35,025	35,100	70,125	80.50	4.4
Kurseong Sub-Division	**390.36**	**27508**	**68453**	**68340**	**136793**	**82.30**	**8.58**
Kurseong (M)	7.85	6,616	21,423	21,023	42,446	93.73	2.66
Kurseong	382.51	20,892	47,030	47,317	94,347	81.15	5.91
Mirik Sub-Division	**125.89**	**12427**	**29082**	**28805**	**57887**	**82.40**	**3.63**
Mirik (NA)	6.5	2,465	5,688	5,825	11,513	88.38	0.72
Mirik	119.39	9,962	23,394	22,980	46,374	80.84	2.91
Siliguri Sub-Division	**797.81**	**209970**	**497002**	**474118**	**971120**	**75.56**	**60.88**
Siliguri (MC)	20.1	66,062	1,51,535	1,43,011	2,94,546	86.43	18.46
Matigara	132.61	42,666	1,01,023	96,255	1,97,278	74.78	12.37
Naxalbari	188.12	35,752	85,054	80,469	1,65,523	75.47	10.38
Kharibari	144.88	23,352	55,671	53,580	1,09,251	67.37	6.85
Phansidewa	312.1	42,138	1,03,719	1,00,803	2,04,522	64.46	12.82
TOTAL	**2232.31**	**339929**	**808809**	**786372**	**1595181**	**79.56**	**100**

(Source: Census, 2011)

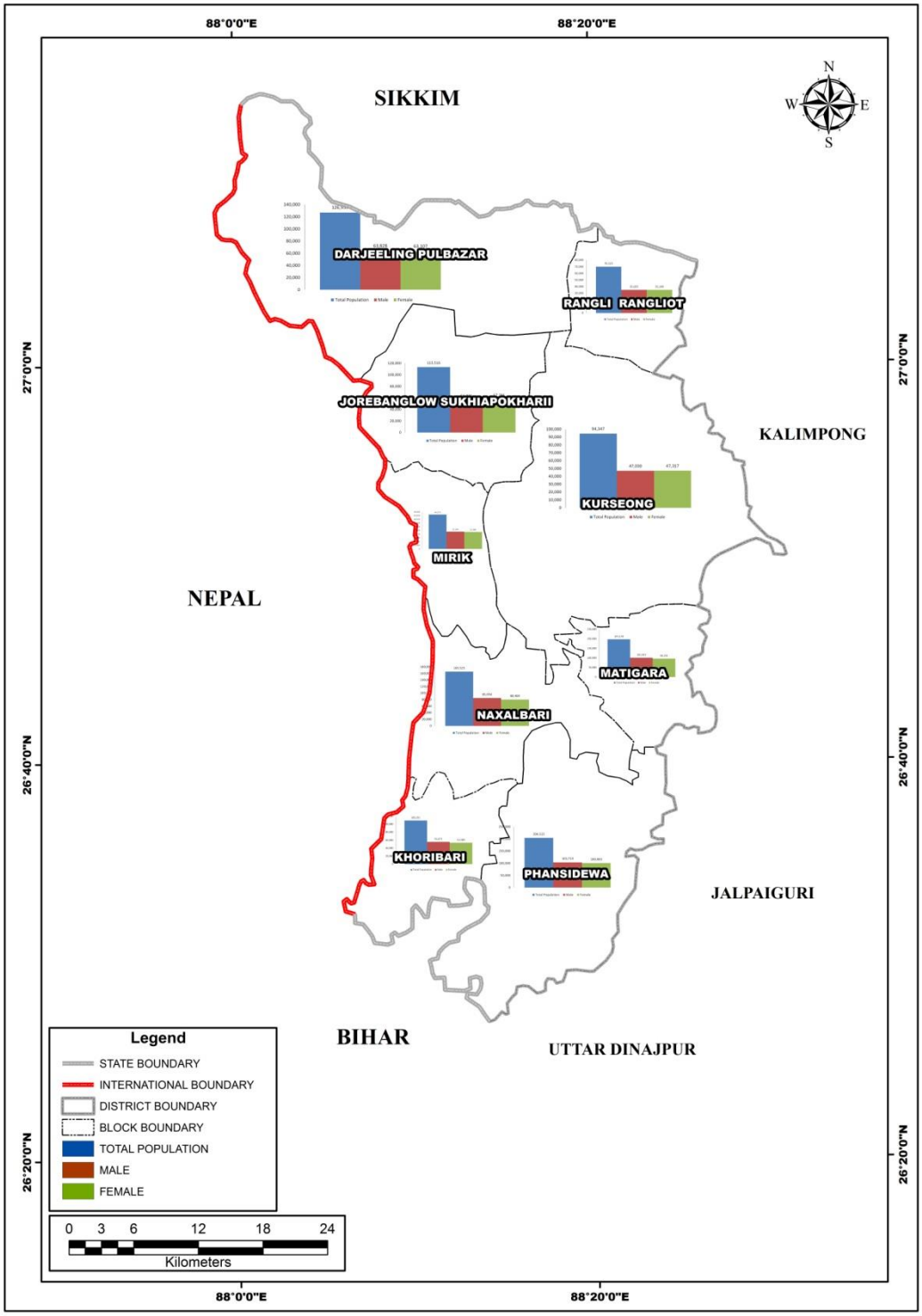


Figure 3.9: Block-wise population distribution in Darjeeling District

(Source: Census, 2011)

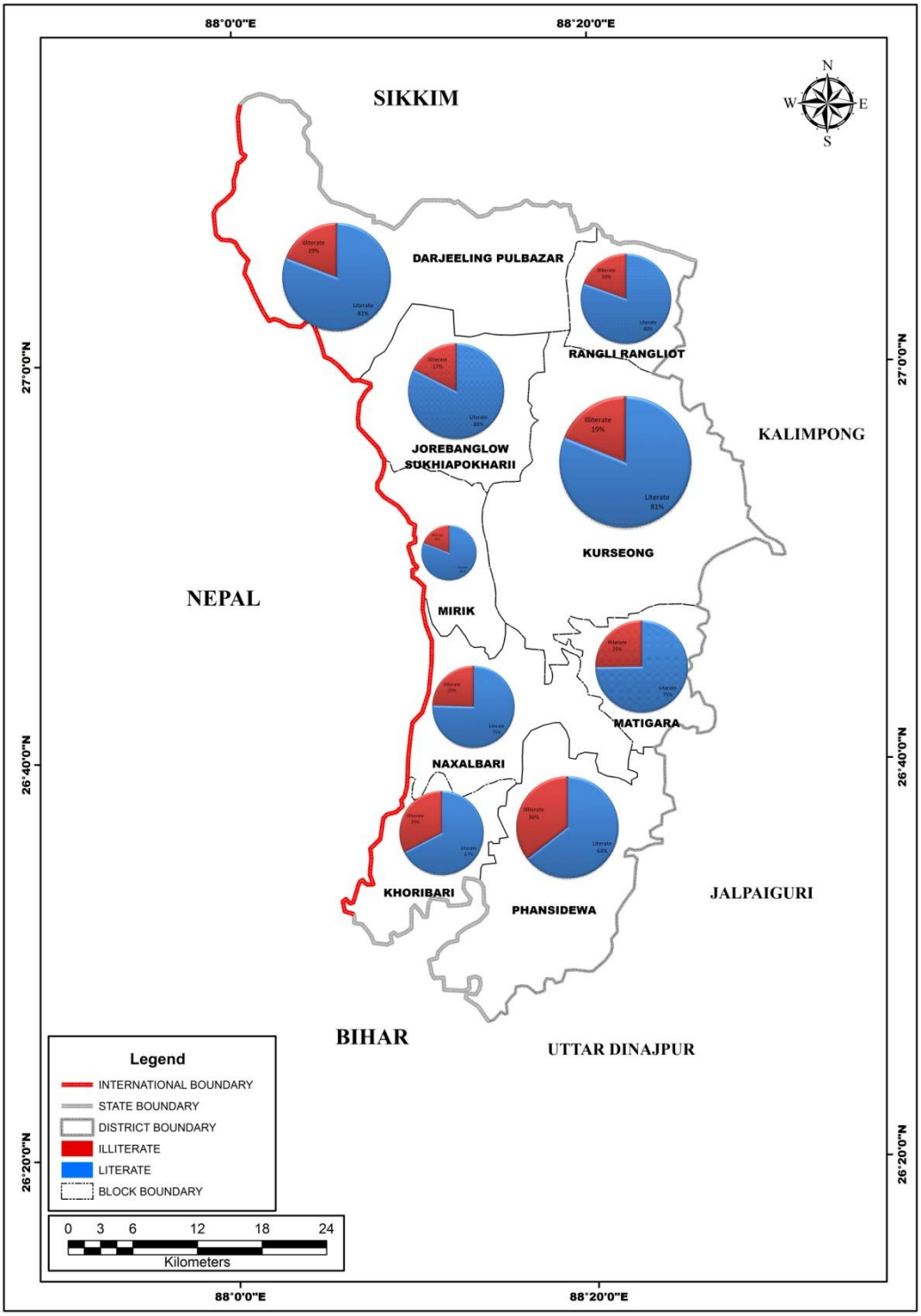


Figure 3.10: Demographic map showing Block-wise Literacy rate of Darjeeling District

(Source: Census, 2011)

3.9 Cropping pattern

The crops of Darjeeling district broadly fall into two groups - (a) plantation crops like tea, orange, cinchona and (b) non-plantation crops like rice, wheat, maize, jute, potato, vegetables etc.

Tea production form the most important part of the district economic scenario. Rice, jute and potato cultivated at the plain-lands under the Terai and Dooars. Jute is also cultivated in the plains. Maize (Corn) and ginger are cultivated primarily in the sloping lands at the foot of the hills. Fruits like Orange, Pomegranate, Pineapple, Mandarin Orange, Banana, Lichee, different Citrus fruits; different vegetables and medicinal herbs like Cucumber, Brinjal, Cabbage, Cauliflower, Cardamom, Chillies, Turmeric, Ginger, Dar-haldi (Daru-Haridra in Sanskrit), Khayer, Cumin, Mint, Potato are cultivated in the district.

3.10 Land Form and Seismicity

Darjeeling district is dominated by hilly topography in the north and plain land in the southern part. The hilly region of the district is very prone to landslide due to poor water retention capacity of the soil clubbed with steep land slope (from North to South, and South-East).

The seismic hazard map of India was updated in 2000 (Figure 3.11) by the Bureau of Indian Standards (BIS). There are no major changes in the zones in West Bengal with the exception of the merging of Zones I and II in the 1984 BIS map. Western sections of the northern districts of Jalpaiguri and Coochbehar lie in Zone V. The remaining parts of these two districts, along with the districts of Darjeeling, Uttar Dinajpur, Dakshin Dinajpur, Maldah, 24 North Parganas and 24 South Parganas lie in Zone IV. The rest of the state along with the city of Kolkata lies in Zone III.

The whole district falls under the Seismic Zone IV (in a scale of I to V in ascending order of propensity f Seismic Activity), indicating very prone to the earthquakes (Census, 2011). However, no major earth quake event has been recorded with its epicenter in Darjeeling district. Many earthquake shocks experienced in the district have been recorded.

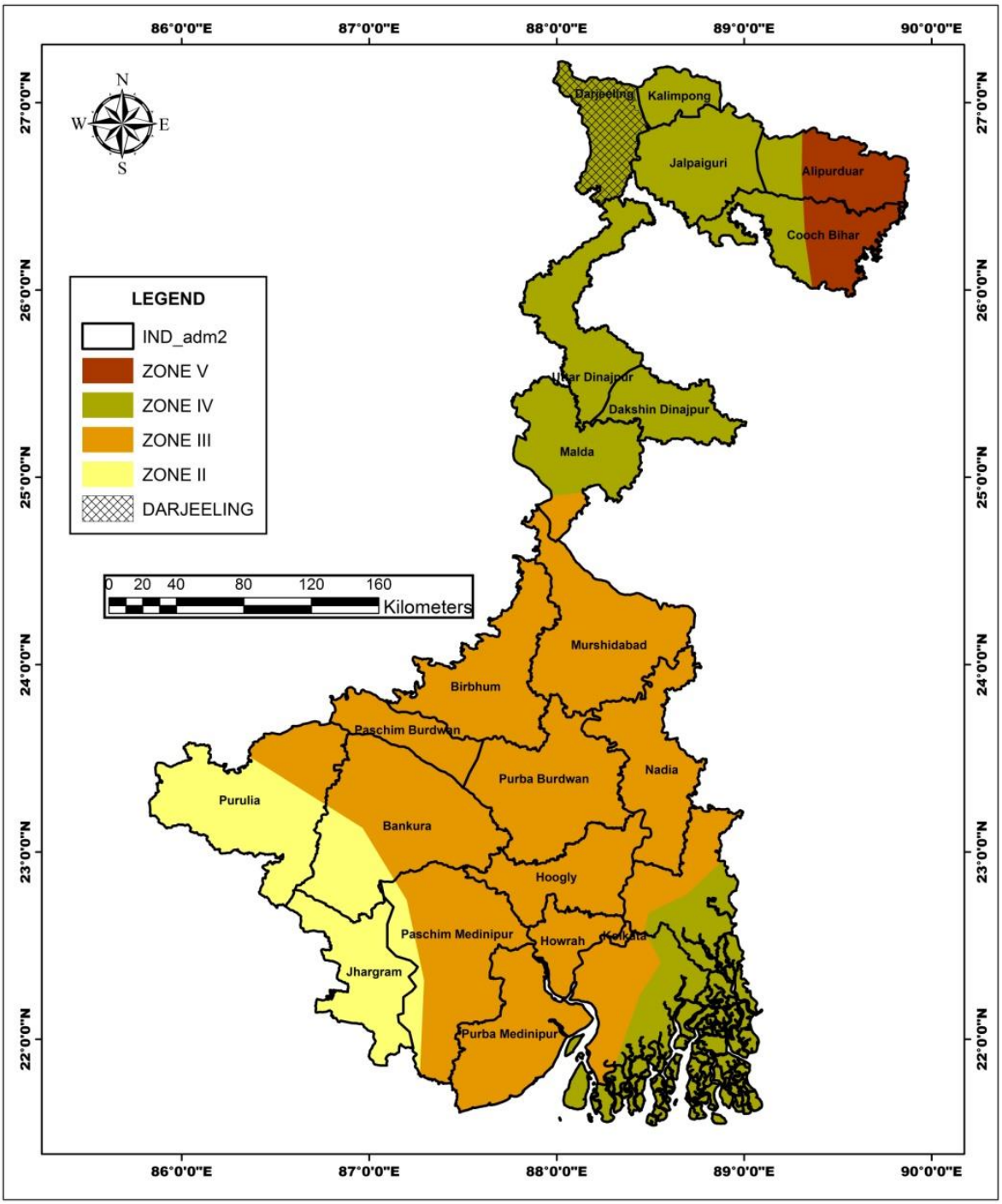


Figure 3.11: Earthquake zonation map of West Bengal highlighting the Darjeeling district position

(Source: https://pib.gov.in/PressReleasePage.aspx?PRID=1740656)

3.10.1 Earthquake:

Earthquake shocks experienced in the district have been recorded since, 1842. Two sharp shocks, felt on the 27th and 28th February 1849, caused many well-built walls to crack. During the Cachar Earthquake of 10 January 1869, smart shocks were recorded at Darjeeling, Kurseong, Pankhabari and Siliguri. The district fell within the higher isoseismic zone of the earthquake with its focus near Cherrapunji; the quake reached Darjeeling within minutes and caused massive devastation. Cracks appeared in several buildings of Darjeeling town and Kalimpong due to the Dhubri earthquake of 3rd July 1930. The Bihar-Nepal earthquake of 15th January 1934 was, severely felt in the district, the worst affected parts being Darjeeling town and its neighboring spurs and the railway station at Tindharia. Kurseong and Kalimpong escaped with minor cracks in buildings but landslides occurred at several places in the Tista valley below Kalimpong. The September 18, 2011 earthquake left a trail of devastation in Sikkim and Darjeeling hilly area damaging roads, building and other structures, uprooting mobile phone towers and snapping communication and power lines. The impact of the quake in Darjeeling hills was felt mainly in Kalimpong and Kurseong subdivisions (Mili, 2012).

On 25th April and 12th May 2015, Nepal and its surrounding area were hit by earthquakes which are considered to be the most devastating in the living memory of the inhabitants of these affected areas. The 7.9 magnitude quake was the strongest to hit Nepal for 81 years. It was the most horrible natural disaster to hit Nepal since the 1934 Nepal–Bihar border earthquake. Earthquakes are often followed by landslides and rock avalanches and glacier avalanches in Himalayan hilly areas. Landslides also blocked the river channels, sewage and other communication system in Darjeeling district. Mud wall, buildings and boundary walls in different locations of Siliguri and Jalpaiguri had collapsed because of the tremors (Dey, 2015).

3.10.2 Landslide:

In Darjeeling district, occurrences of landslides are prominent from a long time of history. As per the landslides records available, in September 1899 landslide 72 lives were lost in Darjeeling town. Kalimpong, Kurseong, Ghum, Tindharia of the Darjeeling Himalaya were also affected by this disaster. In January of 1934, the landslide is mainly affected in Darjeeling, Ghum and Kurseong town. A massive landslide occurred in June 1950, in which 127 lives were lost along with the loss of several properties including roads and Siliguri-Kalimpong railways line.667 lives were lost along with the destruction of a tea garden due to October 1968 landslides. The affected areas of the landslide were Darjeeling town, Manpuri, Lebong, Kalimpong, Tista Bazar, etc. Again, Rimbik, Lodhama, Darjeeling Town, Bijanbari, Lebong, Ghum, Happy Valley were affected by the landslides that occurred on September 1980. Several landslide disasters happened in the year of 1991, 1993, 2003, 2004, 2005, and 2006. All of the slides occurred in the Darjeeling Town, Kalimpong, Kurseong, Pulbazar, Rongtong, Tindharia, etc. The landslide of June 2011 was the subsequent effects of high rainfall of about 152 mm at Darjeeling and 60 mm rainfall in about 3 hours at Kalimpong, Kurseong. In this landslide, no such significant casualties had occurred. In the same year, in September, the landslides occur

due the subsequent effect of Sikkim earthquake but the Darjeeling Himalayas has been less affected than the Sikkim Himalayas (Biswas and Pal, 2015).

Heavy rain has triggered landslides at Mirik, Darjeeling, Kalimpong and Kurseong during June-July, 2015, causes the loss of several lives and properties. Thus, the landslide disaster of 2015 triggers severely the natural environment of the Darjeeling Himalayas. Geological survey conducted for the Darjeeling Landslide by the Survey of India and the report says that the Nepal earthquake has a significant role in the occurrence of the Darjeeling landslide. However, historical record suggests that intense rainfall is the key factor for the June-July, 2015 landslide. As the developmental activity is increased in the mountainous region, thereby, the land use management is significant to reduce the vulnerability of the landslides (Biswas and Pal, 2015).

The mitigational measures to tackle the landslide hazard in the district are (Nad, 2015)-

- ✓ Structural measures: The stability of a vulnerable slope may be increased either by reducing the volume at the head or by expanding the volume at the toe.
- ✓ Drainage Corrections: The streams and temporary water resources particularly at the head of the slides are diverted from the slide area.
- ✓ Proper land use measures: proper scientific land use planning and Ban on non-biodegradable materials in hazard areas.
- ✓ Afforestation: Afforestation programmed lunched for minimize the breakdown situation of environmental equilibrium. The grass cover must not be disturbed unnecessarily in the hilly area.
- ✓ Public Awareness: Village wise Training Programmed, Landslide Management Education from School Level.
- ✓ Settlement policy: Restricting Development in Landslide Prone Areas, Protection of Existing Development, Monitoring and Warning System.

3.10.3 Critical landslide prone area:

The primary risk inclined territories of landslides prone areas tabulated as per research work by Deepak and Pradeep (2019) are given in Table 3.6. A landslide zonation map of the district is given in Figure 3.12.

Table 3.6: Critical landslide prone areas of Darjeeling Himalaya

Level of Landslide Prone Area	Hazard Areas
Very high (Severe) landslide prone area	Small patch on the north-eastern part of the Darjeeling district
High landslide prone area	Darjeeling sadar sub-division on the right side of Teesta River
Moderately high zone of landslide hazard	North-west and south-east below high zone in

Level of Landslide Prone Area	Hazard Areas
	sadar sub-division
Moderate zone of landslide hazard	Largest part of Darjeeling hills where there remains a chance of at least one landslide/ km²
Low landslide hazards prone area	North-west corner of sadar sub-division and southern most end of Kurseong sub-division

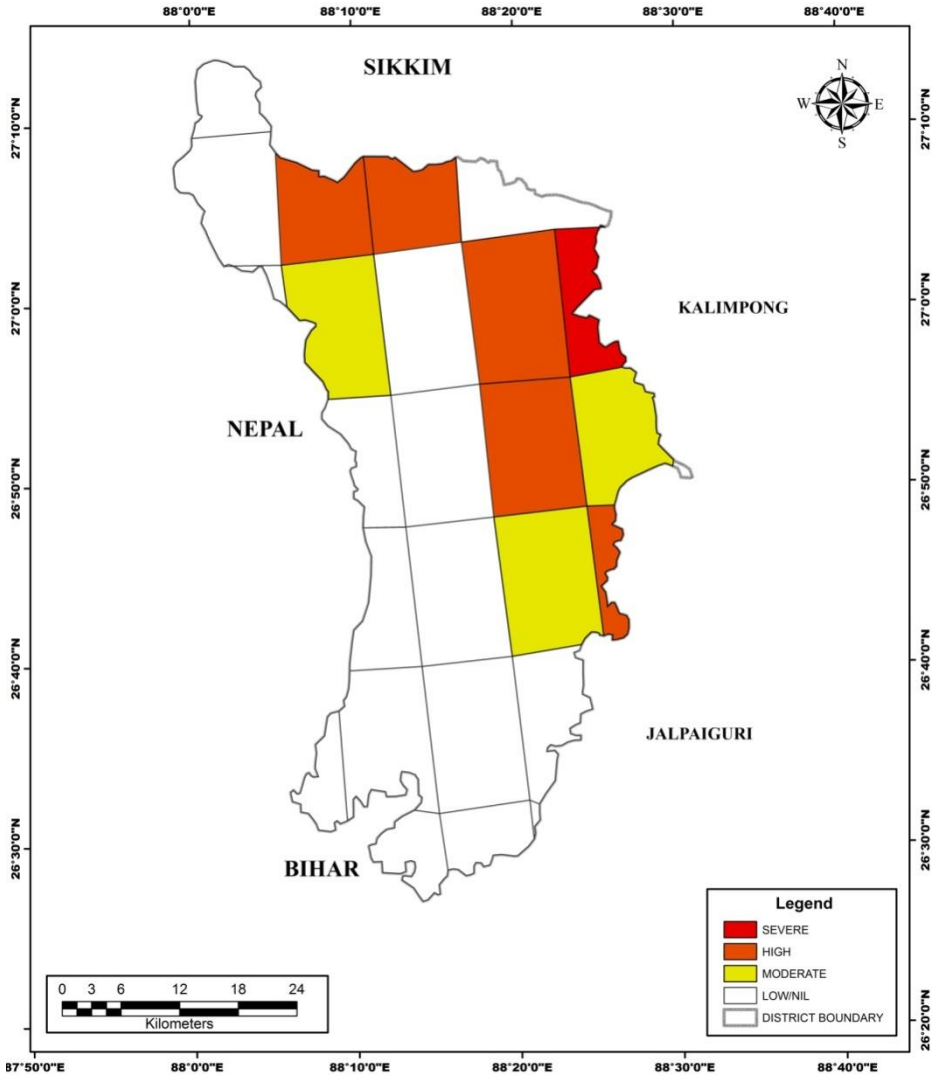


Figure 3.12: Landslide Hazard Zonation Map of Darjeeling District

(Source: Nad, 2015)

3.11 Flora

The major portion of the southern plain area is mostly covered by tea gardens with some protected and reserved forests. Hilly terrains toward the north are thickly forested. The forest consists of trees essentially of Sal, Teak, Bamboo, Pine, Cane etc. Moreover, thick under-growths and plenty of creepers, thorns and bushes make forest difficult to penetrate. Orchids and medicinal plants are available in this hilly region.

A wide range of vegetation structures with extremely rich plant and animal diversity developed in the district due to the extreme climatic, edaphic and physiographic variations. Plants of diverse forms, such as trees, shrubs, climbers, lianas, annual and perennial herbs, geophytes, epiphytes, parasites, and saprophytes, are evenly distributed. The estimated vascular flora for Darjeeling district is 2,912 (Table 3.7).

Table 3.7: Vascular flora in Darjeeling

Taxa	Estimated number of Species
Angiosperms (dicots)	1900
Angiosperms (monocots)	750
Gymnosperms	12
Pteridophytes	250

(Source: Das, 2008)

Darjeeling district has four protected areas – two national parks and two sanctuaries. The biodiversity elements of these protected areas are presented in the following sections (Das, 2008).

Singhalila National Park (SNP): With an area of 79 sq.km, Singhalila National Park lies in the extreme northwestern part of Darjeeling district. The altitude ranges from 2,400 to 3,660m. Thick bamboo, oak, magnolia and rhododendron forest between 2000 and 3600 m cover the Singalila Ridge. There are two seasons of wildflower bloom - one in spring (March and April) when the rhododendrons bloom, and another in the post-monsoon season (around October), when the lower forests bloom (Primula, Geranium, Saxifraga, Bistort, Senecio, Cotoneaster, and numerous orchids). Sandakphu is known as the "mountain of poisonous plants" due to the large concentration of Himalayan cobra lilies (Arisaema) which grow there (https://en.wikipedia.org/wiki/Singalila_National_Park).

Mahananda Wildlife Sanctuary: Shrubs, lianas, climbers, and epiphytes are abundant but grasses and herbaceous growth are scarce. The major deciduous species include Shorearobusta, Tectona grandis, Lagerstroemiaparvi flora, Terminalia alata, Albizia procera,

Phyllanthus urinaria, Alstoniascholaris, Litseamonopeltata, and Macaranga pustulatac. The subtropical zone (500-1,000m) contains forestaffected by a seasonal climate of dry winter and wet monsoon. The forests are deciduous andsemi-evergreen and the dominant species are Duabanga grandiflora, Schimawallichii, Terminaliaalata, Micheliachampaca, Mallotusphilippensis, Phyllanthus emblica, Quercusglauca, Cinnamomum bejolghota, Phoebe lanceolata, Litsea cubeba, Pterospermum acerifolum, and many others (https://en.wikipedia.org/wiki/Mahananda_Wildlife_Sanctuary).

Senchal Wildlife Sanctuary: The area is important because of interesting floristic composition. The background vegetation is temperate broad-leaved forest with dominant species such as, Rhododendron arboreum, Rhododendron grande, Castanopsishystrix, Ilexsikkimensis, Magnolia campbellii, Alcimandracathcartii, Exbucklandiapopulnea, and Prunuscerasoides. Climbers and scramblers include Rubus paniculatus, Senecio diversifolius, Rubiamanjith, Codonopsisviridis, and Edgariadarjeelingensis. The undershrubs and herbs are dominated by Aconogonummolle, Cautleya lutea, Globbahookeri, Artemisia vulgaris, Urticadioica, and Gerardiana heterophylla. The secondary grassland on Tiger Hill is home toinnumerable sun-loving herbaceous plants. Being an area with very high humidity, almost alltrees, including planted conifers, are covered with thick epiphytic vegetation, including Begoniagemipara, Agapetesserpens, A. hookerii, Pilea ternifolia, Chamabainiacuspidata, andHymenodictyonflaccidum. The sanctuary is also home to numerous medicinal plants such asSwertiachirayita, S. pedicillata, Panax pseudoginseng, Hypericum uralaum, and Vallerianahardwickii (https://en.wikipedia.org/wiki/Senchal_Wildlife_Sanctuary).

JorePokhri Wildlife Sanctuary: The Sanctuary was established in 1985 on an area of 0.04 sq.km. The sanctuaryis surrounded by some intact patches of oak and temperate broad-leaved forest and is home to numerous mammals, birds, and reptiles (https://en.wikipedia.org/wiki/Jore_Pokhri_Wildlife_Sanctuary).

Threatened floral species of the district is given in Table 3.8.

Table 3.8: Threatened Plants of Darjeeling District, West Bengal

Scientific Name	Family	Status	Distribution sites and Avg. altitude
Acer hookeri	Aceraceae	Endangered	Darjeeling, 600-1500 m
Acer osmastonii	Aceraceae	Endangered	Darjeeling (endemic), Salombong, Birch hill
Pimpinella tongloensis	Apiaceae	Endangered	Endemic to Singaleela range in the Darjeeling-Sikkim Himalaya
Phoenix rupicola	Arecaceae	Rare	450 m
Begonia scutata	Begoniaceae	Rare	Darjeeling, Peninsular India. 1000-1500 m
Codonopsisaffin	Campanulaceae	Rare	Darjeeling and Sikkim Hiamalaya.

Scientific Name	Family	Status	Distribution sites and Avg. altitude
is			1830-3335 m
Bulleyiayunnanensis	Orchidaceae	Rare	Darjeeling hills
Diplomerishirsuta	Orchidaceae	Vulnerable	Darjeeling. 1500-2000 m
Christiopteristricuspis	Polypodiaceae	Indeterminate	Darjeeling
Ophiorrhizalurida	Rubiaceae	Rare	Darjeeling. 300-1500 m
Christellaclarkei	Thelypteridaceae	Vulnerable	Darjeeling. 4000 m

(Source: https://indiabiodiversity.org/)

3.12 Fauna

Darjeeling district possess a rich variety of fauna. There are about 90 species of mammals in the Darjeeling District. Among the large carnivores, Wild Leopard, Clouded Leopard, Leopard-Cats are seen both in the hills and jungles of the Terai region. The Jackal, Indian Fox are also normal residents of the forests. The Himalayan Black Bear, Common Indian Sloth Bear and Malayan Sun-Bear are the species belonging to Ursidae family which can still be found, although in very limited number, in forests. Among the herbivore, Elephant is very common. Several wild Elephants, sometimes in herds, sometimes singly can often beseen, mainly near the forest areas in the vicinity of river streams and in the Terai. Among the less challenging smaller herbivore, the Gaur, Sambar, Spotted-Deer, Barking-Deer and Hog-Deer can also be occasionally observed. Among the goats, Serow and Ghoral can still be seen in the forests. The Red-Tailed Rabbit, Hispid Hare, Squirrels, Porcupines, Moles, Rats, Mice, wide variety of poisonous and non-poisonous Snakes, Martens and numerous other small animals are the common residents here (Census, 2011).

Darjeeling District is very rich in Bird life containing about 550 species. Nearly one quarter of the species of birds found in India, is found here. More than half of the species are passerine birds, the largest families being the Timaliinae (Laughing-Thrushes, Babblers) with 61 species; the Sylviinae (Warblers) with 60 species; the Turdinae (Chats, Robins, Thrushes) with 56 species; the Muscioa-pmas (Fly-catchers) with 27 species; the Fringillinae (Finches) with 22 species. There are plenty of Minivets, Orioles, Sunbirds, Malay Tree Sparrow. The best represented families in the Coraciformes are the Picidae (Woodpeckers) with 15 species; the Cuculidae (cuckoos) with 16 species and Asionidae (owls) with 14- species. There are five species of King-fisher of which the tiny Indian three-toed Kingfisher (Ceyx e. enthaca) a forest species, is the most beautiful one. Accipitrine birds number about 40 and include the fine Himalayan Lammergeyer (Gypaetus barbatus hemachalanus), Hodgson's Feather-toed Hawk Eagle (Spizaetus n. nipalensis), the Himalayan Rufous bellied Hawk-Eagle (Lophotnorohis k. kienerl) and the handsome bold miniature Falcon, the Himalayan Red-legged Falconet (Microphierax c.

coerulscens). There are about a dozen species of pigeon and doves, some being only found at high elevations. Only Bengal Green-Pigeon (Crocopus p. phoenicopterus) is found m the plains. The Green-Pigeon (Sphenocercus s. spenurus) and the Himalayan Pintailed Green-Pigeon (Sphenocercus a. apicandus) are common in the hills.

Endangered Fauna: There has been a depletion of natural fauna of this region to a certain degree due to human interference on animal kingdom. Because of unnecessary shooting and poaching, extension of tea cultivation and spread of human settlements on the fringe of forests and even setting up of settlements on the seasonal migration routes of some animals like elephants, there has been considerable depletion of fauna in this district. All of these have made conservation of wild life an urgent need of the district for the maintenance of ecological balance. In 1955, Mahanadi Wild Life Sanctuary has been setup for the protection of gaur (Indian bison).

Mahananda Wildlife Sanctuary: Located on the foothills of the Himalayas and is sprawling across 158 sq km of forest area over different altitudes. This wildlife sanctuary is mainly to protect the Indian Bison and Royal Bengal Tiger, which were facing the threat of extinction.

Jore Pokhri Wildlife Sanctuary: This wildlife sanctuary is the habitat of some high-altitude animals like the Himalayan Salamander which is known as Gora in the local language and it is also home to a few other local animals like the tiger, rhino and different species of birds.

Senchal Wildlife Sanctuary: It is one of the oldest wildlife sanctuaries of India and covers an area of 38.6 km^2. The elevation ranges from 1,500 to 2,600 m. It provides habitat for barking deer, wild boar, Himalayan black bear, Indian leopard, jungle cat, rhesus monkey, Assam macaque, Himalayan flying squirrel. The sanctuary is also rich in bird life.

Singhalila National Park (SNP): The Park is home to about 22 species of mammals, of which three are threatened; there are more than 250 species of birds, of which four are threatened. Some of the important wildlife include red panda (Ailurus fulgens), leopard cat (Prionailurus bengalensis), serow (Naemorhedus sumatraensis), common leopard (Panthera pardus), Himalayan thar (Hemitragusjemlahicus), Himalayan black bear (Ursus thibetanus), tragopan (Tragopan satyra), and monal pheasant (Lophophorusimpejanus). Floristic exploration of the park is now in progress; preliminary assessments indicate a high proportion of endemics.

Location of Wild Life Sanctuary and National Parks are shown in the Map of West Bengal (Figure 3.13). As per the map of ENVIS Centre on Wildlife and Protected Areas, there is one National Park and four Sanctuaries situated within the Darjeeling district.

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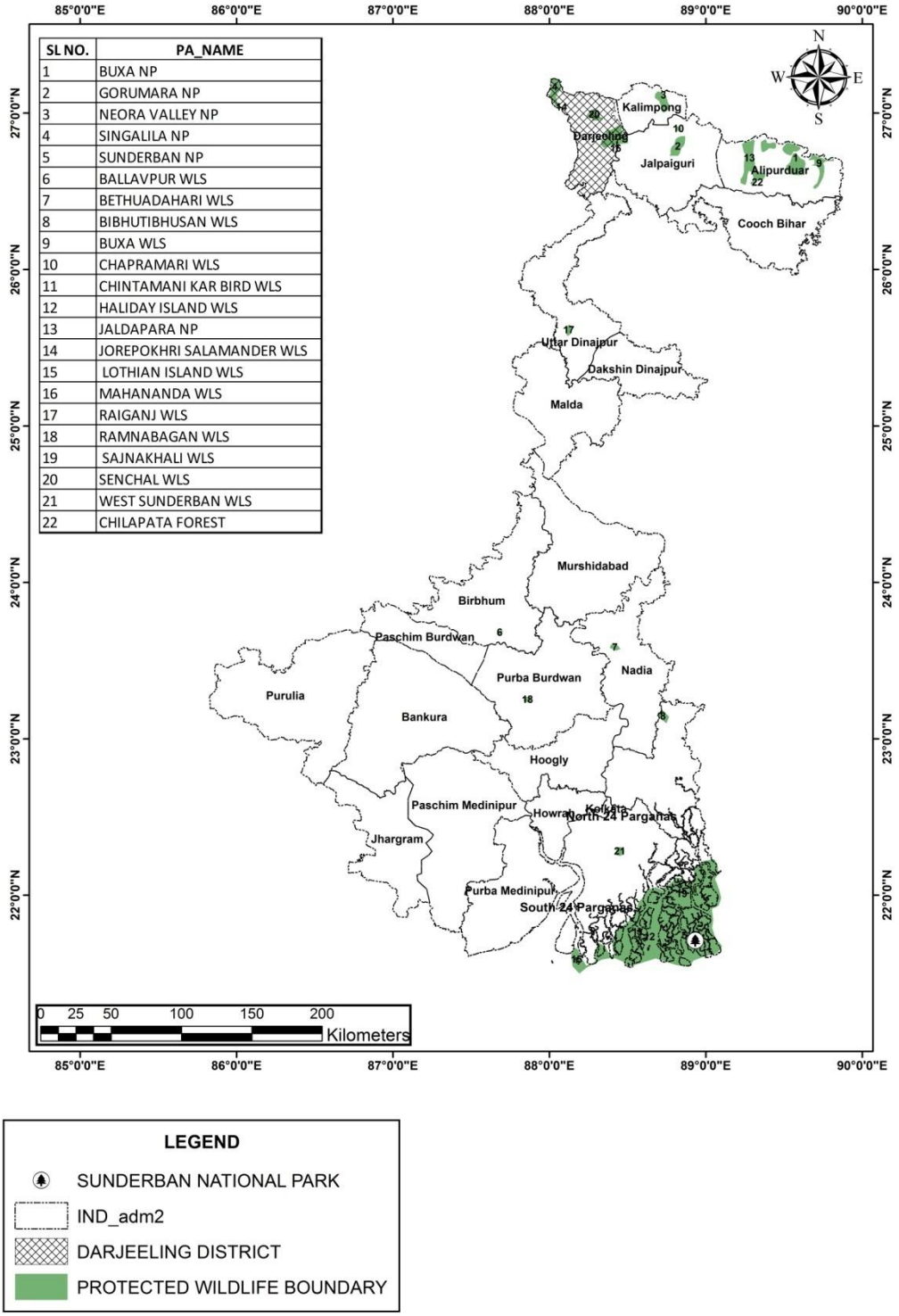

SL NO.	PA_NAME
1	BUXA NP
2	GORUMARA NP
3	NEORA VALLEY NP
4	SINGALILA NP
5	SUNDERBAN NP
6	BALLAVPUR WLS
7	BETHUADAHARI WLS
8	BIBHUTIBHUSAN WLS
9	BUXA WLS
10	CHAPRAMARI WLS
11	CHINTAMANI KAR BIRD WLS
12	HALIDAY ISLAND WLS
13	JALDAPARA NP
14	JOREPOKHRI SALAMANDER WLS
15	LOTHIAN ISLAND WLS
16	MAHANANDA WLS
17	RAIGANJ WLS
18	RAMNABAGAN WLS
19	SAJNAKHALI WLS
20	SENCHAL WLS
21	WEST SUNDERBAN WLS
22	CHILAPATA FOREST

Figure 3.13: District location with respect to Wild Life Sanctuary of West Bengal
(Source: http://wiienvis.nic.in/)

4 Geomorphology

4.1 General Landforms

Darjeeling Himalaya rises abruptly from the North Bengal plain, the elevation changing rapidly from 100-130 m above sea level (a.s.l) to 2000-3000 m a.s.l within a distance of few kilometers. The hilly areas of Darjeeling are a part of the Siwalik Range or Outer Himalayas. The general slopes of the hills are from north to south. Narrow ridges separated by closely-spaced V-shaped valleys, where the slope varies between 15° and 40°. The region is highly prone to landslides, often causing disruptions to socio-economic activities as well as destruction of life and properties (Geomorphological Field Guide Book, IGI).

The complex landform of the district has been form due to different geomorphic processes, each of which has developed its own characteristic assemblage. The geomorphic configuration of the hilly tract is the joint product of geologic foundation and fluvial processes; although slope-wash, in particular mass-movements and related phenomena play a significant role in the final shaping of the landform. The region is characterized by a myriad of ridges and valleys because of the spurs ramifying into lateral spurs which give off lesser ones and these in turn cut the terrain into ridges and valleys, creating a mosaic of micro-topographical units (Cajee, 2018).

Lower hills: This region is bounded by contour heights of approximately 200 - 800 m and covers most of the central section of the district. The rivers are mostly south-flowing and cut deep gorges and V-shaped valleys. The landscape is characterized by narrow ridges, deep incisions and numerous mass-movement scars. The average slope in this zone varies between 10° - 30°, with slope length sometimes exceeding 800 m. These lower hills are the most dissected and eroded tract in the Darjeeling Himalaya.

Middle hills: This is a rather narrow zone, sandwiched between the upper and lower hills and bounded by 800 m and 1400 m contours. Most of the western and north eastern part of the district falls under this category. These hill slopes are mostly used by tea plantations.

Upper hills: The upper hills lie above the 1400 m contour line and have been identified along the Mahaldiram-Bagora region and above the Ghum-Sonada ridge. It is most prominent along the extreme north-western boundary of the region along the Singalila ridges with peaks like Sandhakphu and Phalut towering over the region.

Beyond the hill region in the North, starts the flat plain at South and South-East part of the district. This foothills zone is called the “Terai”, where the wider valley floors are frequently filled up with large boulders transported by debris flow. A number of rivers, i.e., Teesta, Balason, Mahananda originate in the Darjeeling Himalaya, and have formed braided courses on the plains, which are overloaded with sediments. These streams form smaller fans, the apex part of

which could be noticed at the entrance of the mountains. Fragments of higher fan levels with well-develop soil profile are preserved between the alluvial fans. The shape of the terraces and the fan systems on the Terai piedmont zone is irregular, and are partly controlled by tectonics (Sarkar and De, 2017).

4.2 Soil and rock pattern

The Darjeeling hill area is formed of comparatively recent rock structure that has a direct bearing on landslides. Heavy monsoon precipitation contributes to the landslides. Soils of Darjeeling hill areas are extremely varied, depending on elevation, degree of slope, vegetative cover and rock type.

The soil of district Darjeeling falls under Warm Per humid Eco-Region under the Eastern Himalayas Agro Ecological Sub Region (Census, 2011). Soils in the highlands stretching from the west to the east of the district along most of the inter-fluvial areas are mainly mixed sandy loam and loamy, while those on the southern slopes of Mirik and Kurseong are mainly clayey loam and reddish in color. Sandy soils are mainly found in the east of the river Teesta (Sarkar and De, 2017).

Figure 4.1 depicts the soil pattern of the district. Soil type of the district is divided into Brown Forest soil and Terai soil and their subtypes as explained in Table 4.1.

Table 4.1: Description of District soil type

MAP SYMBOL	DESCRIPTION
HILLS AND SIDE SLOPES (BROWN FOREST SOILS)	
W001	Shallow, excessively drained, gravelly loamy soils occurring on very steep side slopes with gravelly loamy surface and severely eroded, associated with rock outcrops.
W002	Moderately shallow, excessively drained, coarse loamy soils occurring on steep side slopes with gravelly loamy surface, severe erosion and strong rockiness associated with moderately shallow, well drained, gravelly loamy soils with loamy surface and moderate erosion.
W003	Deep well drained, fine loamy soils occurring on steep side slopes with gravelly loamy surface, moderate erosion and moderate rockiness, associated with moderately shallow, excessively drained, coarse loamy soils with loamy surface, severe erosion and moderate rockiness.
W004	Moderately shallow, well drained, gravelly loamy soils occurring on steep side slopes with gravelly loamy surface, moderate erosion and moderate rockiness associated with moderately shallow, somewhat excessively drained, gravelly loamy soil with loamy surface, moderate erosion and moderate rockiness.
PIEDMONT PLAIN (TERAI SOILS)	
W006	Very deep, imperfectly drained, coarse loamy soils occurring on very gently sloping upper piedmont plains with loamy surface and moderate erosion associated with very deep, imperfectly drained, fine loamy soils

MAP SYMBOL	DESCRIPTION
W007	Very deep, imperfectly drained, fine loamy soils occurring on very gently sloping lower piedmont plain with loamy surface and moderate erosion associated with very deep, imperfectly drained, coarse loamy soils.
W009	Very deep, imperfectly drained, coarse loamy soils occurring on nearly level lower piedmont plain with loamy surface associated with very deep, imperfectly drained, fine loamy soils.

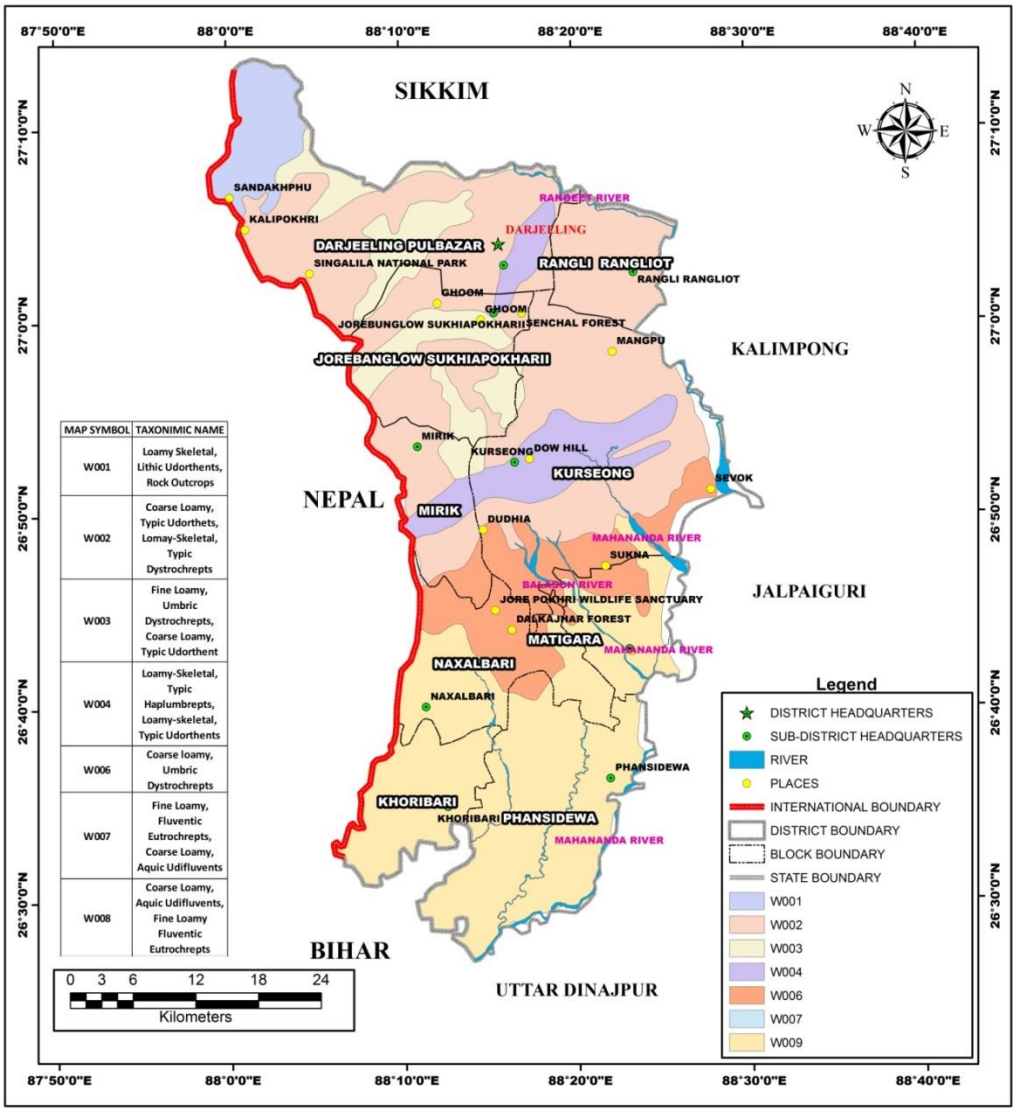

Figure 4.1: Soil Map of Darjeeling District
(Source: https://esdac.jrc.ec.europa.eu/content/west-bengal-soils-sheet-2)

The rock formations from north to south consist of the moderately resistant Darjeeling Gneisses, the Daling Metamorphics of varying resistant (i.e., phyllite to quartzite), and the

Damuda Shales with coal beds. Tertiary sandy molass deposits of Siwalik unconformably overlie the Damuda Formation. The overall rock type of the district is mainly consisting of granite, gneiss, shales, and most importantly sandstone and solidified but poorly consolidated clutter of conglomerate formations.

Rock type of the district may be divided into four tracts, which are, from north to south, the hard rock area, the Bhabar belt, the Terai belt and the alluvial plains. The Bhabar belt comprises rock fragments, big boulders and fine grained clastics derived from the hard- rock area is characterized by gentle slope, boulder surface and forest of tall trees. These are the coarse alluvial zone below the Siwalik Hills (outermost foothills of the Himalayas) where streams disappear into permeable sediments. The Terai belt is the zone of rejected recharge and, as such has developed swampy condition and is composed mostly of coarse granular materials alternating with finer clastics. The alluvium consists of succession of layers of sand, silt and clay with occasional gravel beds and lenses of peaty organic matter (Mili, 2012).

4.3 Different geomorphologic units

Geomorphologically the Darjeeling district can be broadly divided into Hills and Plain land form. The hilly areas of Darjeeling are a part of the Siwalik Range. Darjeeling Himalayas has an elevation range of 2000-3000 m, and occurs as the foreland of the Kanchenjunga massif. Geological foundations of the Darjeeling hills consist of Precambrian slates, schist, phyllite, quartzite, gneisses, lower Gondwana and Siwalik sandstones and recent to sub-recent alluvium.

The foothill of Darjeeling Himalayas, which comes under the Siliguri subdivision, is known as the Terai. This is primarily a plain land having elevation of 100 to 150 meters. Geological formations of these plains are Alluvium, Older Alluvium and Laterite Siwalik System.

Figure 4.2 below represent the geomorphological variation of Darjeeling district. Map shows the position of upper hills in the north-western part of the district where Singalila range is situated. Central region of the northern hilly area is also part of upper hills. Lower and middle ranges are demarcated by Lower hill region. Southern part of the district fall under Alluvial Plain region. In between Plan and hill, there is Alluvial Fan, characteristic of hilly terrain where river off load sediments from narrow canyon to plan land.

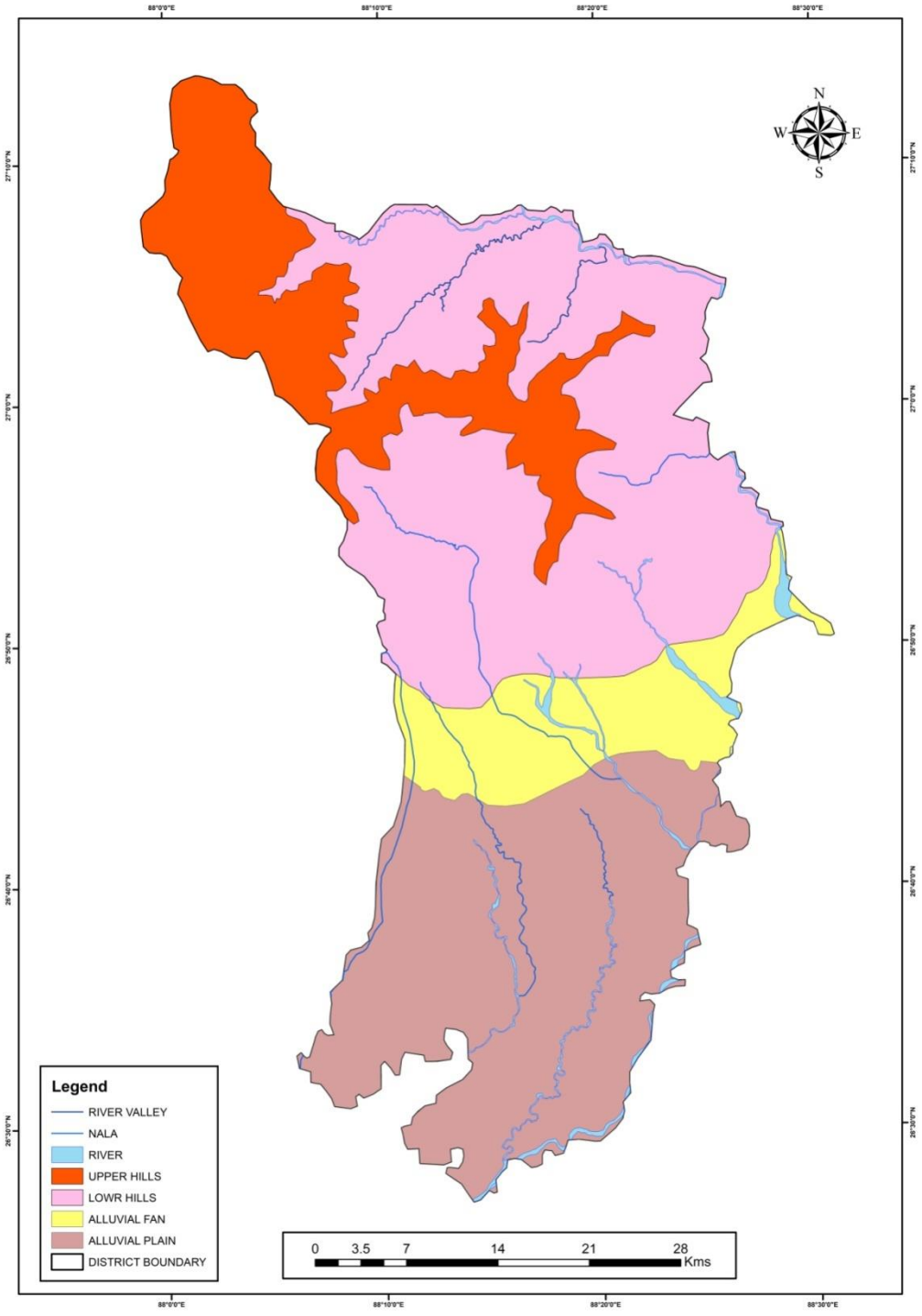

Figure 4.2: Geomorphological map of Darjeeling District

(Source: Resourcesat-1and2 – Liss-3, Bhuvan India)

5 Land use pattern of the district

The land share of district Darjeeling is modest in comparison to other districts in the state. Due to its mountainous terrain, fortunately, for a large proportion of land there is still a forest cover. Total forest land is 124.58 thousand hectares. Total land for agricultural use is 160 thousand hectares. Table 5.1 gives land utilization static of Darjeeling district. Figure 5.1 is pie diagram representing broad land use pattern of the district and Figure 5.2 is Land Use Land Cover map of the district.

Table 5.1: Classification of Land Utilisation Statistics in the district

(In thousand hectares)

Year	2008-09	2009-10	2010-11	2011-12	2012-13
Reporting Area (In Thousand Hectares)	325.47	325.47	325.47	325.47	325.47
Forest Area	124.57	124.57	124.57	124.57	124.58
Area under Non-agricultural use	39.88	40.16	40.53	38.62	39.21
Barren and unculturable land	2.48	2.14	2.46	2.57	2.33
Permanent pastures and other grazing land	0.87	1.13	0.83	0.57	0.5
Land under Misc. tree groves not included in Net area sown	2.21	2.33	2.35	2.64	2.78
Culturable waste land	1.67	1.55	1.49	1.31	1.12
Fallow land other than Current fallow	3.75	3.65	3.22	3.18	2.93
Current fallow	17.53	17.67	16.44	17.36	16.55
Net area sown	132.51	132.27	133.58	134.65	135.47

Source: *http://wbpspm.gov.in/publications/District%20Statistical%20Handbook*

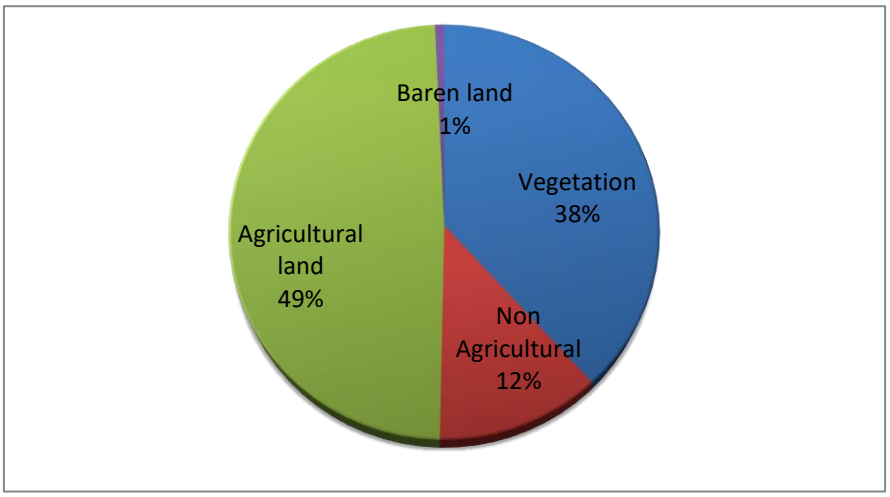

Figure 5.1: Land use pattern of Darjeeling District

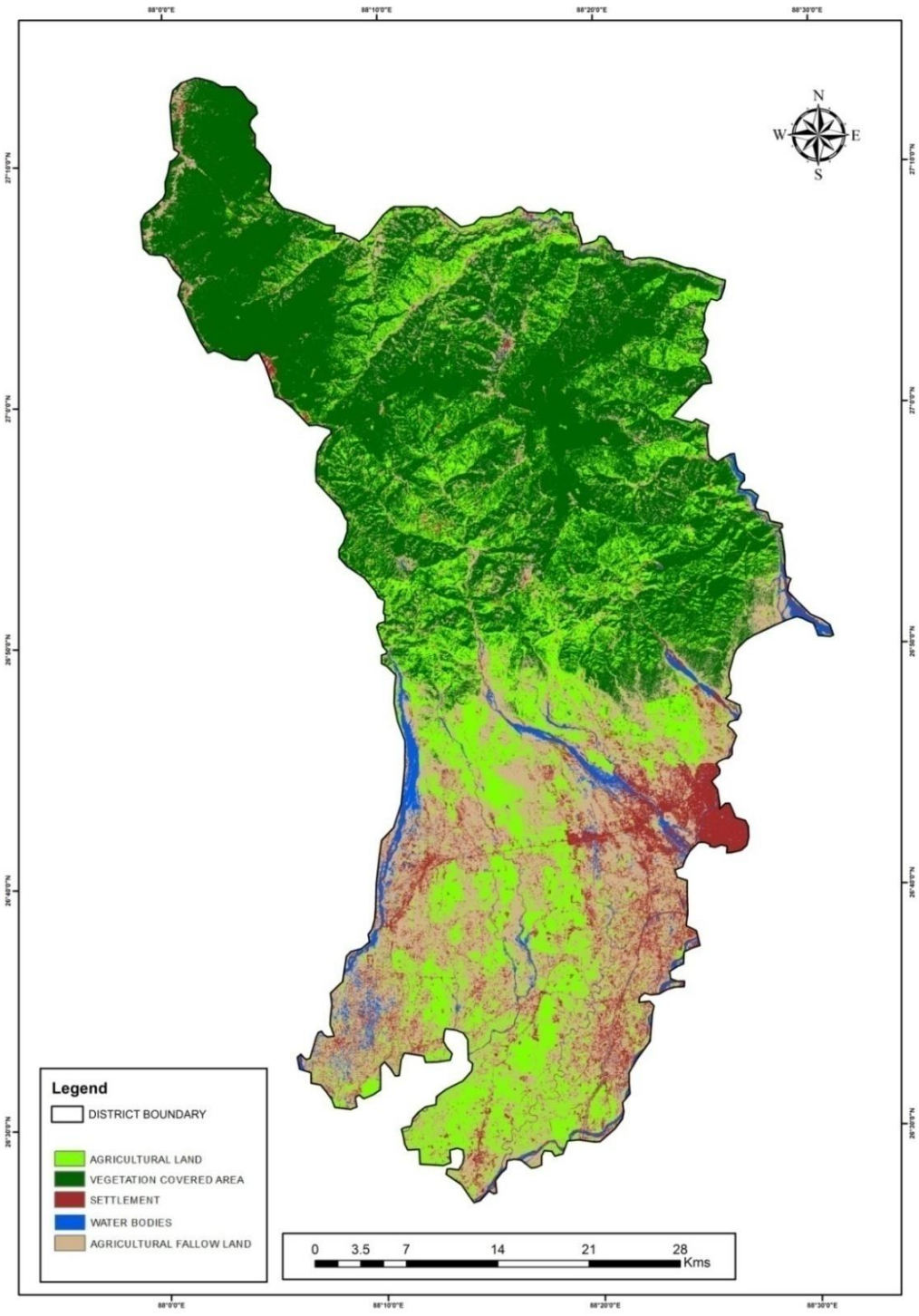

Figure 5.2: Land Use Land Cover map of Darjeeling District
(Source: Resourcesat-1and2 – Liss-3, Bhuvan India)

5.1 Forest

The natural forest resources of Darjeeling district can be classified into the following five categories (Census 2011; FSI 1997):

- The Tropical Semi-Evergreen Forests of district Darjeeling is generally spread over the foothills of the Himalayan Mountain range. The important species are Micheliachampaca, Terminalia myriocarpa, Ailanthus grandis, and Phoebe species. All these species yield valuable commercial timbers.
- Tropical Moist Deciduous Forest of Sal (Shorearobusta) is the most abundant species of plant in this vegetation. Other important deciduous evergreen plants and trees of shorter height like Michelia (Champa), Magnolia, Needle wood Tree (Chilauni), Black Cutch (Khayer), Silk Cotton (Simul), Banana, Plantains, Bamboo can also be seen in great numbers.
- Sub-Tropical Hill Forest can usually be seen at smaller hills upto the height of six thousand feet. It is alternatively known as Sub-tropical Broad-leaved Hill Forest. The main vegetation includes tall and large trees like Himalayan Alder, Nepali Alder, Himalayan Birch (Bhurja-Patra tree) etc.
- Eastern Himalayan Wet Temperate Forest usually grows at an altitude of six thousand to eight thousand feet, which may extend up to an altitude of ten thousand feet. Typical vegetation consists of Fern, Mosses, Epiphytic Orchids, Magnolias, Rhododendrons, Olive, Wild Ginger and large coniferous trees like Himalayan Alpine Fir, Himalayan Hemlock, Chestnut, Wormwood, Walnut, Birch etc.
- Alpine forests can be seen in at a height of eight to ten thousand feet and more. The forest area includes mainly of Pine, Juniper, Willows, Himalayan Silver Fir, Conifers, Oak, Chestnut, Walnut, Laurel, Maple etc. with deciduous and evergreen shrubs of genus Berberis, dwarf Rhododendron, Magnolia, etc.

As per the data made available in the District Statistical Hand Book of Darjeeling published by Government of West Bengal, 1,04,373 ha of the district forest land are under Reserved Forest category and 1,752 ha are under Protected Forest category (Table 5.2). As on 2010-11, Unclassed State Forest in the district is spread over 5,760 ha (Census, 2011).

Table 5.2: Classification of Forest Area, Out-turn of Forest Produce, Revenue and Expenditure of Forest Department

Item	Unit	2006-07	2007-08	2008-09	2009-10	2010-11
1. Area by class of forest:	-	-	-	-	-	
Reserved forest	hectare	104373.00	104373.00	104373.00	104373.00	104373.00
Protected forest	"	1752.30	1752.30	1752.30	1752.30	1752.30
Unclassed state forest	"	5759.87	5759.87	5759.87	5759.87	5759.87
Total		**111885.17**	**111885.17**	**111885.17**	**111885.17**	**111885.17**
2. Forest Produce:	-	-				
Timber	thousand cu. metre	96.75	98.29	91.35	93.10	93.45
Fuel	"	22.56	18.27	15.30	17.20	17.10
Pole	Number	-	-	17	14	18
3. Revenue and Expenditure:	-					
Revenue	Rs. in thousand	184292.00	222943.00	87698.00	82921.00	88767.00
Expenditure	"	188930.00	113070.00	74521.00	78701.28	80874.00

(Source: http://wbpspm.gov.in/publications/District%20Statistical%20Handbook)

5.2 Agriculture and Irrigation

Agriculture not only dominates the economy of Darjeeling District but it is also varied in nature due to variations in altitude, climate and soils. It is imperative to cut terraces for farming due to steep slopes. The steep slope again encourages soil erosion, thereby affecting the cropping pattern. The influence of temperature and heavy rain is also well-marked on the cropping pattern of the district.

The two distinct divisions of the district are mountainous region to the north forming the greater part and the alluvial plains to the south. Most of the area in the district is under forest. Cultivation is suitable between 300m and 600m in the hill areas. The lower hills are mainly used for plantation crops like Tea, Cinchona and Rubber. The net cultivated area is 49% of the total area of the district.

The plain-lands under the Terai and Dooars region are favourable for cultivation of rice, jute and potato. Maize (Corn) and ginger are cultivated primarily in the sloping lands at the foot of the hills. Organised sugarcane cultivation in the district has been accelerated after 2006-07.

Among the vegetables, production of Cucurbits like Squash, Pumpkin, Zucchini, Gourds etc. are maximum in the district, followed by Cabbage, Cauliflower, Tomato, Bringal etc (Census 2011).

The crops of Darjeeling district broadly fall into two groups - (a) plantation crops like tea, orange, cinchona and (b) non-plantation crops like rice, wheat, maize, jute, potato, vegetables etc.

These two may again be conveniently grouped under the following broad categories;-

(1) Subsistence Farming — Paddy, maize, millet, soyabean, wheat, barley etc.
(2) Cash Crop Raising — Potato and vegetables, ginger, cardamom etc.
(3) Plantation Agriculture — Tea, medicinal plants and pineapples.
(4) Miscellaneous categories — Horticulture, floriculture, orchid culture, sericulture and production of mushrooms.

Tea production form the most important part of the district economic scenario. Fruits like Orange, Pomegranate, Pineapple, Mandarin Orange, Banana, Lichee, different Citrus fruits; different vegetables and medicinal herbs like Cucumber, Brinjal, Cabbage, Cauliflower, Cardamom, Chillies, Turmeric, Ginger, Dar-haldi (Daru-Haridra in Sanskrit), Khayer, Cumin, Mint, Potato are cultivated in the district. Food Crops like Rice, Maize, and Wheat etc. are cropped mainly in the Terai region. Jute is also cultivated in the plains (Census 2011).

In Darjeeling, agro-forestry is an integral part of the farming system, where trees are integrated extensively with crop and livestock production. Two type of agro-forestry is practiced in the district. The large cardamom based agro-forestry system which accelerates the nutrient cycling, increases the soil fertility and productivity, reduces soil erosion and also provides aesthetic values for the mountain societies. Another is alder-based jhum system, a unique and highly productive form of jhuming (shifting cultivation or slash and burn agriculture). This system is usually practice at high altitude of Rimbhik and Lava region only by lepchas. Normally a jhum farmer cultivates the jhum fields for two years within a nine-year cycle (1:4 ratio of cropping to fallow). But the alder system allows two harvests in two out of every four to five years (1: 1 ratio of cropping to fallow) (Mukherjee, 2012).

Agriculture is a way of life to the people of Darjeeling as it is the source of livelihood, employment and raw materials to leading industries. In Darjeeling district about 7.6% of the total working population is cultivators, 4.7% are agricultural laborers and 29.96% are engaged inallied agricultural activities. The leading agro-based large-scale industry of the district is tea. Among the small-scale industries sericulture, fruit-processing, phyto-chemical, wheat grinding, flour crushing, rice milling are worth mentioning. The major cash crops of the district are orange, ginger, pine-apple, cardamom, potato and even vegetables. Table 5.3 shows the crop production capacity of the un-divided Darjeeling district.

Table 5.3: Production of Principal Crops in the district of Darjeeling (thousand tonnes)

Crops	2006-07	2007-08	2008-09	2009-10	2010-11
(1)	(2)	(3)	(4)	(5)	(6)
Foodgrains :					
1. **Rice**	**58.7**	**59.5**	**68.7**	**75.4**	**77.8**
Aus	8.9	6.2	5.9	7.6	8.2
Aman	46.6	49.6	59.6	64.4	65.6
Boro	3.2	3.7	3.2	3.4	4.0
2. Wheat	3.2	3.8	2.8	3.4	3.5
3. Barley	-	-	-	-	-
4. Maize	30.8	38.2	42.9	39.6	40.8
5. Other Cereals	14.4	14.3	14.3	14.3	14.2
Total Cereals	**107.1**	**115.8**	**128.7**	**132.7**	**136.3**
6. Gram	-	-	-	-	-
7. Tur	(b)	(b)	(b)	(b)	(b)
8. Other Pulses	1.2	0.7	0.7	0.6	0.7
Total Pulses	**1.2**	**0.7**	**0.7**	**0.6**	**0.7**
Total Foodgrains	**108.3**	**116.5**	**129.4**	**133.3**	**137.0**
Oil Seeds :					
1. Rapeseed and Mustard	0.1	0.1	0.1	0.1	0.2
2. Linseed	(b)	(b)	(b)	(b)	(b)
3. Other Oil seeds	8.0	0.2	0.2	0.1	0.2
Total Oil seeds	**8.1**	**0.3**	**0.3**	**0.2**	**0.4**
Fibres :					
1. Jute	31.4	28.3	33.9	36.8	30.2
2. Mesta	-	-	-	-	-
3. Other Fibres	-	-	-	-	-
Total Fibres	**31.4**	**28.3**	**33.9**	**36.8**	**30.2**
Miscellaneous crops :					
1. Sugarcane	-	2.3	0.9	0.3	0.3
2. Potato	110.4	109.2	124.0	149.4	126.7
3. Tobacco	-	-	-	-	-
4. Tea(P)	88.9	75.2	77.1	72.2	73.9
5. Chillies (dry)	0.3	1.1	0.6	0.6	0.6
6. Ginger	6.3	6.7	6.8	6.9	6.9
Total Miscellaneous crops	**205.9**	**194.5**	**209.4**	**229.4**	**208.4**

(Source: http://wbpspm.gov.in/publications/District%20Statistical%20Handbook)

5.3 Horticulture

A large variety of fruits such as Pine apples, Oranges, Plums, Peaches, Apples etc. are grown in the valleys and on the slopes under moderate rainfall (Table 5.4). The oranges are of excellent quality. The better orangeries usually occur at elevations of 650 m to 1300m. The traditional orange orchards cover about 3.82 sq.km of area. Mirik is supposed to be the most flourishing orange growingarea in the district (FSI 1997). The production of Darjeeling Mandarin Oranges and other variety of Citrus fruits are around 37,770 tonnes as on 2010-11. Pineapples are the highest growing fruit variety in the district with an annual production of 1,31,900 tonnes in 2010-11 (Census, 2011).

Table 5.4: Production of Fruits and Vegetables in the district

Name of Fruits / Vegetables		Production (Thousand tonnes)				
		2006-07	2007-08	2008-09	2009-10	2010-11
A.	**Fruits**					
	Mango	0.17	0.17	0.17	0.17	0.19
	Banana	3.30	3.53	3.94	3.94	3.94
	Pineapple	124.93	126.40	126.90	126.90	131.90
	Papaya	2.80	2.99	2.99	2.99	3.01
	Guava	1.44	1.45	1.45	1.45	1.45
	Jackfruit	2.10	2.56	2.57	2.57	2.57
	Litchi	2.92	0.55	0.55	0.55	0.55
	Mandarin Orange	0.46	35.98	35.98	36.23	36.53
	Other Citrus	5.69	1.24	1.24	1.24	1.24
	Sapota	-	-	-	-	-
	Others	32.55	32.75	32.75	32.73	32.76
	Total	**176.35**	**207.62**	**208.54**	**208.77**	**214.14**
B.	**Vegetables**					
	Tomato	13.26	13.47	13.47	14.47	14.66
	Cabbage	29.17	30.08	30.08	30.08	30.50
	Cauliflower	26.19	26.62	26.62	26.62	26.97
	Peas	12.19	12.22	12.22	12.22	12.59
	Brinjal	46.39	24.57	24.57	24.57	20.64
	Onion	0.49	0.46	0.46	0.46	0.48
	Cucurbits	64.98	80.59	80.59	78.59	81.37
	Ladies Finger	7.93	6.05	6.05	6.05	6.23
	Radish	13.59	13.92	13.92	13.92	9.73
	Others	23.70	26.68	26.68	26.68	36.80

Name of Fruits / Vegetables		Production (Thousand tonnes)				
		2006-07	2007-08	2008-09	2009-10	2010-11
	Total	**237.90**	**234.66**	**234.66**	**233.66**	**239.97**

(Source: http://wbpspm.gov.in/publications/District%20Statistical%20Handbook)

Located principally in temperate climate the district possesses an excellent floral diversity. The important flowers grown in the district and their production during 2006-2011 are shown in Table 5.5.

Table 5.5: Production of Flowers in the district

Name of Flowers	Production				
	2006-07	2007-08	2008-09	2009-10	2010-11
Rose (crore cut flower)	1.099	1.525	1.525	1.525	1.525
Chrysanthemum (crore cut flower)	1.870	1.770	1.770	1.770	1.770
Gladiolus (crore cut flower)	19.015	20.910	20.910	20.910	20.930
Tuberose (crore cut flower)	-	-	-	-	-
Marigold ('000 tonnes)	..	0.110	0.110	0.110	0.110
Jasmine ('000 tonnes)	0.048	0.018	0.018	0.018	0.018
Seasonal Flower ('000 tonnes)	0.102	0.102	0.102	0.102	0.103
Misc.Flower ('000 tonnes)	0.066	0.078	0.078	0.078	0.078

(Source: http://wbpspm.gov.in/publications/District%20Statistical%20Handbook)

5.4 Mining

Darjeeling district is not exposed to mining activity at large scale. Collection of sand, and gravels from the river-bed are the main mineral sources. These materials are primarily utilized for construction purpose. Revenue generated in the district of Darjeeling from minor minerals in the FY 2019-20 is Rs. 6.35 crores.

6 Geology

The Sikkim-Darjeeling Himalaya contains the stretch of tectonically active Eastern Himalaya. It is composed of three main tectonic units: the Higher Himalaya, the Lower Himalaya and the Siwaliks separated by thrusts, but joined by great fluvial system of the Teesta River. The Higher Himalaya with relief up to 2,000–4,000 m was uplifted by about 2,000 m in the Quaternary rising above the snowline. Its mountain massifs previously had fluvial relief which later had been totally transformed by glacial processes. The Lower Himalaya dissected 1,000–2,000 m locally with remains of mature relief fragments are continuously in the forest belt. The Siwaliks in this part of the Himalayan Range are reduced to a narrow belt, which blend with the Lower Himalaya. Along the Frontal Fault it rises above 1,000 m directly over the alluvial plains of the Sub-Himalayan foredeep, which is still active and split into blocks of various tectonic tendencies.

Darjeeling-Sikkim Himalaya is one of the important fault thrust belt in the Himalaya covering the rocks of Central Crystalline Gneissic Complex, Daling Phyllite, Gondwana, Buxa and Siwaliks from north to south. Quaternary rock delimits the Himalaya in the southern part.A number of thrust namely MCT, MBT, MFT and also Daling Thrust are reported in this faultthrust belt.

The geological formations of the Darjeeling Himalaya consist essentially of unaltered sedimentary rocks (Table 6.1). The Sub-Himalaya is made up of Siwalik deposits of the Tertiary age. North of the Siwaliks is the coal-bearing lower Gondwana formations. The Daling Series (Pre-Cambrian) follows and is succeeded by the Darjeeling Gneiss further north (Cajee, 2018).

Table 6.1: Geological succession of Darjeeling Himalaya

Age	Series	Lithological Characteristics
Recent to Sub-recent	Alluvium	Younger flood plain deposits of rivers consisting of sands, pebbles, gravels, bouldersetc.
Pleistocene to Lower Pleistocene (Lower Tertiary)	Siwalik	Micaceous sandstone with siltstone, clay, lignite lenticles, etc.
Thrust (Main Boundary Fault)		
Permian	Damuda (Lower Gondwana)	Quartzitic sandstone with slaty bands, seams of graphitic coal, lampophyre silt and minor bands of limestone.
Thrust (Fault Of Nappe Qutlier)		
Pre-Cambrian	Daling Series	Slate, chlorite-sericite schist, chlorite- quartzs chist.
	Darjeeling Gneiss	Golden silvery mica-schist, carboniferous mica-schist, coarse grained gneiss.

(Source: Cajee, 2018)

Darjeeling Sub Himalaya: The Terai and the foothills were given their present form after the final upheaval of the Himalayan orogeny and consist of almost horizontal layers of unconsolidated sand, silt, pebbles and gravel. The Sub Himalaya is made up of the Siwalik deposits of the Tertiary and good Siwalik exposure is met along the Teesta River.

Damuda Series: Along the foothills of Darjeeling, the Siwaliks are steeply over-thrust by the Damuda formations (Lower Gondwana). The thrust zone is badly exposed and appears to dip at 60° – 70° towards the North. This thrust coincides with the well-known main boundary fault, occurring throughout the entire Himalayan range. The sandstones are micaceous, feldspathic and brownish, often weathered in exposed thrust zones, with coal bearing detrital rocks. Frequently, the sandstones have been converted to quartzites; the shales into splinter-shales and the carboniferous shales to graphitic shales; while the coal has been altered to anthracite. There is a thin discontinuous band of limestone from Kalijhora to Rongtong.

Daling Series: Northwards, the Damuda Series is succeeded by the very uniform and characteristic Dalings. They border the Damudas with a very sharp thrust contact, dipping steeply towards the north. The Daling consists mainly of slates and phyllites, with silvery mica schists representing transition rocks. Feldspars and quartz layers are found lying alternate to each other.

Darjeeling Gneiss: The Darjeeling gneiss occupies a greater part of the region and is found along the higher reaches of the hills. The Darjeeling gneiss consists of garnetiferous mica-schists, quartzites, biotite-kyanite and sillimantic gneiss. The Darjeeling gneiss is met with traverses along Sukhia Pokhri – Maney Bhanjang - Tonglu- Sandhakphu-Phalut Road and also along the Phalut-Rammam-Rimbick-Jhepi-Pulbazar-Darjeeling Road. The gneisses are well foliated, much folded and crumpled and are well- jointed (40°-70° E-W) rocks.

7 Mineral wealth

7.1 Overview of mineral resources

The geological formation of Darjeeling District indicates the presence of quite a number of major minerals such as coal, graphite, limestone, lead, zinc, copper, and minor minerals such as building and silica sand. Of these major minerals, resource of coal is well established along with lead-zinc, copper-gold and limestone deposits. Deposits of sand and building stones are extracted economically.

7.2 Details of Resources

7.2.1 Sand and other riverbed minerals:

I. Drainage System

Drainage system of the district comprises 5 river courses namely, Teesta, Mahananda, Rammam, Rangeet and Mechi (Table 7.1 and Table 7.2). A brief description of each river courses is given below (Census, 2011).

River Teesta (also spelt as Tista) is the most important river of Darjeeling district. The main stream of the river is originated from Cholamoo (Tso Lhamo) Lake in Tibet. Passing through the mighty Himalayas during its early path, the river reaches the plain land at Sevoke near Siliguri and expands in the plains after entering Jalpaiguri district. River Teesta is fed by numerous smaller tributaries from East and large but fewer tributaries from West bank throughout its journey from Sikkim to Bangladesh through Darjeeling and Jalpaiguri. Inside Darjeeling district, the principal tributary of river Teesta are river Rangpo to the left bank which creates a natural boundary between Darjeeling and Sikkim for some distance and rivers Great Rangeet (Bari Rangeet/Rangeet Chhu) and Rammam joins Teesta from the right bank forming the district boundary with Sikkim.The River Teesta is primarily a snow-fed river in its upper course and fed by heavy rainfall during the month of June to September in its lower course. Like all other hilly rivers in the region the river bed almost remains dry in other seasons.

River Mahananda is also known as Mahanadi or Mahaldi. It originates from the Mahaldiram Hills located east of Kurseong from an elevation 6,900 ft and flows in a North-South direction through the district up to Siliguri. Mechi, Balason, Ratwa and Kankai are main tributaries of Mahananda. Like all other rivers of North Bengal, Mahananda is fed by numerous small streams of rivulets flowing from the mighty Himalayas. Trinai, Ranochondi, Chokor and Dauk are notable among them.

The river Rammam and river Rangeet forms the natural northern boundary of the Darjeeling district with the state of Sikkim. Rangeet is originated from a glacier of Mt. Kabru at the lower Kanchenjunga region towards North and meets with river Rammam near Jorethang of Sikkim which ultimately meets river Teesta. The river Rammam is originated from the Singalila

range in Darjeeling and flows towards East before meeting Rangeet. River Rammam is fed by its main tributary Lodhoma and numerous small streams before reaching its confluence with Rangeet.

River Balason is originated from Lepcha Jagat at the Senchal Hills South- West of Darjeeling. It is a tributary of river Mahananda and flows in North-South direction. There are two notable tributaries of river Balason, one is Rinchintong on the left bank and the other is Rangbong on the right bank. The gravels and sand found in the hilly terrain of the river-bed of Balason are used for construction purpose and are considered of having impressive quality.

River Mechi is originated from Mahabharat range of Nepal and flows from North to South and enters Darjeeling district at Mirik C.D. Block. It is the Western-most tract of Darjeeling district forming the Western boundary (international boundary) with Nepal. River Mechi is a tributary of river Mahananda.

Other small river which flows through the district are Chenga and Teri which are the tributaries of River Mechi.

Table 7.1: Drainage system with description of main rivers

S.No.	Name of the River	Area drained (Sq.km)	% Area drained in the district
1	Balason River	19.69	0.94%
2	Teesta River	9.02	0.43%
3	Rangeet River	2.74	0.13%
4	Mechi River	16.60	0.79%
5	Mahananda River	11.67	0.56%

Table 7.2: Salient Features of important rivers and streams

S.No.	Name of the River or Stream	Total Length in the District (in Km)	Place of origin	Altitude at Origin
1	Balason River	48.40	Lepchajagat at the Senchal Hills	2361m
2	Teesta River	37.00	Tso Lhamo Lake, Sikkim	5100m
3	Rangeet River	18.57	Glacier of Mt. Kabru, lower Kanchenjunga	5330m

S.No.	Name of the River or Stream	Total Length in the District (in Km)	Place of origin	Altitude at Origin
4	Mechi River	63.21	Mahabharat range of Nepal	4000m
5	Mahananda River	91.70	Paglajhora Falls on Mahaldiram Hill	2100m

II. Annual deposition of riverbed minerals

Annual deposition of riverbed minerals is dependent on various factors which are explained below.

A. Geomorphological studies

Geomorphological characteristic of a drainage basin is the foremost factor for annual deposition of sedimentary load. The study includes the following parameters:

i) Place of Origin

The place of origin of each of the five rivers is given in Table 7.3.

Table 7.3: Place of origin of rivers of Darjeeling district

Name of the River or Stream	Place of origin
Balason River	Lepchajagat at the Senchal Hills
Teesta River	Tso Lhamo Lake, Sikkim
Rangeet River	Glacier of Mt. Kabru, lower Kanchenjunga
Mechi River	Mahabharat range of Nepal
Mahananda River	Paglajhora Falls on Mahaldiram Hill

ii) Catchment Area

River Teesta and Mahananda form the main drainage system of Darjeeling district. Teesta River is a 315 km long river that rises in the eastern Himalayas, flows through the Indian states of Sikkim and West Bengal through Bangladesh and enters the Bay of Bengal. Mahananda River originated from the Mahaldiram Hills at East of Kurseong from an elevation 6,900 ft. and flows in a North-South direction through hilly catchment area of the district up to Siliguri.

iii) General profile of river stream

Relative disposition of rivers in Darjeeling district along with the distribution of the section lines are shown in Figure 7.1. River profile has been studied along the cross section lines (Figures 7.2 and 7.3) which are chosen based on the drastic variation of the river width, proximity of the operating sand ghats and the position of the sand bars.

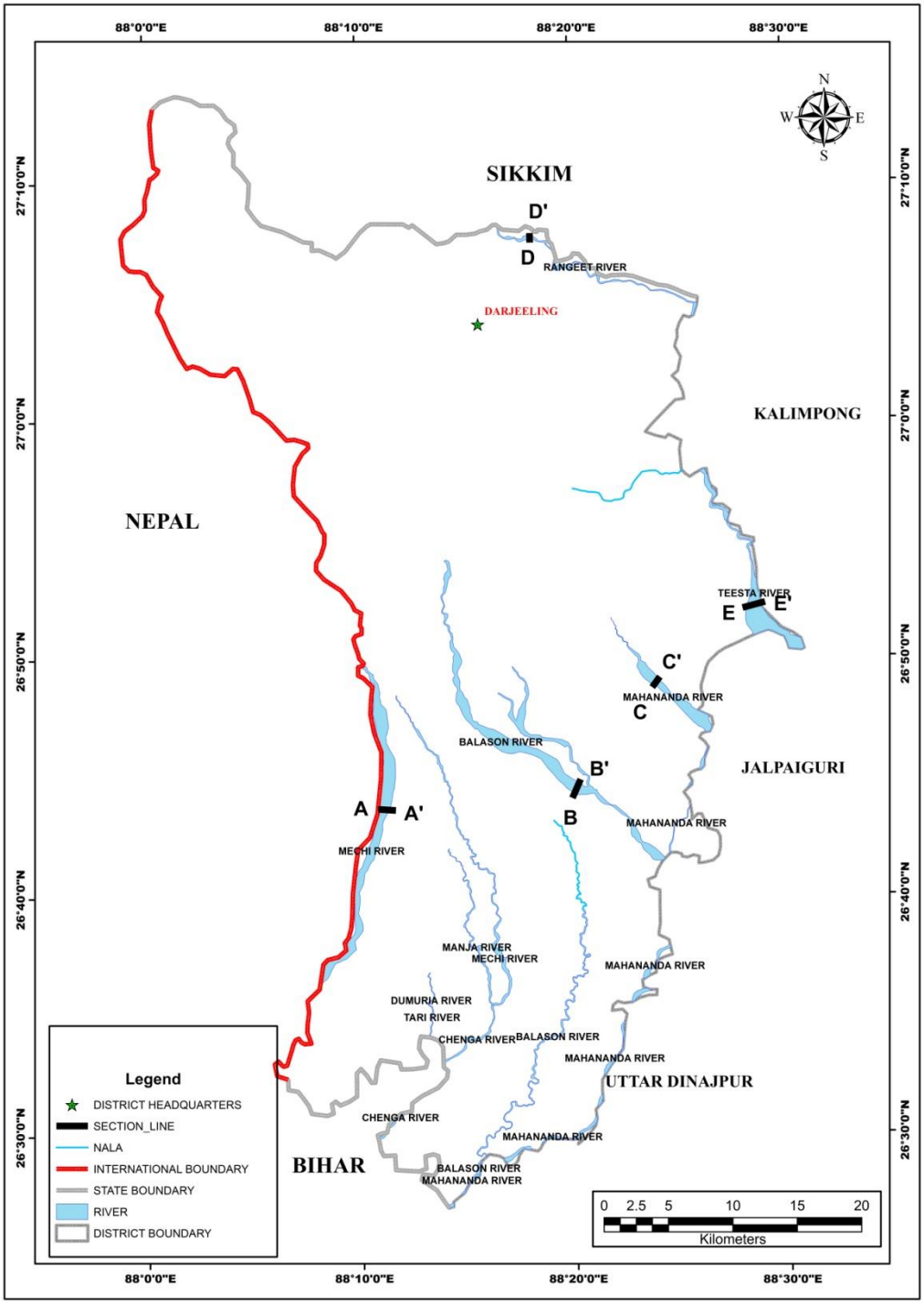

Figure 7.1: Plan showing the major rivers along with the distribution of Section Lines

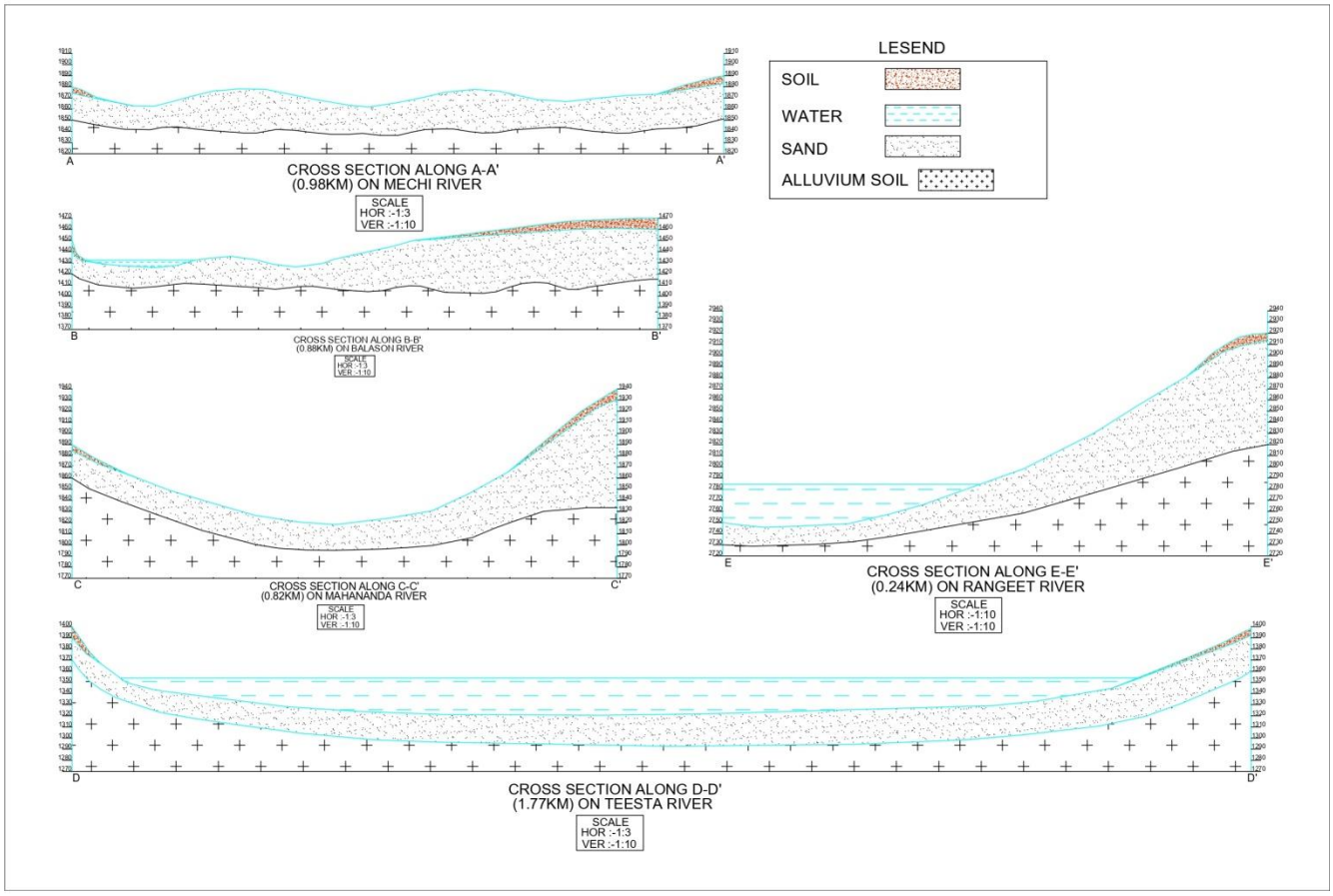

Figure 7.2: River cross section during pre-monsoon period

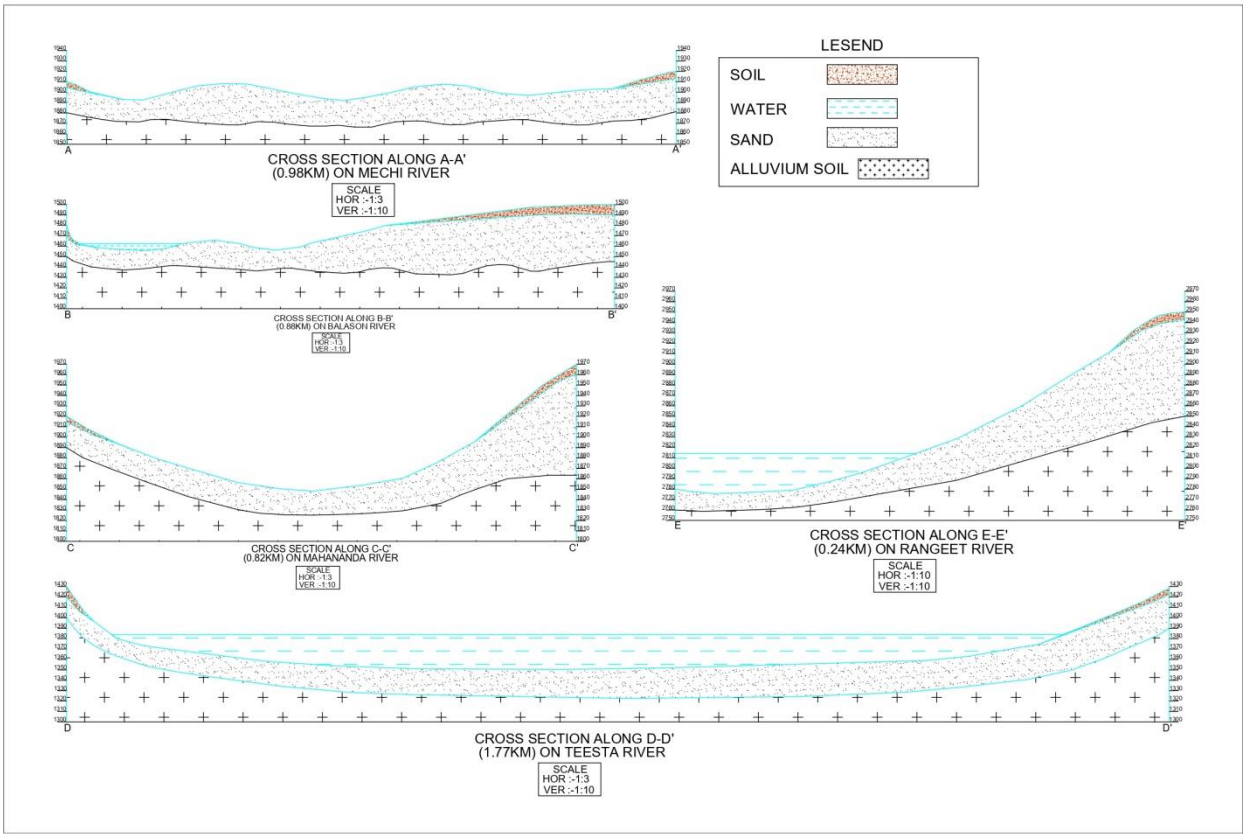

Figure 7.3: River cross sections during post monsoon period

iv) Annual deposition factor

Annual deposition of riverbed materials depends on various factors, such as process of deposition, mode of sediment transport, sediment transport rate, and sediment yield of the river.

1. Process of deposition

Deposition is the processes where material being transported by a river is deposited. Deposition occurs when the forces responsible for sediment transportation are no longer sufficient to overcome the forces of gravity and friction, creating a resistance to motion; this is known as the null-point hypothesis. This can be when a river enters a shallow area or towards its mouth where it meets another body of water.

The principle underlying the null point theory is due to the gravitational force; finer sediments remain in the water column for longer durations allowing transportation outside the surf zone to deposit under calmer conditions. The gravitational effect or settling velocity

determines the location of deposition for finer sediments, whereas a grain's internal angle of friction determines the deposition of larger grains on a shore profile.

Deposition of non-cohesive sediments: Large-grain sediments transported by either bedload or suspended load. In case of bedload, when there is insufficient bed shear stress and fluid turbulence are insufficient to keep the sediment moving, the grain cease horizontal movement and rapidly come to rest. In case of suspended load the grain settle longer distance vertically through the fluid before coming to rest.

Deposition of cohesive sediments: The cohesion of sediment occurs with the small grain sizes associated with silts and clays, or particles smaller than 4Φ or 62.5 μm. If these fine particles remain dispersed in the water column, Stokes law applies to the settling velocity of the individual grains. The face of a clay platelet has a slight negative charge where the edge has a slight positive charge when two platelets come into close proximity with each other the face of one particle and the edge of the other are electro-statically attracted, and then have a higher combined mass which leads to quicker deposition through a higher fall velocity.

2. Mode of sediment transport in rivers

Sediment transport in rivers provides a dynamic linkage between flow and channel form. Mainly there are three processes by which sediment load is transported and these are (i) rolling or traction, in which the particle moves along a sedimentary bed but is too heavy to be lifted from it; (ii) saltation; and (iii) suspension, in which particles remain permanently above the bed, sustained there by the turbulent flow of the water.

Another name for sediment transport is sediment load. The total load includes all particles moving as bedload, suspended load, and wash load.

Bed load: Bedload is the portion of sediment transport that rolls, slides or bounces along the bottom of a waterway. This sediment is not truly suspended, as it sustains intermittent contact with the streambed, and the movement is neither uniform nor continuous. Bedload occurs when the force of the water flow is strong enough to overcome the weight and cohesion of the sediment. While the particles are pushed along, they typically do not move as fast as the water around them, as the flow rate is not great enough to fully suspend them. Bedload transport can occur during low flows (smaller particles) or at high flows (for larger particles). Approximately 5-20% of total sediment transport is bedload. In situations where the flow rate is strong enough, some of the smaller bedload particles can be pushed up into the water column and become suspended.

Suspended load: While there is often overlap, the suspended load and suspended sediment are not the same thing. Suspended sediment are any particles found in the water column, whether the water is flowing or not. The suspended load, on the other hand, is the amount of sediment carried downstream within the water column by the water flow. Suspended

loads require moving water, as the water flow creates small upward currents (turbulence) that keep the particles above the bed. The size of the particles that can be carried as suspended load is dependent on the flow rate. Larger particles are more likely to fall through the upward currents to the bottom, unless the flow rate increases, increasing the turbulence at the streambed. In addition, suspended sediment will not necessarily remain suspended if the flow rate slows.

Wash load: The wash load is a subset of the suspended load. This load is comprised of the finest suspended sediment (typically less than 0.00195 mm in diameter). The wash load is differentiated from the suspended load because it will not settle to the bottom of a waterway during a low or no flow period. Instead, these particles remain in permanent suspension as they are small enough to bounce off water molecules and stay afloat. However, during flow periods, the wash load and suspended load are indistinguishable.

3. Sediment Transport Rate

The rate at which sediment is moved past a cross section of the flow is called either the sediment transport rate or the sediment discharge. It‘s related to the sediment load, but it‘s different, just because different fractions of the sediment load are transported at different rates. It can be measured in mass per unit time, or in weight per unit time, or in volume per unit time. The sediment transport rate is commonly denoted by Qs.

4. Estimation of Sedimentation

There are two approaches to obtaining values describing sediment loads in streams. One is based on direct measurement of the quantities of interest, and the other on relations developed between hydraulic parameters and sediment transport potential.

The total bed material load is equal to the sum of the bedload and the bed material part of the suspended load; in terms of volume transport per unit width, qt = qb + qs. Here wash load, i.e. that part of the suspended load that is too fine to be contained in measurable quantities in the river bed, is excluded from qs.

There are number of equations to compute the total sediment load. Most of these equations have some theoretical and empirical bases.

In 1973, Ackers and White developed a general theory for sediment transport which was calibrated against the flume-transport data then available. Their functions have been widely accepted as one of the best available procedures for estimating the total bed over the full width of the flow section.

Dendy-Bolton formula is often used to calculate the sedimentation yield. But use of these equations to predict sediment yield for a specific location would be unwise because of the wide

variability caused by local factors not considered in the equations development. However, they may provide a quick, rough approximation of mean sediment yields on a regional basis. Computed sediment yields normally would be low for highly erosive areas and high for well stabilized drainage basins with high plant density because the equations are derived from average values. The equations express the general relationships between sediment yield, runoff, and drainage area.

5. Sediment Yield

The water that reaches a stream and its tributaries carries sediment eroded from the entire area drained by it. The total amount of erosional debris exported from such a drainage basin is its sediment load or sediment discharge and the sediment yield is the sediment discharge divided by the total drainage area of the river upstream of the cross section at which the sediment discharge is measured or estimated. Sediment yield is generally expressed as a volume or weight per unit area of drainage basin—e.g., as tons per square kilometre. Further, sediment yield is usually measured during a period of years, and the results are thus expressed as an annual average.

v) Replenishment Study as per EMGSM guidelines 2020:

Replenishment study for a river solely depends on estimation of sediment load for any river system and the estimation is a time consuming and should be done over a period. The process in general is very slow and hardly measurable on season to season basis except otherwise the effect of flood is induced which is again a cyclic phenomenon. Usually replenishment or sediment deposition quantities can be estimated in the following ways as given below:

A. Replenishment study based on satellite imagery involves demarcation of sand bars potential for riverbed mining. Both pre and post monsoon images need to be analysed to established potential sand bars. Volume estimation of sand is done by multiplying Depth and Area of the sand bar. The sand bars are interpreted with the help of satellite imagery. Ground truthing has been done for 100% of the total identified sand bars. During ground truthing, width and length of each segment were physically measured. It has also been observed that in few cases, sand bars have attained more than 3 meters height from the average top level of the river beds. Considerations of sand resources have been restricted within 3 meters from the average top surface of the river bed.
B. Direct field measurement of the existing leases involving estimation of the volume diference of sand during pre and post-monsoon periods. With systematic data acquisition, a model has been developed for calculation of sediment yield and annual replenishment with variable components.
C. The replenishment estimation based on a theoretical empirical formula with the estimation of bed-load transport comprising of analytical models to calculate the replenishment estimation.

V(A). Replenishment study based on field investigation:

Sedimentation in any river is dependent on sediment yield which depends on soil erosion in river's catchment area. Catchment yield is computed using Strange's Monsoon runoff tables for runoff coefficient against rainfall return period. Peak flood discharge is calculated by using Dickens, Jarvis and Rational formula at 25, 50 and 100 years return period. The estimation of bed load transport using Ackers and White Equation.

Methodology Adopted: To delineate replenishment percentage in the river bed of the district, below mentioned steps have been followed.

1. **Field data collation**

Field data collation was carried out during May- June (2020) for all the river ghats on continuous basis for pre monsoon period and October- November (2020) for all the river ghats on continuous basis for post monsoon period. However, the nonoperational areas were covered through traverses. In both the cases, relative elevation levels were captured through GPS/DGPS/ Electronic Total Station. Thickness of the sand bars was measured through sectional profiles. In few instances, sieve analysis of the sands was carried out to derive the size frequency analysis.

Figure 7.4: Site view of Balason River

2. Selection of study profiles:

Study profiles are selected based on the occurrence of the sand bars in the channel profiles. Aerial extents of each of the profiles are mapped from satellite imagery.

3. Data compilation:

Following data were compiled for generation of this annual replenishment report:

- Elevation levels of the different sand ghats and sand bars as measured at site.
- Extents of the sand bars are measured from the pre monsoon satellite imagery.
- Sand production data of the district.

All these data were compiled while estimation of the replenished sand in the Darjeeling district.

4. Assessment of sediment load in the river:

Assessment of sediment load in a river is subjective to study of the whole catchment area, weathering index of the various rock types which acts as a source of sediments in the specific river bed, rainfall data over a period not less than 20 years, and finally the detail monitoring of the river bed upliftment with time axis. Again, the sediment load estimation is not a dependent variable of the district boundary, but it largely depends upon the aerial extents of the catchment areas, which crossed the district and state boundaries.

The major sand producing rivers of the Darjeeling district are Mechi, Balason, Rangeet, Mahananda and Teesta rivers. Planning has been done for systematic sand mining in the rivers.

From the ground survey and satellite imageries study in the pre monsoon period, altogether 168 sand bars are identified in Darjeeling district of which 64 are in Balason River, 31 are in Mechi River, 25 are in Teesta River, 9 are in Mahananda River, 10 sandbars fall in Rangeet River, 23 sand bars are in Chenga River, 5 sand bars in Manja River and the remaining 1 is in Teri River.

In the post monsoon period, altogether 158 sand bars are identified in Darjeeling district of which 60 are in Balason River, 25 are in Mechi River, 22 are in Teesta River, 14 are in Mahananda River, 10 sandbars fall in Rangeet River, 20 sand bars in Chenga River, 6 sand bars in Manja River and the remaining 1 is in Teri River.

For calculating the area of sand bars, following categorization of land within the channel area have been adopted:

a. The untapped sand bars.
b. The sand bars worked in the pre-monsoon period.
c. Main channel course within the channel.

A summary of sediment load comparison between pre- and post-monsoon period for different rivers of Darjeeling district is given in Table 7.4 and details of each sand bars along with their sand resources in pre monsoon and post monsoon periods are provided in Annexure 2. Maps showing distribution of sand bars on rivers of the Darjeeling district during Pre and Post monsoon are depicted in Plate 2A and Plate 2B respectively.

Table 7.4: Sediment load comparison between Pre and Post Monsoon period for different rivers of Darjeeling district

River Name	Pre-Monsoon no of ghats	Post-Monsoon no of ghats	Pre-Monsoon Sediment Load (Mcum)	Post Monsoon Sediment Load (Mcum)	Difference (Mcum)	Difference (%)
Mechi	31	25	20.73	23.87	3.14	15.15
Chenga	23	20	1.97	1.99	0.02	1.02
Manja	5	5	0.24	0.29	0.05	20.83
Tari	1	1	0.04	0.04	0	0.00
Balason	71	67	11.17	12.65	1.48	13.25
Mahananda	15	15	7.26	7.31	0.05	0.69
Teesta	29	22	7.15	9.91	2.76	38.60
Rangeet	10	10	0.82	0.82	0	0.00
Total =	185	165	**49.38**	**56.88**	**7.50**	**16.46**

Thus, in Darjeeling district, about 7.50 million cubic meter of sand has been found as an incremental volume when compared between pre and post monsoon sand reserve data. The average replenishment and aggradation rate for the year 2020 comes to about 116.46%.

Long-term Satellite imagery study has also been carried out for sand producing rivers of Darjeeling District to analyse the changes in river course. A representative map, showing long-term (from 1985-2010-to 2022) erosion-accretion areas on both the banks of Mahananda River has been prepared and furnished as Plate No. 5B. The map shows changes in river channel cross-section through erosion and accretion of river bank. River channel is showing widening of river width of the river courses from 1985 to 2021.

V(B). Replenishment estimation based on field investigation

The study was carried out on existing mining leases. In order to assess the annual replenishment rate, an approach of direct measurement methodology has been adopted. The depth and area of the mining leases are measured through DGPS/Total station just before the closure of the mines in pre-monsoon period and the same areas are resurveyed in the post-

monsoon period. The difference between the depth of the surveyed areas are accounted for the volumetric measurement of the replenished sand.

Table 7.5 represents field measurement of replenishment rate estimated for major rivers.

Table 7.5: Replenishment rate of the district

River Name	Location	Area	Surface RL	Thickness	Volume	After mining floor RL	Surface RL	Thickness	Volume	Difference in RL	Replenishment Rate
		m2	m	m	cum	m	m	m	cum	m	%
Mahananda	Karaibari	33000.00	131.00	3.00	99000.00	128.00	130.96	2.96	97673.40	0.04	98.66
Mahananda	PurbaBansgaon	49000.00	98.00	2.80	137200.00	95.20	97.97	2.77	135828.00	0.03	99.00
Balason	Lalsara	30400.00	198.00	2.90	88160.00	195.10	197.94	2.84	86396.80	0.06	98.00
Balason	Radha	4500.00	139.00	2.95	13275.00	136.05	138.95	2.90	13036.05	0.05	98.20
Balason	Nemai	35900.00	90.90	2.90	104110.00	88.00	90.86	2.86	102652.46	0.04	98.60
Mechi	Bhulka	25000.00	128.00	2.85	71250.00	125.15	127.96	2.81	70181.25	0.04	98.50
Mechi	Baramaniram	20000.00	110.00	3.00	60000.00	107.00	109.96	2.96	59220.00	0.04	98.70
Chenga	Bhatagach	35200.00	125.80	2.95	103840.00	122.85	125.74	2.89	101763.20	0.06	98.00
Chenga	Gaziram	28000.00	93.00	2.90	81200.00	90.10	92.96	2.86	79982.00	0.04	98.50

The average replenishment rate for the year 2020 is about 98.46%.

V(C). Replenishment estimation based on an empirical formula:

The river reaches with sand provide the resource and thus it is necessary to ascertain the rate of replenishment of the mineral. Regular replenishment study needs to be carried out to keep a balance between deposition and extraction.

Sediment load deposition in a river is depend on catchment area, weathering index of the various rock types of the catchment area, land-use pattern of the area, rainfall data and grain size distribution of the sediments. Again, the sediment load estimation is not a dependent variable of the district boundary, but it largely depends upon the aerial extents of the catchment areas, which crosses the district and state boundaries.

i. Methodology of the study:

The replenishment estimation is based on a theoretical empirical formula with the estimation of bedload transport comprising of analytical models to calculate the replenishment estimation. Sedimentation in riverbed depends on catchment yield, peak flood discharge due to rainfall, bed load transport rates and sediment yield characteristic of the river. Some of the common methods used for replenishment study are explained below.

a. Catchment yield calculation:

The total quantity of surface water that can be expected in a given period from a stream at the outlet of its catchment is known as yield of the catchment in that period. The annual yield from a catchment is the end product of various processes such as precipitation, infiltration and evapotranspiration operating on the catchment.

Catchment yield can be estimated using following formula:

Catchment yield (m^3) =Catchment area (m^2) × Runoff coefficient (%) × Rainfall (m)

The runoff generated from the watershed is analyzed using Strange's Tables to get the reliable yield results. Runoff from a catchment is dependent upon annual rainfall as well as catchment characteristics such as soil types and the type of groundcover / land usage. Remote sensing was used for demarcation of catchment area relevant to the drainage system. Runoff coefficient of the catchment has been established based on Stange's Table.

Strange in 1892, studied the available rainfall and runoff and obtained yield ratios as functions of indicators representing catchment characleris1ics (Subramanya, 2008). Catchments are classified as good, average and bad according to the relative magnitudes of yield of sediments. For example, catchment with good forest cover and having soils of high permeability would be classified as bad, while catchment having soils of low permeability and having little or no vegetal cover is termed good. Based on the study Stange established runoff coefficient table as given in Table 7.6:

Table 7.6: Runoff coefficient of the catchment based on Strange's table

Total monsoon rainfall (mm)	Runoff coefficient (%)			Total monsoon rainfall (mm)	Runoff coefficient (%)		
	Good catchment	Average catchment	Bad catchment		Good catchment	Average catchment	Bad catchment
25.4	0.1	0.1	0.1	787.4	27.4	20.5	13.7
50.8	0.2	0.2	0.1	812.8	28.5	21.3	14.2
76.2	0.4	0.3	0.2	838.2	29.6	22.2	14.8
101.6	0.7	0.5	0.3	863.6	30.8	23.1	15.4
127	1	0.7	0.5	889	31.9	23.9	15.9
152.4	1.5	1.1	0.7	914.4	33	24.7	16.5
177.8	2.1	1.5	1	939.8	34.1	25.5	17
203.2	2.8	2.1	1.4	965.2	35.3	26.4	17.6
228.6	3.5	2.6	1.7	990.6	36.4	27.3	18.2
254	4.3	3.2	2.1	1016	37.5	28.1	18.7
279.4	5.2	3.9	2.6	1041.4	38.6	28.9	19.3
304.8	6.2	4.6	3.1	1066.8	39.8	29.8	19.9
330.2	7.2	5.4	3.6	1092.2	40.9	30.6	20.4
355.6	8.3	6.2	4.1	1117.6	42	31.5	21

Total monsoon rainfall (mm)	Runoff coefficient (%)			Total monsoon rainfall (mm)	Runoff coefficient (%)		
	Good catchment	Average catchment	Bad catchment		Good catchment	Average catchment	Bad catchment
381	9.4	7	4.7	1143	43.1	32.3	21.5
406.4	10.5	7.8	5.2	1168.4	44.3	33.2	22.1
431.8	11.6	8.7	5.8	1193.8	45.4	34	22.7
457.2	12.8	9.6	6.4	1219.2	46.5	34.8	23.2
482.6	13.9	10.4	6.9	1244.6	47.6	35.7	23.8
508	15	11.3	7.5	1270	48.8	36.6	24.4
533.4	16.1	12	8	1295.4	49.9	37.4	24.9
558.8	17.3	12.9	8.6	1320.8	51	38.2	25.5
584.2	18.4	13.8	9.2	1346.2	52.1	39	26
609.6	19.5	14.6	9.7	1371.6	53.3	39.9	26.6
635	20.6	15.4	10.3	1397	54.4	40.8	27.2
660.4	21.8	16.3	10.9	1422.4	55.5	41.6	27.7
685.8	22.9	17.1	11.4	1447.8	56.6	42.4	28.3
711.2	24	18	12	1473.2	57.8	43.3	28.9
736.6	25.1	18.8	12.5	1498.6	58.9	44.4	29.4
762	26.3	19.7	13.1	1524	60	45	30

(Source: Subramanya, 2008)

Rainfall returns period for 25, 50 and 100 years calculated as below:

As per Weibull's Formula (Subramanya, 2008)**,**

Return period/Recurrence interval = (n+1)/m

Where: n number of years on record;
m is the rank of observed occurrences when arranged in descending order.

b. Peak Flood Discharge Calculation:

The term "peak discharge" stands for the highest concentration of runoff from the basin area. The accurate estimation of flood discharge remains one of the major challenges as it depends upon physical characteristic of the catchment area and the flood intensity, duration and distribution pattern. There have been many different approaches for determining the peak runoff from an area. As a result, many different models (equations) for peak discharge estimation have been developed. Formulas used for Peak Discharge calculation areas below:

As per Dicken's formula (Subramanya, 2008)**,**

$$Q = CA^{3/4}$$

Where: Q is Maximum flood discharge (m^3/sec) in a river
A is Area of catchment in Sq. Km

C is Constant whose value varies widely between 2.8 to 5.6 for catchments in plains and 14 to 28 for catchments in hills

As per Jarvis formula (Subramanya, 2008)**,**

$$Q = CA^{1/2}$$

Where: Q is Maximum flood discharge (m^3/sec) in a river
A is Area of catchment in Sq. Km
C is Constant whose value varies between 1.77 as minimum and 177 as maximum. Limiting or 100 percent chance floods are given by the value of C of 177

As per Rational formula (Subramanya, 2008)**,**

$$Q = CIA$$

Where: Q is Maximum flood discharge (m^3/sec) in a river
A is Area of catchment in Sq. Km
C is Runoff coefficient which depends on the characteristics of the catchment area. It is a ratio of runoff: rainfall
I is Intensity of rainfall (in m/sec)

c. Bed Load Transport Calculation:

The most important problems in river engineering are to predict bed load transport rates in torrential floods flowing from mountainous streams. Three modes of transport namely; rolling, sliding and saltation may occur simultaneously in bed load transport. The different modes of transportation are closely related and it is difficult, if not impossible, to separate them completely. There are number of equations to compute the total sediment load. Most of these equations have some theoretical and empirical bases.

Ackers and White Equation:

Ackers and White (1973) used dimensional analysis based on flow power concept and their proposed formula is as follows.

$$C_t = C_s G_s \left(d_{50}/h\right) \left(V/U_*\right)^{n'} \left[\left(Fgr/A_1\right) - 1\right]^{m}$$

The dimensionless particle d_{gr} is calculated by:

$$d_{gr} = d_{50} \left(g(G_s-1)/v^2\right)^{1/3}$$

The particle mobility factor F_{gr} is calculated by:

$$F_{gr} = \left(U_* n'/\sqrt{(G_s-1) g d_{50}}\right)^{n'} \times \left(V/\left(5.66 \log\left(10h/d_{50}\right)\right)\right)^{1-n'}$$

Where,

A_1 = Critical particle mobility factor
C_s = Concentration coefficient in the sediment transport function

C_t = Total sediment concentration
d_{50} = Median grainsize
d_{gr} = Dimensionless particle diameter
F_{gr} = Particle mobility parameter
g = Acceleration of gravity
D_s, S_g = Specific gravity
h = Water depth
m = Exponent in the sediment transport function
n' = Manning roughness coefficient
U_* = Shear velocity
V = Mean flow velocity
ν = Kinematic viscosity

Meyer – Peter's equation:

Meyer-Peter's equation (Ponce, 1989) is based on experimental work carried out at the Federal Institute of Technology, Zurich. Mayer-Peter gave a dimensionless equation based on rational laws. Mayer- Peter equation gave an empirical formula of bed load transport rates in flumes and natural rivers. The simplified Meyer-Peter's equation is given below:

$$g_b = 0.417[\tau 0\ (\eta'/\ \eta)^{1.5} - \tau c]^{1.5}$$

Where,
gb = Rate of bed load transport (by weight) in N per m width of channel per second.

η' = Manning's coefficient pertaining to grain size on an unrippled bed and Strickler formula i.e. η' = (1/24) x d1/6 where d is the median size (d_{50}) of the bed sediment in m.

η = The actual observed value of the rugosity coefficient on rippled channels. Its value is generally taken as 0.020 for discharges of more than 11cumecs, and 0.0225 for lower discharges.

τc = Critical shear stress required to move the grain in N/m2 and given by equationτc = 0.687da, where da is mean or average size of the sediment in mm. This arithmetic average size is usually found to vary between d_{50} and d_{60}.

τ0= Unit tractive force produced by flowing water i.e. γwRS. Truly speaking, its value should be taken as the unit tractive force produced by the flowing water on bed = 0.97γwRS. R is the hydraulic mean depth of the channel (depth of flow for wider channel) and S is the bed slope.

d. Sediment Yield Estimation:

Sedimentation occurred as the velocity decreases along with its ability to carry sediment. Coarse sediments deposit first, then interfere with the channel conveyance, and may cause additional river meanders and distributaries. The area of the flowing water expands, the depth decreases, the velocity is reduced, and eventually even fine sediments begin to deposit. As a result, deltas may be formed in the upper portion of reservoirs. The deposited material may later be moved to deeper portions of the reservoir by hyraulic processes within the water body.

There are many sediment transport equations which are suitable for use in the prediction of the rate of replenishment of river. Some of the famous sediment equations are:

1. Dendy – Bolton Equation
2. Yang Equations
3. Engelund-Hansen Equation
4. Modified Universal Soil Loss Equation (MUSLE) developed by Williams and Berndt (1977)

Dendy–Bolton Equation:

Dendy–Bolton formula (Dendy and Bolton 1976) is often used to calculate the sedimentation yield because:-

- The formula uses catchment area and mean annual runoff as key determinants.
- It does not differentiate in basin wide smaller streams and their characteristics.
- Dendy and Bolton equation calculates all types of sediment yield i.e. sheet and rill erosion sediments, gully erosion sediments, channel bed and bank erosion sediments and mass movement etc.

Dendy-Bolton determined the combined influence of runoff and drainage area on sediment yield to compute the sediment yield. They developed two equations i.e. for run off less than 2 inch and for run off more than 2 inch, which are given below:

For run off less than 2 inch:

$(Q<2in)\ S=1289\times (Q)^{0.46}\times [1.43-0.26\ \text{Log}\ (A)]$

For run off more than 2 inches:

$(Q > 2\ in):\ S= 1958\times (e^{-0.055\times Q}) \times [1.43-0.26\ \text{Log}\ (A)]$

Where: S = Sediment yield (tons/sq miles/yr)

Q = Mean Annual runoff (inch)

A = Net drainage are in sq mile

Dendy-Bolton formula is often used to calculate the sediment yield. But use of these equations to predict sediment yield for a specific location would be unwise because of the wide variability caused by local factors not considered in the equation's development. However, they may provide a quick, rough approximation of mean sediment yields on a regional basis for preliminary watershed planning. Computed sediment yields normally would be low for highly erosive areas and high for well stabilized drainage basins with high vegetation density because the equations are derived from average values. The equations express the general relationships between sediment yield, runoff, and drainage area. Many variables influence sediment yield from a drainage basin. They include climate, drainage area, soils, geology, topography, vegetation and land use. The effect of any of these variables may vary greatly from one geographic location to another, and the relative importance of controlling factors often varies within a given land resource area. Studies revealed that sediment yield per unit area generally

decreases as drainage area increases. As drainage area increases, average land slopes usually decrease; and there is less probability of an intense rainstorm over the entire basin. Both phenomena tend to decrease sediment yield per unit area.

Modified Universal Soil Loss Equation (MUSLE):

Modified universal soil loss equation (MUSLE) for estimation of sediment yield is also widely used (Wischmeier and Smith, 1978). MUSLE is a modification of the Universal Soil Loss Equation (USLE). USLE is an estimate of sheet and rill soil movement down a uniform slope using rain- fall energy as the erosive force acting on the soil (Wischmeier and Smith 1978). Depending on soil characteristics (texture, structure, organic matter, and permeability), some soils erode easily while others are inherently more resistant to the erosive action of rain- fall.

MUSLE is similar to USLE except for the energy component. USLE depends strictly upon rainfall as the source of erosive energy. MUSLE uses storm-based runoff volumes and runoff peak flows to simulate erosion and sediment yield (Williams 1995). The use of runoff variables rather than rainfall erosivity as the driving force enables MUSLE to estimate sediment yields for individual storm events. The generalized formula of MUSLE is as below:

$$\mathbf{Y=11.8 \times (Q \times qP).56 \times K \times Ls \times C \times P}$$

Where,

Y = sediment yield of stream (t/yr/km2),
Q = average annual runoff (m3),
K = soil erodibility factor,
qP = Highest discharge recorded (m3/s),
Ls = gradient/slope length,
C = cover management factor,
P = erosion control practice

ii. Estimation of Replenishment:

The district forms a part of the Sub-Himalayan Zone. Darjeeling district is dominated by hilly topography. Darjeeling Himalaya rises abruptly from the North Bengal plain, the elevation changing rapidly from 100-130 m above sea level (a.s.l) to 2000-3000 m a.s.l within a distance of few kilometers. The hilly areas of Darjeeling are a part of the Siwalik Range or Outer Himalayas. The general slopes of the hills are from north to south. The hilly region of the district is very prone to landslide due to poor water retention capacity of the soil clubbed with steep land slope (from North to South, and South-East).

The major sand producing rivers of the Darjeeling district are Mechi, Balason, Rangeet, Mahananda and Teesta rivers. These rivers and its tributary rivers are forming the main catchment area.

For replenishment study, following assumption/calculation taken in to consideration:

- Catchment area (Watershed area) against each river has been calculated based on remote sensing data.

- Rainfall runoff coefficient as per Strange's table for the catchment area is consider 45%, as the rainfall in the district is more than 1524mm and the characteristic of the catchment of the district is average in nature.
- Peak flood discharge of the river of the district calculated based on Dicken's formula which is more applicable to north Indian and central Indian catchment. Here Dicken constant C is taken as 12 in present study as per published literature by Saha (2002).
- Bed load transport has not been computed in the regional aspect of the district, as the values are highly dependent on local factors such as particle mobility factor, roughness coefficient, Shear velocity, Mean flow velocity, Kinematic viscosity etc.
- Sediment yield calculated as per Dendy and Bolton formula as the equations express the general relationships between sediment yield, runoff, and drainage area.
- Computed sediment yields by Dendy Bolton formula normally would be low for highly erosive areas and high for well stabilized drainage basins with high plant density because the equations are derived from average values.
- Dendy -Boltan formula also says that actual sediments yield from individual drainage basins may vary 10-fold or even 100-fold from computed yields. Since the district river basin comprises of sedimentary rocks with good average rainfall therefore the estimated replenishment considered as 50-fold of computed results sediment yield.

The data estimated for each river in the district are given in Table 7.7.

Table 7.7: Replenishment parameter estimated for each river in the district

Estimation parameter	Mechi	Mahananda	Teesta
Catchment Area (m^2)	435250000	901690000	771050000
Annual Rainfall (m) (in 2020)	3.799	3.799	3.799
Strange Runoff coefficient (%)	45%	45%	45%
Annual Run-off (m) (in 2020)	0.83578	0.83578	0.83578
Catchment Yield (m^3)	744081638	1541484140	1318148528
Peak Flood Discharge (m^3/sec)	36160575.27	62441623.45	55525586.19
Flow depth d (m)	0.3	0.3	0.5
Channel width b (m)	392.4	81.19	275.02
Mean velocity v (m/s)	0.05	0.06	0.09
Channel slope S_o (m/m)	0.03	0.04	0.03
Sediment Yield (Tonnes/year)	68.27	127.76	11.76
Estimated Annual Replenishment (in million m3)	25.57	47.85	4.40

Specific gravity of sand = 2.76tonne per m^3

Sedimentation rate of a river is dependent on the annual rainfall of the district. Sedimentation rate for the period 2016-2020 of each river is presented in Table 7.8 and Figure 7.5.

Table 7.8: Sedimentation rate for the period 2016-2020 of each river

Year	Mechi	Mahananda	Teesta
2016	188.48	352.74	308.56
2017	321.07	600.89	525.64
2018	954.15	1785.72	1562.09
2019	462.94	866.4	757.9
2020	68.27	127.76	11.76

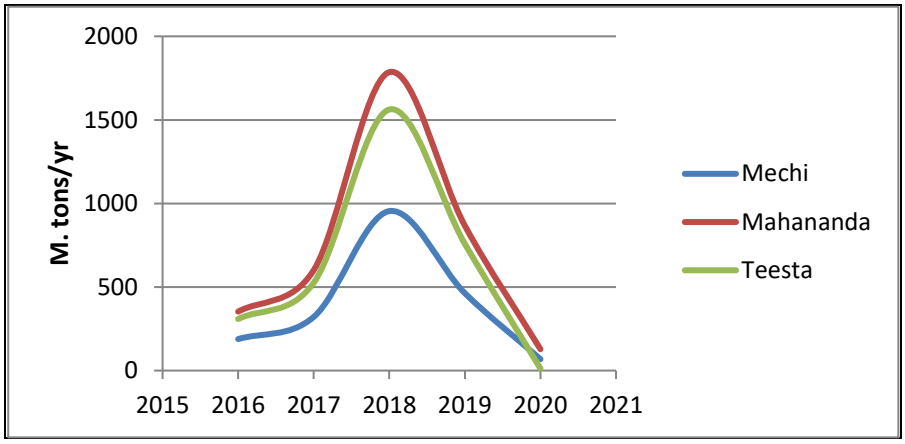

Figure 7.5: Graphical representation of year-wise sedimentation rate

The estimation of sedimentation rate based on empirical formula need critical analysis of different factors related to the LULC property of the catchment area, slope geometry, sediment erosion factor of catchment litho-type. This will help to assess replenishment rate more precisely.

Replenishment studies based on empirical formula for existing mining leases have also been conducted and are given in Table 7.9.

Table 7.9: River wise replenishment rate estimation based on empirical formula

River Name	Location	Lease Area	Surface RL Before mining	Mine out Thickness	Mine out Volume	Drainage area for lease block	Monsoon Rainfall-2020	Estimated Volume as per Dendy-Bolton	Replenishment Rate
		m2	m	m	cum	Km2	m	cum	%
Mahananda	Karaibari	33000.00	131.00	3.00	99000.00	0.045	2.62	75240.00	76.00%
Mahananda	PurbaBansgaon	49000.00	98.00	2.80	137200.00	0.067		109760.00	80.00%

River Name	Location	Lease Area	Surface RL Before mining	Mine out Thickness	Mine out Volume	Drainage area for lease block	Monsoon Rainfall-2020	Estimated Volume as per Dendy-Bolton	Replenishment Rate
		m2	m	m	cum	Km2	m	cum	%
Balason	Lalsara	30400.00	198.00	2.90	88160.00	0.038		67001.60	76.00%
Balason	Radha	4500.00	139.00	2.95	13275.00	0.005		9956.25	75.00%
Balason	Nemai	35900.00	90.90	2.90	104110.00	0.050		82246.90	79.00%
Mechi	Bhulka	25000.00	128.00	2.85	71250.00	0.033		54150.00	76.00%
Mechi	Baramaniram	20000.00	110.00	3.00	60000.00	0.027		48000.00	80.00%
Chenga	Bhatagach	35200.00	125.80	2.95	103840.00	0.048		79956.80	77.00%
Chenga	Gaziram	28000.00	93.00	2.90	81200.00	0.037		64148.00	79.00%

Illustration of Replenishment Estimation is given in Table 7.10.

Table 7.10: Illustration of replenishment rate calculation based on 3 methods

Based on Satellite imagery		Based on field investigation		Based on empirical formula	
Particulars	Estimation	Particulars	Estimation	Particulars	Estimation
		River Name	Balason	River Name	Balason
River	Balason	Location	Radha	Location	Radha
Total Pre-monsoon Sand Bar Area	3852687 (sq.m)	Mining Area	4500 (Sq.m)	Lease Area	4500 (Sq.m)
Average Pre monsoon Thickness	2.9 (m)	Pre monsoon RL	139 (m)	Surface RL Before mining	139 (m)
Total Sand Volume	11.17 (Mcum)	Sand Thickness	2.95 (m)	Mine out Thickness	2.95 (m)
Total Post-monsoon Sand Bar Area	4115646 (sq.m)	Volume excavated (Cum)	13275.00	Mine out Volume (Cum)	13275.00
Average Post-monsoon Thickness	3 (m)	Post monsoon RL	198.95 (m)	Drainage area for lease block	0.005 (Sq.km)
Total Sand Volume	12.65 (M.cum)	Thickness	2.90 (m)	Monsoon Rainfall-2020	3.46 (m)
Pre and Post monsoon Volume Difference	1.48 (M.cum)	Volume deposited (Cum)	13036.05	Estimated Volume as per Dendy- Bolton (S = 1280 Q0.46[1.43 - 0.26 log(A)]) Where, Q is runoff, A is drainage area)	9956.25 (Cum)
Replenishment and Aggradation %	113.2%	Replenishment Rate	98.20%	Replenishment Rate	75%

Replenishment studies have been carried out in the district based on three different methodologies as illustrated in Table 7.10. Table 7.11 explained comparison of the outcome of these three methodologies adopted for the district.

Table 7.11: Comparison of replenishment study

Replenishment Study Method	Mahananda	Balason	Mechi	Chenga
Estimated Annual Replenishment based on Satellite imageries **(*)**	100.69%	113.2%	115.15%	101.02%
Estimated Annual Replenishment based on field investigation	98.83%	98.27%	98.60%	98.25%
Estimated Annual Replenishment based on empirical formula	78%	76.67%	78%	78.0%

(*) Replenishment study based on satellite imagery involves estimation of replenish volume along with aggradation volume.

vi) Total potential of minor mineral in the river bed

The major sand producing rivers of the Darjeeling district are Mechi, Balason, Rangeet, Mahananda and Teesta rivers. Planning has been done for systematic sand mining in the rivers.

B. Geological studies

i) Lithology of the catchment area

Darjeeling Himalaya consists essentially of unaltered sedimentary rocks. The Sub-Himalaya is made up of Siwalik deposits of the Tertiary age. The Terai and the foothills were given their present form after the final upheaval of the Himalayan orogeny and consist of almost horizontal layers of unconsolidated sand, silt, pebbles and gravel. The Darjeeling gneiss occupies a greater part of the region and is found along the higher reaches of the hills. The Darjeeling gneiss consists of garnetiferous mica-schists, quartzites, biotite-kyanite and sillimantic gneiss.

ii) Tectonics and structural behavior of rocks

The Sikkim-Darjeeling Himalaya contains the stretch of tectonically active Eastern Himalaya. It is composed of three main tectonic units: the Higher Himalaya, the Lower Himalaya and the Siwaliks separated by thrusts. Darjeeling-Sikkim Himalaya is one of the important fault thrust belt in the Himalaya covering the rocks of Central Crystalline Gneissic Complex, Daling Phyllite, Gondwana, Buxa and Siwaliks from north to south. Quaternary rock delimits the Himalaya in the southern part. A number of thrust namely MCT, MBT, MFT and also Daling Thrust are reported in this fault thrust belt.

C. Climate Factors

i) Intensity of rainfall

The average annual rainfall is 3141 mm. The maximum rainfall in the area as per IMD data was recorded in the month of July followed by August and September. The rainy season in the district commence from June and lasts till September. The intensity of rainfall due to depressions sometimes becomes very great and may cause enhanced soil erosion in the district.

ii) Climate zone

Darjeeling district has two different climatic conditions due to its distinctive topographical features having hills in a larger portion of the district and plain-lands of Terai towards South and South-Eastern part. The Hills have a temperate weather condition, with pleasant summer and cold winter with occasional snowfall. On the other hand, the marshy tract of Terai is humid and warm, showing typical Tropical and Sub-Tropical climatic conditions depending upon the elevation.

iii) Temperature variation

The temperature in the hilly areas of Darjeeling district varies from 25°C to near freezing points. The maximum temperature is usually reached during monsoon and the lowest temperature is reached during the cold winter, between December to March. The lowest temperature of the district remains around 10°C to (-) 3°C, depending on elevation.

For the purpose of estimating mineable mineral potential, the thickness of the sand bar considered extractable based on base flow level is given in Table 7.12.

Table 7.12: River wise Thickness of sand bar considered mineable

River Name	Considered Mining Thickness (m)
MECHI	2
CHENGA	2.2
MANJA	1.5
TARI	1
BALASON	3
MAHANANDA	3
TEESTA	3
RANJEET	2

Based on geomorphology, geology, climate and mineable thickness of sand bar the annual deposition of riverbed minerals (sand and gravel) has been estimated.

Sand bar area recommended for mineral concession in the table is calculated as per the Enforcement and Monitoring Guidelines for Sand Mining (EMGSM) 2020. As per guidelines, mining depth restricted to 3 meters depth and distance from the bank is ¼th of river width and not less than 7.5 meters. Also mining is prohibitated up to a distance of 1 kilometre (1 km) from major bridges and highways on both sides, or five times (5x) of the span (x) of a bridge/public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side. The annual minable mineral potential is given in Table 7.13.

Table 7.13: Annual mineable mineral potential

Sl. No.	River or Stream	Portion of the river stream recommended for mineral concession (%)	Length of area recommended for mineral concession (in meter)	Average width of area recommended for mineral concession (in meters)	Area recommended for mineral concession (in Sqm)	Mineable mineral potential (in Mcum) (60% of total mineral potential
1	MECHI	53.0	25304.44	392.40	10094202.15	12.11
2	CHENGA	15.60	14380.87	57.81	831390.01	1.10
3	MANJA	11.68	1725.41	67.34	116195.52	0.10
4	TARI	10.34	846.51	34.87	29518.81	0.02
5	BALASON	10.38	31522.04	111.39	3597096.79	6.47
6	MAHANANDA	15.36	21316.12	81.19	1730736.12	3.12
7	TEESTA	33.87	9460.32	275.02	2601808.85	4.68
8	RANJEET	18.54	7524.74	44.62	335779.24	0.40
Total Mineable volume						28.00

III. Riverbed Mineral Potential

Sand is the important riverbed mineral found to be potential for mining. Considerable quantity of quality sands are found to occur in part of Balason, Mechi, Mahananda, Teesta and Rangeet Rivers. Table 7.14 summarizes the potential riverbed mineral deposits of the district. Smaller patches are also available locally in the other smaller rivers as well. Sand mining can be developed on cluster approach with restricted usage of Machinery's for lifting of sands. The rivers in the north Bengal are filled by Gravels and boulders. Development of river bed material with huge boulders also requires usage of machinery's to increase more production in turn revenue.

Table 7.14: Resources of Potential Riverbed Mineral

Boulder (Mcum)	Pebbles/Gravel (Mcum)	Sand/White sand (Mcum)	Total Mineable, Mineral Potential (Mcum)
5.59	8.39	14.02	28.00

Based on satellite imagery study and field investigation, potential zones for riverbed deposits for each river of the district have been identified and the details of the zones are provided in Table 7.15.

Table 7.15: Potential Zone of Riverbed Mineral

Sl.No	Rivers or Streams	Location of potential zones						Potential area (in sq.m)
		Administrative Block	Mouza	JL No.	Zone	Co-ordinates		
						Latitude	Longitude	
1	MECHI	NAXALBARI	Baramaniram, Madan	20,1	1	26.82867	88.169187	10094202.15
						26.65199	88.163528	
		KHORIBARI	Madan and Bajarpur Chat, Antaram, Bhulka	01,04,5,6	2	26.639	88.163102	
						26.60559	88.134069	
2	CHENGA	MIRIK	Gaziram	60	1	26.78501	88.209322	831390.01
						26.76264	88.227804	
		NAXALBARI	Gaziram	60	2	26.76264	88.227804	
						26.74709	88.234262	
		PHANSIDEWA	Patharhirhira, Tentulguri	25,33	3	26.64672	88.272623	
						26.60829	88.282085	
		PHANSIDEWA	Tarabandha, Dhambhita	69,38	4	26.57425	88.266097	
						26.55169	88.229627	
3	MANJA	PHANSIDEWA	Tantilguri,Tentulguri	33	1	26.62261	88.259984	116195.52
						26.60759	88.2661	
4	TARI	KHORIBARI	Bagilahagi and Chuchur	72,74	1	26.5857	88.222201	29518.81
						26.57873	88.22165	
5	BALASON	NAXALBARI	Radha	72	1	26.6567	88.339526	3597096.79
						26.65528	88.340923	
		PHANSIDEWA	Radha	72	2	26.65528	88.340923	
						26.65183	88.339017	
		PHANSIDEWA	Sirsia	71	3	26.63912	88.337699	
						26.63587	88.337557	
		PHANSIDEWA	Nembutari	86	4	26.61615	88.339318	

Sl.No	Rivers or Streams	Location of potential zones						Potential area (in sq.m)
		Administrative Block	Mouza	JL No.	Zone	Co-ordinates		
						Latitude	Longitude	
						26.58903	88.3271	
		PHANSIDEWA	Kantivitta	87	5	26.57806	88.321921	
						26.53947	88.30042	
		KURSEONG	Mm Tarai, Bournivitar Chhat	78,82	6	26.80307	88.248349	
						26.75319	88.320903	
		MATIGARA	BournivitarChhat	82	7	26.77077	88.297074	
						26.76359	88.30898	
		NAXALBARI	Lalsara	62	8	26.75651	88.314609	
						26.74822	88.3219	
		MATIGARA	Lalsara, Dumriguri Chhat, Patanara Chat, Bataliguri, Panchkulguri, Nemai	62,49,61, 64,59,57	9	26.75319	88.320903	
						26.72376	88.37203	
		MATIGARA	Kalam	76	10	26.70957	88.381549	
						26.70247	88.386613	
6	MAHANANDA	KURSEONG	Purba Karaibari Chat	31	1	26.82888	88.384216	1730736.12
						26.80969	88.405868	
		KURSEONG	Purba Karaibari Chat	31	2	26.80314	88.414772	
						26.79825	88.4202	
		MATIGARA	Duramarir Chhat	36	3	26.78806	88.43404	
						26.78066	88.439945	
		PHANSIDEWA	PurbaBansgaon	113	4	26.62751	88.400666	
						26.49605	88.327241	
7	TEESTA	KURSEONG	Pulundung	9	1	26.92629	88.455159	2601808.85
						26.9051	88.472404	
		KURSEONG	Pulundung	9	2	26.87634	88.475511	
						26.8388	88.513117	
8	RANJEET	DARJEELING PULBAZAR	Pulundung	9	1	27.12767	88.283551	335779.24
						27.10697	88.335951	
		RANGLIRANGLIOT	Pulundung	9	2	27.0968	88.366277	
						27.09708	88.370251	

NO MINING ZONE:

As per the Enforcement and Monitoring Guidelines for Sand Mining (EMGSM) 2020 the restricted zone for mining is a distance from the bank is ¼th of river width and not be less than 7.5 meters. Also, there is a no mining zone up to a distance of 1 kilometre (1 km) from major bridges and highways on both sides, or five times (5x) of the span (x) of a bridge/public civil structure (including water intake points) on up-stream side and ten times (10x) the span of such bridge on down-stream side, subjected to a minimum of 250 meters on the upstream side and 500 meters on the downstream side.

No mining zone has been marked for an area up to a width of 100 meters from the active edge of embankments. Also, the concave side of the rive is marked as no mining zone, as mining is this area will affect the course of river in future and will erode the river bank. A representative map of no mining zone shown on River Teesta of Darjeeling district is given in Figure 7.6. Table 7.16 summarized the area of no mining zones demarcated for each river of the district.

Table 7.16: No mining zone in the district

Sl.No.	Rivers or Streams	Administrative Block	No mining area (in Sq.m.)
1	MECHI	NAXALBARI	1597266.69
		KHORIBARI	118023.02
2	CHENGA	MIRIK	5967.81
		NAXALBARI	634.51
		PHANSIDEWA	32750.61
3	MANJA	PHANSIDEWA	23604.53
4	TARI	KHORIBARI	11951.2
5	BALASON	PHANSIDEWA	7424.2
		KURSEONG	305892.04
		NAXALBARI	46240.77
		MATIGARA	234120.24
6	MAHANANDA	KURSEONG	312394.99
		MATIGARA	15822.54
		PHANSIDEWA	45160.08
7	TEESTA	KURSEONG	256071.4
8	RANJEET	PULBAZAR	65672.79
		RANGLIRANGLIOT	6966.69

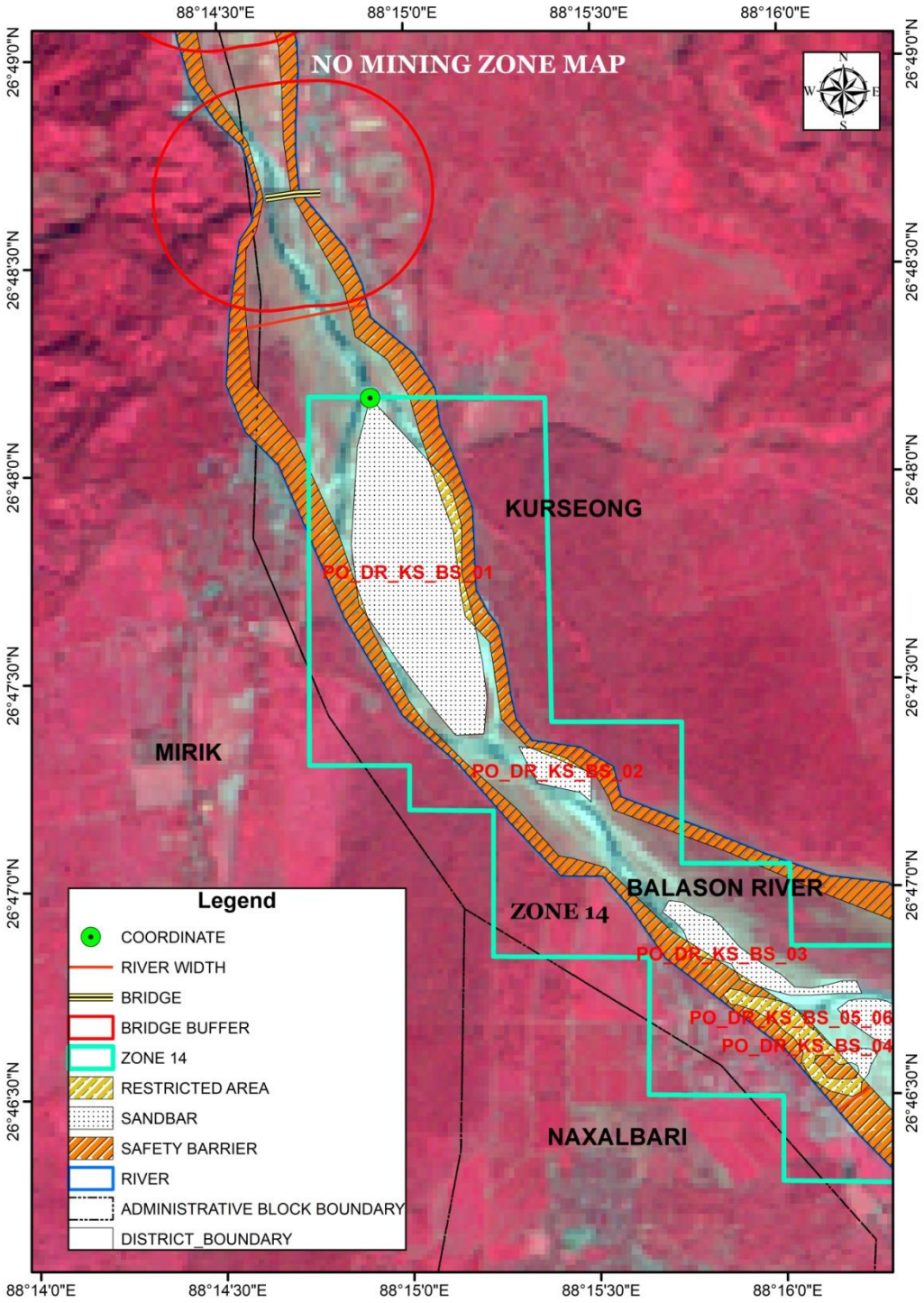

Figure 7.6: A representative map showing no-mining zone demarcated on Teesta River

7.2.2 In-situ Minerals:

I. Mineral Reserve

Mineral resources of the district are still not well established. Reserve of Coal is only mentioned in the Mineral Year Book of West Bengal 2014. Occurrences of coal have been established over a stretch of 77 km between Pankhabari to the west of the Darjeeling district and Jaldhaka to the east of Kalimpong district. Coal reserves are found in Dalingkot coalfield, several seams occur near Tindharia. A total of 15 million tonne of inferred resources of coal down to a depth of 300m has been estimated (GSI, 2018).

Coal bearing Dumuda series consisting of quartzitic and carbonaceous sandstone, shale and coal occur as a thin bed being sandwiched in between two thrusts viz. Daling thrust in the north against Daling rocks and Main Boundary Fault in the south against Siwalik rocks. As a result of thrusting, Daling rocks of Precambrian age are lying above the Damuda of Lower Gondwana (Permian) with a reverse succession. Generally, the rocks striking in West-Southwest to East-Northeast direction have a steep (upto 80°) northerly dip. These Gondwana rocks are well exposed at Pankhabari, Tindharia, Kalijhora, Bagrakotx, Dalingkot and in the valley of Mahanadi and Teesta. The coal exposure beds are not continuous everywhere due to nature of thrusting. This coal bearing Damuda Series has been lithologically sub-divided into three units i.e., upper and a lesser coal bearing unit separated by a barren unit. The upper, middle and lower units are formally named as the Dalingkot, Chunabhati and Rongtong formation.

II. Mineral Potential

The Sikkim-Darjeeling area is dotted with as many as 40 basemetal occurrences confined essentially to the Daling/Darjeeling Group of rocks with biotitic granites occurring as tongue-like bodies. Peshok in Darjeeling district copper deposits established which grades between 0.5% and 2.5% Cu (VE) (Mineral Resources of India, GSI).

A talc lens sandwiched between overlying Daling quartzite and underlying Daling phyllite has been located on a hill slope in north-eastern part of the area at Darjeeling Gorkha Hill Council Forest beside Village Singla. The continuity of the talc lens has been traced down slope over a distance of about 120 m. The analyses of pure/impure talc bodies show 18.91-34.94% MgO with average of 31.63% MgO (Indian Mineral Year Book, WB 2014).

Graphite occurrences have been noted in the Daling Group along Rakti River and as carbonaceous material (mainly graphite) in Sukheapukh-Tanglu road.

About 1.6 Km. long lenticular ferruginous band of iron ore with maximum thickness of 36.57 m. occurs within Siwalik sandstones in the Lohagarh area south-west of Pankhabari. Ores available in the area is relatively poor in quality with only 30% iron content.

Table 7.17 summarized the in-situ mineral deposits of the district.

Table 7.17: In-situ Minerals Occurrences

Name of mineral	Name of associated minerals, if any	Host rock of mineralization	Area of mineralization	Depth of mineralization	Whether virgin or partially excavated	Name of land (whether free for mining/forest /agricultural	Mineral reserve (approximate) mentioning grade	Location of potential mineralized zones				Infrastructure available near the mineralized zone
								Administrative Block	Mouza	Plot No.s	Co-ordinates	
1	2	3	4	5	6	7	8	9				11
Coal	No associated minerals	Carbonaceous sandston, shale	Pankhabari	300m	Partially excavated	Forest/ agricultural land	15 million tonne	Kurseon block	Forest Mauza	NA	26°49'53" and 88°15'58"	Metalled road then foot track
Talc	talc-Steatite	Between overlying Daling quartzite and underlying Daling phyllite	Go-Karmi village	1.9m to 3.7m width	Virgin		59085 metrict tone (334 category) average grade of 30.86% MgO	Pulbazar C D block,	NA	NA	bound by latitudes 27°06'00" to 27°07'37" and longitudes 88°12'00" to 88°14'00"	Metalled road then foot track
Talc	talc-tremolite-calcite-quartz assemblage	Between overlying Daling quartzite and underlying Daling phyllite	Village Singla	2.5m wide and 120m extended mineralized zone identified	Virgin	Forest	54600 metrict tone (334 category) average grade of 31.63% MgO	Pulbazar C D block,	Darjeeling Gorkha Hill Council Forest	NA	bound by latitudes 27°05'00" to 27°08'00" andlongitudes 88°14'00" to 88°17'15"	Metalled road then foot track
Copper	Lead-Zinc	chlorite schist of the Dalings group	Peshok	Surface exposure	Virgin	Peshok Tea garden area	between 0.5% and 2.5% Cu	Rangli Rangliot block	Peshok	NA	27° 03' 10" N and 27° 04'15" N and longitudes 88° 24'30" E and 88° 24'35" E	Metalled road then foot track

7.3 Exploration Requirement of the district

Geologically, the district holds good prospect with respect to base metals, coal and limestone deposits. However, due to lack to details investigation mineral prospect of the district has not been established. GSI has carried out exploration during 1970's to 2000's in search of base metals deposits of the district.

In 2000-2001, GSI has detail investigation in the valley of Mangwajhora (Peshokkhola) for base metal deposits. In 0.35 sq. km area detailed mapping in 1:2000 scales and geochemical sampling was carried out. Evidences of sulphide mineralisation, particularly crystals of pyrite along with chalcopyrite, malachite and azurite have been identified in a band of quartz chlorite schist on the footwall up to 300 m strike length on surface and expected to extend further (Shankar and Tarafdar, GSI progress report, FS 2000-2001).

Talc-steatite investigation has taken up by GSI in collaboration with DMM, Govt. of W.B in an area of 10 sq.kms around Gok-Karmi villages in the north-eastern part of Darjeeling district, bounded by latitude 27"06'00" to 27.07'37 and longitude 88"12'00" to 88'14'00". The area forms the southern slope of Ramam River which demarcates the Northern boundary between Bengal and Sikkim. Thematic mapping brought out 4 lenses of talc in this area. Four trenches and one pit of 47 cu.m were dug to establish the strike continuity of talc deposit in this area. The G4 investigation aided by pitting / trenching, the total probable resource of talc has been estimated in lhe four lenses. The total G4 resources available in the area are 59085 tons of high grade talc (30.86% MgO) (Yanthan and Roy, FS 2009-10).

In 2011-12, GSI in collaboration with DMM, West Bengal carried out reconnaissance survey around Lepcha Basti and Singla in extension area Gok Karmi area of Darjeeling district. A talc bearing rock has been identified which is lying in-between overlying Daling quartzite and underlying Daling phyllite located on a hill slope in north-eastern part of the district at Darjeeling Village Singla. Three trenches have been dug to trace the strike extension of the talc lens. Trench 1 exposed 3.2 m wide, both lumpy and platy talc. Trench-2 (which lies 40 m west of T-1), exposed 2.5 m wide talc of above types with impurities like Fe, mud and clay. The continuity of the talc lens has been traced down slope over a distance of about 120 m toward SE of Trench-1, where 1.5 m of talc body of both platy and lumpy types has been exposed. The analyses of bed rock samples of pure/impure talc bodies show 18.91-34.94% MgO with average of 31.63% MgO (Indian Mineral Year Book, 2012).

8 Overview of mining activity in the district

8.1 General overview

Darjeeling district is not exposed to mining activity at large scale. Collection of sand and gravels from the river-bed are the main mineral sources. These materials are primarily utilized for construction purpose.

8.2 List of existing mining leases of the districts

Details of List of existing mining leases of the districts are furnished in Table 8.1.

Table 8.1: Details of mining leases of the districts

ID	Block	Mouza	JLNo	River	Road	Plot No	Area in Hectares	Latitude	Longitude	Bidder Name	Date of Issuance of Environmental Clearance (E.C.)	Date of Execution of Lease Deed	Lease Agreement Start Date (date of effect)	Lease Agreement Expiry Date	Quantum of Sand Extraction permissible as per Mining Plan (tonnes)	Reasons for non-execution of lease deed
437/SB2021	MATIGARA	Khaprail	14	Balason	Kachha Road	273,292,104	1.5	26° 46' 23.00"N	88° 19' 23.00"E						0	EC Awaiting
420/SB2021	MATIGARA	Kalam	76	Balason	Kachha Road	433,434	3.08	26° 42' 18.00"N	88° 22' 59.00"E						0	EC Awaiting
423/SB2021	MATIGARA	Mathapari	79	Balason	Kachha Road	206	10.12	26° 42' 36.00"N	88° 22' 48.00"E						0	EC Awaiting
436/SB2021	MATIGARA	Khaprail	14	Balason	Kachha Road	273,292,104	1.2	26° 46' 23.00"N	88° 19' 23.00"E						0	EC Awaiting
419/SB2021	MATIGARA	Purba Karaibari Chhat	31	Mahananda	Kachha Road	15,16,18	1.21	26° 4' 42.00"N	88° 25' 16.00"E						0	EC Awaiting
416/SB2021	MATIGARA	Patanerchhat	61	Balason	Kachha Road	21, 20, 07	2.99	26° 44' 50.00"N	88° 90' 51.00"E						0	EC Awaiting
417/SB2021	MATIGARA	Kalam	76	Balason	Kachha Road	639	2.01	26° 42' 18.00"N	88° 22' 59.00"E						0	EC Awaiting
425/SB2021	MATIGARA	Karaibari	39	Mahananda	Kachha Road	194,1094,1095,639	3.3	26° 47' 38.00"N	88° 25' 23.00"E						0	EC Awaiting
428/SB2021	MATIGARA	Champasari	34	Mahananda	Kachha Road	14,16,44,46,47,48,49,50,51,52	4.16	26° 47' 24.00"N	88° 25' 37.00"E						0	EC Awaiting
434/SB2021	MATIGARA	Bataliguri	64	Balason	Kachha Road	267,268,276,274,275,269,270,271,272,273	1.4	26° 44' 24.00"N	88° 20' 1.00"E						0	EC Awaiting
435/SB2021	MATIGARA	Kawakhali	75	Balason	Kachha Road	399,407,408,410,418	4	26° 41' 56.00"N	88° 23' 28.00"E						0	EC Awaiting
577/SB2021	MATIGARA	Nimail Sil 6	57	Balason	Kachha Road	262,264,266,281,258,259,251,272,276	1.2	26° 44' 17.00"N	88° 21' 4.00"E						0	EC Awaiting
563/SB2021	MATIGARA	Nimai Sil 6	57	Balason	Kachha Road	262,264,266,281,258,259,251,272,276	1.2	26° 44' 17.00"N	88° 21' 4.00"E						0	EC Awaiting
479/SB2021	MATIGARA	Champasari	34	Mahananda	Kachha Road	202,203,213,224	2.43	26° 47' 24.00"N	88° 25' 37.00"E						0	EC Awaiting
495/SB2021	MATIGARA	Dumrigurichhat	49	Balason	Kachha Road	29,30	4.5	26° 44' 42.00"N	88° 19' 37.00"E						0	EC Awaiting
497/SB2021	MATIGARA	Patiram I	77	Balason	Kachha Road	216,218,273,277,278,286,291,293,317,318,321,329,323,324,445,447	3	26° 38' 24.00"N	88° 16' 18.00"E						0	EC Awaiting
580/SB2021	MATIGARA	Nimai Sil 8	57	Balason	Kachha Road	289,290,322,321,315	2.7	26° 44' 17.00"N	88° 21' 4.00"E						0	EC Awaiting
582/SB2021	MATIGARA	Patanerchhat	61	Balason	Kachha Road	13, 14, 15, 5,8, 16	1.52	26° 45' 0.00"N	88° 19' 30.00"E						0	EC Awaiting
520/SB2021	MATIGARA	Kawakhali III	75	Balason	No Approach Road	399,40,408,410,418	4	26° 41' 56.00"N	88° 23' 28.00"E	Ambey Abasan Pvt Ltd	28-07-2017	11-10-2017	12-10-2017	11-Oct-22	51831.19	
511/SB2021	MATIGARA	Kawakhali v	75	Balason	Kachha Road	399,407,408,410,418	3	26° 41' 56.00"N	88° 23' 28.00"E	Bidyut Ranjan Thakur	28-07-2017	22-09-2017	25-09-2017	24-Sep-22	38873.39	
529/SB2021	MATIGARA	Kawakhali IV	75	Balason	Kachha Road	399,407,408,410,418	3.8	26° 41' 56.00"N	88° 23' 28.00"E	Ambey Abasan Pvt Ltd	28-07-2017	11-10-2017	12-10-2017	11-Oct-22	49239.63	

ID	Block	Mouza	JLNo	River	Road	Plot No	Area in Hectares	Latitude	Longitude	Bidder Name	Date of Issuance of Environmental Clearance (E.C.)	Date of Execution of Lease Deed	Lease Agreement Start Date (date of effect)	Lease Agreement Expiry Date	Quantum of Sand Extraction permissible as per Mining Plan (tonnes)	Reasons for non-execution of lease deed
517/SB2021	MATIGARA	Duramarichhat	36	Mahananda	Kachha Road	39,41,44,47	1.9	26° 44' 42.00"N	88° 19' 37.00"E	Ankur Biochem Pvt Ltd	11-04-2017	01-09-2017	01-09-2017	31-Aug-22	71429.86	
503/SB2021	MATIGARA	Champasari	34	Mahananda	Kachha Road	202,229,234,235	2.43	26° 47' 24.00"N	88° 25' 37.00"E						0	EC Awaiting
555/SB2021	MATIGARA	Tari	68	Balason	Kachha Road	175,177,67,72,305,300	2.23	26° 43' 41.00"N	88° 21' 54.00"E	Goutam Dey	22-09-2017	19-12-2017	18-01-2018	17-Jan-23	28895.87	
559/SB2021	MATIGARA	Dumrigurichhat	49	Balason	Kachha Road	29,30	3.2	26° 44' 42.00"N	88° 19' 37.00"E	Pravin Kumar Agarwal	20-01-2017	18-12-2017	08-01-2018	07-Jan-23	41464.95	
572/SB2021	MATIGARA	Kawakhali II	75	Balason	Kachha Road	399,407,408,410,418	4	26° 41' 56.00"N	88° 23' 28.00"E						0	EC Awaiting
575/SB2021	MATIGARA	Duramarichhat	36	Mahananda	Kachha Road	39,41,44,47	3.6	26° 44' 42.00"N	88° 19' 37.00"E						0	EC Awaiting
566/SB2021	MATIGARA	Patiram III	77	Balason	Kachha Road	216,218,273,277,278,286,291,293,317,318,321,329,323,324,445,447	2.5	26° 41' 42.00"N	88° 53' 23.00"E						0	EC Awaiting
629/SB2021	PHANSIDEWA	KANTIVITA	87	Balason	Kachha Road	144,145,148,149,147,187	1.8	26° 35' 38.00"N	88° 19' 48.00"E						0	EC Awaiting
632/SB2021	PHANSIDEWA	BHUSHIVITA	71	Balason	Kachha Road	1306	0.5	26° 37' 33.60"N	88° 20' 24.00"E						0	EC Awaiting
1458/SB2021	BIJONBARI-PULBAZAR	Namla	3	Lodhoma	Kachha Road	572	1.27	27° 5' 55.00"N	88° 6' 33.00"E						0	EC Awaiting
634/SB2021	PHANSIDEWA	TARABANDA	69	Balason	Kachha Road	354	0.39	26° 39' 8.00"N	88° 20' 24.00"E						0	EC Awaiting
635/SB2021	PHANSIDEWA	DHAKPARA	105	Mahananda	Kachha Road	3941,3968,3792,3798,3791,3790,3720	4.97	26° 26' 13.00"N	88° 12' 36.00"E						0	EC Awaiting
640/SB2021	PHANSIDEWA	DHAKPARA	105	Mahananda	Kachha Road	3941,3968,3792,3798,3791,3790,3723	4.97	26° 26' 13.00"N	88° 12' 36.00"E						0	EC Awaiting
631/SB2021	PHANSIDEWA	RADHA	72	Balason	Kachha Road	1108,1110,1104,1105,1103	0.45	26° 38' 38.00"N	88° 20' 27.00"E	Pravin Kumar Agarwal	20-01-2017	23-02-2017	03-03-2017	02-Mar-22	4373.827	
642/SB2021	PHANSIDEWA	DHAKPARA	105	Mahananda	Kachha Road	3941,3968,3792,3798,3791,3790,3723	4.97	26° 26' 13.00"N	88° 12' 36.00"E						0	EC Awaiting
644/SB2021	PHANSIDEWA	DHAKPARA	105	Mahananda	Kachha Road	3941,3968,3792,3798,3791,3790,3723	4.97	26° 26' 13.00"N	88° 12' 36.00"E						0	EC Awaiting
645/SB2021	PHANSIDEWA	PURBABANSGAON	113	Mahananda	Kachha Road	6552,6559,6560,6415,7638	4.97	26° 29' 44.00"N	88° 19' 48.00"E						0	EC Awaiting
664/SB2021	KHARIBARI	MADAN	01	Mechi	Kachha Road	170, 171, 163, 166	2.5	26° 38' 10.00"N	88° 9' 36.00"E						0	EC Awaiting
681/SB2021	KHARIBARI	BHULKA I	06	Mechi	Kachha Road	1,2,3,4	3.8	26° 36' 18.00"N	88° 8' 20.00"E						0	EC Awaiting
701/SB2021	NAXALBARI	CHHOTAMO	30	Mechi	Kachha Road	44,51,52,283,285,286,287	2.2	26° 40' 13.00"N	88° 10' 13.00"E						0	EC Awaiting

ID	Block	Mouza	JLNo	River	Road	Plot No	Area in Hectares	Latitude	Longitude	Bidder Name	Date of Issuance of Environmental Clearance (E.C.)	Date of Execution of Lease Deed	Lease Agreement Start Date (date of effect)	Lease Agreement Expiry Date	Quantum of Sand Extraction permissible as per Mining Plan (tonnes)	Reasons for non-execution of lease deed
		NIRAM														
685/SB2021	NAXALBARI	DHEMAL	83	Balason	Kachha Road	91,90,26,28,93,30,31,32,33,34,81	7.99	26° 44' 56.00"N	88° 19' 19.00"E						0	EC Awaiting
688/SB2021	NAXALBARI	BARA MONIRAM V	20	Mechi	Kachha Road	681,683,684,686,688	3.5	26° 42' 28.00"N	88° 10' 42.00"E						0	EC Awaiting
694/SB2021	NAXALBARI	SURAJ BAR III	18	Mechi	Kachha Road	302, 303	4.8	26° 42' 57.00"N	88° 10' 48.00"E						0	EC Awaiting
695/SB2021	NAXALBARI	SURAJ BAR II	18	Mechi	Kachha Road	302,303	4.8	26° 42' 57.00"N	88° 10' 48.00"E						0	EC Awaiting
708/SB2021	NAXALBARI	DHEMAL B	83	Balason	Kachha Road	209,222,232,233,235,236	4	26° 45' 32.00"N	88° 18' 46.00"E						0	EC Awaiting
711/SB2021	NAXALBARI	DHEMAL D	83	Balason	Kachha Road	209,222,232,233,235,236	4	26° 45' 32.00"N	88° 18' 46.00"E						0	EC Awaiting
1399/SB2021	MATIGARA	Panchkulguri	59	Rakti	Kachha Road	27,281,282	3.41	26° 45' 2.00"N	88° 14' 24.00"E						0	EC Awaiting
1401/SB2021	PHANSIDEWA	Bhatagachh	76	Chenga	Kachha Road	662,582,581,663,667,580,606	3.53	26° 35' 25.00"N	88° 16' 23.00"E						0	EC Awaiting
1407/SB2021	PHANSIDEWA	Harivita	42	Chenga	Kachha Road	970,974,975,976,980	1.97	26° 35' 25.00"N	88° 16' 23.00"E						0	EC Awaiting
1411/SB2021	KHARIBARI	Bagulahagi	74	Dumria	Kachha Road	471,401,321,322,324,312,325,313	3.06	26° 35' 6.00"N	88° 13' 19.00"E						0	EC Awaiting
1405/SB2021	MATIGARA	Panchkulguri	59	Rakti	Kachha Road	38	3.41	26° 45' 7.00"N	88° 14' 24.00"E						0	EC Awaiting
1422/SB2021	NAXALBARI	Jamirdargurirchhat	67	Chenga	Kachha Road	20,22,23,79,78,81,80,126,125,127,111,110	2.7	26° 43' 0.00"N	88° 14' 0.00"E						0	EC Awaiting
1432/SB2021	PHANSIDEWA	Madhavita	32	Chenga	Kachha Road	6,7,12	1.4	26° 32' 12.00"N	88° 16' 39.00"E						0	EC Awaiting
1433/SB2021	NAXALBARI	Damdama	45	Manjha	Kachha Road	40	1.83	26° 40' 40.00"N	88° 16' 2.00"E						0	EC Awaiting
1455/SB2021	NAXALBARI	Birshing A	61	Chenga	Kachha Road	1044	0.9	26° 37' 16.00"N	88° 8' 42.00"E						0	EC Awaiting
1454/SB2021	NAXALBARI	Bhelu A	68	Chenga	Kachha Road	237,236,106	2.8	26° 43' 12.00"N	88° 14' 27.00"E						0	EC Awaiting
1441/SB2021	PHANSIDEWA	Tarabari A	30	Chenga	Kachha Road	1,3,5,11,36	4.5	26° 37' 48.00"N	88° 15' 57.00"E						0	EC Awaiting
1438/SB2021	PHANSIDEWA	Bariadangirchhat	24	Chenga	Kachha Road	2,14,13	1.15	26° 38' 46.00"N	88° 16' 23.00"E						0	EC Awaiting
1450/SB2021	KHARIBARI	Bagulahagi II	74	Dumria	Kachha Road	110	4.9	26° 35' 6.00"N	88° 13' 19.00"E						0	EC Awaiting
1452/SB2021	PHANSIDEWA	Kuchia A	34	Chenga	Kachha Road	867,875,878,891	3.08	26° 35' 49.00"N	88° 16' 1.00"E						0	EC Awaiting
1461/SB2021	BIJONBARI-PULBAZAR	Jhepi	7	Jhepi	Kachha Road	667	0.84	27° 5' 48.40"N	88° 6' 39.70"E						0	EC Awaiting
1477/SB2021	BIJONBARI-	Goke Jamune	18	Little Rangit	Kachha Road	233	0.61	27° 49' 2.00"N	88° 36' 1.00"E						0	EC Awaiting

ID	Block	Mouza	JLNo	River	Road	Plot No	Area in Hectares	Latitude	Longitude	Bidder Name	Date of Issuance of Environmental Clearance (E.C.)	Date of Execution of Lease Deed	Lease Agreement Start Date (date of effect)	Lease Agreement Expiry Date	Quantum of Sand Extraction permissible as per Mining Plan (tonnes)	Reasons for non-execution of lease deed
	PULBAZAR	y														
1478/SB2021	BIJONBARI-PULBAZAR	Lama Goan	8	Jhepi	Kachha Road	667	0.45	27° 4' 2.00"N	88° 36' 1.00"E						0	EC Awaiting
1476/SB2021	BIJONBARI-PULBAZAR	Bijanbari	19	Little Rangit	Kachha Road	3984,3985,3986,3988	2.43	27° 40' 7.00"N	88° 33' 3.00"E						0	EC Awaiting
1482/SB2021	NAXALBARI	Sirsia	71	Manjha	Kachha Road	42	1.2	26° 45' 1.00"N	88° 13' 51.00"E	North Bengal Labour Contract and Construction Co Ltd	10-04-2017	18-05-2017	18-05-2017	17-May-22	46682.02	
1484/SB2021	PHANSIDEWA	Patharhirira II	25	Chenga	Kachha Road	373,374,366,367,368,363,605,604,602,180,179	4.9	26° 38' 24.00"N	88° 16' 18.00"E						0	EC Awaiting
1487/SB2021	PHANSIDEWA	Harivita II	42	Chenga	Kachha Road	72,74,75,94,113,117,119,130,124,134,135,167,163,164,181,182,184,392	2	26° 26' 13.00"N	88° 12' 36.00"E						0	EC Awaiting
1490/SB2021	PHANSIDEWA	Mandilajhar	101	Chenga	Kachha Road	1081,1084	1.1	26° 30' 47.00"N	88° 11' 53.00"E						0	EC Awaiting
1494/SB2021	KHARIBARI	Guabari I	69	Dumria	Kachha Road	281,287,291,293,296,297,302,393,387,388,394,396,268	2.13	26° 35' 31.00"N	88° 13' 5.00"E						0	EC Awaiting
475/SB2021	MATIGARA	Patiram	77	Balason	Kachha Road	216,218,273,277,278,286,291,293,317,318,321,329,323,324,445,447	2.5	26° 41' 42.00"N	88° 53' 23.00"E						0	EC Awaiting
662/SB2021	KHARIBARI	ANTARAM	05	Mechi	Kachha Road	8,23,25,32,72	3.8	26° 37' 16.00"N	88° 8' 42.00"E	Goutam Ghosh	20-01-2017	23-02-2017	03-03-2017	02-Mar-22	4373.827	
1553/SB2021	MATIGARA	Palash Sil 23	43	Mahananda	Kachha Road	813,817	2.3	26° 45' 50.00"N	88° 25' 57.00"E	Ankur Biochem Pvt Ltd	11-04-2017	07-07-2017	07-07-2017	06-Jul-22	86007.39	
1481/SB2021	PHANSIDEWA	Dhamvita	38	Chenga	Kachha Road	663,667,420	3.5	26° 33' 57.00"N	88° 15' 4.00"E	MS Singh and Co	20-01-2017	16-02-2017	23-02-2017	22-Feb-22	68037.29	
1488/SB2021	PHANSIDEWA	Harivita I	42	Chenga	Kachha Road	72,74,75,94,96,113,117,119,130,124,134,135,167,163,164,181,182,184,392	3	26° 35' 25.00"N	88° 16' 23.00"E						0	EC Awaiting
1479/SB2021	PHANSIDEWA	Farabari A	43	Chenga	Kachha Road	44,45,46	4.86	26° 36' 36.00"N	88° 16' 48.00"E	MS Larsen and Toubro Ltd	20-01-2017	23-02-2017	23-02-2017	22-Feb-22	2713.761	
658/SB2021	KHARIBARI	BAJARURCHHAT	04	Mechi	Kachha Road	5	2.27	26° 38' 10.00"N	88° 9' 36.00"E						0	EC Awaiting
674/SB2021	KHARIBARI	BHULKA	06	Mechi	Kachha Road	1,2,3,4	2.49	26° 36' 18.00"N	88° 8' 20.00"E	Khitish Biswas	20-01-2017	09-03-2017	19-04-2017	18-Apr-22	51831.19	
735/SB2021	NAXALBARI	BARA MONIRAM	20	Mechi	Kachha Road	681,683,684,685,686,688	2	26° 42' 28.00"N	88° 10' 42.00"E	Dipa Thapa	20-01-2017	07-02-2017	07-02-2017	06-Feb-22	25915.6	
738/SB2021	NAXALBARI	BARA MONIRAM	20	Mechi	Kachha Road	681,683,686,688	4	26° 42' 28.00"N	88° 10' 42.00"E	Sudarshan Mishra	28-07-2017	14-11-2017	14-11-2017	13-Nov-22	55070.64	
1731/SB2021	KURSEONG	Sittong	59	Riyang	Kachha Road	1,410	1.21	26° 94' 9285.00"	N 88° 37' 84.00"E						0	EC Awaiting

ID	Block	Mouza	JLNo	River	Road	Plot No	Area in Hectares	Latitude	Longitude	Bidder Name	Date of Issuance of Environmental Clearance (E.C.)	Date of Execution of Lease Deed	Lease Agreement Start Date (date of effect)	Lease Agreement Expiry Date	Quantum of Sand Extraction permissible as per Mining Plan (tonnes)	Reasons for non-execution of lease deed
1739/SB2021	KURSEONG	Ambotia	12	Balason	Kachha Road	2	1.21	26° 89' 663.00"N	88° 24' 75.00"E						0	EC Awaiting
1740/SB2021	KURSEONG	Painikumari	20	Rakti	Kachha Road	137,140,141,166,167	6.07	267° 77' 6271.00'	N 88° 30' 24.00"E						0	EC Awaiting
1788/SB2021	MATIGARA	Nemai	57	Balason	Kachha Road	281,282,283,288,289,	3	26° 44' 17.00"N	88° 21' 4.00"E	Anamika Roy	10-04-2017	14-07-2017	21-07-2017	20-Jul-22	115246.2	
1791/SB2021	PHANSIDEWA	Tentilguri	33	Chenga	Kachha Road	135,45,46	1.65	26° 36' 36.00"N	88° 15' 59.00"E	Sushmita Ghosh Gope	20-01-2017	20-02-2017	03-03-2017	02-Mar-22	4373.827	
424/SB2021	MATIGARA	Patanerchhat	61	Balason	Kachha Road	9,15,16,17,25,26,41	3.78	26° 45' 0.00"N	88° 19' 30.00"E						0	EC Awaiting
427/SB2021	MATIGARA	Lalsarachhat	62	Balason	Kachha Road	10	3.04	26° 44' 52.00"N	88° 19' 28.00"E						0	EC Awaiting
458/SB2021	MATIGARA	Nentichara	67	Balason	Kachha Road	13,14	0.6	26° 43' 55.00"N	88° 21' 18.00"E						0	EC Awaiting
501/SB2021	MATIGARA	Lalsarachhat	62	Balason	Kachha Road	10	4.75	26° 44' 52.00"N	88° 19' 28.00"E						0	EC Awaiting
507/SB2021	MATIGARA	Nimai	57	Balason	Kachha Road	321,318,311,313,319,434,533,400	3.6	26° 44' 17.00"N	88° 21' 4.00"E	Debjani Sanyal	20-01-2017	20-02-2017	03-03-2017	02-Mar-22	3227.995	
570/SB2021	MATIGARA	Kawakhali I	75	Balason	Kachha Road	399,407,408,410,418	3.8	26° 41' 56.00"N	88° 23' 28.00"E						0	EC Awaiting
576/SB2021	MATIGARA	Bataliguri Sil 20	64	Balason	Kachha Road	267 to 276	2.7	26° 44' 21.00"N	88° 20' 26.00"E						0	EC Awaiting
636/SB2021	PHANSIDEWA	NIMBUTARI	86	Balason	Kachha Road	26,28,24,31,30,302,303,307,312	0.7	26° 36' 7.20"N	88° 19' 58.00"E						0	EC Awaiting
639/SB2021	PHANSIDEWA	DHAKPARA	105	Mahananda	Kachha Road	3941,3968,3792,3798,3791,3790,3723	4.97	26° 26' 13.00"N	88° 12' 36.00"E						0	EC Awaiting
647/SB2021	PHANSIDEWA	PURBABANSGAON	113	Mahananda	Kachha Road	6552,6559,6560,6415,7638	4.95	26° 29' 44.00"N	88° 19' 48.00"E						0	EC Awaiting
670/SB2021	KHARIBARI	ANTARAM IV	05	Mechi	Kachha Road	8,23,25,32,72	3.8	26° 37' 16.00"N	88° 8' 42.00"E	MS Roy and Roy Enterprise	20-01-2017	02-03-2017	21-03-2017	20-Mar-22	46777.66	
676/SB2021	KHARIBARI	ANTARAM V	05	Mechi	Kachha Road	8,23,25,32,72	3.8	26° 37' 16.00"N	88° 8' 42.00"E	Khitish Biswas	20-01-2017	09-03-2017	30-03-2017	29-Mar-22	80783.76	
679/SB2021	KHARIBARI	MADAN	01	Mechi	Kachha Road	170,171,163,166	2.5	26° 38' 10.00"N	88° 9' 36.00"E						0	EC Awaiting
699/SB2021	NAXALBARI	SURAJBARI	18	Mechi	Kachha Road	302,303	4.8	26° 42' 57.00"N	88° 10' 48.00"E						0	EC Awaiting
710/SB2021	NAXALBARI	DHEMAL C	83	Balason	Kachha Road	209,222,232,233,235,236	4	26° 45' 32.00"N	88° 18' 46.00"E						0	EC Awaiting
739/SB2021	NAXALBARI	BOURNIVITARCHHAT	87	Balason	Kachha Road	683	4.32	26° 45' 46.00"N	88° 18' 32.00"E						0	EC Awaiting

ID	Block	Mouza	JLNo	River	Road	Plot No	Area in Hectares	Latitude	Longitude	Bidder Name	Date of Issuance of Environmental Clearance (E.C.)	Date of Execution of Lease Deed	Lease Agreement Start Date (date of effect)	Lease Agreement Expiry Date	Quantum of Sand Extraction permissible as per Mining Plan (tonnes)	Reasons for non-execution of lease deed
1403/SB2021	PHANSIDEWA	Tentilguri	33	Chenga	Kachha Road	24,42,29,43	2.02	26° 36' 36.00"N	88° 15' 59.00"E						0	EC Awaiting
1417/SB2021	MATIGARA	Khapril	14	Rakti	No Approach Road	527,528,549,547,552	3.08	26° 46' 23.00"N	88° 19' 23.00"E						0	EC Awaiting
1437/SB2021	NAXALBARI	Lohasingh	69	Chenga	Kachha Road	151,152	1.8	26° 44' 10.00"N	88° 14' 17.00"E						0	EC Awaiting
1440/SB2021	PHANSIDEWA	Fakirdwip I	27	Chenga	Kachha Road	627,628,629	1.49	26° 37' 52.00"N	88° 15' 25.00"E						0	EC Awaiting
1443/SB2021	PHANSIDEWA	Tarabari B	30	Chenga	Kachha Road	1,3,5,11,36	3.71	26° 37' 48.00"N	88° 15' 57.00"E						0	EC Awaiting
1446/SB2021	PHANSIDEWA	Patharhirira II	25	Chenga	Kachha Road	373,374,366,367,368,363,605,604,602,97,180	4.9	26° 38' 24.00"N	88° 16' 18.00"E						0	EC Awaiting
1449/SB2021	KHARIBARI	Bagulahagi I	74	Dumria	Kachha Road	110	4.9	26° 35' 6.00"N	88° 13' 19.00"E						0	EC Awaiting
1480/SB2021	PHANSIDEWA	Farabari B	43	Chenga	Kachha Road	44,45,46	4.78	26° 36' 36.00"N	88° 16' 48.00"E	MS Larsen and Toubro Ltd	20-01-2017	23-02-2017	23-02-2017	22-Feb-17	95822.89	
1483/SB2021	PHANSIDEWA	Ambari	40	Chenga	Kachha Road	88,348,351,344	1.5	26° 34' 30.00"N	88° 15' 57.00"E						0	EC Awaiting
1492/SB2021	PHANSIDEWA	Patharhirira I	25	Chenga	Kachha Road	373,374,366,367,368,363,605,604,602,97,180	4.9	26° 38' 24.00"N	88° 16' 18.00"E						0	EC Awaiting
1672/SB2021	KURSEONG	Sevoke Forest	3	Teesta	Kachha Road	Sevoke Forest	2.43	26° 87' 90.00"N	88° 47' 62.00"E						0	EC Awaiting
1735/SB2021	KURSEONG	Jamadarvitta	16	Balason	Kachha Road	65,313,331,332,333,334,335,325,326,363	4.05	26° 80' 54.00"N	88° 24' 80.00"E						0	EC Awaiting
1738/SB2021	KURSEONG	Jamadarvitta	16	Balason	Kachha Road	1,2	2.43	26° 89' 44.00"N	88° 28' 54.00"E						0	EC Awaiting
1741/SB2021	KURSEONG	Singell TG	6	Balason	Kachha Road	186	1.21	26° 89' 68.00"N	88° 24' 75.00"E						0	EC Awaiting

8.3 Detail of production of sand and other minerals during last three years

Last 3 years production of minor mineral of Darjeeling District is furnished in Table 8.2.

Table 8.2: Details of production of sand as per mine plan in Darjeeling district

Sl. No.	Year	Name of mineral	Total Production in cft.	Total Production in cum
1	2017-2018	Sand and Gravel	53218050	1506967.36
2	2018-2019	Sand and Gravel	55623050	1575069.37
3	2019-2020	Sand and Gravel	32801550	928836.46

Conversion factor: 1cum=35.315 cft

9 Details of revenue generated from mineral sector during last three years

Revenue generated for last 3 years in Darjeeling District is furnished in Table 9.1.

Table 9.1: District revenue generation from mineral sector

(In Rs.)

Year	Royalty	Cess	Total revenue
2017-2018	79827075	8635467.50	88462542.50
2018-2019	83434535	9050904.00	92485439.00
2019-2020	49202325	5430796.25	54633121.25

10 Transport (Railway, road)

Despite a hilly terrain and high altitude, district Darjeeling has a very wide spread road-network covering almost all areas of the district. Since the expansion of British territory in the early Nineteenth Century across the area, structured transformation of the hilly rural roads to metalled and non-metalled road took place and within the end of Nineteenth Century, owing to the important strategic location, all places of the district were well connected with Head Quarter at Darjeeling Town. Till date the most famous and prominent mode of transport in the district is the Darjeeling Himalayan Railway (The Toy Train of Darjeeling). Presently, its journey starts from the New Jalpaiguri Railway Station near Siliguri and stretches up to Darjeeling Town travelling a distance of 78 Kilometers. In the journey the elevation level changes from 100 Metres above sea level to 2,200 Metres. However, owing to the factors like steep changes in elevation, existence of several Loops in the path and a journey through a landslide prone path, the services in the complete route is hindered. New Jalpaiguri, serving the town of Siliguri, is the major railway station near the district. New Jalpaiguri is well connected to major Indian cities, especially Kolkata.

The Road network of district Darjeeling is well built and several National and State Highways pass through the district. NH-31, NH-31A, NH-31C and NH-110 crosses the district and important locations are connected by SH-12 and SH-12A beside numerous medium, small and minor road networks (Figure 10.1).

Darjeeling does not have an airstrip. The nearest airport is Bagdogra airport (IXB), near Siliguri.

Existing sand and gravel riverbeds of the district are connected with the state highways by blacktop or village/link roads. However, there is scope for development of infrastructural structure. Mining of riverbed sand in the potential areas can generate considerable revenue and which can be utilized for development of road network and infrastructure of the sector.

A transportation map demarcating approach road to the potential sand blocks from the nearest National Highway/ Sate Highway has been prepared and presented in Figure 10.2.

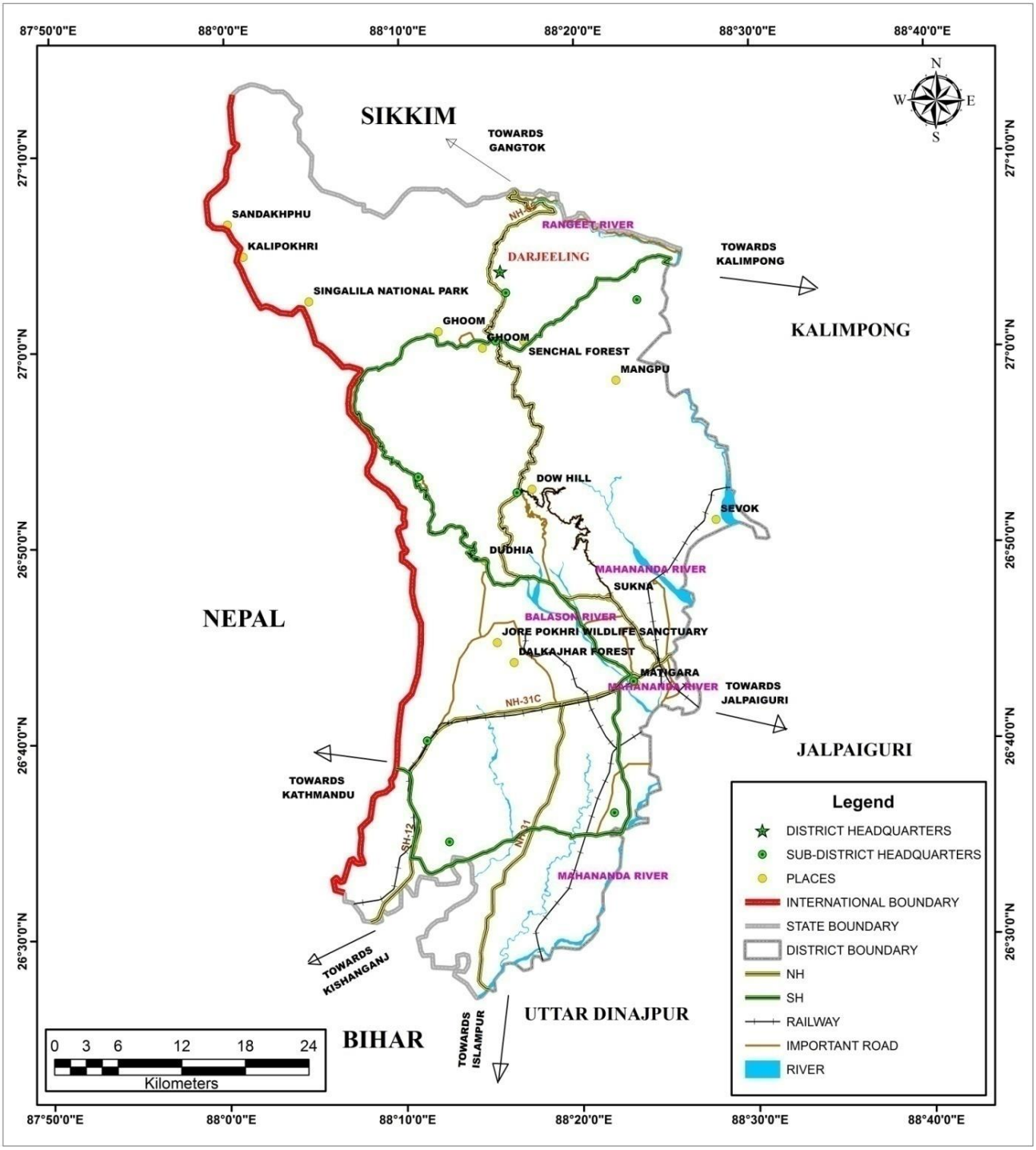

Figure 10.1: Transportation map of Darjeeling District

(Source: *National Informatics Centre*)

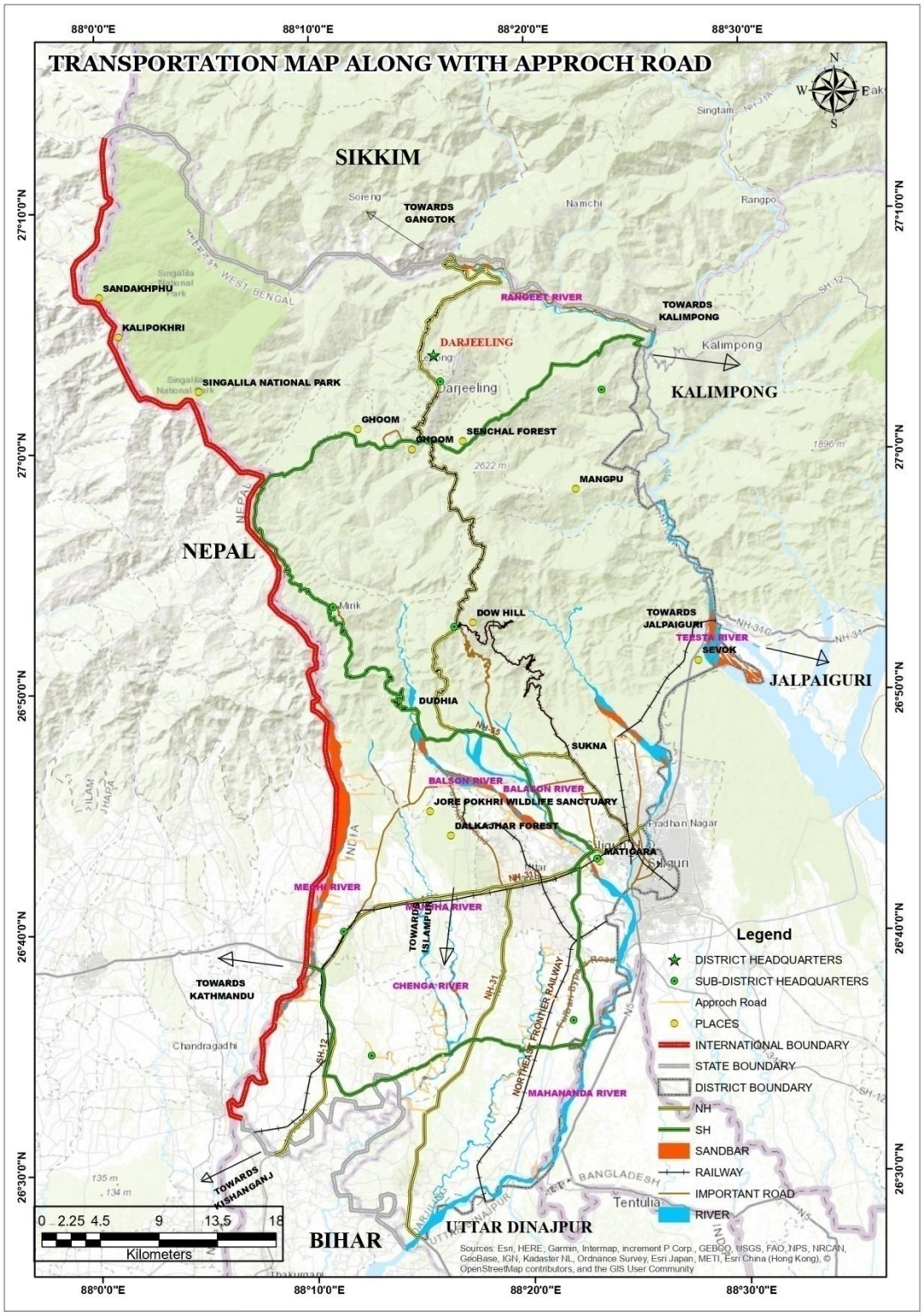

Figure 10.2: Map showing approach road to potential sand bars

11 Remedial measure to mitigate the impact of Mining

11.1 Environmental Sensitivity

The Darjeeling Hill area represents a unique geo- environmental perception. The district as dense vegetation cover; almost 40% of the area is under forest cover. It has one national park and four sanctuaries which are rich in biodiversity.

The mountains of the district serve as the source of resources for the population residing in the hills as well as in the plains, the form of environmental degradation is quite extensive. Soil erosion and its conservation play an important role in the hill areas. Landslide hazards, especially during rainy season have become a common factor to the people of the hill.

The district is not exposed to large scale mining. Only riverbed sand and gravel are being extracted and consumed in local market. Removal or extraction of too much sand from rivers leads to erosion shrinking of river banks. These destructive effects of sand mining ultimately results in loss of fertile land and property. It also destabilized the ground and causes the failure of engineering structures for civilization. In-stream mining directly alters the channel geometry and bed elevation. By removing sediment from the channel, in-stream material extraction disrupts the preexisting balance between sediment supply and transporting capacity, typically inducing incision upstream and downstream of the extraction site. The resultant incision alters the frequency of floodplain inundation along the river courses, lowers valley floor water tables and frequently leads to destruction of bridges and channelization structures (Source: Wiejaczka2018). The sand mining from natural barriers, made up of sand, causes flooding of the natural habitat. The sand mining activity destroys the aesthetic beauty ofriver bank and makes the ecosystem unstable. If there are popular tourist destination, tourism potential of such areas will lose. Therefore, mining of riverbed should be carried out scientifically and based on statutory guidelines for conservation of land, river channels and sustainable development of the society.

11.2 Sand mining Impact

Another serious environmental problem around the globe in recent years is of Sand and gravel mining. Sand mining is a process of extraction of sand from an open pit, river bed, sea beaches, ocean floor, river banks, deltas and island dunes. The extracted sand could be utilised for various types of manufacturing, such as concrete used in the construction of building and other structures. The sand can also be used as an abrasive. The demand for sand will increase with population growth and urbanization. The high demand of sand has led to unsustainable sand mining process resulting in illegal mining.

Although most jurisdictions have legal limit on the location and volume of sand that can be mined, illegal sand extraction is taking place in many parts of the country due to rapid urbanisation and industrialisation. Removal or extraction of too much sand from rivers leads to

erosion shrinking of river banks. Deltas can recede due to sand mining. These destructive effects of sand mining ultimately result in loss of fertile land and property. It also destabilizes the ground and causes failure of engineering structures.

In-stream mining directly alters the channel geometry and bed elevation. Removing sediment from the channel disrupts the pre-existing balance between sediment supply and transporting capacity, typically inducing incision upstream and downstream of the extraction site. The resultant incision alters the frequency of floodplain inundation along the river courses, lowers valley floor water table and frequently leads to destruction of bridges and channelization structures (Wiejaczka, 2018).

Sand Mining in beaches disturbs the ecosystem of different fauna of the beaches. The sand mining from natural barriers, made up of sand, causes flooding of the natural habitat. The sand mining activity destroys the aesthetic beauty o beaches and river bank and makes the ecosystem unstable. If there are popular tourist destination, tourism potential of such areas will decline.

It can be concluded that there has been little in depth research on the environmental, social and political effects of land use practices and calls for urgent attention by the competent authority.

11.3 Remedial measure

11.3.1 Sustainable Mining Practices:

- The depth of mining in riverbed shall not exceed 3 meter or base flow level whichever is less, provided that where the Joint Inspection Committee certifies about excessive deposit or over accumulation of mineral in certain reaches requiring channelization, it can go above 3 meters.
- Mining shall be done in layers of 1 meter depth to avoid ponding effect and after first layer is excavated, the process will be repeated for the next layers.
- No stream should be diverted for the purpose of sand mining. No natural water course and/ or water resources are obstructed due to mining operations.
- No blasting shall be resorted to in river mining and without permission at any other place.

11.3.2 Monitoring the Mining of Mineral and its Transportation:

- For each mining lease site, the access should be controlled in a way that vehicles carrying mineral from that area are tracked and accounted for.
- There should be regular monitoring of the mining activities in the State to ensure effective compliance of stipulated EC conditions and of the provisions under the Minor Mineral Concessions Rules framed by the State Government.

11.3.3 Noise Management:

- Noise arising out of mining and processing shall be abated and controlled at source to keep within permissible limit.
- Restricted sand mining operation has to be carried out between 6 am to 7 pm.

11.3.4 Air Pollution and Dust Management:

- The pollution due to transportation load on the environment will be effectively controlled and water sprinkling will also be done regularly.
- Air pollution due to dust, exhaust emission or fumes during mining and processing phase should be controlled and kept in permissible limits specified under environmental laws.
- The mineral transportation shall be carried out through covered trucks only and the vehicles carrying the mineral shall not be overloaded. Wheel washing facility should be installed and used.

11.3.5 Bio-Diversity Protection:

- Restoration of flora affected by mining should be done immediately. Five times the number of trees destroyed by mining to be planted preferably of indigenous species. Each EC holder shall have to undertake plantation of trees over at least 20% of the total area of lease in the same plot or plots utilised for such working.
- No mining lease shall be granted in the forest area without forest clearance in accordance with the provisions of the Forest Conservation Act, 1980 and the rules made there under.
- Protection of natural home of any wild animal shall have to be ensured.
- No felling of tree near quarry is allowed. For mining lease within 10km of the National Park / Sanctuary or in Eco-Sensitive Zone of the Protected Area, recommendation of Standing Committee of National Board of Wild Life (NBWL) has to be obtained as per the Hon'ble Supreme Court order in I.A. No. 460 of 2004.
- Spring sources should not be affected due to mining activities. Necessary protection measures are to be incorporated.

11.3.6 Management of Instability and Erosion:

- Removal, stacking and utilization of top soil should be ensured during mining. Where top soil cannot be used concurrently, it shall be stored separately for future use keeping in view that the bacterial organism should not die and should be spread nearby area.
- The EC should stipulate conditions for adequate steps to check soil erosion and control debris flow etc. by constructing engineering structures
- Use of oversize material to control erosion and movement of sediments

- No overhangs shall be allowed to be formed due to mining and mining shall not be allowed in area where subsidence of rocks is likely to occur due to steep angle of slope.
- No extraction of Gravel / boulder / sand in landslide prone areas.
- Controlled clearance of riparian vegetation to be undertaken.

11.3.7 Waste Management:

- Site clearance and tidiness is very much needed to have less visual impact of mining.
- Dumping of waste shall be done in earmarked places as approved in Mining Plan.
- Rubbish burial shall not be done in the rivers.

11.3.8 Pollution Prevention:

- Take all possible precautions for the protection of environment and control of pollution.
- Effluent discharge should be kept to the minimum and it should meet the standards prescribed.

11.3.9 Protection of Infrastructure:

- Mining activities shall not be done for mine lease where mining can cause danger to site of flood protection works, places of cultural, religious, historical, and archeological importance.
- For carrying out mining in proximity to any bridge or embankment, appropriate safety zone should be worked out on case to case basis, taking into account the structural parameters, location aspects and flow rate, and no mining should be carried out in the safety zone so worked out.
- Mining shall not be undertaken in a mining lease located in 200-500 meter of bridge, 200 meter upstream and downstream of water supply / irrigation scheme, 100 meters from the edge of National Highway and railway line, 50 meters from a reservoir, canal or building, 25 meters from the edge of State Highway and 10 meters from the edge of other roads except on special exemption by the Sub-Divisional level Joint Inspection Committee.

12 Suggested reclamation plan for already mined out areas

As per statute all mines/quarries are to be properly reclaimed before final closure of the mine. Reclamation plans should include:

a) A baseline survey of river cross section. The study of cross section is basis for delineating channel form. Cross-sections must be surveyed between two monumented endpoints set on the river banks, and elevations should be referenced based on benchmark set in the area;

b) The proposed mining cross-section data should be plotted over the baseline data to illustrate the vertical extent of the proposed excavation;

c) The cross-section of the replenished bar should be the same as the baseline data. This illustrates that the bar elevation after the bar is replenished will be the same as the bar before extraction;

d) A planimetric map showing the aerial extent of the excavation and extent of the riparian buffers;

e) A planting plan developed by a plant ecologist familiar with the flora of the river for any areas such as roads that need to be restored;

f) Each EC holder shall have to undertake plantation of trees over at least 20% of the total area of the plot or plots of land as subject to such working in accordance with a plan approved by the concerned Divisional Forest Officer holding jurisdiction, provided further the competent authority l.e, The Divisional Forest Officer may fix up norms for plantation of trees in a particular area regarding choice of species, spacing, nos of trees and maintenance etc.;

g) A monitoring plan has to establish.

13 Risk assessment and disaster management plan

Risk analysis is the systematic study of risks encountered during various stages of mining operation. Risk analysis seek to identify the risks involved in mining operations, to understand how and when they arise, and estimate the impact (financial or otherwise) of adverse outcomes. The sand mining operation in the district is mainly done manually.

13.1 Identification of risk due to river sand mining

There is no land degradation due to mining activities as mining is done only on river bed dry surface. There will be no OB or waste generation as the sand is exposed in the river bed and is completely saleable. There will be neither any stacking of soil nor creation of OB dumps. The mining activity will carried out up to a maximum depth of 3m below the surface level. So, there is no chance of slope failure, bench failure in the mines. However, there are some identified risks in the mining activity which are as follows:

1. Accident during sand loading and transportation
2. Inundation/ Flooding
3. Quick Sand Condition

13.2 Mitigation measures

13.2.1 Measures to prevent accidents during loading and transportation:

- During the loading truck should be brought to a lower level so that the loading operation suits to the ergonomic condition of the workers.
- The workers will be provided with gloves and safety shoes during loading.
- Opening of the side covers of the truck should be done carefully and with warning to prevent injury to the loaders.
- Mining operations will be takes place during daylight only.
- The truck will be covered with tarpaulin and maintained to prevent any spillage.
- To avoid danger while reversing the trackless vehicles especially at the embankment and tipping points, all areas for reversing of lorries should be made man free as far as possible.
- All transportation within the main working will be carried out directly under the supervision and control of the management.
- Overloading should not be permitted and the maximum permissible speed limit should be ensured.
- There will be regular maintenance of the trucks and the drivers will have valid driving license.

13.2.2 Measures to prevent incidents during Inundation/ Flooding:

To minimize the risk of flooding/ inundation following measures shale be under taken:

- Mining will be completely closed during the monsoon months.
- Proper weather information particularly on rain should be kept during the operational period of mines so that precautionary measures will be undertaken.

13.2.3 Measures for mitigation to quick sand condition:

- Quick sand zone and deep water zone will be clearly demarcated and all the mines workers will be made aware of the location.
- Mining will be done strictly as per the approved mining plan.

13.3 Disaster management plan

As the depth of mining will be maximum of 3m below the surface level considering local condition, the risk related to mining activity is much less. The mining operation will be carried out under the supervision of experienced and qualified Mines Manager having Certificate of Competency to manage the mines granted by DGMS. All the provisions of Mines Act 1952, MMR 1961 and Mines Rules 1955 and other laws applicable to mine will strictly be complied. During heavy rainfall and during the monsoon season the mining activities will be closed. Proper coordination with Irrigation Department should be maintained so that at the time of releasing water, if any, from the dam suitable warning/information is given in advance. Special attention and requisite precautions shall be taken while working in areas of geological weakness like existence of slip, fault etc. The mining site will be supplied with first aid facilities and the entire mines worker will have access to that.

14 Conclusion and Recommendation

The district survey report has been prepared in conformity with the S O 141 (E), S O 3611 (E) and other sand mining guidelines published by MoEF&CC time to time as well as the requirement specified in WBMMCR, 2016.

Potential areas of economic mineralization and mineral deposition have been identified and list is furnished in the report. Estimation of annual sand deposition by replenishment study been incorporated.

The district survey report has been prepared by utilizing both primary and secondary data. The primary data generation involved the satellite imagery study, site inspection, survey, ground truthing etc. while secondary data has been acquired through various authenticated sources and satellite imagery studies.

The district survey report of Darjeeling district also describes the general geographical profile of the district, distribution of natural resources, livelihood, climatic condition and sources of revenue generation.

District physiography is divided in to two units, hills dominated in the north and plain in the southern part.

The Darjeeling District is holding mineral potentiality with respect to major and minor mineral. The district is currently generating revenue from mining of minor minerals such as sand, boulder and gravels from the riverbed.

As per the data received from Department of Mines and Minerals, Siliguri, total 75 blocks have been allotted for mining of river sand in the district. Out of which 34 blocks are allotted in Balason, 12 blocks are allotted in Mahananda, 12 blocks in Mechi, 12 blocks in Chengi and 5 blocks are allotted in Manja and Teri rivers. Total allotted block area for 75 blocks is 279.12 Ha and estimated reserve is around 9375933.87 CuM. Revenue generated in the district of Darjeeling from Minor minerals during the period of April 2017 to March 2020 is Rs. 23.56 crores.

14.1 Conclusion:

1. The rivers are enriched with gravels and boulders along with sand where the percentage of larger grains (gravels and boulders) are much more in the uphill region while percentage of sand is found to be more towards the plains after the hill slope break areas.
2. The replenishment study has been carried out during the preparation of this DSR. Both field-based surveys coupled with satellite imagery study and empirical studies were carried out to determine the rate of replenishment in each river of the district.
3. The determined values of various methods as adopted for replenishment study gives a comparable value and in all cases the values are found to be much more as compared to the capping limit (60%) as suggested in the Enforcement and Monitoring Guidelines for Sand Mining (EMGSM) January 2020, Issued by Ministry of Environment, Forest and Climate Change (MoEF&CC) 2020.

4. Field base study shows variation of replenishment from 98 to 99% in the district and for theoretical replenishment study shows variations from 75% to 80% with an average of 78% of replenishment rate in the district.
5. The total potential river bed deposit for the district comes to about 28 million cubic meters.

14.2 Recommendation:

1. The mining lease distribution for the district must be carried out by involving a district level committee constituted with inter-disciplinary members of various departments including irrigation and waterways, DL&LRO, forest, biodiversity, wetland management, SWID or any other relevant department which the district authority may find suitable to include.
2. While recommending for Mining Leases, the District Level Committee should ensure the protection of Biodiversity Zones as recorded by relevant Government Agenesis from time to time.
3. During finalization of mining leases for the district, strict adherence of Supreme Court orders No 1501 dated 03/06/2022 should be followed.
4. Efforts should be given to restrict distribution of mining leases along the confluence zone of the rivers where rich aquatic habitats are reported.
5. Since the state of West Bengal has royalty system in volumetric measurement, specific gravity for sand and gravel has not been determined during this study. However, during the finalization of mining lease if it is found necessary to conduct such test may be initiated by the state government on case-to-case basis.
6. It is recommended to have a periodical review along with primary data collection during pre- and post-monsoon periods to record the seasonal variance of the sedimentation rate on annual basis and update replenishment rate of the district.

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PLATE 1

DRAINAGE MAP OF THE DISTRICT

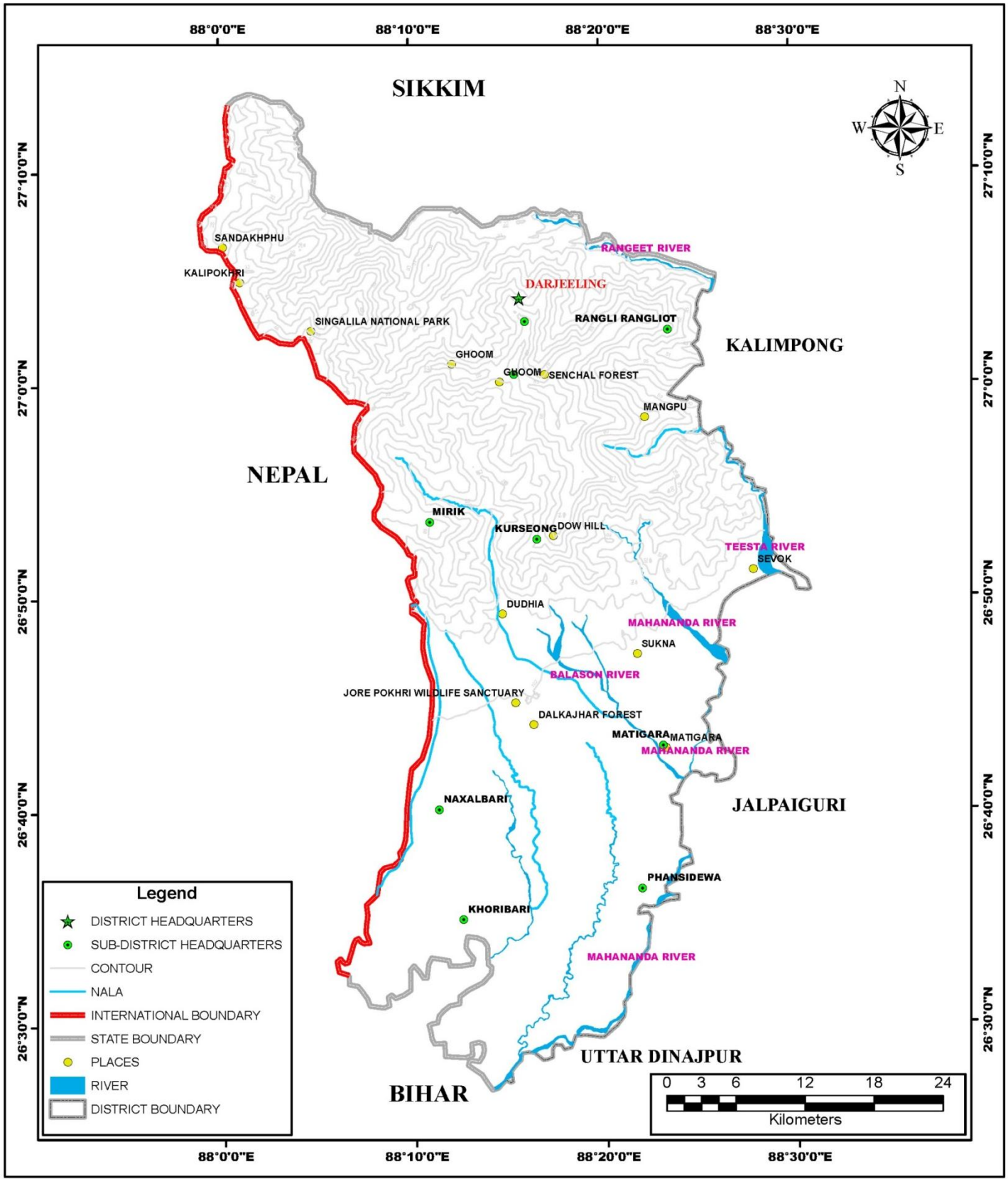


Plate 1A: Drainage Map of the District *(Source: National Informatics Centre -NIC Website, Sept 2020)*

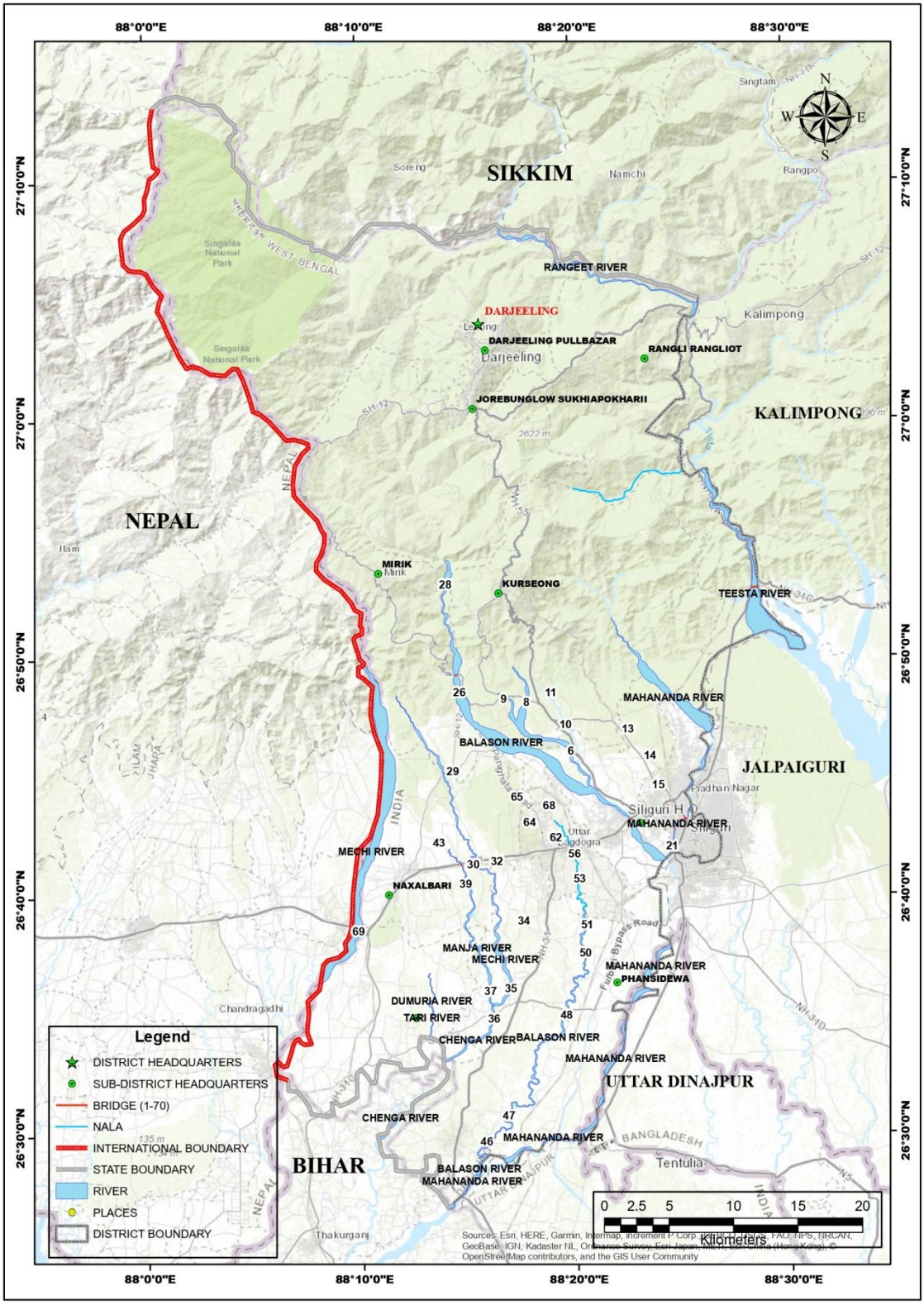


Plate No 1B: Location Map of dams, barrages, bridge showing on drainage system of the *(Source: National Informatics Centre -NIC Website, Sept 2020)*

PLATE 2A

DISTRIBUTION MAP OF SAND BARS ON RIVERS

DURING PRE-MONSOON PERIOD OF DARJEELING DISTRICT

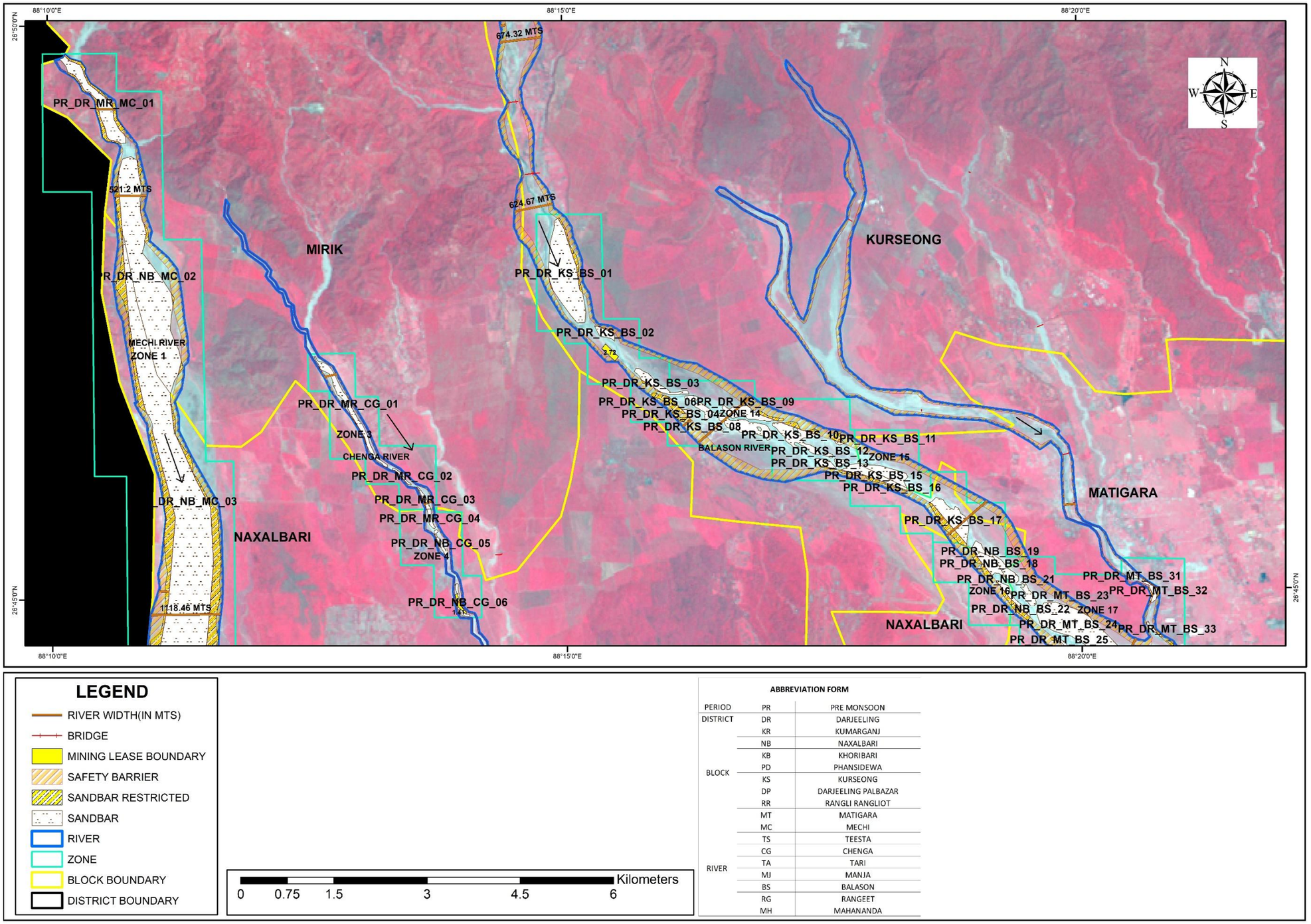


Plate 2A1: Distribution Map of Sand Bars on Rivers During Pre-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, March 2020)*

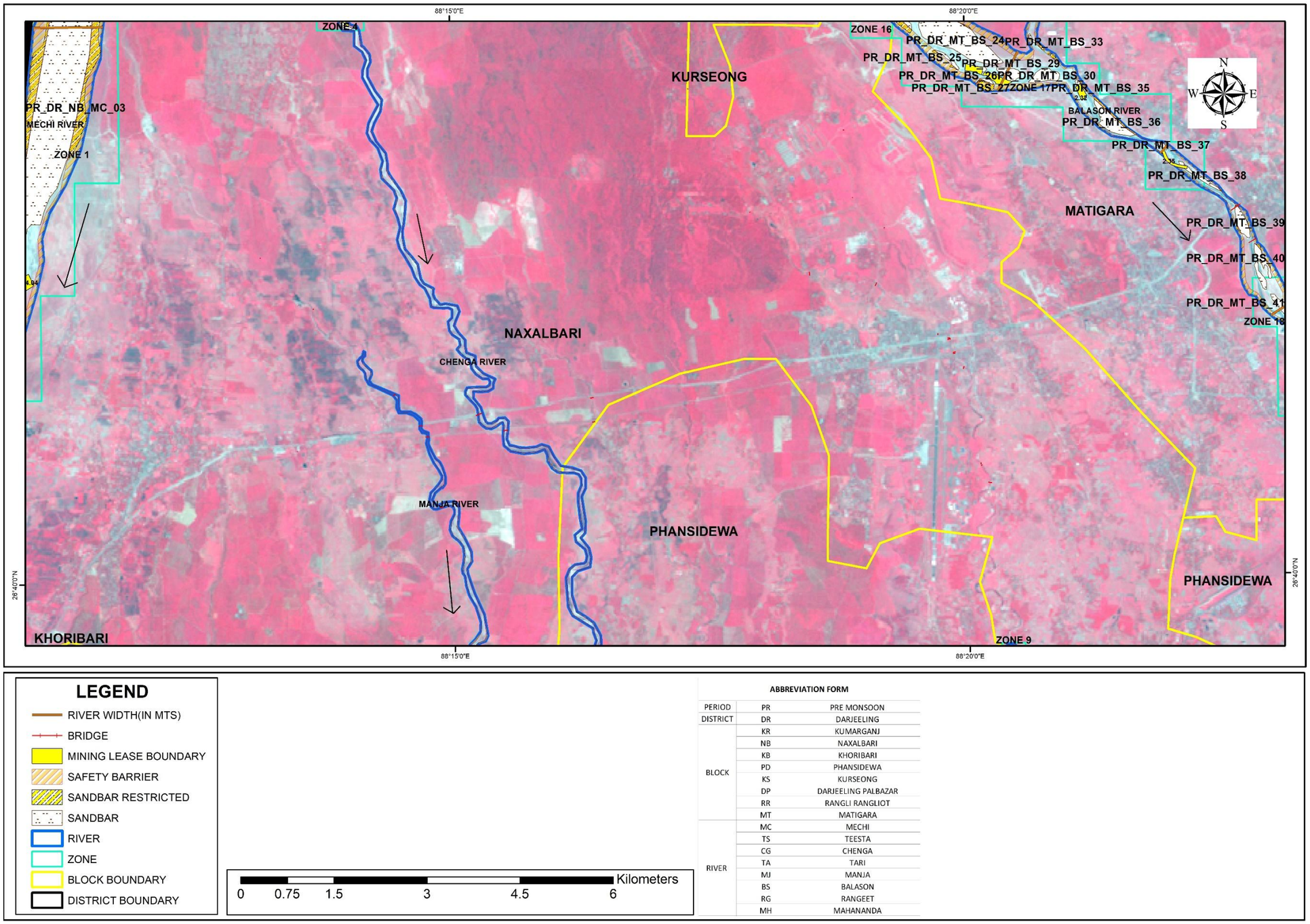
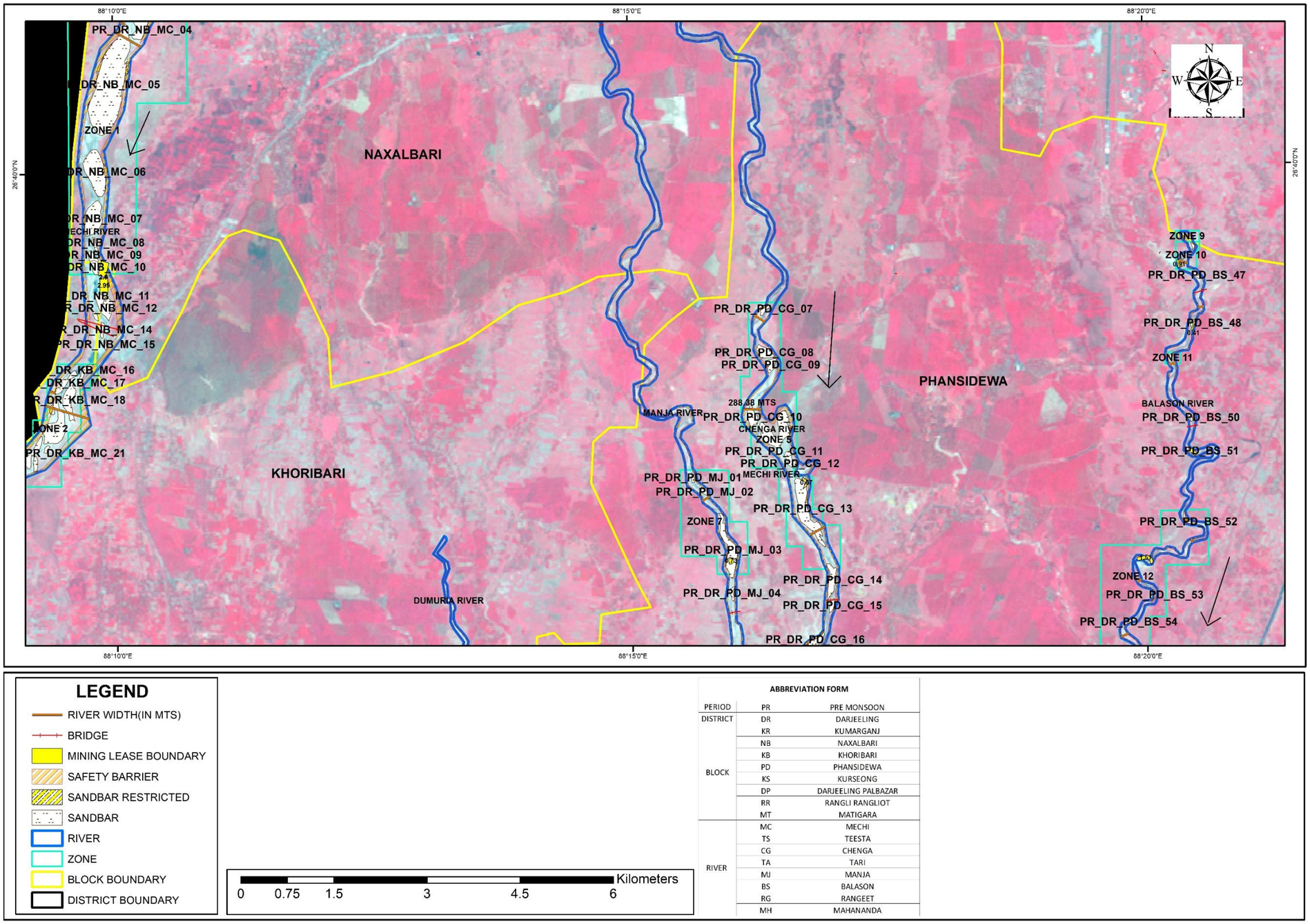


Plate 2A2: Distribution Map of Sand Bars on Rivers During Pre-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, March 2020)*



LEGEND

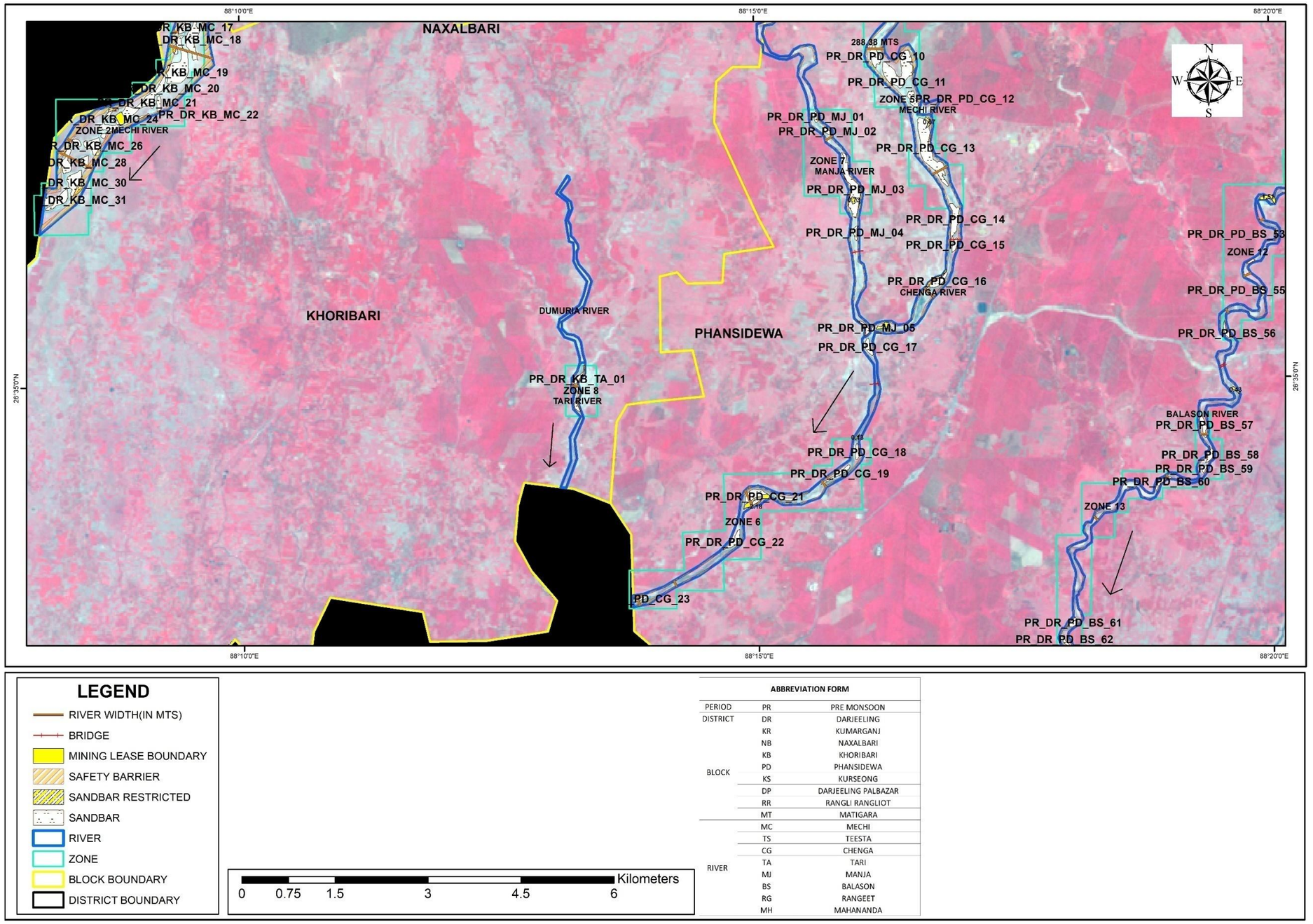
- RIVER WIDTH(IN MTS)
- BRIDGE
- MINING LEASE BOUNDARY
- SAFETY BARRIER
- SANDBAR RESTRICTED
- SANDBAR
- RIVER
- ZONE
- BLOCK BOUNDARY
- DISTRICT BOUNDARY

0 0.75 1.5 3 4.5 6 Kilometers

ABBREVIATION FORM

PERIOD	PR	PRE MONSOON
DISTRICT	DR	DARJEELING
	KR	KUMARGANJ
BLOCK	NB	NAXALBARI
	KB	KHORIBARI
	PD	PHANSIDEWA
	KS	KURSEONG
	DP	DARJEELING PALBAZAR
	RR	RANGLI RANGLIOT
	MT	MATIGARA
RIVER	MC	MECHI
	TS	TEESTA
	CG	CHENGA
	TA	TARI
	MJ	MANJA
	BS	BALASON
	RG	RANGEET
	MH	MAHANANDA

Plate 2A3: Distribution Map of Sand Bars on Rivers During Pre-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, March2020)*



LEGEND

- RIVER WIDTH(IN MTS)
- BRIDGE
- MINING LEASE BOUNDARY
- SAFETY BARRIER
- SANDBAR RESTRICTED
- SANDBAR
- RIVER
- ZONE
- BLOCK BOUNDARY
- DISTRICT BOUNDARY

0 0.75 1.5 3 4.5 6 Kilometers

ABBREVIATION FORM

PERIOD	PR	PRE MONSOON
DISTRICT	DR	DARJEELING
	KR	KUMARGANJ
	NB	NAXALBARI
	KB	KHORIBARI
BLOCK	PD	PHANSIDEWA
	KS	KURSEONG
	DP	DARJEELING PALBAZAR
	RR	RANGLI RANGLIOT
	MT	MATIGARA
	MC	MECHI
	TS	TEESTA
	CG	CHENGA
RIVER	TA	TARI
	MJ	MANJA
	BS	BALASON
	RG	RANGEET
	MH	MAHANANDA

Plate 2A4: Distribution Map of Sand Bars on Rivers During Pre-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, March2020)*

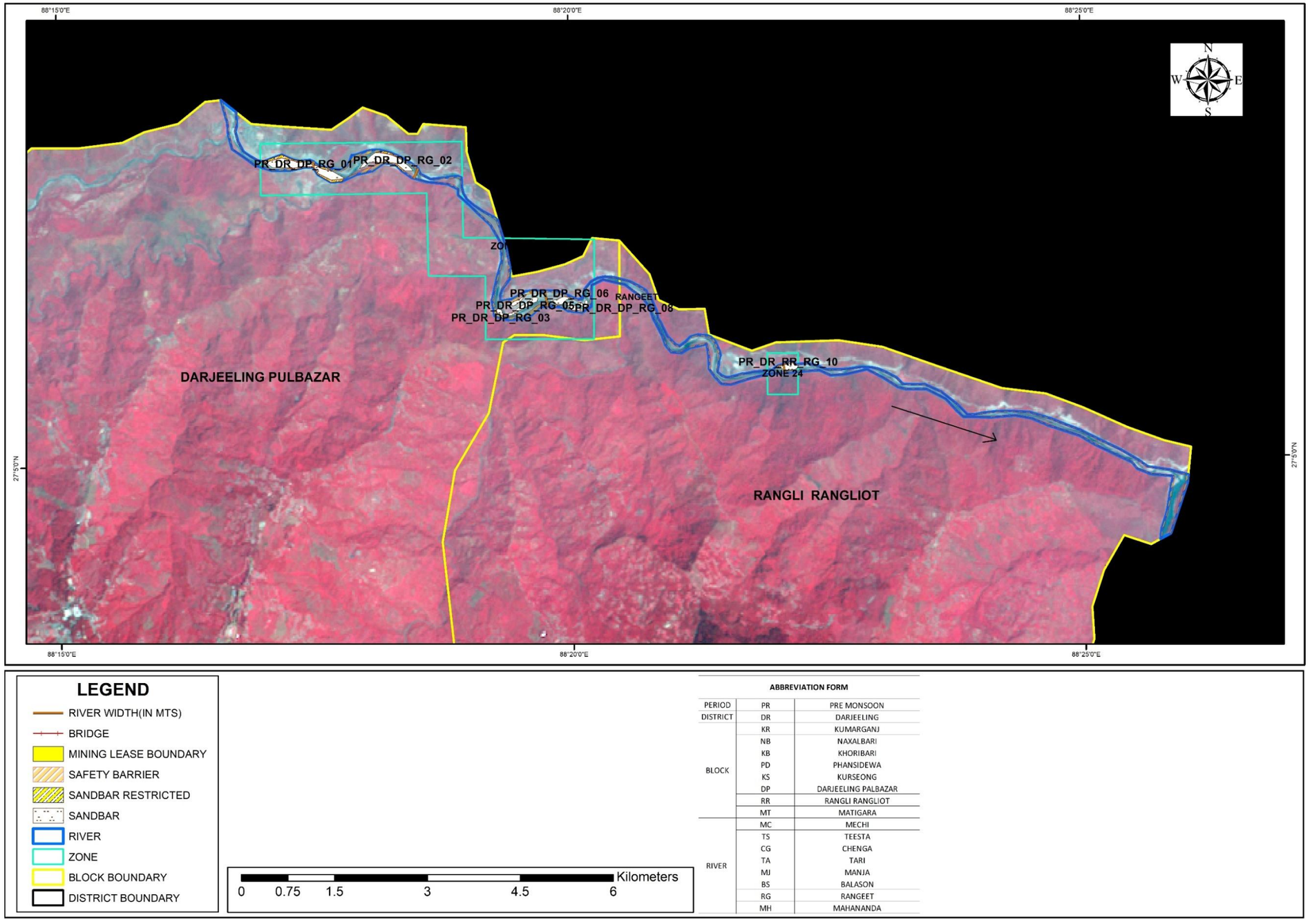


Plate 2A5: Distribution Map of Sand Bars on Rivers During Pre-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, March2020)*

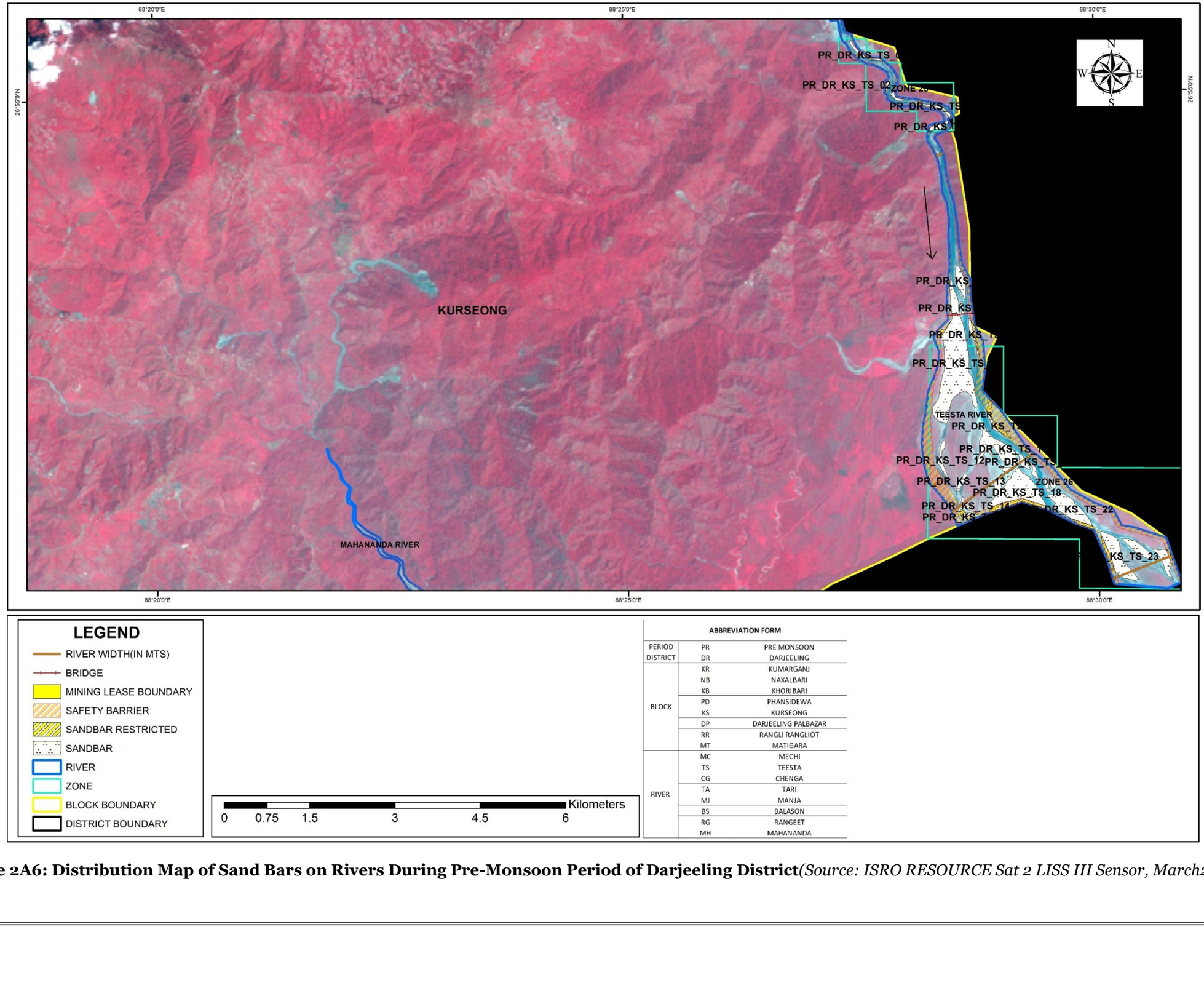


Plate 2A6: Distribution Map of Sand Bars on Rivers During Pre-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, March2020)*

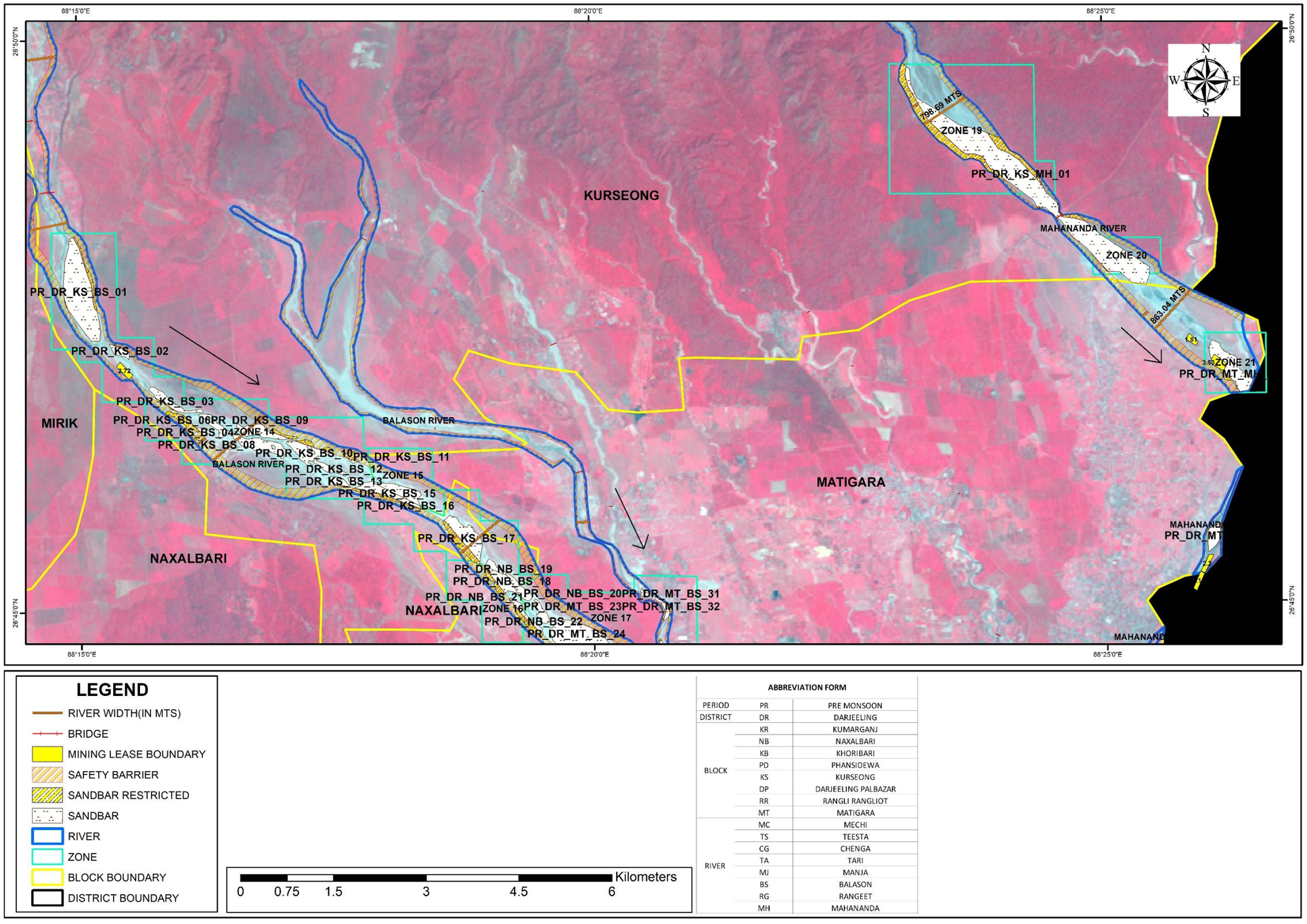
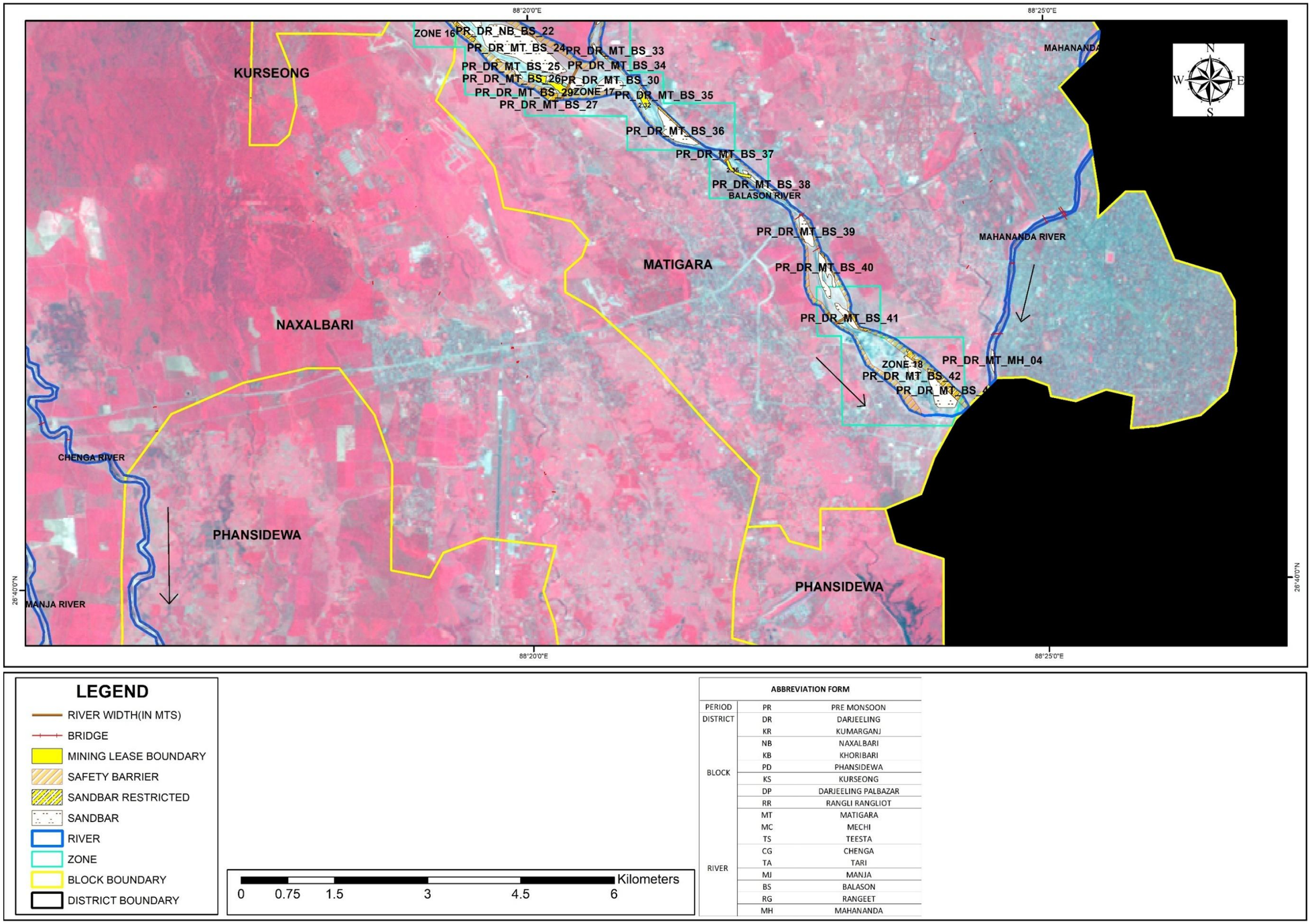


Plate 2A7: Distribution Map of Sand Bars on Rivers During Pre-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, March2020)*



ABBREVIATION FORM		
PERIOD	PR	PRE MONSOON
DISTRICT	DR	DARJEELING
	KR	KUMARGANJ
BLOCK	NB	NAXALBARI
	KB	KHORIBARI
	PD	PHANSIDEWA
	KS	KURSEONG
	DP	DARJEELING PALBAZAR
	RR	RANGLI RANGLIOT
RIVER	MT	MATIGARA
	MC	MECHI
	TS	TEESTA
	CG	CHENGA
	TA	TARI
	MJ	MANJA
	BS	BALASON
	RG	RANGEET
	MH	MAHANANDA

Plate 2A8: Distribution Map of Sand Bars on Rivers During Pre-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, March2020)*

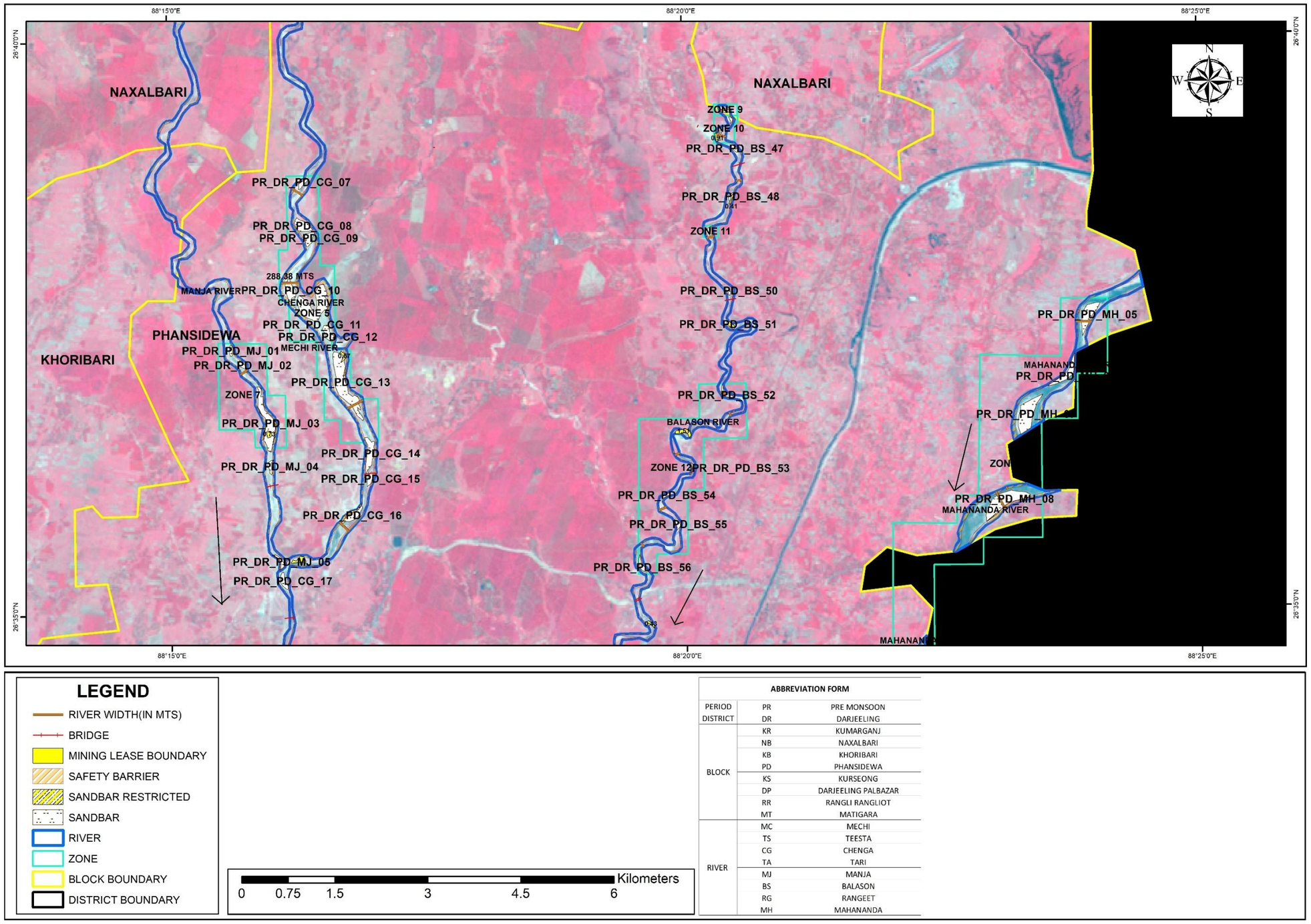


Plate 2A9: Distribution Map of Sand Bars on Rivers During Pre-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, March2020)*

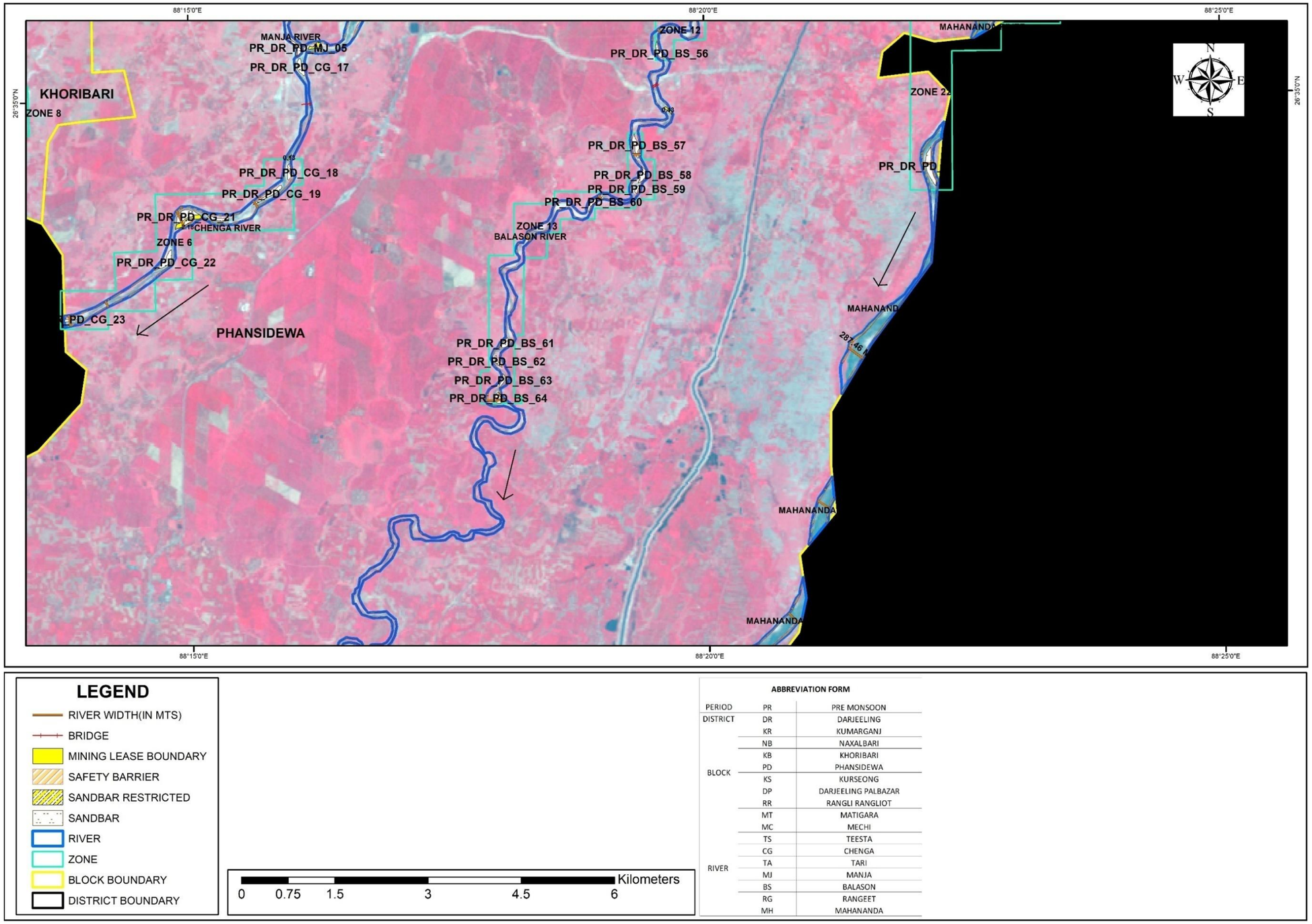
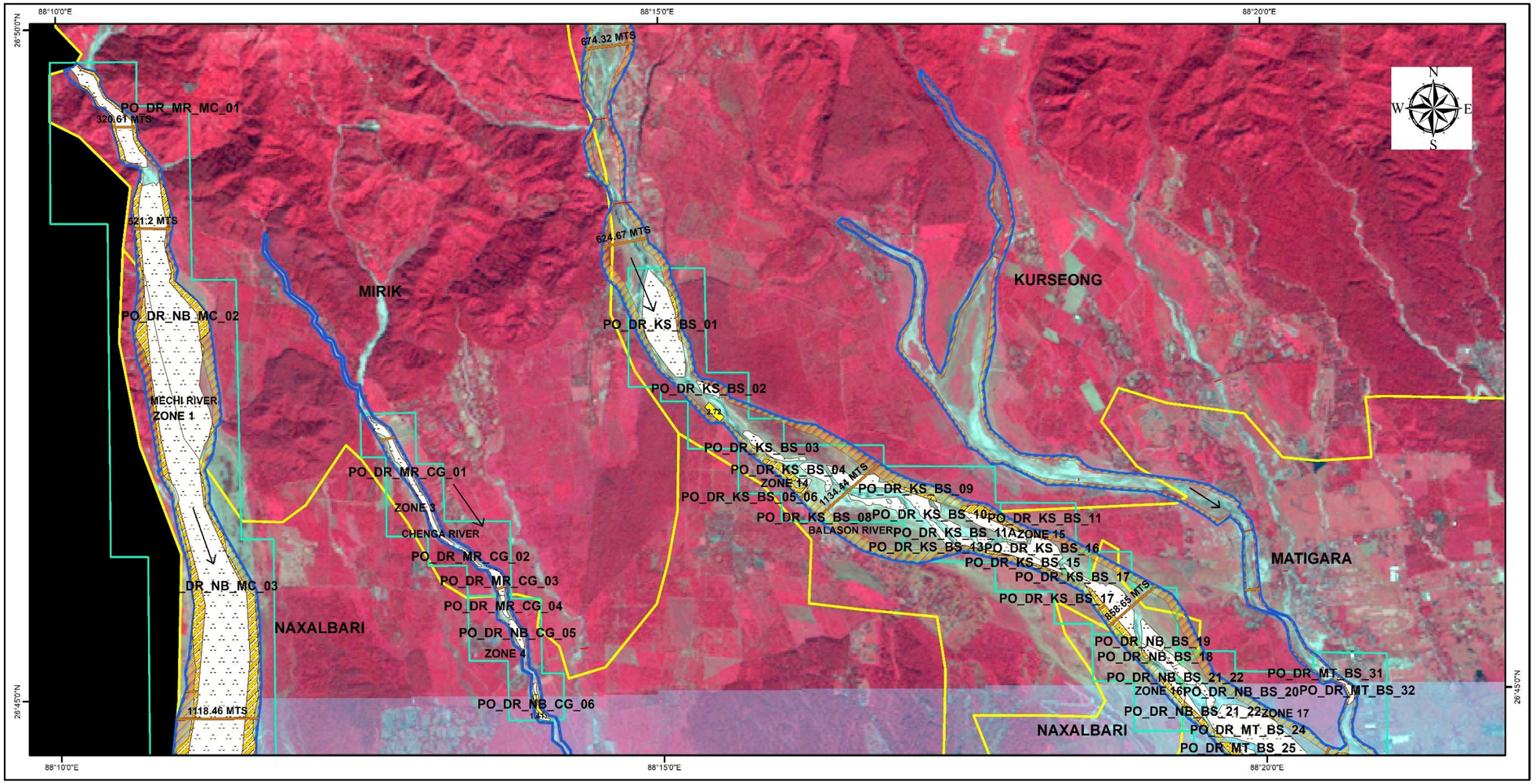


Plate 2A10: Distribution Map of Sand Bars on Rivers During Pre-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, March2020)*

PLATE2B

DISTRIBUTION MAP OF SAND BARS ON RIVERS

DURING POST-MONSOON PERIOD OF DARJEELING DISTRICT



LEGEND

- RIVER WIDTH(IN MTS)
- BRIDGE
- MINING LEASE BOUNDARY
- SAFETY BARRIER
- SANDBAR RESTRICTED
- SANDBAR
- RIVER
- ZONE
- BLOCK BOUNDARY
- DISTRICT BOUNDARY

0 0.75 1.5 3 4.5 6 Kilometers

ABBREVIATION FORM

PERIOD	PO	POST MONSOON
DISTRICT	DR	DARJEELING
	KR	KUMARGANJ
BLOCK	NB	NAXALBARI
	KB	KHORIBARI
	PD	PHANSIDEWA
	KS	KURSEONG
	DP	DARJEELING PALBAZAR
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RIVER	MC	MECHI
	TS	TEESTA
	CG	CHENGA
	TA	TARI
	MJ	MANJA
	BS	BALASON
	RG	RANGEET
	MH	MAHANANDA

Plate 2A1: Distribution Map of Sand Bars on Rivers During Post-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, November 2020)*

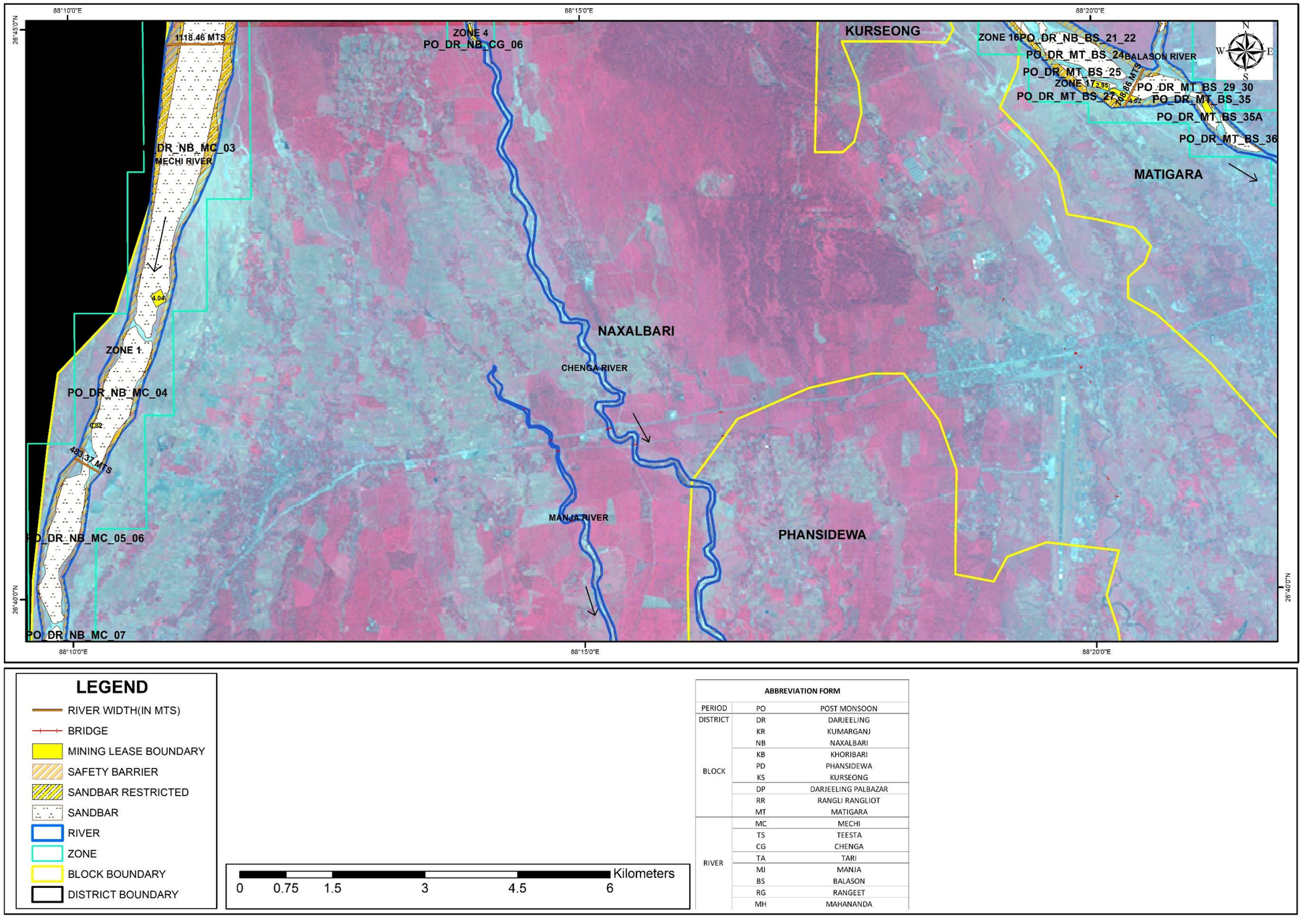
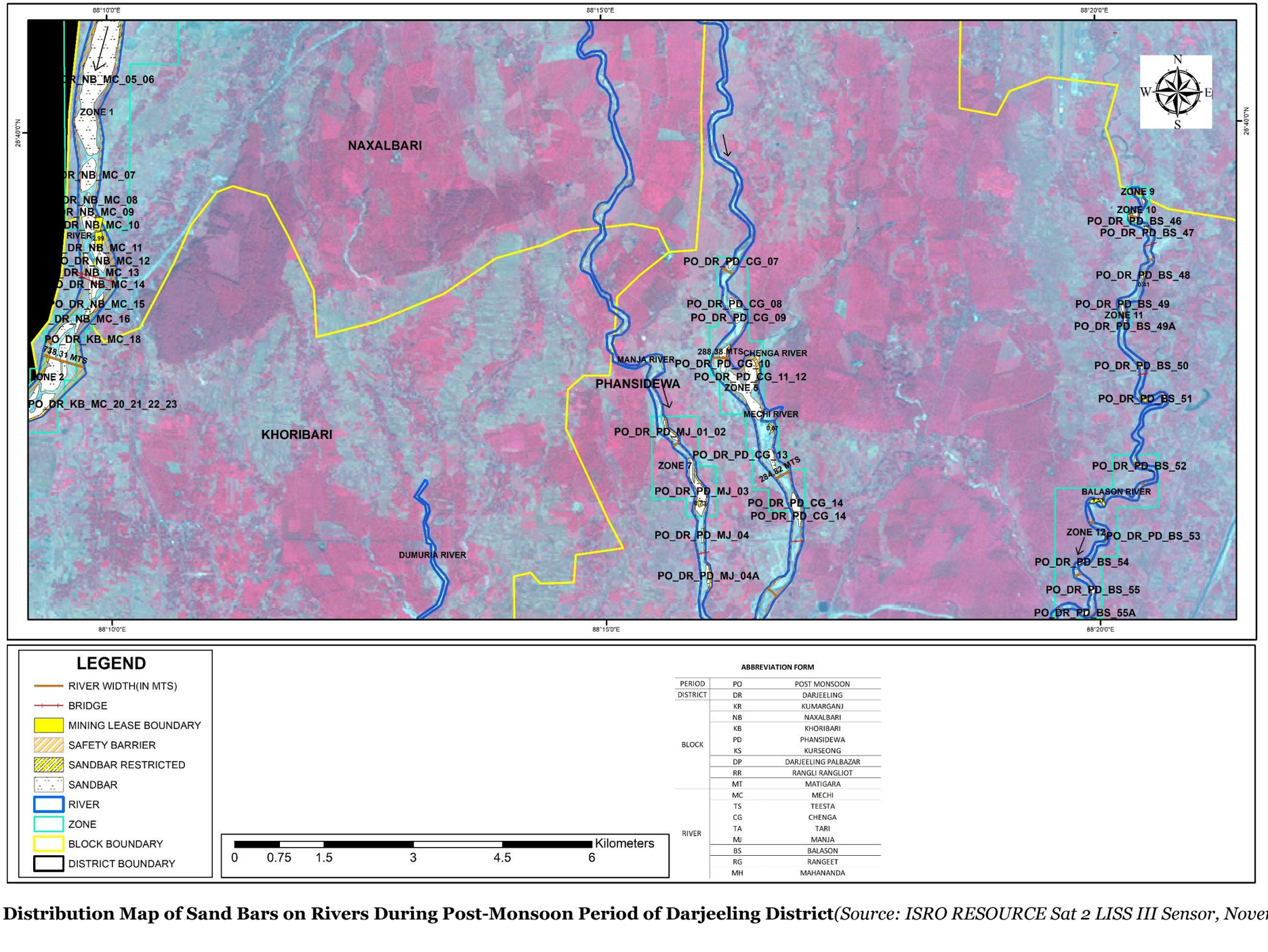


Plate 2A2: Distribution Map of Sand Bars on Rivers During Post-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, November 2020)*



LEGEND

- RIVER WIDTH(IN MTS)
- BRIDGE
- MINING LEASE BOUNDARY
- SAFETY BARRIER
- SANDBAR RESTRICTED
- SANDBAR
- RIVER
- ZONE
- BLOCK BOUNDARY
- DISTRICT BOUNDARY

0 0.75 1.5 3 4.5 6 Kilometers

ABBREVIATION FORM

PERIOD	PO	POST MONSOON
DISTRICT	DR	DARJEELING
BLOCK	KR	KUMARGANJ
	NB	NAXALBARI
	KB	KHORIBARI
	PD	PHANSIDEWA
	KS	KURSEONG
	DP	DARJEELING PALBAZAR
	RR	RANGLI RANGLIOT
	MT	MATIGARA
RIVER	MC	MECHI
	TS	TEESTA
	CG	CHENGA
	TA	TARI
	MJ	MANJA
	BS	BALASON
	RG	RANGEET
	MH	MAHANANDA

Plate 2A3: Distribution Map of Sand Bars on Rivers During Post-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, November 2020)*

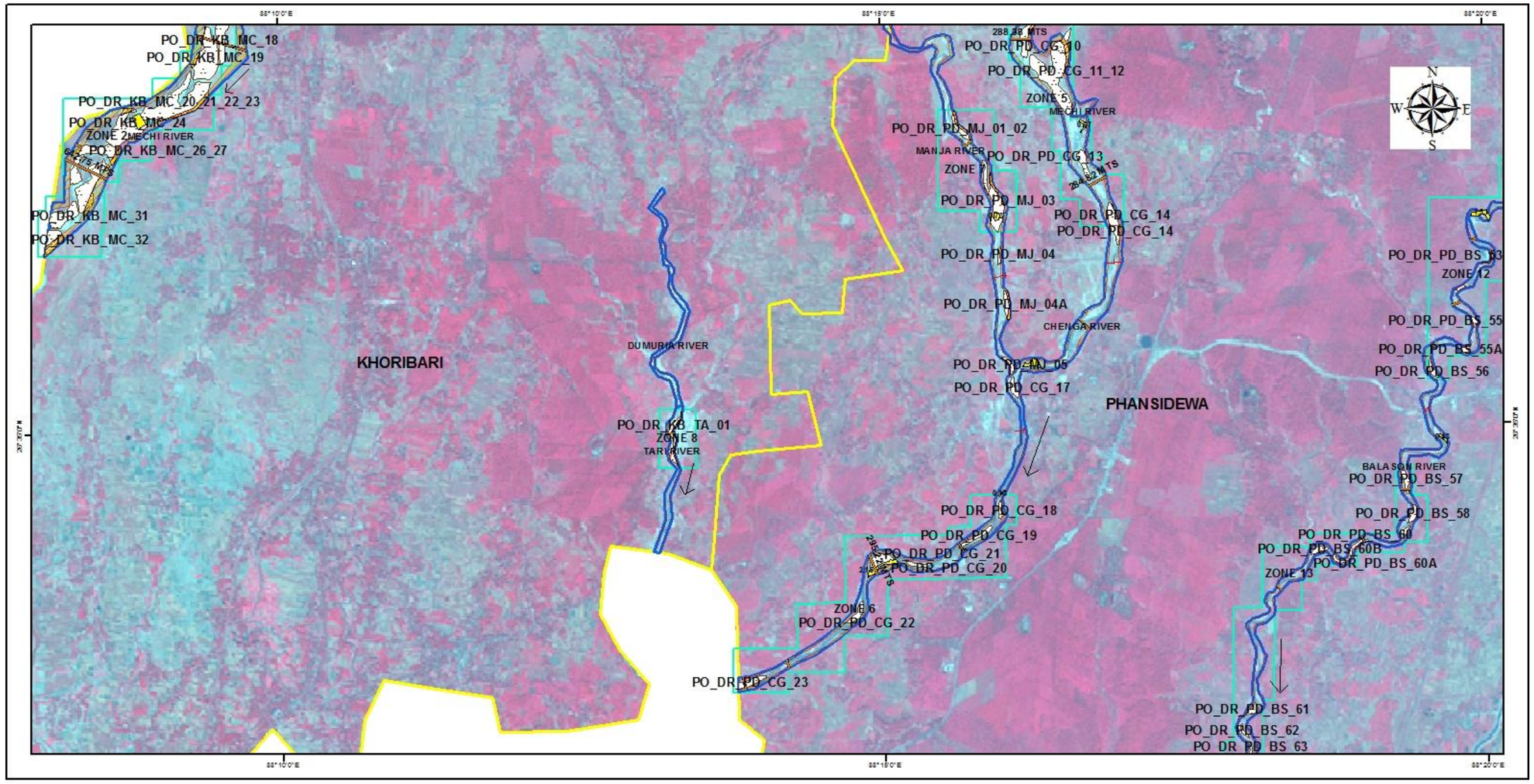


Plate 2A4: Distribution Map of Sand Bars on Rivers During Post-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, November 2020)*

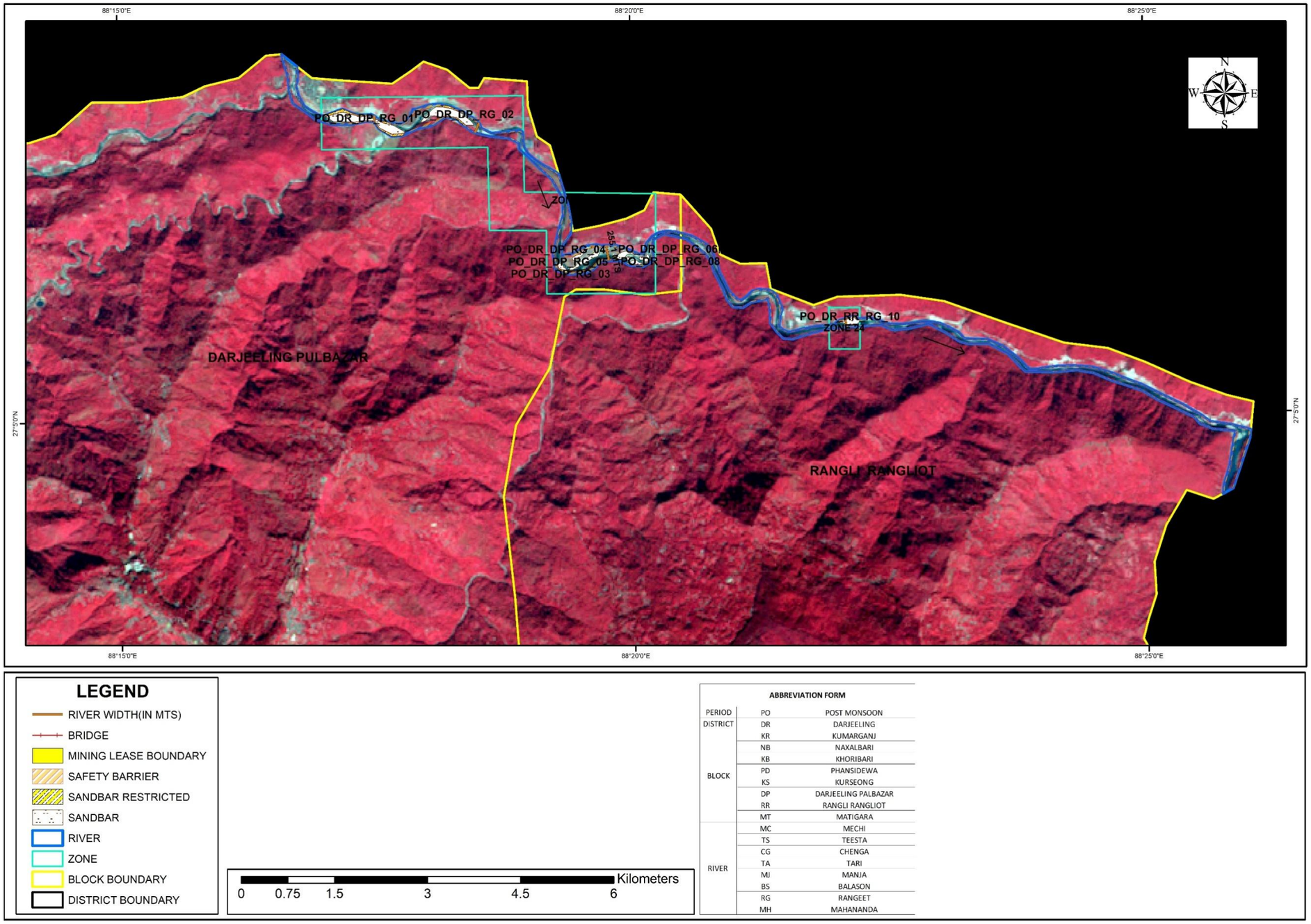


Plate 2A5: Distribution Map of Sand Bars on Rivers During Post-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, November 2020)*

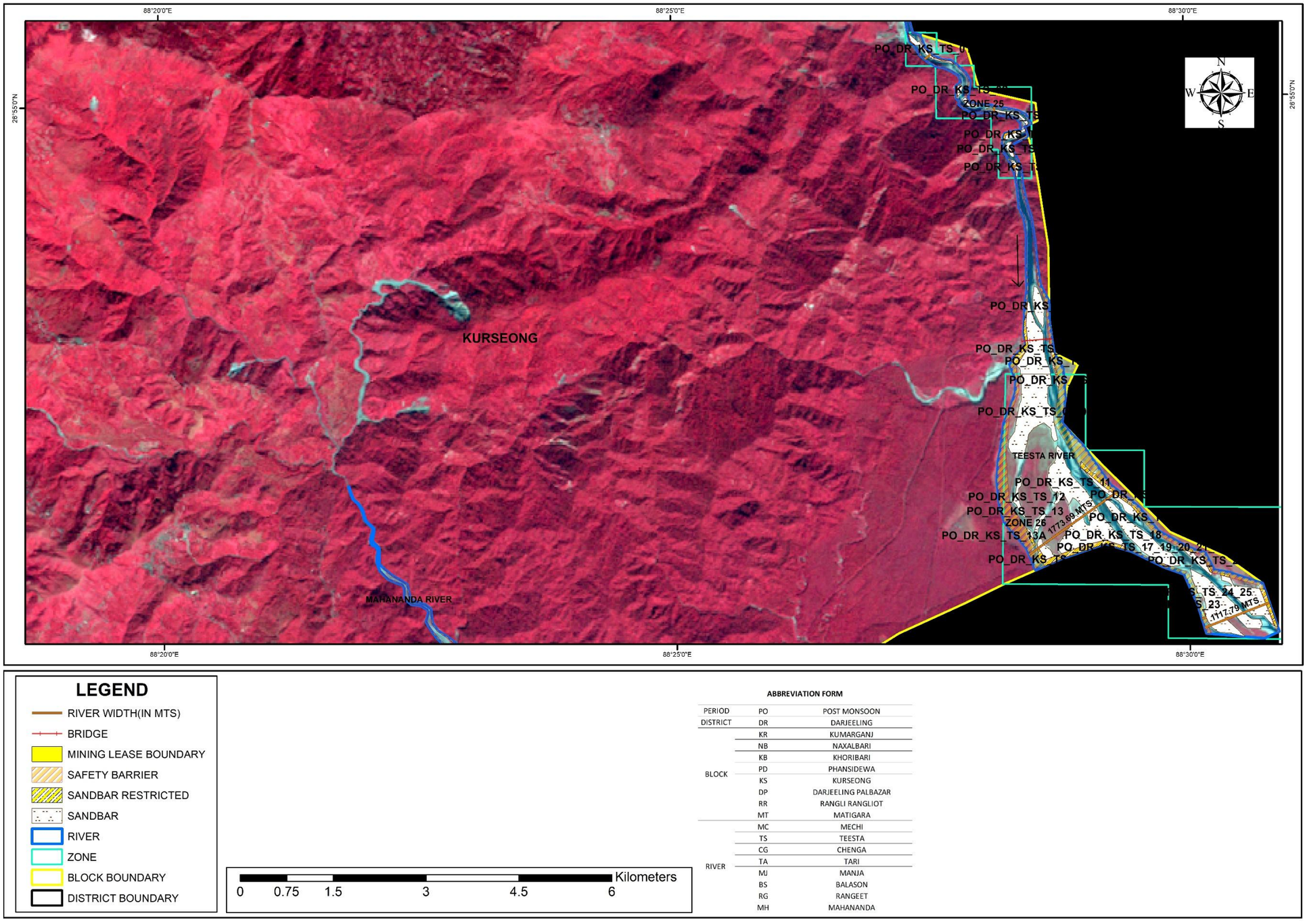
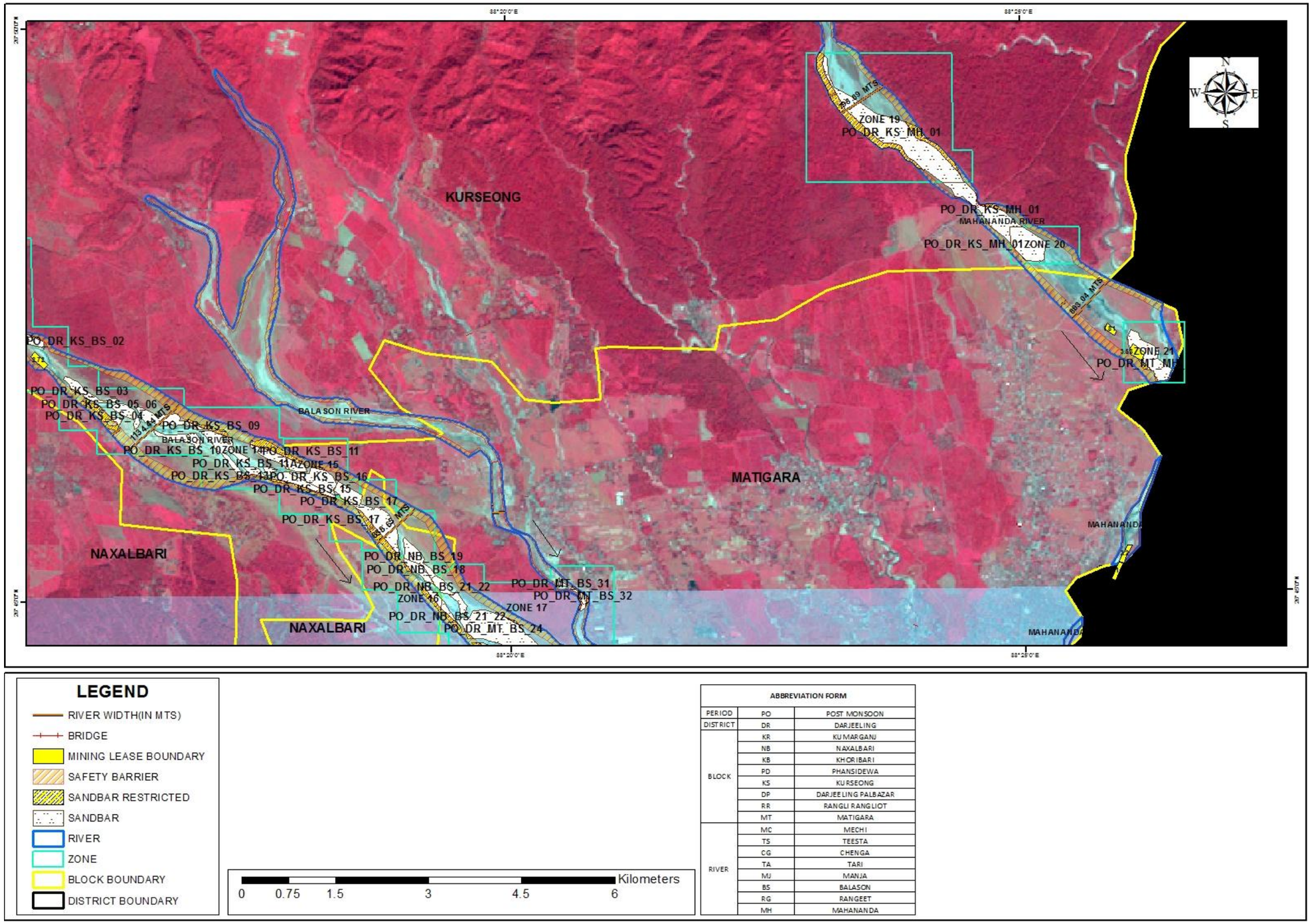


Plate 2A6: Distribution Map of Sand Bars on Rivers During Post-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, November 2020)*



LEGEND

- RIVER WIDTH(IN MTS)
- BRIDGE
- MINING LEASE BOUNDARY
- SAFETY BARRIER
- SANDBAR RESTRICTED
- SANDBAR
- RIVER
- ZONE
- BLOCK BOUNDARY
- DISTRICT BOUNDARY

0 0.75 1.5 3 4.5 6 Kilometers

ABBREVIATION FORM		
PERIOD	PO	POST MONSOON
DISTRICT	DR	DARJEELING
BLOCK	KR	KUMARGANJ
	NB	NAXALBARI
	KB	KHORIBARI
	PD	PHANSIDEWA
	KS	KURSEONG
	DP	DARJEELING PALBAZAR
	RR	RANGLI RANGLIOT
	MT	MATIGARA
RIVER	MC	MECHI
	TS	TEESTA
	CG	CHENGA
	TA	TARI
	MJ	MANJA
	BS	BALASON
	RG	RANGEET
	MH	MAHANANDA

Plate 2A7: Distribution Map of Sand Bars on Rivers During Post-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, November 2020)*

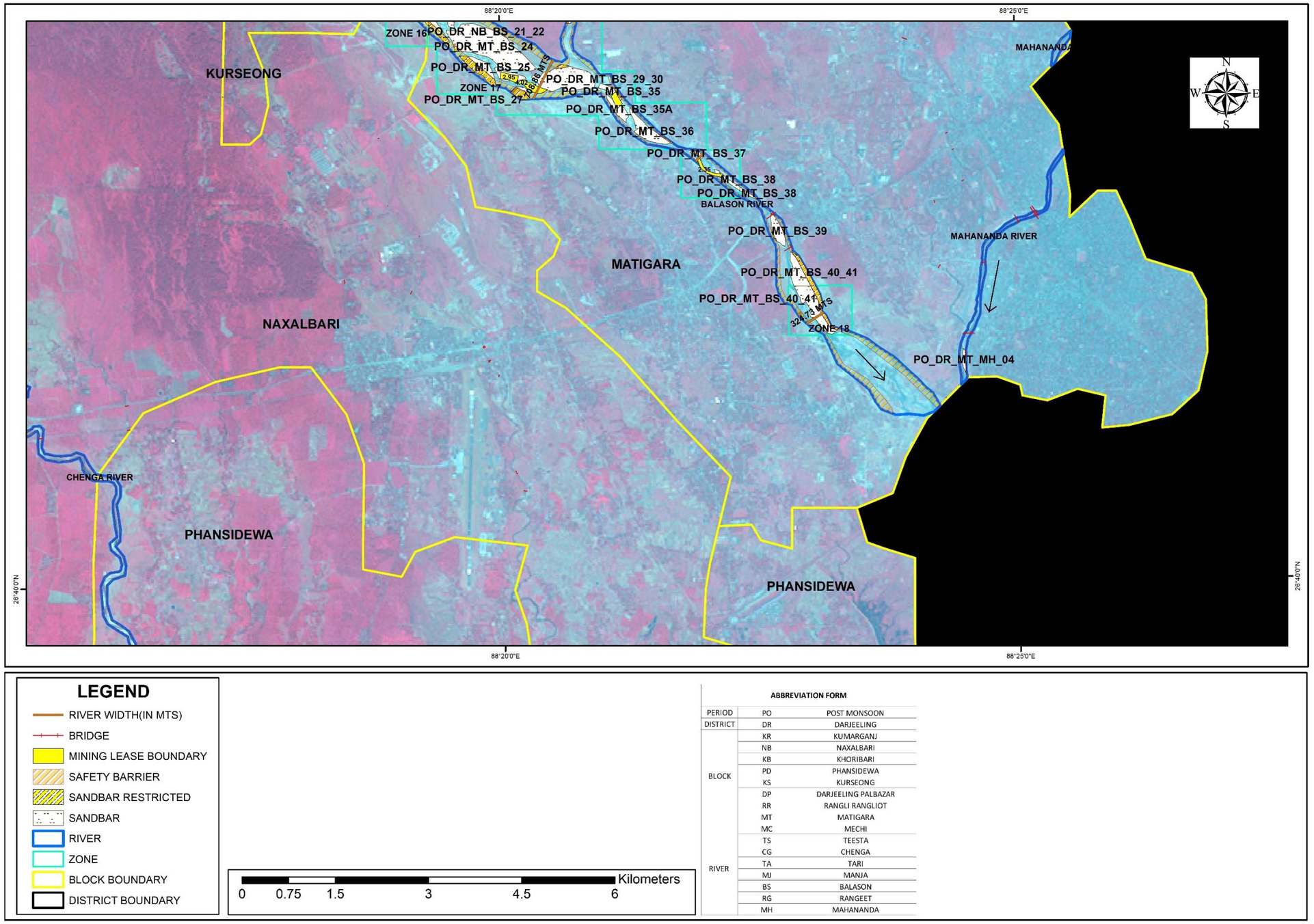


Plate 2A8: Distribution Map of Sand Bars on Rivers During Post-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, November 2020)*

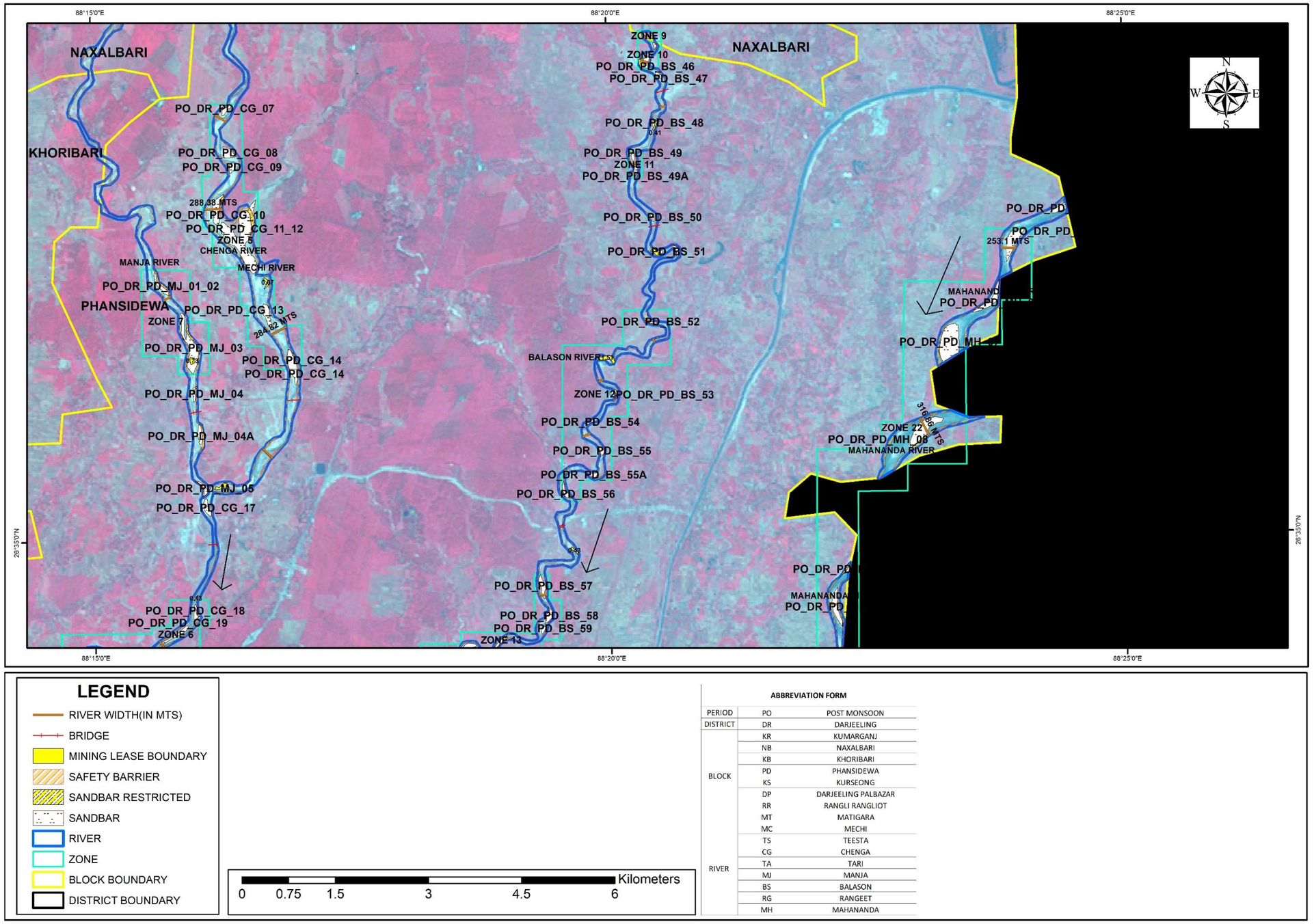
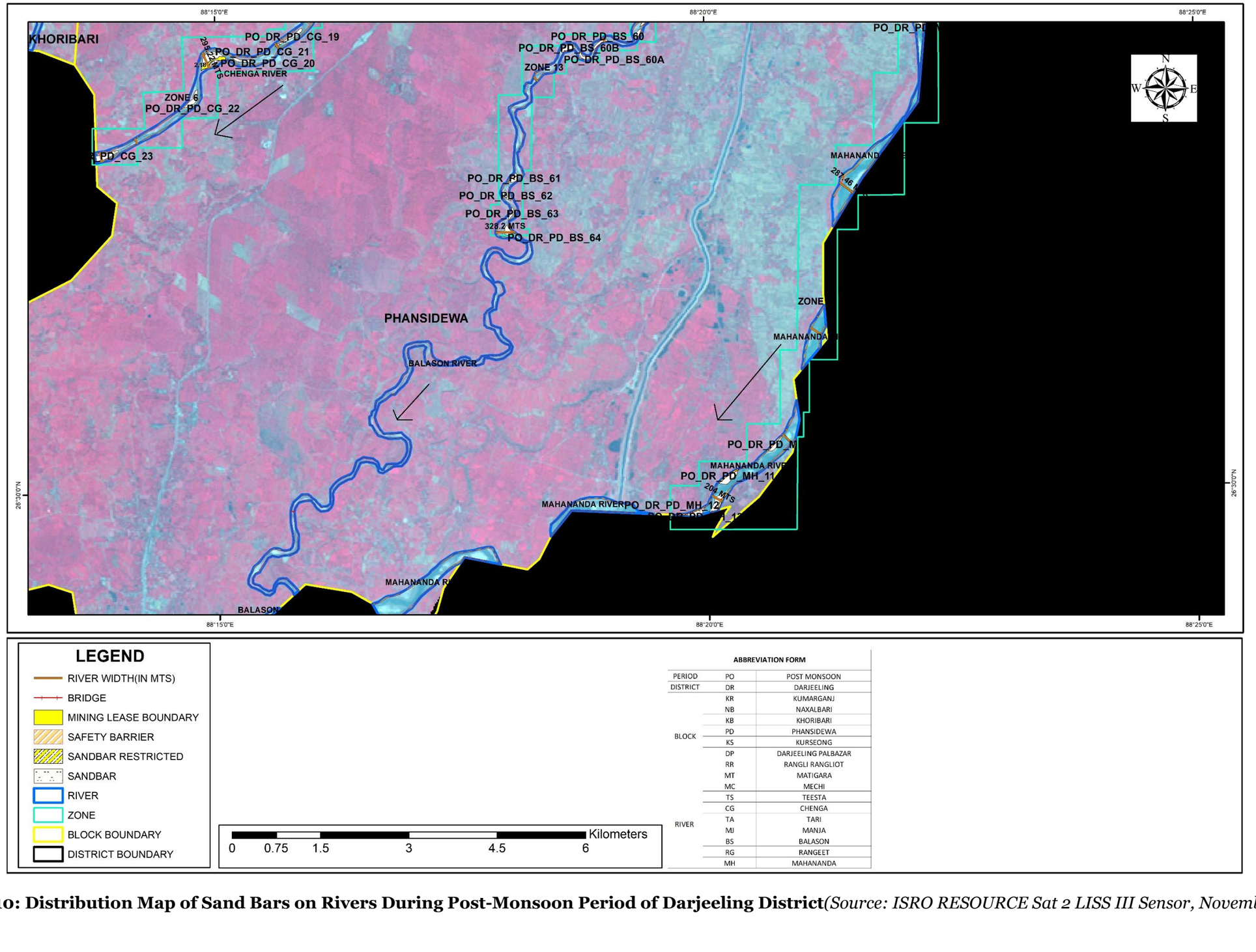


Plate 2A9: Distribution Map of Sand Bars on Rivers During Post-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, November 2020)*



LEGEND

- RIVER WIDTH(IN MTS)
- BRIDGE
- MINING LEASE BOUNDARY
- SAFETY BARRIER
- SANDBAR RESTRICTED
- SANDBAR
- RIVER
- ZONE
- BLOCK BOUNDARY
- DISTRICT BOUNDARY

0 0.75 1.5 3 4.5 6 Kilometers

ABBREVIATION FORM

PERIOD	PO	POST MONSOON
DISTRICT	DR	DARJEELING
BLOCK	KR	KUMARGANJ
	NB	NAXALBARI
	KB	KHORIBARI
	PD	PHANSIDEWA
	KS	KURSEONG
	DP	DARJEELING PALBAZAR
	RR	RANGLI RANGLIOT
	MT	MATIGARA
	MC	MECHI
RIVER	TS	TEESTA
	CG	CHENGA
	TA	TARI
	MJ	MANJA
	BS	BALASON
	RG	RANGEET
	MH	MAHANANDA

Plate 2A10: Distribution Map of Sand Bars on Rivers During Post-Monsoon Period of Darjeeling District*(Source: ISRO RESOURCE Sat 2 LISS III Sensor, November 2020)*

PLATE3

WATERSHED MAP OF THE DISTRICT

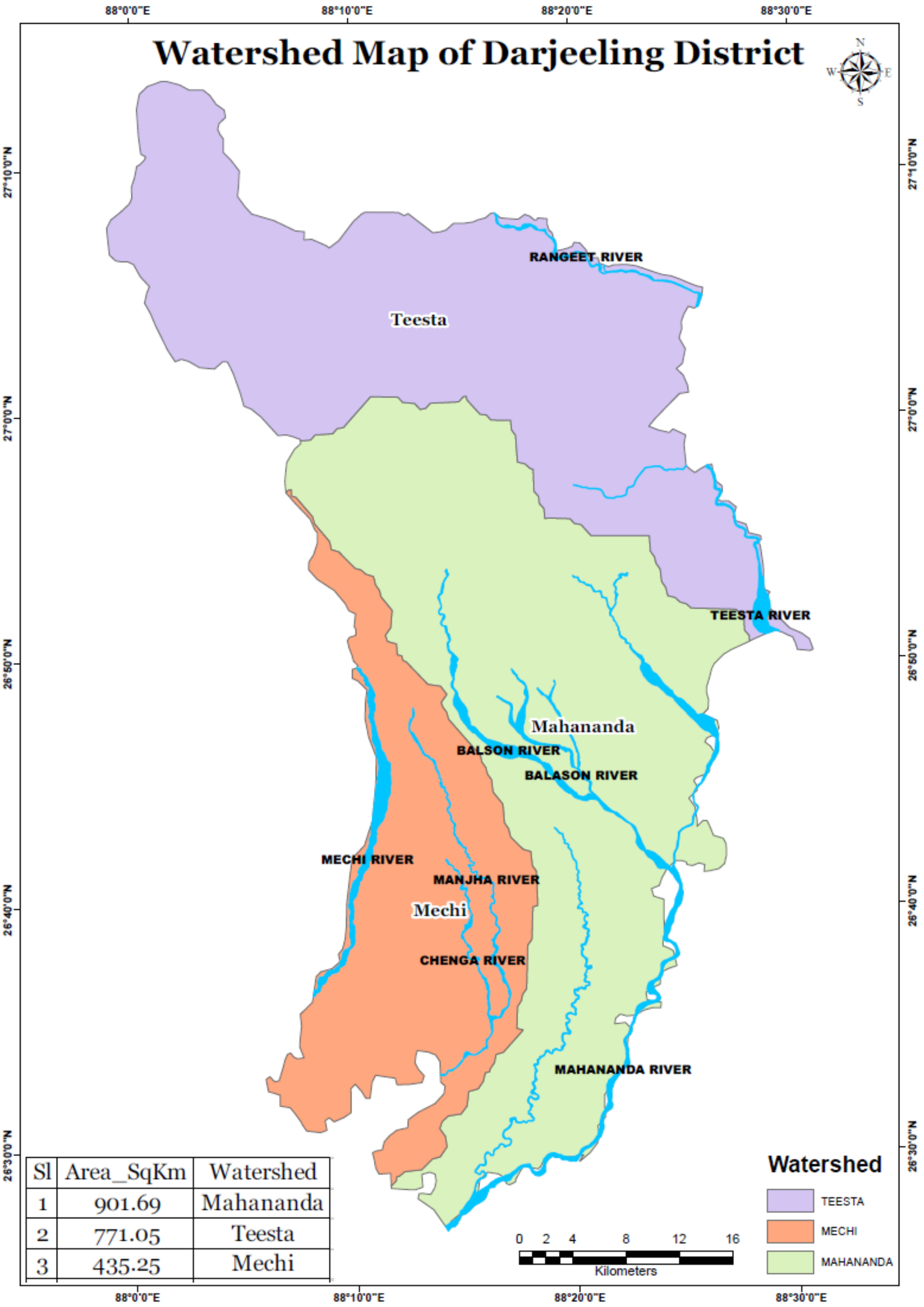


Plate 3A: watershed map of Darjeeling District*(Source: World Wild Fund for Nature, Sept 2020)*

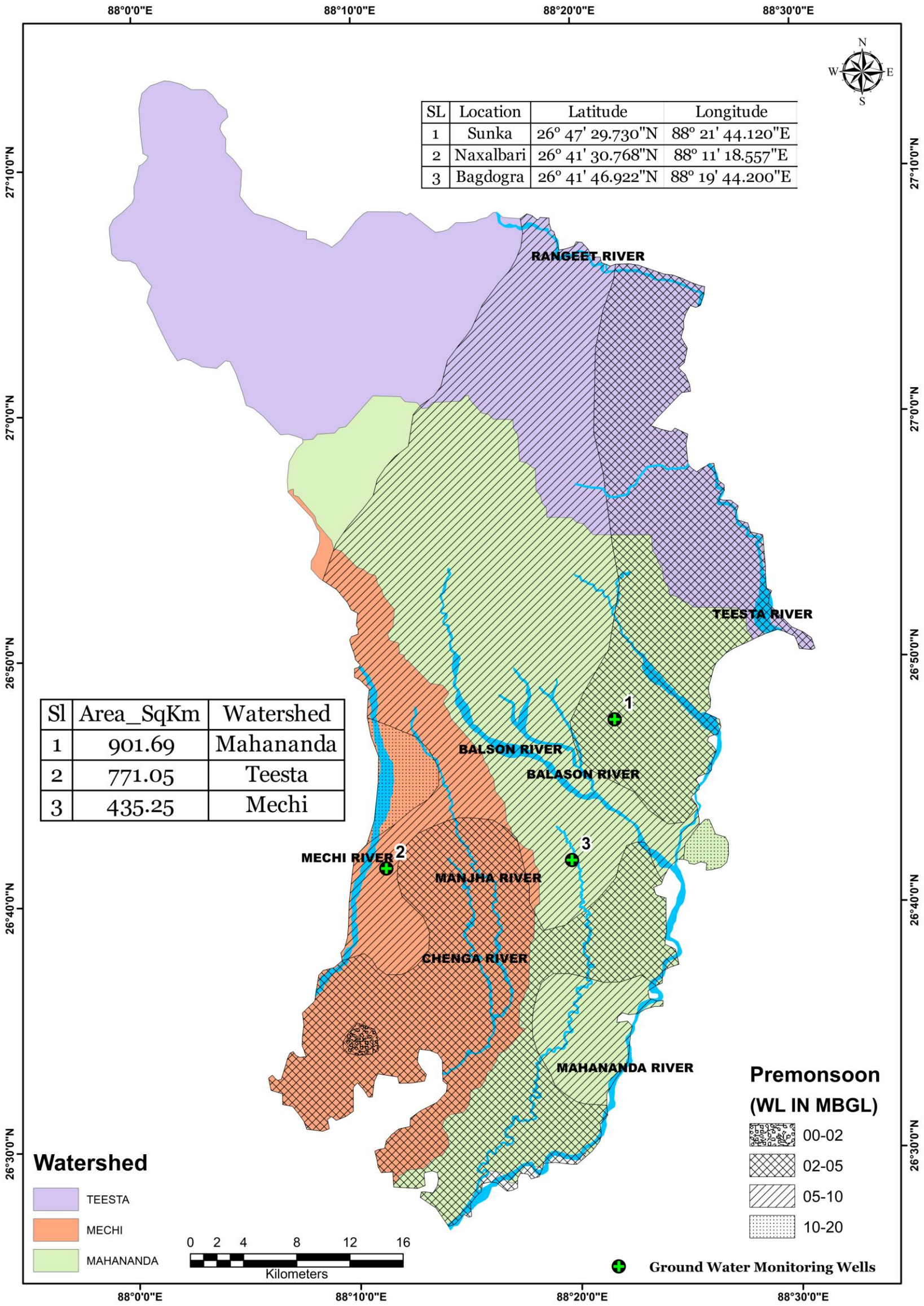


Plate 3B: District Watershed Map showing ground water level during Pre-monsoon period *(Source: World Wild Fund for Nature, Sept 2020)*

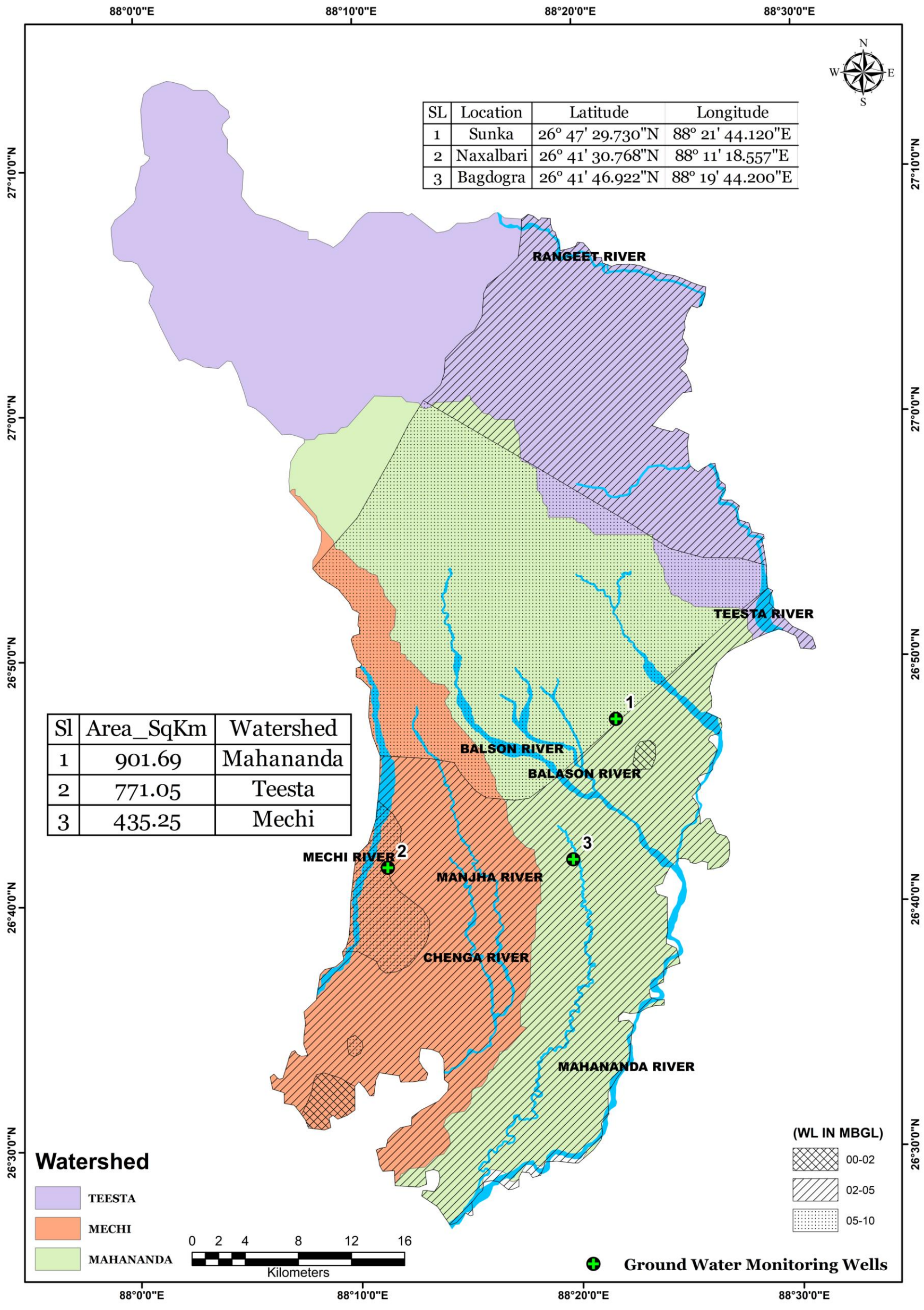


Plate 3C: District Watershed Map showing ground water level during Post-monsoon period *(Source: World Wild Fund for Nature, Sept 2020)*

PLATE 4

FIELD SURVEY PHOTOGRAPHS

4A: Picture of Teesta Riverbed deposit(Date: 12-12-20, Lat: 26° 55' 31.982" N and Long: 88° 27' 21.928" E)

4B: Picture of Teesta Riverbed deposit(Date: 12-12-20, Lat: 26° 55' 1.578" N and Long: 88° 27' 48.290" E)

4C: Picture of Balason Riverbed deposit(Date: 11-12-20, Lat: 26° 47' 22.408" N and Long: 88° 15' 11.834" E)

4D: Picture of Mahananda Riverbed deposit(Date: 10-12-20, Lat: 26° 34' 40.499" N and Long: 88° 22' 18.035" E)

PLATE 5

LONG TERM EROSION-ACCRETION MAP OF RIVER BANK

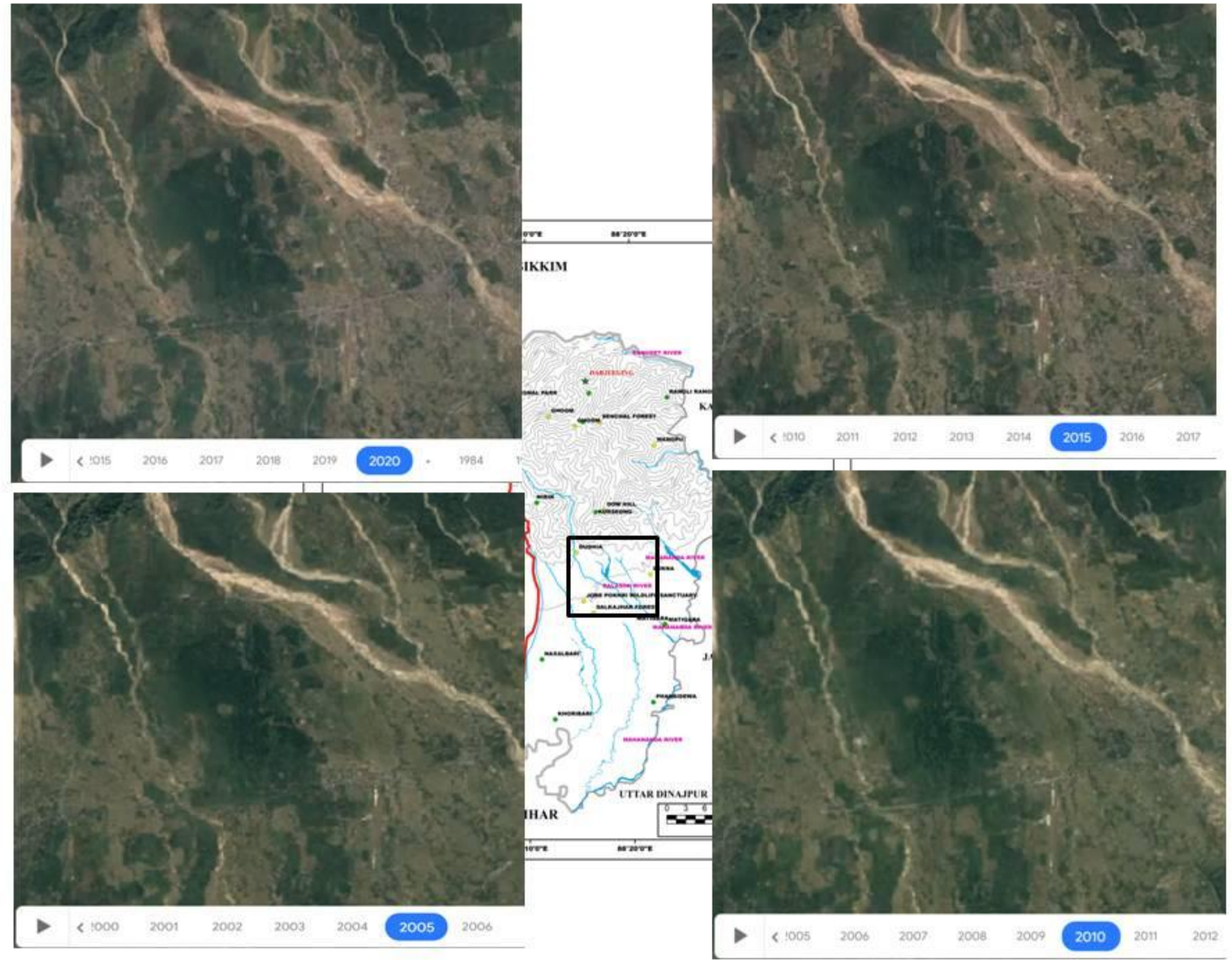


Plate 5A: Long term river course map showing very less erosion/ accretion along its banks *(Source: ISRO RESOURCE Sat 2 LISS III Sensor)*

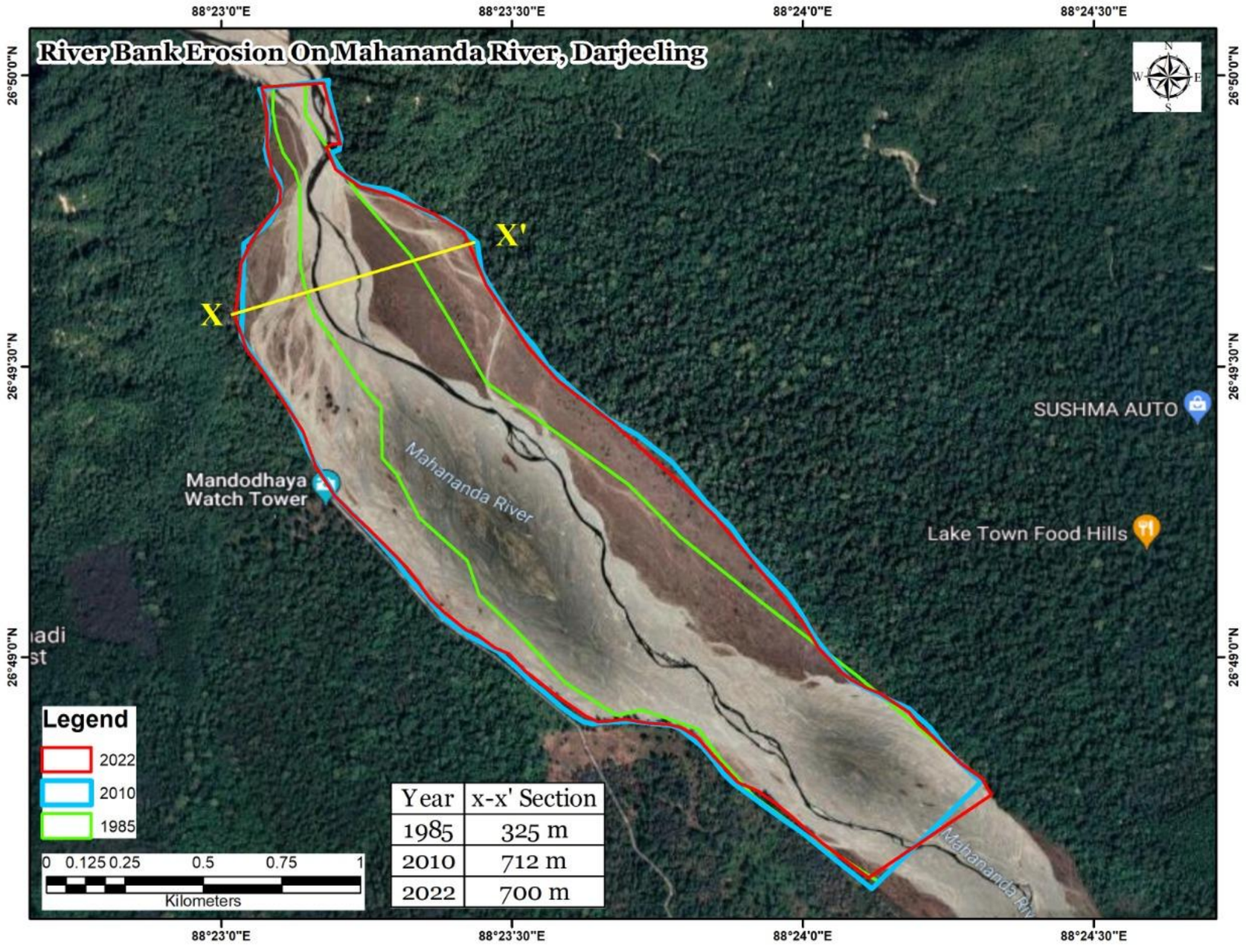


Plate 5B: Map showing long-term (10-year or more) erosion-accretion areas on both the banks of Mahananda River, Darjeeling *(Source: ISRO RESOURCE Sat 2 LISS III Sensor)*

Annexure 1
Compliance as per Enforcement & Monitoring Guidelines for sand Mining, 2020 (MoEF& CC) for preparation of District Survey Report

Sl. No.	Particulars	Status
1	District Survey Report for sand mining shall be prepared before the auction/e-auction/grant of the mining lease/Letter of Intent (LoI) by Mining department or department dealing the mining activity in respective states.	Noted.
2	In order to make the inventory of River Bed Material, a detailed survey of the district needs to be carried out, to identify the source of River Bed Material and alternative source of sand (M-Sand). The source will include rivers, de-siltation of reservoir/dams, Patta lands/Khatedari Land, M-sand etc.	Complied with and explained in Chapter 7 pg no 61 to 98.
3	District Survey Report is to be prepared in such a way that it not only identifies the mineral-bearing area but also define the mining and no mining zones considering various environmental and social factors.	Complied with and furnished in pg no 92-93.
4	Identification of the source of Sand & M-Sand. The sources may be from Rivers, Lakes, Ponds, Dams, De-silting locations, Patta land/Khtedari lands. The details in case of Rivers such as [name, length of river, type (Perennial or Non-Perennial), Villages, Tehsil, District], in case of Lakes, Ponds, Dams, De-silting locations [Name, owned/maintained by (State Govt./PSU), area, Villages, Tehsil, District] in case of Patta land/Khtedari lands [Owner Name, Sy No, Area, Agricultural/Non-Agricultural, Villages, Tehsil, District], in case of M-Sand Plant [Owner Name, Sy No, Area, Quantity/Annum, Villages, Tehsil, District], needs to be recorded.	Complied with and given in table 7.3 pg 72-79.
5	Defining the sources of Sand/M-Sand in the district is the next step for identification of the potential area of deposition/aggradation wherein mining lease could be granted. Detailed survey needs to be carried out for quantification of minerals. The purpose of mining in the river bed is for channelization of rivers so as to avoid the possibility of flooding and to maintain the flow of the rivers. For this, the entire river stretch needs to be surveyed and original ground level (OGL) to be recorded and area of aggradation/deposition needs to be ascertained by comparing the level difference between the outside riverbed OGL and water level. Once the area of aggradation/deposition is identified, then the quantity of River Bed Material available needs to be calculated. The next step is channelization of the river bed and for this central ¾th part of the river, width needs to be identified on a map. Out of the ¾th part area, where there is a deposition/aggradation of the material needs to be identified. The remaining ¼th area needs to be kept as no mining zone for the protection of banks. The specific gravity of the material also needs to be ascertained by analyzing the sample from a NABL accredited lab. Thus, the quantity of material available in metric ton needs to be calculated for mining and no mining zone.	Complied with and given in table 7.11 pg 92 to 93.

Sl. No.	Particulars	Status
6	The permanent boundary pillars need to be erected after identification of an area of aggradation and deposition outside the bank of the river at a safe location for future surveying. The distance between boundary pillars on each side of the bank shall not be more than 100 meters.	Benchmark Pillars are established in strategic locations while boundary pillars will be fixed while fixation of the mining lease boundary subsequent to district level verification.
7	Identifying the mining and no mining zone shall follow with defining the area of sensitivity by ascertaining the distance of the mining area from the protected area, forest, bridges, important structures, habitation etc. and based on the sensitivity the area needs to be defined in sensitive and non-sensitive area.	Complied with and furnished in pg no 93 to 96.
8	Demand and supply of the Riverbed Material through market survey needs to be carried out. In addition to this future demand for the next 5 years also needs to be considered.	Complied with and given in pg no 8.
9	It is suggested that as far as possible the sensitive areas should be avoided for mining, unless local safety condition arises. Such deviation shall be temporary & shall not be a permanent feature.	Complied with and furnished in pg no 93 to 96.
10	Sand and gravel could be extracted from the downstream of the sand bar at river bends. Retaining the upstream one to two-thirds of the bar and riparian vegetation is accepted as a method to promote channel stability.	Noted. The DSR is compose of all the potential sand zones for defining the resources. In a subsequent phase blocking of potential zones shall be done in due consultation with the district level committee. The areas mentioned in the observation points shall be excluded while blocking of sand mining leases which are part of these potential zones marked in this DSR.
11	The final area selected for the mining should be then divided into mining lease as per the requirement of State Government. It is suggested the mining lease area should be so selected as to cover the entire deposition area. Dividing a large area of deposition/aggradation into smaller mining leases should be avoided as it leads to loss of mineral and indirectly promote illegal mining.	Shall be Complied with.
12	Cluster situation shall be examined. A cluster is formed when one mining lease of homogenous mineral is within 500 meters of the other mining lease. In order to reduce the cluster formation mining lease size should be defined in such a way that distance between any two clusters preferably should not be less than 2.5 Km. Mining lease should be defined in such a way that the total area of the mining leases in a cluster should not be more than 10 Ha.	Noted. Due care will be taken while distribution of mining leases either to prevent cluster situation or keeping the prescribed distance in between two mining clusters.
13	The number of a contiguous cluster needs to be ascertained. Contiguous cluster is formed when one cluster is at a distance of 2.5 Km from the other cluster.	Noted and shall be complied with.

Sl. No.	Particulars	Status
14	The mining outside the riverbed on Patta land/Khatedari land be granted when there is possibility of replenishment of material. In case, there is no replenishment then mining lease shall only be granted when there is no riverbed mining possibility within 5 KM of the Patta land/Khatedari land. For government projects, mining could be allowed on Patta land/Khatedari land but the mining should only be done by the Government agency and material should not be used for sale in the open market. Cluster situation as mentioned in para k above is also applicable for the mining in Patta land/Khatedari land.	Noted.
15	The State Government should define the transportation route from the mining lease considering the maximum production from the mines as at this stage the size of mining leases, their location, the quantity of mineral that can be mined safely etc. is available with the State Government. It is suggested that the transportation route should be selected in such a way that the movement of trucks/tippers/tractors from the villages having habitation should be avoided. The transportation route so selected should be verified by the State Government for its carrying capacity.	Noted and final transport route will be submitted during preparation of mine plan.
16	Potential site for mining having its impact on the forest, protected area, habitation, bridges etc, shall be avoided. For this, a sub-divisional committee may be formed which after the site visit shall decide its suitability for mining.	Shall be Complied with.
17	Public consultation-The Comments of the various stakeholders may be sought on the list of mining lease to be auctioned. The State Government shall give an advertisement in the local and national newspaper for seeking comments of the general public on the list of mining lease included in the DSR. The DSR should be placed in the public domain for at least one month from the date of publication of the advertisement for obtaining comments of the general public. The comments so received shall be placed before the sub-divisional committee for active consideration. The final list of sand mining areas [leases to be granted on riverbed &Patta land/Khatedari land, de-siltation location (ponds/lakes/dams), M-Sand Plants (alternate source of sand)] after the public hearing needs to be defined in the final DSR.	After publication of the West Bengal Sand Mining Policy, 2021, it is now eminent that State owned The West Bengal Mineral Development and Trading Corporation Limited (WBMDTCL) shall be responsible for mining of sand/ gravel/ river bed materials in whole state of West Bengal. However, the existing mining leases which were in effect before hand of this Gazzate notification July 2021 will be in operation till the year 2027-28. In order to have the rational distribution of mining leases as per the prevailing norms and guidelines grant of mining leases in the state of West Bengal shall be carried out in phases till all the blocks are under the ambit of WBMDTCL. This DSR thus consist of the identified potential sand deposite areas within which the existing and future mining leases shall occur. The details of the mining leases as and when granted shall follow the procedure described in EMGSM 2020 and prevailing norms.
18	The LOI should not be granted for mining area falling on both riverbed and outside riverbed. Therefore, in the same lease, both types of area should not be included.	Shall be Complied with.

Annexure 2
Estimation of Sand Resources based on sediment load comparison between Pre and Post Monsoon period of Darjeeling District

ABBREVIATION FORM					
DISTRICT	DR	DARJEELING			
PERIOD	PO	POST MONSOON	PERIOD	PR	PRE MONSOON
BLOCK	MR	MIRIK	RIVER	MC	MECHI
	NB	NAXALBARI		TS	TEESTA
	KB	KHORIBARI		CG	CHENGA
	PD	PHANSIDEWA		TA	TARI
	KS	KURSEONG		MJ	MANJA
	DP	DARJEELING PALBAZAR		BS	BALASON
	RR	RANGLIRANGLIOT		RG	RANGEET
	MT	MATIGARA		MH	MAHANANDA

Pre monsoon						**Post monsoon**					
SL No	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**	**SL No**	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**
Estimation of Sand Resources in Pre monsoon period and Post monsoon period in sand bar regions of Mechi River											
1	PR_DR_MR_MC_01	350.00	386140.1387	2.00	0.77	1	PO_DR_MR_MC_01	350	374956.9415	2.00	0.75
2	PR_DR_MR_MC_02	280.00	1501995.484	2.00	3.00	2	PO_DR_MR_MC_02	280	1795652.821	2.00	3.59
3	PR_DR_NB_MC_03	201.00	5691296.847	2.00	11.38	3	PO_DR_NB_MC_03	201	6279377.47	2.00	12.56
4	PR_DR_NB_MC_04	155.00	934161.7372	2.00	1.87	4	PO_DR_NB_MC_04	155	986233.0705	2.00	1.97
5	PR_DR_NB_MC_05	141.00	665677.8321	2.00	1.33	5	PO_DR_NB_MC_05/06	141	938723.5328	2.00	1.88
6	PR_DR_NB_MC_06	0.00	186971.6953	2.00	0.37					2.00	0.00
7	PR_DR_NB_MC_07	135.00	121177.0302	2.00	0.24	6	PO_DR_NB_MC_07	135	121177.0302	2.00	0.24
8	PR_DR_NB_MC_08	129.00	12604.33188	2.00	0.03	7	PO_DR_NB_MC_08	129	12604.33188	2.00	0.03
9	PR_DR_NB_MC_09	128.00	17067.21784	2.00	0.03	8	PO_DR_NB_MC_09	128	29393.50138	2.00	0.06
10	PR_DR_NB_MC_10	128.00	22705.90718	2.00	0.05	9	PO_DR_NB_MC_10	128	73433.45369	2.00	0.15
11	PR_DR_NB_MC_11	126.00	25493.57395	2.00	0.05	10	PO_DR_NB_MC_11	126	38125.45158	2.00	0.08
12	PR_DR_NB_MC_12	125.00	48112.47387	2.00	0.10	11	PO_DR_NB_MC_12	125	46132.81913	2.00	0.09
13	PR_DR_NB_MC_13	124.00	7984.026945	2.00	0.02	12	PO_DR_NB_MC_13	124	57658.12334	2.00	0.12
14	PR_DR_NB_MC_14	124.00	11592.76512	2.00	0.02	13	PO_DR_NB_MC_14	124	48258.72629	2.00	0.10
15	PR_DR_NB_MC_15	122.00	5883.888336	2.00	0.01	14	PO_DR_NB_MC_15	122	34465.42943	2.00	0.07

Pre monsoon						Post monsoon					
S L No	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**	**S L No**	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**
16	PR_DR_KB_MC_16	121.00	21449.85319	2.00	0.04	15	PO_DR_NB_MC_16	121	32174.41896	2.00	0.06
17	PR_DR_KB_MC_17	118.00	33721.2256	2.00	0.07	16	PO_DR_KB_MC_17	118	53582.35639	2.00	0.11
18	PR_DR_KB_MC_18	118.00	74159.39451	2.00	0.15	17	PO_DR_KB_MC_18	118	84331.60207	2.00	0.17
19	PR_DR_KB_MC_19	116.00	151675.5106	2.00	0.30	18	PO_DR_KB_MC_19	116	171608.0484	2.00	0.34
20	PR_DR_KB_MC_20	114.00	6006.396421	2.00	0.01	19	PO_DR_KB_MC_20_21_22_23	114	253442.076	2.00	0.51
21	PR_DR_KB_MC_21		107187.5744	2.00	0.21					2.00	0.00
22	PR_DR_KB_MC_22		15381.56424	2.00	0.03					2.00	0.00
23	PR_DR_KB_MC_23		6909.456023	2.00	0.01					2.00	0.00
24	PR_DR_KB_MC_24	110.00	50612.50042	2.00	0.10	20	PO_DR_KB_MC_24	110	136930.1583	2.00	0.27
25	PR_DR_KB_MC_25	109.00	5197.843057	2.00	0.01		PO_DR_KB_MC_25		0	2.00	0.00
26	PR_DR_KB_MC_26	109.00	51061.37004	2.00	0.10	21	PO_DR_KB_MC_26_27	109	76167.038425	2.00	0.15
27	PR_DR_KB_MC_27		13521.39241	2.00	0.03					2.00	0.00
28	PR_DR_KB_MC_28	107.00	40091.64604	2.00	0.08	22	PO_DR_KB_MC_28	107	40807.15973	2.00	0.08
29	PR_DR_KB_MC_29	106.00	20073.82487	2.00	0.04	23	PO_DR_KB_MC_29_30	106	130865.3075	2.00	0.26
30	PR_DR_KB_MC_30		68856.54452	2.00	0.14					2.00	0.00
31	PR_DR_KB_MC_31	104.00	62257.11784	2.00	0.12	24	PO_DR_KB_MC_31	104	73873.21073	2.00	0.15
	PR_DR_KB_MC_32		0	2.00	0.00	25	PO_DR_KB_MC_32	104	46922.08166	2.00	0.09
Estimation of Sand Resources in Pre monsoon period and Post monsoon period in sand bar regions of Chenga River											
1	PR_DR_MR_CG_01	235.80	149016.8751	2.00	0.30	1	PO_DR_MR_CG_01	236	149016.8751	2.20	0.33
2	PR_DR_MR_CG_02	219.80	11272.42398	2.00	0.02	2	PO_DR_MR_CG_02	220	11272.42398	2.20	0.02
3	PR_DR_MR_CG_03	212.80	18835.62187	2.00	0.04	3	PO_DR_MR_CG_03	213	45826.30901	2.20	0.10
4	PR_DR_MR_CG_04	206.80	17645.18586	2.00	0.04	4	PO_DR_MR_CG_04	207	17457.28248	2.20	0.04
5	PR_DR_NB_CG_05	201.80	20810.97352	2.00	0.04	5	PO_DR_NB_CG_05	202	39673.28957	2.20	0.09
6	PR_DR_NB_CG_06	184.80	27961.52546	2.00	0.06	6	PO_DR_NB_CG_06	185	27961.52546	2.20	0.06
7	PR_DR_PD_CG_07	125.80	17593.9112	2.00	0.04	7	PO_DR_PD_CG_07	126	17593.9112	2.20	0.04
8	PR_DR_PD_CG_08	115.80	38929.13182	2.00	0.08	8	PO_DR_PD_CG_08	116	24929.2005	2.20	0.05

Pre monsoon						Post monsoon					
S L No	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**	**S L No**	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**
9	PR_DR_PD_CG_09	113.80	23519.87231	2.00	0.05	9	PO_DR_PD_CG_09	114	13585.44219	2.20	0.03
10	PR_DR_PD_CG_10	108.80	39130.90264	2.00	0.08	10	PO_DR_PD_CG_10	109	49704.60976	2.20	0.11
11	PR_DR_PD_CG_11	102.80	146754.979	2.00	0.29	11	PO_DR_PD_CG_11_12	103	249283.8867	2.20	0.55
12	PR_DR_PD_CG_12		27974.3195	2.00	0.06					2.20	0.00
13	PR_DR_PD_CG_13	97.80	174584.4266	2.00	0.35	12	PO_DR_PD_CG_13	98	34372.027	2.20	0.08
14	PR_DR_PD_CG_14	95.80	52266.93401	2.00	0.10	13	PO_DR_PD_CG_14	96	55340.04873	2.20	0.12
15	PR_DR_PD_CG_15	94	15243.50607	2.00	0.03		PO_DR_PD_CG_15		0	2.20	0.00
16	PR_DR_PD_CG_16	93	41877.62784	2.00	0.08		PO_DR_PD_CG_16		0	2.20	0.00
17	PR_DR_PD_CG_17	89.80	17539.43885	2.00	0.04	14	PO_DR_PD_CG_17	90	17539.43885	2.20	0.04
18	PR_DR_PD_CG_18	87.80	10353.02705	2.00	0.02	15	PO_DR_PD_CG_18	88	10353.02705	2.20	0.02
19	PR_DR_PD_CG_19	87.80	19464.56591	2.00	0.04	16	PO_DR_PD_CG_19	88	19464.56591	2.20	0.04
20	PR_DR_PD_CG_20	86.80	13820.4434	2.00	0.03	17	PO_DR_PD_CG_20	87	13820.4434	2.20	0.03
21	PR_DR_PD_CG_21	85.80	69773.2671	2.00	0.14	18	PO_DR_PD_CG_21	86	57007.45881	2.20	0.13
22	PR_DR_PD_CG_22	85.80	24178.93956	2.00	0.05	19	PO_DR_PD_CG_22	86	24178.93956	2.20	0.05
23	PR_DR_PD_CG_23	84.80	8332.067015	2.00	0.02	20	PO_DR_PD_CG_23	85	28338.45711	2.20	0.06
Estimation of Sand Resources in Pre monsoon period and Post monsoon period in sand bar regions of Manja River											
1	PR_DR_PD_MJ_01	109.00	6982.540847	1.50	0.01	1	PO_DR_PD_MJ_01_02	109	29682.99647	1.50	0.04
2	PR_DR_PD_MJ_02		8741.82696	1.50	0.01						
3	PR_DR_PD_MJ_03	103.00	119415.7963	1.50	0.18	2	PO_DR_PD_MJ_03	103	110117.0527	1.50	0.17
4	PR_DR_PD_MJ_04	99.00	10427.18819	1.50	0.02	3	PO_DR_PD_MJ_04	99	8197.118949	1.50	0.01
	PR_DR_PD_MJ_04A		0	1.50	0.00	4	PO_DR_PD_MJ_04A	97	31254.30521	1.50	0.05
5	PR_DR_PD_MJ_05	91.00	13696.40396	1.50	0.02	5	PO_DR_PD_MJ_05	91	13696.40396	1.50	0.02
Estimation of Sand Resources in Pre monsoon period and Post monsoon period in sand bar regions of Tari River											
1	PR_DR_KB_TA_01	92.00	42360.42288	1.00	0.04	1	PO_DR_KB_TA_01	92	41470.00566	1.00	0.04
Estimation of Sand Resources in Pre monsoon period and Post monsoon period in sand bar regions of Balason River											
1	PR_DR_KS_BS_01	241.90	587841.9225	2.90	1.70	1	PO_DR_KS_BS_01	242	532484.3762	3.00	1.60
2	PR_DR_KS_BS_02	228.90	38826.31253	2.90	0.11	2	PO_DR_KS_BS_02	229	38826.31253	3.00	0.12

Pre monsoon						Post monsoon					
S L No	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**	**S L No**	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**
3	PR_DR_KS_BS_03	212.90	85031.9871	2.90	0.25	3	PO_DR_KS_BS_03	213	85031.9871	3.00	0.26
4	PR_DR_KS_BS_04	212.90	78793.70037	2.90	0.23	4	PO_DR_KS_BS_04	213	78793.70037	3.00	0.24
5	PR_DR_KS_BS_05	203.90	13960.32138	2.90	0.04	5	PO_DR_KS_BS_05_06	204	72137.56893	3.00	0.22
6	PR_DR_KS_BS_06		33380.44311	2.90	0.10					3.00	0.00
7	PR_DR_KS_BS_07	198.00	13426.66741	2.90	0.04	6	PO_DR_KS_BS_07		0	3.00	0.00
8	PR_DR_KS_BS_08	194.90	134824.3046	2.90	0.39	7	PO_DR_KS_BS_08	195	78826.83453	3.00	0.24
9	PR_DR_KS_BS_09	194.90	120096.2076	2.90	0.35	8	PO_DR_KS_BS_09	195	151868.449	3.00	0.46
10	PR_DR_KS_BS_10	189.90	166185.4849	2.90	0.48	9	PO_DR_KS_BS_10	190	177682.3498	3.00	0.53
11	PR_DR_KS_BS_11	182.90	25418.67763	2.90	0.07	10	PO_DR_KS_BS_11	183	134311.0883	3.00	0.40
12	PR_DR_KS_BS_11A		0	2.90	0.00	11	PO_DR_KS_BS_11A	182	59481.29561	3.00	0.18
13	PR_DR_KS_BS_12	182.00	8330.549815	2.90	0.02	12	PO_DR_KS_BS_12		0	3.00	0.00
14	PR_DR_KS_BS_13	181.90	35296.32955	2.90	0.10	13	PO_DR_KS_BS_13	182	35296.32955	3.00	0.11
15	PR_DR_KS_BS_14	181.90	17759.61213	2.90	0.05	14	PO_DR_KS_BS_14	182	17759.61213	3.00	0.05
16	PR_DR_KS_BS_15	176.90	131734.3963	2.90	0.38	15	PO_DR_KS_BS_15	177	131750.3718	3.00	0.40
17	PR_DR_KS_BS_16	174.90	104011.6317	2.90	0.30	16	PO_DR_KS_BS_16	175	52683.764396	3.00	0.46
18	PR_DR_KS_BS_17	165.90	244715.1847	2.90	0.71	17	PO_DR_KS_BS_17	166	89386.198905	3.00	0.27
19	PR_DR_NB_BS_18	158.90	113335.9098	2.90	0.33	18	PO_DR_NB_BS_18	159	72900.28369	3.00	0.22
20	PR_DR_NB_BS_19	156.90	49908.57086	2.90	0.14	19	PO_DR_NB_BS_19	157	98704.0894	3.00	0.30
21	PR_DR_NB_BS_20	154.90	37630.2674	2.90	0.11	20	PO_DR_NB_BS_20	155	48716.17657	3.00	0.15
22	PR_DR_NB_BS_21	152.90	39633.16304	2.90	0.11	21	PO_DR_NB_BS_21_22	153	115309.2928	3.00	0.35
23	PR_DR_NB_BS_22		49122.03895	2.90	0.14					3.00	0.00
24	PR_DR_MT_BS_23	151.90	41838.69885	2.90	0.12	22	PO_DR_NB_BS_23	152	38799.61021	3.00	0.12
25	PR_DR_MT_BS_24	146.90	508170.0666	2.90	1.47	23	PO_DR_MT_BS_24	147	541482.9003	3.00	1.62
26	PR_DR_MT_BS_25	143.90	24835.23287	2.90	0.07	24	PO_DR_MT_BS_25	144	111975.976	3.00	0.34
27	PR_DR_MT_BS_26	139.90	19765.36701	2.90	0.06	25	PO_DR_MT_BS_26	140	57552.61059	3.00	0.17
28	PR_DR_MT_BS_27	140.90	44453.87976	2.90	0.13	26	PO_DR_MT_BS_27	141	44453.87976	3.00	0.13

Pre monsoon						Post monsoon					
S L No	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**	**S L No**	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**
29	PR_DR_MT_BS_28	139.00	9467.031073	2.90	0.03	27	PO_DR_MT_BS_28		0	3.00	0.00
30	PR_DR_MT_BS_29	134.90	55866.90274	2.90	0.16	28	PO_DR_MT_BS_29_30	135	297581.9556	3.00	0.89
31	PR_DR_MT_BS_30		76304.83613	2.90	0.22					3.00	0.00
32	PR_DR_MT_BS_31	141.90	11490.60213	2.90	0.03	29	PO_DR_MT_BS_31	142	11490.60213	3.00	0.03
33	PR_DR_MT_BS_32	141.90	40819.8789	2.90	0.12	30	PO_DR_MT_BS_32	142	40819.8789	3.00	0.12
34	PR_DR_MT_BS_33	135.00	12908.85198	2.90	0.04	31	PO_DR_MT_BS_33		0	3.00	0.00
35	PR_DR_MT_BS_34	130.00	5235.225524	2.90	0.02	32	PO_DR_MT_BS_34		0	3.00	0.00
36	PR_DR_MT_BS_35	129.90	18784.00988	2.90	0.05	33	PO_DR_MT_BS_35	130	37559.37117	3.00	0.11
37	PR_DR_MT_BS_35A	127.90		2.90	0.00	34	PO_DR_MT_BS_35A	128	52209.44582	3.00	0.16
38	PR_DR_MT_BS_36	125.90	147637.3023	2.90	0.43	35	PO_DR_MT_BS_36	126	115172.0576	3.00	0.35
39	PR_DR_MT_BS_37	121.90	11736.13458	2.90	0.03	36	PO_DR_MT_BS_37	122	11736.13458	3.00	0.04
40	PR_DR_MT_BS_38	121.90	38240.02384	2.90	0.11	37	PO_DR_MT_BS_38	122	38240.02384	3.00	0.11
41	PR_DR_MT_BS_39	116.90	69556.59073	2.90	0.20	38	PO_DR_MT_BS_39	117	69556.59073	3.00	0.21
42	PR_DR_MT_BS_40	116.90	79637.25605	2.90	0.23	39	PO_DR_MT_BS_40_41	117	325857.6498	3.00	0.98
43	PR_DR_MT_BS_41		62633.27197	2.90	0.18					3.00	0.00
44	PR_DR_MT_BS_42	116.00	65485.82206	2.90	0.19	40	PO_DR_MT_BS_42		0	3.00	0.00
45	PR_DR_MT_BS_43	116.00	199938.009	2.90	0.58	41	PO_DR_MT_BS_43		0	3.00	0.00
46	PR_DR_NB_BS_44	109.90	5876.887874	2.90	0.02	42	PO_DR_NB_BS_44	110	5876.887874	3.00	0.02
47	PR_DR_PD_BS_45	107.90	3671.742335	2.90	0.01	43	PO_DR_PD_BS_45	108	3671.742335	3.00	0.01
48	PR_DR_PD_BS_46	106.90	3454.728011	2.90	0.01	44	PO_DR_PD_BS_46	107	20346.8051	3.00	0.06
49	PR_DR_PD_BS_47	104.90	6303.916058	2.90	0.02	45	PO_DR_PD_BS_47	105	6303.916058	3.00	0.02
50	PR_DR_PD_BS_48	102.90	6744.945166	2.90	0.02	46	PO_DR_PD_BS_48	103	6744.945166	3.00	0.02
51	PR_DR_PD_BS_49	101.90	5883.888336	2.90	0.02	47	PO_DR_PD_BS_49	102	5883.888336	3.00	0.02
52	PR_DR_PD_BS_49A		0	2.90	0.00	48	PO_DR_PD_BS_49A	102	8370.614064	3.00	0.03
53	PR_DR_PD_BS_50	99.90	4504.797316	2.90	0.01	49	PO_DR_PD_BS_50	100	4504.797316	3.00	0.01
54	PR_DR_PD_BS_51	99.90	3748.747417	2.90	0.01	50	PO_DR_PD_BS_51	100	10597.17901	3.00	0.03

Pre monsoon						Post monsoon					
S L No	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**	**S L No**	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**
55	PR_DR_PD_BS_51A		0	2.90	0.00	51	PO_DR_PD_BS_51A	100	8110.137629	3.00	0.02
56	PR_DR_PD_BS_52	98.90	8999.093939	2.90	0.03	52	PO_DR_PD_BS_52	99	8999.093939	3.00	0.03
57	PR_DR_PD_BS_53	96.90	5066.006522	2.90	0.01	53	PO_DR_PD_BS_53	97	5066.006522	3.00	0.02
58	PR_DR_PD_BS_54	94.90	4193.276756	2.90	0.01	54	PO_DR_PD_BS_54	95	4193.276756	3.00	0.01
59	PR_DR_PD_BS_55	93.90	7539.497606	2.90	0.02	55	PO_DR_PD_BS_55	94	7539.497606	3.00	0.02
60	PR_DR_PD_BS_55A		0	2.90	0.00	56	PO_DR_PD_BS_55A	94	6261.913286	3.00	0.02
61	PR_DR_PD_BS_56	92.90	12947.35452	2.90	0.04	57	PO_DR_PD_BS_56	93	12947.35452	3.00	0.04
62	PR_DR_PD_BS_57	91.90	20392.34589	2.90	0.06	58	PO_DR_PD_BS_57	92	20392.34589	3.00	0.06
63	PR_DR_PD_BS_58	91.90	15415.01739	2.90	0.04	59	PO_DR_PD_BS_58	92	15415.01739	3.00	0.05
64	PR_DR_PD_BS_59	90.90	5169.841209	2.90	0.01	60	PO_DR_PD_BS_59	91	5169.841209	3.00	0.02
65	PR_DR_PD_BS_60	90.90	13255.37485	2.90	0.04	61	PO_DR_PD_BS_60	91	13255.37485	3.00	0.04
66	PR_DR_PD_BS_60A		0	2.90	0.00	62	PO_DR_PD_BS_60A	91	8551.064369	3.00	0.03
67	PR_DR_PD_BS_60B		0	2.90	0.00	63	PO_DR_PD_BS_60B	90	15555.02663	3.00	0.05
68	PR_DR_PD_BS_61	89.90	14196.937	2.90	0.04	64	PO_DR_PD_BS_61	90	14196.937	3.00	0.04
69	PR_DR_PD_BS_62	87.90	7350.485131	2.90	0.02	65	PO_DR_PD_BS_62	88	7350.485131	3.00	0.02
70	PR_DR_PD_BS_63	87.90	7448.491599	2.90	0.02	66	PO_DR_PD_BS_63	88	7448.491599	3.00	0.02
71	PR_DR_PD_BS_64	87.90	16454.586	2.90	0.05	67	PO_DR_PD_BS_64	88	16454.586	3.00	0.05
Estimation of Sand Resources in Pre monsoon period and Post monsoon period in sand bar regions of Mahananda River											
1	PR_DR_KS_MH_01	168.90	1760564.451	2.90	5.11	1	PO_DR_KS_MH_01	169	1617157.915	3.00	4.85
2	PR_DR_MT_MH_02	131.90	246724.212	2.90	0.72	2	PO_DR_MT_MH_02	132	246724.212	3.00	0.74
3	PR_DR_MT_MH_03	125.00	71799.95059	2.90	0.21	3	PO_DR_MT_MH_03		0	3.00	0.00
4	PR_DR_MT_MH_04	111.90	17286.76593	2.90	0.05	4	PO_DR_MT_MH_04	112	17286.76593	3.00	0.05
5	PR_DR_PD_MH_04A		0	2.90	0.00	5	PO_DR_PD_MH_04A	100	18844.54713	3.00	0.06
6	PR_DR_PD_MH_05	97.90	65454.31998	2.90	0.19	6	PO_DR_PD_MH_05	98	65454.31998	3.00	0.20
7	PR_DR_PD_MH_06	96.90	48373.40787	2.90	0.14	7	PO_DR_PD_MH_06	97	48373.40787	3.00	0.15
8	PR_DR_PD_MH_07	96.90	114401.5505	2.90	0.33	8	PO_DR_PD_MH_07	97	148616.6717	3.00	0.45

Pre monsoon						Post monsoon					
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9	PR_DR_PD_MH_08	94.90	137068.5961	2.90	0.40	9	PO_DR_PD_MH_08	95	98836.89014	3.00	0.30
10	PR_DR_PD_MH_08A		0	2.90	0.00	10	PO_DR_PD_MH_08A	96	9488.779412	3.00	0.03
11	PR_DR_PD_MH_09	94.90	43258.69882	2.90	0.13	11	PO_DR_PD_MH_09	95	43258.69882	3.00	0.13
12	PR_DR_PD_MH_10		0	2.90	0.00	12	PO_DR_PD_MH_10	90	21690.83813	3.00	0.07
13	PR_DR_PD_MH_11		0	2.90	0.00	13	PO_DR_PD_MH_11	86	35073.18814	3.00	0.11
14	PR_DR_PD_MH_12		0	2.90	0.00	14	PO_DR_PD_MH_12	86	39361.93651	3.00	0.12
15	PR_DR_PD_MH_13		0	2.90	0.00	15	PO_DR_PD_MH_13	85	26036.32737	3.00	0.08
Estimation of Sand Resources in Pre monsoon period and Post monsoon period in sand bar regions of Teesta River											
1	PR_DR_KS_TS_01	150.90	23287.03694	2.90	0.07	1	PO_DR_KS_TS_01	151	37900.65133	3.00	0.11
2	PR_DR_KS_TS_02	147.90	10392.04587	2.90	0.03	2	PO_DR_KS_TS_02	148	10392.04587	3.00	0.03
3	PR_DR_KS_TS_03	146.90	11583.80453	2.90	0.03	3	PO_DR_KS_TS_03	147	11583.80453	3.00	0.03
4	PR_DR_KS_TS_04	142.90	23173.29613	2.90	0.07	4	PO_DR_KS_TS_04	143	23173.29613	3.00	0.07
5	PR_DR_KS_TS_05	142.90	22506.76544	2.90	0.07	5	PO_DR_KS_TS_05	143	31437.86902	3.00	0.09
6	PR_DR_KS_TS_05A		0	2.90	0.00	6	PO_DR_KS_TS_05A	141	17836.11681	3.00	0.05
7	PR_DR_KS_TS_05B		0	2.90	0.00	7	PO_DR_KS_TS_05B	141	12452.17212	3.00	0.04
8	PR_DR_KS_TS_06	137.90	61723.72652	2.90	0.18	8	PO_DR_KS_TS_06	138	76714.02965	3.00	0.23
9	PR_DR_KS_TS_07	137.90	813336.7827	2.90	2.36	9	PO_DR_KS_TS_07_08	138	921983.5031	3.00	2.77
10	PR_DR_KS_TS_08		8610.988324	2.90	0.02					3.00	0.00
11	PR_DR_KS_TS_09	137.90	40826.69456	2.90	0.12	10	PO_DR_KS_TS_09	138	27045.79337	3.00	0.08
12	PR_DR_KS_TS_10	134.90	60585.49864	2.90	0.18	11	PO_DR_KS_TS_10	135	125552.9512	3.00	0.38
13	PR_DR_KS_TS_11	134.90	208806.2812	2.90	0.61	12	PO_DR_KS_TS_11	135	316259.9218	3.00	0.95
14	PR_DR_KS_TS_12	133.90	40739.18878	2.90	0.12	13	PO_DR_KS_TS_12	134	40739.18878	3.00	0.12
15	PR_DR_KS_TS_13	132.90	22250.96856	2.90	0.06	14	PO_DR_KS_TS_13	133	22250.96856	3.00	0.07
16	PR_DR_KS_TS_13A		0	2.90	0.00	15	PO_DR_KS_TS_13A	133	16048.5592	3.00	0.05
17	PR_DR_KS_TS_14	131.90	24110.7113	2.90	0.07	16	PO_DR_KS_TS_14_15	132	81661.99929	3.00	0.24
18	PR_DR_KS_TS_15		20567.07742	2.90	0.06					3.00	0.00

Pre monsoon						Post monsoon					
S L No	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**	**S L No**	**Sand Bar_Code**	**RL (m)**	**Area in sq.m.**	**Sand Thickness in m.**	**Sand Volume in M. Cum**
19	PR_DR_KS_TS_16	131.90	17690.44757	2.90	0.05	17	PO_DR_KS_TS_16	132	27192.8123	3.00	0.08
20	PR_DR_KS_TS_18	131.90	425733.0578	2.90	1.23	18	PO_DR_KS_TS_18	132	450719.1466	3.00	1.35
21	PR_DR_KS_TS_17	131.90	25125.49828	2.90	0.07	19	PO_DR_KS_TS_17 _19_20_21_22	132	298868.0621	3.00	0.90
22	PR_DR_KS_TS_19		19681.93901	2.90	0.06					3.00	0.00
23	PR_DR_KS_TS_20		14804.71711	2.90	0.04					3.00	0.00
24	PR_DR_KS_TS_21		12402.9986	2.90	0.04					3.00	0.00
25	PR_DR_KS_TS_22		200283.1453	2.90	0.58					3.00	0.00
26	PR_DR_KS_TS_22A		0	2.90	0.00	20	PO_DR_KS_TS_22A	130	52260.72032	3.00	0.16
27	PR_DR_KS_TS_23	127.90	211408.4842	2.90	0.61	21	PO_DR_KS_TS_23	128	439680.7282	3.00	1.32
28	PR_DR_KS_TS_24	126.90	71563.31692	2.90	0.21	22	PO_DR_KS_TS_24_25	127	262820.1684	3.00	0.79
29	PR_DR_KS_TS_25		74680.71017	2.90	0.22					3.00	0.00
Estimation of Sand Resources in Pre monsoon period and Post monsoon period in sand bar regions of Rangeet River											
1	PR_DR_DP_RG_01	358.00	171562.3999	2.00	0.34	1	PO_DR_DP_RG_01	358	171562.3999	2.00	0.34
2	PR_DR_DP_RG_02	288.00	109149.685	2.00	0.22	2	PO_DR_DP_RG_02	288	109149.685	2.00	0.22
3	PR_DR_DP_RG_03	267.00	13412.01019	2.00	0.03	3	PO_DR_DP_RG_03	267	13412.01019	2.00	0.03
4	PR_DR_DP_RG_04	271.00	11974.2903	2.00	0.02	4	PO_DR_DP_RG_04	271	11974.2903	2.00	0.02
5	PR_DR_DP_RG_05	268.00	28415.75044	2.00	0.06	5	PO_DR_DP_RG_05	268	28415.75044	2.00	0.06
6	PR_DR_DP_RG_06	264.00	20875.37777	2.00	0.04	6	PO_DR_DP_RG_06	264	20875.37777	2.00	0.04
7	PR_DR_DP_RG_07	262.00	3566.735404	2.00	0.01	7	PO_DR_DP_RG_07	262	3566.735404	2.00	0.01
8	PR_DR_DP_RG_08	263.00	9500.467029	2.00	0.02	8	PO_DR_DP_RG_08	263	9500.467029	2.00	0.02
9	PR_DR_DP_RG_09	263.00	9110.681304	2.00	0.02	9	PO_DR_DP_RG_09	263	9110.681304	2.00	0.02
10	PR_DR_RR_RG_10	237.00	30851.31618	2.00	0.06	10	PO_DR_RR_RG_10	237	30851.31618	2.00	0.06

Annexure 3
Boundary Coordinates of Potential Blocks of Darjeeling District

Abbreviation used in the table as below

DISTRICT	DR	DARJEELING			
BLOCK	MR	MIRIK	RIVER	MC	MECHI
	NB	NAXALBARI		TS	TEESTA
	KB	KHORIBARI		CG	CHENGA
	PD	PHANSIDEWA		TA	TARI
	KS	KURSEONG		MJ	MANJA
	DP	DARJEELING PALBAZAR		BS	BALASON
	RR	RANGLI RANGLIOT		RG	RANGEET
	MT	MATIGARA		MH	MAHANANDA

CODE	POINT_NO	LATITUDE	LONGITUDE
DR_DP_RG_03	1	27° 6' 17.632" N	88° 19' 21.817" E
	2	27° 6' 17.068" N	88° 19' 21.967" E
	3	27° 6' 18.127" N	88° 19' 17.704" E
	4	27° 6' 18.830" N	88° 19' 16.880" E
	5	27° 6' 20.661" N	88° 19' 16.255" E
	6	27° 6' 21.156" N	88° 19' 17.391" E
	7	27° 6' 20.751" N	88° 19' 19.259" E
	8	27° 6' 19.456" N	88° 19' 19.821" E
	9	27° 6' 18.414" N	88° 19' 20.961" E
DR_DP_RG_05	1	27° 6' 18.650" N	88° 19' 23.270" E
	2	27° 6' 18.890" N	88° 19' 25.146" E
	3	27° 6' 19.265" N	88° 19' 26.448" E
	4	27° 6' 20.415" N	88° 19' 27.614" E
	5	27° 6' 21.179" N	88° 19' 28.632" E
	6	27° 6' 22.067" N	88° 19' 30.228" E
	7	27° 6' 22.828" N	88° 19' 31.534" E
	8	27° 6' 23.455" N	88° 19' 33.415" E
	9	27° 6' 24.602" N	88° 19' 34.869" E
	10	27° 6' 25.748" N	88° 19' 36.468" E
	11	27° 6' 26.894" N	88° 19' 38.067" E
	12	27° 6' 27.137" N	88° 19' 39.655" E
	13	27° 6' 26.351" N	88° 19' 40.943" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	14	27° 6' 24.553" N	88° 19' 40.057" E
	15	27° 6' 24.180" N	88° 19' 38.612" E
	16	27° 6' 23.552" N	88° 19' 36.875" E
	17	27° 6' 22.791" N	88° 19' 35.425" E
	18	27° 6' 21.902" N	88° 19' 33.973" E
	19	27° 6' 21.271" N	88° 19' 32.524" E
	20	27° 6' 20.636" N	88° 19' 31.508" E
	21	27° 6' 20.009" N	88° 19' 29.627" E
	22	27° 6' 19.246" N	88° 19' 28.465" E
	23	27° 6' 18.482" N	88° 19' 27.447" E
	24	27° 6' 17.980" N	88° 19' 25.952" E
	25	27° 6' 17.559" N	88° 19' 24.986" E
	26	27° 6' 17.485" N	88° 19' 23.737" E
DR_DP_RG_04	1	27° 6' 23.037" N	88° 19' 27.645" E
	2	27° 6' 22.449" N	88° 19' 26.101" E
	3	27° 6' 22.888" N	88° 19' 25.145" E
	4	27° 6' 23.751" N	88° 19' 24.867" E
	5	27° 6' 25.191" N	88° 19' 27.190" E
	6	27° 6' 25.689" N	88° 19' 29.021" E
	7	27° 6' 26.873" N	88° 19' 31.149" E
	8	27° 6' 26.933" N	88° 19' 31.226" E
	9	27° 6' 28.298" N	88° 19' 33.923" E
	10	27° 6' 27.369" N	88° 19' 33.269" E
	11	27° 6' 26.693" N	88° 19' 32.012" E
	12	27° 6' 25.753" N	88° 19' 31.424" E
	13	27° 6' 24.646" N	88° 19' 30.258" E
	14	27° 6' 23.884" N	88° 19' 29.000" E
DR_DP_RG_06	1	27° 6' 26.051" N	88° 20' 0.624" E
	2	27° 6' 25.386" N	88° 20' 1.108" E
	3	27° 6' 25.484" N	88° 19' 59.764" E
	4	27° 6' 25.751" N	88° 19' 58.807" E
	5	27° 6' 25.420" N	88° 19' 57.458" E
	6	27° 6' 24.657" N	88° 19' 56.392" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	7	27° 6' 23.718" N	88° 19' 55.612" E
	8	27° 6' 23.294" N	88° 19' 55.031" E
	9	27° 6' 23.047" N	88° 19' 53.875" E
	10	27° 6' 23.060" N	88° 19' 52.434" E
	11	27° 6' 23.415" N	88° 19' 51.285" E
	12	27° 6' 23.683" N	88° 19' 50.231" E
	13	27° 6' 24.290" N	88° 19' 49.662" E
	14	27° 6' 25.410" N	88° 19' 49.483" E
	15	27° 6' 25.650" N	88° 19' 51.408" E
	16	27° 6' 25.811" N	88° 19' 52.562" E
	17	27° 6' 26.401" N	88° 19' 53.818" E
	18	27° 6' 26.990" N	88° 19' 55.170" E
	19	27° 6' 27.237" N	88° 19' 56.326" E
	20	27° 6' 26.968" N	88° 19' 57.476" E
	21	27° 6' 26.785" N	88° 19' 58.627" E
	22	27° 6' 26.769" N	88° 19' 58.806" E
DR_DP_RG_07	1	27° 6' 22.848" N	88° 19' 56.755" E
	2	27° 6' 23.876" N	88° 19' 57.055" E
	3	27° 6' 24.300" N	88° 19' 57.733" E
	4	27° 6' 24.026" N	88° 19' 59.459" E
	5	27° 6' 23.504" N	88° 20' 0.029" E
	6	27° 6' 23.078" N	88° 19' 59.640" E
	7	27° 6' 22.487" N	88° 19' 58.480" E
	8	27° 6' 22.409" N	88° 19' 57.710" E
DR_DP_RG_08	1	27° 6' 20.098" N	88° 20' 5.600" E
	2	27° 6' 19.908" N	88° 20' 4.154" E
	3	27° 6' 19.916" N	88° 20' 4.014" E
	4	27° 6' 20.060" N	88° 20' 2.371" E
	5	27° 6' 20.068" N	88° 20' 1.497" E
	6	27° 6' 20.142" N	88° 20' 0.278" E
	7	27° 6' 20.776" N	88° 19' 59.459" E
	8	27° 6' 21.025" N	88° 19' 58.559" E
	9	27° 6' 22.148" N	88° 19' 59.783" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	10	27° 6' 22.341" N	88° 20' 1.168" E
	11	27° 6' 22.535" N	88° 20' 2.554" E
	12	27° 6' 21.771" N	88° 20' 3.237" E
	13	27° 6' 21.144" N	88° 20' 4.075" E
	14	27° 6' 20.861" N	88° 20' 4.917" E
	15	27° 6' 20.648" N	88° 20' 5.606" E
DR_DP_RG_09	1	27° 6' 23.139" N	88° 20' 4.099" E
	2	27° 6' 23.894" N	88° 20' 4.261" E
	3	27° 6' 24.024" N	88° 20' 5.108" E
	4	27° 6' 24.013" N	88° 20' 6.184" E
	5	27° 6' 23.110" N	88° 20' 7.096" E
	6	27° 6' 23.101" N	88° 20' 8.095" E
	7	27° 6' 24.062" N	88° 20' 8.260" E
	8	27° 6' 24.613" N	88° 20' 8.267" E
	9	27° 6' 25.089" N	88° 20' 8.810" E
	10	27° 6' 25.083" N	88° 20' 9.425" E
	11	27° 6' 24.804" N	88° 20' 9.806" E
	12	27° 6' 23.978" N	88° 20' 9.950" E
	13	27° 6' 23.015" N	88° 20' 9.862" E
	14	27° 6' 22.194" N	88° 20' 9.468" E
	15	27° 6' 21.717" N	88° 20' 8.924" E
	16	27° 6' 21.523" N	88° 20' 7.692" E
	17	27° 6' 21.803" N	88° 20' 7.157" E
	18	27° 6' 22.221" N	88° 20' 6.624" E
	19	27° 6' 22.503" N	88° 20' 5.859" E
	20	27° 6' 22.515" N	88° 20' 4.629" E
DR_RR_RG_10	1	27° 5' 51.166" N	88° 22' 9.588" E
	2	27° 5' 49.734" N	88° 22' 10.939" E
	3	27° 5' 49.855" N	88° 22' 12.101" E
	4	27° 5' 49.711" N	88° 22' 12.370" E
	5	27° 5' 49.640" N	88° 22' 12.549" E
	6	27° 5' 49.547" N	88° 22' 12.784" E
	7	27° 5' 49.200" N	88° 22' 12.782" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	8	27° 5' 49.062" N	88° 22' 12.724" E
	9	27° 5' 48.540" N	88° 22' 12.509" E
	10	27° 5' 48.067" N	88° 22' 11.658" E
	11	27° 5' 47.729" N	88° 22' 11.039" E
	12	27° 5' 47.677" N	88° 22' 9.347" E
	13	27° 5' 47.551" N	88° 22' 8.116" E
	14	27° 5' 47.352" N	88° 22' 7.345" E
	15	27° 5' 47.362" N	88° 22' 6.346" E
	16	27° 5' 47.444" N	88° 22' 4.964" E
	17	27° 5' 47.937" N	88° 22' 3.817" E
	18	27° 5' 48.360" N	88° 22' 2.746" E
	19	27° 5' 48.442" N	88° 22' 1.441" E
	20	27° 5' 48.645" N	88° 21' 59.899" E
	21	27° 5' 49.269" N	88° 22' 1.255" E
	22	27° 5' 50.842" N	88° 22' 7.566" E
DR_KS_TS_01	1	26° 55' 31.982" N	88° 27' 21.928" E
	2	26° 55' 29.647" N	88° 27' 24.537" E
	3	26° 55' 30.327" N	88° 27' 25.314" E
	4	26° 55' 29.290" N	88° 27' 25.876" E
	5	26° 55' 28.336" N	88° 27' 26.631" E
	6	26° 55' 27.040" N	88° 27' 27.286" E
	7	26° 55' 26.377" N	88° 27' 28.248" E
	8	26° 55' 26.274" N	88° 27' 28.298" E
	9	26° 55' 26.032" N	88° 27' 28.547" E
	10	26° 55' 25.562" N	88° 27' 28.801" E
	11	26° 55' 24.347" N	88° 27' 29.937" E
	12	26° 55' 23.131" N	88° 27' 31.072" E
	13	26° 55' 22.521" N	88° 27' 31.928" E
	14	26° 55' 22.231" N	88° 27' 32.458" E
	15	26° 55' 22.076" N	88° 27' 32.618" E
	16	26° 55' 21.882" N	88° 27' 33.100" E
	17	26° 55' 21.118" N	88° 27' 34.499" E
	18	26° 55' 20.844" N	88° 27' 35.666" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	19	26° 55' 19.588" N	88° 27' 38.772" E
	20	26° 55' 19.573" N	88° 27' 41.760" E
	21	26° 55' 19.478" N	88° 27' 43.495" E
	22	26° 55' 19.152" N	88° 27' 44.085" E
	23	26° 55' 18.395" N	88° 27' 45.068" E
	24	26° 55' 17.738" N	88° 27' 45.391" E
	25	26° 55' 18.534" N	88° 27' 43.291" E
	26	26° 55' 18.811" N	88° 27' 41.472" E
	27	26° 55' 19.094" N	88° 27' 38.982" E
	28	26° 55' 19.721" N	88° 27' 36.592" E
	29	26° 55' 20.792" N	88° 27' 32.769" E
	30	26° 55' 22.368" N	88° 27' 30.007" E
	31	26° 55' 24.715" N	88° 27' 27.544" E
	32	26° 55' 28.097" N	88° 27' 24.805" E
	33	26° 55' 28.104" N	88° 27' 22.823" E
	34	26° 55' 28.175" N	88° 27' 22.783" E
	35	26° 55' 30.158" N	88° 27' 20.194" E
	36	26° 55' 34.203" N	88° 27' 19.124" E
DR_KS_TS_02	1	26° 55' 1.578" N	88° 27' 48.290" E
	2	26° 55' 0.803" N	88° 27' 47.337" E
	3	26° 55' 2.827" N	88° 27' 47.276" E
	4	26° 55' 3.101" N	88° 27' 47.389" E
	5	26° 55' 3.856" N	88° 27' 47.552" E
	6	26° 55' 4.752" N	88° 27' 47.333" E
	7	26° 55' 5.921" N	88° 27' 47.348" E
	8	26° 55' 6.535" N	88° 27' 47.893" E
	9	26° 55' 6.801" N	88° 27' 48.741" E
	10	26° 55' 6.792" N	88° 27' 49.585" E
	11	26° 55' 6.165" N	88° 27' 50.344" E
	12	26° 55' 5.342" N	88° 27' 50.180" E
	13	26° 55' 4.174" N	88° 27' 50.011" E
	14	26° 55' 3.081" N	88° 27' 49.307" E
DR_KS_TS_03	1	26° 55' 0.234" N	88° 27' 51.879" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	2	26° 55' 0.158" N	88° 27' 52.569" E
	3	26° 54' 59.467" N	88° 27' 52.867" E
	4	26° 54' 58.366" N	88° 27' 52.929" E
	5	26° 54' 57.189" N	88° 27' 53.604" E
	6	26° 54' 57.045" N	88° 27' 54.216" E
	7	26° 54' 56.617" N	88° 27' 55.745" E
	8	26° 54' 56.252" N	88° 27' 57.736" E
	9	26° 54' 56.102" N	88° 27' 58.962" E
	10	26° 54' 55.485" N	88° 27' 58.723" E
	11	26° 54' 55.221" N	88° 27' 57.722" E
	12	26° 54' 55.166" N	88° 27' 56.341" E
	13	26° 54' 55.387" N	88° 27' 54.962" E
	14	26° 54' 55.813" N	88° 27' 53.663" E
	15	26° 54' 56.304" N	88° 27' 52.749" E
	16	26° 54' 57.272" N	88° 27' 52.301" E
	17	26° 54' 58.183" N	88° 27' 50.625" E
	18	26° 54' 59.081" N	88° 27' 50.329" E
	19	26° 54' 59.696" N	88° 27' 50.721" E
	20	26° 55' 0.033" N	88° 27' 51.339" E
DR_KS_TS_04	1	26° 54' 45.730" N	88° 28' 28.173" E
	2	26° 54' 45.332" N	88° 28' 27.426" E
	3	26° 54' 47.360" N	88° 28' 25.934" E
	4	26° 54' 49.374" N	88° 28' 24.119" E
	5	26° 54' 50.001" N	88° 28' 23.359" E
	6	26° 54' 51.212" N	88° 28' 19.385" E
	7	26° 54' 51.448" N	88° 28' 16.549" E
	8	26° 54' 52.173" N	88° 28' 12.952" E
	9	26° 54' 52.968" N	88° 28' 9.280" E
	10	26° 54' 53.745" N	88° 28' 7.371" E
	11	26° 54' 54.261" N	88° 28' 4.002" E
	12	26° 54' 54.522" N	88° 28' 5.386" E
	13	26° 54' 54.364" N	88° 28' 7.379" E
	14	26° 54' 53.932" N	88° 28' 9.215" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	15	26° 54' 53.279" N	88° 28' 12.430" E
	16	26° 54' 52.769" N	88° 28' 15.185" E
	17	26° 54' 52.535" N	88° 28' 17.868" E
	18	26° 54' 51.886" N	88° 28' 20.698" E
	19	26° 54' 51.597" N	88° 28' 21.999" E
	20	26° 54' 50.889" N	88° 28' 23.985" E
	21	26° 54' 50.054" N	88° 28' 24.895" E
	22	26° 54' 48.938" N	88° 28' 26.415" E
	23	26° 54' 47.965" N	88° 28' 27.323" E
	24	26° 54' 47.336" N	88° 28' 28.235" E
	25	26° 54' 46.784" N	88° 28' 28.458" E
DR_KS_TS_05	1	26° 54' 43.218" N	88° 28' 26.678" E
	2	26° 54' 42.180" N	88° 28' 26.970" E
	3	26° 54' 41.797" N	88° 28' 25.171" E
	4	26° 54' 41.120" N	88° 28' 24.088" E
	5	26° 54' 40.231" N	88° 28' 23.732" E
	6	26° 54' 40.093" N	88° 28' 22.061" E
	7	26° 54' 38.395" N	88° 28' 22.024" E
	8	26° 54' 38.567" N	88° 28' 18.300" E
	9	26° 54' 38.107" N	88° 28' 16.223" E
	10	26° 54' 38.046" N	88° 28' 15.455" E
	11	26° 54' 38.141" N	88° 28' 14.863" E
	12	26° 54' 40.018" N	88° 28' 15.322" E
	13	26° 54' 40.462" N	88° 28' 16.071" E
	14	26° 54' 42.002" N	88° 28' 22.997" E
	15	26° 54' 42.323" N	88° 28' 23.872" E
	16	26° 54' 42.221" N	88° 28' 24.026" E
	17	26° 54' 42.521" N	88° 28' 24.411" E
	18	26° 54' 42.524" N	88° 28' 24.418" E
	19	26° 54' 42.528" N	88° 28' 24.419" E
	20	26° 54' 42.764" N	88° 28' 24.723" E
	21	26° 54' 43.711" N	88° 28' 26.347" E
DR_KS_TS_07_08	1	26° 52' 34.646" N	88° 28' 39.922" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	2	26° 52' 29.853" N	88° 28' 40.506" E
	3	26° 52' 27.627" N	88° 28' 38.232" E
	4	26° 52' 21.356" N	88° 28' 38.091" E
	5	26° 52' 19.550" N	88° 28' 38.164" E
	6	26° 52' 16.806" N	88° 28' 40.403" E
	7	26° 52' 12.667" N	88° 28' 41.500" E
	8	26° 52' 9.398" N	88° 28' 41.649" E
	9	26° 52' 0.261" N	88° 28' 43.831" E
	10	26° 51' 59.424" N	88° 28' 41.711" E
	11	26° 52' 1.675" N	88° 28' 40.206" E
	12	26° 52' 6.151" N	88° 28' 39.689" E
	13	26° 52' 9.288" N	88° 28' 35.703" E
	14	26° 52' 6.599" N	88° 28' 29.724" E
	15	26° 52' 3.193" N	88° 28' 26.612" E
	16	26° 51' 59.588" N	88° 28' 25.990" E
	17	26° 51' 54.959" N	88° 28' 24.588" E
	18	26° 51' 52.380" N	88° 28' 24.554" E
	19	26° 51' 50.669" N	88° 28' 23.765" E
	20	26° 51' 51.575" N	88° 28' 19.367" E
	21	26° 51' 54.190" N	88° 28' 15.949" E
	22	26° 51' 56.783" N	88° 28' 14.641" E
	23	26° 52' 0.389" N	88° 28' 15.071" E
	24	26° 52' 4.824" N	88° 28' 18.580" E
	25	26° 52' 8.773" N	88° 28' 19.206" E
	26	26° 52' 18.723" N	88° 28' 21.444" E
	27	26° 52' 21.290" N	88° 28' 22.628" E
	28	26° 52' 30.575" N	88° 28' 22.748" E
	29	26° 52' 35.004" N	88° 28' 22.336" E
DR_KS_TS_12	1	26° 51' 41.154" N	88° 28' 22.134" E
	2	26° 51' 39.774" N	88° 28' 22.500" E
	3	26° 51' 38.742" N	88° 28' 22.582" E
	4	26° 51' 37.886" N	88° 28' 22.188" E
	5	26° 51' 36.425" N	88° 28' 22.169" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	6	26° 51' 35.659" N	88° 28' 21.392" E
	7	26° 51' 34.980" N	88° 28' 20.521" E
	8	26° 51' 33.777" N	88° 28' 20.409" E
	9	26° 51' 31.284" N	88° 28' 20.377" E
	10	26° 51' 28.700" N	88° 28' 20.823" E
	11	26° 51' 26.545" N	88° 28' 21.370" E
	12	26° 51' 24.298" N	88° 28' 22.491" E
	13	26° 51' 23.004" N	88° 28' 22.858" E
	14	26° 51' 19.893" N	88° 28' 24.351" E
	15	26° 51' 19.903" N	88° 28' 23.393" E
	16	26° 51' 21.202" N	88° 28' 22.547" E
	17	26° 51' 22.246" N	88° 28' 21.314" E
	18	26° 51' 24.410" N	88° 28' 20.000" E
	19	26° 51' 26.484" N	88° 28' 18.973" E
	20	26° 51' 28.314" N	88° 28' 16.600" E
	21	26° 51' 29.517" N	88° 28' 16.711" E
	22	26° 51' 29.594" N	88° 28' 17.575" E
	23	26° 51' 30.190" N	88° 28' 18.158" E
	24	26° 51' 33.537" N	88° 28' 18.776" E
	25	26° 51' 35.167" N	88° 28' 19.085" E
	26	26° 51' 37.313" N	88° 28' 19.400" E
	27	26° 51' 39.283" N	88° 28' 20.193" E
	28	26° 51' 40.563" N	88° 28' 21.072" E
DR_KS_TS_13	1	26° 51' 12.015" N	88° 28' 29.522" E
	2	26° 51' 13.134" N	88° 28' 29.440" E
	3	26° 51' 14.675" N	88° 28' 30.036" E
	4	26° 51' 16.473" N	88° 28' 30.730" E
	5	26° 51' 17.844" N	88° 28' 31.227" E
	6	26° 51' 19.207" N	88° 28' 32.395" E
	7	26° 51' 20.741" N	88° 28' 33.757" E
	8	26° 51' 21.681" N	88° 28' 34.344" E
	9	26° 51' 21.492" N	88° 28' 35.972" E
	10	26° 51' 20.799" N	88° 28' 36.442" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	11	26° 51' 19.348" N	88° 28' 35.369" E
	12	26° 51' 17.895" N	88° 28' 34.583" E
	13	26° 51' 16.697" N	88° 28' 33.992" E
	14	26° 51' 15.075" N	88° 28' 32.917" E
	15	26° 51' 13.455" N	88° 28' 31.553" E
	16	26° 51' 12.423" N	88° 28' 31.636" E
	17	26° 51' 11.820" N	88° 28' 31.724" E
	18	26° 51' 11.657" N	88° 28' 30.859" E
DR_KS_TS_13A	1	26° 51' 7.979" N	88° 28' 28.990" E
	2	26° 51' 7.633" N	88° 28' 29.011" E
	3	26° 51' 13.929" N	88° 28' 24.748" E
	4	26° 51' 13.956" N	88° 28' 24.754" E
	5	26° 51' 13.771" N	88° 28' 25.998" E
	6	26° 51' 13.075" N	88° 28' 26.851" E
	7	26° 51' 12.551" N	88° 28' 27.611" E
	8	26° 51' 11.340" N	88° 28' 28.267" E
	9	26° 51' 10.218" N	88° 28' 28.732" E
	10	26° 51' 9.184" N	88° 28' 28.910" E
DR_KS_TS_18	1	26° 51' 25.147" N	88° 29' 5.701" E
	2	26° 51' 24.548" N	88° 29' 6.061" E
	3	26° 51' 24.329" N	88° 29' 6.372" E
	4	26° 51' 24.243" N	88° 29' 6.232" E
	5	26° 51' 20.512" N	88° 29' 8.319" E
	6	26° 51' 14.596" N	88° 29' 14.268" E
	7	26° 51' 7.177" N	88° 29' 20.642" E
	8	26° 51' 3.809" N	88° 29' 22.541" E
	9	26° 51' 7.301" N	88° 29' 11.163" E
	10	26° 51' 5.265" N	88° 29' 0.400" E
	11	26° 51' 0.469" N	88° 28' 45.192" E
	12	26° 51' 2.407" N	88° 28' 43.626" E
	13	26° 51' 5.505" N	88° 28' 43.379" E
	14	26° 51' 8.832" N	88° 28' 45.866" E
	15	26° 51' 15.486" N	88° 28' 50.842" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	16	26° 51' 19.539" N	88° 28' 50.789" E
	17	26° 51' 20.618" N	88° 28' 54.605" E
	18	26° 51' 22.325" N	88° 28' 55.777" E
	19	26° 51' 23.060" N	88° 28' 56.132" E
	20	26° 51' 21.166" N	88° 28' 58.029" E
	21	26° 51' 16.945" N	88° 28' 58.836" E
	22	26° 51' 15.348" N	88° 29' 0.580" E
	23	26° 51' 15.220" N	88° 29' 1.820" E
	24	26° 51' 15.562" N	88° 29' 2.016" E
	25	26° 51' 17.257" N	88° 29' 1.812" E
	26	26° 51' 20.266" N	88° 29' 1.851" E
	27	26° 51' 22.415" N	88° 29' 4.406" E
	28	26° 51' 23.517" N	88° 29' 5.057" E
	29	26° 51' 25.084" N	88° 29' 4.739" E
	30	26° 51' 25.027" N	88° 29' 5.384" E
DR_KS_TS_14_15	1	26° 50' 59.489" N	88° 28' 42.084" E
	2	26° 50' 57.525" N	88° 28' 35.856" E
	3	26° 51' 4.471" N	88° 28' 31.152" E
	4	26° 51' 6.408" N	88° 28' 31.024" E
	5	26° 51' 10.386" N	88° 28' 32.945" E
	6	26° 51' 8.118" N	88° 28' 33.817" E
	7	26° 51' 6.188" N	88° 28' 34.175" E
	8	26° 51' 4.867" N	88° 28' 35.538" E
	9	26° 51' 3.260" N	88° 28' 37.895" E
	10	26° 51' 1.940" N	88° 28' 39.181" E
	11	26° 51' 1.131" N	88° 28' 39.646" E
	12	26° 51' 0.138" N	88° 28' 40.462" E
	13	26° 50' 59.573" N	88° 28' 41.911" E
DR_NB_MC_04	1	26° 42' 15.738" N	88° 10' 43.219" E
	2	26° 42' 15.087" N	88° 10' 43.573" E
	3	26° 42' 15.679" N	88° 10' 47.520" E
	4	26° 42' 12.027" N	88° 10' 47.721" E
	5	26° 42' 3.801" N	88° 10' 45.010" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	6	26° 41' 58.848" N	88° 10' 42.565" E
	7	26° 41' 58.832" N	88° 10' 42.417" E
	8	26° 41' 58.456" N	88° 10' 42.372" E
	9	26° 41' 56.907" N	88° 10' 41.607" E
	10	26° 41' 54.875" N	88° 10' 39.110" E
	11	26° 41' 48.881" N	88° 10' 36.057" E
	12	26° 41' 44.259" N	88° 10' 36.009" E
	13	26° 41' 41.804" N	88° 10' 35.411" E
	14	26° 41' 35.857" N	88° 10' 33.822" E
	15	26° 41' 34.579" N	88° 10' 32.854" E
	16	26° 41' 27.415" N	88° 10' 25.681" E
	17	26° 41' 20.081" N	88° 10' 21.643" E
	18	26° 41' 19.681" N	88° 10' 20.950" E
	19	26° 41' 17.216" N	88° 10' 19.967" E
	20	26° 41' 16.976" N	88° 10' 19.965" E
	21	26° 41' 10.338" N	88° 10' 16.918" E
	22	26° 41' 10.051" N	88° 10' 15.586" E
	23	26° 41' 10.386" N	88° 10' 14.034" E
	24	26° 41' 10.507" N	88° 10' 12.360" E
	25	26° 41' 11.269" N	88° 10' 11.291" E
	26	26° 41' 12.485" N	88° 10' 11.266" E
	27	26° 41' 13.562" N	88° 10' 12.024" E
	28	26° 41' 14.478" N	88° 10' 13.119" E
	29	26° 41' 14.893" N	88° 10' 14.843" E
	30	26° 41' 19.844" N	88° 10' 11.826" E
	31	26° 41' 25.974" N	88° 10' 11.410" E
	32	26° 41' 29.486" N	88° 10' 11.741" E
	33	26° 41' 40.071" N	88° 10' 16.342" E
	34	26° 41' 44.657" N	88° 10' 17.169" E
	35	26° 41' 48.814" N	88° 10' 18.106" E
	36	26° 41' 53.362" N	88° 10' 18.950" E
	37	26° 42' 0.909" N	88° 10' 22.853" E
	38	26° 42' 2.861" N	88° 10' 25.135" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	39	26° 42' 5.298" N	88° 10' 26.740" E
	40	26° 42' 7.603" N	88° 10' 28.774" E
	41	26° 42' 11.461" N	88° 10' 30.106" E
	42	26° 42' 14.811" N	88° 10' 30.572" E
	43	26° 42' 15.733" N	88° 10' 30.521" E
	44	26° 42' 20.802" N	88° 10' 33.143" E
	45	26° 42' 21.745" N	88° 10' 34.377" E
	46	26° 42' 22.761" N	88° 10' 36.254" E
	47	26° 42' 23.393" N	88° 10' 37.841" E
	48	26° 42' 22.612" N	88° 10' 38.694" E
	49	26° 42' 20.155" N	88° 10' 39.387" E
	50	26° 42' 17.429" N	88° 10' 41.513" E
DR_NB_MC_05_06	1	26° 40' 59.043" N	88° 10' 6.856" E
	2	26° 40' 57.547" N	88° 10' 7.266" E
	3	26° 40' 58.454" N	88° 10' 8.158" E
	4	26° 40' 47.285" N	88° 10' 6.428" E
	5	26° 40' 42.347" N	88° 10' 4.718" E
	6	26° 40' 39.162" N	88° 10' 5.164" E
	7	26° 40' 37.874" N	88° 10' 4.959" E
	8	26° 40' 37.936" N	88° 10' 4.801" E
	9	26° 40' 29.618" N	88° 10' 2.340" E
	10	26° 40' 25.960" N	88° 10' 0.148" E
	11	26° 40' 23.653" N	88° 9' 58.402" E
	12	26° 40' 18.561" N	88° 9' 53.723" E
	13	26° 40' 15.072" N	88° 9' 51.473" E
	14	26° 40' 10.572" N	88° 9' 51.737" E
	15	26° 40' 7.853" N	88° 9' 52.813" E
	16	26° 40' 2.414" N	88° 9' 53.546" E
	17	26° 39' 58.119" N	88° 9' 53.024" E
	18	26° 39' 54.334" N	88° 9' 53.177" E
	19	26° 39' 52.701" N	88° 9' 53.064" E
	20	26° 39' 51.188" N	88° 9' 54.772" E
	21	26° 39' 50.756" N	88° 9' 54.724" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	22	26° 39' 48.203" N	88° 9' 53.065" E
	23	26° 39' 48.258" N	88° 9' 51.981" E
	24	26° 39' 47.140" N	88° 9' 49.658" E
	25	26° 39' 47.498" N	88° 9' 47.843" E
	26	26° 39' 49.055" N	88° 9' 46.806" E
	27	26° 39' 51.730" N	88° 9' 45.589" E
	28	26° 39' 55.529" N	88° 9' 43.714" E
	29	26° 40' 1.230" N	88° 9' 40.613" E
	30	26° 40' 1.924" N	88° 9' 40.340" E
	31	26° 40' 6.118" N	88° 9' 39.624" E
	32	26° 40' 8.124" N	88° 9' 39.981" E
	33	26° 40' 8.537" N	88° 9' 40.878" E
	34	26° 40' 11.278" N	88° 9' 42.246" E
	35	26° 40' 13.673" N	88° 9' 43.802" E
	36	26° 40' 16.323" N	88° 9' 43.507" E
	37	26° 40' 18.006" N	88° 9' 42.806" E
	38	26° 40' 20.198" N	88° 9' 42.828" E
	39	26° 40' 22.251" N	88° 9' 44.141" E
	40	26° 40' 25.601" N	88° 9' 44.606" E
	41	26° 40' 29.456" N	88° 9' 46.064" E
	42	26° 40' 32.445" N	88° 9' 45.378" E
	43	26° 40' 33.924" N	88° 9' 45.064" E
	44	26° 40' 38.571" N	88° 9' 46.680" E
	45	26° 40' 38.882" N	88° 9' 46.879" E
	46	26° 40' 39.480" N	88° 9' 47.363" E
	47	26° 40' 40.594" N	88° 9' 47.853" E
	48	26° 40' 42.565" N	88° 9' 48.639" E
	49	26° 40' 44.191" N	88° 9' 49.613" E
	50	26° 40' 44.876" N	88° 9' 50.003" E
	51	26° 40' 45.649" N	88° 9' 50.106" E
	52	26° 40' 49.294" N	88° 9' 50.409" E
	53	26° 41' 2.196" N	88° 9' 54.895" E
	54	26° 41' 3.702" N	88° 9' 56.112" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	55	26° 41' 4.029" N	88° 9' 58.432" E
	56	26° 41' 5.911" N	88° 10' 4.913" E
	57	26° 41' 9.127" N	88° 10' 5.950" E
	58	26° 41' 12.479" N	88° 10' 6.128" E
	59	26° 41' 18.294" N	88° 10' 7.253" E
	60	26° 41' 18.483" N	88° 10' 7.385" E
	61	26° 41' 17.071" N	88° 10' 9.165" E
	62	26° 41' 14.384" N	88° 10' 9.138" E
	63	26° 41' 11.008" N	88° 10' 9.390" E
	64	26° 41' 8.960" N	88° 10' 10.087" E
	65	26° 41' 8.637" N	88° 10' 10.203" E
	66	26° 41' 6.487" N	88° 10' 10.181" E
	67	26° 41' 4.339" N	88° 10' 9.920" E
	68	26° 41' 1.344" N	88° 10' 8.214" E
DR_NB_MC_08	1	26° 39' 18.634" N	88° 9' 50.293" E
	2	26° 39' 18.376" N	88° 9' 50.392" E
	3	26° 39' 19.042" N	88° 9' 49.203" E
	4	26° 39' 23.096" N	88° 9' 47.617" E
	5	26° 39' 24.565" N	88° 9' 46.771" E
	6	26° 39' 26.025" N	88° 9' 46.977" E
	7	26° 39' 27.057" N	88° 9' 46.988" E
	8	26° 39' 27.045" N	88° 9' 48.519" E
	9	26° 39' 25.752" N	88° 9' 48.889" E
	10	26° 39' 24.288" N	88° 9' 49.065" E
	11	26° 39' 22.825" N	88° 9' 49.242" E
	12	26° 39' 21.186" N	88° 9' 49.895" E
	13	26° 39' 19.904" N	88° 9' 50.592" E
DR_NB_MC_10	1	26° 39' 7.621" N	88° 9' 53.679" E
	2	26° 39' 7.522" N	88° 9' 45.028" E
	3	26° 39' 10.726" N	88° 9' 43.930" E
	4	26° 39' 13.717" N	88° 9' 43.581" E
	5	26° 39' 14.248" N	88° 9' 45.588" E
	6	26° 39' 14.901" N	88° 9' 48.055" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	7	26° 39' 13.956" N	88° 9' 50.110" E
	8	26° 39' 12.856" N	88° 9' 52.505" E
	9	26° 39' 8.677" N	88° 9' 54.104" E
DR_KB_MC_17	1	26° 38' 5.899" N	88° 9' 28.117" E
	2	26° 38' 4.637" N	88° 9' 24.550" E
	3	26° 38' 8.911" N	88° 9' 25.434" E
	4	26° 38' 9.520" N	88° 9' 26.613" E
	5	26° 38' 11.865" N	88° 9' 28.611" E
	6	26° 38' 12.180" N	88° 9' 28.573" E
	7	26° 38' 15.097" N	88° 9' 31.482" E
	8	26° 38' 15.411" N	88° 9' 31.983" E
	9	26° 38' 16.070" N	88° 9' 33.425" E
	10	26° 38' 16.424" N	88° 9' 34.538" E
	11	26° 38' 17.353" N	88° 9' 36.557" E
	12	26° 38' 15.887" N	88° 9' 37.116" E
	13	26° 38' 15.280" N	88° 9' 37.780" E
	14	26° 38' 14.330" N	88° 9' 38.000" E
	15	26° 38' 13.255" N	88° 9' 36.956" E
	16	26° 38' 13.008" N	88° 9' 35.576" E
	17	26° 38' 10.815" N	88° 9' 32.453" E
	18	26° 38' 8.889" N	88° 9' 30.539" E
DR_KB_MC_19	1	26° 37' 41.047" N	88° 9' 28.249" E
	2	26° 37' 39.090" N	88° 9' 25.646" E
	3	26° 37' 39.289" N	88° 9' 22.395" E
	4	26° 37' 39.303" N	88° 9' 20.673" E
	5	26° 37' 38.976" N	88° 9' 18.565" E
	6	26° 37' 38.983" N	88° 9' 17.608" E
	7	26° 37' 41.559" N	88° 9' 18.112" E
	8	26° 37' 43.366" N	88° 9' 18.035" E
	9	26° 37' 44.305" N	88° 9' 17.145" E
	10	26° 37' 45.643" N	88° 9' 18.512" E
	11	26° 37' 51.635" N	88° 9' 20.981" E
	12	26° 37' 53.037" N	88° 9' 23.433" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	13	26° 37' 54.252" N	88° 9' 23.121" E
	14	26° 37' 54.337" N	88° 9' 22.094" E
	15	26° 37' 55.927" N	88° 9' 22.749" E
	16	26° 38' 2.608" N	88° 9' 24.130" E
	17	26° 38' 2.718" N	88° 9' 25.587" E
	18	26° 38' 2.010" N	88° 9' 26.334" E
	19	26° 38' 0.669" N	88° 9' 26.246" E
	20	26° 37' 58.688" N	88° 9' 26.705" E
	21	26° 37' 56.963" N	88° 9' 27.261" E
	22	26° 37' 55.576" N	88° 9' 28.683" E
	23	26° 37' 54.964" N	88° 9' 29.920" E
	24	26° 37' 50.921" N	88° 9' 30.071" E
	25	26° 37' 48.082" N	88° 9' 30.234" E
	26	26° 37' 45.244" N	88° 9' 30.301" E
	27	26° 37' 43.186" N	88° 9' 29.514" E
DR_KB_MC_18	1	26° 37' 58.308" N	88° 9' 34.077" E
	2	26° 37' 55.224" N	88° 9' 33.616" E
	3	26° 37' 48.229" N	88° 9' 33.665" E
	4	26° 37' 47.176" N	88° 9' 33.592" E
	5	26° 37' 45.648" N	88° 9' 31.108" E
	6	26° 37' 50.758" N	88° 9' 30.816" E
	7	26° 37' 54.112" N	88° 9' 30.792" E
	8	26° 37' 56.546" N	88° 9' 29.668" E
	9	26° 37' 57.456" N	88° 9' 30.137" E
	10	26° 37' 58.237" N	88° 9' 29.284" E
	11	26° 38' 0.217" N	88° 9' 28.921" E
	12	26° 38' 2.281" N	88° 9' 28.942" E
	13	26° 38' 5.197" N	88° 9' 29.928" E
	14	26° 38' 6.822" N	88° 9' 30.997" E
	15	26° 38' 8.103" N	88° 9' 32.062" E
	16	26° 38' 9.299" N	88° 9' 33.031" E
	17	26° 38' 9.762" N	88° 9' 33.139" E
	18	26° 38' 11.000" N	88° 9' 35.213" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	19	26° 38' 10.313" N	88° 9' 35.242" E
	20	26° 38' 9.455" N	88° 9' 35.042" E
	21	26° 38' 8.681" N	88° 9' 35.034" E
	22	26° 38' 7.636" N	88° 9' 36.555" E
	23	26° 38' 6.000" N	88° 9' 36.825" E
	24	26° 38' 3.857" N	88° 9' 36.038" E
	25	26° 38' 1.456" N	88° 9' 35.248" E
	26	26° 38' 0.863" N	88° 9' 34.094" E
	27	26° 37' 58.975" N	88° 9' 33.692" E
DR_KB_MC_20_21_22_23	1	26° 37' 28.838" N	88° 9' 10.121" E
	2	26° 37' 27.268" N	88° 9' 11.711" E
	3	26° 37' 27.889" N	88° 9' 13.306" E
	4	26° 37' 28.811" N	88° 9' 14.119" E
	5	26° 37' 30.406" N	88° 9' 14.709" E
	6	26° 37' 32.520" N	88° 9' 14.845" E
	7	26° 37' 34.444" N	88° 9' 17.524" E
	8	26° 37' 35.126" N	88° 9' 18.201" E
	9	26° 37' 36.244" N	88° 9' 18.212" E
	10	26° 37' 37.358" N	88° 9' 18.702" E
	11	26° 37' 38.205" N	88° 9' 20.241" E
	12	26° 37' 37.875" N	88° 9' 22.591" E
	13	26° 37' 37.739" N	88° 9' 26.551" E
	14	26° 37' 35.838" N	88° 9' 25.613" E
	15	26° 37' 33.918" N	88° 9' 25.302" E
	16	26° 37' 26.340" N	88° 9' 17.390" E
	17	26° 37' 20.626" N	88° 9' 0.972" E
	18	26° 37' 20.570" N	88° 9' 0.841" E
	19	26° 37' 20.738" N	88° 9' 0.356" E
	20	26° 37' 21.589" N	88° 9' 1.513" E
	21	26° 37' 22.047" N	88° 9' 2.322" E
	22	26° 37' 21.151" N	88° 8' 57.969" E
	23	26° 37' 21.476" N	88° 8' 56.172" E
	24	26° 37' 21.290" N	88° 8' 53.550" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	25	26° 37' 20.690" N	88° 8' 51.190" E
	26	26° 37' 21.216" N	88° 8' 49.577" E
	27	26° 37' 23.138" N	88° 8' 50.717" E
	28	26° 37' 24.676" N	88° 8' 51.881" E
	29	26° 37' 25.786" N	88° 8' 52.944" E
	30	26° 37' 27.251" N	88° 8' 53.475" E
	31	26° 37' 27.353" N	88° 8' 53.819" E
	32	26° 37' 26.790" N	88° 8' 56.398" E
	33	26° 37' 26.261" N	88° 8' 58.020" E
	34	26° 37' 27.019" N	88° 8' 59.941" E
	35	26° 37' 29.063" N	88° 9' 2.353" E
	36	26° 37' 30.256" N	88° 9' 3.705" E
	37	26° 37' 32.479" N	88° 9' 5.258" E
	38	26° 37' 33.154" N	88° 9' 6.891" E
	39	26° 37' 34.003" N	88° 9' 8.239" E
	40	26° 37' 35.528" N	88° 9' 11.125" E
	41	26° 37' 37.665" N	88° 9' 12.677" E
	42	26° 37' 38.865" N	88° 9' 13.167" E
	43	26° 37' 39.291" N	88° 9' 13.650" E
	44	26° 37' 40.233" N	88° 9' 14.138" E
	45	26° 37' 42.027" N	88° 9' 15.495" E
	46	26° 37' 42.968" N	88° 9' 16.175" E
	47	26° 37' 42.876" N	88° 9' 16.843" E
	48	26° 37' 40.384" N	88° 9' 16.723" E
	49	26° 37' 38.667" N	88° 9' 16.323" E
	50	26° 37' 37.209" N	88° 9' 15.830" E
	51	26° 37' 35.068" N	88° 9' 14.756" E
	52	26° 37' 34.141" N	88° 9' 12.450" E
	53	26° 37' 32.860" N	88° 9' 11.385" E
	54	26° 37' 32.610" N	88° 9' 10.426" E
	55	26° 37' 31.321" N	88° 9' 10.221" E
	56	26° 37' 29.258" N	88° 9' 10.105" E
DR_KB_MC_31	1	26° 36' 32.860" N	88° 8' 10.846" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	2	26° 36' 33.044" N	88° 8' 6.183" E
	3	26° 36' 33.732" N	88° 8' 6.094" E
	4	26° 36' 35.790" N	88° 8' 5.432" E
	5	26° 36' 39.830" N	88° 8' 6.150" E
	6	26° 36' 39.837" N	88° 8' 6.154" E
	7	26° 36' 40.075" N	88° 8' 8.644" E
	8	26° 36' 39.801" N	88° 8' 10.746" E
	9	26° 36' 39.880" N	88° 8' 12.935" E
	10	26° 36' 40.031" N	88° 8' 14.192" E
	11	26° 36' 40.975" N	88° 8' 14.489" E
	12	26° 36' 41.699" N	88° 8' 14.549" E
	13	26° 36' 43.686" N	88° 8' 16.311" E
	14	26° 36' 44.821" N	88° 8' 16.935" E
	15	26° 36' 45.072" N	88° 8' 18.478" E
	16	26° 36' 45.123" N	88° 8' 18.612" E
	17	26° 36' 39.148" N	88° 8' 19.923" E
	18	26° 36' 37.932" N	88° 8' 18.572" E
	19	26° 36' 35.736" N	88° 8' 13.576" E
DR_MR_CG_01	1	26° 46' 8.974" N	88° 13' 15.873" E
	2	26° 46' 7.734" N	88° 13' 16.013" E
	3	26° 46' 8.002" N	88° 13' 14.380" E
	4	26° 46' 8.445" N	88° 13' 13.553" E
	5	26° 46' 9.620" N	88° 13' 12.738" E
	6	26° 46' 11.088" N	88° 13' 9.995" E
	7	26° 46' 13.449" N	88° 13' 7.414" E
	8	26° 46' 15.942" N	88° 13' 5.525" E
	9	26° 46' 19.187" N	88° 13' 3.939" E
	10	26° 46' 23.300" N	88° 13' 2.800" E
	11	26° 46' 25.199" N	88° 13' 1.549" E
	12	26° 46' 25.609" N	88° 13' 1.336" E
	13	26° 46' 25.894" N	88° 13' 1.091" E
	14	26° 46' 26.906" N	88° 13' 0.425" E
	15	26° 46' 27.558" N	88° 13' 0.000" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	16	26° 46' 28.306" N	88° 12' 59.602" E
	17	26° 46' 28.681" N	88° 12' 59.249" E
	18	26° 46' 33.781" N	88° 12' 55.871" E
	19	26° 46' 35.211" N	88° 12' 54.629" E
	20	26° 46' 36.677" N	88° 12' 54.173" E
	21	26° 46' 38.475" N	88° 12' 53.043" E
	22	26° 46' 40.615" N	88° 12' 52.222" E
	23	26° 46' 42.136" N	88° 12' 51.242" E
	24	26° 46' 43.800" N	88° 12' 49.804" E
	25	26° 46' 45.118" N	88° 12' 48.515" E
	26	26° 46' 45.889" N	88° 12' 46.837" E
	27	26° 46' 47.060" N	88° 12' 46.619" E
	28	26° 46' 48.925" N	88° 12' 45.796" E
	29	26° 46' 50.929" N	88° 12' 44.668" E
	30	26° 46' 52.995" N	88° 12' 44.383" E
	31	26° 46' 55.135" N	88° 12' 43.563" E
	32	26° 46' 56.307" N	88° 12' 43.192" E
	33	26° 46' 57.143" N	88° 12' 41.975" E
	34	26° 46' 57.705" N	88° 12' 40.678" E
	35	26° 46' 58.406" N	88° 12' 39.075" E
	36	26° 46' 58.898" N	88° 12' 37.854" E
	37	26° 46' 59.144" N	88° 12' 37.489" E
	38	26° 47' 0.235" N	88° 12' 36.661" E
	39	26° 47' 1.179" N	88° 12' 36.575" E
	40	26° 47' 2.285" N	88° 12' 35.974" E
	41	26° 47' 3.463" N	88° 12' 34.990" E
	42	26° 47' 4.500" N	88° 12' 34.388" E
	43	26° 47' 6.021" N	88° 12' 33.561" E
	44	26° 47' 6.013" N	88° 12' 34.481" E
	45	26° 47' 3.871" N	88° 12' 35.531" E
	46	26° 47' 3.173" N	88° 12' 36.750" E
	47	26° 47' 3.088" N	88° 12' 38.589" E
	48	26° 47' 1.759" N	88° 12' 41.257" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	49	26° 47' 0.994" N	88° 12' 42.169" E
	50	26° 46' 58.983" N	88° 12' 44.064" E
	51	26° 46' 56.423" N	88° 12' 45.723" E
	52	26° 46' 52.832" N	88° 12' 47.371" E
	53	26° 46' 49.999" N	88° 12' 48.873" E
	54	26° 46' 47.302" N	88° 12' 50.531" E
	55	26° 46' 45.221" N	88° 12' 52.578" E
	56	26° 46' 42.662" N	88° 12' 54.084" E
	57	26° 46' 39.214" N	88° 12' 55.120" E
	58	26° 46' 37.552" N	88° 12' 56.405" E
	59	26° 46' 34.717" N	88° 12' 58.061" E
	60	26° 46' 32.506" N	88° 12' 59.264" E
	61	26° 46' 30.285" N	88° 13' 1.463" E
	62	26° 46' 28.143" N	88° 13' 2.666" E
	63	26° 46' 25.725" N	88° 13' 3.790" E
	64	26° 46' 23.583" N	88° 13' 4.917" E
	65	26° 46' 21.723" N	88° 13' 5.203" E
	66	26° 46' 19.376" N	88° 13' 6.175" E
	67	26° 46' 16.820" N	88° 13' 7.450" E
	68	26° 46' 14.402" N	88° 13' 8.574" E
	69	26° 46' 12.464" N	88° 13' 10.009" E
	70	26° 46' 10.858" N	88° 13' 12.751" E
	71	26° 46' 8.974" N	88° 13' 15.873" E
	72	26° 46' 33.961" N	88° 12' 55.068" E
	73	26° 46' 33.946" N	88° 12' 55.078" E
	74	26° 46' 33.995" N	88° 12' 55.038" E
DR_MR_CG_02	1	26° 45' 59.165" N	88° 13' 29.379" E
	2	26° 45' 58.337" N	88° 13' 29.676" E
	3	26° 45' 58.560" N	88° 13' 27.763" E
	4	26° 46' 1.333" N	88° 13' 25.187" E
	5	26° 46' 3.901" N	88° 13' 22.609" E
	6	26° 46' 3.962" N	88° 13' 22.537" E
	7	26° 46' 5.159" N	88° 13' 21.488" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	8	26° 46' 5.278" N	88° 13' 21.028" E
	9	26° 46' 6.054" N	88° 13' 20.179" E
	10	26° 46' 6.205" N	88° 13' 18.725" E
	11	26° 46' 7.099" N	88° 13' 18.735" E
	12	26° 46' 7.087" N	88° 13' 20.037" E
	13	26° 46' 5.693" N	88° 13' 22.245" E
	14	26° 46' 4.511" N	88° 13' 23.612" E
	15	26° 46' 2.295" N	88° 13' 25.350" E
	16	26° 46' 0.837" N	88° 13' 26.867" E
	17	26° 45' 59.727" N	88° 13' 28.005" E
DR_MR_CG_03	1	26° 45' 45.558" N	88° 13' 41.111" E
	2	26° 45' 45.452" N	88° 13' 38.490" E
	3	26° 45' 46.028" N	88° 13' 38.154" E
	4	26° 45' 46.492" N	88° 13' 38.157" E
	5	26° 45' 48.124" N	88° 13' 37.427" E
	6	26° 45' 48.280" N	88° 13' 37.345" E
	7	26° 45' 48.433" N	88° 13' 37.310" E
	8	26° 45' 49.882" N	88° 13' 36.866" E
	9	26° 45' 51.610" N	88° 13' 35.888" E
	10	26° 45' 52.576" N	88° 13' 35.592" E
	11	26° 45' 54.441" N	88° 13' 34.692" E
	12	26° 45' 56.239" N	88° 13' 33.639" E
	13	26° 45' 57.212" N	88° 13' 32.423" E
	14	26° 45' 57.203" N	88° 13' 33.496" E
	15	26° 45' 57.613" N	88° 13' 34.718" E
	16	26° 45' 55.993" N	88° 13' 38.643" E
	17	26° 45' 55.384" N	88° 13' 39.145" E
	18	26° 45' 52.654" N	88° 13' 40.778" E
	19	26° 45' 50.255" N	88° 13' 41.195" E
DR_NB_CG_05	1	26° 45' 22.176" N	88° 13' 50.744" E
	2	26° 45' 21.493" N	88° 13' 50.200" E
	3	26° 45' 21.780" N	88° 13' 48.824" E
	4	26° 45' 23.231" N	88° 13' 48.150" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	5	26° 45' 25.239" N	88° 13' 46.639" E
	6	26° 45' 27.518" N	88° 13' 45.591" E
	7	26° 45' 29.176" N	88° 13' 44.842" E
	8	26° 45' 29.662" N	88° 13' 44.311" E
	9	26° 45' 30.975" N	88° 13' 43.636" E
	10	26° 45' 31.337" N	88° 13' 43.438" E
	11	26° 45' 31.821" N	88° 13' 43.287" E
	12	26° 45' 32.019" N	88° 13' 43.068" E
	13	26° 45' 32.772" N	88° 13' 42.659" E
	14	26° 45' 33.735" N	88° 13' 42.669" E
	15	26° 45' 34.284" N	88° 13' 42.752" E
	16	26° 45' 34.823" N	88° 13' 44.060" E
	17	26° 45' 34.540" N	88° 13' 44.977" E
	18	26° 45' 33.331" N	88° 13' 46.267" E
	19	26° 45' 31.919" N	88° 13' 47.141" E
	20	26° 45' 30.724" N	88° 13' 48.255" E
	21	26° 45' 28.003" N	88° 13' 49.709" E
	22	26° 45' 25.939" N	88° 13' 49.687" E
	23	26° 45' 24.657" N	88° 13' 50.311" E
	24	26° 45' 23.209" N	88° 13' 50.679" E
DR_NB_CG_06	1	26° 44' 49.529" N	88° 14' 3.106" E
	2	26° 44' 49.529" N	88° 14' 0.497" E
	3	26° 44' 49.915" N	88° 13' 58.519" E
	4	26° 44' 50.682" N	88° 13' 57.301" E
	5	26° 44' 53.237" N	88° 13' 56.179" E
	6	26° 44' 55.133" N	88° 13' 55.373" E
	7	26° 44' 55.214" N	88° 13' 55.355" E
	8	26° 44' 56.409" N	88° 13' 55.294" E
	9	26° 44' 58.750" N	88° 13' 55.089" E
	10	26° 45' 0.119" N	88° 13' 55.870" E
	11	26° 45' 1.428" N	88° 13' 55.654" E
	12	26° 45' 2.808" N	88° 13' 55.133" E
	13	26° 45' 3.980" N	88° 13' 54.839" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	14	26° 45' 4.874" N	88° 13' 54.849" E
	15	26° 45' 5.975" N	88° 13' 54.784" E
	16	26° 45' 6.319" N	88° 13' 54.864" E
	17	26° 45' 6.378" N	88° 13' 55.938" E
	18	26° 45' 6.235" N	88° 13' 56.549" E
	19	26° 45' 4.379" N	88° 13' 56.376" E
	20	26° 45' 3.279" N	88° 13' 56.364" E
	21	26° 45' 2.245" N	88° 13' 56.583" E
	22	26° 45' 1.071" N	88° 13' 57.106" E
	23	26° 45' 0.313" N	88° 13' 57.328" E
	24	26° 44' 59.006" N	88° 13' 57.237" E
	25	26° 44' 57.356" N	88° 13' 57.143" E
	26	26° 44' 55.911" N	88° 13' 57.204" E
	27	26° 44' 54.189" N	88° 13' 57.415" E
	28	26° 44' 52.876" N	88° 13' 58.167" E
	29	26° 44' 52.112" N	88° 13' 58.925" E
	30	26° 44' 51.212" N	88° 13' 59.682" E
	31	26° 44' 50.653" N	88° 14' 0.672" E
	32	26° 44' 50.436" N	88° 14' 1.819" E
	33	26° 44' 50.153" N	88° 14' 2.812" E
	34	26° 44' 49.529" N	88° 14' 3.342" E
	35	26° 44' 49.531" N	88° 14' 3.112" E
DR_PD_CG_07	1	26° 38' 42.840" N	88° 16' 17.125" E
	2	26° 38' 42.421" N	88° 16' 15.924" E
	3	26° 38' 44.095" N	88° 16' 16.182" E
	4	26° 38' 45.370" N	88° 16' 16.071" E
	5	26° 38' 47.078" N	88° 16' 18.926" E
	6	26° 38' 47.455" N	88° 16' 20.021" E
	7	26° 38' 48.348" N	88° 16' 20.280" E
	8	26° 38' 48.343" N	88° 16' 20.825" E
	9	26° 38' 48.176" N	88° 16' 21.442" E
	10	26° 38' 46.588" N	88° 16' 21.138" E
	11	26° 38' 45.911" N	88° 16' 19.886" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	12	26° 38' 45.186" N	88° 16' 19.256" E
	13	26° 38' 44.035" N	88° 16' 18.143" E
	14	26° 38' 43.350" N	88° 16' 17.800" E
	15	26° 38' 42.840" N	88° 16' 17.125" E
	16	26° 38' 47.831" N	88° 16' 19.306" E
	17	26° 38' 47.505" N	88° 16' 17.389" E
	18	26° 38' 46.231" N	88° 16' 15.034" E
	19	26° 38' 46.603" N	88° 16' 14.583" E
	20	26° 38' 47.245" N	88° 16' 14.973" E
	21	26° 38' 48.180" N	88° 16' 16.131" E
	22	26° 38' 47.782" N	88° 16' 17.371" E
	23	26° 38' 47.773" N	88° 16' 18.376" E
	24	26° 38' 48.326" N	88° 16' 19.052" E
	25	26° 38' 48.357" N	88° 16' 19.293" E
	26	26° 38' 48.356" N	88° 16' 19.447" E
DR_PD_CG_08	1	26° 38' 20.461" N	88° 16' 16.877" E
	2	26° 38' 23.992" N	88° 16' 16.656" E
	3	26° 38' 26.460" N	88° 16' 16.552" E
	4	26° 38' 25.817" N	88° 16' 18.850" E
	5	26° 38' 25.049" N	88° 16' 20.636" E
	6	26° 38' 22.990" N	88° 16' 22.527" E
	7	26° 38' 21.149" N	88° 16' 24.061" E
	8	26° 38' 20.527" N	88° 16' 21.542" E
	9	26° 38' 20.434" N	88° 16' 19.867" E
DR_PD_CG_09	1	26° 38' 15.929" N	88° 16' 19.736" E
	2	26° 38' 17.695" N	88° 16' 21.089" E
	3	26° 38' 17.845" N	88° 16' 24.262" E
	4	26° 38' 16.511" N	88° 16' 23.876" E
	5	26° 38' 15.275" N	88° 16' 23.632" E
	6	26° 38' 14.383" N	88° 16' 23.469" E
	7	26° 38' 13.910" N	88° 16' 22.469" E
	8	26° 38' 12.409" N	88° 16' 21.075" E
	9	26° 38' 12.485" N	88° 16' 20.233" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	10	26° 38' 13.794" N	88° 16' 20.018" E
	11	26° 38' 15.445" N	88° 16' 20.037" E
DR_PD_CG_11_12	1	26° 37' 52.511" N	88° 16' 30.163" E
	2	26° 37' 52.172" N	88° 16' 30.315" E
	3	26° 37' 52.452" N	88° 16' 30.487" E
	4	26° 37' 52.436" N	88° 16' 30.578" E
	5	26° 37' 50.843" N	88° 16' 31.747" E
	6	26° 37' 44.644" N	88° 16' 32.635" E
	7	26° 37' 39.765" N	88° 16' 32.156" E
	8	26° 37' 39.518" N	88° 16' 31.625" E
	9	26° 37' 38.755" N	88° 16' 31.899" E
	10	26° 37' 37.574" N	88° 16' 31.254" E
	11	26° 37' 35.890" N	88° 16' 29.169" E
	12	26° 37' 32.851" N	88° 16' 28.676" E
	13	26° 37' 28.106" N	88° 16' 34.249" E
	14	26° 37' 24.336" N	88° 16' 35.700" E
	15	26° 37' 22.732" N	88° 16' 35.568" E
	16	26° 37' 22.352" N	88° 16' 35.437" E
	17	26° 37' 22.361" N	88° 16' 34.514" E
	18	26° 37' 20.475" N	88° 16' 34.624" E
	19	26° 37' 19.497" N	88° 16' 33.465" E
	20	26° 37' 21.061" N	88° 16' 31.645" E
	21	26° 37' 24.073" N	88° 16' 29.440" E
	22	26° 37' 25.399" N	88° 16' 28.370" E
	23	26° 37' 28.910" N	88° 16' 26.496" E
	24	26° 37' 29.337" N	88° 16' 26.019" E
	25	26° 37' 30.554" N	88° 16' 25.953" E
	26	26° 37' 34.243" N	88° 16' 23.121" E
	27	26° 37' 35.042" N	88° 16' 20.646" E
	28	26° 37' 35.606" N	88° 16' 19.542" E
	29	26° 37' 38.595" N	88° 16' 18.360" E
	30	26° 37' 40.489" N	88° 16' 15.492" E
	31	26° 37' 42.610" N	88° 16' 14.774" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	32	26° 37' 45.429" N	88° 16' 14.882" E
	33	26° 37' 46.802" N	88° 16' 15.280" E
	34	26° 37' 46.721" N	88° 16' 16.580" E
	35	26° 37' 45.333" N	88° 16' 18.019" E
	36	26° 37' 43.869" N	88° 16' 20.146" E
	37	26° 37' 42.339" N	88° 16' 22.043" E
	38	26° 37' 40.506" N	88° 16' 22.620" E
	39	26° 37' 38.664" N	88° 16' 24.274" E
	40	26° 37' 39.081" N	88° 16' 25.714" E
	41	26° 37' 41.012" N	88° 16' 26.094" E
	42	26° 37' 42.734" N	88° 16' 25.874" E
	43	26° 37' 45.101" N	88° 16' 25.661" E
	44	26° 37' 48.223" N	88° 16' 25.098" E
	45	26° 37' 50.575" N	88° 16' 26.559" E
	46	26° 37' 52.072" N	88° 16' 27.413" E
	47	26° 37' 52.703" N	88° 16' 29.098" E
DR_PD_CG_13	1	26° 36' 51.150" N	88° 16' 45.806" E
	2	26° 36' 50.920" N	88° 16' 45.062" E
	3	26° 36' 52.238" N	88° 16' 41.968" E
	4	26° 36' 56.531" N	88° 16' 40.355" E
	5	26° 36' 57.310" N	88° 16' 39.790" E
	6	26° 36' 58.783" N	88° 16' 38.562" E
	7	26° 36' 59.904" N	88° 16' 38.192" E
	8	26° 37' 0.940" N	88° 16' 37.725" E
	9	26° 37' 2.229" N	88° 16' 37.835" E
	10	26° 37' 2.310" N	88° 16' 38.410" E
	11	26° 37' 3.893" N	88° 16' 39.419" E
	12	26° 37' 3.172" N	88° 16' 41.506" E
	13	26° 37' 0.515" N	88° 16' 42.666" E
	14	26° 36' 58.949" N	88° 16' 42.368" E
	15	26° 36' 58.156" N	88° 16' 42.842" E
	16	26° 36' 57.371" N	88° 16' 42.565" E
	17	26° 36' 56.249" N	88° 16' 43.030" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	18	26° 36' 54.633" N	88° 16' 43.382" E
DR_PD_CG_14	1	26° 36' 29.565" N	88° 16' 58.910" E
	2	26° 36' 29.550" N	88° 16' 58.907" E
	3	26° 36' 29.644" N	88° 16' 53.871" E
	4	26° 36' 31.177" N	88° 16' 53.308" E
	5	26° 36' 33.104" N	88° 16' 52.934" E
	6	26° 36' 36.644" N	88° 16' 52.688" E
	7	26° 36' 39.980" N	88° 16' 53.298" E
	8	26° 36' 39.701" N	88° 16' 54.633" E
	9	26° 36' 33.057" N	88° 16' 58.054" E
	10	26° 36' 32.714" N	88° 16' 58.095" E
	11	26° 36' 30.327" N	88° 16' 58.306" E
	12	26° 36' 30.187" N	88° 16' 58.610" E
DR_PD_CG_18	1	26° 34' 19.891" N	88° 15' 58.705" E
	2	26° 34' 18.500" N	88° 15' 57.972" E
	3	26° 34' 18.939" N	88° 15' 57.021" E
	4	26° 34' 21.304" N	88° 15' 56.927" E
	5	26° 34' 23.880" N	88° 15' 57.314" E
	6	26° 34' 26.031" N	88° 15' 57.218" E
	7	26° 34' 27.314" N	88° 15' 57.950" E
	8	26° 34' 25.588" N	88° 15' 58.648" E
	9	26° 34' 24.085" N	88° 15' 58.512" E
	10	26° 34' 23.336" N	88° 15' 58.145" E
	11	26° 34' 21.396" N	88° 15' 58.722" E
	12	26° 34' 21.124" N	88° 15' 59.276" E
	13	26° 34' 20.970" N	88° 15' 59.344" E
	14	26° 34' 20.446" N	88° 15' 59.650" E
DR_PD_CG_19	1	26° 34' 5.791" N	88° 15' 36.675" E
	2	26° 34' 7.494" N	88° 15' 38.487" E
	3	26° 34' 8.759" N	88° 15' 41.370" E
	4	26° 34' 10.450" N	88° 15' 44.616" E
	5	26° 34' 11.399" N	88° 15' 46.658" E
	6	26° 34' 12.778" N	88° 15' 48.705" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	7	26° 34' 13.630" N	88° 15' 49.671" E
	8	26° 34' 14.692" N	88° 15' 51.117" E
	9	26° 34' 15.331" N	88° 15' 51.722" E
	10	26° 34' 15.861" N	88° 15' 52.564" E
	11	26° 34' 15.961" N	88° 15' 53.402" E
	12	26° 34' 14.883" N	88° 15' 53.749" E
	13	26° 34' 14.135" N	88° 15' 53.263" E
	14	26° 34' 12.963" N	88° 15' 52.054" E
	15	26° 34' 11.695" N	88° 15' 49.650" E
	16	26° 34' 10.954" N	88° 15' 48.327" E
	17	26° 34' 10.534" N	88° 15' 47.246" E
	18	26° 34' 9.584" N	88° 15' 45.323" E
	19	26° 34' 8.955" N	88° 15' 43.523" E
	20	26° 34' 7.790" N	88° 15' 41.479" E
	21	26° 34' 6.944" N	88° 15' 39.915" E
DR_PD_CG_20	1	26° 34' 0.325" N	88° 15' 10.438" E
	2	26° 33' 59.982" N	88° 15' 12.825" E
	3	26° 33' 59.758" N	88° 15' 13.779" E
	4	26° 33' 59.100" N	88° 15' 15.325" E
	5	26° 33' 58.850" N	88° 15' 19.267" E
	6	26° 33' 59.252" N	88° 15' 22.499" E
	7	26° 33' 58.711" N	88° 15' 22.852" E
	8	26° 33' 57.647" N	88° 15' 21.645" E
	9	26° 33' 57.548" N	88° 15' 20.687" E
	10	26° 33' 57.453" N	88° 15' 19.252" E
	11	26° 33' 57.579" N	88° 15' 17.102" E
	12	26° 33' 57.814" N	88° 15' 14.833" E
	13	26° 33' 58.041" N	88° 15' 13.521" E
	14	26° 33' 58.806" N	88° 15' 12.095" E
DR_PD_CG_21	1	26° 33' 59.623" N	88° 14' 52.500" E
	2	26° 34' 1.761" N	88° 14' 53.838" E
	3	26° 34' 3.037" N	88° 14' 55.406" E
	4	26° 34' 3.561" N	88° 14' 56.966" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	5	26° 34' 3.544" N	88° 14' 58.878" E
	6	26° 34' 3.312" N	88° 15' 0.788" E
	7	26° 34' 3.192" N	88° 15' 2.221" E
	8	26° 34' 1.888" N	88° 15' 3.881" E
	9	26° 34' 1.121" N	88° 15' 5.546" E
	10	26° 33' 59.930" N	88° 15' 6.489" E
	11	26° 33' 59.411" N	88° 15' 4.332" E
	12	26° 33' 58.884" N	88° 15' 3.250" E
	13	26° 33' 58.362" N	88° 15' 1.452" E
	14	26° 33' 57.829" N	88° 15' 0.968" E
	15	26° 33' 57.515" N	88° 15' 0.008" E
	16	26° 33' 58.485" N	88° 14' 59.660" E
	17	26° 33' 58.385" N	88° 14' 58.822" E
	18	26° 33' 57.321" N	88° 14' 57.615" E
	19	26° 33' 55.934" N	88° 14' 56.405" E
	20	26° 33' 55.559" N	88° 14' 55.397" E
	21	26° 33' 55.738" N	88° 14' 54.538" E
	22	26° 33' 55.748" N	88° 14' 53.486" E
	23	26° 33' 56.701" N	88° 14' 52.636" E
DR_PD_CG_22	1	26° 33' 32.850" N	88° 14' 41.095" E
	2	26° 33' 31.900" N	88° 14' 39.172" E
	3	26° 33' 32.445" N	88° 14' 39.448" E
	4	26° 33' 32.984" N	88° 14' 40.041" E
	5	26° 33' 33.281" N	88° 14' 40.980" E
	6	26° 33' 34.878" N	88° 14' 42.790" E
	7	26° 33' 36.050" N	88° 14' 43.998" E
	8	26° 33' 37.536" N	88° 14' 46.165" E
	9	26° 33' 37.858" N	88° 14' 46.169" E
	10	26° 33' 39.148" N	88° 14' 46.183" E
	11	26° 33' 40.858" N	88° 14' 47.277" E
	12	26° 33' 41.929" N	88° 14' 47.767" E
	13	26° 33' 42.884" N	88° 14' 49.092" E
	14	26° 33' 41.379" N	88° 14' 49.195" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	15	26° 33' 39.767" N	88° 14' 49.178" E
	16	26° 33' 37.727" N	88° 14' 48.916" E
	17	26° 33' 36.654" N	88° 14' 48.666" E
	18	26° 33' 35.055" N	88° 14' 47.095" E
	19	26° 33' 34.313" N	88° 14' 45.891" E
	20	26° 33' 33.362" N	88° 14' 44.088" E
DR_PD_CG_23	1	26° 33' 4.547" N	88° 13' 51.495" E
	2	26° 33' 3.600" N	88° 13' 46.720" E
	3	26° 33' 5.215" N	88° 13' 46.679" E
	4	26° 33' 5.925" N	88° 13' 46.661" E
	5	26° 33' 6.752" N	88° 13' 46.640" E
	6	26° 33' 6.799" N	88° 13' 48.727" E
	7	26° 33' 6.871" N	88° 13' 50.354" E
	8	26° 33' 7.550" N	88° 13' 51.317" E
	9	26° 33' 7.879" N	88° 13' 53.042" E
	10	26° 33' 8.377" N	88° 13' 54.048" E
	11	26° 33' 9.107" N	88° 13' 55.215" E
	12	26° 33' 9.437" N	88° 13' 58.776" E
	13	26° 33' 9.526" N	88° 14' 0.440" E
	14	26° 33' 8.805" N	88° 14' 0.318" E
	15	26° 33' 7.996" N	88° 13' 58.416" E
	16	26° 33' 6.165" N	88° 13' 55.299" E
DR_PD_MJ_01_02	1	26° 37' 10.541" N	88° 15' 44.200" E
	2	26° 37' 8.580" N	88° 15' 44.348" E
	3	26° 37' 8.879" N	88° 15' 43.380" E
	4	26° 37' 9.535" N	88° 15' 42.096" E
	5	26° 37' 10.063" N	88° 15' 40.810" E
	6	26° 37' 11.446" N	88° 15' 40.407" E
	7	26° 37' 11.929" N	88° 15' 39.644" E
	8	26° 37' 13.286" N	88° 15' 37.994" E
	9	26° 37' 15.208" N	88° 15' 36.465" E
	10	26° 37' 19.085" N	88° 15' 35.647" E
	11	26° 37' 21.032" N	88° 15' 36.157" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	12	26° 37' 20.184" N	88° 15' 36.707" E
	13	26° 37' 15.706" N	88° 15' 37.480" E
	14	26° 37' 11.640" N	88° 15' 43.029" E
	15	26° 37' 11.336" N	88° 15' 42.990" E
	16	26° 37' 10.680" N	88° 15' 43.974" E
DR_PD_MJ_03	1	26° 36' 45.918" N	88° 15' 53.728" E
	2	26° 36' 45.484" N	88° 15' 54.003" E
	3	26° 36' 47.554" N	88° 15' 54.396" E
	4	26° 36' 50.447" N	88° 15' 53.968" E
	5	26° 36' 52.477" N	88° 15' 54.159" E
	6	26° 36' 49.761" N	88° 15' 54.205" E
	7	26° 36' 46.942" N	88° 15' 55.972" E
	8	26° 36' 44.507" N	88° 15' 58.334" E
	9	26° 36' 43.849" N	88° 15' 58.305" E
	10	26° 36' 43.810" N	88° 15' 58.679" E
	11	26° 36' 42.507" N	88° 16' 0.195" E
	12	26° 36' 42.207" N	88° 16' 0.420" E
	13	26° 36' 37.813" N	88° 16' 1.344" E
	14	26° 36' 37.484" N	88° 16' 1.278" E
	15	26° 36' 36.826" N	88° 16' 0.802" E
	16	26° 36' 36.270" N	88° 16' 1.037" E
	17	26° 36' 32.188" N	88° 16' 0.224" E
	18	26° 36' 31.335" N	88° 15' 59.670" E
	19	26° 36' 27.400" N	88° 15' 57.993" E
	20	26° 36' 27.401" N	88° 15' 57.892" E
	21	26° 36' 28.314" N	88° 15' 57.054" E
	22	26° 36' 31.367" N	88° 15' 54.264" E
	23	26° 36' 35.602" N	88° 15' 55.083" E
	24	26° 36' 37.377" N	88° 15' 55.814" E
	25	26° 36' 39.022" N	88° 15' 55.745" E
	26	26° 36' 39.318" N	88° 15' 55.802" E
	27	26° 36' 39.582" N	88° 15' 55.722" E
	28	26° 36' 40.629" N	88° 15' 55.678" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	29	26° 36' 43.761" N	88° 15' 54.565" E
	30	26° 36' 44.257" N	88° 15' 53.621" E
	31	26° 36' 48.128" N	88° 15' 51.409" E
	32	26° 36' 48.347" N	88° 15' 51.363" E
	33	26° 36' 49.209" N	88° 15' 51.085" E
	34	26° 36' 50.412" N	88° 15' 51.194" E
	35	26° 36' 51.787" N	88° 15' 51.305" E
	36	26° 36' 53.163" N	88° 15' 51.320" E
	37	26° 36' 54.281" N	88° 15' 51.332" E
	38	26° 36' 55.482" N	88° 15' 51.633" E
	39	26° 36' 56.167" N	88° 15' 51.927" E
	40	26° 36' 57.977" N	88° 15' 51.469" E
	41	26° 36' 59.448" N	88° 15' 50.433" E
	42	26° 36' 59.088" N	88° 15' 52.246" E
	43	26° 36' 58.768" N	88° 15' 52.630" E
	44	26° 36' 57.814" N	88° 15' 53.285" E
	45	26° 36' 55.897" N	88° 15' 53.264" E
	46	26° 36' 54.353" N	88° 15' 52.864" E
	47	26° 36' 52.718" N	88° 15' 52.942" E
	48	26° 36' 51.084" N	88° 15' 53.019" E
	49	26° 36' 48.334" N	88° 15' 52.798" E
DR_KS_BS_03	1	26° 46' 51.303" N	88° 15' 52.549" E
	2	26° 46' 48.949" N	88° 15' 56.115" E
	3	26° 46' 47.245" N	88° 15' 59.258" E
	4	26° 46' 45.420" N	88° 16' 1.393" E
	5	26° 46' 45.266" N	88° 16' 4.122" E
	6	26° 46' 45.758" N	88° 16' 6.858" E
	7	26° 46' 46.254" N	88° 16' 9.019" E
	8	26° 46' 46.234" N	88° 16' 11.318" E
	9	26° 46' 44.420" N	88° 16' 12.160" E
	10	26° 46' 44.453" N	88° 16' 8.568" E
	11	26° 46' 44.237" N	88° 16' 3.823" E
	12	26° 46' 44.265" N	88° 16' 0.662" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	13	26° 46' 45.069" N	88° 15' 57.366" E
	14	26° 46' 45.499" N	88° 15' 55.749" E
	15	26° 46' 47.707" N	88° 15' 51.957" E
	16	26° 46' 48.864" N	88° 15' 51.228" E
	17	26° 46' 49.529" N	88° 15' 48.936" E
	18	26° 46' 49.530" N	88° 15' 48.827" E
	19	26° 46' 52.210" N	88° 15' 44.226" E
	20	26° 46' 53.834" N	88° 15' 43.523" E
	21	26° 46' 55.006" N	88° 15' 42.243" E
	22	26° 46' 56.443" N	88° 15' 40.247" E
	23	26° 46' 58.110" N	88° 15' 41.271" E
	24	26° 46' 57.832" N	88° 15' 43.567" E
	25	26° 46' 56.393" N	88° 15' 45.851" E
	26	26° 46' 55.597" N	88° 15' 48.285" E
	27	26° 46' 54.295" N	88° 15' 49.708" E
DR_KS_BS_04	1	26° 46' 43.063" N	88° 16' 0.505" E
	2	26° 46' 42.014" N	88° 16' 1.732" E
	3	26° 46' 43.287" N	88° 15' 59.546" E
	4	26° 46' 43.063" N	88° 16' 0.505" E
	5	26° 46' 36.548" N	88° 16' 7.905" E
	6	26° 46' 36.273" N	88° 16' 9.722" E
	7	26° 46' 36.515" N	88° 16' 11.545" E
	8	26° 46' 36.413" N	88° 16' 13.364" E
	9	26° 46' 35.714" N	88° 16' 14.602" E
	10	26° 46' 35.030" N	88° 16' 14.115" E
	11	26° 46' 33.919" N	88° 16' 13.432" E
	12	26° 46' 32.889" N	88° 16' 13.133" E
	13	26° 46' 31.950" N	88° 16' 12.356" E
	14	26° 46' 31.947" N	88° 16' 12.354" E
	15	26° 46' 31.996" N	88° 16' 12.304" E
	16	26° 46' 32.875" N	88° 16' 11.413" E
	17	26° 46' 33.161" N	88° 16' 11.604" E
	18	26° 46' 34.023" N	88° 16' 11.326" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	19	26° 46' 34.462" N	88° 16' 10.373" E
	20	26° 46' 34.379" N	88° 16' 9.888" E
	21	26° 46' 36.788" N	88° 16' 7.447" E
DR_KS_BS_05_06	1	26° 46' 30.844" N	88° 16' 22.595" E
	2	26° 46' 30.444" N	88° 16' 21.211" E
	3	26° 46' 31.062" N	88° 16' 21.294" E
	4	26° 46' 32.922" N	88° 16' 21.008" E
	5	26° 46' 33.815" N	88° 16' 21.172" E
	6	26° 46' 34.777" N	88° 16' 21.259" E
	7	26° 46' 35.336" N	88° 16' 20.269" E
	8	26° 46' 35.898" N	88° 16' 18.972" E
	9	26° 46' 37.866" N	88° 16' 14.019" E
	10	26° 46' 40.483" N	88° 16' 9.833" E
	11	26° 46' 42.217" N	88° 16' 8.223" E
	12	26° 46' 42.898" N	88° 16' 9.317" E
	13	26° 46' 43.408" N	88° 16' 9.993" E
	14	26° 46' 43.665" N	88° 16' 12.008" E
	15	26° 46' 43.572" N	88° 16' 14.689" E
	16	26° 46' 43.284" N	88° 16' 16.142" E
	17	26° 46' 42.653" N	88° 16' 17.438" E
	18	26° 46' 41.948" N	88° 16' 19.046" E
	19	26° 46' 40.037" N	88° 16' 21.228" E
	20	26° 46' 36.681" N	88° 16' 23.733" E
	21	26° 46' 33.721" N	88° 16' 24.861" E
	22	26° 46' 33.713" N	88° 16' 24.849" E
	23	26° 46' 32.620" N	88° 16' 23.994" E
	24	26° 46' 31.729" N	88° 16' 23.601" E
DR_KS_BS_09	1	26° 46' 37.148" N	88° 16' 33.879" E
	2	26° 46' 36.380" N	88° 16' 35.666" E
	3	26° 46' 37.861" N	88° 16' 38.317" E
	4	26° 46' 37.822" N	88° 16' 42.628" E
	5	26° 46' 38.181" N	88° 16' 45.645" E
	6	26° 46' 36.976" N	88° 16' 47.658" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	7	26° 46' 36.807" N	88° 16' 47.886" E
	8	26° 46' 35.837" N	88° 16' 48.234" E
	9	26° 46' 34.551" N	88° 16' 47.741" E
	10	26° 46' 34.313" N	88° 16' 50.372" E
	11	26° 46' 34.556" N	88° 16' 51.704" E
	12	26° 46' 32.945" N	88° 16' 54.395" E
	13	26° 46' 30.052" N	88° 17' 2.786" E
	14	26° 46' 30.127" N	88° 17' 1.582" E
	15	26° 46' 29.721" N	88° 16' 58.943" E
	16	26° 46' 29.963" N	88° 16' 55.952" E
	17	26° 46' 30.020" N	88° 16' 55.518" E
	18	26° 46' 31.117" N	88° 16' 56.766" E
	19	26° 46' 31.718" N	88° 16' 56.869" E
	20	26° 46' 31.652" N	88° 16' 54.665" E
	21	26° 46' 32.068" N	88° 16' 46.718" E
	22	26° 46' 31.511" N	88° 16' 45.726" E
	23	26° 46' 31.995" N	88° 16' 45.197" E
	24	26° 46' 32.388" N	88° 16' 42.816" E
	25	26° 46' 31.719" N	88° 16' 38.232" E
	26	26° 46' 32.200" N	88° 16' 34.501" E
	27	26° 46' 34.274" N	88° 16' 30.853" E
	28	26° 46' 34.073" N	88° 16' 29.294" E
	29	26° 46' 33.681" N	88° 16' 27.756" E
	30	26° 46' 34.865" N	88° 16' 26.778" E
	31	26° 46' 36.736" N	88° 16' 25.047" E
	32	26° 46' 39.240" N	88° 16' 23.806" E
	33	26° 46' 42.356" N	88° 16' 21.541" E
	34	26° 46' 41.372" N	88° 16' 25.746" E
	35	26° 46' 38.560" N	88° 16' 32.338" E
DR_KS_BS_08	1	26° 46' 27.740" N	88° 16' 57.231" E
	2	26° 46' 27.737" N	88° 16' 57.244" E
	3	26° 46' 26.611" N	88° 16' 58.094" E
	4	26° 46' 25.055" N	88° 16' 59.034" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	5	26° 46' 24.009" N	88° 17' 0.555" E
	6	26° 46' 22.624" N	88° 17' 1.593" E
	7	26° 46' 22.465" N	88° 17' 0.155" E
	8	26° 46' 21.530" N	88° 16' 58.994" E
	9	26° 46' 20.154" N	88° 16' 58.979" E
	10	26° 46' 19.739" N	88° 16' 57.346" E
	11	26° 46' 21.900" N	88° 16' 56.125" E
	12	26° 46' 22.529" N	88° 16' 53.162" E
	13	26° 46' 23.150" N	88° 16' 50.966" E
	14	26° 46' 24.291" N	88° 16' 48.488" E
	15	26° 46' 24.581" N	88° 16' 44.851" E
	16	26° 46' 23.909" N	88° 16' 43.119" E
	17	26° 46' 24.269" N	88° 16' 41.398" E
	18	26° 46' 25.484" N	88° 16' 40.071" E
	19	26° 46' 26.366" N	88° 16' 37.686" E
	20	26° 46' 26.475" N	88° 16' 35.100" E
	21	26° 46' 26.915" N	88° 16' 33.956" E
	22	26° 46' 28.646" N	88° 16' 32.730" E
	23	26° 46' 29.605" N	88° 16' 32.552" E
	24	26° 46' 28.408" N	88° 16' 35.871" E
	25	26° 46' 27.170" N	88° 16' 39.689" E
	26	26° 46' 27.139" N	88° 16' 43.137" E
	27	26° 46' 27.509" N	88° 16' 49.752" E
	28	26° 46' 27.740" N	88° 16' 57.231" E
	29	26° 46' 25.288" N	88° 16' 52.331" E
	30	26° 46' 24.501" N	88° 16' 53.759" E
	31	26° 46' 25.444" N	88° 16' 54.057" E
	32	26° 46' 26.134" N	88° 16' 53.873" E
	33	26° 46' 26.917" N	88° 16' 52.828" E
	34	26° 46' 26.758" N	88° 16' 51.389" E
DR_KS_BS_10	1	26° 46' 29.026" N	88° 17' 3.292" E
	2	26° 46' 28.922" N	88° 17' 5.303" E
	3	26° 46' 28.958" N	88° 17' 5.959" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	4	26° 46' 27.200" N	88° 17' 11.059" E
	5	26° 46' 26.454" N	88° 17' 13.456" E
	6	26° 46' 26.106" N	88° 17' 12.456" E
	7	26° 46' 24.034" N	88° 17' 13.295" E
	8	26° 46' 23.448" N	88° 17' 13.984" E
	9	26° 46' 23.073" N	88° 17' 15.008" E
	10	26° 46' 22.989" N	88° 17' 14.816" E
	11	26° 46' 22.032" N	88° 17' 15.955" E
	12	26° 46' 21.849" N	88° 17' 17.198" E
	13	26° 46' 23.141" N	88° 17' 16.925" E
	14	26° 46' 23.926" N	88° 17' 15.784" E
	15	26° 46' 25.653" N	88° 17' 14.942" E
	16	26° 46' 26.166" N	88° 17' 14.381" E
	17	26° 46' 25.449" N	88° 17' 16.688" E
	18	26° 46' 25.293" N	88° 17' 16.758" E
	19	26° 46' 24.676" N	88° 17' 18.379" E
	20	26° 46' 20.975" N	88° 17' 18.721" E
	21	26° 46' 20.211" N	88° 17' 17.658" E
	22	26° 46' 18.570" N	88° 17' 18.502" E
	23	26° 46' 17.611" N	88° 17' 19.928" E
	24	26° 46' 17.420" N	88° 17' 22.034" E
	25	26° 46' 16.808" N	88° 17' 23.080" E
	26	26° 46' 15.844" N	88° 17' 25.081" E
	27	26° 46' 14.967" N	88° 17' 26.987" E
	28	26° 46' 14.441" N	88° 17' 28.131" E
	29	26° 46' 12.978" N	88° 17' 28.210" E
	30	26° 46' 12.039" N	88° 17' 27.433" E
	31	26° 46' 12.044" N	88° 17' 26.954" E
	32	26° 46' 12.231" N	88° 17' 25.232" E
	33	26° 46' 13.374" N	88° 17' 22.563" E
	34	26° 46' 14.590" N	88° 17' 21.139" E
	35	26° 46' 16.153" N	88° 17' 19.529" E
	36	26° 46' 16.766" N	88° 17' 18.290" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	37	26° 46' 16.947" N	88° 17' 17.238" E
	38	26° 46' 18.080" N	88° 17' 15.623" E
	39	26° 46' 18.520" N	88° 17' 14.478" E
	40	26° 46' 18.616" N	88° 17' 13.425" E
	41	26° 46' 17.501" N	88° 17' 13.125" E
	42	26° 46' 16.714" N	88° 17' 14.554" E
	43	26° 46' 16.101" N	88° 17' 15.792" E
	44	26° 46' 5.417" N	88° 17' 25.870" E
	45	26° 46' 4.950" N	88° 17' 21.943" E
	46	26° 46' 16.304" N	88° 17' 12.346" E
	47	26° 46' 17.345" N	88° 17' 11.304" E
	48	26° 46' 18.307" N	88° 17' 9.590" E
	49	26° 46' 19.001" N	88° 17' 8.927" E
	50	26° 46' 19.351" N	88° 17' 8.261" E
	51	26° 46' 21.162" N	88° 17' 7.610" E
	52	26° 46' 21.853" N	88° 17' 7.331" E
	53	26° 46' 22.378" N	88° 17' 6.283" E
	54	26° 46' 23.160" N	88° 17' 5.430" E
	55	26° 46' 24.114" N	88° 17' 4.482" E
	56	26° 46' 26.106" N	88° 17' 2.876" E
	57	26° 46' 27.155" N	88° 17' 1.068" E
	58	26° 46' 27.589" N	88° 17' 0.594" E
	59	26° 46' 28.450" N	88° 17' 0.412" E
	60	26° 46' 29.045" N	88° 17' 1.281" E
DR_KS_BS_11	1	26° 46' 14.759" N	88° 17' 49.467" E
	2	26° 46' 8.357" N	88° 17' 51.173" E
	3	26° 46' 8.498" N	88° 17' 50.592" E
	4	26° 46' 8.835" N	88° 17' 49.206" E
	5	26° 46' 9.665" N	88° 17' 49.055" E
	6	26° 46' 10.987" N	88° 17' 47.461" E
	7	26° 46' 12.817" N	88° 17' 42.960" E
	8	26° 46' 14.165" N	88° 17' 38.377" E
	9	26° 46' 16.335" N	88° 17' 34.340" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	10	26° 46' 20.772" N	88° 17' 28.908" E
	11	26° 46' 21.700" N	88° 17' 28.743" E
	12	26° 46' 20.556" N	88° 17' 32.418" E
	13	26° 46' 18.331" N	88° 17' 40.655" E
DR_KS_BS_13	1	26° 46' 7.109" N	88° 17' 35.324" E
	2	26° 46' 5.548" N	88° 17' 36.839" E
	3	26° 46' 4.334" N	88° 17' 37.879" E
	4	26° 46' 4.334" N	88° 17' 37.875" E
	5	26° 46' 5.902" N	88° 17' 29.947" E
	6	26° 46' 5.680" N	88° 17' 28.078" E
	7	26° 46' 6.407" N	88° 17' 27.461" E
	8	26° 46' 7.704" N	88° 17' 26.613" E
	9	26° 46' 8.745" N	88° 17' 25.667" E
	10	26° 46' 9.528" N	88° 17' 24.622" E
	11	26° 46' 10.119" N	88° 17' 25.874" E
	12	26° 46' 9.741" N	88° 17' 29.606" E
	13	26° 46' 9.552" N	88° 17' 31.424" E
	14	26° 46' 9.018" N	88° 17' 33.430" E
DR_KS_BS_14	1	26° 46' 8.473" N	88° 17' 36.604" E
	2	26° 46' 9.353" N	88° 17' 36.326" E
	3	26° 46' 9.811" N	88° 17' 37.021" E
	4	26° 46' 9.646" N	88° 17' 38.111" E
	5	26° 46' 9.471" N	88° 17' 40.294" E
	6	26° 46' 9.355" N	88° 17' 41.787" E
	7	26° 46' 8.826" N	88° 17' 43.218" E
	8	26° 46' 8.147" N	88° 17' 44.129" E
	9	26° 46' 7.479" N	88° 17' 43.835" E
	10	26° 46' 7.188" N	88° 17' 41.762" E
	11	26° 46' 6.474" N	88° 17' 40.834" E
	12	26° 46' 5.700" N	88° 17' 40.883" E
	13	26° 46' 5.344" N	88° 17' 40.247" E
	14	26° 46' 5.353" N	88° 17' 39.270" E
	15	26° 46' 5.565" N	88° 17' 38.697" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	16	26° 46' 6.761" N	88° 17' 37.619" E
	17	26° 46' 7.075" N	88° 17' 37.163" E
DR_MT_BS_29_30	1	26° 44' 29.544" N	88° 20' 44.137" E
	2	26° 44' 28.593" N	88° 20' 49.153" E
	3	26° 44' 27.402" N	88° 20' 52.300" E
	4	26° 44' 25.582" N	88° 20' 53.858" E
	5	26° 44' 23.273" N	88° 20' 54.281" E
	6	26° 44' 22.296" N	88° 20' 55.347" E
	7	26° 44' 21.114" N	88° 20' 55.333" E
	8	26° 44' 19.370" N	88° 20' 54.834" E
	9	26° 44' 18.692" N	88° 20' 53.773" E
	10	26° 44' 18.995" N	88° 20' 48.988" E
	11	26° 44' 17.527" N	88° 20' 40.639" E
	12	26° 44' 17.991" N	88° 20' 37.005" E
	13	26° 44' 19.979" N	88° 20' 39.079" E
	14	26° 44' 19.558" N	88° 20' 36.262" E
	15	26° 44' 17.801" N	88° 20' 31.070" E
	16	26° 44' 17.926" N	88° 20' 25.704" E
	17	26° 44' 19.297" N	88° 20' 22.899" E
	18	26° 44' 21.972" N	88° 20' 22.448" E
	19	26° 44' 23.049" N	88° 20' 20.497" E
	20	26° 44' 24.872" N	88° 20' 18.603" E
	21	26° 44' 26.159" N	88° 20' 18.905" E
	22	26° 44' 25.598" N	88° 20' 23.478" E
	23	26° 44' 27.914" N	88° 20' 25.586" E
	24	26° 44' 27.885" N	88° 20' 28.602" E
	25	26° 44' 29.811" N	88° 20' 32.162" E
	26	26° 44' 29.353" N	88° 20' 32.885" E
	27	26° 44' 30.466" N	88° 20' 40.200" E
	28	26° 44' 30.850" N	88° 20' 40.238" E
DR_KS_BS_17/14	1	26° 45' 53.033" N	88° 18' 21.390" E
	2	26° 45' 48.912" N	88° 18' 32.327" E
	3	26° 45' 49.945" N	88° 18' 32.692" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	4	26° 45' 49.942" N	88° 18' 32.698" E
	5	26° 45' 48.615" N	88° 18' 36.754" E
	6	26° 45' 47.944" N	88° 18' 39.620" E
	7	26° 45' 46.835" N	88° 18' 40.333" E
	8	26° 45' 47.997" N	88° 18' 41.401" E
	9	26° 45' 47.628" N	88° 18' 44.175" E
	10	26° 45' 46.141" N	88° 18' 46.840" E
	11	26° 45' 44.662" N	88° 18' 48.738" E
	12	26° 45' 43.535" N	88° 18' 49.683" E
	13	26° 45' 42.149" N	88° 18' 50.817" E
	14	26° 45' 41.112" N	88° 18' 51.380" E
	15	26° 45' 39.698" N	88° 18' 51.410" E
	16	26° 45' 39.287" N	88° 18' 52.201" E
	17	26° 45' 35.485" N	88° 18' 54.264" E
	18	26° 45' 33.023" N	88° 18' 54.355" E
	19	26° 45' 28.543" N	88° 18' 53.926" E
	20	26° 45' 24.064" N	88° 18' 55.271" E
	21	26° 45' 23.783" N	88° 18' 55.088" E
	22	26° 45' 22.636" N	88° 18' 54.754" E
	23	26° 45' 45.890" N	88° 18' 33.037" E
	24	26° 45' 47.210" N	88° 18' 30.499" E
	25	26° 45' 48.465" N	88° 18' 29.688" E
	26	26° 45' 50.102" N	88° 18' 27.072" E
	27	26° 45' 51.410" N	88° 18' 25.052" E
	28	26° 45' 51.850" N	88° 18' 23.979" E
	29	26° 45' 52.840" N	88° 18' 21.476" E
DR_NB_BS_21_22/16	1	26° 44' 59.451" N	88° 19' 19.452" E
	2	26° 44' 55.049" N	88° 19' 18.992" E
	3	26° 44' 55.858" N	88° 19' 18.053" E
	4	26° 45' 6.344" N	88° 19' 8.952" E
	5	26° 45' 6.899" N	88° 19' 10.337" E
	6	26° 45' 5.875" N	88° 19' 11.742" E
	7	26° 45' 3.221" N	88° 19' 15.383" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	8	26° 45' 2.452" N	88° 19' 17.170" E
	9	26° 45' 1.911" N	88° 19' 17.522" E
	10	26° 45' 1.751" N	88° 19' 16.969" E
DR_MT_BS_24	1	26° 44' 49.486" N	88° 19' 57.446" E
	2	26° 44' 45.985" N	88° 20' 4.076" E
	3	26° 44' 41.680" N	88° 20' 7.630" E
	4	26° 44' 38.544" N	88° 20' 11.999" E
	5	26° 44' 35.067" N	88° 20' 15.981" E
	6	26° 44' 32.116" N	88° 20' 18.819" E
	7	26° 44' 29.816" N	88° 20' 21.485" E
	8	26° 44' 29.267" N	88° 20' 20.746" E
	9	26° 44' 28.328" N	88° 20' 18.130" E
	10	26° 44' 28.426" N	88° 20' 15.066" E
	11	26° 44' 29.284" N	88° 20' 11.629" E
	12	26° 44' 29.208" N	88° 20' 4.032" E
	13	26° 44' 29.518" N	88° 20' 1.365" E
	14	26° 44' 34.726" N	88° 19' 55.410" E
	15	26° 44' 35.969" N	88° 19' 53.197" E
	16	26° 44' 37.402" N	88° 19' 47.085" E
	17	26° 44' 38.644" N	88° 19' 43.077" E
	18	26° 44' 38.848" N	88° 19' 39.900" E
	19	26° 44' 38.864" N	88° 19' 38.162" E
	20	26° 44' 42.297" N	88° 19' 33.794" E
	21	26° 44' 43.196" N	88° 19' 32.751" E
	22	26° 44' 44.508" N	88° 19' 32.304" E
	23	26° 44' 48.657" N	88° 19' 29.245" E
	24	26° 44' 49.227" N	88° 19' 29.072" E
	25	26° 44' 50.109" N	88° 19' 28.896" E
	26	26° 44' 49.938" N	88° 19' 33.546" E
	27	26° 44' 49.387" N	88° 19' 34.976" E
	28	26° 44' 53.312" N	88° 19' 37.692" E
	29	26° 44' 53.591" N	88° 19' 44.591" E
	30	26° 44' 50.750" N	88° 19' 54.136" E

CODE	POINT_NO	LATITUDE	LONGITUDE
DR_MT_BS_25	1	26° 44' 25.321" N	88° 19' 56.844" E
	2	26° 44' 24.018" N	88° 19' 57.058" E
	3	26° 44' 24.022" N	88° 19' 57.046" E
	4	26° 44' 36.554" N	88° 19' 41.102" E
	5	26° 44' 36.481" N	88° 19' 43.193" E
	6	26° 44' 33.394" N	88° 19' 51.489" E
	7	26° 44' 32.775" N	88° 19' 53.301" E
	8	26° 44' 29.663" N	88° 19' 55.085" E
	9	26° 44' 26.204" N	88° 19' 56.486" E
	10	26° 44' 26.076" N	88° 19' 56.613" E
DR_MT_BS_37	1	26° 43' 42.034" N	88° 21' 57.527" E
	2	26° 43' 41.765" N	88° 21' 56.987" E
	3	26° 43' 42.602" N	88° 21' 55.772" E
	4	26° 43' 43.443" N	88° 21' 54.173" E
	5	26° 43' 44.150" N	88° 21' 52.113" E
	6	26° 43' 44.996" N	88° 21' 50.055" E
	7	26° 43' 45.738" N	88° 21' 51.519" E
	8	26° 43' 45.850" N	88° 21' 52.252" E
	9	26° 43' 45.332" N	88° 21' 55.643" E
	10	26° 43' 44.938" N	88° 21' 56.029" E
	11	26° 43' 43.830" N	88° 21' 56.782" E
	12	26° 43' 42.861" N	88° 21' 57.460" E
DR_MT_BS_38	1	26° 43' 26.599" N	88° 22' 19.199" E
	2	26° 43' 24.617" N	88° 22' 19.176" E
	3	26° 43' 26.067" N	88° 22' 16.663" E
	4	26° 43' 30.082" N	88° 22' 10.487" E
	5	26° 43' 32.791" N	88° 22' 6.019" E
	6	26° 43' 34.437" N	88° 22' 4.698" E
	7	26° 43' 36.076" N	88° 22' 4.143" E
	8	26° 43' 35.276" N	88° 22' 6.911" E
	9	26° 43' 33.804" N	88° 22' 7.946" E
	10	26° 43' 32.667" N	88° 22' 9.944" E
	11	26° 43' 30.758" N	88° 22' 11.740" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	12	26° 43' 30.053" N	88° 22' 13.455" E
	13	26° 43' 28.918" N	88° 22' 15.261" E
	14	26° 43' 28.129" N	88° 22' 16.784" E
DR_MT_BS_40_41	1	26° 42' 26.351" N	88° 23' 4.266" E
	2	26° 42' 21.965" N	88° 23' 4.309" E
	3	26° 42' 12.616" N	88° 23' 10.706" E
	4	26° 42' 11.151" N	88° 23' 14.694" E
	5	26° 42' 10.158" N	88° 23' 13.618" E
	6	26° 42' 8.886" N	88° 23' 11.808" E
	7	26° 42' 9.662" N	88° 23' 9.424" E
	8	26° 42' 11.729" N	88° 23' 6.816" E
	9	26° 42' 14.873" N	88° 23' 4.101" E
	10	26° 42' 16.824" N	88° 23' 2.450" E
	11	26° 42' 18.251" N	88° 22' 59.355" E
	12	26° 42' 19.866" N	88° 22' 59.135" E
	13	26° 42' 21.075" N	88° 23' 0.113" E
	14	26° 42' 23.615" N	88° 22' 58.415" E
	15	26° 42' 26.211" N	88° 22' 56.723" E
	16	26° 42' 25.283" N	88° 22' 54.893" E
	17	26° 42' 26.240" N	88° 22' 53.755" E
	18	26° 42' 28.559" N	88° 22' 53.480" E
	19	26° 42' 29.226" N	88° 22' 52.555" E
	20	26° 42' 31.816" N	88° 22' 51.438" E
	21	26° 42' 33.546" N	88° 22' 50.405" E
	22	26° 42' 34.436" N	88° 22' 49.982" E
	23	26° 42' 34.476" N	88° 22' 59.711" E
DR_MT_BS_31	1	26° 45' 9.423" N	88° 20' 27.097" E
	2	26° 45' 9.953" N	88° 20' 27.941" E
	3	26° 45' 8.553" N	88° 20' 28.164" E
	4	26° 45' 7.675" N	88° 20' 30.069" E
	5	26° 45' 6.793" N	88° 20' 32.453" E
	6	26° 45' 6.032" N	88° 20' 33.402" E
	7	26° 45' 5.717" N	88° 20' 32.560" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	8	26° 45' 5.727" N	88° 20' 31.483" E
	9	26° 45' 5.640" N	88° 20' 29.327" E
	10	26° 45' 5.549" N	88° 20' 27.650" E
	11	26° 45' 7.170" N	88° 20' 26.711" E
DR_PD_MH_05	1	26° 37' 21.742" N	88° 23' 51.901" E
	2	26° 37' 28.840" N	88° 23' 51.509" E
	3	26° 37' 34.422" N	88° 23' 52.294" E
	4	26° 37' 37.837" N	88° 23' 54.728" E
	5	26° 37' 39.075" N	88° 24' 0.005" E
	6	26° 37' 39.051" N	88° 24' 2.396" E
	7	26° 37' 35.416" N	88° 24' 0.438" E
	8	26° 37' 33.073" N	88° 23' 58.257" E
	9	26° 37' 29.655" N	88° 23' 56.063" E
	10	26° 37' 27.728" N	88° 23' 55.322" E
DR_PD_MH_06	1	26° 36' 56.488" N	88° 23' 36.096" E
	2	26° 36' 55.502" N	88° 23' 31.492" E
	3	26° 36' 56.545" N	88° 23' 32.482" E
	4	26° 36' 57.192" N	88° 23' 33.858" E
	5	26° 37' 1.219" N	88° 23' 40.603" E
	6	26° 37' 1.586" N	88° 23' 40.832" E
	7	26° 37' 3.127" N	88° 23' 43.064" E
	8	26° 37' 6.721" N	88° 23' 44.830" E
	9	26° 37' 9.979" N	88° 23' 45.826" E
	10	26° 37' 12.726" N	88° 23' 47.396" E
	11	26° 37' 10.125" N	88° 23' 47.113" E
	12	26° 37' 5.202" N	88° 23' 46.754" E
	13	26° 37' 2.682" N	88° 23' 46.550" E
	14	26° 37' 1.721" N	88° 23' 46.109" E
	15	26° 36' 58.666" N	88° 23' 42.054" E
DR_PD_MH_07	1	26° 36' 50.007" N	88° 23' 21.760" E
	2	26° 36' 48.911" N	88° 23' 22.554" E
	3	26° 36' 49.215" N	88° 23' 23.228" E
	4	26° 36' 48.065" N	88° 23' 23.420" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	5	26° 36' 43.540" N	88° 23' 23.695" E
	6	26° 36' 42.124" N	88° 23' 23.150" E
	7	26° 36' 40.700" N	88° 23' 23.790" E
	8	26° 36' 34.606" N	88° 23' 23.455" E
	9	26° 36' 33.761" N	88° 23' 21.281" E
	10	26° 36' 30.380" N	88° 23' 15.309" E
	11	26° 36' 30.551" N	88° 23' 15.311" E
	12	26° 36' 29.640" N	88° 23' 14.540" E
	13	26° 36' 31.724" N	88° 23' 13.121" E
	14	26° 36' 33.029" N	88° 23' 12.624" E
	15	26° 36' 35.943" N	88° 23' 12.077" E
	16	26° 36' 41.471" N	88° 23' 12.985" E
	17	26° 36' 41.700" N	88° 23' 13.051" E
	18	26° 36' 45.128" N	88° 23' 14.201" E
	19	26° 36' 47.796" N	88° 23' 15.687" E
	20	26° 36' 49.489" N	88° 23' 18.463" E
DR_PD_MH_09	1	26° 34' 14.189" N	88° 22' 14.226" E
	2	26° 34' 12.126" N	88° 22' 14.137" E
	3	26° 34' 12.862" N	88° 22' 13.335" E
	4	26° 34' 15.785" N	88° 22' 11.218" E
	5	26° 34' 19.460" N	88° 22' 9.110" E
	6	26° 34' 24.286" N	88° 22' 7.996" E
	7	26° 34' 29.093" N	88° 22' 8.818" E
	8	26° 34' 32.678" N	88° 22' 11.538" E
	9	26° 34' 27.714" N	88° 22' 11.360" E
	10	26° 34' 24.488" N	88° 22' 11.560" E
	11	26° 34' 21.048" N	88° 22' 11.639" E
	12	26° 34' 17.165" N	88° 22' 13.027" E
	13	26° 34' 14.812" N	88° 22' 14.301" E
DR_PD_MH_10	1	26° 30' 20.301" N	88° 20' 39.061" E
	2	26° 30' 20.247" N	88° 20' 36.666" E
	3	26° 30' 20.665" N	88° 20' 37.173" E
	4	26° 30' 28.201" N	88° 20' 45.003" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	5	26° 30' 28.474" N	88° 20' 45.341" E
	6	26° 30' 28.192" N	88° 20' 45.724" E
	7	26° 30' 26.697" N	88° 20' 44.750" E
	8	26° 30' 24.775" N	88° 20' 43.414" E
	9	26° 30' 23.278" N	88° 20' 42.560" E
	10	26° 30' 21.146" N	88° 20' 40.624" E
DR_NB_BS_44	1	26° 39' 24.125" N	88° 20' 22.292" E
	2	26° 39' 22.644" N	88° 20' 24.381" E
	3	26° 39' 21.692" N	88° 20' 24.944" E
	4	26° 39' 20.905" N	88° 20' 26.370" E
	5	26° 39' 20.725" N	88° 20' 27.229" E
	6	26° 39' 20.393" N	88° 20' 25.981" E
	7	26° 39' 20.580" N	88° 20' 24.356" E
	8	26° 39' 21.021" N	88° 20' 23.213" E
	9	26° 39' 22.061" N	88° 20' 22.364" E
DR_PD_BS_45	1	26° 39' 18.319" N	88° 20' 27.105" E
	2	26° 39' 18.306" N	88° 20' 28.445" E
	3	26° 39' 16.920" N	88° 20' 29.481" E
	4	26° 39' 16.062" N	88° 20' 29.280" E
	5	26° 39' 14.870" N	88° 20' 28.118" E
	6	26° 39' 14.787" N	88° 20' 27.734" E
	7	26° 39' 15.987" N	88° 20' 28.131" E
DR_PD_BS_46	1	26° 39' 5.675" N	88° 20' 24.949" E
	2	26° 39' 5.199" N	88° 20' 24.504" E
	3	26° 39' 5.358" N	88° 20' 22.286" E
	4	26° 39' 6.601" N	88° 20' 20.461" E
	5	26° 39' 7.806" N	88° 20' 20.284" E
	6	26° 39' 8.836" N	88° 20' 20.487" E
	7	26° 39' 9.689" N	88° 20' 21.263" E
	8	26° 39' 11.184" N	88° 20' 24.574" E
	9	26° 39' 10.791" N	88° 20' 25.331" E
	10	26° 39' 8.439" N	88° 20' 24.779" E
	11	26° 39' 5.708" N	88° 20' 24.866" E

CODE	POINT_NO	LATITUDE	LONGITUDE
DR_PD_BS_49	1	26° 38' 20.240" N	88° 20' 15.783" E
	2	26° 38' 15.563" N	88° 20' 16.325" E
	3	26° 38' 16.086" N	88° 20' 15.566" E
	4	26° 38' 17.559" N	88° 20' 14.435" E
	5	26° 38' 19.627" N	88° 20' 13.981" E
	6	26° 38' 20.224" N	88° 20' 14.466" E
	7	26° 38' 20.814" N	88° 20' 15.717" E
	8	26° 38' 20.687" N	88° 20' 15.732" E
	9	26° 38' 20.565" N	88° 20' 15.632" E
DR_PD_BS_49A	1	26° 38' 9.202" N	88° 20' 16.497" E
	2	26° 38' 9.137" N	88° 20' 15.205" E
	3	26° 38' 11.046" N	88° 20' 15.258" E
	4	26° 38' 11.269" N	88° 20' 15.493" E
	5	26° 38' 13.045" N	88° 20' 15.959" E
	6	26° 38' 13.614" N	88° 20' 15.433" E
	7	26° 38' 14.032" N	88° 20' 15.922" E
	8	26° 38' 13.655" N	88° 20' 17.525" E
	9	26° 38' 12.579" N	88° 20' 17.675" E
	10	26° 38' 10.611" N	88° 20' 17.605" E
DR_PD_BS_52	1	26° 36' 58.125" N	88° 20' 21.546" E
	2	26° 36' 57.690" N	88° 20' 22.020" E
	3	26° 36' 57.088" N	88° 20' 22.108" E
	4	26° 36' 55.452" N	88° 20' 22.280" E
	5	26° 36' 54.248" N	88° 20' 22.362" E
	6	26° 36' 53.039" N	88° 20' 22.922" E
	7	26° 36' 52.681" N	88° 20' 24.353" E
	8	26° 36' 52.406" N	88° 20' 26.167" E
	9	26° 36' 52.220" N	88° 20' 27.696" E
	10	26° 36' 51.612" N	88° 20' 28.262" E
	11	26° 36' 51.278" N	88° 20' 27.302" E
	12	26° 36' 51.466" N	88° 20' 25.582" E
	13	26° 36' 51.649" N	88° 20' 24.341" E
	14	26° 36' 52.531" N	88° 20' 22.055" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	15	26° 36' 53.658" N	88° 20' 21.112" E
	16	26° 36' 55.548" N	88° 20' 21.229" E
DR_PD_BS_54	1	26° 35' 59.301" N	88° 19' 45.661" E
	2	26° 36' 1.587" N	88° 19' 49.514" E
	3	26° 36' 1.230" N	88° 19' 50.944" E
	4	26° 36' 0.207" N	88° 19' 49.976" E
	5	26° 35' 59.791" N	88° 19' 48.441" E
	6	26° 35' 59.115" N	88° 19' 47.190" E
DR_PD_BS_55	1	26° 35' 42.617" N	88° 19' 55.129" E
	2	26° 35' 41.936" N	88° 19' 54.451" E
	3	26° 35' 43.309" N	88° 19' 54.754" E
	4	26° 35' 44.141" N	88° 19' 54.380" E
	5	26° 35' 44.209" N	88° 19' 54.382" E
	6	26° 35' 46.839" N	88° 19' 53.410" E
	7	26° 35' 47.709" N	88° 19' 53.179" E
	8	26° 35' 47.096" N	88° 19' 54.320" E
	9	26° 35' 46.396" N	88° 19' 55.651" E
	10	26° 35' 45.031" N	88° 19' 56.671" E
	11	26° 35' 44.848" N	88° 19' 56.633" E
	12	26° 35' 43.810" N	88° 19' 56.290" E
DR_PD_BS_55A	1	26° 35' 33.138" N	88° 19' 48.133" E
	2	26° 35' 33.789" N	88° 19' 52.062" E
	3	26° 35' 33.869" N	88° 19' 52.732" E
	4	26° 35' 32.840" N	88° 19' 52.433" E
	5	26° 35' 31.814" N	88° 19' 51.752" E
	6	26° 35' 31.304" N	88° 19' 51.172" E
	7	26° 35' 31.224" N	88° 19' 50.502" E
	8	26° 35' 31.492" N	88° 19' 49.453" E
DR_PD_BS_56	1	26° 35' 20.510" N	88° 19' 37.562" E
	2	26° 35' 20.349" N	88° 19' 36.412" E
	3	26° 35' 20.883" N	88° 19' 34.505" E
	4	26° 35' 22.098" N	88° 19' 33.276" E
	5	26° 35' 25.119" N	88° 19' 32.067" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	6	26° 35' 27.097" N	88° 19' 31.995" E
	7	26° 35' 29.544" N	88° 19' 32.776" E
	8	26° 35' 29.514" N	88° 19' 32.770" E
	9	26° 35' 29.336" N	88° 19' 32.829" E
	10	26° 35' 25.794" N	88° 19' 33.414" E
	11	26° 35' 24.329" N	88° 19' 33.780" E
	12	26° 35' 23.196" N	88° 19' 35.393" E
	13	26° 35' 21.809" N	88° 19' 36.620" E
DR_PD_BS_57	1	26° 34' 28.345" N	88° 19' 21.449" E
	2	26° 34' 28.178" N	88° 19' 20.873" E
	3	26° 34' 29.303" N	88° 19' 20.121" E
	4	26° 34' 30.512" N	88° 19' 19.561" E
	5	26° 34' 31.889" N	88° 19' 19.386" E
	6	26° 34' 32.749" N	88° 19' 19.396" E
	7	26° 34' 33.696" N	88° 19' 19.311" E
	8	26° 34' 35.160" N	88° 19' 19.041" E
	9	26° 34' 35.767" N	88° 19' 18.474" E
	10	26° 34' 36.634" N	88° 19' 17.719" E
	11	26° 34' 37.840" N	88° 19' 17.541" E
	12	26° 34' 39.383" N	88° 19' 18.037" E
	13	26° 34' 41.008" N	88° 19' 18.917" E
	14	26° 34' 38.508" N	88° 19' 19.653" E
	15	26° 34' 37.123" N	88° 19' 20.689" E
	16	26° 34' 36.089" N	88° 19' 20.868" E
	17	26° 34' 35.209" N	88° 19' 21.605" E
	18	26° 34' 33.921" N	88° 19' 21.800" E
	19	26° 34' 33.329" N	88° 19' 21.793" E
	20	26° 34' 31.874" N	88° 19' 21.011" E
	21	26° 34' 30.412" N	88° 19' 21.090" E
DR_PD_BS_58	1	26° 34' 15.528" N	88° 19' 21.875" E
	2	26° 34' 15.193" N	88° 19' 20.915" E
	3	26° 34' 16.392" N	88° 19' 21.503" E
	4	26° 34' 17.933" N	88° 19' 22.190" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	5	26° 34' 19.571" N	88° 19' 21.731" E
	6	26° 34' 20.680" N	88° 19' 22.700" E
	7	26° 34' 21.530" N	88° 19' 23.761" E
	8	26° 34' 21.692" N	88° 19' 23.781" E
	9	26° 34' 21.721" N	88° 19' 23.840" E
	10	26° 34' 21.825" N	88° 19' 23.798" E
	11	26° 34' 22.389" N	88° 19' 23.867" E
	12	26° 34' 23.708" N	88° 19' 23.024" E
	13	26° 34' 23.825" N	88° 19' 22.976" E
	14	26° 34' 22.727" N	88° 19' 24.540" E
	15	26° 34' 21.686" N	88° 19' 25.484" E
	16	26° 34' 20.223" N	88° 19' 25.563" E
	17	26° 34' 18.592" N	88° 19' 25.353" E
	18	26° 34' 17.992" N	88° 19' 25.059" E
	19	26° 34' 16.970" N	88° 19' 23.996" E
	20	26° 34' 16.119" N	88° 19' 23.030" E
DR_PD_BS_59	1	26° 34' 13.809" N	88° 19' 21.856" E
	2	26° 34' 12.523" N	88° 19' 21.363" E
	3	26° 34' 11.497" N	88° 19' 20.777" E
	4	26° 34' 9.441" N	88° 19' 19.893" E
	5	26° 34' 10.567" N	88° 19' 19.045" E
	6	26° 34' 12.031" N	88° 19' 18.871" E
	7	26° 34' 12.541" N	88° 19' 19.450" E
	8	26° 34' 13.562" N	88° 19' 20.610" E
DR_PD_BS_60	1	26° 34' 7.464" N	88° 19' 1.319" E
	2	26° 34' 7.201" N	88° 19' 0.605" E
	3	26° 34' 7.214" N	88° 19' 0.371" E
	4	26° 34' 6.571" N	88° 18' 57.342" E
	5	26° 34' 5.749" N	88° 18' 56.296" E
	6	26° 34' 5.705" N	88° 18' 56.231" E
	7	26° 34' 5.681" N	88° 18' 56.211" E
	8	26° 34' 5.432" N	88° 18' 55.895" E
	9	26° 34' 4.397" N	88° 18' 54.372" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	10	26° 34' 3.875" N	88° 18' 54.189" E
	11	26° 34' 3.748" N	88° 18' 54.009" E
	12	26° 34' 3.326" N	88° 18' 53.143" E
	13	26° 34' 2.040" N	88° 18' 52.746" E
	14	26° 33' 59.809" N	88° 18' 52.243" E
	15	26° 34' 0.930" N	88° 18' 51.873" E
	16	26° 34' 2.050" N	88° 18' 51.599" E
	17	26° 34' 3.251" N	88° 18' 51.899" E
	18	26° 34' 4.874" N	88° 18' 53.161" E
	19	26° 34' 6.490" N	88° 18' 55.092" E
	20	26° 34' 7.340" N	88° 18' 56.154" E
	21	26° 34' 7.844" N	88° 18' 57.402" E
	22	26° 34' 8.090" N	88° 18' 58.744" E
	23	26° 34' 8.163" N	88° 19' 0.084" E
DR_PD_BS_60A	1	26° 34' 1.610" N	88° 18' 43.370" E
	2	26° 34' 0.996" N	88° 18' 44.702" E
	3	26° 34' 0.220" N	88° 18' 44.884" E
	4	26° 33' 59.355" N	88° 18' 45.448" E
	5	26° 33' 58.828" N	88° 18' 46.685" E
	6	26° 33' 58.729" N	88° 18' 48.118" E
	7	26° 33' 58.628" N	88° 18' 49.743" E
	8	26° 33' 58.703" N	88° 18' 50.891" E
	9	26° 33' 57.853" N	88° 18' 49.830" E
	10	26° 33' 57.607" N	88° 18' 48.584" E
	11	26° 33' 57.278" N	88° 18' 46.954" E
	12	26° 33' 57.807" N	88° 18' 45.526" E
	13	26° 33' 58.850" N	88° 18' 44.295" E
	14	26° 33' 59.890" N	88° 18' 43.446" E
DR_PD_BS_60B	1	26° 34' 3.696" N	88° 18' 41.003" E
	2	26° 34' 3.088" N	88° 18' 39.617" E
	3	26° 34' 3.109" N	88° 18' 39.325" E
	4	26° 34' 2.849" N	88° 18' 37.639" E
	5	26° 34' 2.165" N	88° 18' 35.393" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	6	26° 34' 1.853" N	88° 18' 34.841" E
	7	26° 34' 1.280" N	88° 18' 32.561" E
	8	26° 34' 3.164" N	88° 18' 33.347" E
	9	26° 34' 4.700" N	88° 18' 34.703" E
	10	26° 34' 5.202" N	88° 18' 36.143" E
	11	26° 34' 5.185" N	88° 18' 38.056" E
	12	26° 34' 4.908" N	88° 18' 40.061" E
	13	26° 34' 4.384" N	88° 18' 41.011" E
DR_PD_BS_61	1	26° 32' 49.785" N	88° 17' 59.146" E
	2	26° 32' 50.982" N	88° 17' 59.829" E
	3	26° 32' 52.774" N	88° 18' 1.379" E
	4	26° 32' 53.625" N	88° 18' 2.344" E
	5	26° 32' 54.475" N	88° 18' 3.406" E
	6	26° 32' 55.159" N	88° 18' 3.891" E
	7	26° 32' 53.859" N	88° 18' 4.928" E
	8	26° 32' 52.738" N	88° 18' 5.298" E
	9	26° 32' 51.453" N	88° 18' 4.806" E
	10	26° 32' 50.602" N	88° 18' 3.744" E
	11	26° 32' 50.011" N	88° 18' 2.590" E
DR_PD_BS_62	1	26° 32' 45.842" N	88° 17' 57.667" E
	2	26° 32' 44.122" N	88° 17' 57.744" E
	3	26° 32' 42.309" N	88° 17' 58.488" E
	4	26° 32' 41.786" N	88° 17' 59.343" E
	5	26° 32' 40.743" N	88° 18' 0.478" E
	6	26° 32' 39.624" N	88° 18' 0.657" E
	7	26° 32' 40.237" N	88° 17' 59.421" E
	8	26° 32' 40.762" N	88° 17' 58.471" E
	9	26° 32' 41.894" N	88° 17' 56.858" E
	10	26° 32' 43.960" N	88° 17' 56.690" E
	11	26° 32' 45.594" N	88° 17' 56.613" E
DR_PD_BS_63	1	26° 32' 36.353" N	88° 18' 1.002" E
	2	26° 32' 35.483" N	88° 18' 2.140" E
	3	26° 32' 34.019" N	88° 18' 2.410" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	4	26° 32' 32.901" N	88° 18' 2.397" E
	5	26° 32' 31.534" N	88° 18' 1.426" E
	6	26° 32' 31.107" N	88° 18' 1.039" E
	7	26° 32' 29.573" N	88° 17' 59.587" E
	8	26° 32' 28.631" N	88° 17' 59.099" E
	9	26° 32' 29.666" N	88° 17' 58.824" E
	10	26° 32' 31.293" N	88° 17' 59.607" E
	11	26° 32' 32.403" N	88° 18' 0.384" E
	12	26° 32' 33.943" N	88° 18' 1.262" E
DR_PD_BS_64	1	26° 32' 20.887" N	88° 17' 59.681" E
	2	26° 32' 20.902" N	88° 17' 58.056" E
	3	26° 32' 21.255" N	88° 17' 57.008" E
	4	26° 32' 22.122" N	88° 17' 56.253" E
	5	26° 32' 23.498" N	88° 17' 56.268" E
	6	26° 32' 24.954" N	88° 17' 56.858" E
	7	26° 32' 25.980" N	88° 17' 57.539" E
	8	26° 32' 26.658" N	88° 17' 58.598" E
	9	26° 32' 26.571" N	88° 17' 58.675" E
	10	26° 32' 26.416" N	88° 17' 58.645" E
	11	26° 32' 24.676" N	88° 17' 59.046" E
	12	26° 32' 23.932" N	88° 17' 59.967" E
	13	26° 32' 23.636" N	88° 18' 0.000" E
	14	26° 32' 23.113" N	88° 18' 0.757" E
	15	26° 32' 22.589" N	88° 18' 1.612" E
	16	26° 32' 22.074" N	88° 18' 1.510" E
	17	26° 32' 21.479" N	88° 18' 0.739" E
DR_KS_TS_23	1	26° 50' 26.505" N	88° 30' 33.889" E
	2	26° 50' 25.195" N	88° 30' 35.789" E
	3	26° 50' 24.845" N	88° 30' 41.065" E
	4	26° 50' 22.622" N	88° 30' 41.941" E
	5	26° 50' 21.590" N	88° 30' 41.927" E
	6	26° 50' 21.184" N	88° 30' 41.308" E
	7	26° 50' 19.788" N	88° 30' 41.336" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	8	26° 50' 20.089" N	88° 30' 40.873" E
	9	26° 50' 20.165" N	88° 30' 37.638" E
	10	26° 50' 20.269" N	88° 30' 33.208" E
	11	26° 50' 26.473" N	88° 30' 26.820" E
	12	26° 50' 26.106" N	88° 30' 19.990" E
	13	26° 50' 15.905" N	88° 30' 32.023" E
	14	26° 50' 17.798" N	88° 30' 23.950" E
	15	26° 50' 18.413" N	88° 30' 16.649" E
	16	26° 50' 20.928" N	88° 30' 12.609" E
	17	26° 50' 24.382" N	88° 30' 10.382" E
	18	26° 50' 26.017" N	88° 30' 9.468" E
	19	26° 50' 30.340" N	88° 30' 8.149" E
	20	26° 50' 30.342" N	88° 30' 8.151" E
	21	26° 50' 31.224" N	88° 30' 9.313" E
	22	26° 50' 33.220" N	88° 30' 9.186" E
	23	26° 50' 34.807" N	88° 30' 8.670" E
	24	26° 50' 36.185" N	88° 30' 8.535" E
	25	26° 50' 37.016" N	88° 30' 7.932" E
	26	26° 50' 38.888" N	88° 30' 6.577" E
	27	26° 50' 38.967" N	88° 30' 4.622" E
	28	26° 50' 40.411" N	88° 30' 3.915" E
	29	26° 50' 41.664" N	88° 30' 4.236" E
	30	26° 50' 42.846" N	88° 30' 3.025" E
	31	26° 50' 47.084" N	88° 30' 1.106" E
	32	26° 50' 49.611" N	88° 30' 0.814" E
	33	26° 50' 51.796" N	88° 30' 0.436" E
	34	26° 50' 46.963" N	88° 30' 10.197" E
	35	26° 50' 37.389" N	88° 30' 21.094" E
DR_KS_TS_24_25	1	26° 50' 42.930" N	88° 30' 25.600" E
	2	26° 50' 40.955" N	88° 30' 40.947" E
	3	26° 50' 21.441" N	88° 30' 49.202" E
	4	26° 50' 21.839" N	88° 30' 48.085" E
	5	26° 50' 26.728" N	88° 30' 43.238" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	6	26° 50' 26.802" N	88° 30' 36.290" E
	7	26° 50' 32.115" N	88° 30' 31.927" E
	8	26° 50' 41.476" N	88° 30' 20.788" E
	9	26° 50' 42.325" N	88° 30' 19.737" E
	10	26° 50' 42.953" N	88° 30' 20.456" E
	11	26° 50' 42.482" N	88° 30' 24.338" E
	12	26° 50' 43.030" N	88° 30' 24.575" E
	13	26° 50' 43.728" N	88° 30' 23.664" E
	14	26° 50' 44.497" N	88° 30' 22.447" E
	15	26° 50' 45.639" N	88° 30' 18.552" E
	16	26° 50' 47.083" N	88° 30' 18.647" E
	17	26° 50' 48.386" N	88° 30' 18.073" E
	18	26° 50' 46.952" N	88° 30' 23.642" E
DR_MT_MH_02	1	26° 46' 50.375" N	88° 26' 23.803" E
	2	26° 46' 49.667" N	88° 26' 18.719" E
	3	26° 46' 52.713" N	88° 26' 16.512" E
	4	26° 46' 55.214" N	88° 26' 16.066" E
	5	26° 46' 55.404" N	88° 26' 14.563" E
	6	26° 46' 56.544" N	88° 26' 13.738" E
	7	26° 47' 2.287" N	88° 26' 7.008" E
	8	26° 47' 2.451" N	88° 26' 6.596" E
	9	26° 47' 3.571" N	88° 26' 6.017" E
	10	26° 47' 7.914" N	88° 26' 1.664" E
	11	26° 47' 12.910" N	88° 26' 0.769" E
	12	26° 47' 17.020" N	88° 26' 2.545" E
	13	26° 47' 15.080" N	88° 26' 7.311" E
	14	26° 47' 13.876" N	88° 26' 7.296" E
	15	26° 47' 11.103" N	88° 26' 9.369" E
	16	26° 47' 8.284" N	88° 26' 16.039" E
	17	26° 47' 5.848" N	88° 26' 18.883" E
	18	26° 47' 1.551" N	88° 26' 18.637" E
	19	26° 46' 55.857" N	88° 26' 26.601" E
DR_MT_BS_36	1	26° 43' 54.707" N	88° 21' 31.900" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	2	26° 43' 53.175" N	88° 21' 33.797" E
	3	26° 43' 53.249" N	88° 21' 34.037" E
	4	26° 43' 49.952" N	88° 21' 39.233" E
	5	26° 43' 49.308" N	88° 21' 36.327" E
	6	26° 43' 50.318" N	88° 21' 29.636" E
	7	26° 43' 51.654" N	88° 21' 24.864" E
	8	26° 43' 54.888" N	88° 21' 19.348" E
	9	26° 43' 56.279" N	88° 21' 17.736" E
	10	26° 43' 57.040" N	88° 21' 19.086" E
	11	26° 43' 59.625" N	88° 21' 18.542" E
	12	26° 44' 1.608" N	88° 21' 17.991" E
	13	26° 44' 6.706" N	88° 21' 15.370" E
	14	26° 44' 8.899" N	88° 21' 15.382" E
	15	26° 44' 5.151" N	88° 21' 18.771" E
	16	26° 44' 1.116" N	88° 21' 23.473" E
	17	26° 43' 57.367" N	88° 21' 27.029" E
	18	26° 43' 56.800" N	88° 21' 28.861" E
DR_MT_BS_35A	1	26° 44' 16.643" N	88° 21' 1.314" E
	2	26° 44' 10.906" N	88° 21' 7.759" E
	3	26° 44' 8.628" N	88° 21' 12.233" E
	4	26° 44' 5.944" N	88° 21' 14.116" E
	5	26° 44' 3.789" N	88° 21' 14.665" E
	6	26° 44' 2.770" N	88° 21' 13.312" E
	7	26° 44' 0.879" N	88° 21' 13.290" E
	8	26° 44' 2.794" N	88° 21' 10.823" E
	9	26° 44' 4.710" N	88° 21' 8.260" E
	10	26° 44' 9.125" N	88° 21' 5.152" E
	11	26° 44' 13.365" N	88° 21' 2.425" E
DR_MT_BS_35	1	26° 44' 12.859" N	88° 21' 10.367" E
	2	26° 44' 12.787" N	88° 21' 8.930" E
	3	26° 44' 12.878" N	88° 21' 8.357" E
	4	26° 44' 15.051" N	88° 21' 5.892" E
	5	26° 44' 18.269" N	88° 21' 0.859" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	6	26° 44' 19.166" N	88° 20' 56.919" E
	7	26° 44' 21.623" N	88° 20' 58.504" E
	8	26° 44' 19.579" N	88° 21' 5.429" E
	9	26° 44' 18.981" N	88° 21' 6.081" E
	10	26° 44' 13.175" N	88° 21' 10.824" E
DR_MT_BS_27	1	26° 44' 17.234" N	88° 20' 16.809" E
	2	26° 44' 17.227" N	88° 20' 15.545" E
	3	26° 44' 20.079" N	88° 20' 9.016" E
	4	26° 44' 20.402" N	88° 20' 9.357" E
	5	26° 44' 20.012" N	88° 20' 14.236" E
	6	26° 44' 18.360" N	88° 20' 16.228" E
DR_MT_BS_32	1	26° 44' 54.650" N	88° 20' 43.087" E
	2	26° 44' 53.035" N	88° 20' 41.057" E
	3	26° 44' 53.119" N	88° 20' 39.975" E
	4	26° 44' 57.050" N	88° 20' 41.389" E
	5	26° 45' 0.784" N	88° 20' 39.441" E
	6	26° 45' 1.024" N	88° 20' 38.968" E
	7	26° 45' 1.822" N	88° 20' 39.340" E
	8	26° 45' 3.142" N	88° 20' 36.195" E
	9	26° 45' 4.443" N	88° 20' 34.966" E
	10	26° 45' 5.314" N	88° 20' 35.537" E
	11	26° 45' 3.783" N	88° 20' 38.002" E
	12	26° 45' 0.505" N	88° 20' 43.662" E
	13	26° 44' 58.309" N	88° 20' 43.972" E
	14	26° 44' 54.980" N	88° 20' 43.292" E
DR_KS_BS_01	1	26° 47' 22.408" N	88° 15' 11.834" E
	2	26° 47' 22.233" N	88° 15' 7.281" E
	3	26° 47' 26.134" N	88° 15' 3.731" E
	4	26° 47' 33.063" N	88° 14' 58.058" E
	5	26° 47' 39.429" N	88° 14' 53.306" E
	6	26° 47' 44.012" N	88° 14' 51.570" E
	7	26° 47' 49.895" N	88° 14' 50.816" E
	8	26° 48' 4.073" N	88° 14' 51.930" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	9	26° 48' 11.043" N	88° 14' 54.055" E
	10	26° 48' 1.748" N	88° 15' 3.481" E
	11	26° 47' 56.072" N	88° 15' 5.520" E
	12	26° 47' 51.860" N	88° 15' 7.199" E
	13	26° 47' 43.184" N	88° 15' 8.253" E
	14	26° 47' 39.428" N	88° 15' 9.017" E
	15	26° 47' 37.839" N	88° 15' 10.627" E
	16	26° 47' 32.728" N	88° 15' 11.708" E
	17	26° 47' 27.563" N	88° 15' 12.370" E
DR_NB_MC_07	1	26° 39' 28.418" N	88° 9' 47.318" E
	2	26° 39' 27.418" N	88° 9' 43.384" E
	3	26° 39' 30.769" N	88° 9' 42.827" E
	4	26° 39' 39.023" N	88° 9' 43.009" E
	5	26° 39' 42.240" N	88° 9' 44.826" E
	6	26° 39' 45.644" N	88° 9' 49.167" E
	7	26° 39' 46.279" N	88° 9' 50.370" E
	8	26° 39' 44.545" N	88° 9' 52.075" E
	9	26° 39' 42.389" N	88° 9' 52.819" E
	10	26° 39' 40.161" N	88° 9' 51.935" E
	11	26° 39' 35.471" N	88° 9' 53.016" E
	12	26° 39' 34.621" N	88° 9' 52.921" E
	13	26° 39' 31.653" N	88° 9' 51.274" E
DR_KS_BS_02	1	26° 47' 16.427" N	88° 15' 29.043" E
	2	26° 47' 12.429" N	88° 15' 28.999" E
	3	26° 47' 13.864" N	88° 15' 27.147" E
	4	26° 47' 14.406" N	88° 15' 24.278" E
	5	26° 47' 15.214" N	88° 15' 20.407" E
	6	26° 47' 18.066" N	88° 15' 18.714" E
	7	26° 47' 20.528" N	88° 15' 17.447" E
	8	26° 47' 20.304" N	88° 15' 19.405" E
	9	26° 47' 17.605" N	88° 15' 26.406" E
	10	26° 47' 16.957" N	88° 15' 28.131" E
DR_KS_BS_16	1	26° 46' 7.992" N	88° 18' 12.050" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	2	26° 46' 4.862" N	88° 18' 16.494" E
	3	26° 46' 1.808" N	88° 18' 18.167" E
	4	26° 46' 0.348" N	88° 18' 18.959" E
	5	26° 45' 59.075" N	88° 18' 18.280" E
	6	26° 45' 57.737" N	88° 18' 16.683" E
	7	26° 45' 56.332" N	88° 18' 17.505" E
	8	26° 45' 54.389" N	88° 18' 18.441" E
	9	26° 45' 54.235" N	88° 18' 18.465" E
	10	26° 45' 57.076" N	88° 18' 12.174" E
	11	26° 46' 6.311" N	88° 17' 51.719" E
	12	26° 46' 7.148" N	88° 17' 51.495" E
	13	26° 46' 6.421" N	88° 17' 55.708" E
	14	26° 46' 6.033" N	88° 18' 2.888" E
	15	26° 46' 9.707" N	88° 18' 3.904" E
	16	26° 46' 9.682" N	88° 18' 4.578" E
	17	26° 46' 8.841" N	88° 18' 7.610" E
DR_NB_BS_23	1	26° 44' 51.108" N	88° 19' 34.128" E
	2	26° 44' 51.901" N	88° 19' 30.558" E
	3	26° 44' 53.408" N	88° 19' 29.923" E
	4	26° 44' 56.780" N	88° 19' 29.732" E
	5	26° 44' 57.611" N	88° 19' 29.205" E
	6	26° 44' 59.897" N	88° 19' 25.999" E
	7	26° 45' 1.636" N	88° 19' 23.984" E
	8	26° 45' 1.508" N	88° 19' 26.138" E
	9	26° 45' 3.674" N	88° 19' 28.126" E
	10	26° 44' 57.161" N	88° 19' 33.108" E
	11	26° 44' 55.980" N	88° 19' 34.397" E
	12	26° 44' 52.842" N	88° 19' 33.340" E
DR_PD_MH_08	1	26° 35' 48.645" N	88° 22' 59.840" E
	2	26° 35' 45.079" N	88° 22' 55.002" E
	3	26° 35' 48.491" N	88° 22' 54.569" E
	4	26° 35' 52.987" N	88° 22' 56.536" E
	5	26° 35' 56.837" N	88° 22' 58.495" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	6	26° 35' 59.482" N	88° 23' 2.831" E
	7	26° 36' 1.245" N	88° 23' 9.428" E
	8	26° 36' 0.566" N	88° 23' 12.887" E
	9	26° 36' 0.462" N	88° 23' 14.299" E
	10	26° 35' 58.453" N	88° 23' 13.021" E
	11	26° 35' 58.049" N	88° 23' 10.266" E
	12	26° 35' 56.676" N	88° 23' 7.858" E
	13	26° 35' 55.621" N	88° 23' 5.813" E
	14	26° 35' 54.551" N	88° 23' 5.322" E
	15	26° 35' 52.527" N	88° 23' 4.943" E
	16	26° 35' 51.839" N	88° 23' 4.054" E
	17	26° 35' 51.039" N	88° 23' 3.287" E
DR_PD_MH_08A	1	26° 34' 40.499" N	88° 22' 18.035" E
	2	26° 34' 39.459" N	88° 22' 14.809" E
	3	26° 34' 41.005" N	88° 22' 16.489" E
	4	26° 34' 44.172" N	88° 22' 18.917" E
	5	26° 34' 43.031" N	88° 22' 18.643" E
	6	26° 34' 42.092" N	88° 22' 18.417" E
DR_KS_TS_17_19_20_21_22	1	26° 50' 53.652" N	88° 29' 54.504" E
	2	26° 50' 53.125" N	88° 29' 49.247" E
	3	26° 50' 55.459" N	88° 29' 41.916" E
	4	26° 50' 56.937" N	88° 29' 39.605" E
	5	26° 50' 59.828" N	88° 29' 34.611" E
	6	26° 51' 1.536" N	88° 29' 31.614" E
	7	26° 51' 2.699" N	88° 29' 31.341" E
	8	26° 51' 8.814" N	88° 29' 24.402" E
	9	26° 51' 14.798" N	88° 29' 19.591" E
	10	26° 51' 16.747" N	88° 29' 18.179" E
	11	26° 51' 19.598" N	88° 29' 16.922" E
	12	26° 51' 22.855" N	88° 29' 13.801" E
	13	26° 51' 25.586" N	88° 29' 11.680" E
	14	26° 51' 28.442" N	88° 29' 9.848" E
	15	26° 51' 28.935" N	88° 29' 12.011" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	16	26° 51' 26.617" N	88° 29' 15.767" E
	17	26° 51' 17.584" N	88° 29' 24.469" E
	18	26° 51' 12.511" N	88° 29' 32.550" E
	19	26° 51' 9.669" N	88° 29' 36.808" E
	20	26° 51' 5.543" N	88° 29' 41.086" E
	21	26° 51' 1.451" N	88° 29' 45.825" E
	22	26° 51' 0.320" N	88° 29' 49.242" E
	23	26° 50' 59.275" N	88° 29' 50.276" E
	24	26° 50' 56.153" N	88° 29' 52.823" E
DR_KB_MC_32	1	26° 36' 30.359" N	88° 8' 11.439" E
	2	26° 36' 24.976" N	88° 8' 3.510" E
	3	26° 36' 25.071" N	88° 8' 3.527" E
	4	26° 36' 27.875" N	88° 8' 4.025" E
	5	26° 36' 29.883" N	88° 8' 4.382" E
	6	26° 36' 32.039" N	88° 8' 4.766" E
	7	26° 36' 32.017" N	88° 8' 9.350" E
	8	26° 36' 31.279" N	88° 8' 11.294" E
DR_PD_MH_12	1	26° 29' 47.762" N	88° 20' 3.790" E
	2	26° 29' 46.995" N	88° 20' 0.556" E
	3	26° 29' 47.608" N	88° 20' 0.918" E
	4	26° 29' 49.746" N	88° 20' 2.137" E
	5	26° 29' 52.311" N	88° 20' 3.720" E
	6	26° 29' 54.784" N	88° 20' 3.629" E
	7	26° 29' 56.159" N	88° 20' 6.034" E
	8	26° 29' 57.532" N	88° 20' 8.678" E
	9	26° 29' 57.371" N	88° 20' 10.691" E
	10	26° 29' 56.031" N	88° 20' 9.459" E
	11	26° 29' 52.658" N	88° 20' 6.935" E
	12	26° 29' 48.119" N	88° 20' 5.297" E
DR_PD_MH_11	1	26° 30' 2.660" N	88° 20' 12.058" E
	2	26° 30' 2.137" N	88° 20' 10.499" E
	3	26° 30' 2.705" N	88° 20' 7.161" E
	4	26° 30' 2.999" N	88° 20' 6.794" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	5	26° 30' 6.208" N	88° 20' 10.867" E
	6	26° 30' 10.013" N	88° 20' 18.342" E
	7	26° 30' 7.125" N	88° 20' 17.247" E
	8	26° 30' 5.433" N	88° 20' 14.360" E
	9	26° 30' 4.044" N	88° 20' 13.388" E
DR_PD_MH_04A	1	26° 37' 52.652" N	88° 24' 26.167" E
	2	26° 37' 49.425" N	88° 24' 26.938" E
	3	26° 37' 48.754" N	88° 24' 25.467" E
	4	26° 37' 48.259" N	88° 24' 23.356" E
	5	26° 37' 47.087" N	88° 24' 20.184" E
	6	26° 37' 47.109" N	88° 24' 17.984" E
	7	26° 37' 47.886" N	88° 24' 17.611" E
	8	26° 37' 49.406" N	88° 24' 20.404" E
DR_KS_TS_10	1	26° 51' 19.836" N	88° 29' 31.072" E
	2	26° 51' 19.863" N	88° 29' 28.429" E
	3	26° 51' 21.197" N	88° 29' 24.276" E
	4	26° 51' 22.784" N	88° 29' 22.222" E
	5	26° 51' 25.930" N	88° 29' 20.940" E
	6	26° 51' 27.238" N	88° 29' 19.232" E
	7	26° 51' 33.914" N	88° 29' 9.205" E
	8	26° 51' 37.521" N	88° 29' 5.077" E
	9	26° 51' 44.906" N	88° 28' 58.038" E
	10	26° 51' 45.622" N	88° 28' 56.870" E
	11	26° 51' 45.830" N	88° 28' 56.889" E
	12	26° 51' 35.551" N	88° 29' 10.085" E
	13	26° 51' 25.278" N	88° 29' 26.247" E
DR_KS_TS_05A	1	26° 54' 28.786" N	88° 28' 19.981" E
	2	26° 54' 28.798" N	88° 28' 18.907" E
	3	26° 54' 29.425" N	88° 28' 18.148" E
	4	26° 54' 31.501" N	88° 28' 16.870" E
	5	26° 54' 33.231" N	88° 28' 15.895" E
	6	26° 54' 35.371" N	88° 28' 15.156" E
	7	26° 54' 36.664" N	88° 28' 16.477" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	8	26° 54' 36.708" N	88° 28' 18.856" E
	9	26° 54' 36.106" N	88° 28' 18.854" E
	10	26° 54' 35.792" N	88° 28' 18.174" E
	11	26° 54' 33.864" N	88° 28' 17.602" E
	12	26° 54' 31.578" N	88° 28' 19.155" E
	13	26° 54' 29.865" N	88° 28' 20.095" E
DR_KS_TS_05B	1	26° 54' 18.723" N	88° 28' 21.999" E
	2	26° 54' 18.483" N	88° 28' 21.100" E
	3	26° 54' 19.447" N	88° 28' 20.934" E
	4	26° 54' 20.382" N	88° 28' 21.176" E
	5	26° 54' 22.449" N	88° 28' 20.896" E
	6	26° 54' 23.834" N	88° 28' 19.917" E
	7	26° 54' 25.147" N	88° 28' 19.397" E
	8	26° 54' 26.326" N	88° 28' 18.414" E
	9	26° 54' 27.495" N	88° 28' 18.506" E
	10	26° 54' 26.996" N	88° 28' 20.188" E
	11	26° 54' 25.540" N	88° 28' 21.243" E
	12	26° 54' 23.395" N	88° 28' 22.520" E
	13	26° 54' 21.608" N	88° 28' 22.343" E
	14	26° 54' 19.754" N	88° 28' 22.012" E
DR_MR_MC_02	1	26° 48' 51.163" N	88° 10' 51.274" E
	2	26° 48' 40.975" N	88° 10' 52.686" E
	3	26° 48' 32.488" N	88° 10' 54.707" E
	4	26° 48' 23.386" N	88° 10' 53.175" E
	5	26° 48' 11.104" N	88° 10' 56.593" E
	6	26° 48' 6.943" N	88° 10' 55.400" E
	7	26° 47' 52.813" N	88° 11' 9.100" E
	8	26° 47' 41.278" N	88° 11' 10.660" E
	9	26° 47' 41.093" N	88° 11' 9.806" E
	10	26° 47' 39.552" N	88° 11' 10.894" E
	11	26° 47' 33.257" N	88° 11' 11.746" E
	12	26° 47' 28.225" N	88° 11' 10.757" E
	13	26° 47' 20.493" N	88° 11' 9.958" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	14	26° 47' 9.703" N	88° 11' 14.876" E
	15	26° 47' 4.548" N	88° 11' 16.220" E
	16	26° 47' 3.456" N	88° 11' 16.175" E
	17	26° 46' 56.780" N	88° 11' 14.219" E
	18	26° 46' 53.818" N	88° 11' 12.076" E
	19	26° 46' 50.817" N	88° 11' 11.087" E
	20	26° 46' 47.297" N	88° 11' 9.769" E
	21	26° 46' 57.141" N	88° 11' 2.003" E
	22	26° 47' 11.856" N	88° 10' 57.652" E
	23	26° 47' 23.645" N	88° 10' 54.166" E
	24	26° 47' 29.392" N	88° 10' 52.467" E
	25	26° 47' 34.828" N	88° 10' 50.859" E
	26	26° 47' 43.452" N	88° 10' 49.000" E
	27	26° 48' 9.759" N	88° 10' 43.328" E
	28	26° 48' 10.828" N	88° 10' 42.660" E
	29	26° 48' 10.908" N	88° 10' 42.656" E
	30	26° 48' 31.147" N	88° 10' 41.026" E
	31	26° 48' 39.099" N	88° 10' 40.337" E
	32	26° 48' 46.417" N	88° 10' 41.419" E
	33	26° 48' 50.604" N	88° 10' 42.473" E
	34	26° 48' 50.079" N	88° 10' 43.097" E
	35	26° 48' 50.171" N	88° 10' 43.130" E
	36	26° 48' 51.420" N	88° 10' 48.054" E
	37	26° 48' 50.605" N	88° 10' 49.452" E
	38	26° 48' 51.449" N	88° 10' 50.464" E
DR_NB_MC_09	1	26° 39' 21.128" N	88° 9' 44.322" E
	2	26° 39' 19.631" N	88° 9' 45.164" E
	3	26° 39' 20.190" N	88° 9' 45.483" E
	4	26° 39' 19.144" N	88° 9' 47.195" E
	5	26° 39' 16.984" N	88° 9' 48.512" E
	6	26° 39' 16.066" N	88° 9' 49.471" E
	7	26° 39' 16.087" N	88° 9' 50.874" E
	8	26° 39' 15.211" N	88° 9' 51.603" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	9	26° 39' 12.856" N	88° 9' 52.505" E
	10	26° 39' 13.956" N	88° 9' 50.110" E
	11	26° 39' 14.901" N	88° 9' 48.055" E
	12	26° 39' 14.248" N	88° 9' 45.588" E
	13	26° 39' 13.717" N	88° 9' 43.581" E
	14	26° 39' 17.526" N	88° 9' 43.137" E
DR_NB_MC_16	1	26° 38' 20.011" N	88° 9' 43.574" E
	2	26° 38' 20.485" N	88° 9' 44.241" E
	3	26° 38' 20.461" N	88° 9' 47.279" E
	4	26° 38' 20.412" N	88° 9' 47.167" E
	5	26° 38' 17.531" N	88° 9' 44.506" E
	6	26° 38' 15.725" N	88° 9' 41.856" E
	7	26° 38' 10.798" N	88° 9' 39.773" E
	8	26° 38' 10.271" N	88° 9' 38.452" E
	9	26° 38' 12.313" N	88° 9' 38.473" E
	10	26° 38' 16.708" N	88° 9' 39.953" E
	11	26° 38' 18.631" N	88° 9' 41.407" E
DR_KB_MC_28	1	26° 36' 52.599" N	88° 8' 17.904" E
	2	26° 36' 52.091" N	88° 8' 16.942" E
	3	26° 36' 52.698" N	88° 8' 15.867" E
	4	26° 36' 57.576" N	88° 8' 15.888" E
	5	26° 36' 58.634" N	88° 8' 15.955" E
	6	26° 37' 0.339" N	88° 8' 17.885" E
	7	26° 37' 3.074" N	88° 8' 17.761" E
	8	26° 37' 4.932" N	88° 8' 19.046" E
	9	26° 37' 4.973" N	88° 8' 19.079" E
	10	26° 37' 5.133" N	88° 8' 20.516" E
	11	26° 37' 4.608" N	88° 8' 21.659" E
	12	26° 36' 59.639" N	88° 8' 19.313" E
	13	26° 36' 56.871" N	88° 8' 21.391" E
	14	26° 36' 54.548" N	88° 8' 21.559" E
	15	26° 36' 52.927" N	88° 8' 19.916" E
DR_KB_MC_26_27	1	26° 37' 10.706" N	88° 8' 35.371" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	2	26° 37' 8.865" N	88° 8' 38.756" E
	3	26° 37' 8.677" N	88° 8' 40.248" E
	4	26° 37' 8.437" N	88° 8' 40.227" E
	5	26° 37' 2.877" N	88° 8' 36.082" E
	6	26° 37' 2.981" N	88° 8' 35.987" E
	7	26° 37' 3.192" N	88° 8' 35.415" E
	8	26° 37' 4.535" N	88° 8' 35.314" E
	9	26° 37' 5.416" N	88° 8' 34.806" E
	10	26° 37' 5.731" N	88° 8' 34.063" E
	11	26° 37' 5.739" N	88° 8' 33.087" E
	12	26° 37' 4.952" N	88° 8' 32.525" E
	13	26° 37' 6.223" N	88° 8' 29.376" E
	14	26° 37' 6.456" N	88° 8' 27.130" E
	15	26° 37' 6.355" N	88° 8' 24.268" E
	16	26° 37' 5.712" N	88° 8' 20.760" E
	17	26° 37' 6.172" N	88° 8' 19.903" E
	18	26° 37' 9.965" N	88° 8' 22.525" E
	19	26° 37' 10.348" N	88° 8' 24.299" E
	20	26° 37' 9.906" N	88° 8' 25.825" E
	21	26° 37' 8.804" N	88° 8' 28.811" E
	22	26° 37' 9.401" N	88° 8' 29.790" E
	23	26° 37' 9.216" N	88° 8' 31.511" E
	24	26° 37' 9.461" N	88° 8' 33.044" E
DR_KB_MC_29_30	1	26° 37' 1.222" N	88° 8' 34.848" E
	2	26° 36' 58.827" N	88° 8' 33.063" E
	3	26° 36' 59.088" N	88° 8' 32.562" E
	4	26° 36' 58.742" N	88° 8' 30.607" E
	5	26° 36' 56.349" N	88° 8' 31.216" E
	6	26° 36' 52.511" N	88° 8' 28.355" E
	7	26° 36' 40.230" N	88° 8' 22.250" E
	8	26° 36' 39.888" N	88° 8' 21.270" E
	9	26° 36' 40.126" N	88° 8' 20.220" E
	10	26° 36' 42.190" N	88° 8' 20.126" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	11	26° 36' 45.032" N	88° 8' 19.580" E
	12	26° 36' 48.852" N	88° 8' 18.680" E
	13	26° 36' 50.666" N	88° 8' 18.315" E
	14	26° 36' 51.938" N	88° 8' 20.624" E
	15	26° 36' 54.271" N	88° 8' 25.641" E
	16	26° 36' 55.601" N	88° 8' 27.032" E
	17	26° 36' 57.054" N	88° 8' 26.013" E
	18	26° 36' 58.919" N	88° 8' 25.056" E
	19	26° 37' 0.311" N	88° 8' 25.184" E
	20	26° 37' 1.279" N	88° 8' 26.744" E
	21	26° 37' 2.108" N	88° 8' 30.150" E
	22	26° 37' 2.494" N	88° 8' 32.366" E
	23	26° 37' 3.989" N	88° 8' 32.610" E
	24	26° 37' 1.763" N	88° 8' 33.564" E
DR_KB_MC_24	1	26° 37' 22.169" N	88° 8' 44.013" E
	2	26° 37' 19.668" N	88° 8' 44.160" E
	3	26° 37' 20.707" N	88° 8' 46.655" E
	4	26° 37' 20.658" N	88° 8' 47.875" E
	5	26° 37' 18.913" N	88° 8' 54.774" E
	6	26° 37' 17.575" N	88° 8' 53.748" E
	7	26° 37' 14.973" N	88° 8' 51.228" E
	8	26° 37' 13.069" N	88° 8' 45.875" E
	9	26° 37' 12.472" N	88° 8' 44.658" E
	10	26° 37' 10.771" N	88° 8' 41.945" E
	11	26° 37' 9.000" N	88° 8' 39.614" E
	12	26° 37' 8.993" N	88° 8' 38.767" E
	13	26° 37' 11.989" N	88° 8' 33.894" E
	14	26° 37' 15.027" N	88° 8' 36.696" E
	15	26° 37' 16.882" N	88° 8' 36.887" E
	16	26° 37' 18.214" N	88° 8' 38.106" E
	17	26° 37' 19.031" N	88° 8' 39.147" E
	18	26° 37' 21.968" N	88° 8' 39.693" E
	19	26° 37' 23.451" N	88° 8' 41.258" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	20	26° 37' 23.665" N	88° 8' 41.391" E
	21	26° 37' 25.922" N	88° 8' 48.996" E
	22	26° 37' 25.642" N	88° 8' 49.403" E
	23	26° 37' 25.043" N	88° 8' 49.014" E
	24	26° 37' 24.795" N	88° 8' 47.863" E
	25	26° 37' 24.720" N	88° 8' 46.427" E
	26	26° 37' 24.553" N	88° 8' 45.852" E
	27	26° 37' 23.529" N	88° 8' 44.885" E
	28	26° 37' 22.757" N	88° 8' 44.590" E
DR_KB_TA_01	1	26° 34' 43.261" N	88° 13' 17.842" E
	2	26° 34' 43.148" N	88° 13' 17.773" E
	3	26° 34' 45.047" N	88° 13' 16.394" E
	4	26° 34' 46.789" N	88° 13' 13.782" E
	5	26° 34' 49.373" N	88° 13' 13.331" E
	6	26° 34' 52.153" N	88° 13' 15.035" E
	7	26° 34' 55.805" N	88° 13' 15.312" E
	8	26° 34' 59.050" N	88° 13' 12.956" E
	9	26° 35' 2.692" N	88° 13' 14.429" E
	10	26° 35' 4.411" N	88° 13' 16.722" E
	11	26° 35' 4.906" N	88° 13' 17.383" E
	12	26° 35' 6.305" N	88° 13' 19.249" E
	13	26° 35' 8.110" N	88° 13' 18.968" E
	14	26° 35' 8.269" N	88° 13' 19.351" E
	15	26° 35' 5.763" N	88° 13' 19.233" E
	16	26° 35' 3.592" N	88° 13' 17.661" E
	17	26° 35' 0.125" N	88° 13' 14.870" E
	18	26° 34' 55.671" N	88° 13' 16.831" E
	19	26° 34' 50.252" N	88° 13' 14.975" E
	20	26° 34' 48.408" N	88° 13' 15.472" E
DR_MR_CG_04	1	26° 45' 45.452" N	88° 13' 38.490" E
	2	26° 45' 45.558" N	88° 13' 41.111" E
	3	26° 45' 45.511" N	88° 13' 41.110" E
	4	26° 45' 43.791" N	88° 13' 41.168" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	5	26° 45' 41.592" N	88° 13' 40.915" E
	6	26° 45' 38.763" N	88° 13' 41.880" E
	7	26° 45' 36.898" N	88° 13' 42.780" E
	8	26° 45' 36.204" N	88° 13' 43.539" E
	9	26° 45' 35.383" N	88° 13' 42.994" E
	10	26° 45' 35.737" N	88° 13' 41.848" E
	11	26° 45' 37.125" N	88° 13' 40.407" E
	12	26° 45' 38.437" N	88° 13' 39.808" E
	13	26° 45' 41.470" N	88° 13' 39.151" E
	14	26° 45' 43.327" N	88° 13' 39.094" E
	15	26° 45' 44.912" N	88° 13' 38.805" E
DR_KS_BS_11A	1	26° 46' 10.847" N	88° 18' 0.376" E
	2	26° 46' 6.960" N	88° 18' 1.536" E
	3	26° 46' 7.290" N	88° 17' 55.562" E
	4	26° 46' 8.357" N	88° 17' 51.173" E
	5	26° 46' 14.759" N	88° 17' 49.467" E
	6	26° 46' 11.953" N	88° 17' 56.389" E
DR_KS_BS_15	1	26° 45' 54.235" N	88° 18' 18.465" E
	2	26° 45' 52.846" N	88° 18' 18.681" E
	3	26° 46' 1.214" N	88° 17' 53.650" E
	4	26° 46' 3.904" N	88° 17' 40.051" E
	5	26° 46' 5.030" N	88° 17' 43.239" E
	6	26° 46' 6.624" N	88° 17' 45.293" E
	7	26° 46' 7.329" N	88° 17' 50.450" E
	8	26° 46' 7.148" N	88° 17' 51.495" E
	9	26° 46' 6.311" N	88° 17' 51.719" E
	10	26° 45' 57.076" N	88° 18' 12.174" E
DR_NB_BS_19	1	88° 19' 16.492" E	88° 19' 16.492" E
	2	88° 19' 13.164" E	88° 19' 13.164" E
	3	88° 19' 8.856" E	88° 19' 8.856" E
	4	88° 19' 0.272" E	88° 19' 0.272" E
	5	88° 18' 57.854" E	88° 18' 57.854" E
	6	88° 18' 58.196" E	88° 18' 58.196" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	7	88° 18' 57.551" E	88° 18' 57.551" E
	8	88° 18' 58.423" E	88° 18' 58.423" E
	9	88° 19' 7.096" E	88° 19' 7.096" E
	10	88° 19' 9.641" E	88° 19' 9.641" E
	11	88° 19' 8.899" E	88° 19' 8.899" E
	12	88° 19' 13.195" E	88° 19' 13.195" E
DR_NB_BS_18	1	26° 45' 17.209" N	88° 19' 8.856" E
	2	26° 45' 6.699" N	88° 19' 15.717" E
	3	26° 45' 7.414" N	88° 19' 14.654" E
	4	26° 45' 8.835" N	88° 19' 12.036" E
	5	26° 45' 9.209" N	88° 19' 9.689" E
	6	26° 45' 10.551" N	88° 19' 8.988" E
	7	26° 45' 12.072" N	88° 19' 7.210" E
	8	26° 45' 14.039" N	88° 19' 3.761" E
	9	26° 45' 14.298" N	88° 19' 2.049" E
	10	26° 45' 19.258" N	88° 18' 57.743" E
	11	26° 45' 19.759" N	88° 18' 57.704" E
	12	26° 45' 21.369" N	88° 18' 57.854" E
	13	26° 45' 20.455" N	88° 19' 0.272" E
DR_NB_BS_20	1	26° 45' 1.541" N	88° 19' 25.582" E
	2	26° 45' 2.334" N	88° 19' 24.356" E
	3	26° 45' 2.866" N	88° 19' 19.288" E
	4	26° 45' 5.436" N	88° 19' 17.593" E
	5	26° 45' 6.699" N	88° 19' 15.717" E
	6	26° 45' 10.610" N	88° 19' 13.164" E
	7	26° 45' 11.987" N	88° 19' 16.492" E
	8	26° 45' 11.694" N	88° 19' 16.738" E
	9	26° 45' 9.510" N	88° 19' 20.425" E
	10	26° 45' 9.090" N	88° 19' 20.903" E
	11	26° 45' 8.068" N	88° 19' 22.068" E
	12	26° 45' 7.120" N	88° 19' 23.151" E
	13	26° 45' 5.078" N	88° 19' 23.127" E
	14	26° 45' 3.998" N	88° 19' 24.251" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	15	26° 45' 2.578" N	88° 19' 26.629" E
	16	26° 45' 2.235" N	88° 19' 26.805" E
	17	26° 45' 1.508" N	88° 19' 26.138" E
DR_MT_BS_26	1	26° 44' 25.607" N	88° 20' 14.465" E
	2	26° 44' 24.389" N	88° 20' 15.272" E
	3	26° 44' 23.676" N	88° 20' 11.788" E
	4	26° 44' 23.228" N	88° 20' 2.690" E
	5	26° 44' 24.288" N	88° 19' 59.686" E
	6	26° 44' 30.120" N	88° 19' 56.737" E
	7	26° 44' 30.716" N	88° 19' 58.314" E
	8	26° 44' 29.258" N	88° 19' 59.753" E
	9	26° 44' 27.904" N	88° 20' 4.794" E
	10	26° 44' 27.378" N	88° 20' 9.461" E
	11	26° 44' 26.364" N	88° 20' 11.700" E
DR_KS_TS_11	1	26° 51' 25.127" N	88° 28' 57.107" E
	2	26° 51' 25.459" N	88° 28' 57.030" E
	3	26° 51' 27.487" N	88° 28' 55.461" E
	4	26° 51' 28.967" N	88° 28' 53.755" E
	5	26° 51' 29.844" N	88° 28' 52.137" E
	6	26° 51' 25.903" N	88° 28' 49.559" E
	7	26° 51' 27.628" N	88° 28' 49.130" E
	8	26° 51' 32.042" N	88° 28' 46.542" E
	9	26° 51' 31.016" N	88° 28' 46.097" E
	10	26° 51' 29.728" N	88° 28' 45.889" E
	11	26° 51' 28.704" N	88° 28' 45.204" E
	12	26° 51' 27.854" N	88° 28' 44.235" E
	13	26° 51' 27.089" N	88° 28' 43.362" E
	14	26° 51' 26.583" N	88° 28' 42.397" E
	15	26° 51' 26.771" N	88° 28' 40.865" E
	16	26° 51' 28.050" N	88° 28' 41.936" E
	17	26° 51' 29.414" N	88° 28' 43.009" E
	18	26° 51' 30.527" N	88° 28' 43.502" E
	19	26° 51' 32.414" N	88° 28' 43.910" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	20	26° 51' 33.005" N	88° 28' 40.573" E
	21	26° 51' 34.433" N	88° 28' 39.728" E
	22	26° 51' 36.768" N	88° 28' 38.465" E
	23	26° 51' 38.844" N	88° 28' 37.197" E
	24	26° 51' 41.807" N	88° 28' 37.523" E
	25	26° 51' 43.994" N	88° 28' 38.127" E
	26	26° 51' 46.051" N	88° 28' 38.729" E
	27	26° 51' 47.453" N	88° 28' 40.329" E
	28	26° 51' 49.498" N	88° 28' 42.081" E
	29	26° 51' 53.100" N	88° 28' 42.991" E
	30	26° 51' 55.811" N	88° 28' 42.739" E
	31	26° 51' 57.351" N	88° 28' 43.478" E
	32	26° 51' 53.962" N	88° 28' 46.885" E
	33	26° 51' 48.449" N	88° 28' 48.145" E
	34	26° 51' 46.117" N	88° 28' 49.074" E
	35	26° 51' 44.310" N	88° 28' 50.858" E
	36	26° 51' 41.663" N	88° 28' 51.326" E
	37	26° 51' 33.840" N	88° 28' 59.421" E
	38	26° 51' 27.599" N	88° 29' 4.229" E
	39	26° 51' 25.147" N	88° 29' 5.701" E
	40	26° 51' 25.027" N	88° 29' 5.384" E
	41	26° 51' 25.183" N	88° 29' 3.622" E
	42	26° 51' 25.144" N	88° 29' 0.784" E
	43	26° 51' 26.347" N	88° 28' 57.578" E
DR_KS_TS_16	1	26° 51' 25.084" N	88° 29' 4.739" E
	2	26° 51' 23.517" N	88° 29' 5.057" E
	3	26° 51' 22.415" N	88° 29' 4.406" E
	4	26° 51' 20.266" N	88° 29' 1.851" E
	5	26° 51' 17.257" N	88° 29' 1.812" E
	6	26° 51' 18.927" N	88° 29' 0.910" E
	7	26° 51' 20.650" N	88° 29' 0.549" E
	8	26° 51' 24.184" N	88° 28' 56.674" E
	9	26° 51' 24.908" N	88° 28' 57.023" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	10	26° 51' 26.347" N	88° 28' 57.578" E
	11	26° 51' 25.144" N	88° 29' 0.784" E
	12	26° 51' 25.183" N	88° 29' 3.622" E
DR_KS_TS_22A	1	26° 50' 59.290" N	88° 30' 3.171" E
	2	26° 50' 57.229" N	88° 30' 4.941" E
	3	26° 50' 58.344" N	88° 30' 7.544" E
	4	26° 50' 49.972" N	88° 30' 11.915" E
	5	26° 50' 49.666" N	88° 30' 13.104" E
	6	26° 50' 48.031" N	88° 30' 12.669" E
	7	26° 50' 53.360" N	88° 30' 6.068" E
	8	26° 50' 55.969" N	88° 30' 3.347" E
	9	26° 51' 2.298" N	88° 29' 55.740" E
	10	26° 51' 1.631" N	88° 29' 56.971" E
	11	26° 51' 0.417" N	88° 30' 2.369" E
DR_KS_BS_17/15	1	26° 46' 0.299" N	88° 18' 22.917" E
	2	26° 45' 54.390" N	88° 18' 34.261" E
	3	26° 45' 53.101" N	88° 18' 33.806" E
	4	26° 45' 49.945" N	88° 18' 32.692" E
	5	26° 45' 48.912" N	88° 18' 32.327" E
	6	26° 45' 53.033" N	88° 18' 21.390" E
	7	26° 45' 54.675" N	88° 18' 20.659" E
	8	26° 45' 57.179" N	88° 18' 17.240" E
	9	26° 46' 1.908" N	88° 18' 19.995" E
	10	26° 46' 1.825" N	88° 18' 20.167" E
DR_NB_BS_21_22/17	1	26° 44' 49.258" N	88° 19' 27.183" E
	2	26° 44' 46.214" N	88° 19' 29.248" E
	3	26° 44' 55.049" N	88° 19' 18.992" E
	4	26° 44' 59.451" N	88° 19' 19.452" E
	5	26° 44' 58.296" N	88° 19' 20.699" E
	6	26° 44' 53.116" N	88° 19' 24.415" E
	7	26° 44' 52.441" N	88° 19' 25.152" E
	8	26° 44' 50.295" N	88° 19' 26.659" E
DR_KS_MH_01/20	1	26° 47' 53.690" N	88° 25' 12.721" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	2	26° 47' 52.446" N	88° 25' 10.018" E
	3	26° 47' 53.155" N	88° 25' 9.151" E
	4	26° 47' 53.533" N	88° 25' 2.399" E
	5	26° 47' 57.498" N	88° 24' 58.031" E
	6	26° 48' 1.906" N	88° 24' 53.929" E
	7	26° 48' 2.460" N	88° 24' 53.378" E
	8	26° 48' 11.298" N	88° 24' 53.179" E
	9	26° 48' 11.249" N	88° 25' 0.880" E
	10	26° 48' 3.316" N	88° 25' 14.050" E
	11	26° 47' 59.965" N	88° 25' 13.259" E
	12	26° 47' 56.255" N	88° 25' 12.753" E
DR_KS_TS_09	1	26° 52' 29.025" N	88° 28' 44.718" E
	2	26° 52' 27.682" N	88° 28' 44.473" E
	3	26° 52' 28.897" N	88° 28' 43.434" E
	4	26° 52' 32.767" N	88° 28' 43.293" E
	5	26° 52' 34.589" N	88° 28' 42.693" E
	6	26° 52' 34.576" N	88° 28' 43.320" E
DR_DP_RG_01	1	27° 7' 41.420" N	88° 17' 11.422" E
	2	27° 7' 38.880" N	88° 17' 22.118" E
	3	27° 7' 39.204" N	88° 17' 25.571" E
	4	27° 7' 38.238" N	88° 17' 27.793" E
	5	27° 7' 37.101" N	88° 17' 31.853" E
	6	27° 7' 36.163" N	88° 17' 33.349" E
	7	27° 7' 35.136" N	88° 17' 36.489" E
	8	27° 7' 34.591" N	88° 17' 40.234" E
	9	27° 7' 30.703" N	88° 17' 47.743" E
	10	27° 7' 30.253" N	88° 17' 47.481" E
	11	27° 7' 30.007" N	88° 17' 46.797" E
	12	27° 7' 29.516" N	88° 17' 40.372" E
	13	27° 7' 32.851" N	88° 17' 33.069" E
	14	27° 7' 36.696" N	88° 17' 30.077" E
	15	27° 7' 36.778" N	88° 17' 24.927" E
	16	27° 7' 36.015" N	88° 17' 18.076" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	17	27° 7' 35.948" N	88° 17' 16.417" E
	18	27° 7' 36.298" N	88° 17' 14.365" E
	19	27° 7' 36.373" N	88° 17' 6.150" E
	20	27° 7' 39.203" N	88° 17' 1.479" E
DR_DP_RG_02	1	27° 7' 40.202" N	88° 18' 21.103" E
	2	27° 7' 38.507" N	88° 18' 23.101" E
	3	27° 7' 36.285" N	88° 18' 26.247" E
	4	27° 7' 35.112" N	88° 18' 27.530" E
	5	27° 7' 33.943" N	88° 18' 28.382" E
	6	27° 7' 33.963" N	88° 18' 26.220" E
	7	27° 7' 33.985" N	88° 18' 23.914" E
	8	27° 7' 34.028" N	88° 18' 23.395" E
	9	27° 7' 38.040" N	88° 18' 18.141" E
	10	27° 7' 38.793" N	88° 18' 11.154" E
	11	27° 7' 38.305" N	88° 18' 9.748" E
	12	27° 7' 38.382" N	88° 18' 8.685" E
	13	27° 7' 38.518" N	88° 18' 7.966" E
	14	27° 7' 38.796" N	88° 18' 5.807" E
	15	27° 7' 38.823" N	88° 18' 2.924" E
	16	27° 7' 37.802" N	88° 18' 1.759" E
	17	27° 7' 36.273" N	88° 17' 59.724" E
	18	27° 7' 35.396" N	88° 17' 56.975" E
	19	27° 7' 37.701" N	88° 17' 58.731" E
	20	27° 7' 39.740" N	88° 18' 1.349" E
	21	27° 7' 42.040" N	88° 18' 3.682" E
	22	27° 7' 43.667" N	88° 18' 6.338" E
	23	27° 7' 43.524" N	88° 18' 10.451" E
	24	27° 7' 42.515" N	88° 18' 15.436" E
	25	27° 7' 40.862" N	88° 18' 19.958" E
DR_KS_MH_01/19	1	26° 48' 56.075" N	88° 24' 5.038" E
	2	26° 48' 52.509" N	88° 24' 10.897" E
	3	26° 48' 40.940" N	88° 24' 22.560" E
	4	26° 48' 38.620" N	88° 24' 24.678" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	5	26° 48' 35.716" N	88° 24' 26.176" E
	6	26° 48' 34.564" N	88° 24' 27.494" E
	7	26° 48' 34.699" N	88° 24' 13.840" E
	8	26° 48' 41.088" N	88° 24' 4.777" E
	9	26° 48' 41.610" N	88° 24' 3.115" E
	10	26° 48' 46.887" N	88° 23' 57.328" E
	11	26° 48' 47.950" N	88° 23' 54.083" E
	12	26° 48' 54.530" N	88° 23' 49.563" E
	13	26° 48' 55.866" N	88° 23' 44.884" E
	14	26° 48' 55.829" N	88° 23' 39.901" E
	15	26° 48' 58.533" N	88° 23' 36.005" E
	16	26° 49' 13.757" N	88° 23' 17.982" E
	17	26° 49' 31.497" N	88° 23' 6.506" E
	18	26° 49' 37.706" N	88° 23' 4.665" E
	19	26° 49' 42.128" N	88° 23' 5.528" E
	20	26° 49' 40.638" N	88° 23' 7.430" E
	21	26° 49' 32.721" N	88° 23' 8.101" E
	22	26° 49' 25.465" N	88° 23' 11.462" E
	23	26° 49' 19.510" N	88° 23' 22.507" E
	24	26° 49' 11.472" N	88° 23' 35.442" E
	25	26° 49' 8.248" N	88° 23' 48.436" E
	26	26° 49' 6.757" N	88° 23' 52.668" E
	27	26° 48' 58.372" N	88° 23' 58.856" E
DR_MR_MC_01	1	26° 49' 26.932" N	88° 10' 27.285" E
	2	26° 49' 20.263" N	88° 10' 36.224" E
	3	26° 49' 19.419" N	88° 10' 37.062" E
	4	26° 49' 19.355" N	88° 10' 37.373" E
	5	26° 49' 10.846" N	88° 10' 38.333" E
	6	26° 49' 5.489" N	88° 10' 41.440" E
	7	26° 49' 3.200" N	88° 10' 43.971" E
	8	26° 49' 1.277" N	88° 10' 45.151" E
	9	26° 48' 58.439" N	88° 10' 45.121" E
	10	26° 48' 58.283" N	88° 10' 42.055" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	11	26° 48' 59.209" N	88° 10' 41.756" E
	12	26° 48' 59.833" N	88° 10' 41.073" E
	13	26° 49' 0.352" N	88° 10' 36.631" E
	14	26° 49' 1.083" N	88° 10' 34.761" E
	15	26° 49' 1.411" N	88° 10' 34.415" E
	16	26° 49' 6.065" N	88° 10' 33.112" E
	17	26° 49' 12.591" N	88° 10' 30.132" E
	18	26° 49' 21.039" N	88° 10' 28.580" E
	19	26° 49' 23.772" N	88° 10' 25.647" E
	20	26° 49' 24.529" N	88° 10' 24.253" E
	21	26° 49' 24.686" N	88° 10' 24.129" E
	22	26° 49' 24.741" N	88° 10' 25.200" E
	23	26° 49' 25.576" N	88° 10' 24.121" E
	24	26° 49' 25.341" N	88° 10' 22.938" E
	25	26° 49' 25.355" N	88° 10' 22.730" E
	26	26° 49' 26.209" N	88° 10' 21.158" E
	27	26° 49' 29.501" N	88° 10' 19.207" E
	28	26° 49' 33.992" N	88° 10' 15.832" E
	29	26° 49' 35.778" N	88° 10' 11.644" E
	30	26° 49' 38.728" N	88° 10' 10.664" E
	31	26° 49' 41.370" N	88° 10' 8.343" E
	32	26° 49' 42.666" N	88° 10' 6.987" E
	33	26° 49' 43.209" N	88° 10' 9.072" E
	34	26° 49' 44.346" N	88° 10' 9.779" E
	35	26° 49' 41.799" N	88° 10' 12.774" E
	36	26° 49' 39.687" N	88° 10' 18.647" E
	37	26° 49' 36.834" N	88° 10' 20.486" E
	38	26° 49' 34.853" N	88° 10' 20.945" E
	39	26° 49' 29.542" N	88° 10' 23.670" E
DR_NB_MC_03	1	26° 42' 17.795" N	88° 10' 47.007" E
	2	26° 42' 17.163" N	88° 10' 45.420" E
	3	26° 42' 17.434" N	88° 10' 43.843" E
	4	26° 42' 20.409" N	88° 10' 42.869" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	5	26° 42' 23.656" N	88° 10' 40.173" E
	6	26° 42' 24.833" N	88° 10' 38.175" E
	7	26° 42' 27.810" N	88° 10' 36.913" E
	8	26° 42' 30.377" N	88° 10' 38.519" E
	9	26° 42' 33.342" N	88° 10' 38.693" E
	10	26° 42' 36.305" N	88° 10' 39.155" E
	11	26° 42' 38.064" N	88° 10' 38.782" E
	12	26° 42' 51.817" N	88° 10' 41.730" E
	13	26° 42' 55.360" N	88° 10' 43.372" E
	14	26° 43' 2.702" N	88° 10' 44.597" E
	15	26° 43' 10.824" N	88° 10' 46.238" E
	16	26° 43' 11.934" N	88° 10' 46.044" E
	17	26° 43' 15.997" N	88° 10' 46.916" E
	18	26° 43' 18.446" N	88° 10' 47.926" E
	19	26° 43' 20.822" N	88° 10' 47.950" E
	20	26° 43' 25.247" N	88° 10' 48.899" E
	21	26° 44' 9.248" N	88° 10' 57.134" E
	22	26° 44' 59.357" N	88° 11' 7.590" E
	23	26° 45' 42.530" N	88° 11' 11.989" E
	24	26° 45' 59.768" N	88° 11' 7.139" E
	25	26° 46' 28.414" N	88° 10' 58.835" E
	26	26° 46' 29.454" N	88° 10' 59.325" E
	27	26° 46' 31.728" N	88° 10' 58.889" E
	28	26° 46' 34.697" N	88° 10' 57.540" E
	29	26° 46' 36.981" N	88° 10' 55.954" E
	30	26° 46' 37.139" N	88° 10' 55.767" E
	31	26° 46' 41.474" N	88° 10' 54.160" E
	32	26° 46' 56.121" N	88° 10' 50.719" E
	33	26° 47' 25.288" N	88° 10' 46.110" E
	34	26° 47' 57.557" N	88° 10' 43.330" E
	35	26° 48' 10.828" N	88° 10' 42.660" E
	36	26° 48' 9.759" N	88° 10' 43.328" E
	37	26° 47' 43.452" N	88° 10' 49.000" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	38	26° 47' 34.828" N	88° 10' 50.859" E
	39	26° 47' 29.392" N	88° 10' 52.467" E
	40	26° 47' 23.645" N	88° 10' 54.166" E
	41	26° 47' 11.856" N	88° 10' 57.652" E
	42	26° 46' 57.141" N	88° 11' 2.003" E
	43	26° 46' 47.297" N	88° 11' 9.769" E
	44	26° 46' 46.858" N	88° 11' 9.605" E
	45	26° 46' 45.244" N	88° 11' 9.813" E
	46	26° 46' 43.008" N	88° 11' 9.790" E
	47	26° 46' 42.833" N	88° 11' 9.835" E
	48	26° 46' 42.769" N	88° 11' 9.809" E
	49	26° 46' 27.067" N	88° 11' 11.830" E
	50	26° 46' 25.941" N	88° 11' 12.387" E
	51	26° 46' 25.616" N	88° 11' 12.387" E
	52	26° 46' 24.994" N	88° 11' 12.856" E
	53	26° 46' 0.800" N	88° 11' 24.834" E
	54	26° 45' 47.527" N	88° 11' 32.569" E
	55	26° 45' 18.674" N	88° 11' 33.992" E
	56	26° 44' 37.521" N	88° 11' 29.789" E
	57	26° 44' 1.391" N	88° 11' 21.273" E
	58	26° 43' 42.539" N	88° 11' 16.349" E
	59	26° 43' 41.947" N	88° 11' 15.748" E
	60	26° 43' 35.158" N	88° 11' 13.149" E
	61	26° 43' 31.991" N	88° 11' 11.937" E
	62	26° 43' 27.752" N	88° 11' 10.314" E
	63	26° 43' 22.425" N	88° 11' 5.663" E
	64	26° 43' 15.023" N	88° 11' 2.369" E
	65	26° 43' 8.437" N	88° 11' 0.232" E
	66	26° 43' 8.438" N	88° 11' 0.110" E
	67	26° 43' 6.570" N	88° 11' 0.293" E
	68	26° 43' 4.134" N	88° 10' 59.773" E
	69	26° 43' 0.957" N	88° 10' 58.621" E
	70	26° 42' 57.760" N	88° 10' 58.846" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	71	26° 42' 51.883" N	88° 10' 58.130" E
	72	26° 42' 44.786" N	88° 10' 58.487" E
	73	26° 42' 44.185" N	88° 10' 58.321" E
	74	26° 42' 41.752" N	88° 10' 57.519" E
	75	26° 42' 39.903" N	88° 10' 56.283" E
	76	26° 42' 36.700" N	88° 10' 53.664" E
	77	26° 42' 34.394" N	88° 10' 51.773" E
	78	26° 42' 30.279" N	88° 10' 50.295" E
	79	26° 42' 26.539" N	88° 10' 50.256" E
	80	26° 42' 23.719" N	88° 10' 48.073" E
DR_PD_CG_10	1	26° 37' 46.402" N	88° 16' 13.821" E
	2	26° 37' 45.308" N	88° 16' 13.044" E
	3	26° 37' 45.800" N	88° 16' 11.901" E
	4	26° 37' 45.617" N	88° 16' 11.634" E
	5	26° 37' 46.920" N	88° 16' 10.541" E
	6	26° 37' 48.811" N	88° 16' 10.698" E
	7	26° 37' 51.341" N	88° 16' 10.907" E
	8	26° 37' 53.545" N	88° 16' 10.010" E
	9	26° 37' 56.126" N	88° 16' 9.943" E
	10	26° 37' 57.753" N	88° 16' 10.631" E
	11	26° 37' 59.449" N	88° 16' 13.328" E
	12	26° 38' 1.537" N	88° 16' 16.809" E
	13	26° 38' 0.831" N	88° 16' 16.872" E
	14	26° 37' 58.701" N	88° 16' 14.650" E
	15	26° 37' 55.931" N	88° 16' 14.411" E
	16	26° 37' 55.658" N	88° 16' 14.148" E
	17	26° 37' 53.080" N	88° 16' 13.928" E
	18	26° 37' 48.597" N	88° 16' 15.218" E
	19	26° 37' 48.460" N	88° 16' 13.890" E
	20	26° 37' 47.708" N	88° 16' 13.912" E
DR_PD_BS_53	1	26° 36' 11.349" N	88° 20' 3.018" E
	2	26° 36' 10.926" N	88° 20' 2.344" E
	3	26° 36' 11.685" N	88° 20' 2.624" E

CODE	POINT_NO	LATITUDE	LONGITUDE
	4	26° 36' 12.619" N	88° 20' 3.626" E
	5	26° 36' 14.457" N	88° 20' 3.896" E
	6	26° 36' 16.575" N	88° 20' 3.138" E
	7	26° 36' 17.368" N	88° 20' 3.088" E
	8	26° 36' 16.758" N	88° 20' 3.942" E
	9	26° 36' 15.549" N	88° 20' 4.502" E
	10	26° 36' 14.515" N	88° 20' 4.681" E
	11	26° 36' 13.313" N	88° 20' 4.476" E
	12	26° 36' 12.461" N	88° 20' 3.701" E
DR_PD_MH_13	1	26° 29' 45.866" N	88° 19' 55.788" E
	2	26° 29' 45.106" N	88° 19' 52.583" E
	3	26° 29' 45.481" N	88° 19' 44.618" E
	4	26° 29' 46.336" N	88° 19' 48.705" E
	5	26° 29' 48.804" N	88° 19' 56.092" E
	6	26° 29' 49.740" N	88° 19' 57.825" E

Annexure 4
Map showing of Potential Blocks of Darjeeling District

POTENTIAL BLOCK DR_KS_BS_01 OF BALASON RIVER

88°14'40"E 88°14'50"E 88°15'0"E 88°15'10"E

26°48'10"N 26°48'0"N 26°47'50"N 26°47'40"N 26°47'30"N 26°47'20"N

BALASON RIVER

DR_KS_BS_01

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KS_BS_01

POINT_NO	LATITUDE	LONGITUDE
1	26° 47' 22.408" N	88° 15' 11.834" E
2	26° 47' 22.233" N	88° 15' 7.281" E
3	26° 47' 26.134" N	88° 15' 3.731" E
4	26° 47' 33.063" N	88° 14' 58.058" E
5	26° 47' 39.429" N	88° 14' 53.306" E
6	26° 47' 44.012" N	88° 14' 51.570" E
7	26° 47' 49.895" N	88° 14' 50.816" E
8	26° 48' 4.073" N	88° 14' 51.930" E
9	26° 48' 11.043" N	88° 14' 54.055" E
10	26° 48' 1.748" N	88° 15' 3.481" E
11	26° 47' 56.072" N	88° 15' 5.520" E
12	26° 47' 51.860" N	88° 15' 7.199" E
13	26° 47' 43.184" N	88° 15' 8.253" E
14	26° 47' 39.428" N	88° 15' 9.017" E
15	26° 47' 37.839" N	88° 15' 10.627" E
16	26° 47' 32.728" N	88° 15' 11.708" E
17	26° 47' 27.563" N	88° 15' 12.370" E

0.15 0.075 0 0.15 0.3 0.45
Kilometers

POTENTIAL BLOCK DR_KS_BS_02 OF BALASON RIVER

88°15'20"E 88°15'25"E

26°47'20"N 26°47'15"N 26°47'10"N

N W E S

DR_KS_BS_02

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

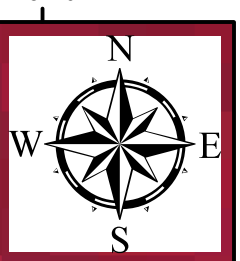
ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

0.045 0.0225 0 0.045 0.09 0.135

Kilometers

DR_KS_BS_02		
POINT_NO	LATITUDE	LONGITUDE
1	26° 47' 16.427" N	88° 15' 29.043" E
2	26° 47' 12.429" N	88° 15' 28.999" E
3	26° 47' 13.864" N	88° 15' 27.147" E
4	26° 47' 14.406" N	88° 15' 24.278" E
5	26° 47' 15.214" N	88° 15' 20.407" E
6	26° 47' 18.066" N	88° 15' 18.714" E
7	26° 47' 20.528" N	88° 15' 17.447" E
8	26° 47' 20.304" N	88° 15' 19.405" E
9	26° 47' 17.605" N	88° 15' 26.406" E
10	26° 47' 16.957" N	88° 15' 28.131" E

POTENTIAL BLOCK DR_KS_BS_03 OF BALASON RIVER



BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KS_BS_03

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 51.303" N	88° 15' 52.549" E	15	26° 46' 47.707" N	88° 15' 51.957" E
2	26° 46' 48.949" N	88° 15' 56.115" E	16	26° 46' 48.864" N	88° 15' 51.228" E
3	26° 46' 47.245" N	88° 15' 59.258" E	17	26° 46' 49.529" N	88° 15' 48.936" E
4	26° 46' 45.420" N	88° 16' 1.393" E	18	26° 46' 49.530" N	88° 15' 48.827" E
5	26° 46' 45.266" N	88° 16' 4.122" E	19	26° 46' 52.210" N	88° 15' 44.226" E
6	26° 46' 45.758" N	88° 16' 6.858" E	20	26° 46' 53.834" N	88° 15' 43.523" E
7	26° 46' 46.254" N	88° 16' 9.019" E	21	26° 46' 55.006" N	88° 15' 42.243" E
8	26° 46' 46.234" N	88° 16' 11.318" E	22	26° 46' 56.443" N	88° 15' 40.247" E
9	26° 46' 44.420" N	88° 16' 12.160" E	23	26° 46' 58.110" N	88° 15' 41.271" E
10	26° 46' 44.453" N	88° 16' 8.568" E	24	26° 46' 57.832" N	88° 15' 43.567" E
11	26° 46' 44.237" N	88° 16' 3.823" E	25	26° 46' 56.393" N	88° 15' 45.851" E
12	26° 46' 44.265" N	88° 16' 0.662" E	26	26° 46' 55.597" N	88° 15' 48.285" E
13	26° 46' 45.069" N	88° 15' 57.366" E	27	26° 46' 54.295" N	88° 15' 49.708" E
14	26° 46' 45.499" N	88° 15' 55.749" E			

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

0.075 0.0375 0 0.075 0.15 0.225
Kilometers

88°15'40"E 88°15'45"E 88°15'50"E 88°15'55"E 88°16'0"E 88°16'5"E 88°16'10"E

26°47'10"N 26°47'5"N 26°47'0"N 26°46'55"N 26°46'50"N 26°46'45"N 26°46'40"N 26°46'35"N 26°46'30"N 26°46'25"N

POTENTIAL BLOCK DR_KS_BS_04 OF BALASON RIVER

88°16'10"E

88°16'15"E

26°46'35"N

26°46'30"N

N

W

E

S

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KS_BS_04		
POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 36.548" N	88° 16' 7.905" E
2	26° 46' 36.273" N	88° 16' 9.722" E
3	26° 46' 36.515" N	88° 16' 11.545" E
4	26° 46' 36.413" N	88° 16' 13.364" E
5	26° 46' 35.714" N	88° 16' 14.602" E
6	26° 46' 35.030" N	88° 16' 14.115" E
7	26° 46' 33.919" N	88° 16' 13.432" E
8	26° 46' 32.889" N	88° 16' 13.133" E
9	26° 46' 31.950" N	88° 16' 12.356" E
10	26° 46' 31.947" N	88° 16' 12.354" E
11	26° 46' 31.996" N	88° 16' 12.304" E
12	26° 46' 32.875" N	88° 16' 11.413" E
13	26° 46' 33.161" N	88° 16' 11.604" E
14	26° 46' 34.023" N	88° 16' 11.326" E
15	26° 46' 34.462" N	88° 16' 10.373" E
16	26° 46' 34.379" N	88° 16' 9.888" E
17	26° 46' 36.788" N	88° 16' 7.447" E

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

0.025 0.0125 0 0.025 0.05 0.075

Kilometers

POTENTIAL BLOCK DR_KS_BS_05_06 OF BALASON RIVER

88°16'10"E 88°16'15"E 88°16'20"E 88°16'25"E

26°46'45"N 26°46'40"N 26°46'35"N 26°46'30"N 26°46'25"N

N W E S

DR_KS_BS_03

DR_KS_BS_04

DR_KS_BS_05_06

DR_KS_BS_09

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

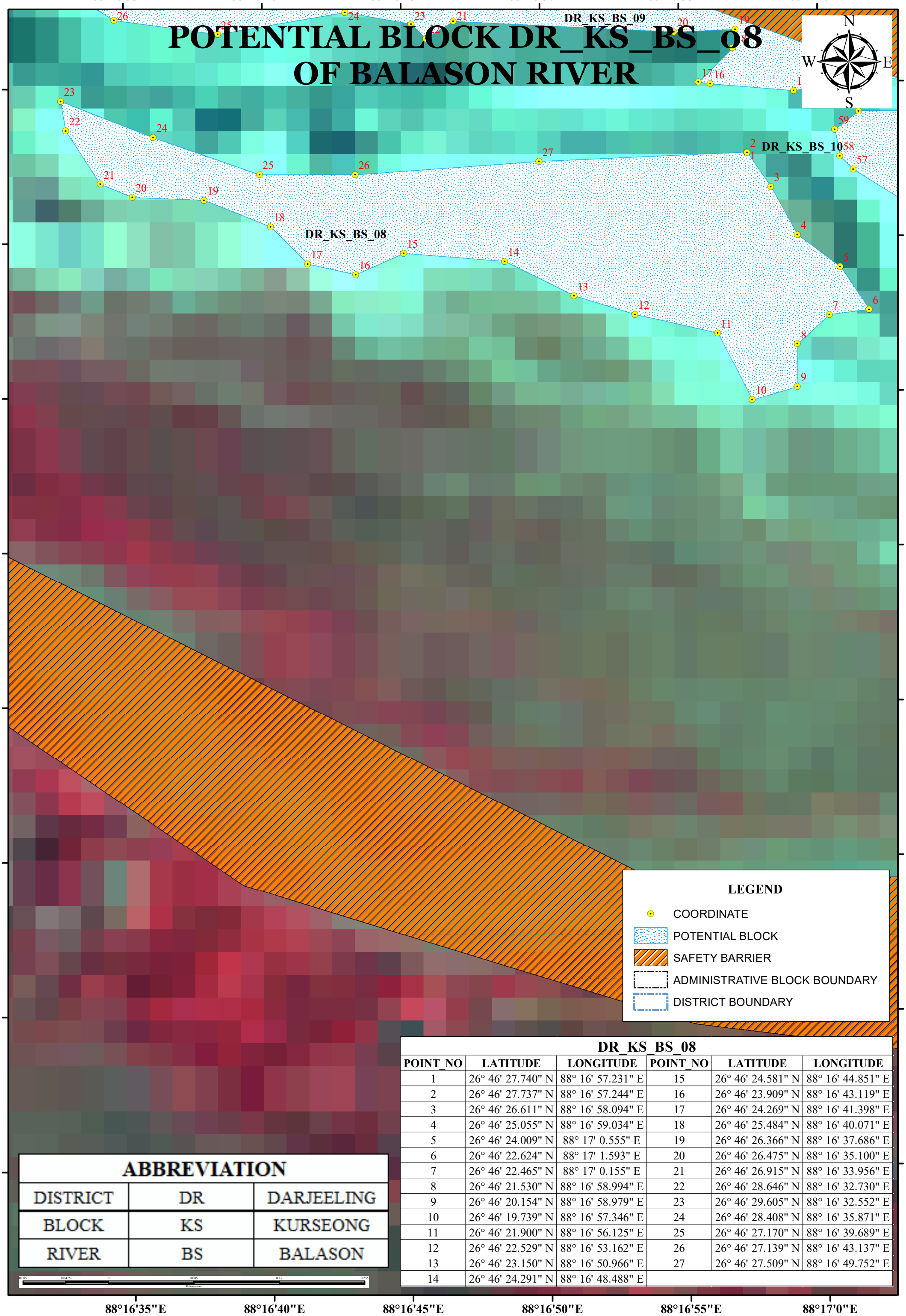
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

Kilometers

DR_KS_BS_05_06

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 30.844" N	88° 16' 22.595" E	13	26° 46' 43.408" N	88° 16' 9.993" E
2	26° 46' 30.444" N	88° 16' 21.211" E	14	26° 46' 43.665" N	88° 16' 12.008" E
3	26° 46' 31.062" N	88° 16' 21.294" E	15	26° 46' 43.572" N	88° 16' 14.689" E
4	26° 46' 32.922" N	88° 16' 21.008" E	16	26° 46' 43.284" N	88° 16' 16.142" E
5	26° 46' 33.815" N	88° 16' 21.172" E	17	26° 46' 42.653" N	88° 16' 17.438" E
6	26° 46' 34.777" N	88° 16' 21.259" E	18	26° 46' 41.948" N	88° 16' 19.046" E
7	26° 46' 35.336" N	88° 16' 20.269" E	19	26° 46' 40.037" N	88° 16' 21.228" E
8	26° 46' 35.898" N	88° 16' 18.972" E	20	26° 46' 36.681" N	88° 16' 23.733" E
9	26° 46' 37.866" N	88° 16' 14.019" E	21	26° 46' 33.721" N	88° 16' 24.861" E
10	26° 46' 40.483" N	88° 16' 9.833" E	22	26° 46' 33.713" N	88° 16' 24.849" E
11	26° 46' 42.217" N	88° 16' 8.223" E	23	26° 46' 32.620" N	88° 16' 23.994" E
12	26° 46' 42.898" N	88° 16' 9.317" E	24	26° 46' 31.729" N	88° 16' 23.601" E

POTENTIAL BLOCK DR_KS_BS_08 OF BALASON RIVER



ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

DR_KS_BS_08

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 27.740" N	88° 16' 57.231" E	15	26° 46' 24.581" N	88° 16' 44.851" E
2	26° 46' 27.737" N	88° 16' 57.244" E	16	26° 46' 23.909" N	88° 16' 43.119" E
3	26° 46' 26.611" N	88° 16' 58.094" E	17	26° 46' 24.269" N	88° 16' 41.398" E
4	26° 46' 25.055" N	88° 16' 59.034" E	18	26° 46' 25.484" N	88° 16' 40.071" E
5	26° 46' 24.009" N	88° 17' 0.555" E	19	26° 46' 26.366" N	88° 16' 37.686" E
6	26° 46' 22.624" N	88° 17' 1.593" E	20	26° 46' 26.475" N	88° 16' 35.100" E
7	26° 46' 22.465" N	88° 17' 0.155" E	21	26° 46' 26.915" N	88° 16' 33.956" E
8	26° 46' 21.530" N	88° 16' 58.994" E	22	26° 46' 28.646" N	88° 16' 32.730" E
9	26° 46' 20.154" N	88° 16' 58.979" E	23	26° 46' 29.605" N	88° 16' 32.552" E
10	26° 46' 19.739" N	88° 16' 57.346" E	24	26° 46' 28.408" N	88° 16' 35.871" E
11	26° 46' 21.900" N	88° 16' 56.125" E	25	26° 46' 27.170" N	88° 16' 39.689" E
12	26° 46' 22.529" N	88° 16' 53.162" E	26	26° 46' 27.139" N	88° 16' 43.137" E
13	26° 46' 23.150" N	88° 16' 50.966" E	27	26° 46' 27.509" N	88° 16' 49.752" E
14	26° 46' 24.291" N	88° 16' 48.488" E			

POTENTIAL BLOCK DR_KS_BS_09 OF BALASON RIVER

88°16'30"E 88°16'45"E 88°17'0"E

26°46'45"N 26°46'30"N 26°46'15"N 26°46'0"N

N W E S

DR_KS_BS_05_06

DR_KS_BS_09

DR_KS_BS_08

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

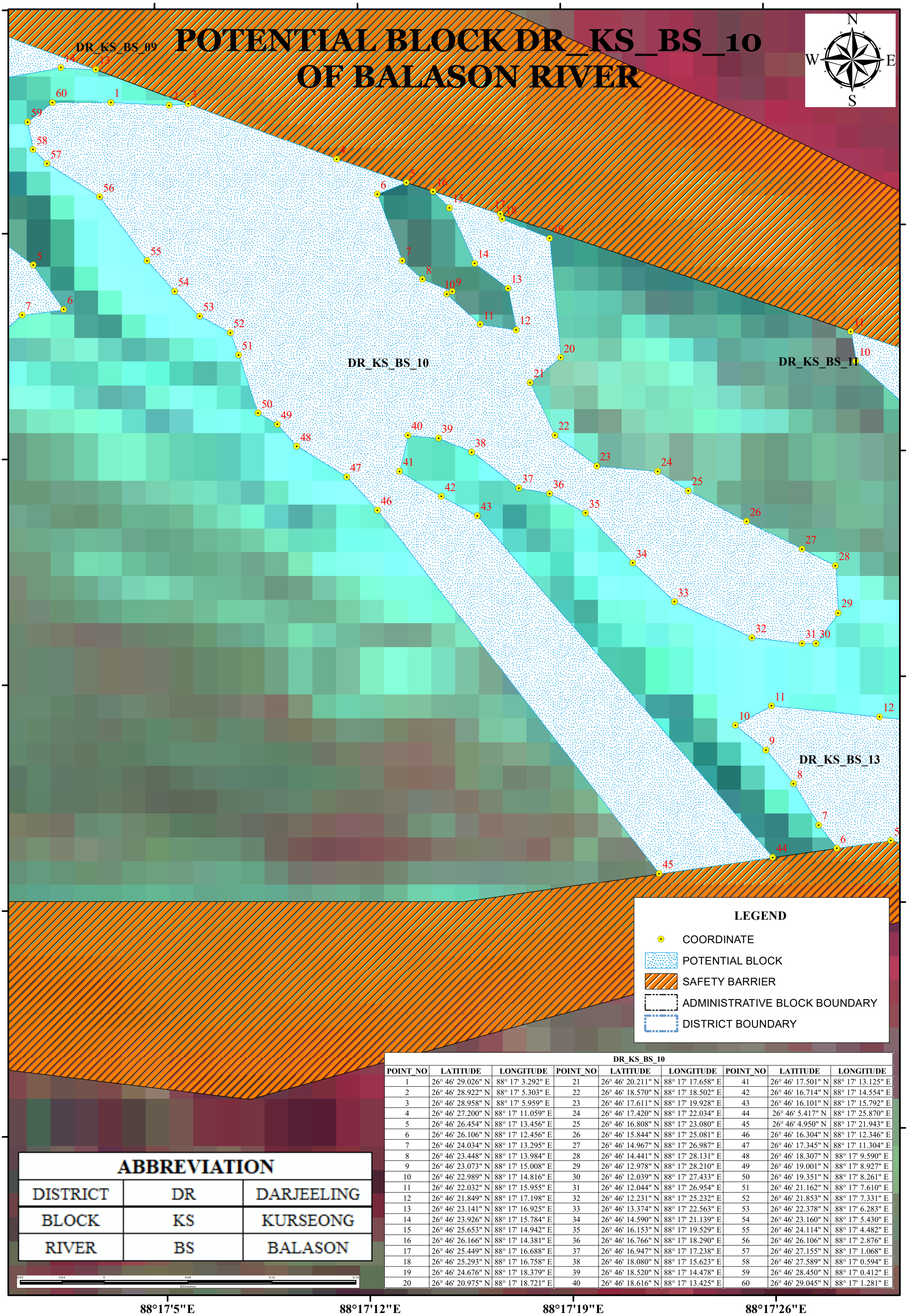
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

Kilometers

DR_KS_BS_09

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 37.148" N	88° 16' 33.879" E	13	26° 46' 30.052" N	88° 17' 2.786" E	25	26° 46' 31.719" N	88° 16' 38.232" E
2	26° 46' 36.380" N	88° 16' 35.666" E	14	26° 46' 30.127" N	88° 17' 1.582" E	26	26° 46' 32.200" N	88° 16' 34.501" E
3	26° 46' 37.861" N	88° 16' 38.317" E	15	26° 46' 29.721" N	88° 16' 58.943" E	27	26° 46' 34.274" N	88° 16' 30.853" E
4	26° 46' 37.822" N	88° 16' 42.628" E	16	26° 46' 29.963" N	88° 16' 55.952" E	28	26° 46' 34.073" N	88° 16' 29.294" E
5	26° 46' 38.181" N	88° 16' 45.645" E	17	26° 46' 30.020" N	88° 16' 55.518" E	29	26° 46' 33.681" N	88° 16' 27.756" E
6	26° 46' 36.976" N	88° 16' 47.658" E	18	26° 46' 31.117" N	88° 16' 56.766" E	30	26° 46' 34.865" N	88° 16' 26.778" E
7	26° 46' 36.807" N	88° 16' 47.886" E	19	26° 46' 31.718" N	88° 16' 56.869" E	31	26° 46' 36.736" N	88° 16' 25.047" E
8	26° 46' 35.837" N	88° 16' 48.234" E	20	26° 46' 31.652" N	88° 16' 54.665" E	32	26° 46' 39.240" N	88° 16' 23.806" E
9	26° 46' 34.551" N	88° 16' 47.741" E	21	26° 46' 32.068" N	88° 16' 46.718" E	33	26° 46' 42.356" N	88° 16' 21.541" E
10	26° 46' 34.313" N	88° 16' 50.372" E	22	26° 46' 31.511" N	88° 16' 45.726" E	34	26° 46' 41.372" N	88° 16' 25.746" E
11	26° 46' 34.556" N	88° 16' 51.704" E	23	26° 46' 31.995" N	88° 16' 45.197" E	35	26° 46' 38.560" N	88° 16' 32.338" E
12	26° 46' 32.945" N	88° 16' 54.395" E	24	26° 46' 32.388" N	88° 16' 42.816" E			

POTENTIAL BLOCK DR_KS_BS_10 OF BALASON RIVER



ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

DR_KS_BS_10

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 29.026" N	88° 17' 3.292" E	21	26° 46' 20.211" N	88° 17' 17.658" E	41	26° 46' 17.501" N	88° 17' 13.125" E
2	26° 46' 28.922" N	88° 17' 5.303" E	22	26° 46' 18.570" N	88° 17' 18.502" E	42	26° 46' 16.714" N	88° 17' 14.554" E
3	26° 46' 28.958" N	88° 17' 5.959" E	23	26° 46' 17.611" N	88° 17' 19.928" E	43	26° 46' 16.101" N	88° 17' 15.792" E
4	26° 46' 27.200" N	88° 17' 11.059" E	24	26° 46' 17.420" N	88° 17' 22.034" E	44	26° 46' 5.417" N	88° 17' 25.870" E
5	26° 46' 26.454" N	88° 17' 13.456" E	25	26° 46' 16.808" N	88° 17' 23.080" E	45	26° 46' 4.950" N	88° 17' 21.943" E
6	26° 46' 26.106" N	88° 17' 12.456" E	26	26° 46' 15.844" N	88° 17' 25.081" E	46	26° 46' 16.304" N	88° 17' 12.346" E
7	26° 46' 24.034" N	88° 17' 13.295" E	27	26° 46' 14.967" N	88° 17' 26.987" E	47	26° 46' 17.345" N	88° 17' 11.304" E
8	26° 46' 23.448" N	88° 17' 13.984" E	28	26° 46' 14.441" N	88° 17' 28.131" E	48	26° 46' 18.307" N	88° 17' 9.590" E
9	26° 46' 23.073" N	88° 17' 15.008" E	29	26° 46' 12.978" N	88° 17' 28.210" E	49	26° 46' 19.001" N	88° 17' 8.927" E
10	26° 46' 22.989" N	88° 17' 14.816" E	30	26° 46' 12.039" N	88° 17' 27.433" E	50	26° 46' 19.351" N	88° 17' 8.261" E
11	26° 46' 22.032" N	88° 17' 15.955" E	31	26° 46' 12.044" N	88° 17' 26.954" E	51	26° 46' 21.162" N	88° 17' 7.610" E
12	26° 46' 21.849" N	88° 17' 17.198" E	32	26° 46' 12.231" N	88° 17' 25.232" E	52	26° 46' 21.853" N	88° 17' 7.331" E
13	26° 46' 23.141" N	88° 17' 16.925" E	33	26° 46' 13.374" N	88° 17' 22.563" E	53	26° 46' 22.378" N	88° 17' 6.283" E
14	26° 46' 23.926" N	88° 17' 15.784" E	34	26° 46' 14.590" N	88° 17' 21.139" E	54	26° 46' 23.160" N	88° 17' 5.430" E
15	26° 46' 25.653" N	88° 17' 14.942" E	35	26° 46' 16.153" N	88° 17' 19.529" E	55	26° 46' 24.114" N	88° 17' 4.482" E
16	26° 46' 26.166" N	88° 17' 14.381" E	36	26° 46' 16.766" N	88° 17' 18.290" E	56	26° 46' 26.106" N	88° 17' 2.876" E
17	26° 46' 25.449" N	88° 17' 16.688" E	37	26° 46' 16.947" N	88° 17' 17.238" E	57	26° 46' 27.155" N	88° 17' 1.068" E
18	26° 46' 25.293" N	88° 17' 16.758" E	38	26° 46' 18.080" N	88° 17' 15.623" E	58	26° 46' 27.589" N	88° 17' 0.594" E
19	26° 46' 24.676" N	88° 17' 18.379" E	39	26° 46' 18.520" N	88° 17' 14.478" E	59	26° 46' 28.450" N	88° 17' 0.412" E
20	26° 46' 20.975" N	88° 17' 18.721" E	40	26° 46' 18.616" N	88° 17' 13.425" E	60	26° 46' 29.045" N	88° 17' 1.281" E

POTENTIAL BLOCK DR_KS_BS_11 OF BALASON RIVER

88°17'33"E 88°17'40"E 88°17'47"E

26°46'18"N 26°46'11"N 26°46'4"N 26°45'57"N

DR_KS_BS_10
DR_KS_BS_11
DR_KS_BS_11A
DR_KS_BS_13
DR_KS_BS_14

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KS_BS_11

POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 14.759" N	88° 17' 49.467" E
2	26° 46' 8.357" N	88° 17' 51.173" E
3	26° 46' 8.498" N	88° 17' 50.592" E
4	26° 46' 8.835" N	88° 17' 49.206" E
5	26° 46' 9.665" N	88° 17' 49.055" E
6	26° 46' 10.987" N	88° 17' 47.461" E
7	26° 46' 12.817" N	88° 17' 42.960" E
8	26° 46' 14.165" N	88° 17' 38.377" E
9	26° 46' 16.335" N	88° 17' 34.340" E
10	26° 46' 20.772" N	88° 17' 28.908" E
11	26° 46' 21.700" N	88° 17' 28.743" E
12	26° 46' 20.556" N	88° 17' 32.418" E
13	26° 46' 18.331" N	88° 17' 40.655" E

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

0.065 0.0325 0 0.065 0.13 0.195
Kilometers

POTENTIAL BLOCK DR_KS_BS_11A OF BALASON RIVER

88°17'50"E

88°18'0"E

26°46'10"N

26°46'0"N

N

W

E

S

DR_KS_BS_11

DR_KS_BS_11A

DR_KS_BS_15

DR_KS_BS_16

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

0.035 0.0175 0 0.035 0.07 0.105

Kilometers

DR_KS_BS_11A

POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 10.847" N	88° 18' 0.376" E
2	26° 46' 6.960" N	88° 18' 1.536" E
3	26° 46' 7.290" N	88° 17' 55.562" E
4	26° 46' 8.357" N	88° 17' 51.173" E
5	26° 46' 14.759" N	88° 17' 49.467" E
6	26° 46' 11.953" N	88° 17' 56.389" E

88°17'30"E

POTENTIAL BLOCK DR_KS_BS_13 OF BALASON RIVER

N
W E
S

DR_KS_BS_10

DR_KS_BS_14

DR_KS_BS_13

DR_KS_BS_10

26°46'10"N

26°46'0"N

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KS_BS_13		
POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 7.109" N	88° 17' 35.324" E
2	26° 46' 5.548" N	88° 17' 36.839" E
3	26° 46' 4.334" N	88° 17' 37.879" E
4	26° 46' 4.334" N	88° 17' 37.875" E
5	26° 46' 5.902" N	88° 17' 29.947" E
6	26° 46' 5.680" N	88° 17' 28.078" E
7	26° 46' 6.407" N	88° 17' 27.461" E
8	26° 46' 7.704" N	88° 17' 26.613" E
9	26° 46' 8.745" N	88° 17' 25.667" E
10	26° 46' 9.528" N	88° 17' 24.622" E
11	26° 46' 10.119" N	88° 17' 25.874" E
12	26° 46' 9.741" N	88° 17' 29.606" E
13	26° 46' 9.552" N	88° 17' 31.424" E
14	26° 46' 9.018" N	88° 17' 33.430" E

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

0.035 0.0175 0 0.035 0.07 0.105
Kilometers

88°17'30"E

N.,0.94°26

POTENTIAL BLOCK DR_KS_BS_14 OF BALASON RIVER

88°17'39"E 88°17'42"E

26°46'9"N 26°46'6"N 26°46'3"N

DR_KS_BS_14

BALASON RIVER

DR_KS_BS_13

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

LEGEND

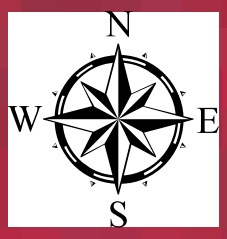
- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.02 0.01 0 0.02 0.04 0.06
Kilometers

DR_KS_BS_14

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 8.473" N	88° 17' 36.604" E	10	26° 46' 7.188" N	88° 17' 41.762" E
2	26° 46' 9.353" N	88° 17' 36.326" E	11	26° 46' 6.474" N	88° 17' 40.834" E
3	26° 46' 9.811" N	88° 17' 37.021" E	12	26° 46' 5.700" N	88° 17' 40.883" E
4	26° 46' 9.646" N	88° 17' 38.111" E	13	26° 46' 5.344" N	88° 17' 40.247" E
5	26° 46' 9.471" N	88° 17' 40.294" E	14	26° 46' 5.353" N	88° 17' 39.270" E
6	26° 46' 9.355" N	88° 17' 41.787" E	15	26° 46' 5.565" N	88° 17' 38.697" E
7	26° 46' 8.826" N	88° 17' 43.218" E	16	26° 46' 6.761" N	88° 17' 37.619" E
8	26° 46' 8.147" N	88° 17' 44.129" E	17	26° 46' 7.075" N	88° 17' 37.163" E
9	26° 46' 7.479" N	88° 17' 43.835" E			

POTENTIAL BLOCK DR_KS_BS_15 OF BALASON RIVER



DR_KS_BS_11

DR_KS_BS_11A

DR_KS_BS_14

BALASON RIVER

DR_KS_BS_16

DR_KS_BS_15

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

0.15 0.075 0 0.15 0.3 0.45
Kilometers

LEGEND

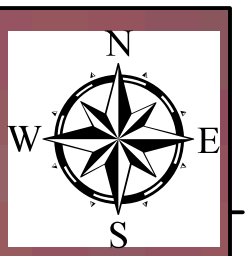
- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KS_BS_15		
POINT_NO	LATITUDE	LONGITUDE
1	26° 45' 54.235" N	88° 18' 18.465" E
2	26° 45' 52.846" N	88° 18' 18.681" E
3	26° 46' 1.214" N	88° 17' 53.650" E
4	26° 46' 3.904" N	88° 17' 40.051" E
5	26° 46' 5.030" N	88° 17' 43.239" E
6	26° 46' 6.624" N	88° 17' 45.293" E
7	26° 46' 7.329" N	88° 17' 50.450" E
8	26° 46' 7.148" N	88° 17' 51.495" E
9	26° 46' 6.311" N	88° 17' 51.719" E
10	26° 45' 57.076" N	88° 18' 12.174" E

88°17'40"E 88°17'45"E 88°17'50"E 88°17'55"E 88°18'0"E 88°18'5"E 88°18'10"E 88°18'15"E 88°18'20"E

26°46'25"N 26°46'20"N 26°46'15"N 26°46'10"N 26°46'5"N 26°46'0"N 26°45'55"N 26°45'50"N 26°45'45"N 26°45'40"N 26°45'35"N

POTENTIAL BLOCK DR_KS_BS_16 OF BALASON RIVER



DR_KS_BS_11

DR_KS_BS_11A

DR_KS_BS_16

BALASON RIVER

DR_KS_BS_15

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

0.09 0.045 0 0.09 0.18 0.27
Kilometers

DR_KS_BS_16

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 7.992" N	88° 18' 12.050" E	10	26° 45' 57.076" N	88° 18' 12.174" E
2	26° 46' 4.862" N	88° 18' 16.494" E	11	26° 46' 6.311" N	88° 17' 51.719" E
3	26° 46' 1.808" N	88° 18' 18.167" E	12	26° 46' 7.148" N	88° 17' 51.495" E
4	26° 46' 0.348" N	88° 18' 18.959" E	13	26° 46' 6.421" N	88° 17' 55.708" E
5	26° 45' 59.075" N	88° 18' 18.280" E	14	26° 46' 6.033" N	88° 18' 2.888" E
6	26° 45' 57.737" N	88° 18' 16.683" E	15	26° 46' 9.707" N	88° 18' 3.904" E
7	26° 45' 56.332" N	88° 18' 17.505" E	16	26° 46' 9.682" N	88° 18' 4.578" E
8	26° 45' 54.389" N	88° 18' 18.441" E	17	26° 46' 8.841" N	88° 18' 7.610" E
9	26° 45' 54.235" N	88° 18' 18.465" E			

88°17'50"E 88°17'55"E 88°18'0"E 88°18'5"E 88°18'10"E 88°18'15"E

26°46'15"N 26°46'10"N 26°46'5"N 26°46'0"N 26°45'55"N 26°45'50"N 26°45'45"N 26°45'40"N

POTENTIAL BLOCK DR_KS_BS_17_14 OF BALASON RIVER

DR_KS_BS_17/15

DR_KS_BS_17/14

BALASON RIVER

DR_NB_BS_19

N

S

E

W

88°18'25"E 88°18'30"E 88°18'35"E 88°18'40"E 88°18'45"E 88°18'50"E 88°18'55"E

26°45'55"N 26°45'50"N 26°45'45"N 26°45'40"N 26°45'35"N 26°45'30"N 26°45'25"N 26°45'20"N 26°45'15"N 26°45'10"N

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

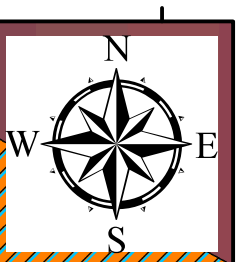
0.1 0.05 0 0.1 0.2 0.3

Kilometers

DR_KS_BS_17/14

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 45' 53.033" N	88° 18' 21.390" E	11	26° 45' 44.662" N	88° 18' 48.738" E	21	26° 45' 23.783" N	88° 18' 55.088" E
2	26° 45' 48.912" N	88° 18' 32.327" E	12	26° 45' 43.535" N	88° 18' 49.683" E	22	26° 45' 22.636" N	88° 18' 54.754" E
3	26° 45' 49.945" N	88° 18' 32.692" E	13	26° 45' 42.149" N	88° 18' 50.817" E	23	26° 45' 45.890" N	88° 18' 33.037" E
4	26° 45' 49.942" N	88° 18' 32.698" E	14	26° 45' 41.112" N	88° 18' 51.380" E	24	26° 45' 47.210" N	88° 18' 30.499" E
5	26° 45' 48.615" N	88° 18' 36.754" E	15	26° 45' 39.698" N	88° 18' 51.410" E	25	26° 45' 48.465" N	88° 18' 29.688" E
6	26° 45' 47.944" N	88° 18' 39.620" E	16	26° 45' 39.287" N	88° 18' 52.201" E	26	26° 45' 50.102" N	88° 18' 27.072" E
7	26° 45' 46.835" N	88° 18' 40.333" E	17	26° 45' 35.485" N	88° 18' 54.264" E	27	26° 45' 51.410" N	88° 18' 25.052" E
8	26° 45' 47.997" N	88° 18' 41.401" E	18	26° 45' 33.023" N	88° 18' 54.355" E	28	26° 45' 51.850" N	88° 18' 23.979" E
9	26° 45' 47.628" N	88° 18' 44.175" E	19	26° 45' 28.543" N	88° 18' 53.926" E	29	26° 45' 52.840" N	88° 18' 21.476" E
10	26° 45' 46.141" N	88° 18' 46.840" E	20	26° 45' 24.064" N	88° 18' 55.271" E			

POTENTIAL BLOCK DR_KS_BS_17_15 OF BALASON RIVER



88°18'20"E 88°18'25"E 88°18'30"E 88°18'35"E

26°46'0"N 26°45'55"N 26°45'50"N 26°45'45"N 26°45'40"N

DR_KS_BS_16

DR_KS_BS_17/15

DR_KS_BS_15

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	BS	BALASON

0.055 0.0275 0 0.055 0.11 0.165
Kilometers

DR_KS_BS_17/15		
POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 0.299" N	88° 18' 22.917" E
2	26° 45' 54.390" N	88° 18' 34.261" E
3	26° 45' 53.101" N	88° 18' 33.806" E
4	26° 45' 49.945" N	88° 18' 32.692" E
5	26° 45' 48.912" N	88° 18' 32.327" E
6	26° 45' 53.033" N	88° 18' 21.390" E
7	26° 45' 54.675" N	88° 18' 20.659" E
8	26° 45' 57.179" N	88° 18' 17.240" E
9	26° 46' 1.908" N	88° 18' 19.995" E
10	26° 46' 1.825" N	88° 18' 20.167" E

POTENTIAL BLOCK DR_MT_BS_24 OF BALASON RIVER

DR_NB_BS_23

DR_MT_BS_24

BALASON RIVER

DR_MT_BS_25

DR_MT_BS_26

DR_MT_BS_29_30

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	BS	BALASON

0.15 0.075 0 0.15 0.3 0.45
Kilometers

DR_MT_BS_24

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 44' 49.486" N	88° 19' 57.446" E	16	26° 44' 37.402" N	88° 19' 47.085" E
2	26° 44' 45.985" N	88° 20' 4.076" E	17	26° 44' 38.644" N	88° 19' 43.077" E
3	26° 44' 41.680" N	88° 20' 7.630" E	18	26° 44' 38.848" N	88° 19' 39.900" E
4	26° 44' 38.544" N	88° 20' 11.999" E	19	26° 44' 38.864" N	88° 19' 38.162" E
5	26° 44' 35.067" N	88° 20' 15.981" E	20	26° 44' 42.297" N	88° 19' 33.794" E
6	26° 44' 32.116" N	88° 20' 18.819" E	21	26° 44' 43.196" N	88° 19' 32.751" E
7	26° 44' 29.816" N	88° 20' 21.485" E	22	26° 44' 44.508" N	88° 19' 32.304" E
8	26° 44' 29.267" N	88° 20' 20.746" E	23	26° 44' 48.657" N	88° 19' 29.245" E
9	26° 44' 28.328" N	88° 20' 18.130" E	24	26° 44' 49.227" N	88° 19' 29.072" E
10	26° 44' 28.426" N	88° 20' 15.066" E	25	26° 44' 50.109" N	88° 19' 28.896" E
11	26° 44' 29.284" N	88° 20' 11.629" E	26	26° 44' 49.938" N	88° 19' 33.546" E
12	26° 44' 29.208" N	88° 20' 4.032" E	27	26° 44' 49.387" N	88° 19' 34.976" E
13	26° 44' 29.518" N	88° 20' 1.365" E	28	26° 44' 53.312" N	88° 19' 37.692" E
14	26° 44' 34.726" N	88° 19' 55.410" E	29	26° 44' 53.591" N	88° 19' 44.591" E
15	26° 44' 35.969" N	88° 19' 53.197" E	30	26° 44' 50.750" N	88° 19' 54.136" E

POTENTIAL BLOCK DR_MT_BS_25 OF BALASON RIVER

88°19'45"E 88°19'50"E 88°19'55"E

26°44'35"N 26°44'30"N 26°44'25"N 26°44'20"N 26°44'15"N

N W E S

DR_MT_BS_24

DR_MT_BS_25

BALASON RIVER

DR_MT_BS_26

16 4 5 15 14 6 7 6 8 9 10 1 3 2

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	BS	BALASON

0.05 0.025 0 0.05 0.1 0.15
Kilometers

DR_MT_BS_25		
POINT_NO	LATITUDE	LONGITUDE
1	26° 44' 25.321" N	88° 19' 56.844" E
2	26° 44' 24.018" N	88° 19' 57.058" E
3	26° 44' 24.022" N	88° 19' 57.046" E
4	26° 44' 36.554" N	88° 19' 41.102" E
5	26° 44' 36.481" N	88° 19' 43.193" E
6	26° 44' 33.394" N	88° 19' 51.489" E
7	26° 44' 32.775" N	88° 19' 53.301" E
8	26° 44' 29.663" N	88° 19' 55.085" E
9	26° 44' 26.204" N	88° 19' 56.486" E
10	26° 44' 26.076" N	88° 19' 56.613" E

POTENTIAL BLOCK DR_MT_BS_26 OF BALASON RIVER

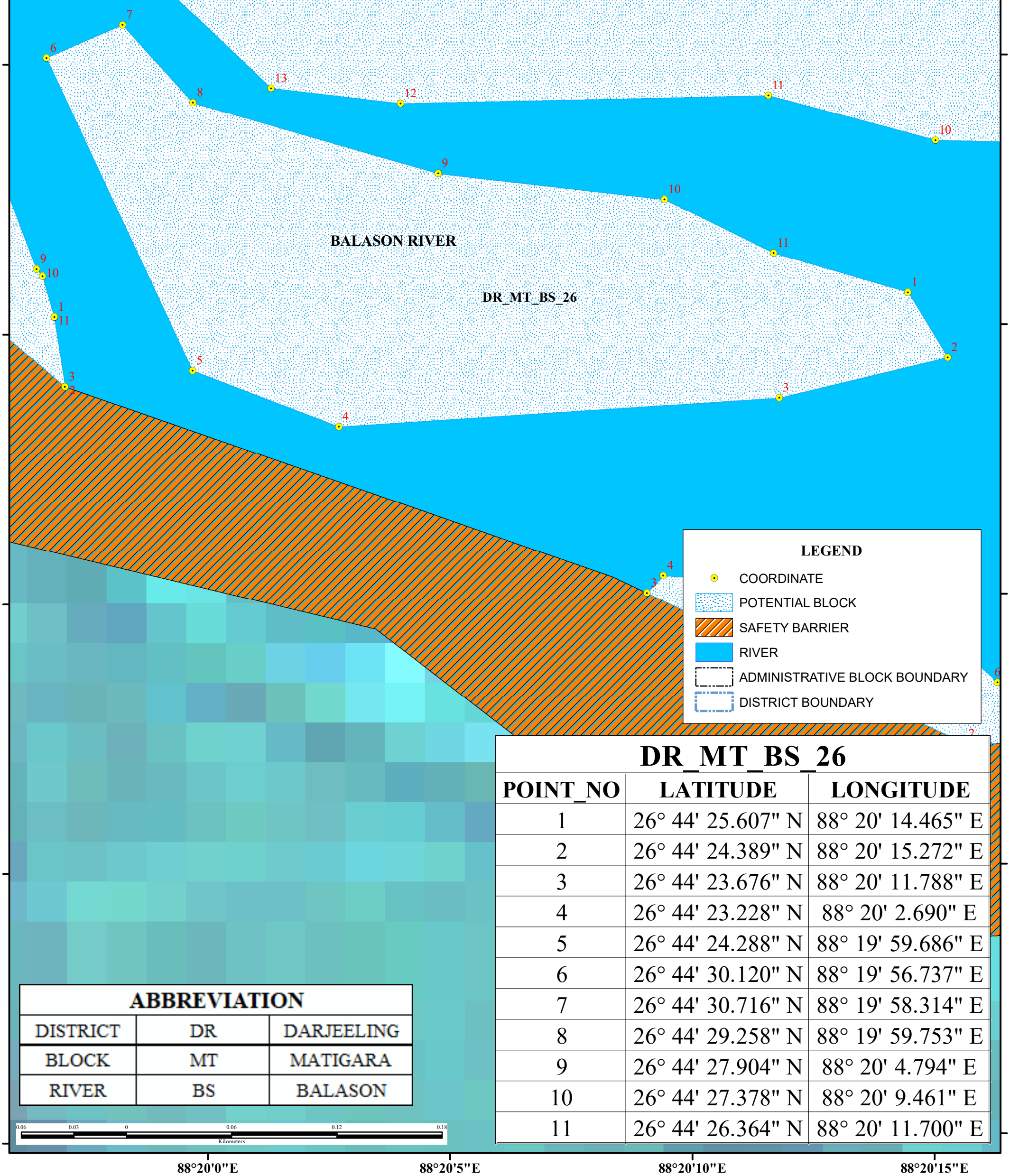
88°20'0"E 88°20'5"E 88°20'10"E 88°20'15"E

26°44'35"N 26°44'30"N 26°44'25"N 26°44'20"N 26°44'15"N 26°44'10"N

DR_MT_BS_24

DR_MT_BS_26

BALASON RIVER



LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_MT_BS_26

POINT_NO	LATITUDE	LONGITUDE
1	26° 44' 25.607" N	88° 20' 14.465" E
2	26° 44' 24.389" N	88° 20' 15.272" E
3	26° 44' 23.676" N	88° 20' 11.788" E
4	26° 44' 23.228" N	88° 20' 2.690" E
5	26° 44' 24.288" N	88° 19' 59.686" E
6	26° 44' 30.120" N	88° 19' 56.737" E
7	26° 44' 30.716" N	88° 19' 58.314" E
8	26° 44' 29.258" N	88° 19' 59.753" E
9	26° 44' 27.904" N	88° 20' 4.794" E
10	26° 44' 27.378" N	88° 20' 9.461" E
11	26° 44' 26.364" N	88° 20' 11.700" E

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	BS	BALASON

0.06 0.03 0 0.06 0.12 0.18
Kilometers

POTENTIAL BLOCK DR_MT_BS_27 OF BALASON RIVER

88°20'10"E

88°20'15"E

26°44'20"N

26°44'15"N

N

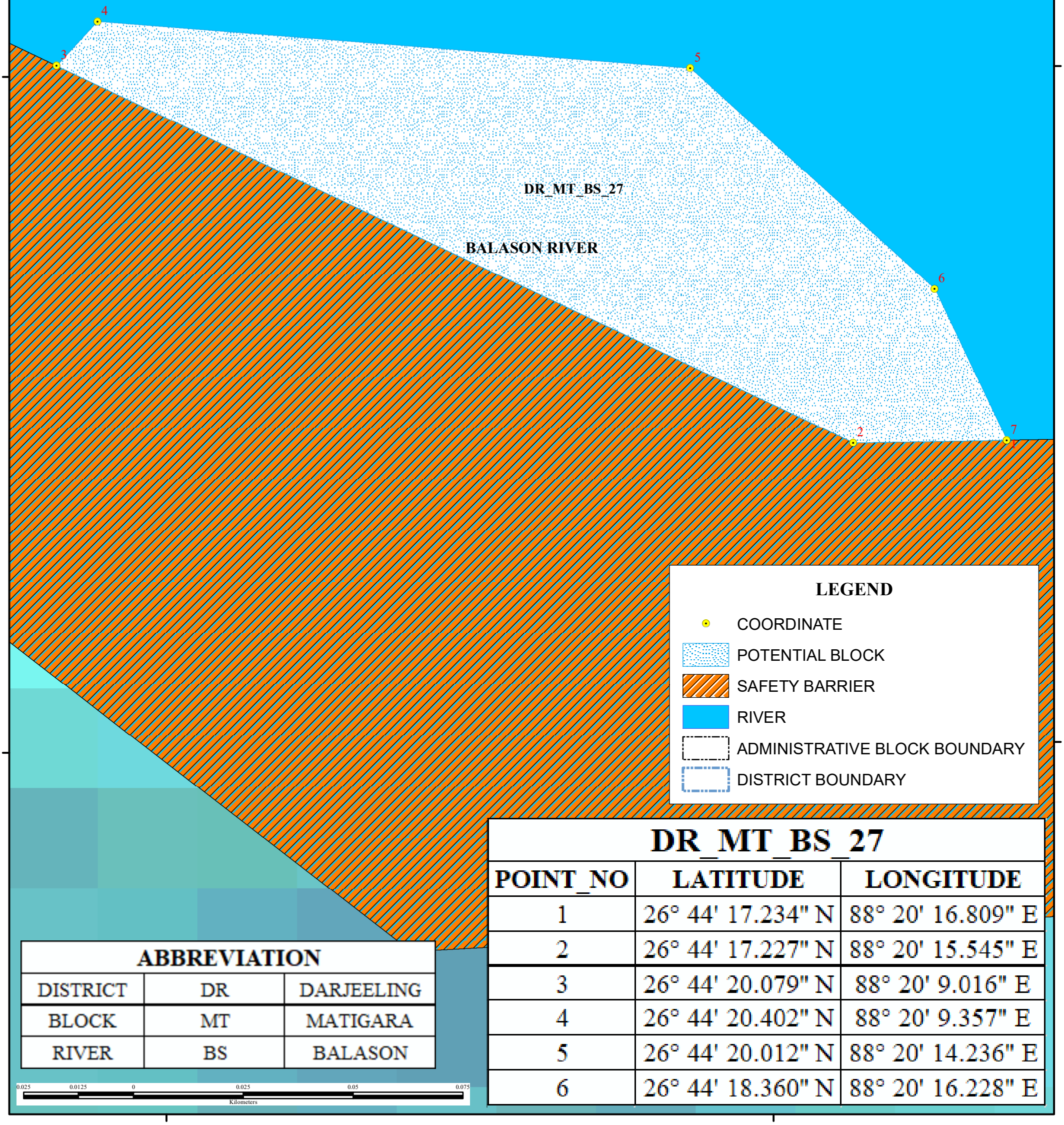
W

E

S

DR_MT_BS_27

BALASON RIVER



LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

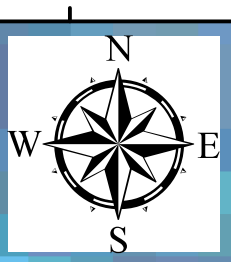
ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	BS	BALASON

0.025 0.0125 0 0.025 0.05 0.075

Kilometers

DR_MT_BS_27		
POINT_NO	LATITUDE	LONGITUDE
1	26° 44' 17.234" N	88° 20' 16.809" E
2	26° 44' 17.227" N	88° 20' 15.545" E
3	26° 44' 20.079" N	88° 20' 9.016" E
4	26° 44' 20.402" N	88° 20' 9.357" E
5	26° 44' 20.012" N	88° 20' 14.236" E
6	26° 44' 18.360" N	88° 20' 16.228" E

POTENTIAL BLOCK DR_MT_BS_29_30 OF BALASON RIVER



88°20'20"E 88°20'25"E 88°20'30"E 88°20'35"E 88°20'40"E 88°20'45"E 88°20'50"E 88°20'55"E

26°44'45"N 26°44'40"N 26°44'35"N 26°44'30"N 26°44'25"N 26°44'20"N 26°44'15"N 26°44'10"N 26°44'5"N 26°44'0"N

DR_MT_BS_24

DR_MT_BS_29_30

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	BS	BALASON

0.1 0.05 0 0.1 0.2 0.3
Kilometers

DR_MT_BS_29_30

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 44' 29.544" N	88° 20' 44.137" E	15	26° 44' 17.801" N	88° 20' 31.070" E
2	26° 44' 28.593" N	88° 20' 49.153" E	16	26° 44' 17.926" N	88° 20' 25.704" E
3	26° 44' 27.402" N	88° 20' 52.300" E	17	26° 44' 19.297" N	88° 20' 22.899" E
4	26° 44' 25.582" N	88° 20' 53.858" E	18	26° 44' 21.972" N	88° 20' 22.448" E
5	26° 44' 23.273" N	88° 20' 54.281" E	19	26° 44' 23.049" N	88° 20' 20.497" E
6	26° 44' 22.296" N	88° 20' 55.347" E	20	26° 44' 24.872" N	88° 20' 18.603" E
7	26° 44' 21.114" N	88° 20' 55.333" E	21	26° 44' 26.159" N	88° 20' 18.905" E
8	26° 44' 19.370" N	88° 20' 54.834" E	22	26° 44' 25.598" N	88° 20' 23.478" E
9	26° 44' 18.692" N	88° 20' 53.773" E	23	26° 44' 27.914" N	88° 20' 25.586" E
10	26° 44' 18.995" N	88° 20' 48.988" E	24	26° 44' 27.885" N	88° 20' 28.602" E
11	26° 44' 17.527" N	88° 20' 40.639" E	25	26° 44' 29.811" N	88° 20' 32.162" E
12	26° 44' 17.991" N	88° 20' 37.005" E	26	26° 44' 29.353" N	88° 20' 32.885" E
13	26° 44' 19.979" N	88° 20' 39.079" E	27	26° 44' 30.466" N	88° 20' 40.200" E
14	26° 44' 19.558" N	88° 20' 36.262" E	28	26° 44' 30.850" N	88° 20' 40.238" E

POTENTIAL BLOCK DR_MT_BS_31 OF BALASON RIVER

88°20'27"E 88°20'30"E 88°20'33"E

26°45'9"N 26°45'6"N 26°45'3"N

DR_MT_BS_31

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	BS	BALASON

0.02 0.01 0 0.02 0.04 0.06
Kilometers

DR_MT_BS_31

POINT_NO	LATITUDE	LONGITUDE
1	26° 45' 9.423" N	88° 20' 27.097" E
2	26° 45' 9.953" N	88° 20' 27.941" E
3	26° 45' 8.553" N	88° 20' 28.164" E
4	26° 45' 7.675" N	88° 20' 30.069" E
5	26° 45' 6.793" N	88° 20' 32.453" E
6	26° 45' 6.032" N	88° 20' 33.402" E
7	26° 45' 5.717" N	88° 20' 32.560" E
8	26° 45' 5.727" N	88° 20' 31.483" E
9	26° 45' 5.640" N	88° 20' 29.327" E
10	26° 45' 5.549" N	88° 20' 27.650" E
11	26° 45' 7.170" N	88° 20' 26.711" E

POTENTIAL BLOCK DR_MT_BS_32 OF BALASON RIVER

88°20'36"E 88°20'39"E 88°20'42"E

26°45'3"N 26°45'0"N 26°44'57"N 26°44'54"N

N W E S

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	BS	BALASON

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_MT_BS_32
BALASON RIVER

DR_MT_BS_32		
POINT_NO	LATITUDE	LONGITUDE
1	26° 44' 54.650" N	88° 20' 43.087" E
2	26° 44' 53.035" N	88° 20' 41.057" E
3	26° 44' 53.119" N	88° 20' 39.975" E
4	26° 44' 57.050" N	88° 20' 41.389" E
5	26° 45' 0.784" N	88° 20' 39.441" E
6	26° 45' 1.024" N	88° 20' 38.968" E
7	26° 45' 1.822" N	88° 20' 39.340" E
8	26° 45' 3.142" N	88° 20' 36.195" E
9	26° 45' 4.443" N	88° 20' 34.966" E
10	26° 45' 5.314" N	88° 20' 35.537" E
11	26° 45' 3.783" N	88° 20' 38.002" E
12	26° 45' 0.505" N	88° 20' 43.662" E
13	26° 44' 58.309" N	88° 20' 43.972" E
14	26° 44' 54.980" N	88° 20' 43.292" E

0.03 0.015 0 0.03 0.06 0.09
Kilometers

POTENTIAL BLOCK DR_MT_BS_35 OF BALASON RIVER

88°20'57"E 88°21'0"E 88°21'3"E 88°21'6"E 88°21'9"E

26°44'21"N 26°44'18"N 26°44'15"N 26°44'12"N 26°44'9"N 26°44'6"N

N W E S

DR_MT_BS_35

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_MT_BS_35

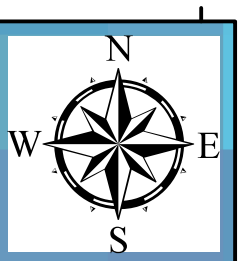
POINT_NO	LATITUDE	LONGITUDE
1	26° 44' 12.859" N	88° 21' 10.367" E
2	26° 44' 12.787" N	88° 21' 8.930" E
3	26° 44' 12.878" N	88° 21' 8.357" E
4	26° 44' 15.051" N	88° 21' 5.892" E
5	26° 44' 18.269" N	88° 21' 0.859" E
6	26° 44' 19.166" N	88° 20' 56.919" E
7	26° 44' 21.623" N	88° 20' 58.504" E
8	26° 44' 19.579" N	88° 21' 5.429" E
9	26° 44' 18.981" N	88° 21' 6.081" E
10	26° 44' 13.175" N	88° 21' 10.824" E

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	BS	BALASON

0.045 0.0225 0 0.045 0.09 0.135
Kilometers

POTENTIAL BLOCK DR_MT_BS_35A OF BALASON RIVER



88°21'3"E | 88°21'6"E | 88°21'9"E | 88°21'12"E | 88°21'15"E

26°44'15"N | 26°44'12"N | 26°44'9"N | 26°44'6"N | 26°44'3"N | 26°44'0"N

DR_MT_BS_35

BALASON RIVER

DR_MT_BS_35A

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_MT_BS_35A

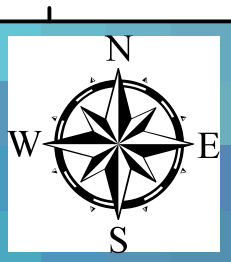
POINT_NO	LATITUDE	LONGITUDE
1	26° 44' 16.643" N	88° 21' 1.314" E
2	26° 44' 10.906" N	88° 21' 7.759" E
3	26° 44' 8.628" N	88° 21' 12.233" E
4	26° 44' 5.944" N	88° 21' 14.116" E
5	26° 44' 3.789" N	88° 21' 14.665" E
6	26° 44' 2.770" N	88° 21' 13.312" E
7	26° 44' 0.879" N	88° 21' 13.290" E
8	26° 44' 2.794" N	88° 21' 10.823" E
9	26° 44' 4.710" N	88° 21' 8.260" E
10	26° 44' 9.125" N	88° 21' 5.152" E
11	26° 44' 13.365" N	88° 21' 2.425" E

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	BS	BALASON

0.045 0.0225 0 0.045 0.09 0.135
Kilometers

POTENTIAL BLOCK DR_MT_BS_36 OF BALASON RIVER



BALASON RIVER

DR_MT_BS_36

DR_MT_BS_36		
POINT_NO	LATITUDE	LONGITUDE
1	26° 43' 54.707" N	88° 21' 31.900" E
2	26° 43' 53.175" N	88° 21' 33.797" E
3	26° 43' 53.249" N	88° 21' 34.037" E
4	26° 43' 49.952" N	88° 21' 39.233" E
5	26° 43' 49.308" N	88° 21' 36.327" E
6	26° 43' 50.318" N	88° 21' 29.636" E
7	26° 43' 51.654" N	88° 21' 24.864" E
8	26° 43' 54.888" N	88° 21' 19.348" E
9	26° 43' 56.279" N	88° 21' 17.736" E
10	26° 43' 57.040" N	88° 21' 19.086" E
11	26° 43' 59.625" N	88° 21' 18.542" E
12	26° 44' 1.608" N	88° 21' 17.991" E
13	26° 44' 6.706" N	88° 21' 15.370" E
14	26° 44' 8.899" N	88° 21' 15.382" E
15	26° 44' 5.151" N	88° 21' 18.771" E
16	26° 44' 1.116" N	88° 21' 23.473" E
17	26° 43' 57.367" N	88° 21' 27.029" E
18	26° 43' 56.800" N	88° 21' 28.861" E

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	BS	BALASON

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.08 0.04 0 0.08 0.16 0.24
Kilometers

88°21'15"E 88°21'18"E 88°21'21"E 88°21'24"E 88°21'27"E 88°21'30"E 88°21'33"E 88°21'36"E 88°21'39"E

26°44'9"N 26°44'6"N 26°44'3"N 26°44'0"N 26°43'57"N 26°43'54"N 26°43'51"N 26°43'48"N 26°43'45"N 26°43'42"N 26°43'39"N

POTENTIAL BLOCK DR_MT_BS_37 OF BALASON RIVER

88°21'51"E 88°21'54"E 88°21'57"E

26°43'48"N 26°43'45"N 26°43'42"N 26°43'39"N

N W E S

DR_MT_BS_37

BALASON RIVER

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	BS	BALASON

DR_MT_BS_37		
POINT_NO	LATITUDE	LONGITUDE
1	26° 43' 42.034" N	88° 21' 57.527" E
2	26° 43' 41.765" N	88° 21' 56.987" E
3	26° 43' 42.602" N	88° 21' 55.772" E
4	26° 43' 43.443" N	88° 21' 54.173" E
5	26° 43' 44.150" N	88° 21' 52.113" E
6	26° 43' 44.996" N	88° 21' 50.055" E
7	26° 43' 45.738" N	88° 21' 51.519" E
8	26° 43' 45.850" N	88° 21' 52.252" E
9	26° 43' 45.332" N	88° 21' 55.643" E
10	26° 43' 44.938" N	88° 21' 56.029" E
11	26° 43' 43.830" N	88° 21' 56.782" E
12	26° 43' 42.861" N	88° 21' 57.460" E

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.025 0.0125 0 0.025 0.05 0.075

Kilometers

POTENTIAL BLOCK DR_MT_BS_38 OF BALASON RIVER

88°22'6"E 88°22'9"E 88°22'12"E 88°22'15"E 88°22'18"E

26°43'39"N 26°43'36"N 26°43'33"N 26°43'30"N 26°43'27"N 26°43'24"N 26°43'21"N

BALASON RIVER

DR_MT_BS_38

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	BS	BALASON

DR_MT_BS_38

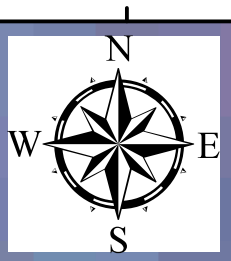
POINT_NO	LATITUDE	LONGITUDE
1	26° 43' 26.599" N	88° 22' 19.199" E
2	26° 43' 24.617" N	88° 22' 19.176" E
3	26° 43' 26.067" N	88° 22' 16.663" E
4	26° 43' 30.082" N	88° 22' 10.487" E
5	26° 43' 32.791" N	88° 22' 6.019" E
6	26° 43' 34.437" N	88° 22' 4.698" E
7	26° 43' 36.076" N	88° 22' 4.143" E
8	26° 43' 35.276" N	88° 22' 6.911" E
9	26° 43' 33.804" N	88° 22' 7.946" E
10	26° 43' 32.667" N	88° 22' 9.944" E
11	26° 43' 30.758" N	88° 22' 11.740" E
12	26° 43' 30.053" N	88° 22' 13.455" E
13	26° 43' 28.918" N	88° 22' 15.261" E
14	26° 43' 28.129" N	88° 22' 16.784" E

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.05 0.025 0 0.05 0.1 0.15
Kilometers

POTENTIAL BLOCK DR_MT_BS_40_41 OF BALASON RIVER



DR_MT_BS_40_41

BALASON RIVER

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	BS	BALASON

DR_MT_BS_40_41

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 42' 26.351" N	88° 23' 4.266" E	13	26° 42' 21.075" N	88° 23' 0.113" E
2	26° 42' 21.965" N	88° 23' 4.309" E	14	26° 42' 23.615" N	88° 22' 58.415" E
3	26° 42' 12.616" N	88° 23' 10.706" E	15	26° 42' 26.211" N	88° 22' 56.723" E
4	26° 42' 11.151" N	88° 23' 14.694" E	16	26° 42' 25.283" N	88° 22' 54.893" E
5	26° 42' 10.158" N	88° 23' 13.618" E	17	26° 42' 26.240" N	88° 22' 53.755" E
6	26° 42' 8.886" N	88° 23' 11.808" E	18	26° 42' 28.559" N	88° 22' 53.480" E
7	26° 42' 9.662" N	88° 23' 9.424" E	19	26° 42' 29.226" N	88° 22' 52.555" E
8	26° 42' 11.729" N	88° 23' 6.816" E	20	26° 42' 31.816" N	88° 22' 51.438" E
9	26° 42' 14.873" N	88° 23' 4.101" E	21	26° 42' 33.546" N	88° 22' 50.405" E
10	26° 42' 16.824" N	88° 23' 2.450" E	22	26° 42' 34.436" N	88° 22' 49.982" E
11	26° 42' 18.251" N	88° 22' 59.355" E	23	26° 42' 34.476" N	88° 22' 59.711" E
12	26° 42' 19.866" N	88° 22' 59.135" E			

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.08 0.04 0 0.08 0.16 0.24
Kilometers

88°22'51"E 88°22'54"E 88°22'57"E 88°23'0"E 88°23'3"E 88°23'6"E 88°23'9"E 88°23'12"E 88°23'15"E

26°42'36"N 26°42'33"N 26°42'30"N 26°42'27"N 26°42'24"N 26°42'21"N 26°42'18"N 26°42'15"N 26°42'12"N 26°42'9"N 26°42'6"N 26°42'3"N

POTENTIAL BLOCK DR_NB_BS_18 OF BALASON RIVER

88°19'0"E | 88°19'5"E | 88°19'10"E | 88°19'15"E

26°45'20"N | 26°45'15"N | 26°45'10"N | 26°45'5"N | 26°45'0"N

DR_NB_BS_19

DR_NB_BS_18

DR_NB_BS_20

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	NB	NAXALBARI
RIVER	BS	BALASON

0.06 0.03 0 0.06 0.12 0.18
Kilometers

DR_NB_BS_18

POINT_NO	LATITUDE	LONGITUDE
1	26° 45' 17.209" N	88° 19' 8.856" E
2	26° 45' 6.699" N	88° 19' 15.717" E
3	26° 45' 7.414" N	88° 19' 14.654" E
4	26° 45' 8.835" N	88° 19' 12.036" E
5	26° 45' 9.209" N	88° 19' 9.689" E
6	26° 45' 10.551" N	88° 19' 8.988" E
7	26° 45' 12.072" N	88° 19' 7.210" E
8	26° 45' 14.039" N	88° 19' 3.761" E
9	26° 45' 14.298" N	88° 19' 2.049" E
10	26° 45' 19.258" N	88° 18' 57.743" E
11	26° 45' 19.759" N	88° 18' 57.704" E
12	26° 45' 21.369" N	88° 18' 57.854" E
13	26° 45' 20.455" N	88° 19' 0.272" E

POTENTIAL BLOCK DR_NB_BS_19 OF BALASON RIVER

88°19'0"E 88°19'5"E 88°19'10"E 88°19'15"E

26°45'30"N 26°45'25"N 26°45'20"N 26°45'15"N 26°45'10"N

N W E S

DR_NB_BS_19

BALASON RIVER

DR_NB_BS_21

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	NB	NAXALBARI
RIVER	BS	BALASON

DR_NB_BS_19

POINT_NO	LATITUDE	LONGITUDE
1	26° 45' 11.987" N	88° 19' 16.492" E
2	26° 45' 10.610" N	88° 19' 13.164" E
3	26° 45' 17.209" N	88° 19' 8.856" E
4	26° 45' 20.455" N	88° 19' 0.272" E
5	26° 45' 21.369" N	88° 18' 57.854" E
6	26° 45' 25.042" N	88° 18' 58.196" E
7	26° 45' 31.368" N	88° 18' 57.551" E
8	26° 45' 32.263" N	88° 18' 58.423" E
9	26° 45' 24.315" N	88° 19' 7.096" E
10	26° 45' 20.808" N	88° 19' 9.641" E
11	26° 45' 18.641" N	88° 19' 8.899" E
12	26° 45' 15.919" N	88° 19' 13.195" E

0.06 0.03 0 0.06 0.12 0.18
Kilometers

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

POTENTIAL BLOCK DR_NB_BS_20 OF BALASON RIVER

88°19'15"E 88°19'20"E 88°19'25"E

26°45'15"N 26°45'10"N 26°45'5"N 26°45'0"N

N W E S

DR_NB_BS_19

DR_NB_BS_18

DR_NB_BS_20

BALASON RIVER

DR_NB_BS_21_22/16

7 1 8 6 2 9 10 11 3 5 2 12 4 13 14 7 3 15 8 2 16 9 10 7 1 8 17 114 1 5

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	NB	NAXALBARI
RIVER	BS	BALASON

0.045 0.0225 0 0.045 0.09 0.135

Kilometers

DR_NB_BS_20					
POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 45' 1.541" N	88° 19' 25.582" E	10	26° 45' 9.090" N	88° 19' 20.903" E
2	26° 45' 2.334" N	88° 19' 24.356" E	11	26° 45' 8.068" N	88° 19' 22.068" E
3	26° 45' 2.866" N	88° 19' 19.288" E	12	26° 45' 7.120" N	88° 19' 23.151" E
4	26° 45' 5.436" N	88° 19' 17.593" E	13	26° 45' 5.078" N	88° 19' 23.127" E
5	26° 45' 6.699" N	88° 19' 15.717" E	14	26° 45' 3.998" N	88° 19' 24.251" E
6	26° 45' 10.610" N	88° 19' 13.164" E	15	26° 45' 2.578" N	88° 19' 26.629" E
7	26° 45' 11.987" N	88° 19' 16.492" E	16	26° 45' 2.235" N	88° 19' 26.805" E
8	26° 45' 11.694" N	88° 19' 16.738" E	17	26° 45' 1.508" N	88° 19' 26.138" E
9	26° 45' 9.510" N	88° 19' 20.425" E			

POTENTIAL BLOCK DR_NB_BS_21_22/16 OF BALASON RIVER

88°19'10"E | 88°19'15"E | 88°19'20"E

26°45'5"N | 26°45'0"N | 26°44'55"N

N | S | E | W

DR_NB_BS_18

DR_NB_BS_20

DR_NB_BS_21_22/16

BALASON RIVER

DR_NB_BS_21_22/17

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_NB_BS_21_22/16

POINT_NO	LATITUDE	LONGITUDE
1	26° 44' 59.451" N	88° 19' 19.452" E
2	26° 44' 55.049" N	88° 19' 18.992" E
3	26° 44' 55.858" N	88° 19' 18.053" E
4	26° 45' 6.344" N	88° 19' 8.952" E
5	26° 45' 6.899" N	88° 19' 10.337" E
6	26° 45' 5.875" N	88° 19' 11.742" E
7	26° 45' 3.221" N	88° 19' 15.383" E
8	26° 45' 2.452" N	88° 19' 17.170" E
9	26° 45' 1.911" N	88° 19' 17.522" E
10	26° 45' 1.751" N	88° 19' 16.969" E

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	NB	NAXALBARI
RIVER	BS	BALASON

0.035 0.0175 0 0.035 0.07 0.105

Kilometers

POTENTIAL BLOCK DR_NB_BS_21_22/17 OF BALASON RIVER

88°19'20"E 88°19'25"E

26°45'0"N

26°44'55"N

26°44'50"N

N W E S

DR_NB_BS_21_22/16

DR_NB_BS_21_22/17

BALASON RIVER

DR_MT_BS_24

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.035 0.0175 0 0.035 0.07 0.105

Kilometers

DR_NB_BS_21_22/17

POINT_NO	LATITUDE	LONGITUDE
1	26° 44' 49.258" N	88° 19' 27.183" E
2	26° 44' 46.214" N	88° 19' 29.248" E
3	26° 44' 55.049" N	88° 19' 18.992" E
4	26° 44' 59.451" N	88° 19' 19.452" E
5	26° 44' 58.296" N	88° 19' 20.699" E
6	26° 44' 53.116" N	88° 19' 24.415" E
7	26° 44' 52.441" N	88° 19' 25.152" E
8	26° 44' 50.295" N	88° 19' 26.659" E

POTENTIAL BLOCK DR_NB_BS_23 OF BALASON RIVER

88°19'25"E 88°19'30"E 88°19'35"E

26°45'5"N 26°45'0"N 26°44'55"N

N W E S

DR_NB_BS_20

DR_NB_BS_23

BALASON RIVER

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	NB	NAXALBARI
RIVER	BS	BALASON

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_NB_BS_23

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 44' 51.108" N	88° 19' 34.128" E	7	26° 45' 1.636" N	88° 19' 23.984" E
2	26° 44' 51.901" N	88° 19' 30.558" E	8	26° 45' 1.508" N	88° 19' 26.138" E
3	26° 44' 53.408" N	88° 19' 29.923" E	9	26° 45' 3.674" N	88° 19' 28.126" E
4	26° 44' 56.780" N	88° 19' 29.732" E	10	26° 44' 57.161" N	88° 19' 33.108" E
5	26° 44' 57.611" N	88° 19' 29.205" E	11	26° 44' 55.980" N	88° 19' 34.397" E
6	26° 44' 59.897" N	88° 19' 25.999" E	12	26° 44' 52.842" N	88° 19' 33.340" E

0.035 0.0175 0 0.035 0.07 0.105

Kilometers

POTENTIAL BLOCK DR_NB_BS_44 OF BALASON RIVER

88°20'24"E 88°20'27"E

26°39'24"N 26°39'21"N 26°39'18"N

N W E S

DR_NB_BS_44

BALASON RIVER

1 2 3 4 5 6 7 8 9

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	NB	NAXALBARI
RIVER	BS	BALASON

DR_NB_BS_44		
POINT_NO	LATITUDE	LONGITUDE
1	26° 39' 24.125" N	88° 20' 22.292" E
2	26° 39' 22.644" N	88° 20' 24.381" E
3	26° 39' 21.692" N	88° 20' 24.944" E
4	26° 39' 20.905" N	88° 20' 26.370" E
5	26° 39' 20.725" N	88° 20' 27.229" E
6	26° 39' 20.393" N	88° 20' 25.981" E
7	26° 39' 20.580" N	88° 20' 24.356" E
8	26° 39' 21.021" N	88° 20' 23.213" E
9	26° 39' 22.061" N	88° 20' 22.364" E

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.015 0.0075 0 0.015 0.03 0.045
Kilometers

45

POTENTIAL BLOCK DR_PD_BS_45 OF BALASON RIVER

88°20'27"E

26°39'18"N

26°39'15"N

N

W

E

S

DR_PD_BS_45

BALASON RIVER

DR_PD_BS_45		
POINT_NO	LATITUDE	LONGITUDE
1	26° 39' 18.319" N	88° 20' 27.105" E
2	26° 39' 18.306" N	88° 20' 28.445" E
3	26° 39' 16.920" N	88° 20' 29.481" E
4	26° 39' 16.062" N	88° 20' 29.280" E
5	26° 39' 14.870" N	88° 20' 28.118" E
6	26° 39' 14.787" N	88° 20' 27.734" E
7	26° 39' 15.987" N	88° 20' 28.131" E

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.009 0.0045 0 0.009 0.018 0.027

Kilometers

POTENTIAL BLOCK DR_PD_BS_46 OF BALASON RIVER

88°20'21"E 88°20'24"E 88°20'27"E

26°39'12"N 26°39'9"N 26°39'6"N 26°39'3"N

DR_PD_BS_46 BALASON RIVER

LEGEND	
COORDINATE	
POTENTIAL BLOCK	
SAFETY BARRIER	
RIVER	
ADMINISTRATIVE BLOCK BOUNDARY	
DISTRICT BOUNDARY	

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.03 0.015 0 0.03 0.06 0.09
Kilometers

DR_PD_BS_46		
POINT_NO	LATITUDE	LONGITUDE
1	26° 39' 5.675" N	88° 20' 24.949" E
2	26° 39' 5.199" N	88° 20' 24.504" E
3	26° 39' 5.358" N	88° 20' 22.286" E
4	26° 39' 6.601" N	88° 20' 20.461" E
5	26° 39' 7.806" N	88° 20' 20.284" E
6	26° 39' 8.836" N	88° 20' 20.487" E
7	26° 39' 9.689" N	88° 20' 21.263" E
8	26° 39' 11.184" N	88° 20' 24.574" E
9	26° 39' 10.791" N	88° 20' 25.331" E
10	26° 39' 8.439" N	88° 20' 24.779" E
11	26° 39' 5.708" N	88° 20' 24.866" E

88°20'21"E 88°20'24"E 88°20'27"E

POTENTIAL BLOCK DR_PD_BS_49 OF BALASON RIVER

88°20'15"E
88°20'18"E
26°38'21"N
26°38'18"N
26°38'15"N

N
W
E
S

DR_PD_BS_49

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.015 0.0075 0 0.015 0.03 0.045
Kilometers

DR_PD_BS_49

POINT_NO	LATITUDE	LONGITUDE
1	26° 38' 20.240" N	88° 20' 15.783" E
2	26° 38' 15.563" N	88° 20' 16.325" E
3	26° 38' 16.086" N	88° 20' 15.566" E
4	26° 38' 17.559" N	88° 20' 14.435" E
5	26° 38' 19.627" N	88° 20' 13.981" E
6	26° 38' 20.224" N	88° 20' 14.466" E
7	26° 38' 20.814" N	88° 20' 15.717" E
8	26° 38' 20.687" N	88° 20' 15.732" E
9	26° 38' 20.565" N	88° 20' 15.632" E

POTENTIAL BLOCK DR_PD_BS_49A OF BALASON RIVER

88°20'15"E

88°20'18"E

26°38'12"N

26°38'9"N

N

W

E

S

DR_PD_BS_49A

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_PD_BS_49A		
POINT_NO	LATITUDE	LONGITUDE
1	26° 38' 9.202" N	88° 20' 16.497" E
2	26° 38' 9.137" N	88° 20' 15.205" E
3	26° 38' 11.046" N	88° 20' 15.258" E
4	26° 38' 11.269" N	88° 20' 15.493" E
5	26° 38' 13.045" N	88° 20' 15.959" E
6	26° 38' 13.614" N	88° 20' 15.433" E
7	26° 38' 14.032" N	88° 20' 15.922" E
8	26° 38' 13.655" N	88° 20' 17.525" E
9	26° 38' 12.579" N	88° 20' 17.675" E
10	26° 38' 10.611" N	88° 20' 17.605" E

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.015 0.0075 0 0.015 0.03 0.045

Kilometers

POTENTIAL BLOCK DR_PD_BS_52 OF BALASON RIVER

88°20'21"E 88°20'24"E 88°20'27"E

26°36'57"N 26°36'54"N 26°36'51"N 26°36'48"N

N W E S

BALASON RIVER

DR_PD_BS_52

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.03 0.015 0 0.03 0.06 0.09
Kilometers

DR_PD_BS_52					
POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 36' 58.125" N	88° 20' 21.546" E	9	26° 36' 52.220" N	88° 20' 27.696" E
2	26° 36' 57.690" N	88° 20' 22.020" E	10	26° 36' 51.612" N	88° 20' 28.262" E
3	26° 36' 57.088" N	88° 20' 22.108" E	11	26° 36' 51.278" N	88° 20' 27.302" E
4	26° 36' 55.452" N	88° 20' 22.280" E	12	26° 36' 51.466" N	88° 20' 25.582" E
5	26° 36' 54.248" N	88° 20' 22.362" E	13	26° 36' 51.649" N	88° 20' 24.341" E
6	26° 36' 53.039" N	88° 20' 22.922" E	14	26° 36' 52.531" N	88° 20' 22.055" E
7	26° 36' 52.681" N	88° 20' 24.353" E	15	26° 36' 53.658" N	88° 20' 21.112" E
8	26° 36' 52.406" N	88° 20' 26.167" E	16	26° 36' 55.548" N	88° 20' 21.229" E

POTENTIAL BLOCK DR_PD_BS_53 OF BALASON RIVER

88°20'0"E 88°20'3"E 88°20'6"E

26°36'18"N 26°36'15"N 26°36'12"N 26°36'9"N

N W E S

DR_PD_BS_53

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_PD_BS_53

POINT_NO	LATITUDE	LONGITUDE
1	26° 36' 11.349" N	88° 20' 3.018" E
2	26° 36' 10.926" N	88° 20' 2.344" E
3	26° 36' 11.685" N	88° 20' 2.624" E
4	26° 36' 12.619" N	88° 20' 3.626" E
5	26° 36' 14.457" N	88° 20' 3.896" E
6	26° 36' 16.575" N	88° 20' 3.138" E
7	26° 36' 17.368" N	88° 20' 3.088" E
8	26° 36' 16.758" N	88° 20' 3.942" E
9	26° 36' 15.549" N	88° 20' 4.502" E
10	26° 36' 14.515" N	88° 20' 4.681" E
11	26° 36' 13.313" N	88° 20' 4.476" E
12	26° 36' 12.461" N	88° 20' 3.701" E

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.02 0.01 0 0.02 0.04 0.06
Kilometers

POTENTIAL BLOCK DR_PD_BS_54 OF BALASON RIVER

88°19'48"E 88°19'51"E

26°36'3"N 26°36'0"N 26°35'57"N

N W E S

DR_PD_BS_54

BALASON RIVER

1 2 3 4 5 6

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_PD_BS_54

POINT_NO	LATITUDE	LONGITUDE
1	26° 35' 59.301" N	88° 19' 45.661" E
2	26° 36' 1.587" N	88° 19' 49.514" E
3	26° 36' 1.230" N	88° 19' 50.944" E
4	26° 36' 0.207" N	88° 19' 49.976" E
5	26° 35' 59.791" N	88° 19' 48.441" E
6	26° 35' 59.115" N	88° 19' 47.190" E

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.015 0.0075 0 0.015 0.03 0.045

Kilometers

POTENTIAL BLOCK DR_PD_BS_55 OF BALASON RIVER

88°19'54"E 88°19'57"E

26°35'48"N 26°35'45"N 26°35'42"N 26°35'39"N

N W E S

DR_PD_BS_55

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_PD_BS_55		
POINT_NO	LATITUDE	LONGITUDE
1	26° 35' 42.617" N	88° 19' 55.129" E
2	26° 35' 41.936" N	88° 19' 54.451" E
3	26° 35' 43.309" N	88° 19' 54.754" E
4	26° 35' 44.141" N	88° 19' 54.380" E
5	26° 35' 44.209" N	88° 19' 54.382" E
6	26° 35' 46.839" N	88° 19' 53.410" E
7	26° 35' 47.709" N	88° 19' 53.179" E
8	26° 35' 47.096" N	88° 19' 54.320" E
9	26° 35' 46.396" N	88° 19' 55.651" E
10	26° 35' 45.031" N	88° 19' 56.671" E
11	26° 35' 44.848" N	88° 19' 56.633" E
12	26° 35' 43.810" N	88° 19' 56.290" E

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.02 0.01 0 0.02 0.04 0.06

Kilometers

POTENTIAL BLOCK DR_PD_BS_55A OF BALASON RIVER

88°19'48"E 88°19'51"E 88°19'54"E

26°35'33"N 26°35'30"N 26°35'27"N

N W E S

BALASON RIVER
DR_PD_BS_55A

1 2 3 4 5 6 7 8

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.02 0.01 0 0.02 0.04 0.06
Kilometers

DR_PD_BS_55A		
POINT_NO	LATITUDE	LONGITUDE
1	26° 35' 33.138" N	88° 19' 48.133" E
2	26° 35' 33.789" N	88° 19' 52.062" E
3	26° 35' 33.869" N	88° 19' 52.732" E
4	26° 35' 32.840" N	88° 19' 52.433" E
5	26° 35' 31.814" N	88° 19' 51.752" E
6	26° 35' 31.304" N	88° 19' 51.172" E
7	26° 35' 31.224" N	88° 19' 50.502" E
8	26° 35' 31.492" N	88° 19' 49.453" E

POTENTIAL BLOCK DR_PD_BS_56 OF BALASON RIVER

88°19'33"E 88°19'36"E 88°19'39"E

26°35'30"N 26°35'27"N 26°35'24"N 26°35'21"N 26°35'18"N

N W E S

BALASON RIVER
DR_PD_BS_56

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

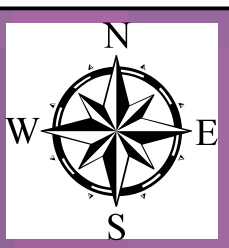
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.03 0.015 0 0.03 0.06 0.09
Kilometers

DR_PD_BS_56

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 35' 20.510" N	88° 19' 37.562" E	8	26° 35' 29.514" N	88° 19' 32.770" E
2	26° 35' 20.349" N	88° 19' 36.412" E	9	26° 35' 29.336" N	88° 19' 32.829" E
3	26° 35' 20.883" N	88° 19' 34.505" E	10	26° 35' 25.794" N	88° 19' 33.414" E
4	26° 35' 22.098" N	88° 19' 33.276" E	11	26° 35' 24.329" N	88° 19' 33.780" E
5	26° 35' 25.119" N	88° 19' 32.067" E	12	26° 35' 23.196" N	88° 19' 35.393" E
6	26° 35' 27.097" N	88° 19' 31.995" E	13	26° 35' 21.809" N	88° 19' 36.620" E
7	26° 35' 29.544" N	88° 19' 32.776" E			

POTENTIAL BLOCK DR_PD_BS_57 OF BALASON RIVER



88°19'15"E 88°19'18"E 88°19'21"E 88°19'24"E 88°19'27"E

26°34'42"N 26°34'39"N 26°34'36"N 26°34'33"N 26°34'30"N 26°34'27"N 26°34'24"N

DR_PD_BS_57

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.045 0.0225 0 0.045 0.09 0.135
Kilometers

DR_PD_BS_57					
POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 34' 28.345" N	88° 19' 21.449" E	12	26° 34' 39.383" N	88° 19' 18.037" E
2	26° 34' 28.178" N	88° 19' 20.873" E	13	26° 34' 41.008" N	88° 19' 18.917" E
3	26° 34' 29.303" N	88° 19' 20.121" E	14	26° 34' 38.508" N	88° 19' 19.653" E
4	26° 34' 30.512" N	88° 19' 19.561" E	15	26° 34' 37.123" N	88° 19' 20.689" E
5	26° 34' 31.889" N	88° 19' 19.386" E	16	26° 34' 36.089" N	88° 19' 20.868" E
6	26° 34' 32.749" N	88° 19' 19.396" E	17	26° 34' 35.209" N	88° 19' 21.605" E
7	26° 34' 33.696" N	88° 19' 19.311" E	18	26° 34' 33.921" N	88° 19' 21.800" E
8	26° 34' 35.160" N	88° 19' 19.041" E	19	26° 34' 33.329" N	88° 19' 21.793" E
9	26° 34' 35.767" N	88° 19' 18.474" E	20	26° 34' 31.874" N	88° 19' 21.011" E
10	26° 34' 36.634" N	88° 19' 17.719" E	21	26° 34' 30.412" N	88° 19' 21.090" E
11	26° 34' 37.840" N	88° 19' 17.541" E			

POTENTIAL BLOCK DR_PD_BS_58 OF BALASON RIVER

88°19'21"E 88°19'24"E 88°19'27"E

26°34'24"N 26°34'21"N 26°34'18"N 26°34'15"N

N W E S

DR_PD_BS_58

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.03 0.015 0 0.03 0.06 0.09
Kilometers

DR_PD_BS_58					
POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 34' 15.528" N	88° 19' 21.875" E	11	26° 34' 22.389" N	88° 19' 23.867" E
2	26° 34' 15.193" N	88° 19' 20.915" E	12	26° 34' 23.708" N	88° 19' 23.024" E
3	26° 34' 16.392" N	88° 19' 21.503" E	13	26° 34' 23.825" N	88° 19' 22.976" E
4	26° 34' 17.933" N	88° 19' 22.190" E	14	26° 34' 22.727" N	88° 19' 24.540" E
5	26° 34' 19.571" N	88° 19' 21.731" E	15	26° 34' 21.686" N	88° 19' 25.484" E
6	26° 34' 20.680" N	88° 19' 22.700" E	16	26° 34' 20.223" N	88° 19' 25.563" E
7	26° 34' 21.530" N	88° 19' 23.761" E	17	26° 34' 18.592" N	88° 19' 25.353" E
8	26° 34' 21.692" N	88° 19' 23.781" E	18	26° 34' 17.992" N	88° 19' 25.059" E
9	26° 34' 21.721" N	88° 19' 23.840" E	19	26° 34' 16.970" N	88° 19' 23.996" E
10	26° 34' 21.825" N	88° 19' 23.798" E	20	26° 34' 16.119" N	88° 19' 23.030" E

POTENTIAL BLOCK DR_PD_BS_59 OF BALASON RIVER

88°19'20"E

88°19'22"E

26°34'14"N

26°34'12"N

26°34'10"N

N

W

E

S

BALASON RIVER

DR_PD_BS_59

1

2

3

4

5

6

7

8

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_PD_BS_59

POINT_NO	LATITUDE	LONGITUDE
1	26° 34' 13.809" N	88° 19' 21.856" E
2	26° 34' 12.523" N	88° 19' 21.363" E
3	26° 34' 11.497" N	88° 19' 20.777" E
4	26° 34' 9.441" N	88° 19' 19.893" E
5	26° 34' 10.567" N	88° 19' 19.045" E
6	26° 34' 12.031" N	88° 19' 18.871" E
7	26° 34' 12.541" N	88° 19' 19.450" E
8	26° 34' 13.562" N	88° 19' 20.610" E

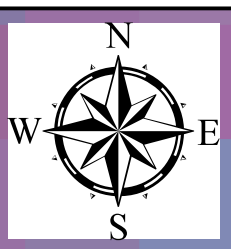
ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.015 0.0075 0 0.015 0.03 0.045

Kilometers

POTENTIAL BLOCK DR_PD_BS_60 OF BALASON RIVER



88°18'52"E 88°18'54"E 88°18'56"E 88°18'58"E 88°19'0"E 88°19'2"E 88°19'4"E

26°34'12"N 26°34'10"N 26°34'8"N 26°34'6"N 26°34'4"N 26°34'2"N 26°34'0"N 26°33'58"N 26°33'56"N 26°33'54"N

BALASON RIVER

DR_PD_BS_60

DR_PD_BS_60A

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

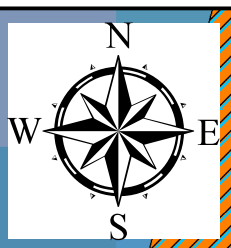
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.045 0.0225 0 0.045 0.09 0.135
Kilometers

DR_PD_BS_60

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 34' 7.464" N	88° 19' 1.319" E	13	26° 34' 2.040" N	88° 18' 52.746" E
2	26° 34' 7.201" N	88° 19' 0.605" E	14	26° 33' 59.809" N	88° 18' 52.243" E
3	26° 34' 7.214" N	88° 19' 0.371" E	15	26° 34' 0.930" N	88° 18' 51.873" E
4	26° 34' 6.571" N	88° 18' 57.342" E	16	26° 34' 2.050" N	88° 18' 51.599" E
5	26° 34' 5.749" N	88° 18' 56.296" E	17	26° 34' 3.251" N	88° 18' 51.899" E
6	26° 34' 5.705" N	88° 18' 56.231" E	18	26° 34' 4.874" N	88° 18' 53.161" E
7	26° 34' 5.681" N	88° 18' 56.211" E	19	26° 34' 6.490" N	88° 18' 55.092" E
8	26° 34' 5.432" N	88° 18' 55.895" E	20	26° 34' 7.340" N	88° 18' 56.154" E
9	26° 34' 4.397" N	88° 18' 54.372" E	21	26° 34' 7.844" N	88° 18' 57.402" E
10	26° 34' 3.875" N	88° 18' 54.189" E	22	26° 34' 8.090" N	88° 18' 58.744" E
11	26° 34' 3.748" N	88° 18' 54.009" E	23	26° 34' 8.163" N	88° 19' 0.084" E
12	26° 34' 3.326" N	88° 18' 53.143" E			

POTENTIAL BLOCK DR_PD_BS_60A OF BALASON RIVER



88°18'42"E 88°18'44"E 88°18'46"E 88°18'48"E 88°18'50"E

26°34'4"N 26°34'2"N 26°34'0"N 26°33'58"N 26°33'56"N 26°33'54"N 26°33'52"N

BALASON RIVER

DR_PD_BS_60A

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

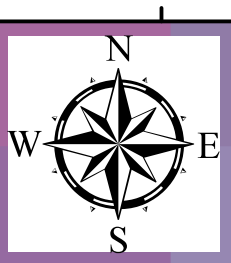
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.03 0.015 0 0.03 0.06 0.09
Kilometers

DR_PD_BS_60A		
POINT_NO	LATITUDE	LONGITUDE
1	26° 34' 1.610" N	88° 18' 43.370" E
2	26° 34' 0.996" N	88° 18' 44.702" E
3	26° 34' 0.220" N	88° 18' 44.884" E
4	26° 33' 59.355" N	88° 18' 45.448" E
5	26° 33' 58.828" N	88° 18' 46.685" E
6	26° 33' 58.729" N	88° 18' 48.118" E
7	26° 33' 58.628" N	88° 18' 49.743" E
8	26° 33' 58.703" N	88° 18' 50.891" E
9	26° 33' 57.853" N	88° 18' 49.830" E
10	26° 33' 57.607" N	88° 18' 48.584" E
11	26° 33' 57.278" N	88° 18' 46.954" E
12	26° 33' 57.807" N	88° 18' 45.526" E
13	26° 33' 58.850" N	88° 18' 44.295" E
14	26° 33' 59.890" N	88° 18' 43.446" E

POTENTIAL BLOCK DR_PD_BS_60B OF BALASON RIVER



88°18'34"E 88°18'36"E 88°18'38"E 88°18'40"E 88°18'42"E

26°34'8"N 26°34'6"N 26°34'4"N 26°34'2"N 26°34'0"N 26°33'58"N 26°33'56"N

DR_PD_BS_60B

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.03 0.015 0 0.03 0.06 0.09
Kilometers

DR_PD_BS_60B		
POINT_NO	LATITUDE	LONGITUDE
1	26° 34' 3.696" N	88° 18' 41.003" E
2	26° 34' 3.088" N	88° 18' 39.617" E
3	26° 34' 3.109" N	88° 18' 39.325" E
4	26° 34' 2.849" N	88° 18' 37.639" E
5	26° 34' 2.165" N	88° 18' 35.393" E
6	26° 34' 1.853" N	88° 18' 34.841" E
7	26° 34' 1.280" N	88° 18' 32.561" E
8	26° 34' 3.164" N	88° 18' 33.347" E
9	26° 34' 4.700" N	88° 18' 34.703" E
10	26° 34' 5.202" N	88° 18' 36.143" E
11	26° 34' 5.185" N	88° 18' 38.056" E
12	26° 34' 4.908" N	88° 18' 40.061" E
13	26° 34' 4.384" N	88° 18' 41.011" E

POTENTIAL BLOCK DR_PD_BS_61 OF BALASON RIVER

88°18'0"E 88°18'2"E 88°18'4"E 88°18'6"E 88°18'8"E

26°32'56"N 26°32'54"N 26°32'52"N 26°32'50"N 26°32'48"N 26°32'46"N 26°32'44"N

DR_PD_BS_61

BALASON RIVER

1 2 3 4 5 6 7 8 9 10 11

LEGEND

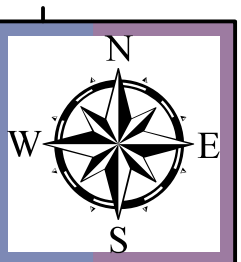
- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.03 0.015 0 0.03 0.06 0.09
Kilometers

DR_PD_BS_61		
POINT_NO	LATITUDE	LONGITUDE
1	26° 32' 49.785" N	88° 17' 59.146" E
2	26° 32' 50.982" N	88° 17' 59.829" E
3	26° 32' 52.774" N	88° 18' 1.379" E
4	26° 32' 53.625" N	88° 18' 2.344" E
5	26° 32' 54.475" N	88° 18' 3.406" E
6	26° 32' 55.159" N	88° 18' 3.891" E
7	26° 32' 53.859" N	88° 18' 4.928" E
8	26° 32' 52.738" N	88° 18' 5.298" E
9	26° 32' 51.453" N	88° 18' 4.806" E
10	26° 32' 50.602" N	88° 18' 3.744" E
11	26° 32' 50.011" N	88° 18' 2.590" E

POTENTIAL BLOCK DR_PD_BS_62 OF BALASON RIVER



88°17'56"E 88°17'58"E 88°18'0"E 88°18'2"E 88°18'4"E

26°32'46"N 26°32'44"N 26°32'42"N 26°32'40"N 26°32'38"N 26°32'36"N

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_PD_BS_62

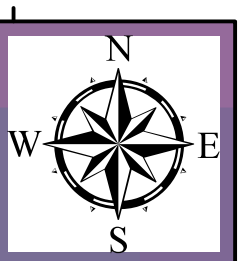
POINT_NO	LATITUDE	LONGITUDE
1	26° 32' 45.842" N	88° 17' 57.667" E
2	26° 32' 44.122" N	88° 17' 57.744" E
3	26° 32' 42.309" N	88° 17' 58.488" E
4	26° 32' 41.786" N	88° 17' 59.343" E
5	26° 32' 40.743" N	88° 18' 0.478" E
6	26° 32' 39.624" N	88° 18' 0.657" E
7	26° 32' 40.237" N	88° 17' 59.421" E
8	26° 32' 40.762" N	88° 17' 58.471" E
9	26° 32' 41.894" N	88° 17' 56.858" E
10	26° 32' 43.960" N	88° 17' 56.690" E
11	26° 32' 45.594" N	88° 17' 56.613" E

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.03 0.015 0 0.03 0.06 0.09
Kilometers

POTENTIAL BLOCK DR_PD_BS_63 OF BALASON RIVER



88°17'58"E 88°18'0"E 88°18'2"E 88°18'4"E 88°18'6"E

26°32'38"N 26°32'36"N 26°32'34"N 26°32'32"N 26°32'30"N 26°32'28"N

BALASON RIVER

1 2 3 4 5 6 7 8 9 10 11 12

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_PD_BS_63

POINT_NO	LATITUDE	LONGITUDE
1	26° 32' 36.353" N	88° 18' 1.002" E
2	26° 32' 35.483" N	88° 18' 2.140" E
3	26° 32' 34.019" N	88° 18' 2.410" E
4	26° 32' 32.901" N	88° 18' 2.397" E
5	26° 32' 31.534" N	88° 18' 1.426" E
6	26° 32' 31.107" N	88° 18' 1.039" E
7	26° 32' 29.573" N	88° 17' 59.587" E
8	26° 32' 28.631" N	88° 17' 59.099" E
9	26° 32' 29.666" N	88° 17' 58.824" E
10	26° 32' 31.293" N	88° 17' 59.607" E
11	26° 32' 32.403" N	88° 18' 0.384" E
12	26° 32' 33.943" N	88° 18' 1.262" E

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.03 0.015 0 0.03 0.06 0.09
Kilometers

POTENTIAL BLOCK DR_PD_BS_64 OF BALASON RIVER

88°17'56"E 88°17'58"E 88°18'0"E 88°18'2"E 88°18'4"E

26°32'28"N 26°32'26"N 26°32'24"N 26°32'22"N 26°32'20"N 26°32'18"N

N W E S

BALASON RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

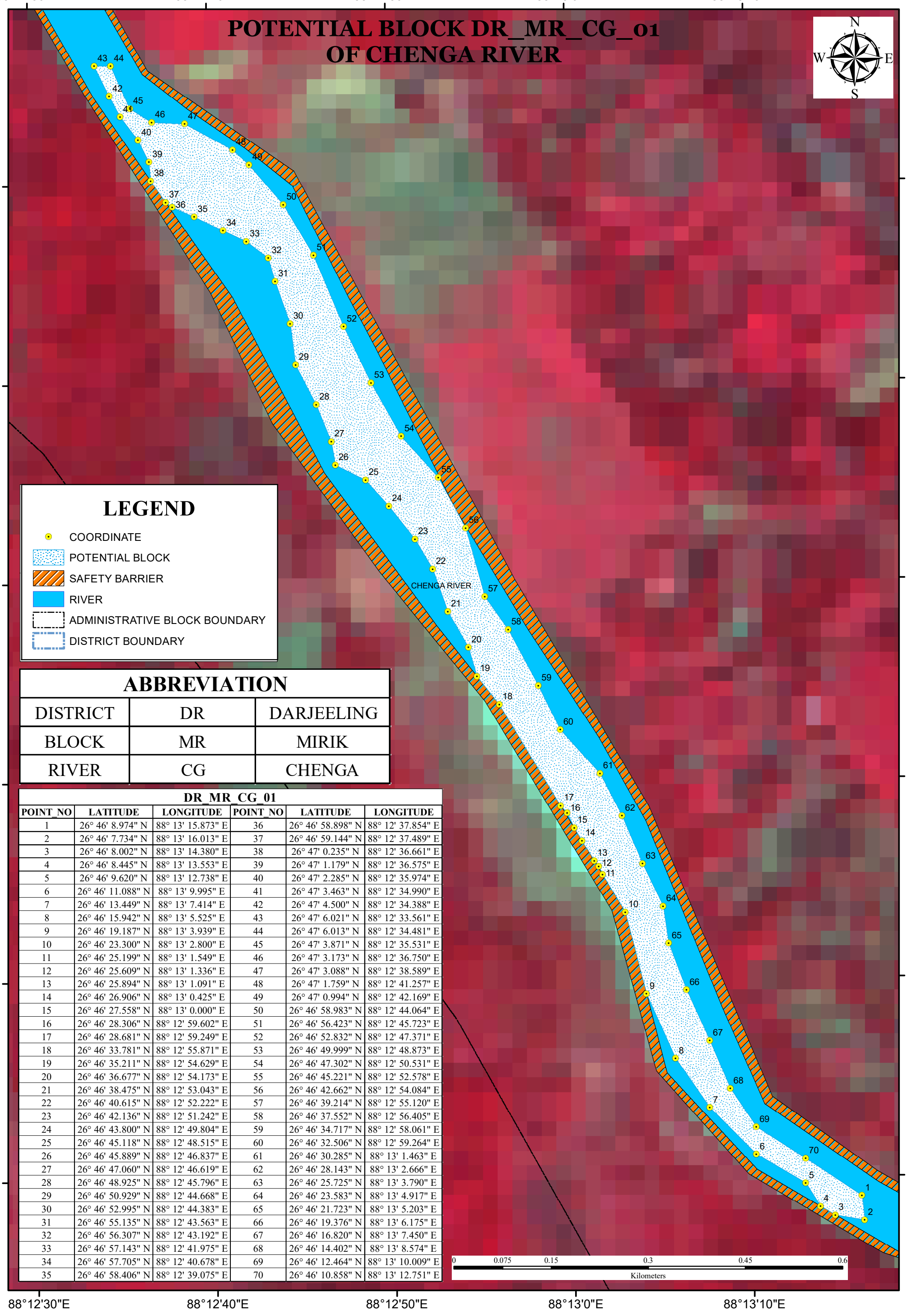
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	BS	BALASON

0.03 0.015 0 0.03 0.06 0.09
Kilometers

DR_PD_BS_64

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 32' 20.887" N	88° 17' 59.681" E	10	26° 32' 26.416" N	88° 17' 58.645" E
2	26° 32' 20.902" N	88° 17' 58.056" E	11	26° 32' 24.676" N	88° 17' 59.046" E
3	26° 32' 21.255" N	88° 17' 57.008" E	12	26° 32' 23.932" N	88° 17' 59.967" E
4	26° 32' 22.122" N	88° 17' 56.253" E	13	26° 32' 23.636" N	88° 18' 0.000" E
5	26° 32' 23.498" N	88° 17' 56.268" E	14	26° 32' 23.113" N	88° 18' 0.757" E
6	26° 32' 24.954" N	88° 17' 56.858" E	15	26° 32' 22.589" N	88° 18' 1.612" E
7	26° 32' 25.980" N	88° 17' 57.539" E	16	26° 32' 22.074" N	88° 18' 1.510" E
8	26° 32' 26.658" N	88° 17' 58.598" E	17	26° 32' 21.479" N	88° 18' 0.739" E
9	26° 32' 26.571" N	88° 17' 58.675" E			

POTENTIAL BLOCK DR_MR_CG_01 OF CHENGA RIVER



LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	MR	MIRIK
RIVER	CG	CHENGA

DR_MR_CG_01

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 8.974" N	88° 13' 15.873" E	36	26° 46' 58.898" N	88° 12' 37.854" E
2	26° 46' 7.734" N	88° 13' 16.013" E	37	26° 46' 59.144" N	88° 12' 37.489" E
3	26° 46' 8.002" N	88° 13' 14.380" E	38	26° 47' 0.235" N	88° 12' 36.661" E
4	26° 46' 8.445" N	88° 13' 13.553" E	39	26° 47' 1.179" N	88° 12' 36.575" E
5	26° 46' 9.620" N	88° 13' 12.738" E	40	26° 47' 2.285" N	88° 12' 35.974" E
6	26° 46' 11.088" N	88° 13' 9.995" E	41	26° 47' 3.463" N	88° 12' 34.990" E
7	26° 46' 13.449" N	88° 13' 7.414" E	42	26° 47' 4.500" N	88° 12' 34.388" E
8	26° 46' 15.942" N	88° 13' 5.525" E	43	26° 47' 6.021" N	88° 12' 33.561" E
9	26° 46' 19.187" N	88° 13' 3.939" E	44	26° 47' 6.013" N	88° 12' 34.481" E
10	26° 46' 23.300" N	88° 13' 2.800" E	45	26° 47' 3.871" N	88° 12' 35.531" E
11	26° 46' 25.199" N	88° 13' 1.549" E	46	26° 47' 3.173" N	88° 12' 36.750" E
12	26° 46' 25.609" N	88° 13' 1.336" E	47	26° 47' 3.088" N	88° 12' 38.589" E
13	26° 46' 25.894" N	88° 13' 1.091" E	48	26° 47' 1.759" N	88° 12' 41.257" E
14	26° 46' 26.906" N	88° 13' 0.425" E	49	26° 47' 0.994" N	88° 12' 42.169" E
15	26° 46' 27.558" N	88° 13' 0.000" E	50	26° 46' 58.983" N	88° 12' 44.064" E
16	26° 46' 28.306" N	88° 12' 59.602" E	51	26° 46' 56.423" N	88° 12' 45.723" E
17	26° 46' 28.681" N	88° 12' 59.249" E	52	26° 46' 52.832" N	88° 12' 47.371" E
18	26° 46' 33.781" N	88° 12' 55.871" E	53	26° 46' 49.999" N	88° 12' 48.873" E
19	26° 46' 35.211" N	88° 12' 54.629" E	54	26° 46' 47.302" N	88° 12' 50.531" E
20	26° 46' 36.677" N	88° 12' 54.173" E	55	26° 46' 45.221" N	88° 12' 52.578" E
21	26° 46' 38.475" N	88° 12' 53.043" E	56	26° 46' 42.662" N	88° 12' 54.084" E
22	26° 46' 40.615" N	88° 12' 52.222" E	57	26° 46' 39.214" N	88° 12' 55.120" E
23	26° 46' 42.136" N	88° 12' 51.242" E	58	26° 46' 37.552" N	88° 12' 56.405" E
24	26° 46' 43.800" N	88° 12' 49.804" E	59	26° 46' 34.717" N	88° 12' 58.061" E
25	26° 46' 45.118" N	88° 12' 48.515" E	60	26° 46' 32.506" N	88° 12' 59.264" E
26	26° 46' 45.889" N	88° 12' 46.837" E	61	26° 46' 30.285" N	88° 13' 1.463" E
27	26° 46' 47.060" N	88° 12' 46.619" E	62	26° 46' 28.143" N	88° 13' 2.666" E
28	26° 46' 48.925" N	88° 12' 45.796" E	63	26° 46' 25.725" N	88° 13' 3.790" E
29	26° 46' 50.929" N	88° 12' 44.668" E	64	26° 46' 23.583" N	88° 13' 4.917" E
30	26° 46' 52.995" N	88° 12' 44.383" E	65	26° 46' 21.723" N	88° 13' 5.203" E
31	26° 46' 55.135" N	88° 12' 43.563" E	66	26° 46' 19.376" N	88° 13' 6.175" E
32	26° 46' 56.307" N	88° 12' 43.192" E	67	26° 46' 16.820" N	88° 13' 7.450" E
33	26° 46' 57.143" N	88° 12' 41.975" E	68	26° 46' 14.402" N	88° 13' 8.574" E
34	26° 46' 57.705" N	88° 12' 40.678" E	69	26° 46' 12.464" N	88° 13' 10.009" E
35	26° 46' 58.406" N	88° 12' 39.075" E	70	26° 46' 10.858" N	88° 13' 12.751" E

POTENTIAL BLOCK DR_MR_CG_02 OF CHENGA RIVER

88°13'20"E 88°13'25"E 88°13'30"E

26°46'5"N 26°46'0"N 26°45'55"N

CHENGA RIVER

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	MR	MIRIK
RIVER	CG	CHENGA

DR_MR_CG_02

POINT_NO	LATITUDE	LONGITUDE
1	26° 45' 59.165" N	88° 13' 29.379" E
2	26° 45' 58.337" N	88° 13' 29.676" E
3	26° 45' 58.560" N	88° 13' 27.763" E
4	26° 46' 1.333" N	88° 13' 25.187" E
5	26° 46' 3.901" N	88° 13' 22.609" E
6	26° 46' 3.962" N	88° 13' 22.537" E
7	26° 46' 5.159" N	88° 13' 21.488" E
8	26° 46' 5.278" N	88° 13' 21.028" E
9	26° 46' 6.054" N	88° 13' 20.179" E
10	26° 46' 6.205" N	88° 13' 18.725" E
11	26° 46' 7.099" N	88° 13' 18.735" E
12	26° 46' 7.087" N	88° 13' 20.037" E
13	26° 46' 5.693" N	88° 13' 22.245" E
14	26° 46' 4.511" N	88° 13' 23.612" E
15	26° 46' 2.295" N	88° 13' 25.350" E
16	26° 46' 0.837" N	88° 13' 26.867" E
17	26° 45' 59.727" N	88° 13' 28.005" E

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0 0.0175 0.035 0.07 0.105 0.14

Kilometers

POTENTIAL BLOCK DR_MR_CG_03 OF CHENGA RIVER

88°13'30"E 88°13'35"E 88°13'40"E

26°46'0"N 26°45'55"N 26°45'50"N 26°45'45"N

N W E S

CHENGA RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	MR	MIRIK
RIVER	CG	CHENGA

DR_MR_CG_03		
POINT_NO	LATITUDE	LONGITUDE
1	26° 45' 45.558" N	88° 13' 41.111" E
2	26° 45' 45.452" N	88° 13' 38.490" E
3	26° 45' 46.028" N	88° 13' 38.154" E
4	26° 45' 46.492" N	88° 13' 38.157" E
5	26° 45' 48.124" N	88° 13' 37.427" E
6	26° 45' 48.280" N	88° 13' 37.345" E
7	26° 45' 48.433" N	88° 13' 37.310" E
8	26° 45' 49.882" N	88° 13' 36.866" E
9	26° 45' 51.610" N	88° 13' 35.888" E
10	26° 45' 52.576" N	88° 13' 35.592" E
11	26° 45' 54.441" N	88° 13' 34.692" E
12	26° 45' 56.239" N	88° 13' 33.639" E
13	26° 45' 57.212" N	88° 13' 32.423" E
14	26° 45' 57.203" N	88° 13' 33.496" E
15	26° 45' 57.613" N	88° 13' 34.718" E
16	26° 45' 55.993" N	88° 13' 38.643" E
17	26° 45' 55.384" N	88° 13' 39.145" E
18	26° 45' 52.654" N	88° 13' 40.778" E
19	26° 45' 50.255" N	88° 13' 41.195" E

0 0.0225 0.045 0.09 0.135 0.18

Kilometers

POTENTIAL BLOCK DR_MR_CG_04 OF CHENGA RIVER

88°13'40"E

26°45'45"N

26°45'40"N

26°45'35"N

CHENGA RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	MR	MIRIK
RIVER	CG	CHENGA

DR_MR_CG_04

POINT_NO	LATITUDE	LONGITUDE
1	26° 45' 45.452" N	88° 13' 38.490" E
2	26° 45' 45.558" N	88° 13' 41.111" E
3	26° 45' 45.511" N	88° 13' 41.110" E
4	26° 45' 43.791" N	88° 13' 41.168" E
5	26° 45' 41.592" N	88° 13' 40.915" E
6	26° 45' 38.763" N	88° 13' 41.880" E
7	26° 45' 36.898" N	88° 13' 42.780" E
8	26° 45' 36.204" N	88° 13' 43.539" E
9	26° 45' 35.383" N	88° 13' 42.994" E
10	26° 45' 35.737" N	88° 13' 41.848" E
11	26° 45' 37.125" N	88° 13' 40.407" E
12	26° 45' 38.437" N	88° 13' 39.808" E
13	26° 45' 41.470" N	88° 13' 39.151" E
14	26° 45' 43.327" N	88° 13' 39.094" E
15	26° 45' 44.912" N	88° 13' 38.805" E

0 0.0125 0.025 0.05 0.075 0.1

Kilometers

POTENTIAL BLOCK DR_NB_CG_05 OF CHENGA RIVER

88°13'42"E 88°13'44"E 88°13'46"E 88°13'48"E 88°13'50"E

26°45'34"N 26°45'32"N 26°45'30"N 26°45'28"N 26°45'26"N 26°45'24"N 26°45'22"N

CHENGA RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	NB	NAXALBARI
RIVER	CG	CHENGA

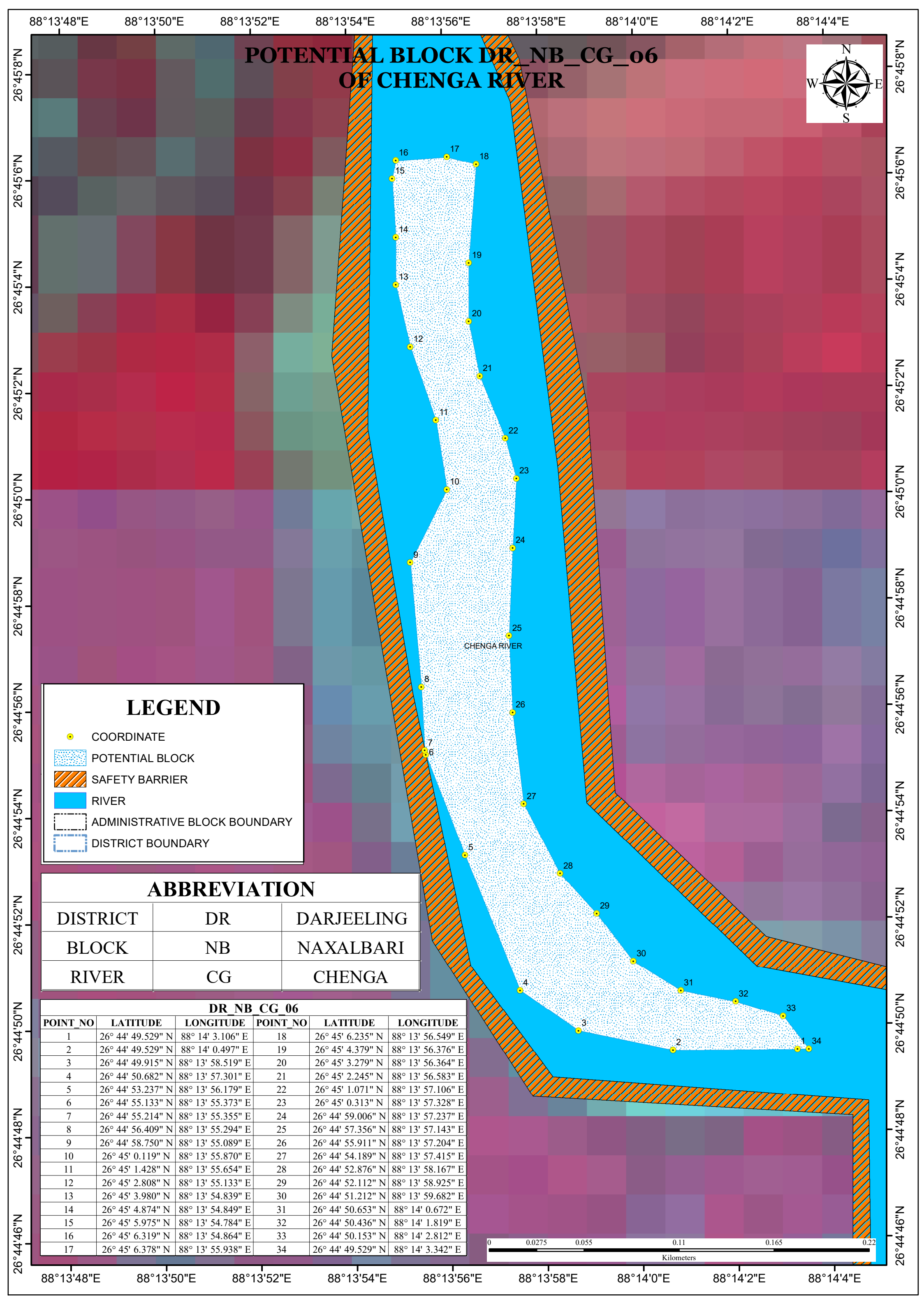
DR_NB_CG_05

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 45' 22.176" N	88° 13' 50.744" E	13	26° 45' 32.772" N	88° 13' 42.659" E
2	26° 45' 21.493" N	88° 13' 50.200" E	14	26° 45' 33.735" N	88° 13' 42.669" E
3	26° 45' 21.780" N	88° 13' 48.824" E	15	26° 45' 34.284" N	88° 13' 42.752" E
4	26° 45' 23.231" N	88° 13' 48.150" E	16	26° 45' 34.823" N	88° 13' 44.060" E
5	26° 45' 25.239" N	88° 13' 46.639" E	17	26° 45' 34.540" N	88° 13' 44.977" E
6	26° 45' 27.518" N	88° 13' 45.591" E	18	26° 45' 33.331" N	88° 13' 46.267" E
7	26° 45' 29.176" N	88° 13' 44.842" E	19	26° 45' 31.919" N	88° 13' 47.141" E
8	26° 45' 29.662" N	88° 13' 44.311" E	20	26° 45' 30.724" N	88° 13' 48.255" E
9	26° 45' 30.975" N	88° 13' 43.636" E	21	26° 45' 28.003" N	88° 13' 49.709" E
10	26° 45' 31.337" N	88° 13' 43.438" E	22	26° 45' 25.939" N	88° 13' 49.687" E
11	26° 45' 31.821" N	88° 13' 43.287" E	23	26° 45' 24.657" N	88° 13' 50.311" E
12	26° 45' 32.019" N	88° 13' 43.068" E	24	26° 45' 23.209" N	88° 13' 50.679" E

0 0.0175 0.035 0.07 0.105 0.14

Kilometers

POTENTIAL BLOCK DR_NB_CG_06 OF CHENGA RIVER



LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	NB	NAXALBARI
RIVER	CG	CHENGA

DR_NB_CG_06

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 44' 49.529" N	88° 14' 3.106" E	18	26° 45' 6.235" N	88° 13' 56.549" E
2	26° 44' 49.529" N	88° 14' 0.497" E	19	26° 45' 4.379" N	88° 13' 56.376" E
3	26° 44' 49.915" N	88° 13' 58.519" E	20	26° 45' 3.279" N	88° 13' 56.364" E
4	26° 44' 50.682" N	88° 13' 57.301" E	21	26° 45' 2.245" N	88° 13' 56.583" E
5	26° 44' 53.237" N	88° 13' 56.179" E	22	26° 45' 1.071" N	88° 13' 57.106" E
6	26° 44' 55.133" N	88° 13' 55.373" E	23	26° 45' 0.313" N	88° 13' 57.328" E
7	26° 44' 55.214" N	88° 13' 55.355" E	24	26° 44' 59.006" N	88° 13' 57.237" E
8	26° 44' 56.409" N	88° 13' 55.294" E	25	26° 44' 57.356" N	88° 13' 57.143" E
9	26° 44' 58.750" N	88° 13' 55.089" E	26	26° 44' 55.911" N	88° 13' 57.204" E
10	26° 45' 0.119" N	88° 13' 55.870" E	27	26° 44' 54.189" N	88° 13' 57.415" E
11	26° 45' 1.428" N	88° 13' 55.654" E	28	26° 44' 52.876" N	88° 13' 58.167" E
12	26° 45' 2.808" N	88° 13' 55.133" E	29	26° 44' 52.112" N	88° 13' 58.925" E
13	26° 45' 3.980" N	88° 13' 54.839" E	30	26° 44' 51.212" N	88° 13' 59.682" E
14	26° 45' 4.874" N	88° 13' 54.849" E	31	26° 44' 50.653" N	88° 14' 0.672" E
15	26° 45' 5.975" N	88° 13' 54.784" E	32	26° 44' 50.436" N	88° 14' 1.819" E
16	26° 45' 6.319" N	88° 13' 54.864" E	33	26° 44' 50.153" N	88° 14' 2.812" E
17	26° 45' 6.378" N	88° 13' 55.938" E	34	26° 44' 49.529" N	88° 14' 3.342" E

POTENTIAL BLOCK DR_PD_CG_07 OF CHENGA RIVER

88°16'14"E 88°16'16"E 88°16'18"E 88°16'20"E 88°16'22"E

26°38'50"N 26°38'48"N 26°38'46"N 26°38'44"N 26°38'42"N 26°38'40"N 26°38'38"N

CHENGA RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	CG	CHENGA

DR_PD_CG_07

POINT_NO	LATITUDE	LONGITUDE
1	26° 38' 42.840" N	88° 16' 17.125" E
2	26° 38' 42.421" N	88° 16' 15.924" E
3	26° 38' 44.095" N	88° 16' 16.182" E
4	26° 38' 45.370" N	88° 16' 16.071" E
5	26° 38' 47.078" N	88° 16' 18.926" E
6	26° 38' 47.455" N	88° 16' 20.021" E
7	26° 38' 48.348" N	88° 16' 20.280" E
8	26° 38' 48.343" N	88° 16' 20.825" E
9	26° 38' 48.176" N	88° 16' 21.442" E
10	26° 38' 46.588" N	88° 16' 21.138" E
11	26° 38' 45.911" N	88° 16' 19.886" E
12	26° 38' 45.186" N	88° 16' 19.256" E
13	26° 38' 44.035" N	88° 16' 18.143" E
14	26° 38' 43.350" N	88° 16' 17.800" E

0 0.015 0.03 0.06 0.09 0.12
Kilometers

POTENTIAL BLOCK DR_PD_CG_08 OF CHENGA RIVER

CHENGA RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

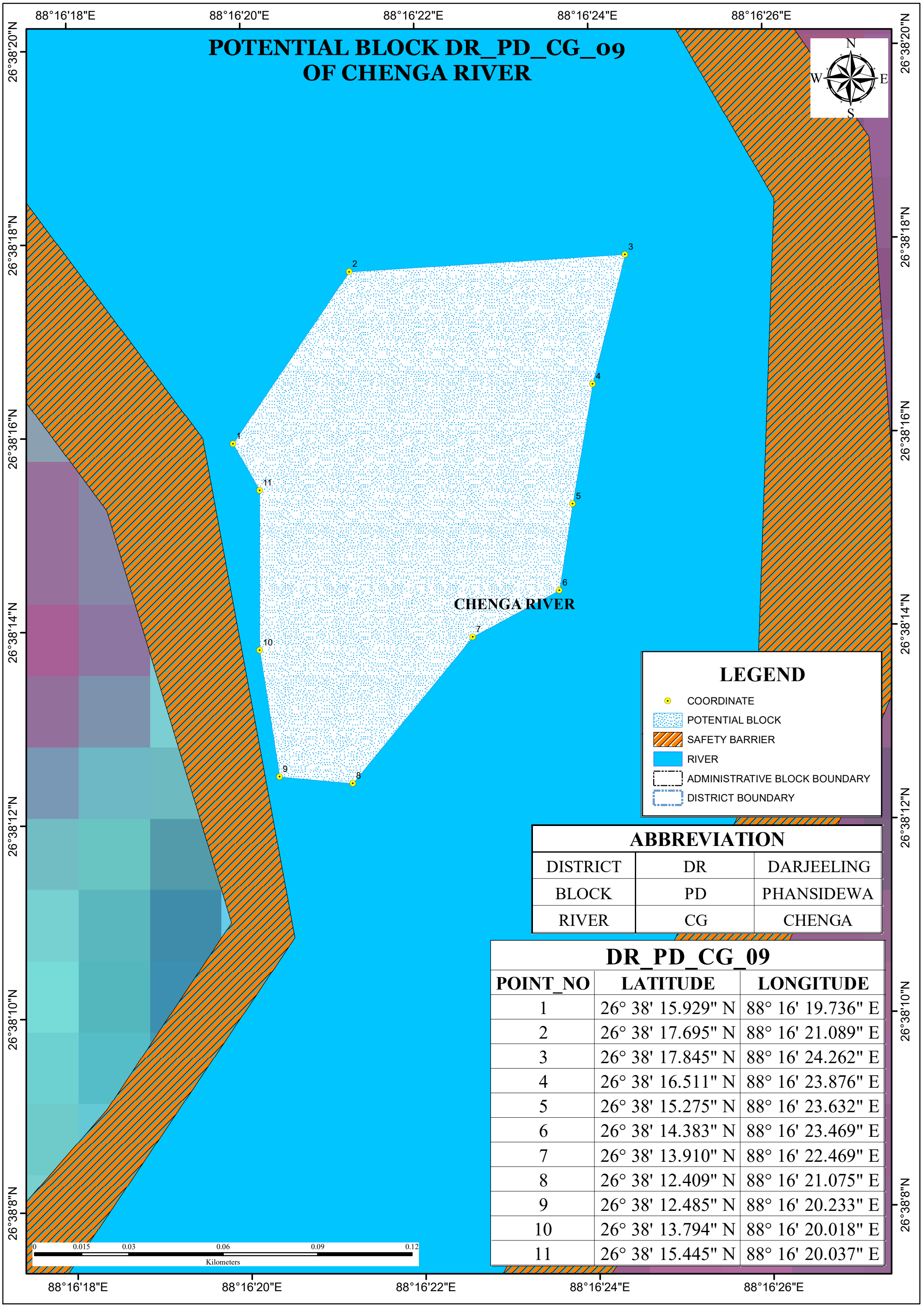
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	CG	CHENGA

DR_PD_CG_08

POINT_NO	LATITUDE	LONGITUDE
1	26° 38' 20.461" N	88° 16' 16.877" E
2	26° 38' 23.992" N	88° 16' 16.656" E
3	26° 38' 26.460" N	88° 16' 16.552" E
4	26° 38' 25.817" N	88° 16' 18.850" E
5	26° 38' 25.049" N	88° 16' 20.636" E
6	26° 38' 22.990" N	88° 16' 22.527" E
7	26° 38' 21.149" N	88° 16' 24.061" E
8	26° 38' 20.527" N	88° 16' 21.542" E
9	26° 38' 20.434" N	88° 16' 19.867" E

0 0.0225 0.045 0.09 0.135 0.18
Kilometers

POTENTIAL BLOCK DR_PD_CG_09 OF CHENGA RIVER



LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	CG	CHENGA

DR_PD_CG_09

POINT_NO	LATITUDE	LONGITUDE
1	26° 38' 15.929" N	88° 16' 19.736" E
2	26° 38' 17.695" N	88° 16' 21.089" E
3	26° 38' 17.845" N	88° 16' 24.262" E
4	26° 38' 16.511" N	88° 16' 23.876" E
5	26° 38' 15.275" N	88° 16' 23.632" E
6	26° 38' 14.383" N	88° 16' 23.469" E
7	26° 38' 13.910" N	88° 16' 22.469" E
8	26° 38' 12.409" N	88° 16' 21.075" E
9	26° 38' 12.485" N	88° 16' 20.233" E
10	26° 38' 13.794" N	88° 16' 20.018" E
11	26° 38' 15.445" N	88° 16' 20.037" E

POTENTIAL BLOCK DR_PD_CG_10 OF CHENGA RIVER

88°16'10"E 88°16'12"E 88°16'14"E 88°16'16"E 88°16'18"E 88°16'20"E 88°16'22"E

26°38'2"N 26°38'0"N 26°37'58"N 26°37'56"N 26°37'54"N 26°37'52"N 26°37'50"N 26°37'48"N 26°37'46"N 26°37'44"N

CHENGA RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	CG	CHENGA

0 0.02 0.04 0.08 0.12 0.16
Kilometers

DR_PD_CG_10

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 37' 46.402" N	88° 16' 13.821" E	11	26° 37' 59.449" N	88° 16' 13.328" E
2	26° 37' 45.308" N	88° 16' 13.044" E	12	26° 38' 1.537" N	88° 16' 16.809" E
3	26° 37' 45.800" N	88° 16' 11.901" E	13	26° 38' 0.831" N	88° 16' 16.872" E
4	26° 37' 45.617" N	88° 16' 11.634" E	14	26° 37' 58.701" N	88° 16' 14.650" E
5	26° 37' 46.920" N	88° 16' 10.541" E	15	26° 37' 55.931" N	88° 16' 14.411" E
6	26° 37' 48.811" N	88° 16' 10.698" E	16	26° 37' 55.658" N	88° 16' 14.148" E
7	26° 37' 51.341" N	88° 16' 10.907" E	17	26° 37' 53.080" N	88° 16' 13.928" E
8	26° 37' 53.545" N	88° 16' 10.010" E	18	26° 37' 48.597" N	88° 16' 15.218" E
9	26° 37' 56.126" N	88° 16' 9.943" E	19	26° 37' 48.460" N	88° 16' 13.890" E
10	26° 37' 57.753" N	88° 16' 10.631" E	20	26° 37' 47.708" N	88° 16' 13.912" E

POTENTIAL BLOCK DR_PD_CG_11_12 OF CHENGA RIVER

DR_PD_CG_10

DR_PD_CG_11_12

CHENGA RIVER

MECHI RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	CG	CHENGA

DR_PD_CG_11_12

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 37' 52.511" N	88° 16' 30.163" E	17	26° 37' 22.361" N	88° 16' 34.514" E	33	26° 37' 46.802" N	88° 16' 15.280" E
2	26° 37' 52.172" N	88° 16' 30.315" E	18	26° 37' 20.475" N	88° 16' 34.624" E	34	26° 37' 46.721" N	88° 16' 16.580" E
3	26° 37' 52.452" N	88° 16' 30.487" E	19	26° 37' 19.497" N	88° 16' 33.465" E	35	26° 37' 45.333" N	88° 16' 18.019" E
4	26° 37' 52.436" N	88° 16' 30.578" E	20	26° 37' 21.061" N	88° 16' 31.645" E	36	26° 37' 43.869" N	88° 16' 20.146" E
5	26° 37' 50.843" N	88° 16' 31.747" E	21	26° 37' 24.073" N	88° 16' 29.440" E	37	26° 37' 42.339" N	88° 16' 22.043" E
6	26° 37' 44.644" N	88° 16' 32.635" E	22	26° 37' 25.399" N	88° 16' 28.370" E	38	26° 37' 40.506" N	88° 16' 22.620" E
7	26° 37' 39.765" N	88° 16' 32.156" E	23	26° 37' 28.910" N	88° 16' 26.496" E	39	26° 37' 38.664" N	88° 16' 24.274" E
8	26° 37' 39.518" N	88° 16' 31.625" E	24	26° 37' 29.337" N	88° 16' 26.019" E	40	26° 37' 39.081" N	88° 16' 25.714" E
9	26° 37' 38.755" N	88° 16' 31.899" E	25	26° 37' 30.554" N	88° 16' 25.953" E	41	26° 37' 41.012" N	88° 16' 26.094" E
10	26° 37' 37.574" N	88° 16' 31.254" E	26	26° 37' 34.243" N	88° 16' 23.121" E	42	26° 37' 42.734" N	88° 16' 25.874" E
11	26° 37' 35.890" N	88° 16' 29.169" E	27	26° 37' 35.042" N	88° 16' 20.646" E	43	26° 37' 45.101" N	88° 16' 25.661" E
12	26° 37' 32.851" N	88° 16' 28.676" E	28	26° 37' 35.606" N	88° 16' 19.542" E	44	26° 37' 48.223" N	88° 16' 25.098" E
13	26° 37' 28.106" N	88° 16' 34.249" E	29	26° 37' 38.595" N	88° 16' 18.360" E	45	26° 37' 50.575" N	88° 16' 26.559" E
14	26° 37' 24.336" N	88° 16' 35.700" E	30	26° 37' 40.489" N	88° 16' 15.492" E	46	26° 37' 52.072" N	88° 16' 27.413" E
15	26° 37' 22.732" N	88° 16' 35.568" E	31	26° 37' 42.610" N	88° 16' 14.774" E	47	26° 37' 52.703" N	88° 16' 29.098" E
16	26° 37' 22.352" N	88° 16' 35.437" E	32	26° 37' 45.429" N	88° 16' 14.882" E			

0 0.05 0.1 0.2 0.3 0.4
Kilometers

88°16'6"E 88°16'10"E 88°16'14"E 88°16'18"E 88°16'22"E 88°16'26"E 88°16'30"E 88°16'34"E 88°16'38"E

26°37'54"N 26°37'50"N 26°37'46"N 26°37'42"N 26°37'38"N 26°37'34"N 26°37'30"N 26°37'26"N 26°37'22"N 26°37'18"N 26°37'14"N

POTENTIAL BLOCK DR_PD_CG_13 OF CHENGA RIVER

88°16'33"E 88°16'36"E 88°16'39"E 88°16'42"E 88°16'45"E

26°37'6"N 26°37'3"N 26°37'0"N 26°36'57"N 26°36'54"N 26°36'51"N 26°36'48"N

CHENGA RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_PD_CG_13

POINT_NO	LATITUDE	LONGITUDE
1	26° 36' 51.150" N	88° 16' 45.806" E
2	26° 36' 50.920" N	88° 16' 45.062" E
3	26° 36' 52.238" N	88° 16' 41.968" E
4	26° 36' 56.531" N	88° 16' 40.355" E
5	26° 36' 57.310" N	88° 16' 39.790" E
6	26° 36' 58.783" N	88° 16' 38.562" E
7	26° 36' 59.904" N	88° 16' 38.192" E
8	26° 37' 0.940" N	88° 16' 37.725" E
9	26° 37' 2.229" N	88° 16' 37.835" E
10	26° 37' 2.310" N	88° 16' 38.410" E
11	26° 37' 3.893" N	88° 16' 39.419" E
12	26° 37' 3.172" N	88° 16' 41.506" E
13	26° 37' 0.515" N	88° 16' 42.666" E
14	26° 36' 58.949" N	88° 16' 42.368" E
15	26° 36' 58.156" N	88° 16' 42.842" E
16	26° 36' 57.371" N	88° 16' 42.565" E
17	26° 36' 56.249" N	88° 16' 43.030" E
18	26° 36' 54.633" N	88° 16' 43.382" E

0 0.0225 0.045 0.09 0.135 0.18
Kilometers

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	CG	CHENGA

POTENTIAL BLOCK DR_PD_CG_14 OF CHENGA RIVER

88°16'48"E 88°16'51"E 88°16'54"E 88°16'57"E 88°17'0"E

26°36'39"N 26°36'36"N 26°36'33"N 26°36'30"N 26°36'27"N 26°36'24"N

N W E S

CHENGA RIVER

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	CG	CHENGA

DR_PD_CG_14

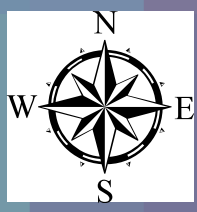
POINT_NO	LATITUDE	LONGITUDE
1	26° 36' 29.565" N	88° 16' 58.910" E
2	26° 36' 29.644" N	88° 16' 53.871" E
3	26° 36' 31.177" N	88° 16' 53.308" E
4	26° 36' 33.104" N	88° 16' 52.934" E
5	26° 36' 36.644" N	88° 16' 52.688" E
6	26° 36' 39.980" N	88° 16' 53.298" E
7	26° 36' 39.701" N	88° 16' 54.633" E
8	26° 36' 33.057" N	88° 16' 58.054" E
9	26° 36' 32.714" N	88° 16' 58.095" E
10	26° 36' 30.327" N	88° 16' 58.306" E
11	26° 36' 30.187" N	88° 16' 58.610" E

0 0.0225 0.045 0.09 0.135 0.18
Kilometers

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

POTENTIAL BLOCK DR_PD_CG_18 OF CHENGA RIVER



ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	CG	CHENGA

DR_PD_CG_18

POINT_NO	LATITUDE	LONGITUDE
1	26° 34' 19.891" N	88° 15' 58.705" E
2	26° 34' 18.500" N	88° 15' 57.972" E
3	26° 34' 18.939" N	88° 15' 57.021" E
4	26° 34' 21.304" N	88° 15' 56.927" E
5	26° 34' 23.880" N	88° 15' 57.314" E
6	26° 34' 26.031" N	88° 15' 57.218" E
7	26° 34' 27.314" N	88° 15' 57.950" E
8	26° 34' 25.588" N	88° 15' 58.648" E
9	26° 34' 24.085" N	88° 15' 58.512" E
10	26° 34' 23.336" N	88° 15' 58.145" E
11	26° 34' 21.396" N	88° 15' 58.722" E
12	26° 34' 21.124" N	88° 15' 59.276" E
13	26° 34' 20.970" N	88° 15' 59.344" E
14	26° 34' 20.446" N	88° 15' 59.650" E

CHENGA RIVER

LEGEND

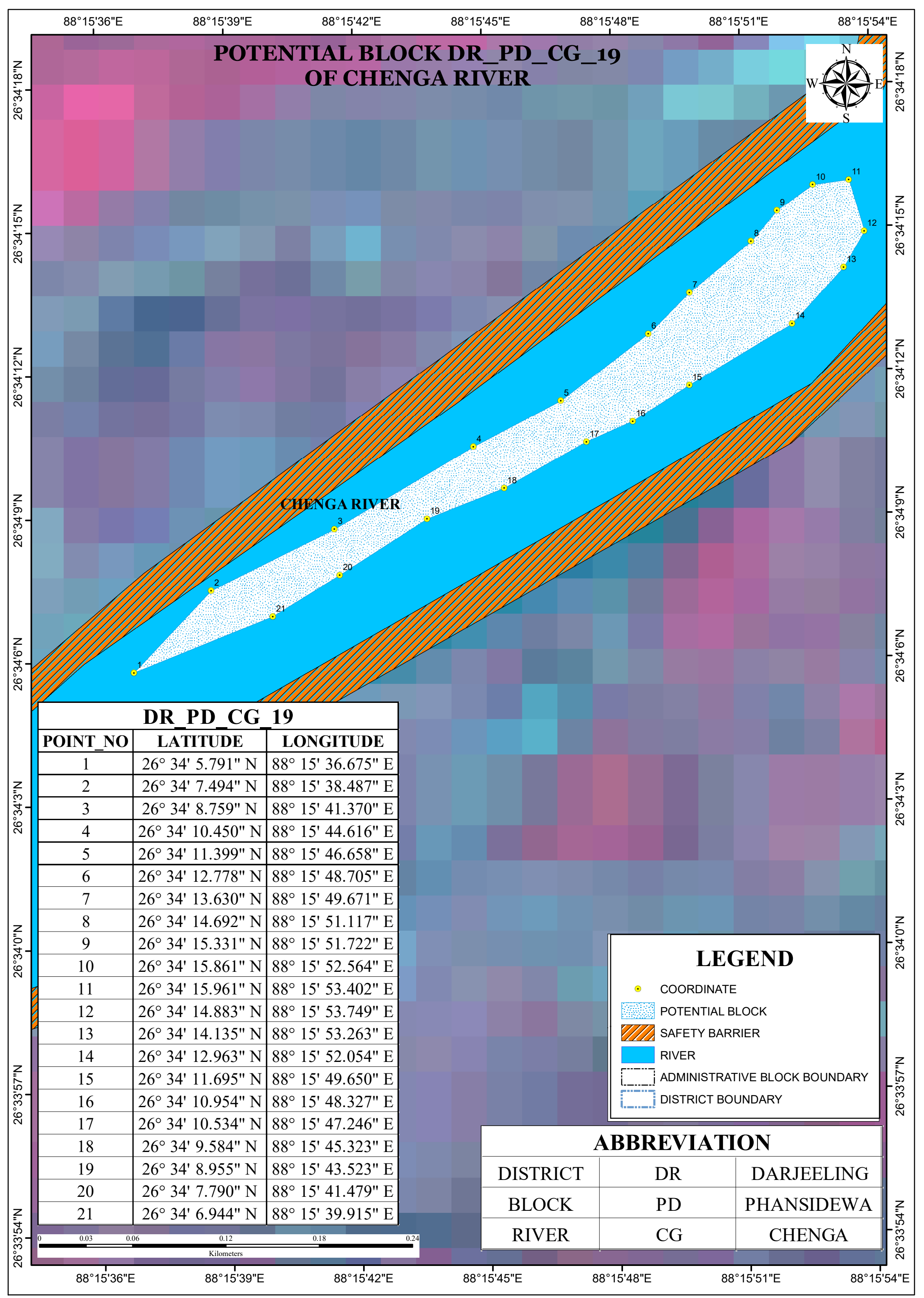
- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0 0.0225 0.045 0.09 0.135 0.18
Kilometers

88°15'51"E 88°15'54"E 88°15'57"E 88°16'0"E 88°16'3"E

26°34'30"N 26°34'27"N 26°34'24"N 26°34'21"N 26°34'18"N 26°34'15"N 26°34'12"N

POTENTIAL BLOCK DR_PD_CG_19 OF CHENGA RIVER



DR_PD_CG_19		
POINT_NO	LATITUDE	LONGITUDE
1	26° 34' 5.791" N	88° 15' 36.675" E
2	26° 34' 7.494" N	88° 15' 38.487" E
3	26° 34' 8.759" N	88° 15' 41.370" E
4	26° 34' 10.450" N	88° 15' 44.616" E
5	26° 34' 11.399" N	88° 15' 46.658" E
6	26° 34' 12.778" N	88° 15' 48.705" E
7	26° 34' 13.630" N	88° 15' 49.671" E
8	26° 34' 14.692" N	88° 15' 51.117" E
9	26° 34' 15.331" N	88° 15' 51.722" E
10	26° 34' 15.861" N	88° 15' 52.564" E
11	26° 34' 15.961" N	88° 15' 53.402" E
12	26° 34' 14.883" N	88° 15' 53.749" E
13	26° 34' 14.135" N	88° 15' 53.263" E
14	26° 34' 12.963" N	88° 15' 52.054" E
15	26° 34' 11.695" N	88° 15' 49.650" E
16	26° 34' 10.954" N	88° 15' 48.327" E
17	26° 34' 10.534" N	88° 15' 47.246" E
18	26° 34' 9.584" N	88° 15' 45.323" E
19	26° 34' 8.955" N	88° 15' 43.523" E
20	26° 34' 7.790" N	88° 15' 41.479" E
21	26° 34' 6.944" N	88° 15' 39.915" E

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	CG	CHENGA

POTENTIAL BLOCK DR_PD_CG_20 OF CHENGA RIVER

88°15'12"E 88°15'15"E 88°15'18"E 88°15'21"E

26°34'3"N 26°34'0"N 26°33'57"N 26°33'54"N 26°33'51"N 26°33'48"N

CHENGA RIVER

DR_PD_CG_20		
POINT_NO	LATITUDE	LONGITUDE
1	26° 34' 0.325" N	88° 15' 10.438" E
2	26° 33' 59.982" N	88° 15' 12.825" E
3	26° 33' 59.758" N	88° 15' 13.779" E
4	26° 33' 59.100" N	88° 15' 15.325" E
5	26° 33' 58.850" N	88° 15' 19.267" E
6	26° 33' 59.252" N	88° 15' 22.499" E
7	26° 33' 58.711" N	88° 15' 22.852" E
8	26° 33' 57.647" N	88° 15' 21.645" E
9	26° 33' 57.548" N	88° 15' 20.687" E
10	26° 33' 57.453" N	88° 15' 19.252" E
11	26° 33' 57.579" N	88° 15' 17.102" E
12	26° 33' 57.814" N	88° 15' 14.833" E
13	26° 33' 58.041" N	88° 15' 13.521" E
14	26° 33' 58.806" N	88° 15' 12.095" E

0 0.02 0.04 0.08 0.12 0.16
Kilometers

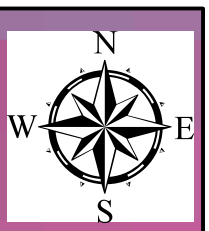
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	CG	CHENGA

POTENTIAL BLOCK DR_PD_CG_21 OF CHENGA RIVER



CHENGA RIVER

ABBREVIATION		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	CG	CHENGA

DR_PD_CG_21

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 33' 59.623" N	88° 14' 52.500" E	13	26° 33' 58.362" N	88° 15' 1.452" E
2	26° 34' 1.761" N	88° 14' 53.838" E	14	26° 33' 57.829" N	88° 15' 0.968" E
3	26° 34' 3.037" N	88° 14' 55.406" E	15	26° 33' 57.515" N	88° 15' 0.008" E
4	26° 34' 3.561" N	88° 14' 56.966" E	16	26° 33' 58.485" N	88° 14' 59.660" E
5	26° 34' 3.544" N	88° 14' 58.878" E	17	26° 33' 58.385" N	88° 14' 58.822" E
6	26° 34' 3.312" N	88° 15' 0.788" E	18	26° 33' 57.321" N	88° 14' 57.615" E
7	26° 34' 3.192" N	88° 15' 2.221" E	19	26° 33' 55.934" N	88° 14' 56.405" E
8	26° 34' 1.888" N	88° 15' 3.881" E	20	26° 33' 55.559" N	88° 14' 55.397" E
9	26° 34' 1.121" N	88° 15' 5.546" E	21	26° 33' 55.738" N	88° 14' 54.538" E
10	26° 33' 59.930" N	88° 15' 6.489" E	22	26° 33' 55.748" N	88° 14' 53.486" E
11	26° 33' 59.411" N	88° 15' 4.332" E	23	26° 33' 56.701" N	88° 14' 52.636" E
12	26° 33' 58.884" N	88° 15' 3.250" E			

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0 0.0275 0.055 0.11 0.165 0.22

Kilometers

88°14'51"E 88°14'54"E 88°14'57"E 88°15'0"E 88°15'3"E 88°15'6"E

26°34'6"N 26°34'3"N 26°34'0"N 26°33'57"N 26°33'54"N 26°33'51"N 26°33'48"N 26°33'45"N

POTENTIAL BLOCK DR_PD_CG_22 OF CHENGA RIVER

88°14'39"E 88°14'42"E 88°14'45"E 88°14'48"E 88°14'51"E

26°33'42"N 26°33'39"N 26°33'36"N 26°33'33"N 26°33'30"N 26°33'27"N

CHENGA RIVER

ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	CG	CHENGA

DR_PD_CG_22

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 33' 32.850" N	88° 14' 41.095" E	11	26° 33' 40.858" N	88° 14' 47.277" E
2	26° 33' 31.900" N	88° 14' 39.172" E	12	26° 33' 41.929" N	88° 14' 47.767" E
3	26° 33' 32.445" N	88° 14' 39.448" E	13	26° 33' 42.884" N	88° 14' 49.092" E
4	26° 33' 32.984" N	88° 14' 40.041" E	14	26° 33' 41.379" N	88° 14' 49.195" E
5	26° 33' 33.281" N	88° 14' 40.980" E	15	26° 33' 39.767" N	88° 14' 49.178" E
6	26° 33' 34.878" N	88° 14' 42.790" E	16	26° 33' 37.727" N	88° 14' 48.916" E
7	26° 33' 36.050" N	88° 14' 43.998" E	17	26° 33' 36.654" N	88° 14' 48.666" E
8	26° 33' 37.536" N	88° 14' 46.165" E	18	26° 33' 35.055" N	88° 14' 47.095" E
9	26° 33' 37.858" N	88° 14' 46.169" E	19	26° 33' 34.313" N	88° 14' 45.891" E
10	26° 33' 39.148" N	88° 14' 46.183" E	20	26° 33' 33.362" N	88° 14' 44.088" E

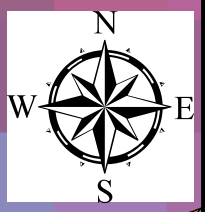
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0 0.0225 0.045 0.09 0.135 0.18

Kilometers

POTENTIAL BLOCK DR_PD_CG_23 OF CHENGA RIVER



88°13'48"E 88°13'51"E 88°13'54"E 88°13'57"E 88°14'0"E

26°33'12"N 26°33'9"N 26°33'6"N 26°33'3"N 26°33'0"N 26°32'57"N 26°32'54"N

CHENGA RIVER

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

DR_PD_CG_23		
POINT_NO	LATITUDE	LONGITUDE
1	26° 33' 4.547" N	88° 13' 51.495" E
2	26° 33' 3.600" N	88° 13' 46.720" E
3	26° 33' 5.215" N	88° 13' 46.679" E
4	26° 33' 5.925" N	88° 13' 46.661" E
5	26° 33' 6.752" N	88° 13' 46.640" E
6	26° 33' 6.799" N	88° 13' 48.727" E
7	26° 33' 6.871" N	88° 13' 50.354" E
8	26° 33' 7.550" N	88° 13' 51.317" E
9	26° 33' 7.879" N	88° 13' 53.042" E
10	26° 33' 8.377" N	88° 13' 54.048" E
11	26° 33' 9.107" N	88° 13' 55.215" E
12	26° 33' 9.437" N	88° 13' 58.776" E
13	26° 33' 9.526" N	88° 14' 0.440" E
14	26° 33' 8.805" N	88° 14' 0.318" E
15	26° 33' 7.996" N	88° 13' 58.416" E
16	26° 33' 6.165" N	88° 13' 55.299" E

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

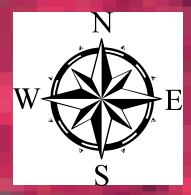
ABBREVIATION

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	CG	CHENGA

0 0.0225 0.045 0.09 0.135 0.18

Kilometers

POTENTIAL BLOCK DR_KS_MH_01/19 OF MAHANANDA RIVER



DR_KS_MH_01/19		
POINT_NO	LATITUDE	LONGITUDE
1	26° 48' 56.075" N	88° 24' 5.038" E
2	26° 48' 52.509" N	88° 24' 10.897" E
3	26° 48' 40.940" N	88° 24' 22.560" E
4	26° 48' 38.620" N	88° 24' 24.678" E
5	26° 48' 35.716" N	88° 24' 26.176" E
6	26° 48' 34.564" N	88° 24' 27.494" E
7	26° 48' 34.699" N	88° 24' 13.840" E
8	26° 48' 41.088" N	88° 24' 4.777" E
9	26° 48' 41.610" N	88° 24' 3.115" E
10	26° 48' 46.887" N	88° 23' 57.328" E
11	26° 48' 47.950" N	88° 23' 54.083" E
12	26° 48' 54.530" N	88° 23' 49.563" E
13	26° 48' 55.866" N	88° 23' 44.884" E
14	26° 48' 55.829" N	88° 23' 39.901" E
15	26° 48' 58.533" N	88° 23' 36.005" E
16	26° 49' 13.757" N	88° 23' 17.982" E
17	26° 49' 31.497" N	88° 23' 6.506" E
18	26° 49' 37.706" N	88° 23' 4.665" E
19	26° 49' 42.128" N	88° 23' 5.528" E
20	26° 49' 40.638" N	88° 23' 7.430" E
21	26° 49' 32.721" N	88° 23' 8.101" E
22	26° 49' 25.465" N	88° 23' 11.462" E
23	26° 49' 19.510" N	88° 23' 22.507" E
24	26° 49' 11.472" N	88° 23' 35.442" E
25	26° 49' 8.248" N	88° 23' 48.436" E
26	26° 49' 6.757" N	88° 23' 52.668" E
27	26° 48' 58.372" N	88° 23' 58.856" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	MH	MAHANANDA

LEGEND

- COORDINATE
- POTENTIAL_BLOCK
- SAFETY_BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

0 0.25 0.5 1 1.5 2

Kilometers

88°23'0"E 88°23'30"E 88°24'0"E 88°24'30"E

26°50'0"N 26°49'30"N 26°49'0"N 26°48'30"N 26°48'0"N 26°47'30"N

88°25'0"E

POTENTIAL BLOCK DR_KS_MH_01/20 OF MAHANANDA RIVER

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MAHANANDA RIVER

26°48'0"N

26°48'0"N

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DR_KS_MH_01/20

POINT_NO	LATITUDE	LONGITUDE
1	26° 47' 53.690" N	88° 25' 12.721" E
2	26° 47' 52.446" N	88° 25' 10.018" E
3	26° 47' 53.155" N	88° 25' 9.151" E
4	26° 47' 53.533" N	88° 25' 2.399" E
5	26° 47' 57.498" N	88° 24' 58.031" E
6	26° 48' 1.906" N	88° 24' 53.929" E
7	26° 48' 2.460" N	88° 24' 53.378" E
8	26° 48' 11.298" N	88° 24' 53.179" E
9	26° 48' 11.249" N	88° 25' 0.880" E
10	26° 48' 3.316" N	88° 25' 14.050" E
11	26° 47' 59.965" N	88° 25' 13.259" E
12	26° 47' 56.255" N	88° 25' 12.753" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	MH	MAHANANDA

LEGEND

- COORDINATE
- POTENTIAL_BLOCK
- SAFETY_BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

0 0.075 0.15 0.3 0.45 0.6

Kilometers

88°25'0"E

88°26'0"E

POTENTIAL BLOCK DR_MT_MH_02 OF MAHANANDA RIVER

MAHANANDA RIVER

26°47'0"N

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	MT	MATIGARA
RIVER	MH	MAHANANDA

DR_MT_MH_02		
POINT_NO	LATITUDE	LONGITUDE
1	26° 46' 50.375" N	88° 26' 23.803" E
2	26° 46' 49.667" N	88° 26' 18.719" E
3	26° 46' 52.713" N	88° 26' 16.512" E
4	26° 46' 55.214" N	88° 26' 16.066" E
5	26° 46' 55.404" N	88° 26' 14.563" E
6	26° 46' 56.544" N	88° 26' 13.738" E
7	26° 47' 2.287" N	88° 26' 7.008" E
8	26° 47' 2.451" N	88° 26' 6.596" E
9	26° 47' 3.571" N	88° 26' 6.017" E
10	26° 47' 7.914" N	88° 26' 1.664" E
11	26° 47' 12.910" N	88° 26' 0.769" E
12	26° 47' 17.020" N	88° 26' 2.545" E
13	26° 47' 15.080" N	88° 26' 7.311" E
14	26° 47' 13.876" N	88° 26' 7.296" E
15	26° 47' 11.103" N	88° 26' 9.369" E
16	26° 47' 8.284" N	88° 26' 16.039" E
17	26° 47' 5.848" N	88° 26' 18.883" E
18	26° 47' 1.551" N	88° 26' 18.637" E
19	26° 46' 55.857" N	88° 26' 26.601" E

LEGEND

- COORDINATE
- POTENTIAL_BLOCK
- SAFETY_BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

0 0.05 0.1 0.2 0.3 0.4

Kilometers

88°26'0"E

88°24'20"E

POTENTIAL BLOCK DR_PD_MH_04A OF MAHANANDA RIVER

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MAHANANDA RIVER

LEGEND

- COORDINATE
- POTENTIAL_BLOCK
- SAFETY_BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

DR_PD_MH_04A

POINT_NO	LATITUDE	LONGITUDE
1	26° 37' 52.652" N	88° 24' 26.167" E
2	26° 37' 49.425" N	88° 24' 26.938" E
3	26° 37' 48.754" N	88° 24' 25.467" E
4	26° 37' 48.259" N	88° 24' 23.356" E
5	26° 37' 47.087" N	88° 24' 20.184" E
6	26° 37' 47.109" N	88° 24' 17.984" E
7	26° 37' 47.886" N	88° 24' 17.611" E
8	26° 37' 49.406" N	88° 24' 20.404" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	MH	MAHANANDA

0 0.0275 0.055 0.11 0.165 0.22

Kilometers

26°37'40"N

88°24'20"E

POTENTIAL BLOCK DR_PD_MH_05 OF MAHANANDA RIVER

88°23'40"E

88°24'0"E

26°37'40"N

26°37'20"N

26°37'0"N

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	MH	MAHANANDA

LEGEND

- COORDINATE
- POTENTIAL_BLOCK
- SAFETY_BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

MAHANANDA RIVER

DR_PD_MH_05		
POINT_NO	LATITUDE	LONGITUDE
1	26° 37' 21.742" N	88° 23' 51.901" E
2	26° 37' 28.840" N	88° 23' 51.509" E
3	26° 37' 34.422" N	88° 23' 52.294" E
4	26° 37' 37.837" N	88° 23' 54.728" E
5	26° 37' 39.075" N	88° 24' 0.005" E
6	26° 37' 39.051" N	88° 24' 2.396" E
7	26° 37' 35.416" N	88° 24' 0.438" E
8	26° 37' 33.073" N	88° 23' 58.257" E
9	26° 37' 29.655" N	88° 23' 56.063" E
10	26° 37' 27.728" N	88° 23' 55.322" E

0 0.075 0.15 0.3 0.45 0.6

Kilometers

POTENTIAL BLOCK DR_PD_MH_06 OF MAHANANDA RIVER

88°23'20"E

88°23'40"E

26°37'0"N

26°36'40"N

N

W

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LEGEND

- COORDINATE
- POTENTIAL_BLOCK
- SAFETY_BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

MAHANANDA RIVER

DR_PD_MH_06		
POINT_NO	LATITUDE	LONGITUDE
1	26° 36' 56.488" N	88° 23' 36.096" E
2	26° 36' 55.502" N	88° 23' 31.492" E
3	26° 36' 56.545" N	88° 23' 32.482" E
4	26° 36' 57.192" N	88° 23' 33.858" E
5	26° 37' 1.219" N	88° 23' 40.603" E
6	26° 37' 1.586" N	88° 23' 40.832" E
7	26° 37' 3.127" N	88° 23' 43.064" E
8	26° 37' 6.721" N	88° 23' 44.830" E
9	26° 37' 9.979" N	88° 23' 45.826" E
10	26° 37' 12.726" N	88° 23' 47.396" E
11	26° 37' 10.125" N	88° 23' 47.113" E
12	26° 37' 5.202" N	88° 23' 46.754" E
13	26° 37' 2.682" N	88° 23' 46.550" E
14	26° 37' 1.721" N	88° 23' 46.109" E
15	26° 36' 58.666" N	88° 23' 42.054" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	MH	MAHANANDA

0 0.075 0.15 0.3 0.45 0.6

Kilometers

POTENTIAL BLOCK DR_PD_MH_07 OF MAHANANDA RIVER

88°23'0"E

88°23'20"E

26°36'40"N

26°36'20"N

N

W

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MAHANANDA RIVER

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LEGEND

- COORDINATE
- POTENTIAL_BLOCK
- SAFETY_BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

DR_PD_MH_07

POINT_NO	LATITUDE	LONGITUDE
1	26° 36' 50.007" N	88° 23' 21.760" E
2	26° 36' 48.911" N	88° 23' 22.554" E
3	26° 36' 49.215" N	88° 23' 23.228" E
4	26° 36' 48.065" N	88° 23' 23.420" E
5	26° 36' 43.540" N	88° 23' 23.695" E
6	26° 36' 42.124" N	88° 23' 23.150" E
7	26° 36' 40.700" N	88° 23' 23.790" E
8	26° 36' 34.606" N	88° 23' 23.455" E
9	26° 36' 33.761" N	88° 23' 21.281" E
10	26° 36' 30.380" N	88° 23' 15.309" E
11	26° 36' 30.551" N	88° 23' 15.311" E
12	26° 36' 29.640" N	88° 23' 14.540" E
13	26° 36' 31.724" N	88° 23' 13.121" E
14	26° 36' 33.029" N	88° 23' 12.624" E
15	26° 36' 35.943" N	88° 23' 12.077" E
16	26° 36' 41.471" N	88° 23' 12.985" E
17	26° 36' 41.700" N	88° 23' 13.051" E
18	26° 36' 45.128" N	88° 23' 14.201" E
19	26° 36' 47.796" N	88° 23' 15.687" E
20	26° 36' 49.489" N	88° 23' 18.463" E

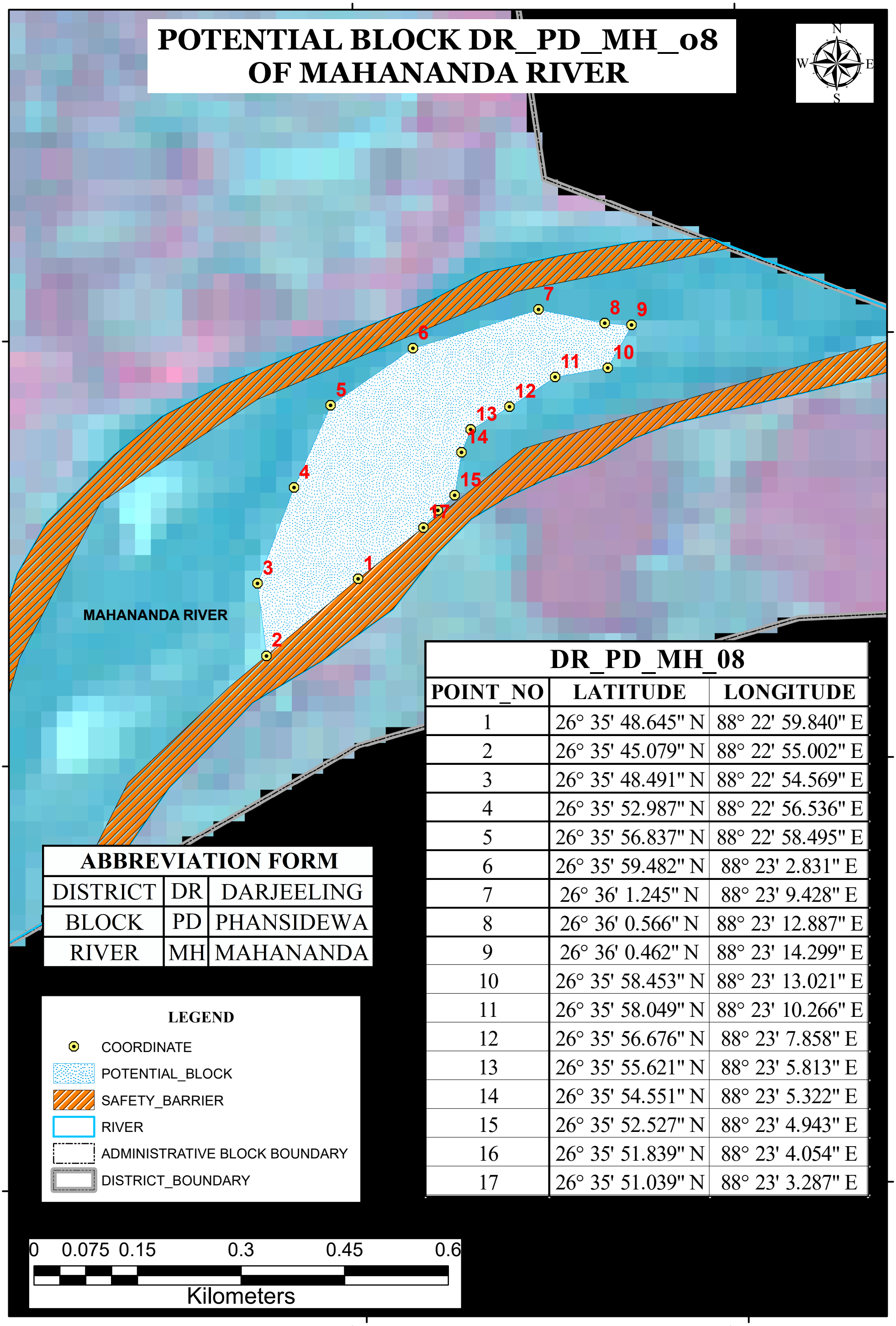
ABBREVIATION FORM

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	MH	MAHANANDA

0 0.075 0.15 0.3 0.45 0.6

Kilometers

POTENTIAL BLOCK DR_PD_MH_08 OF MAHANANDA RIVER



DR_PD_MH_08		
POINT_NO	LATITUDE	LONGITUDE
1	26° 35' 48.645" N	88° 22' 59.840" E
2	26° 35' 45.079" N	88° 22' 55.002" E
3	26° 35' 48.491" N	88° 22' 54.569" E
4	26° 35' 52.987" N	88° 22' 56.536" E
5	26° 35' 56.837" N	88° 22' 58.495" E
6	26° 35' 59.482" N	88° 23' 2.831" E
7	26° 36' 1.245" N	88° 23' 9.428" E
8	26° 36' 0.566" N	88° 23' 12.887" E
9	26° 36' 0.462" N	88° 23' 14.299" E
10	26° 35' 58.453" N	88° 23' 13.021" E
11	26° 35' 58.049" N	88° 23' 10.266" E
12	26° 35' 56.676" N	88° 23' 7.858" E
13	26° 35' 55.621" N	88° 23' 5.813" E
14	26° 35' 54.551" N	88° 23' 5.322" E
15	26° 35' 52.527" N	88° 23' 4.943" E
16	26° 35' 51.839" N	88° 23' 4.054" E
17	26° 35' 51.039" N	88° 23' 3.287" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	MH	MAHANANDA

LEGEND

- COORDINATE
- POTENTIAL_BLOCK
- SAFETY_BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

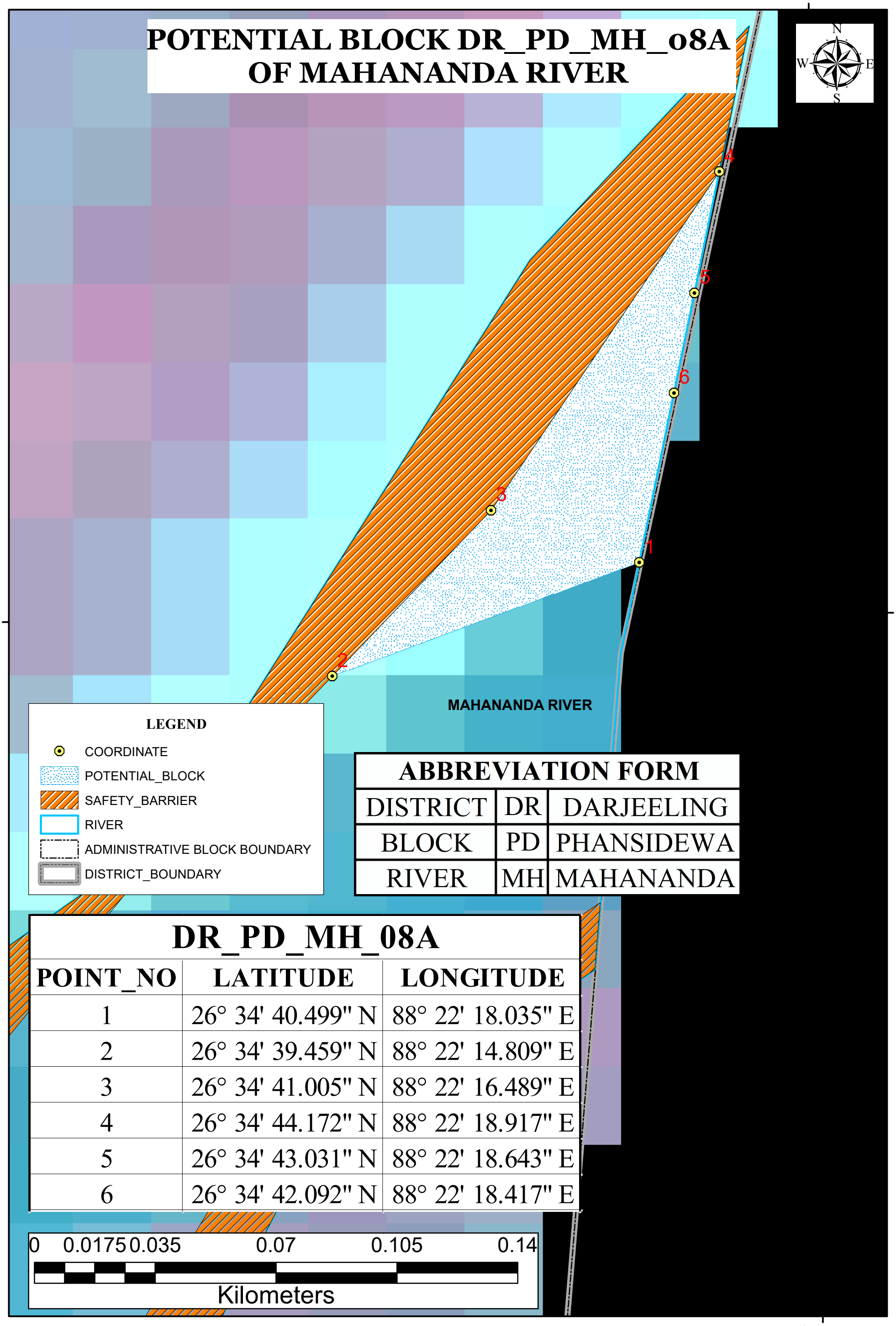
0 0.075 0.15 0.3 0.45 0.6

Kilometers

POTENTIAL BLOCK DR_PD_MH_o8A OF MAHANANDA RIVER

88°22'20"E

26°34'40"N



26°34'40"N

88°22'20"E

LEGEND

- COORDINATE
- POTENTIAL_BLOCK
- SAFETY_BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	MH	MAHANANDA

DR_PD_MH_08A

POINT_NO	LATITUDE	LONGITUDE
1	26° 34' 40.499" N	88° 22' 18.035" E
2	26° 34' 39.459" N	88° 22' 14.809" E
3	26° 34' 41.005" N	88° 22' 16.489" E
4	26° 34' 44.172" N	88° 22' 18.917" E
5	26° 34' 43.031" N	88° 22' 18.643" E
6	26° 34' 42.092" N	88° 22' 18.417" E

0 0.0175 0.035 0.07 0.105 0.14

Kilometers

88°22'0"E

POTENTIAL BLOCK DR_PD_MH_09 OF MAHANANDA RIVER

N
W
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S

26°34'20"N

26°34'20"N

MAHANANDA RIVER

LEGEND

- COORDINATE
- POTENTIAL_BLOCK
- SAFETY_BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

DR_PD_MH_09

POINT_NO	LATITUDE	LONGITUDE
1	26° 34' 14.189" N	88° 22' 14.226" E
2	26° 34' 12.126" N	88° 22' 14.137" E
3	26° 34' 12.862" N	88° 22' 13.335" E
4	26° 34' 15.785" N	88° 22' 11.218" E
5	26° 34' 19.460" N	88° 22' 9.110" E
6	26° 34' 24.286" N	88° 22' 7.996" E
7	26° 34' 29.093" N	88° 22' 8.818" E
8	26° 34' 32.678" N	88° 22' 11.538" E
9	26° 34' 27.714" N	88° 22' 11.360" E
10	26° 34' 24.488" N	88° 22' 11.560" E
11	26° 34' 21.048" N	88° 22' 11.639" E
12	26° 34' 17.165" N	88° 22' 13.027" E
13	26° 34' 14.812" N	88° 22' 14.301" E

ABBREVIATION FORM

DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	MH	MAHANANDA

0 0.05 0.1 0.2 0.3 0.4

Kilometers

88°22'0"E

POTENTIAL BLOCK DR_PD_MH_10 OF MAHANANDA RIVER

88°20'40"E

N
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E
S

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	MH	MAHANANDA

LEGEND

- COORDINATE
- POTENTIAL_BLOCK
- SAFETY_BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

26°30'20"N

MAHANANDA RIVER

DR_PD_MH_10		
POINT_NO	LATITUDE	LONGITUDE
1	26° 30' 20.301" N	88° 20' 39.061" E
2	26° 30' 20.247" N	88° 20' 36.666" E
3	26° 30' 20.665" N	88° 20' 37.173" E
4	26° 30' 28.201" N	88° 20' 45.003" E
5	26° 30' 28.474" N	88° 20' 45.341" E
6	26° 30' 28.192" N	88° 20' 45.724" E
7	26° 30' 26.697" N	88° 20' 44.750" E
8	26° 30' 24.775" N	88° 20' 43.414" E
9	26° 30' 23.278" N	88° 20' 42.560" E
10	26° 30' 21.146" N	88° 20' 40.624" E

0 0.04 0.08 0.16 0.24 0.32

Kilometers

88°20'40"E

88°20'0"E

POTENTIAL BLOCK DR_PD_MH_11 OF MAHANANDA RIVER

N
W
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ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	MH	MAHANANDA

LEGEND

- COORDINATE
- POTENTIAL_BLOCK
- SAFETY_BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

26°30'0"N

MAHANANDA RIVER

DR_PD_MH_11		
POINT_NO	LATITUDE	LONGITUDE
1	26° 30' 2.660" N	88° 20' 12.058" E
2	26° 30' 2.137" N	88° 20' 10.499" E
3	26° 30' 2.705" N	88° 20' 7.161" E
4	26° 30' 2.999" N	88° 20' 6.794" E
5	26° 30' 6.208" N	88° 20' 10.867" E
6	26° 30' 10.013" N	88° 20' 18.342" E
7	26° 30' 7.125" N	88° 20' 17.247" E
8	26° 30' 5.433" N	88° 20' 14.360" E
9	26° 30' 4.044" N	88° 20' 13.388" E

DR

0 0.05 0.1 0.2 0.3 0.4

Kilometers

88°20'0"E

POTENTIAL BLOCK DR_PD_MH_12 OF MAHANANDA RIVER

88°20'0"E

26°30'0"N

26°29'40"N

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	MH	MAHANANDA

LEGEND

- COORDINATE
- POTENTIAL_BLOCK
- SAFETY_BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

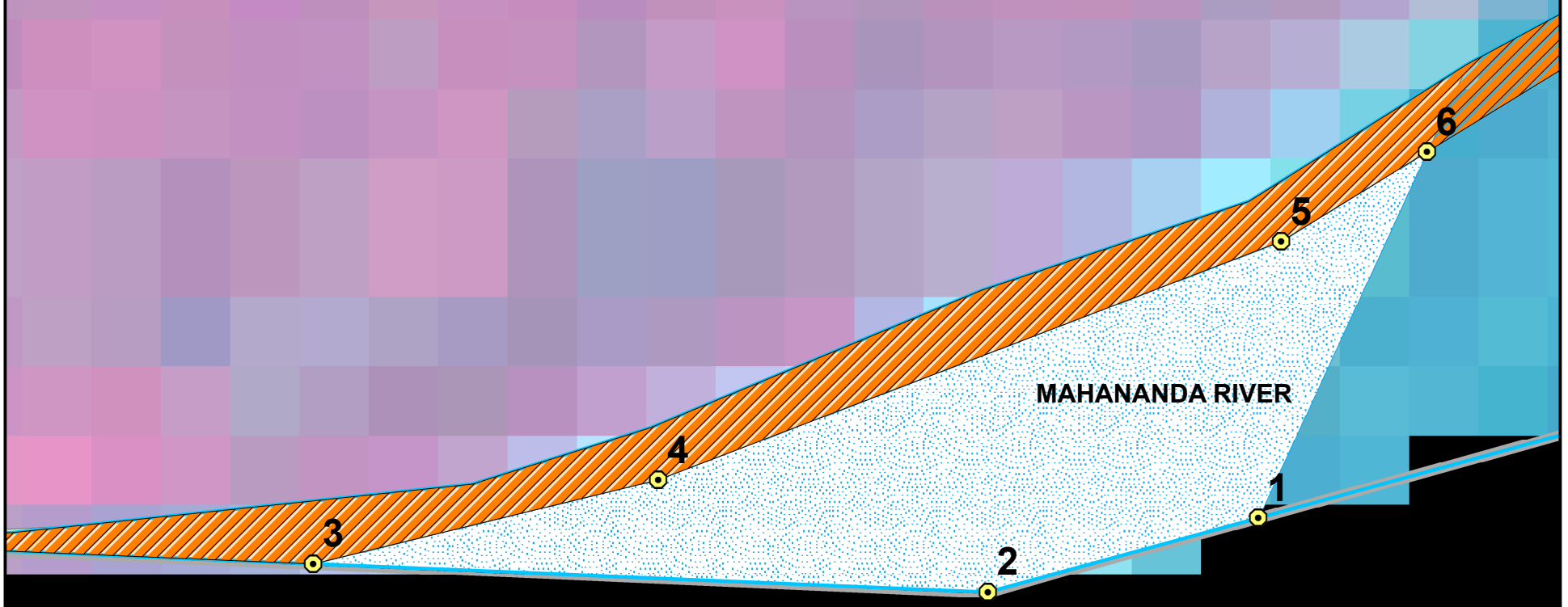
MAHANANDA RIVER

DR_PD_MH_12		
POINT_NO	LATITUDE	LONGITUDE
1	26° 29' 47.762" N	88° 20' 3.790" E
2	26° 29' 46.995" N	88° 20' 0.556" E
3	26° 29' 47.608" N	88° 20' 0.918" E
4	26° 29' 49.746" N	88° 20' 2.137" E
5	26° 29' 52.311" N	88° 20' 3.720" E
6	26° 29' 54.784" N	88° 20' 3.629" E
7	26° 29' 56.159" N	88° 20' 6.034" E
8	26° 29' 57.532" N	88° 20' 8.678" E
9	26° 29' 57.371" N	88° 20' 10.691" E
10	26° 29' 56.031" N	88° 20' 9.459" E
11	26° 29' 52.658" N	88° 20' 6.935" E
12	26° 29' 48.119" N	88° 20' 5.297" E

0 0.05 0.1 0.2 0.3 0.4

Kilometers

POTENTIAL BLOCK DR_PD_MH_13 OF MAHANANDA RIVER



26°29'40"N

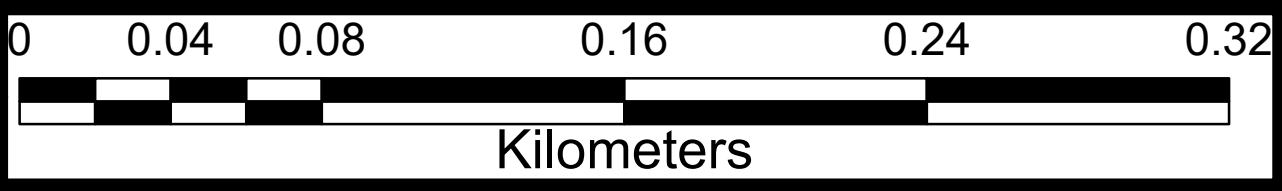
26°29'40"N

LEGEND

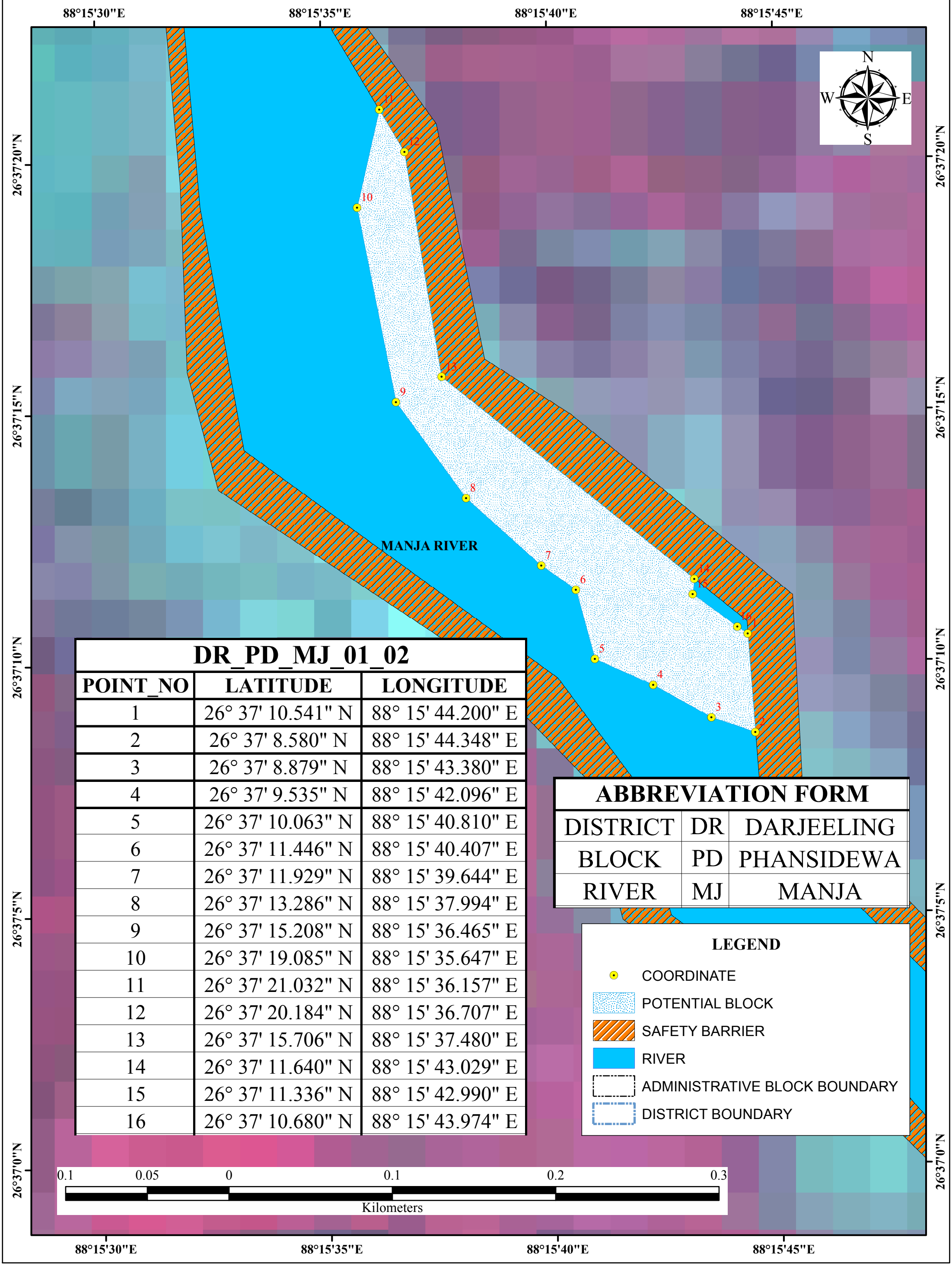
- COORDINATE
- SAFETY_BARRIER
- RIVER
- POTENTIAL_BLOCK
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT_BOUNDARY

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	MH	MAHANANDA

DR_PD_MH_13		
POINT_NO	**LATITUDE**	**LONGITUDE**
1	26° 29' 45.866" N	88° 19' 55.788" E
2	26° 29' 45.106" N	88° 19' 52.583" E
3	26° 29' 45.481" N	88° 19' 44.618" E
4	26° 29' 46.336" N	88° 19' 48.705" E
5	26° 29' 48.804" N	88° 19' 56.092" E
6	26° 29' 49.740" N	88° 19' 57.825" E



POTENTIAL BLOCK DR_PD_MJ_01_02 OF MANJA RIVER



DR_PD_MJ_01_02		
POINT_NO	LATITUDE	LONGITUDE
1	26° 37' 10.541" N	88° 15' 44.200" E
2	26° 37' 8.580" N	88° 15' 44.348" E
3	26° 37' 8.879" N	88° 15' 43.380" E
4	26° 37' 9.535" N	88° 15' 42.096" E
5	26° 37' 10.063" N	88° 15' 40.810" E
6	26° 37' 11.446" N	88° 15' 40.407" E
7	26° 37' 11.929" N	88° 15' 39.644" E
8	26° 37' 13.286" N	88° 15' 37.994" E
9	26° 37' 15.208" N	88° 15' 36.465" E
10	26° 37' 19.085" N	88° 15' 35.647" E
11	26° 37' 21.032" N	88° 15' 36.157" E
12	26° 37' 20.184" N	88° 15' 36.707" E
13	26° 37' 15.706" N	88° 15' 37.480" E
14	26° 37' 11.640" N	88° 15' 43.029" E
15	26° 37' 11.336" N	88° 15' 42.990" E
16	26° 37' 10.680" N	88° 15' 43.974" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	MJ	MANJA

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

POTENTIAL BLOCK DR_PD_MJ_03 OF MANJA RIVER

88°15'30"E 88°15'35"E 88°15'40"E 88°15'45"E 88°15'50"E 88°15'55"E 88°16'0"E 88°16'5"E

26°37'0"N 26°36'55"N 26°36'50"N 26°36'45"N 26°36'40"N 26°36'35"N 26°36'30"N 26°36'25"N 26°36'20"N 26°36'15"N

N W E S

MANJA RIVER

DR_PD_MJ_03					
POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 36' 45.918" N	88° 15' 53.728" E	25	26° 36' 39.022" N	88° 15' 55.745" E
2	26° 36' 45.484" N	88° 15' 54.003" E	26	26° 36' 39.318" N	88° 15' 55.802" E
3	26° 36' 47.554" N	88° 15' 54.396" E	27	26° 36' 39.582" N	88° 15' 55.722" E
4	26° 36' 50.447" N	88° 15' 53.968" E	28	26° 36' 40.629" N	88° 15' 55.678" E
5	26° 36' 52.477" N	88° 15' 54.159" E	29	26° 36' 43.761" N	88° 15' 54.565" E
6	26° 36' 49.761" N	88° 15' 54.205" E	30	26° 36' 44.257" N	88° 15' 53.621" E
7	26° 36' 46.942" N	88° 15' 55.972" E	31	26° 36' 48.128" N	88° 15' 51.409" E
8	26° 36' 44.507" N	88° 15' 58.334" E	32	26° 36' 48.347" N	88° 15' 51.363" E
9	26° 36' 43.849" N	88° 15' 58.305" E	33	26° 36' 49.209" N	88° 15' 51.085" E
10	26° 36' 43.810" N	88° 15' 58.679" E	34	26° 36' 50.412" N	88° 15' 51.194" E
11	26° 36' 42.507" N	88° 16' 0.195" E	35	26° 36' 51.787" N	88° 15' 51.305" E
12	26° 36' 42.207" N	88° 16' 0.420" E	36	26° 36' 53.163" N	88° 15' 51.320" E
13	26° 36' 37.813" N	88° 16' 1.344" E	37	26° 36' 54.281" N	88° 15' 51.332" E
14	26° 36' 37.484" N	88° 16' 1.278" E	38	26° 36' 55.482" N	88° 15' 51.633" E
15	26° 36' 36.826" N	88° 16' 0.802" E	39	26° 36' 56.167" N	88° 15' 51.927" E
16	26° 36' 36.270" N	88° 16' 1.037" E	40	26° 36' 57.977" N	88° 15' 51.469" E
17	26° 36' 32.188" N	88° 16' 0.224" E	41	26° 36' 59.448" N	88° 15' 50.433" E
18	26° 36' 31.335" N	88° 15' 59.670" E	42	26° 36' 59.088" N	88° 15' 52.246" E
19	26° 36' 27.400" N	88° 15' 57.993" E	43	26° 36' 58.768" N	88° 15' 52.630" E
20	26° 36' 27.401" N	88° 15' 57.892" E	44	26° 36' 57.814" N	88° 15' 53.285" E
21	26° 36' 28.314" N	88° 15' 57.054" E	45	26° 36' 55.897" N	88° 15' 53.264" E
22	26° 36' 31.367" N	88° 15' 54.264" E	46	26° 36' 54.353" N	88° 15' 52.864" E
23	26° 36' 35.602" N	88° 15' 55.083" E	47	26° 36' 52.718" N	88° 15' 52.942" E
24	26° 36' 37.377" N	88° 15' 55.814" E	48	26° 36' 51.084" N	88° 15' 53.019" E
			49	26° 36' 48.334" N	88° 15' 52.798" E

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	PD	PHANSIDEWA
RIVER	MJ	MANJA

0.2 0.1 0 0.2 0.4 0.6

Kilometers

POTENTIAL BLOCK DR_MR_MC_01 OF MECHI RIVER

DR_MR_MC_01		
POINT_NO	LATITUDE	LONGITUDE
1	26° 49' 26.932" N	88° 10' 27.285" E
2	26° 49' 20.263" N	88° 10' 36.224" E
3	26° 49' 19.419" N	88° 10' 37.062" E
4	26° 49' 19.355" N	88° 10' 37.373" E
5	26° 49' 10.846" N	88° 10' 38.333" E
6	26° 49' 5.489" N	88° 10' 41.440" E
7	26° 49' 3.200" N	88° 10' 43.971" E
8	26° 49' 1.277" N	88° 10' 45.151" E
9	26° 48' 58.439" N	88° 10' 45.121" E
10	26° 48' 58.283" N	88° 10' 42.055" E
11	26° 48' 59.209" N	88° 10' 41.756" E
12	26° 48' 59.833" N	88° 10' 41.073" E
13	26° 49' 0.352" N	88° 10' 36.631" E
14	26° 49' 1.083" N	88° 10' 34.761" E
15	26° 49' 1.411" N	88° 10' 34.415" E
16	26° 49' 6.065" N	88° 10' 33.112" E
17	26° 49' 12.591" N	88° 10' 30.132" E
18	26° 49' 21.039" N	88° 10' 28.580" E
19	26° 49' 23.772" N	88° 10' 25.647" E
20	26° 49' 24.529" N	88° 10' 24.253" E
21	26° 49' 24.686" N	88° 10' 24.129" E
22	26° 49' 24.741" N	88° 10' 25.200" E
23	26° 49' 25.576" N	88° 10' 24.121" E
24	26° 49' 25.341" N	88° 10' 22.938" E
25	26° 49' 25.355" N	88° 10' 22.730" E
26	26° 49' 26.209" N	88° 10' 21.158" E
27	26° 49' 29.501" N	88° 10' 19.207" E
28	26° 49' 33.992" N	88° 10' 15.832" E
29	26° 49' 35.778" N	88° 10' 11.644" E
30	26° 49' 38.728" N	88° 10' 10.664" E
31	26° 49' 41.370" N	88° 10' 8.343" E
32	26° 49' 42.666" N	88° 10' 6.987" E
33	26° 49' 43.209" N	88° 10' 9.072" E
34	26° 49' 44.346" N	88° 10' 9.779" E
35	26° 49' 41.799" N	88° 10' 12.774" E
36	26° 49' 39.687" N	88° 10' 18.647" E
37	26° 49' 36.834" N	88° 10' 20.486" E
38	26° 49' 34.853" N	88° 10' 20.945" E
39	26° 49' 29.542" N	88° 10' 23.670" E

DR_MR_MC_01

MECHI RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	MR	MIRIK
RIVER	MC	MECHI

0.25 0.125 0 0.25 0.5 0.75

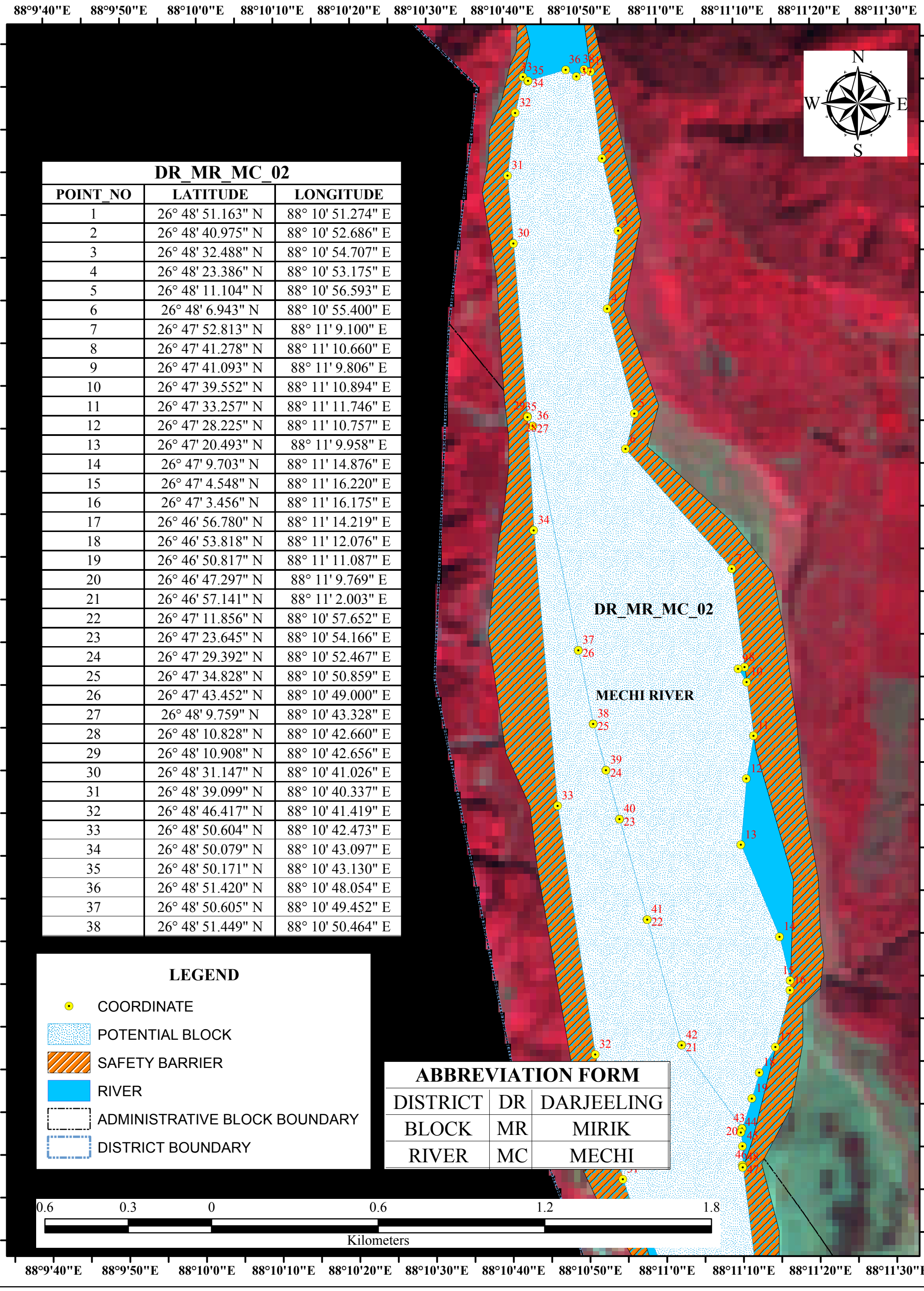
Kilometers

88°10'0"E 88°10'5"E 88°10'10"E 88°10'15"E 88°10'20"E 88°10'25"E 88°10'30"E 88°10'35"E 88°10'40"E 88°10'45"E

26°49'40"N 26°49'35"N 26°49'30"N 26°49'25"N 26°49'20"N 26°49'15"N 26°49'10"N 26°49'5"N 26°49'0"N 26°48'55"N 26°48'50"N 26°48'45"N

POTENTIAL BLOCK DR_MR_MC_02 OF MECHI RIVER

DR_MR_MC_02		
POINT_NO	LATITUDE	LONGITUDE
1	26° 48' 51.163" N	88° 10' 51.274" E
2	26° 48' 40.975" N	88° 10' 52.686" E
3	26° 48' 32.488" N	88° 10' 54.707" E
4	26° 48' 23.386" N	88° 10' 53.175" E
5	26° 48' 11.104" N	88° 10' 56.593" E
6	26° 48' 6.943" N	88° 10' 55.400" E
7	26° 47' 52.813" N	88° 11' 9.100" E
8	26° 47' 41.278" N	88° 11' 10.660" E
9	26° 47' 41.093" N	88° 11' 9.806" E
10	26° 47' 39.552" N	88° 11' 10.894" E
11	26° 47' 33.257" N	88° 11' 11.746" E
12	26° 47' 28.225" N	88° 11' 10.757" E
13	26° 47' 20.493" N	88° 11' 9.958" E
14	26° 47' 9.703" N	88° 11' 14.876" E
15	26° 47' 4.548" N	88° 11' 16.220" E
16	26° 47' 3.456" N	88° 11' 16.175" E
17	26° 46' 56.780" N	88° 11' 14.219" E
18	26° 46' 53.818" N	88° 11' 12.076" E
19	26° 46' 50.817" N	88° 11' 11.087" E
20	26° 46' 47.297" N	88° 11' 9.769" E
21	26° 46' 57.141" N	88° 11' 2.003" E
22	26° 47' 11.856" N	88° 10' 57.652" E
23	26° 47' 23.645" N	88° 10' 54.166" E
24	26° 47' 29.392" N	88° 10' 52.467" E
25	26° 47' 34.828" N	88° 10' 50.859" E
26	26° 47' 43.452" N	88° 10' 49.000" E
27	26° 48' 9.759" N	88° 10' 43.328" E
28	26° 48' 10.828" N	88° 10' 42.660" E
29	26° 48' 10.908" N	88° 10' 42.656" E
30	26° 48' 31.147" N	88° 10' 41.026" E
31	26° 48' 39.099" N	88° 10' 40.337" E
32	26° 48' 46.417" N	88° 10' 41.419" E
33	26° 48' 50.604" N	88° 10' 42.473" E
34	26° 48' 50.079" N	88° 10' 43.097" E
35	26° 48' 50.171" N	88° 10' 43.130" E
36	26° 48' 51.420" N	88° 10' 48.054" E
37	26° 48' 50.605" N	88° 10' 49.452" E
38	26° 48' 51.449" N	88° 10' 50.464" E



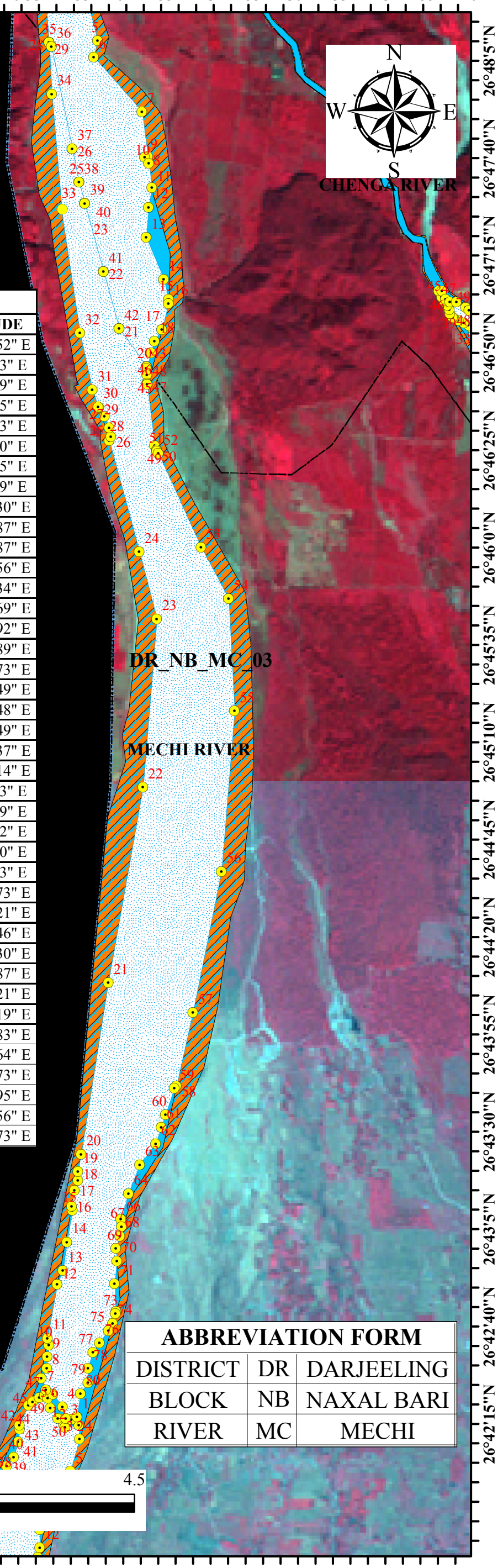
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	MR	MIRIK
RIVER	MC	MECHI

POTENTIAL BLOCK DR_NB_MC_03 OF MECHI RIVER

DR_NB_MC_03					
POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 42' 17.795" N	88° 10' 47.007" E	41	26° 47' 11.856" N	88° 10' 57.652" E
2	26° 42' 17.163" N	88° 10' 45.420" E	42	26° 46' 57.141" N	88° 11' 2.003" E
3	26° 42' 17.434" N	88° 10' 43.843" E	43	26° 46' 47.297" N	88° 11' 9.769" E
4	26° 42' 20.409" N	88° 10' 42.869" E	44	26° 46' 46.858" N	88° 11' 9.605" E
5	26° 42' 23.656" N	88° 10' 40.173" E	45	26° 46' 45.244" N	88° 11' 9.813" E
6	26° 42' 24.833" N	88° 10' 38.175" E	46	26° 46' 43.008" N	88° 11' 9.790" E
7	26° 42' 27.810" N	88° 10' 36.913" E	47	26° 46' 42.833" N	88° 11' 9.835" E
8	26° 42' 30.377" N	88° 10' 38.519" E	48	26° 46' 42.769" N	88° 11' 9.809" E
9	26° 42' 33.342" N	88° 10' 38.693" E	49	26° 46' 27.067" N	88° 11' 11.830" E
10	26° 42' 36.305" N	88° 10' 39.155" E	50	26° 46' 25.941" N	88° 11' 12.387" E
11	26° 42' 38.064" N	88° 10' 38.782" E	51	26° 46' 25.616" N	88° 11' 12.387" E
12	26° 42' 51.817" N	88° 10' 41.730" E	52	26° 46' 24.994" N	88° 11' 12.856" E
13	26° 42' 55.360" N	88° 10' 43.372" E	53	26° 46' 0.800" N	88° 11' 24.834" E
14	26° 43' 2.702" N	88° 10' 44.597" E	54	26° 45' 47.527" N	88° 11' 32.569" E
15	26° 43' 10.824" N	88° 10' 46.238" E	55	26° 45' 18.674" N	88° 11' 33.992" E
16	26° 43' 11.934" N	88° 10' 46.044" E	56	26° 44' 37.521" N	88° 11' 29.789" E
17	26° 43' 15.997" N	88° 10' 46.916" E	57	26° 44' 1.391" N	88° 11' 21.273" E
18	26° 43' 18.446" N	88° 10' 47.926" E	58	26° 43' 42.539" N	88° 11' 16.349" E
19	26° 43' 20.822" N	88° 10' 47.950" E	59	26° 43' 41.947" N	88° 11' 15.748" E
20	26° 43' 25.247" N	88° 10' 48.899" E	60	26° 43' 35.158" N	88° 11' 13.149" E
21	26° 44' 9.248" N	88° 10' 57.134" E	61	26° 43' 31.991" N	88° 11' 11.937" E
22	26° 44' 59.357" N	88° 11' 7.590" E	62	26° 43' 27.752" N	88° 11' 10.314" E
23	26° 45' 42.530" N	88° 11' 11.989" E	63	26° 43' 22.425" N	88° 11' 5.663" E
24	26° 45' 59.768" N	88° 11' 7.139" E	64	26° 43' 15.023" N	88° 11' 2.369" E
25	26° 46' 28.414" N	88° 10' 58.835" E	65	26° 43' 8.437" N	88° 11' 0.232" E
26	26° 46' 29.454" N	88° 10' 59.325" E	66	26° 43' 8.438" N	88° 11' 0.110" E
27	26° 46' 31.728" N	88° 10' 58.889" E	67	26° 43' 6.570" N	88° 11' 0.293" E
28	26° 46' 34.697" N	88° 10' 57.540" E	68	26° 43' 4.134" N	88° 10' 59.773" E
29	26° 46' 36.981" N	88° 10' 55.954" E	69	26° 43' 0.957" N	88° 10' 58.621" E
30	26° 46' 37.139" N	88° 10' 55.767" E	70	26° 42' 57.760" N	88° 10' 58.846" E
31	26° 46' 41.474" N	88° 10' 54.160" E	71	26° 42' 51.883" N	88° 10' 58.130" E
32	26° 46' 56.121" N	88° 10' 50.719" E	72	26° 42' 44.786" N	88° 10' 58.487" E
33	26° 47' 25.288" N	88° 10' 46.110" E	73	26° 42' 44.185" N	88° 10' 58.321" E
34	26° 47' 57.557" N	88° 10' 43.330" E	74	26° 42' 41.752" N	88° 10' 57.519" E
35	26° 48' 10.828" N	88° 10' 42.660" E	75	26° 42' 39.903" N	88° 10' 56.283" E
36	26° 48' 9.759" N	88° 10' 43.328" E	76	26° 42' 36.700" N	88° 10' 53.664" E
37	26° 47' 43.452" N	88° 10' 49.000" E	77	26° 42' 34.394" N	88° 10' 51.773" E
38	26° 47' 34.828" N	88° 10' 50.859" E	78	26° 42' 30.279" N	88° 10' 50.295" E
39	26° 47' 29.392" N	88° 10' 52.467" E	79	26° 42' 26.539" N	88° 10' 50.256" E
40	26° 47' 23.645" N	88° 10' 54.166" E	80	26° 42' 23.719" N	88° 10' 48.073" E



LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	NB	NAXAL BARI
RIVER	MC	MECHI

1.5 0.75 0 1.5 3 4.5

Kilometers

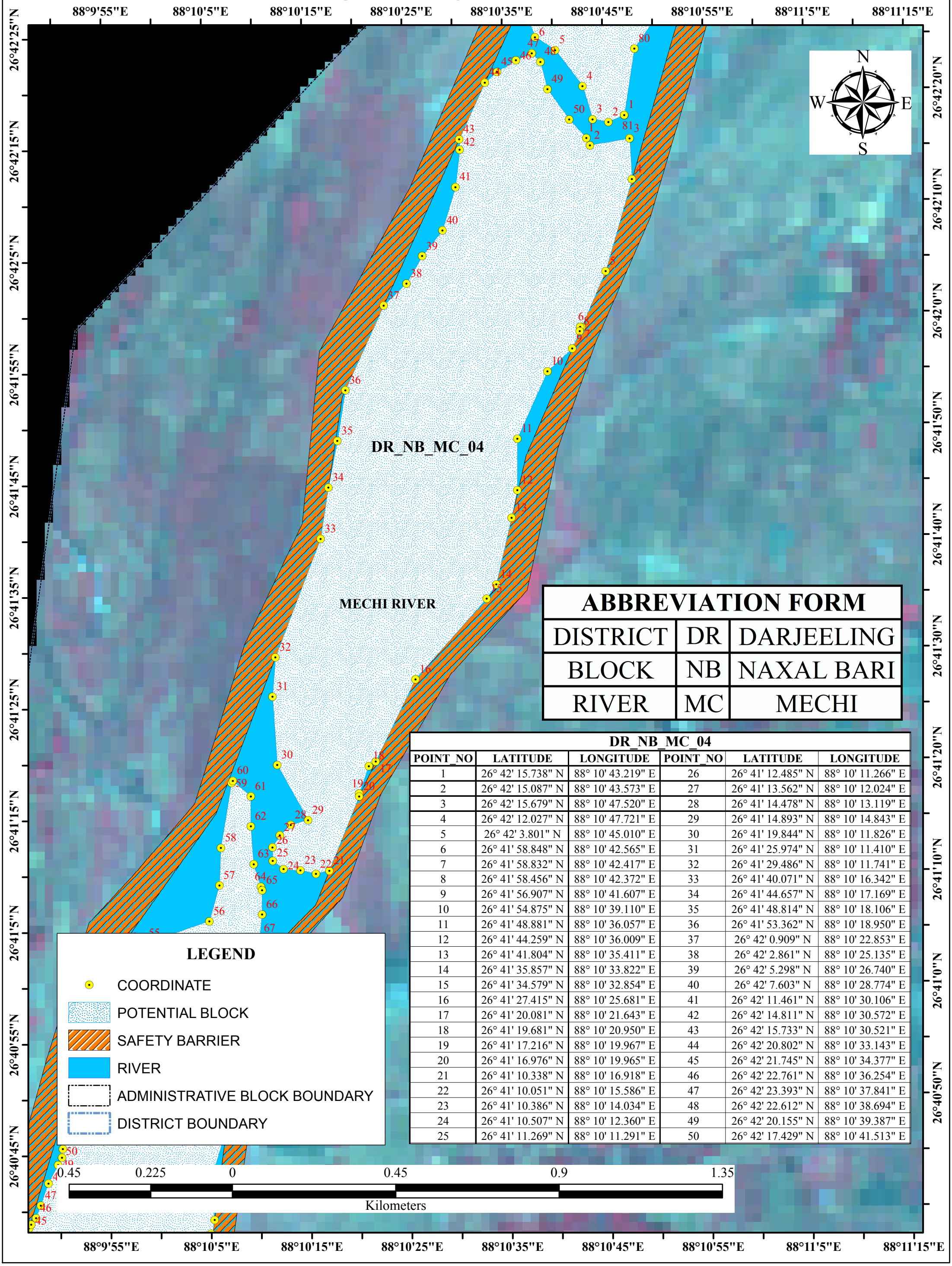
88°7'40"E 88°8'5"E 88°8'30"E 88°8'55"E 88°9'20"E 88°9'45"E 88°10'10"E 88°10'35"E 88°11'0"E 88°11'25"E 88°11'50"E 88°12'15"E 88°12'40"E

26°48'20"N 26°47'55"N 26°47'30"N 26°47'5"N 26°46'40"N 26°46'15"N 26°45'50"N 26°45'25"N 26°45'0"N 26°44'35"N 26°44'10"N 26°43'45"N 26°43'20"N 26°42'55"N 26°42'30"N 26°42'5"N

88°7'35"E 88°8'0"E 88°8'25"E 88°8'50"E 88°9'15"E 88°9'40"E 88°10'5"E 88°10'30"E 88°10'55"E 88°11'20"E 88°11'45"E 88°12'10"E 88°12'35"E

26°48'5"N 26°47'40"N 26°47'15"N 26°46'50"N 26°46'25"N 26°46'0"N 26°45'35"N 26°45'10"N 26°44'45"N 26°44'20"N 26°43'55"N 26°43'30"N 26°43'5"N 26°42'40"N 26°42'15"N

POTENTIAL BLOCK DR_NB_MC_04 OF MECHI RIVER



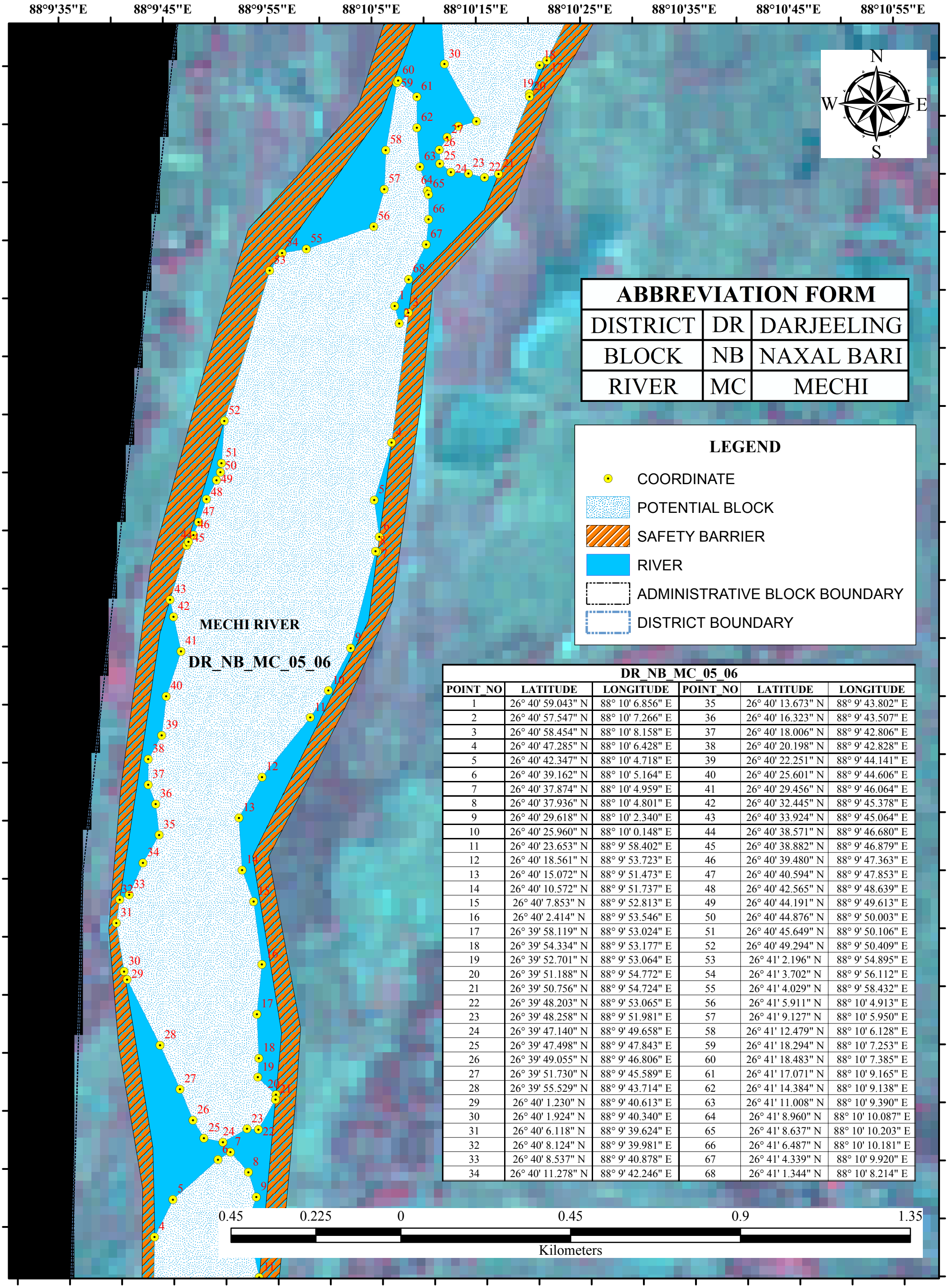
ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	NB	NAXAL BARI
RIVER	MC	MECHI

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_NB_MC_04					
POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 42' 15.738" N	88° 10' 43.219" E	26	26° 41' 12.485" N	88° 10' 11.266" E
2	26° 42' 15.087" N	88° 10' 43.573" E	27	26° 41' 13.562" N	88° 10' 12.024" E
3	26° 42' 15.679" N	88° 10' 47.520" E	28	26° 41' 14.478" N	88° 10' 13.119" E
4	26° 42' 12.027" N	88° 10' 47.721" E	29	26° 41' 14.893" N	88° 10' 14.843" E
5	26° 42' 3.801" N	88° 10' 45.010" E	30	26° 41' 19.844" N	88° 10' 11.826" E
6	26° 41' 58.848" N	88° 10' 42.565" E	31	26° 41' 25.974" N	88° 10' 11.410" E
7	26° 41' 58.832" N	88° 10' 42.417" E	32	26° 41' 29.486" N	88° 10' 11.741" E
8	26° 41' 58.456" N	88° 10' 42.372" E	33	26° 41' 40.071" N	88° 10' 16.342" E
9	26° 41' 56.907" N	88° 10' 41.607" E	34	26° 41' 44.657" N	88° 10' 17.169" E
10	26° 41' 54.875" N	88° 10' 39.110" E	35	26° 41' 48.814" N	88° 10' 18.106" E
11	26° 41' 48.881" N	88° 10' 36.057" E	36	26° 41' 53.362" N	88° 10' 18.950" E
12	26° 41' 44.259" N	88° 10' 36.009" E	37	26° 42' 0.909" N	88° 10' 22.853" E
13	26° 41' 41.804" N	88° 10' 35.411" E	38	26° 42' 2.861" N	88° 10' 25.135" E
14	26° 41' 35.857" N	88° 10' 33.822" E	39	26° 42' 5.298" N	88° 10' 26.740" E
15	26° 41' 34.579" N	88° 10' 32.854" E	40	26° 42' 7.603" N	88° 10' 28.774" E
16	26° 41' 27.415" N	88° 10' 25.681" E	41	26° 42' 11.461" N	88° 10' 30.106" E
17	26° 41' 20.081" N	88° 10' 21.643" E	42	26° 42' 14.811" N	88° 10' 30.572" E
18	26° 41' 19.681" N	88° 10' 20.950" E	43	26° 42' 15.733" N	88° 10' 30.521" E
19	26° 41' 17.216" N	88° 10' 19.967" E	44	26° 42' 20.802" N	88° 10' 33.143" E
20	26° 41' 16.976" N	88° 10' 19.965" E	45	26° 42' 21.745" N	88° 10' 34.377" E
21	26° 41' 10.338" N	88° 10' 16.918" E	46	26° 42' 22.761" N	88° 10' 36.254" E
22	26° 41' 10.051" N	88° 10' 15.586" E	47	26° 42' 23.393" N	88° 10' 37.841" E
23	26° 41' 10.386" N	88° 10' 14.034" E	48	26° 42' 22.612" N	88° 10' 38.694" E
24	26° 41' 10.507" N	88° 10' 12.360" E	49	26° 42' 20.155" N	88° 10' 39.387" E
25	26° 41' 11.269" N	88° 10' 11.291" E	50	26° 42' 17.429" N	88° 10' 41.513" E

POTENTIAL BLOCK DR_NB_MC_05_06 OF MECHI RIVER



ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	NB	NAXAL BARI
RIVER	MC	MECHI

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_NB_MC_05_06

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 40' 59.043" N	88° 10' 6.856" E	35	26° 40' 13.673" N	88° 9' 43.802" E
2	26° 40' 57.547" N	88° 10' 7.266" E	36	26° 40' 16.323" N	88° 9' 43.507" E
3	26° 40' 58.454" N	88° 10' 8.158" E	37	26° 40' 18.006" N	88° 9' 42.806" E
4	26° 40' 47.285" N	88° 10' 6.428" E	38	26° 40' 20.198" N	88° 9' 42.828" E
5	26° 40' 42.347" N	88° 10' 4.718" E	39	26° 40' 22.251" N	88° 9' 44.141" E
6	26° 40' 39.162" N	88° 10' 5.164" E	40	26° 40' 25.601" N	88° 9' 44.606" E
7	26° 40' 37.874" N	88° 10' 4.959" E	41	26° 40' 29.456" N	88° 9' 46.064" E
8	26° 40' 37.936" N	88° 10' 4.801" E	42	26° 40' 32.445" N	88° 9' 45.378" E
9	26° 40' 29.618" N	88° 10' 2.340" E	43	26° 40' 33.924" N	88° 9' 45.064" E
10	26° 40' 25.960" N	88° 10' 0.148" E	44	26° 40' 38.571" N	88° 9' 46.680" E
11	26° 40' 23.653" N	88° 9' 58.402" E	45	26° 40' 38.882" N	88° 9' 46.879" E
12	26° 40' 18.561" N	88° 9' 53.723" E	46	26° 40' 39.480" N	88° 9' 47.363" E
13	26° 40' 15.072" N	88° 9' 51.473" E	47	26° 40' 40.594" N	88° 9' 47.853" E
14	26° 40' 10.572" N	88° 9' 51.737" E	48	26° 40' 42.565" N	88° 9' 48.639" E
15	26° 40' 7.853" N	88° 9' 52.813" E	49	26° 40' 44.191" N	88° 9' 49.613" E
16	26° 40' 2.414" N	88° 9' 53.546" E	50	26° 40' 44.876" N	88° 9' 50.003" E
17	26° 39' 58.119" N	88° 9' 53.024" E	51	26° 40' 45.649" N	88° 9' 50.106" E
18	26° 39' 54.334" N	88° 9' 53.177" E	52	26° 40' 49.294" N	88° 9' 50.409" E
19	26° 39' 52.701" N	88° 9' 53.064" E	53	26° 41' 2.196" N	88° 9' 54.895" E
20	26° 39' 51.188" N	88° 9' 54.772" E	54	26° 41' 3.702" N	88° 9' 56.112" E
21	26° 39' 50.756" N	88° 9' 54.724" E	55	26° 41' 4.029" N	88° 9' 58.432" E
22	26° 39' 48.203" N	88° 9' 53.065" E	56	26° 41' 5.911" N	88° 10' 4.913" E
23	26° 39' 48.258" N	88° 9' 51.981" E	57	26° 41' 9.127" N	88° 10' 5.950" E
24	26° 39' 47.140" N	88° 9' 49.658" E	58	26° 41' 12.479" N	88° 10' 6.128" E
25	26° 39' 47.498" N	88° 9' 47.843" E	59	26° 41' 18.294" N	88° 10' 7.253" E
26	26° 39' 49.055" N	88° 9' 46.806" E	60	26° 41' 18.483" N	88° 10' 7.385" E
27	26° 39' 51.730" N	88° 9' 45.589" E	61	26° 41' 17.071" N	88° 10' 9.165" E
28	26° 39' 55.529" N	88° 9' 43.714" E	62	26° 41' 14.384" N	88° 10' 9.138" E
29	26° 40' 1.230" N	88° 9' 40.613" E	63	26° 41' 11.008" N	88° 10' 9.390" E
30	26° 40' 1.924" N	88° 9' 40.340" E	64	26° 41' 8.960" N	88° 10' 10.087" E
31	26° 40' 6.118" N	88° 9' 39.624" E	65	26° 41' 8.637" N	88° 10' 10.203" E
32	26° 40' 8.124" N	88° 9' 39.981" E	66	26° 41' 6.487" N	88° 10' 10.181" E
33	26° 40' 8.537" N	88° 9' 40.878" E	67	26° 41' 4.339" N	88° 10' 9.920" E
34	26° 40' 11.278" N	88° 9' 42.246" E	68	26° 41' 1.344" N	88° 10' 8.214" E

POTENTIAL BLOCK DR_NB_MC_07 OF MECHI RIVER

88°9'40"E 88°9'45"E 88°9'50"E 88°9'55"E 88°10'0"E 88°10'5"E

26°39'45"N 26°39'40"N 26°39'35"N 26°39'30"N 26°39'25"N 26°39'20"N 26°39'15"N

N W E S

DR_NB_MC_07

MECHI RIVER

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	NB	NAXAL BARI
RIVER	MC	MECHI

DR_NB_MC_07		
POINT_NO	LATITUDE	LONGITUDE
1	26° 39' 28.418" N	88° 9' 47.318" E
2	26° 39' 27.418" N	88° 9' 43.384" E
3	26° 39' 30.769" N	88° 9' 42.827" E
4	26° 39' 39.023" N	88° 9' 43.009" E
5	26° 39' 42.240" N	88° 9' 44.826" E
6	26° 39' 45.644" N	88° 9' 49.167" E
7	26° 39' 46.279" N	88° 9' 50.370" E
8	26° 39' 44.545" N	88° 9' 52.075" E
9	26° 39' 42.389" N	88° 9' 52.819" E
10	26° 39' 40.161" N	88° 9' 51.935" E
11	26° 39' 35.471" N	88° 9' 53.016" E
12	26° 39' 34.621" N	88° 9' 52.921" E
13	26° 39' 31.653" N	88° 9' 51.274" E

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

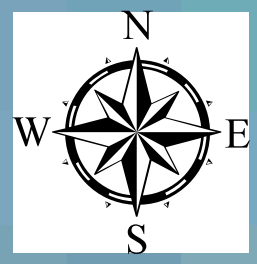
0.15 0.075 0 0.15 0.3 0.45

Kilometers

POTENTIAL BLOCK DR_NB_MC_08 OF MECHI RIVER

88°9'45"E 88°9'50"E 88°9'55"E

26°39'25"N 26°39'20"N 26°39'15"N



DR_NB_MC_08

MECHI RIVER

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	NB	NAXAL BARI
RIVER	MC	MECHI

DR_NB_MC_08		
POINT_NO	LATITUDE	LONGITUDE
1	26° 39' 18.634" N	88° 9' 50.293" E
2	26° 39' 18.376" N	88° 9' 50.392" E
3	26° 39' 19.042" N	88° 9' 49.203" E
4	26° 39' 23.096" N	88° 9' 47.617" E
5	26° 39' 24.565" N	88° 9' 46.771" E
6	26° 39' 26.025" N	88° 9' 46.977" E
7	26° 39' 27.057" N	88° 9' 46.988" E
8	26° 39' 27.045" N	88° 9' 48.519" E
9	26° 39' 25.752" N	88° 9' 48.889" E
10	26° 39' 24.288" N	88° 9' 49.065" E
11	26° 39' 22.825" N	88° 9' 49.242" E
12	26° 39' 21.186" N	88° 9' 49.895" E
13	26° 39' 19.904" N	88° 9' 50.592" E

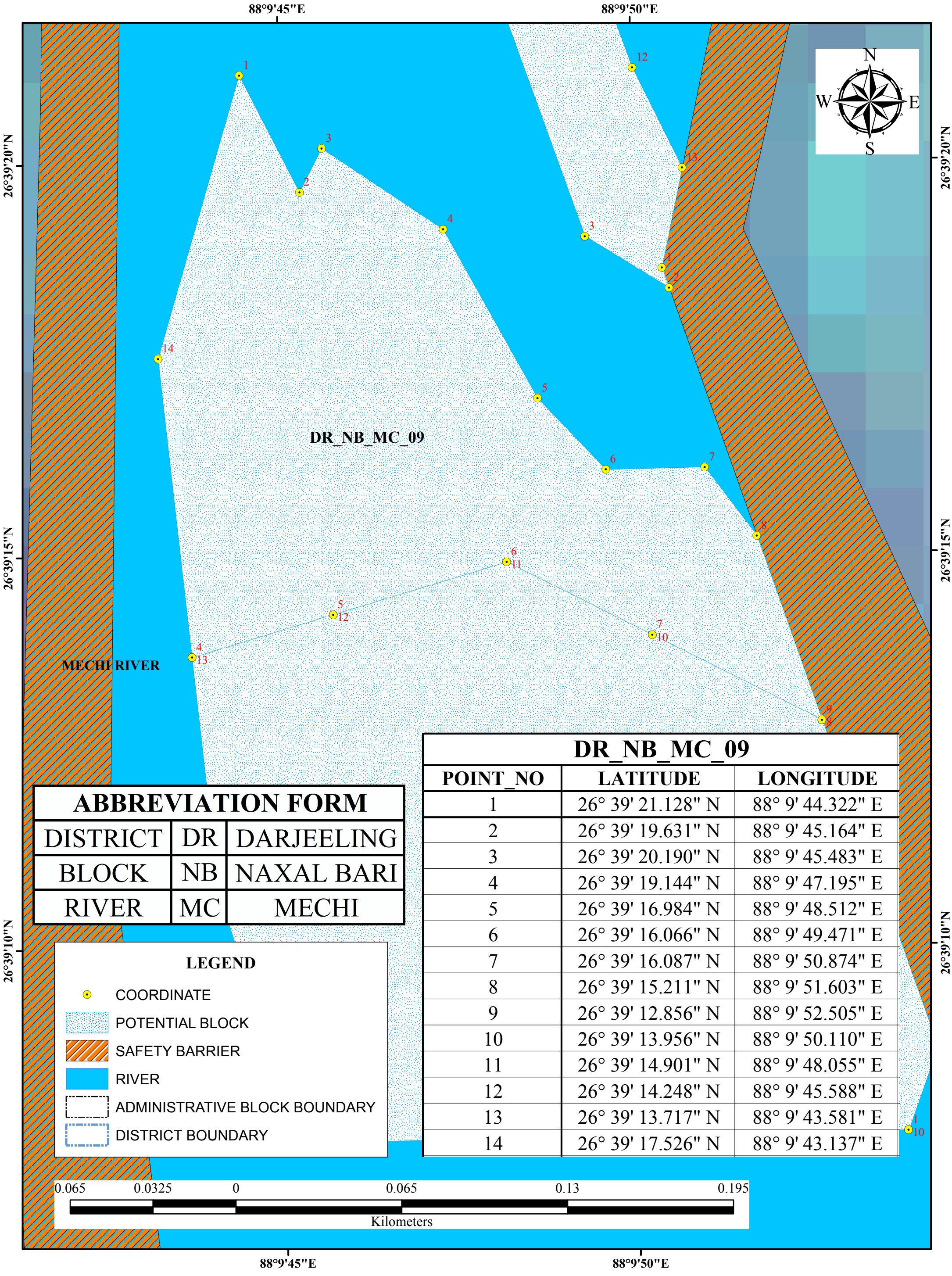
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.075 0.0375 0 0.075 0.15 0.225

Kilometers

POTENTIAL BLOCK DR_NB_MC_09 OF MECHI RIVER



ABBREVIATION FORM

DISTRICT	DR	DARJEELING
BLOCK	NB	NAXAL BARI
RIVER	MC	MECHI

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.065 0.0325 0 0.065 0.13 0.195

Kilometers

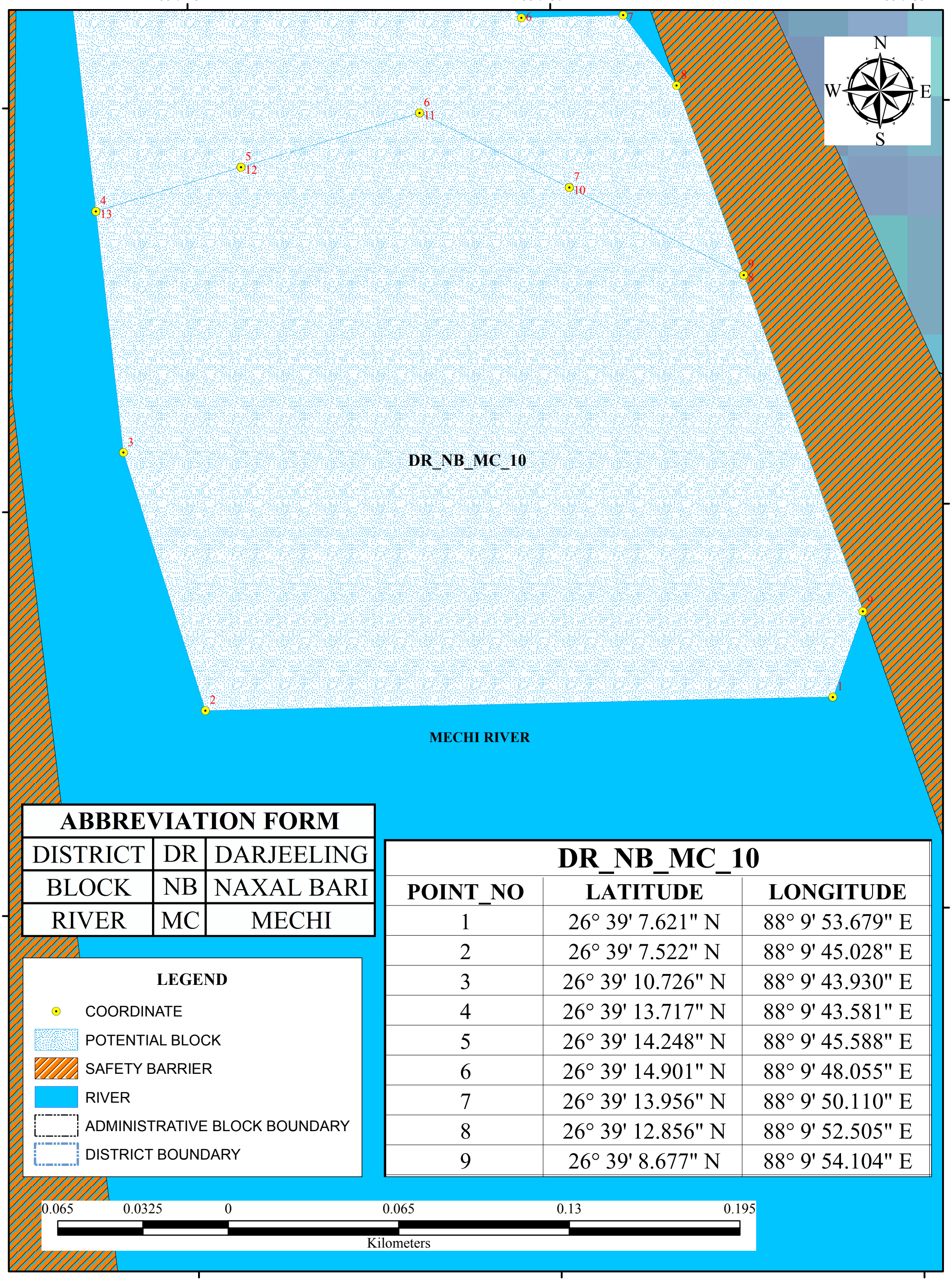
DR_NB_MC_09

POINT_NO	LATITUDE	LONGITUDE
1	26° 39' 21.128" N	88° 9' 44.322" E
2	26° 39' 19.631" N	88° 9' 45.164" E
3	26° 39' 20.190" N	88° 9' 45.483" E
4	26° 39' 19.144" N	88° 9' 47.195" E
5	26° 39' 16.984" N	88° 9' 48.512" E
6	26° 39' 16.066" N	88° 9' 49.471" E
7	26° 39' 16.087" N	88° 9' 50.874" E
8	26° 39' 15.211" N	88° 9' 51.603" E
9	26° 39' 12.856" N	88° 9' 52.505" E
10	26° 39' 13.956" N	88° 9' 50.110" E
11	26° 39' 14.901" N	88° 9' 48.055" E
12	26° 39' 14.248" N	88° 9' 45.588" E
13	26° 39' 13.717" N	88° 9' 43.581" E
14	26° 39' 17.526" N	88° 9' 43.137" E

POTENTIAL BLOCK DR_NB_MC_10 OF MECHI RIVER

88°9'45"E 88°9'50"E 88°9'55"E

26°39'15"N 26°39'10"N 26°39'5"N



ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	NB	NAXAL BARI
RIVER	MC	MECHI

LEGEND

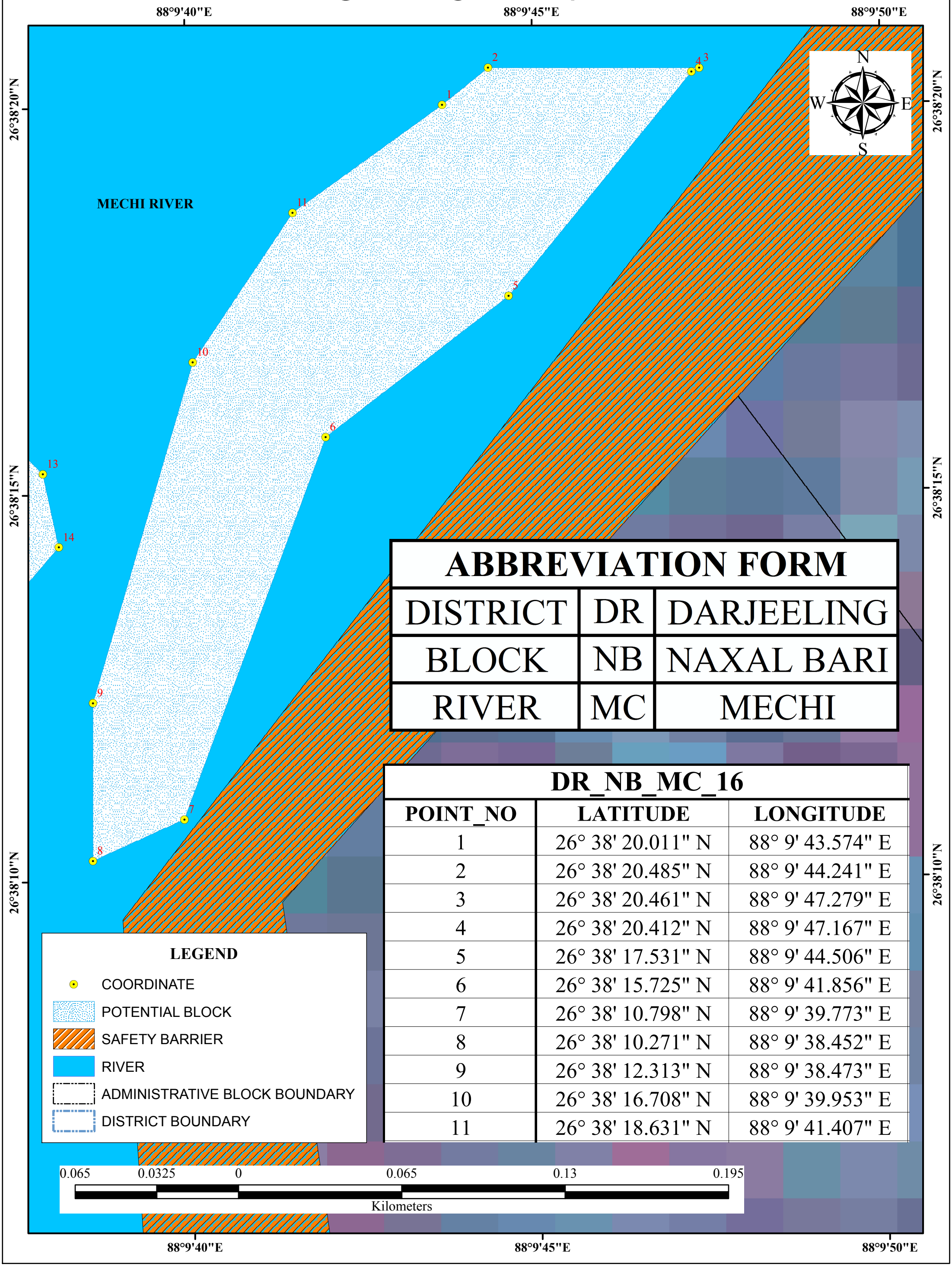
- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_NB_MC_10		
POINT_NO	LATITUDE	LONGITUDE
1	26° 39' 7.621" N	88° 9' 53.679" E
2	26° 39' 7.522" N	88° 9' 45.028" E
3	26° 39' 10.726" N	88° 9' 43.930" E
4	26° 39' 13.717" N	88° 9' 43.581" E
5	26° 39' 14.248" N	88° 9' 45.588" E
6	26° 39' 14.901" N	88° 9' 48.055" E
7	26° 39' 13.956" N	88° 9' 50.110" E
8	26° 39' 12.856" N	88° 9' 52.505" E
9	26° 39' 8.677" N	88° 9' 54.104" E

0.065 0.0325 0 0.065 0.13 0.195

Kilometers

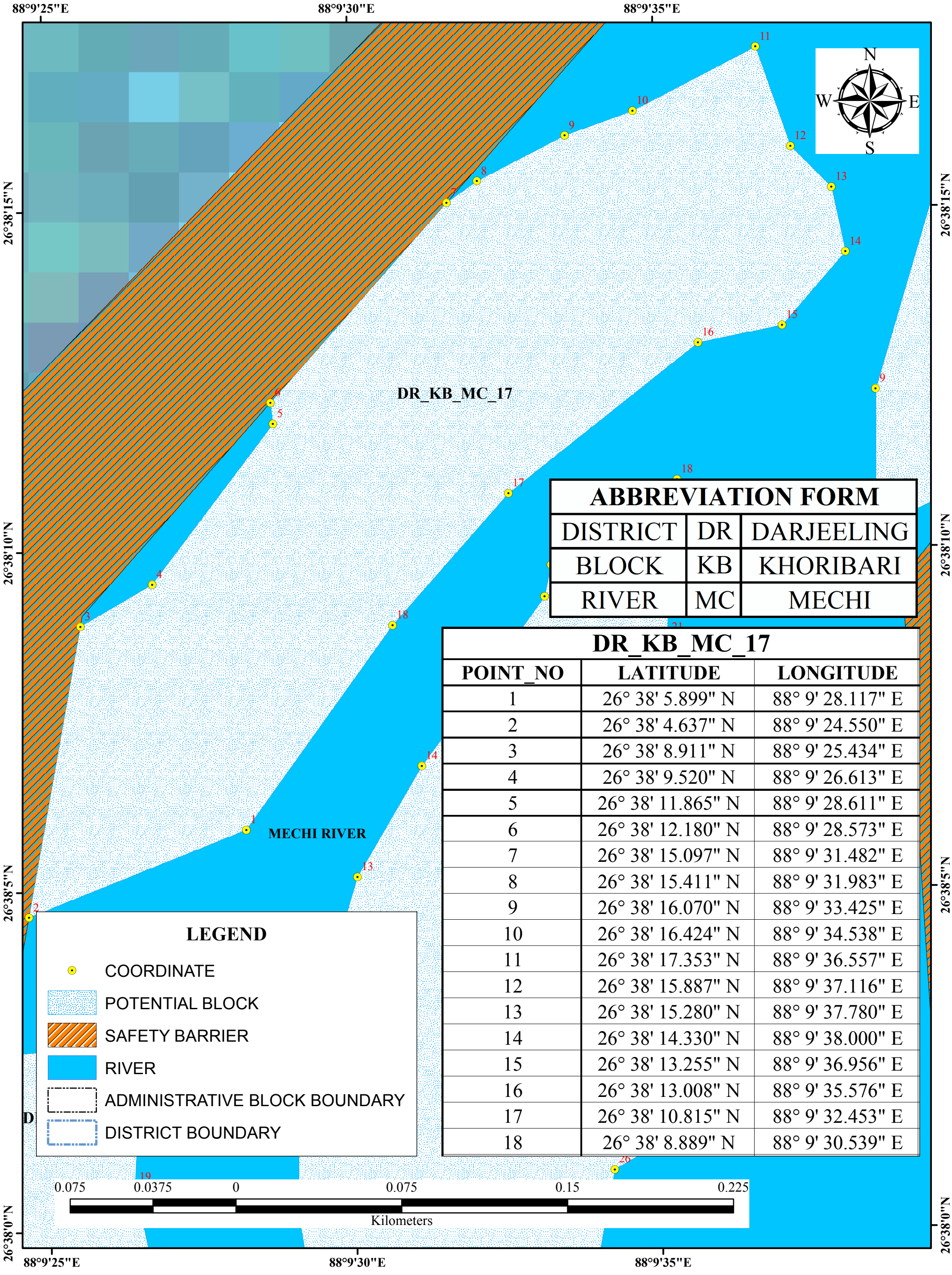
POTENTIAL BLOCK DR_NB_MC_16 OF MECHI RIVER



ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	NB	NAXAL BARI
RIVER	MC	MECHI

DR_NB_MC_16		
POINT_NO	LATITUDE	LONGITUDE
1	26° 38' 20.011" N	88° 9' 43.574" E
2	26° 38' 20.485" N	88° 9' 44.241" E
3	26° 38' 20.461" N	88° 9' 47.279" E
4	26° 38' 20.412" N	88° 9' 47.167" E
5	26° 38' 17.531" N	88° 9' 44.506" E
6	26° 38' 15.725" N	88° 9' 41.856" E
7	26° 38' 10.798" N	88° 9' 39.773" E
8	26° 38' 10.271" N	88° 9' 38.452" E
9	26° 38' 12.313" N	88° 9' 38.473" E
10	26° 38' 16.708" N	88° 9' 39.953" E
11	26° 38' 18.631" N	88° 9' 41.407" E

POTENTIAL BLOCK DR_KB_MC_17 OF MECHI RIVER



ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KB	KHORIBARI
RIVER	MC	MECHI

DR_KB_MC_17		
POINT_NO	LATITUDE	LONGITUDE
1	26° 38' 5.899" N	88° 9' 28.117" E
2	26° 38' 4.637" N	88° 9' 24.550" E
3	26° 38' 8.911" N	88° 9' 25.434" E
4	26° 38' 9.520" N	88° 9' 26.613" E
5	26° 38' 11.865" N	88° 9' 28.611" E
6	26° 38' 12.180" N	88° 9' 28.573" E
7	26° 38' 15.097" N	88° 9' 31.482" E
8	26° 38' 15.411" N	88° 9' 31.983" E
9	26° 38' 16.070" N	88° 9' 33.425" E
10	26° 38' 16.424" N	88° 9' 34.538" E
11	26° 38' 17.353" N	88° 9' 36.557" E
12	26° 38' 15.887" N	88° 9' 37.116" E
13	26° 38' 15.280" N	88° 9' 37.780" E
14	26° 38' 14.330" N	88° 9' 38.000" E
15	26° 38' 13.255" N	88° 9' 36.956" E
16	26° 38' 13.008" N	88° 9' 35.576" E
17	26° 38' 10.815" N	88° 9' 32.453" E
18	26° 38' 8.889" N	88° 9' 30.539" E

POTENTIAL BLOCK DR_KB_MC_18 OF MECHI RIVER

88°9'30"E 88°9'35"E 88°9'40"E 88°9'45"E 88°9'50"E 88°9'55"E

26°38'10"N 26°38'5"N 26°38'0"N 26°37'55"N 26°37'50"N 26°37'45"N 26°37'40"N

DR_KB_MC_18

MECHI RIVER

N W E S

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KB	KHORIBARI
RIVER	MC	MECHI

DR_KB_MC_18		
POINT_NO	LATITUDE	LONGITUDE
1	26° 37' 58.308" N	88° 9' 34.077" E
2	26° 37' 55.224" N	88° 9' 33.616" E
3	26° 37' 48.229" N	88° 9' 33.665" E
4	26° 37' 47.176" N	88° 9' 33.592" E
5	26° 37' 45.648" N	88° 9' 31.108" E
6	26° 37' 50.758" N	88° 9' 30.816" E
7	26° 37' 54.112" N	88° 9' 30.792" E
8	26° 37' 56.546" N	88° 9' 29.668" E
9	26° 37' 57.456" N	88° 9' 30.137" E
10	26° 37' 58.237" N	88° 9' 29.284" E
11	26° 38' 0.217" N	88° 9' 28.921" E
12	26° 38' 2.281" N	88° 9' 28.942" E
13	26° 38' 5.197" N	88° 9' 29.928" E
14	26° 38' 6.822" N	88° 9' 30.997" E
15	26° 38' 8.103" N	88° 9' 32.062" E
16	26° 38' 9.299" N	88° 9' 33.031" E
17	26° 38' 9.762" N	88° 9' 33.139" E
18	26° 38' 11.000" N	88° 9' 35.213" E
19	26° 38' 10.313" N	88° 9' 35.242" E
20	26° 38' 9.455" N	88° 9' 35.042" E
21	26° 38' 8.681" N	88° 9' 35.034" E
22	26° 38' 7.636" N	88° 9' 36.555" E
23	26° 38' 6.000" N	88° 9' 36.825" E
24	26° 38' 3.857" N	88° 9' 36.038" E
25	26° 38' 1.456" N	88° 9' 35.248" E
26	26° 38' 0.863" N	88° 9' 34.094" E
27	26° 37' 58.975" N	88° 9' 33.692" E

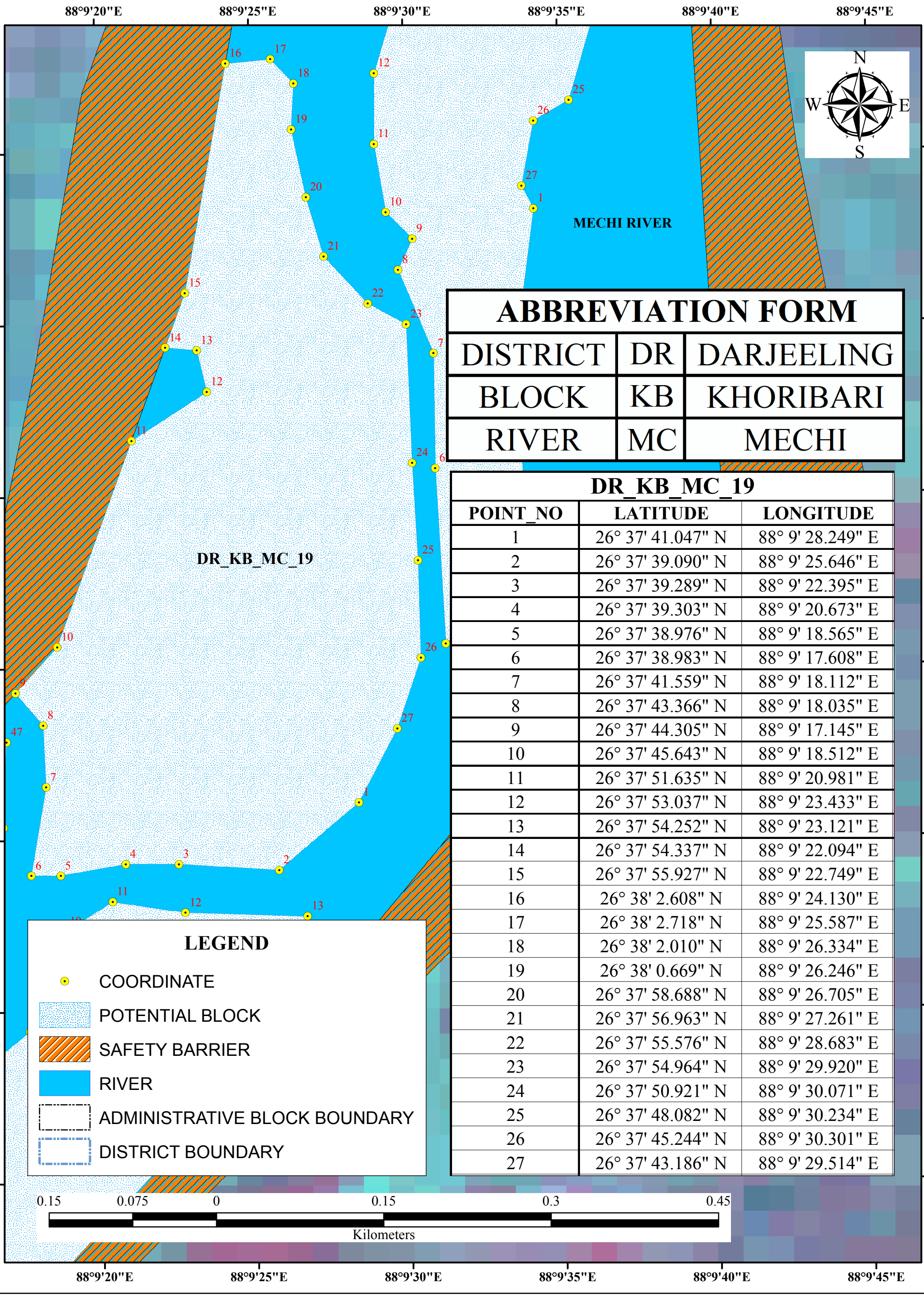
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.15 0.075 0 0.15 0.3 0.45

Kilometers

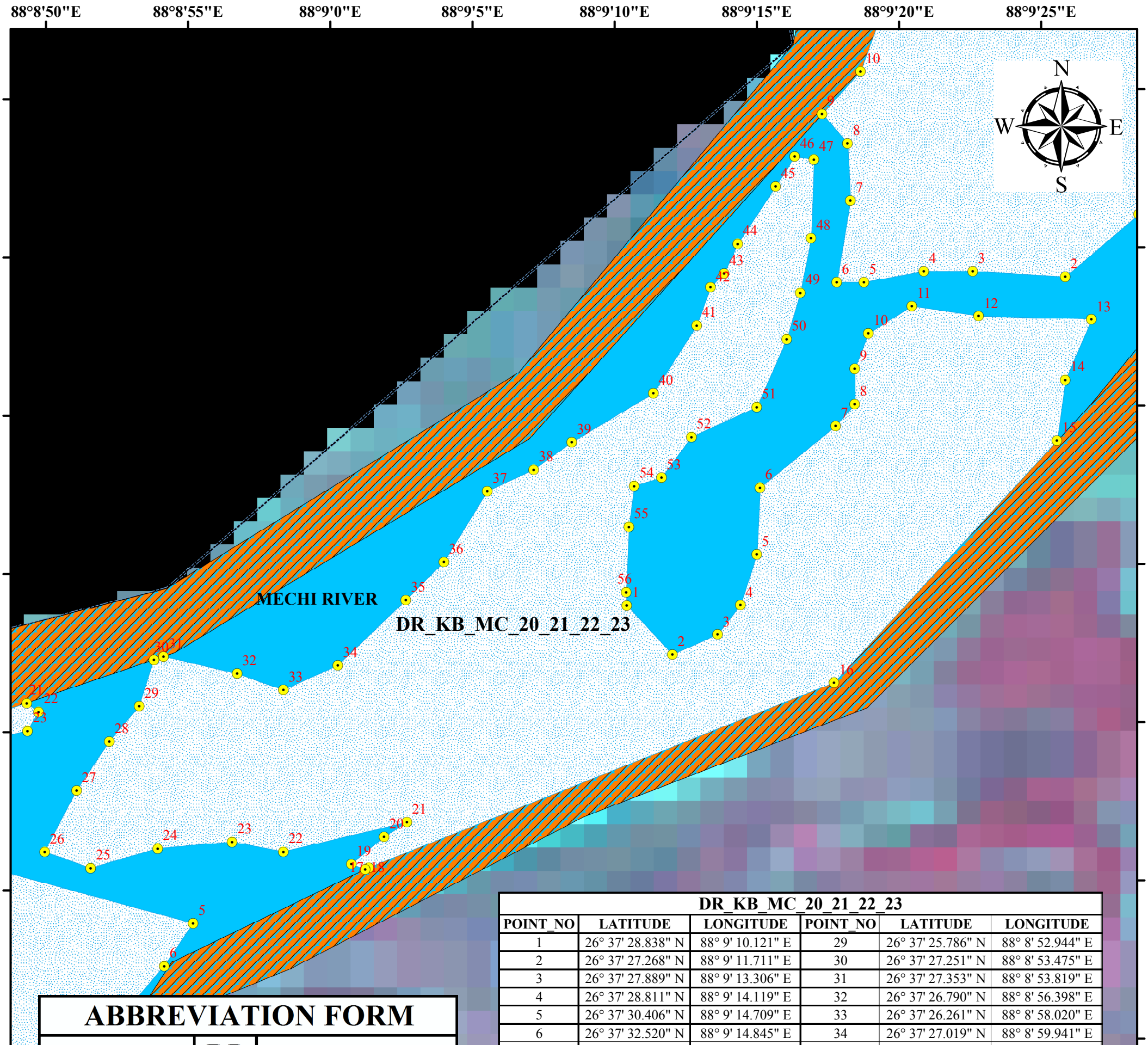
POTENTIAL BLOCK DR_KB_MC_19 OF MECHI RIVER



ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KB	KHORIBARI
RIVER	MC	MECHI

DR_KB_MC_19		
POINT_NO	LATITUDE	LONGITUDE
1	26° 37' 41.047" N	88° 9' 28.249" E
2	26° 37' 39.090" N	88° 9' 25.646" E
3	26° 37' 39.289" N	88° 9' 22.395" E
4	26° 37' 39.303" N	88° 9' 20.673" E
5	26° 37' 38.976" N	88° 9' 18.565" E
6	26° 37' 38.983" N	88° 9' 17.608" E
7	26° 37' 41.559" N	88° 9' 18.112" E
8	26° 37' 43.366" N	88° 9' 18.035" E
9	26° 37' 44.305" N	88° 9' 17.145" E
10	26° 37' 45.643" N	88° 9' 18.512" E
11	26° 37' 51.635" N	88° 9' 20.981" E
12	26° 37' 53.037" N	88° 9' 23.433" E
13	26° 37' 54.252" N	88° 9' 23.121" E
14	26° 37' 54.337" N	88° 9' 22.094" E
15	26° 37' 55.927" N	88° 9' 22.749" E
16	26° 38' 2.608" N	88° 9' 24.130" E
17	26° 38' 2.718" N	88° 9' 25.587" E
18	26° 38' 2.010" N	88° 9' 26.334" E
19	26° 38' 0.669" N	88° 9' 26.246" E
20	26° 37' 58.688" N	88° 9' 26.705" E
21	26° 37' 56.963" N	88° 9' 27.261" E
22	26° 37' 55.576" N	88° 9' 28.683" E
23	26° 37' 54.964" N	88° 9' 29.920" E
24	26° 37' 50.921" N	88° 9' 30.071" E
25	26° 37' 48.082" N	88° 9' 30.234" E
26	26° 37' 45.244" N	88° 9' 30.301" E
27	26° 37' 43.186" N	88° 9' 29.514" E

POTENTIAL BLOCK DR_KB_MC_20_21_22_23 OF MECHI RIVER



ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KB	KHORIBARI
RIVER	MC	MECHI

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.2 0.1 0 0.2 0.4 0.6

Kilometers

DR_KB_MC_20_21_22_23					
POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 37' 28.838" N	88° 9' 10.121" E	29	26° 37' 25.786" N	88° 8' 52.944" E
2	26° 37' 27.268" N	88° 9' 11.711" E	30	26° 37' 27.251" N	88° 8' 53.475" E
3	26° 37' 27.889" N	88° 9' 13.306" E	31	26° 37' 27.353" N	88° 8' 53.819" E
4	26° 37' 28.811" N	88° 9' 14.119" E	32	26° 37' 26.790" N	88° 8' 56.398" E
5	26° 37' 30.406" N	88° 9' 14.709" E	33	26° 37' 26.261" N	88° 8' 58.020" E
6	26° 37' 32.520" N	88° 9' 14.845" E	34	26° 37' 27.019" N	88° 8' 59.941" E
7	26° 37' 34.444" N	88° 9' 17.524" E	35	26° 37' 29.063" N	88° 9' 2.353" E
8	26° 37' 35.126" N	88° 9' 18.201" E	36	26° 37' 30.256" N	88° 9' 3.705" E
9	26° 37' 36.244" N	88° 9' 18.212" E	37	26° 37' 32.479" N	88° 9' 5.258" E
10	26° 37' 37.358" N	88° 9' 18.702" E	38	26° 37' 33.154" N	88° 9' 6.891" E
11	26° 37' 38.205" N	88° 9' 20.241" E	39	26° 37' 34.003" N	88° 9' 8.239" E
12	26° 37' 37.875" N	88° 9' 22.591" E	40	26° 37' 35.528" N	88° 9' 11.125" E
13	26° 37' 37.739" N	88° 9' 26.551" E	41	26° 37' 37.665" N	88° 9' 12.677" E
14	26° 37' 35.838" N	88° 9' 25.613" E	42	26° 37' 38.865" N	88° 9' 13.167" E
15	26° 37' 33.918" N	88° 9' 25.302" E	43	26° 37' 39.291" N	88° 9' 13.650" E
16	26° 37' 26.340" N	88° 9' 17.390" E	44	26° 37' 40.233" N	88° 9' 14.138" E
17	26° 37' 20.626" N	88° 9' 0.972" E	45	26° 37' 42.027" N	88° 9' 15.495" E
18	26° 37' 20.570" N	88° 9' 0.841" E	46	26° 37' 42.968" N	88° 9' 16.175" E
19	26° 37' 20.738" N	88° 9' 0.356" E	47	26° 37' 42.876" N	88° 9' 16.843" E
20	26° 37' 21.589" N	88° 9' 1.513" E	48	26° 37' 40.384" N	88° 9' 16.723" E
21	26° 37' 22.047" N	88° 9' 2.322" E	49	26° 37' 38.667" N	88° 9' 16.323" E
22	26° 37' 21.151" N	88° 8' 57.969" E	50	26° 37' 37.209" N	88° 9' 15.830" E
23	26° 37' 21.476" N	88° 8' 56.172" E	51	26° 37' 35.068" N	88° 9' 14.756" E
24	26° 37' 21.290" N	88° 8' 53.550" E	52	26° 37' 34.141" N	88° 9' 12.450" E
25	26° 37' 20.690" N	88° 8' 51.190" E	53	26° 37' 32.860" N	88° 9' 11.385" E
26	26° 37' 21.216" N	88° 8' 49.577" E	54	26° 37' 32.610" N	88° 9' 10.426" E
27	26° 37' 23.138" N	88° 8' 50.717" E	55	26° 37' 31.321" N	88° 9' 10.221" E
28	26° 37' 24.676" N	88° 8' 51.881" E	56	26° 37' 29.258" N	88° 9' 10.105" E

POTENTIAL BLOCK DR_KB_MC_24 OF MECHI RIVER

88°8'35"E 88°8'40"E 88°8'45"E 88°8'50"E 88°8'55"E

26°37'25"N 26°37'20"N 26°37'15"N 26°37'10"N 26°37'5"N 26°37'0"N

MECHI RIVER

DR_KB_MC_24

N W E S

ABBREVIATION FORM

DISTRICT	DR	DARJEELING
BLOCK	KB	KHORIBARI
RIVER	MC	MECHI

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

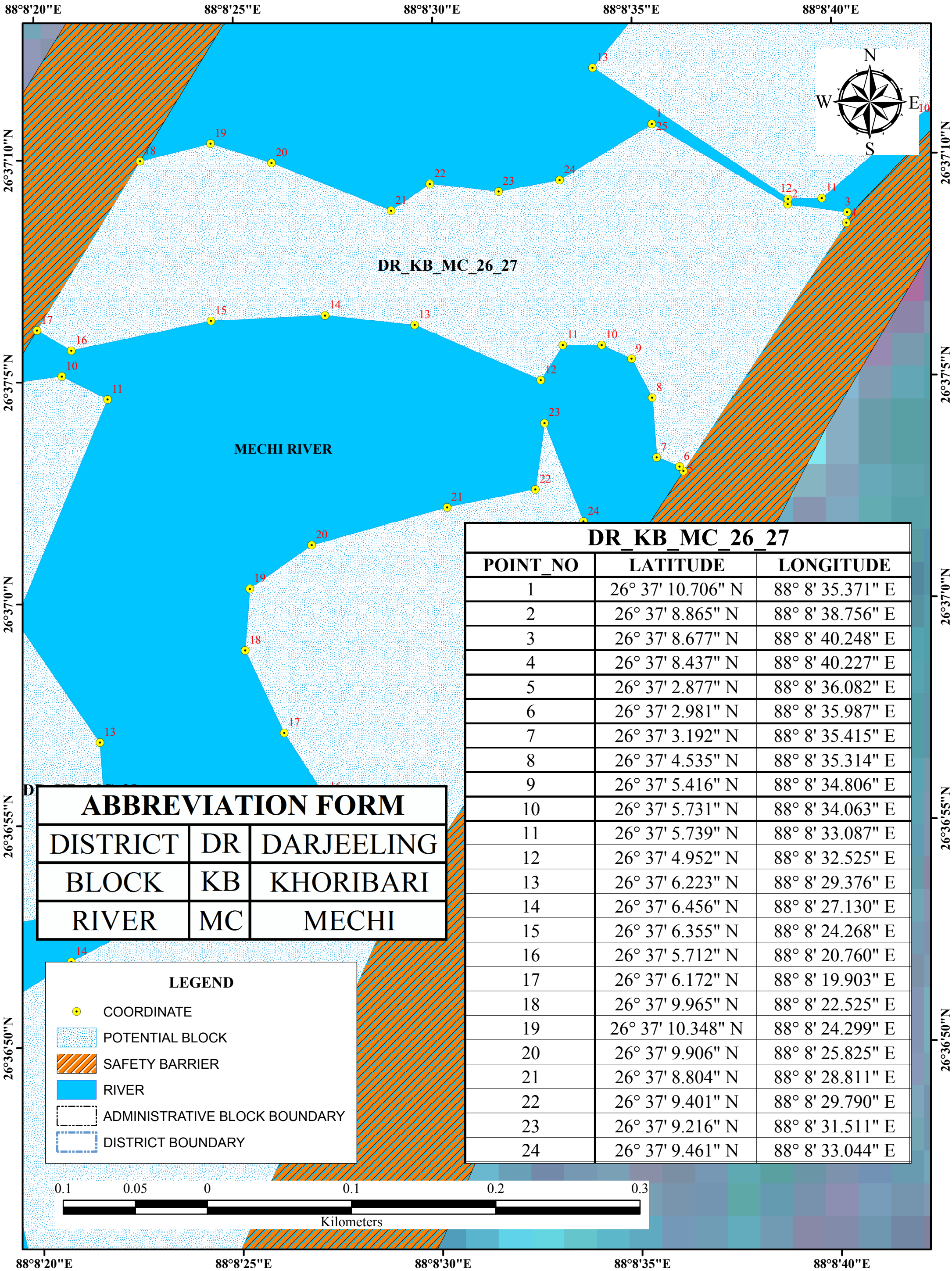
0.1 0.05 0 0.1 0.2 0.3

Kilometers

DR_KB_MC_24

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 37' 22.169" N	88° 8' 44.013" E	15	26° 37' 16.882" N	88° 8' 36.887" E
2	26° 37' 19.668" N	88° 8' 44.160" E	16	26° 37' 18.214" N	88° 8' 38.106" E
3	26° 37' 20.707" N	88° 8' 46.655" E	17	26° 37' 19.031" N	88° 8' 39.147" E
4	26° 37' 20.658" N	88° 8' 47.875" E	18	26° 37' 21.968" N	88° 8' 39.693" E
5	26° 37' 18.913" N	88° 8' 54.774" E	19	26° 37' 23.451" N	88° 8' 41.258" E
6	26° 37' 17.575" N	88° 8' 53.748" E	20	26° 37' 23.665" N	88° 8' 41.391" E
7	26° 37' 14.973" N	88° 8' 51.228" E	21	26° 37' 25.922" N	88° 8' 48.996" E
8	26° 37' 13.069" N	88° 8' 45.875" E	22	26° 37' 25.642" N	88° 8' 49.403" E
9	26° 37' 12.472" N	88° 8' 44.658" E	23	26° 37' 25.043" N	88° 8' 49.014" E
10	26° 37' 10.771" N	88° 8' 41.945" E	24	26° 37' 24.795" N	88° 8' 47.863" E
11	26° 37' 9.000" N	88° 8' 39.614" E	25	26° 37' 24.720" N	88° 8' 46.427" E
12	26° 37' 8.993" N	88° 8' 38.767" E	26	26° 37' 24.553" N	88° 8' 45.852" E
13	26° 37' 11.989" N	88° 8' 33.894" E	27	26° 37' 23.529" N	88° 8' 44.885" E
14	26° 37' 15.027" N	88° 8' 36.696" E	28	26° 37' 22.757" N	88° 8' 44.590" E

POTENTIAL BLOCK DR_KB_MC_26_27 OF MECHI RIVER



DR_KB_MC_26_27		
POINT_NO	LATITUDE	LONGITUDE
1	26° 37' 10.706" N	88° 8' 35.371" E
2	26° 37' 8.865" N	88° 8' 38.756" E
3	26° 37' 8.677" N	88° 8' 40.248" E
4	26° 37' 8.437" N	88° 8' 40.227" E
5	26° 37' 2.877" N	88° 8' 36.082" E
6	26° 37' 2.981" N	88° 8' 35.987" E
7	26° 37' 3.192" N	88° 8' 35.415" E
8	26° 37' 4.535" N	88° 8' 35.314" E
9	26° 37' 5.416" N	88° 8' 34.806" E
10	26° 37' 5.731" N	88° 8' 34.063" E
11	26° 37' 5.739" N	88° 8' 33.087" E
12	26° 37' 4.952" N	88° 8' 32.525" E
13	26° 37' 6.223" N	88° 8' 29.376" E
14	26° 37' 6.456" N	88° 8' 27.130" E
15	26° 37' 6.355" N	88° 8' 24.268" E
16	26° 37' 5.712" N	88° 8' 20.760" E
17	26° 37' 6.172" N	88° 8' 19.903" E
18	26° 37' 9.965" N	88° 8' 22.525" E
19	26° 37' 10.348" N	88° 8' 24.299" E
20	26° 37' 9.906" N	88° 8' 25.825" E
21	26° 37' 8.804" N	88° 8' 28.811" E
22	26° 37' 9.401" N	88° 8' 29.790" E
23	26° 37' 9.216" N	88° 8' 31.511" E
24	26° 37' 9.461" N	88° 8' 33.044" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KB	KHORIBARI
RIVER	MC	MECHI

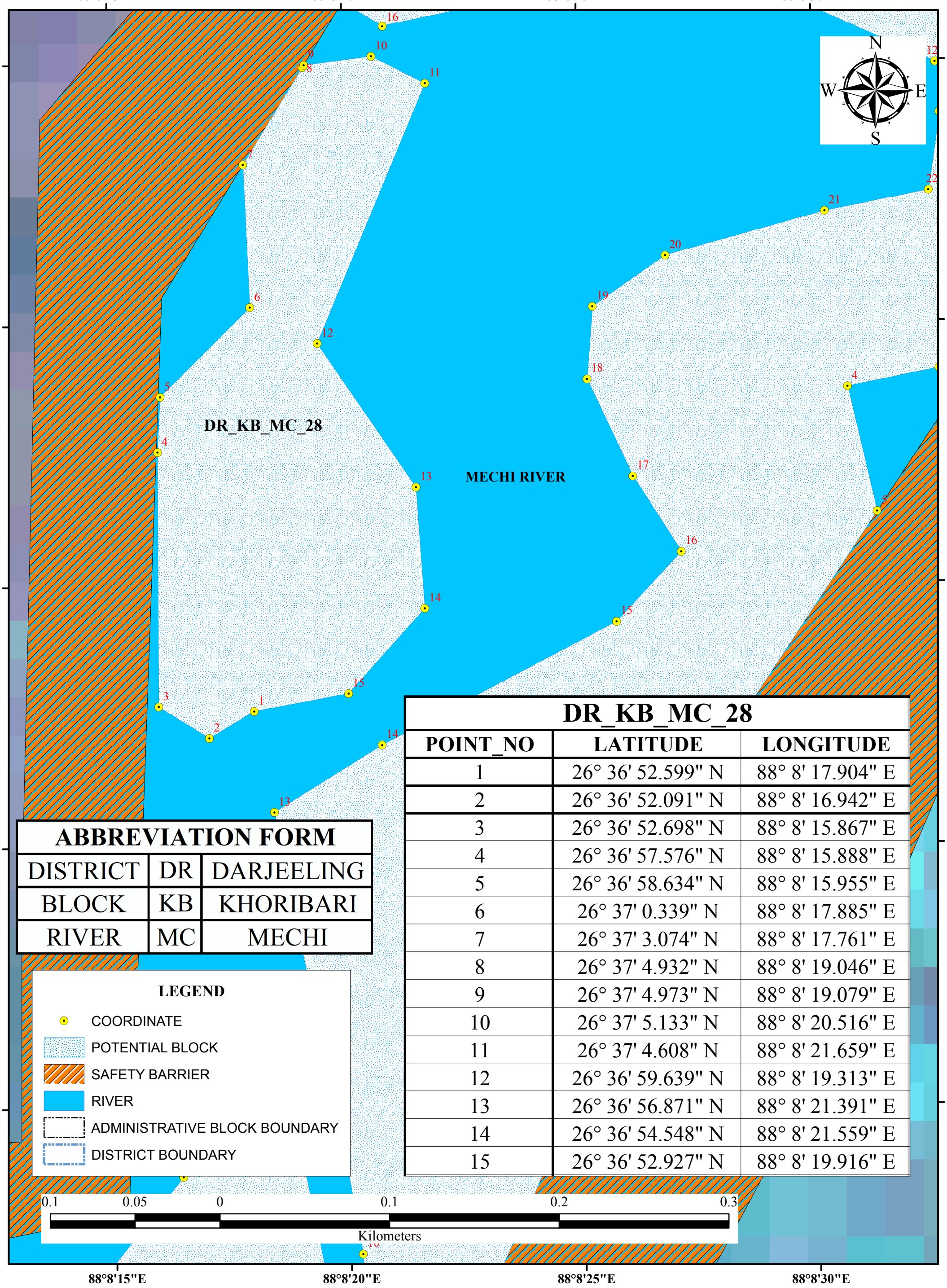
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.1 0.05 0 0.1 0.2 0.3

Kilometers

POTENTIAL BLOCK DR_KB_MC_28 OF MECHI RIVER



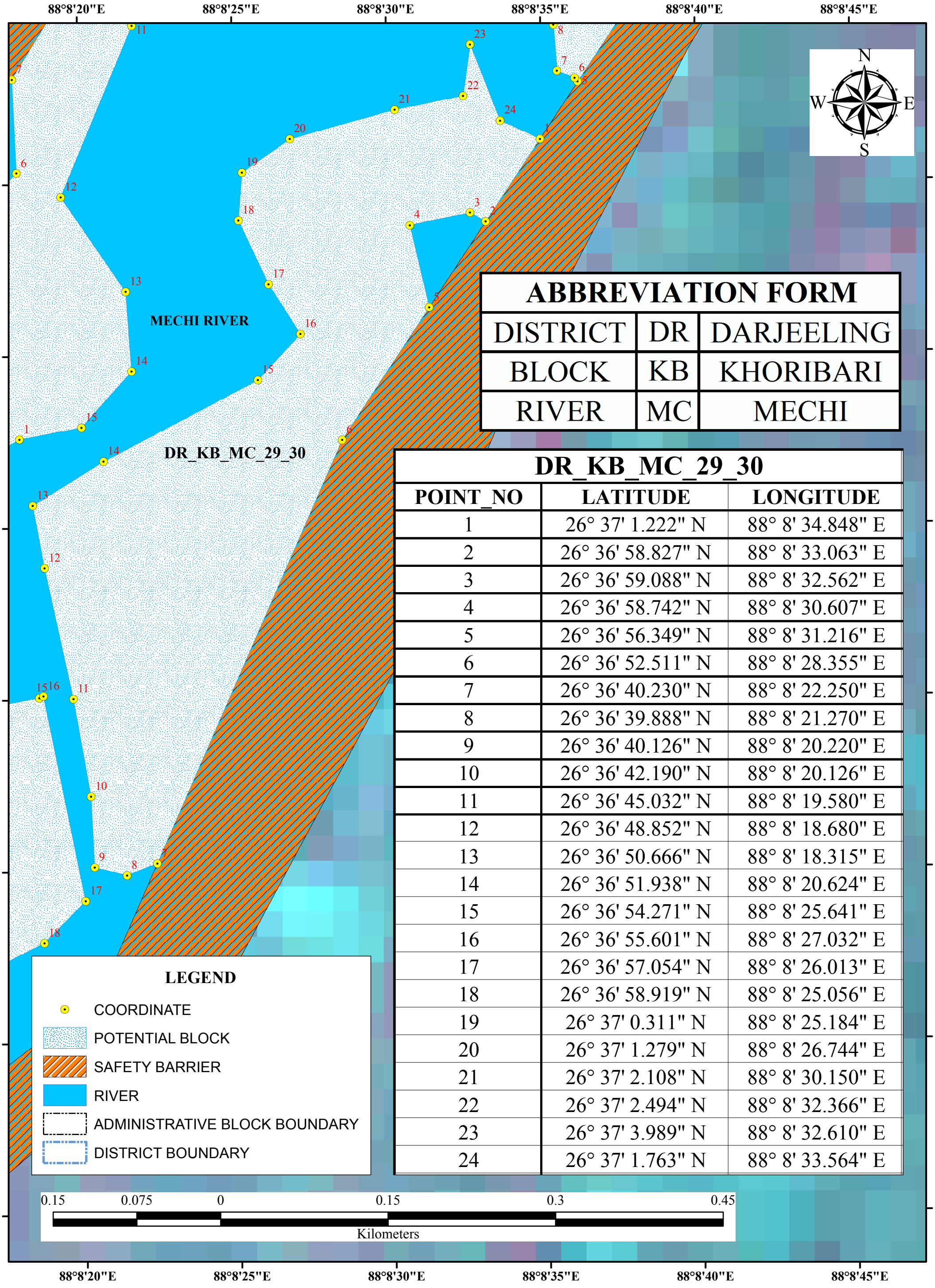
ABBREVIATION FORM

DISTRICT	DR	DARJEELING
BLOCK	KB	KHORIBARI
RIVER	MC	MECHI

DR_KB_MC_28

POINT_NO	LATITUDE	LONGITUDE
1	26° 36' 52.599" N	88° 8' 17.904" E
2	26° 36' 52.091" N	88° 8' 16.942" E
3	26° 36' 52.698" N	88° 8' 15.867" E
4	26° 36' 57.576" N	88° 8' 15.888" E
5	26° 36' 58.634" N	88° 8' 15.955" E
6	26° 37' 0.339" N	88° 8' 17.885" E
7	26° 37' 3.074" N	88° 8' 17.761" E
8	26° 37' 4.932" N	88° 8' 19.046" E
9	26° 37' 4.973" N	88° 8' 19.079" E
10	26° 37' 5.133" N	88° 8' 20.516" E
11	26° 37' 4.608" N	88° 8' 21.659" E
12	26° 36' 59.639" N	88° 8' 19.313" E
13	26° 36' 56.871" N	88° 8' 21.391" E
14	26° 36' 54.548" N	88° 8' 21.559" E
15	26° 36' 52.927" N	88° 8' 19.916" E

POTENTIAL BLOCK DR_KB_MC_29_30 OF MECHI RIVER

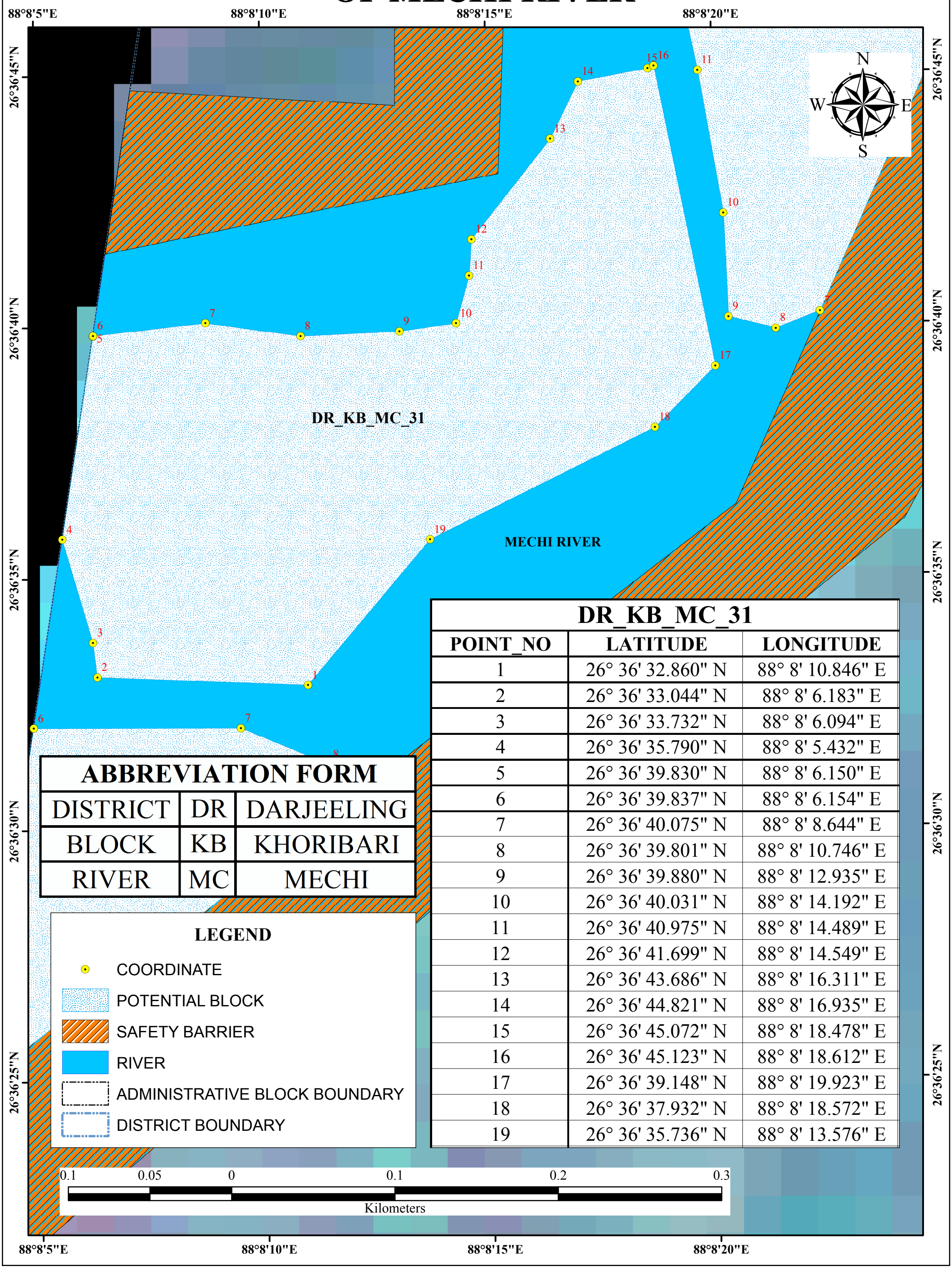


ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KB	KHORIBARI
RIVER	MC	MECHI

DR_KB_MC_29_30

POINT_NO	LATITUDE	LONGITUDE
1	26° 37' 1.222" N	88° 8' 34.848" E
2	26° 36' 58.827" N	88° 8' 33.063" E
3	26° 36' 59.088" N	88° 8' 32.562" E
4	26° 36' 58.742" N	88° 8' 30.607" E
5	26° 36' 56.349" N	88° 8' 31.216" E
6	26° 36' 52.511" N	88° 8' 28.355" E
7	26° 36' 40.230" N	88° 8' 22.250" E
8	26° 36' 39.888" N	88° 8' 21.270" E
9	26° 36' 40.126" N	88° 8' 20.220" E
10	26° 36' 42.190" N	88° 8' 20.126" E
11	26° 36' 45.032" N	88° 8' 19.580" E
12	26° 36' 48.852" N	88° 8' 18.680" E
13	26° 36' 50.666" N	88° 8' 18.315" E
14	26° 36' 51.938" N	88° 8' 20.624" E
15	26° 36' 54.271" N	88° 8' 25.641" E
16	26° 36' 55.601" N	88° 8' 27.032" E
17	26° 36' 57.054" N	88° 8' 26.013" E
18	26° 36' 58.919" N	88° 8' 25.056" E
19	26° 37' 0.311" N	88° 8' 25.184" E
20	26° 37' 1.279" N	88° 8' 26.744" E
21	26° 37' 2.108" N	88° 8' 30.150" E
22	26° 37' 2.494" N	88° 8' 32.366" E
23	26° 37' 3.989" N	88° 8' 32.610" E
24	26° 37' 1.763" N	88° 8' 33.564" E

POTENTIAL BLOCK DR_KB_MC_31 OF MECHI RIVER



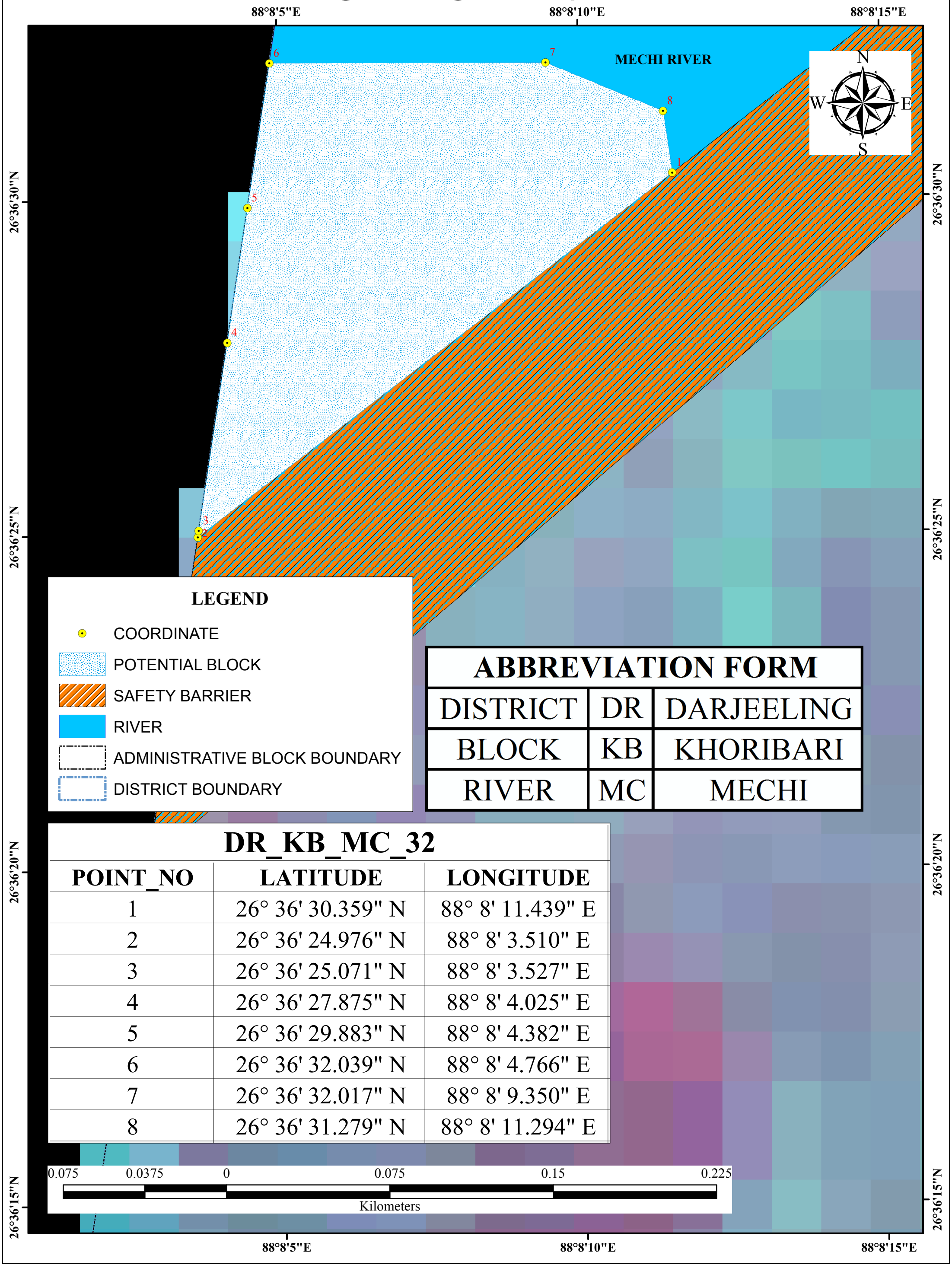
ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KB	KHORIBARI
RIVER	MC	MECHI

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KB_MC_31		
POINT_NO	LATITUDE	LONGITUDE
1	26° 36' 32.860" N	88° 8' 10.846" E
2	26° 36' 33.044" N	88° 8' 6.183" E
3	26° 36' 33.732" N	88° 8' 6.094" E
4	26° 36' 35.790" N	88° 8' 5.432" E
5	26° 36' 39.830" N	88° 8' 6.150" E
6	26° 36' 39.837" N	88° 8' 6.154" E
7	26° 36' 40.075" N	88° 8' 8.644" E
8	26° 36' 39.801" N	88° 8' 10.746" E
9	26° 36' 39.880" N	88° 8' 12.935" E
10	26° 36' 40.031" N	88° 8' 14.192" E
11	26° 36' 40.975" N	88° 8' 14.489" E
12	26° 36' 41.699" N	88° 8' 14.549" E
13	26° 36' 43.686" N	88° 8' 16.311" E
14	26° 36' 44.821" N	88° 8' 16.935" E
15	26° 36' 45.072" N	88° 8' 18.478" E
16	26° 36' 45.123" N	88° 8' 18.612" E
17	26° 36' 39.148" N	88° 8' 19.923" E
18	26° 36' 37.932" N	88° 8' 18.572" E
19	26° 36' 35.736" N	88° 8' 13.576" E

POTENTIAL BLOCK DR_KB_MC_32 OF MECHI RIVER



LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KB	KHORIBARI
RIVER	MC	MECHI

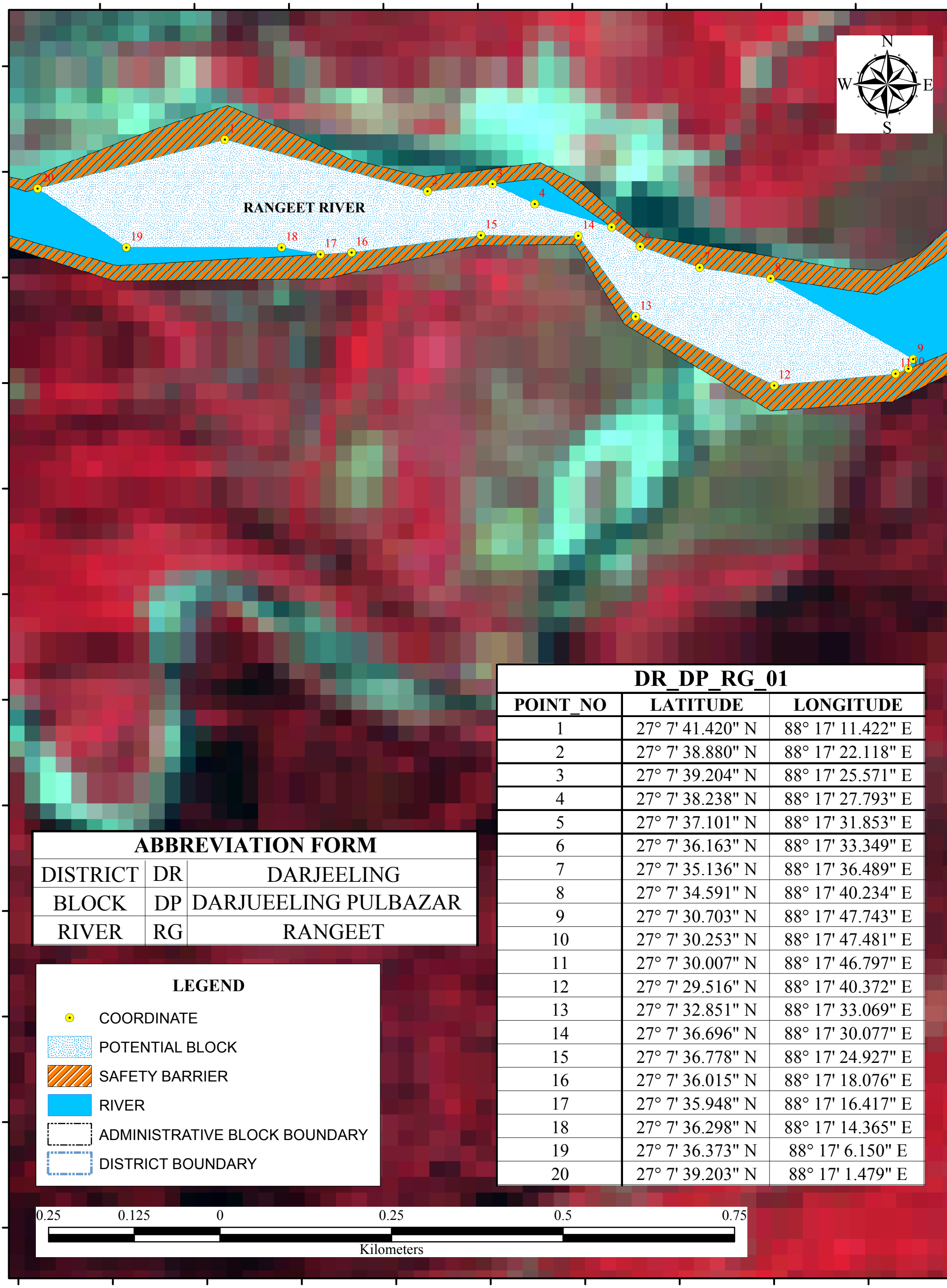
DR_KB_MC_32

POINT_NO	LATITUDE	LONGITUDE
1	26° 36' 30.359" N	88° 8' 11.439" E
2	26° 36' 24.976" N	88° 8' 3.510" E
3	26° 36' 25.071" N	88° 8' 3.527" E
4	26° 36' 27.875" N	88° 8' 4.025" E
5	26° 36' 29.883" N	88° 8' 4.382" E
6	26° 36' 32.039" N	88° 8' 4.766" E
7	26° 36' 32.017" N	88° 8' 9.350" E
8	26° 36' 31.279" N	88° 8' 11.294" E

0.075 0.0375 0 0.075 0.15 0.225

Kilometers

POTENTIAL BLOCK DR_DP_RG_01 OF RANGEET RIVER



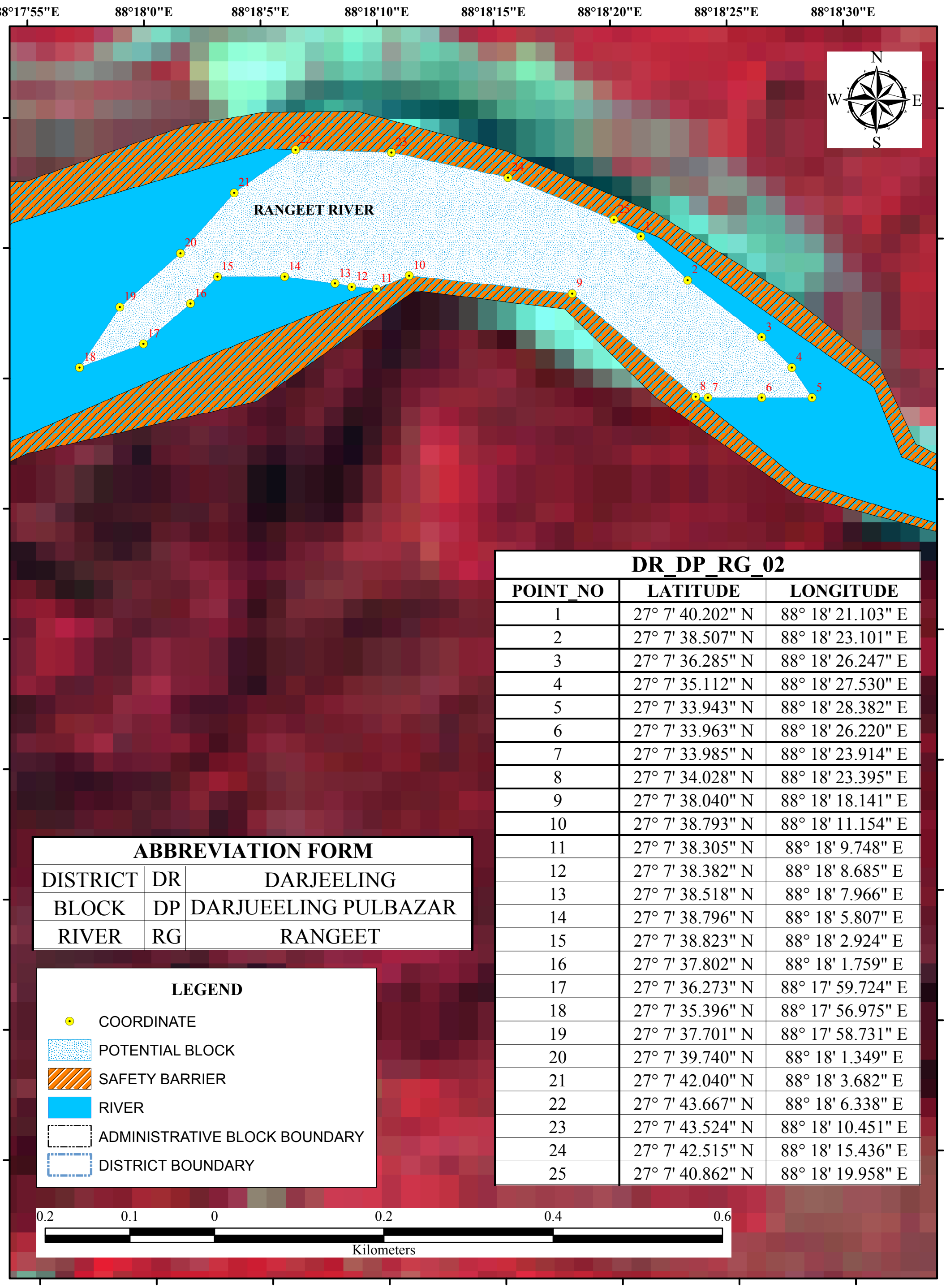
DR_DP_RG_01		
POINT_NO	LATITUDE	LONGITUDE
1	27° 7' 41.420" N	88° 17' 11.422" E
2	27° 7' 38.880" N	88° 17' 22.118" E
3	27° 7' 39.204" N	88° 17' 25.571" E
4	27° 7' 38.238" N	88° 17' 27.793" E
5	27° 7' 37.101" N	88° 17' 31.853" E
6	27° 7' 36.163" N	88° 17' 33.349" E
7	27° 7' 35.136" N	88° 17' 36.489" E
8	27° 7' 34.591" N	88° 17' 40.234" E
9	27° 7' 30.703" N	88° 17' 47.743" E
10	27° 7' 30.253" N	88° 17' 47.481" E
11	27° 7' 30.007" N	88° 17' 46.797" E
12	27° 7' 29.516" N	88° 17' 40.372" E
13	27° 7' 32.851" N	88° 17' 33.069" E
14	27° 7' 36.696" N	88° 17' 30.077" E
15	27° 7' 36.778" N	88° 17' 24.927" E
16	27° 7' 36.015" N	88° 17' 18.076" E
17	27° 7' 35.948" N	88° 17' 16.417" E
18	27° 7' 36.298" N	88° 17' 14.365" E
19	27° 7' 36.373" N	88° 17' 6.150" E
20	27° 7' 39.203" N	88° 17' 1.479" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	DP	DARJUEELING PULBAZAR
RIVER	RG	RANGEET

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

POTENTIAL BLOCK DR_DP_RG_02 OF RANGEET RIVER



DR_DP_RG_02		
POINT_NO	LATITUDE	LONGITUDE
1	27° 7' 40.202" N	88° 18' 21.103" E
2	27° 7' 38.507" N	88° 18' 23.101" E
3	27° 7' 36.285" N	88° 18' 26.247" E
4	27° 7' 35.112" N	88° 18' 27.530" E
5	27° 7' 33.943" N	88° 18' 28.382" E
6	27° 7' 33.963" N	88° 18' 26.220" E
7	27° 7' 33.985" N	88° 18' 23.914" E
8	27° 7' 34.028" N	88° 18' 23.395" E
9	27° 7' 38.040" N	88° 18' 18.141" E
10	27° 7' 38.793" N	88° 18' 11.154" E
11	27° 7' 38.305" N	88° 18' 9.748" E
12	27° 7' 38.382" N	88° 18' 8.685" E
13	27° 7' 38.518" N	88° 18' 7.966" E
14	27° 7' 38.796" N	88° 18' 5.807" E
15	27° 7' 38.823" N	88° 18' 2.924" E
16	27° 7' 37.802" N	88° 18' 1.759" E
17	27° 7' 36.273" N	88° 17' 59.724" E
18	27° 7' 35.396" N	88° 17' 56.975" E
19	27° 7' 37.701" N	88° 17' 58.731" E
20	27° 7' 39.740" N	88° 18' 1.349" E
21	27° 7' 42.040" N	88° 18' 3.682" E
22	27° 7' 43.667" N	88° 18' 6.338" E
23	27° 7' 43.524" N	88° 18' 10.451" E
24	27° 7' 42.515" N	88° 18' 15.436" E
25	27° 7' 40.862" N	88° 18' 19.958" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	DP	DARJUEELING PULBAZAR
RIVER	RG	RANGEET

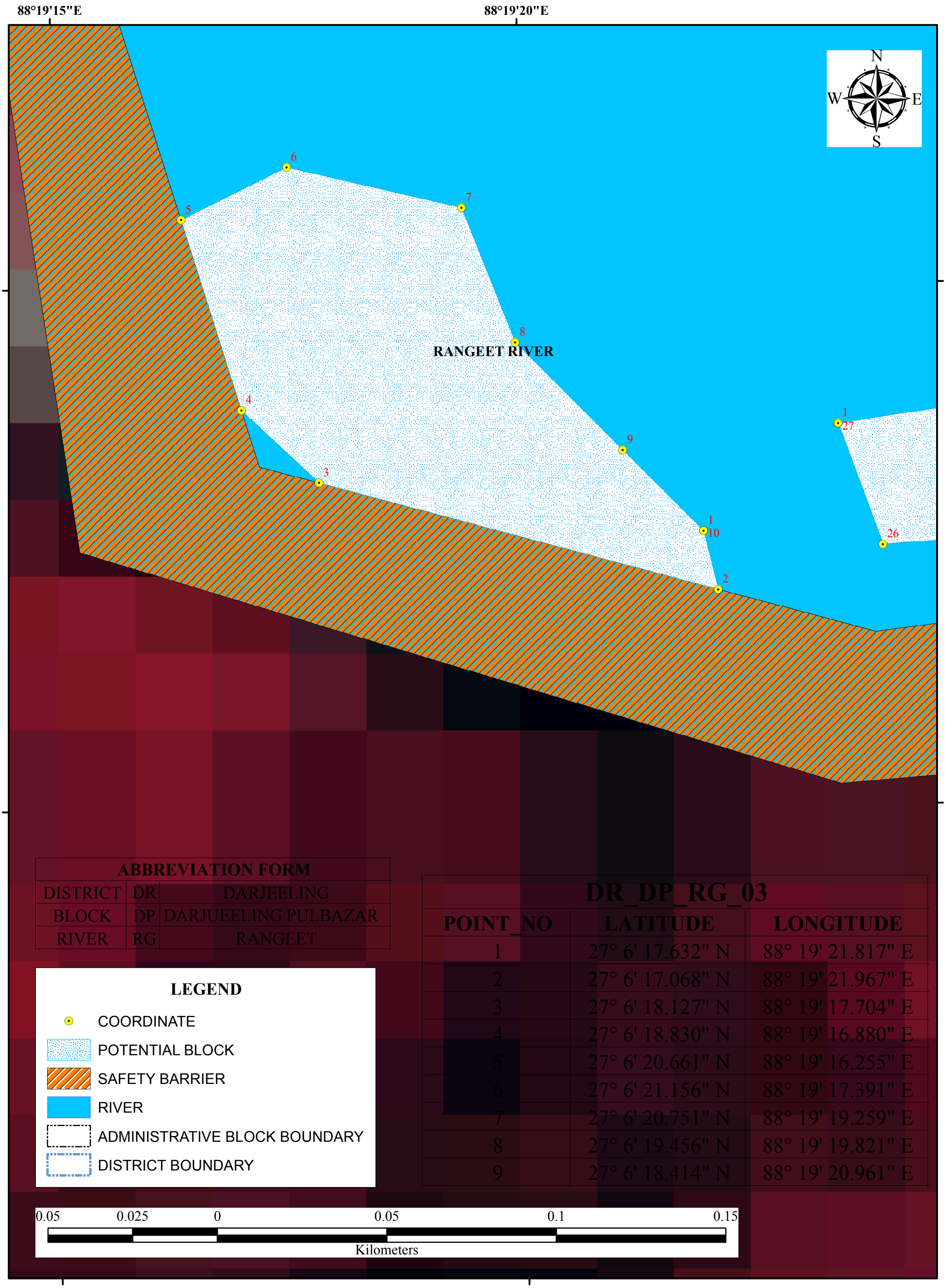
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.2 0.1 0 0.2 0.4 0.6

Kilometers

POTENTIAL BLOCK DR_DP_RG_03 OF RANGEET RIVER



ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	DP	DARJUEELING PULBAZAR
RIVER	RG	RANGEET

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_DP_RG_03

POINT_NO	LATITUDE	LONGITUDE
1	27° 6' 17.632" N	88° 19' 21.817" E
2	27° 6' 17.068" N	88° 19' 21.967" E
3	27° 6' 18.127" N	88° 19' 17.704" E
4	27° 6' 18.830" N	88° 19' 16.880" E
5	27° 6' 20.661" N	88° 19' 16.255" E
6	27° 6' 21.156" N	88° 19' 17.391" E
7	27° 6' 20.751" N	88° 19' 19.259" E
8	27° 6' 19.456" N	88° 19' 19.821" E
9	27° 6' 18.414" N	88° 19' 20.961" E

POTENTIAL BLOCK DR_DP_RG_04 OF RANGEET RIVER

88°19'25"E

88°19'30"E

27°6'25"N

27°6'20"N

N

W

E

S

RANGEET RIVER

DR_DP_RG_04		
POINT_NO	LATITUDE	LONGITUDE
1	27° 6' 23.037" N	88° 19' 27.645" E
2	27° 6' 22.449" N	88° 19' 26.101" E
3	27° 6' 22.888" N	88° 19' 25.145" E
4	27° 6' 23.751" N	88° 19' 24.867" E
5	27° 6' 25.191" N	88° 19' 27.190" E
6	27° 6' 25.689" N	88° 19' 29.021" E
7	27° 6' 26.873" N	88° 19' 31.149" E
8	27° 6' 26.933" N	88° 19' 31.226" E
9	27° 6' 28.298" N	88° 19' 33.923" E
10	27° 6' 27.369" N	88° 19' 33.269" E
11	27° 6' 26.693" N	88° 19' 32.012" E
12	27° 6' 25.753" N	88° 19' 31.424" E
13	27° 6' 24.646" N	88° 19' 30.258" E
14	27° 6' 23.884" N	88° 19' 29.000" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	DP	DARJUEELING PULBAZAR
RIVER	RG	RANGEET

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.05 0.025 0 0.05 0.1 0.15

Kilometers

POTENTIAL BLOCK DR_DP_RG_04 OF RANGEET RIVER

88°19'25"E 88°19'30"E 88°19'35"E 88°19'40"E

27°6'30"N 27°6'25"N 27°6'20"N 27°6'15"N 27°6'10"N

N W E S

RANGEET RIVER

DR_DP_RG_05

DR_DP_RG_05		
POINT_NO	LATITUDE	LONGITUDE
1	27° 6' 18.650" N	88° 19' 23.270" E
2	27° 6' 18.890" N	88° 19' 25.146" E
3	27° 6' 19.265" N	88° 19' 26.448" E
4	27° 6' 20.415" N	88° 19' 27.614" E
5	27° 6' 21.179" N	88° 19' 28.632" E
6	27° 6' 22.067" N	88° 19' 30.228" E
7	27° 6' 22.828" N	88° 19' 31.534" E
8	27° 6' 23.455" N	88° 19' 33.415" E
9	27° 6' 24.602" N	88° 19' 34.869" E
10	27° 6' 25.748" N	88° 19' 36.468" E
11	27° 6' 26.894" N	88° 19' 38.067" E
12	27° 6' 27.137" N	88° 19' 39.655" E
13	27° 6' 26.351" N	88° 19' 40.943" E
14	27° 6' 24.553" N	88° 19' 40.057" E
15	27° 6' 24.180" N	88° 19' 38.612" E
16	27° 6' 23.552" N	88° 19' 36.875" E
17	27° 6' 22.791" N	88° 19' 35.425" E
18	27° 6' 21.902" N	88° 19' 33.973" E
19	27° 6' 21.271" N	88° 19' 32.524" E
20	27° 6' 20.636" N	88° 19' 31.508" E
21	27° 6' 20.009" N	88° 19' 29.627" E
22	27° 6' 19.246" N	88° 19' 28.465" E
23	27° 6' 18.482" N	88° 19' 27.447" E
24	27° 6' 17.980" N	88° 19' 25.952" E
25	27° 6' 17.559" N	88° 19' 24.986" E
26	27° 6' 17.485" N	88° 19' 23.737" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	DP	DARJUEELING PULBAZAR
RIVER	RG	RANGEET

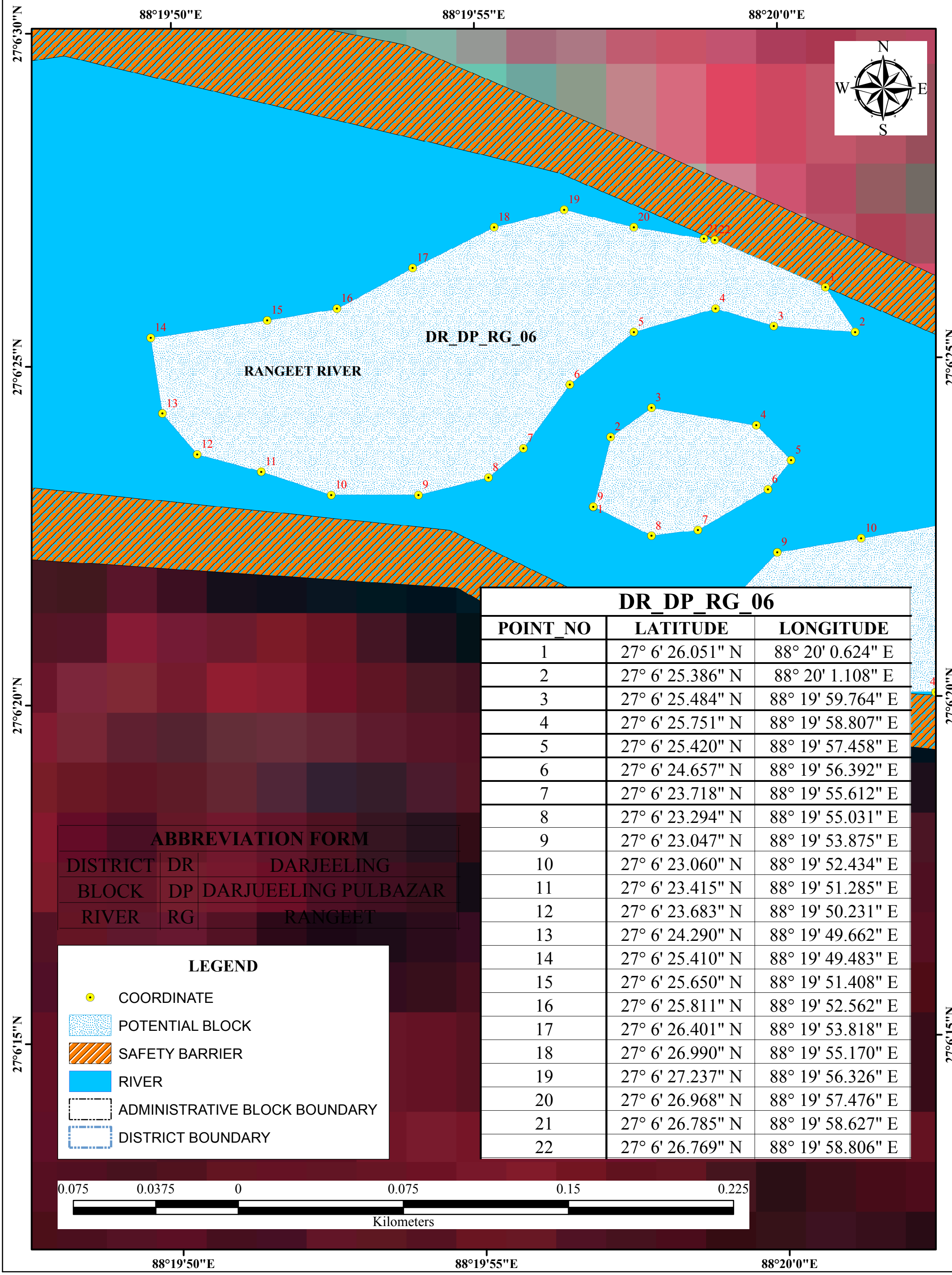
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.1 0.05 0 0.1 0.2 0.3

Kilometers

POTENTIAL BLOCK DR_DP_RG_06 OF RANGEET RIVER



DR_DP_RG_06		
POINT_NO	LATITUDE	LONGITUDE
1	27° 6' 26.051" N	88° 20' 0.624" E
2	27° 6' 25.386" N	88° 20' 1.108" E
3	27° 6' 25.484" N	88° 19' 59.764" E
4	27° 6' 25.751" N	88° 19' 58.807" E
5	27° 6' 25.420" N	88° 19' 57.458" E
6	27° 6' 24.657" N	88° 19' 56.392" E
7	27° 6' 23.718" N	88° 19' 55.612" E
8	27° 6' 23.294" N	88° 19' 55.031" E
9	27° 6' 23.047" N	88° 19' 53.875" E
10	27° 6' 23.060" N	88° 19' 52.434" E
11	27° 6' 23.415" N	88° 19' 51.285" E
12	27° 6' 23.683" N	88° 19' 50.231" E
13	27° 6' 24.290" N	88° 19' 49.662" E
14	27° 6' 25.410" N	88° 19' 49.483" E
15	27° 6' 25.650" N	88° 19' 51.408" E
16	27° 6' 25.811" N	88° 19' 52.562" E
17	27° 6' 26.401" N	88° 19' 53.818" E
18	27° 6' 26.990" N	88° 19' 55.170" E
19	27° 6' 27.237" N	88° 19' 56.326" E
20	27° 6' 26.968" N	88° 19' 57.476" E
21	27° 6' 26.785" N	88° 19' 58.627" E
22	27° 6' 26.769" N	88° 19' 58.806" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	DP	DARJUEELING PULBAZAR
RIVER	RG	RANGEET

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.075 0.0375 0 0.075 0.15 0.225

Kilometers

POTENTIAL BLOCK DR_DP_RG_07 OF RANGEET RIVER

88°20'0"E

27°6'25"N

27°6'20"N

N

W E

S

DR_DP_RG_07

RANGEET RIVER

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	DP	DARJUEELING PULBAZAR
RIVER	RG	RANGEET

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_DP_RG_07

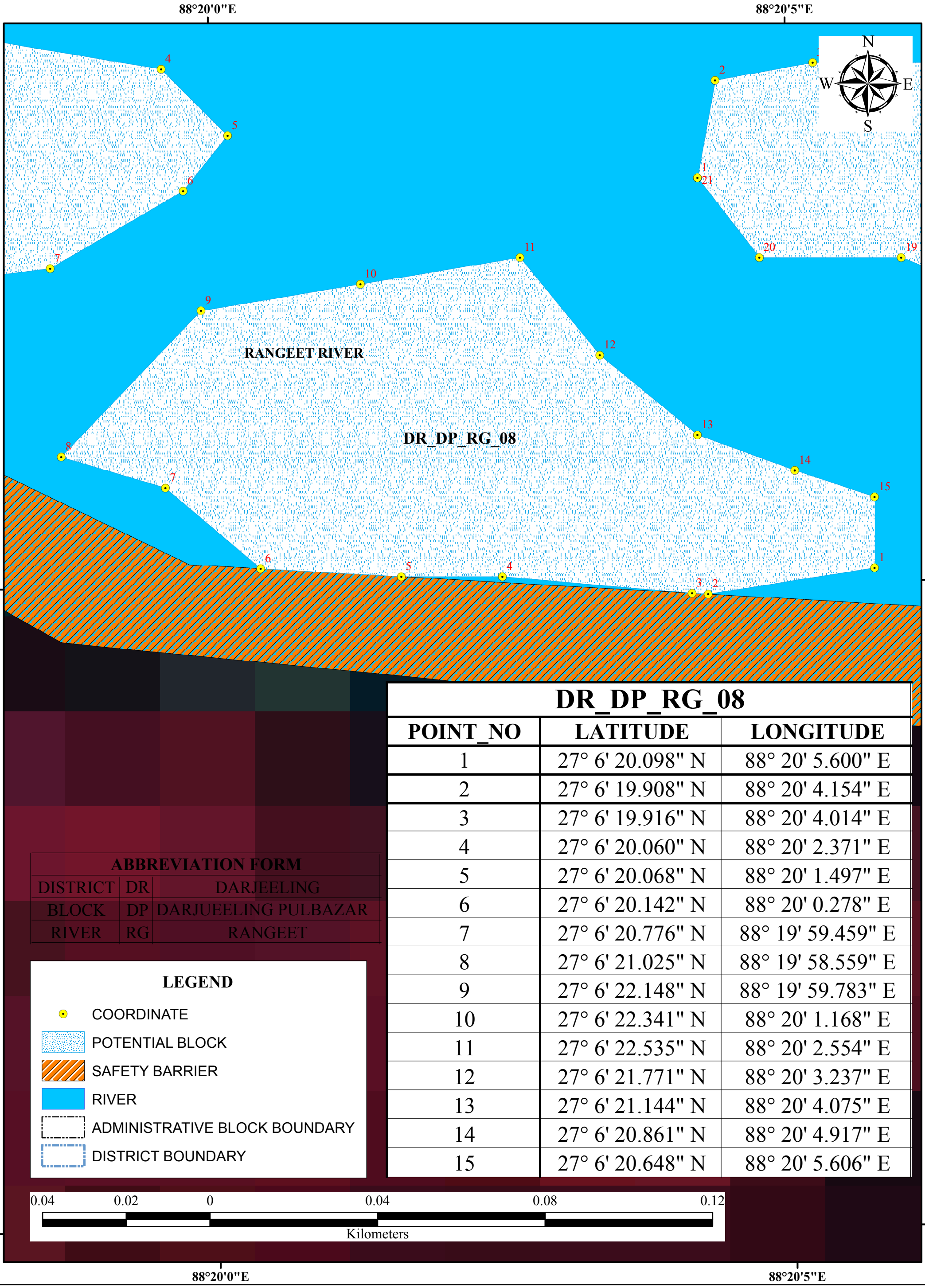
POINT_NO	LATITUDE	LONGITUDE
1	27° 6' 22.848" N	88° 19' 56.755" E
2	27° 6' 23.876" N	88° 19' 57.055" E
3	27° 6' 24.300" N	88° 19' 57.733" E
4	27° 6' 24.026" N	88° 19' 59.459" E
5	27° 6' 23.504" N	88° 20' 0.029" E
6	27° 6' 23.078" N	88° 19' 59.640" E
7	27° 6' 22.487" N	88° 19' 58.480" E
8	27° 6' 22.409" N	88° 19' 57.710" E

0.03 0.015 0 0.03 0.06 0.09

Kilometers

88°20'0"E

POTENTIAL BLOCK DR_DP_RG_08 OF RANGEET RIVER



DR_DP_RG_08		
POINT_NO	LATITUDE	LONGITUDE
1	27° 6' 20.098" N	88° 20' 5.600" E
2	27° 6' 19.908" N	88° 20' 4.154" E
3	27° 6' 19.916" N	88° 20' 4.014" E
4	27° 6' 20.060" N	88° 20' 2.371" E
5	27° 6' 20.068" N	88° 20' 1.497" E
6	27° 6' 20.142" N	88° 20' 0.278" E
7	27° 6' 20.776" N	88° 19' 59.459" E
8	27° 6' 21.025" N	88° 19' 58.559" E
9	27° 6' 22.148" N	88° 19' 59.783" E
10	27° 6' 22.341" N	88° 20' 1.168" E
11	27° 6' 22.535" N	88° 20' 2.554" E
12	27° 6' 21.771" N	88° 20' 3.237" E
13	27° 6' 21.144" N	88° 20' 4.075" E
14	27° 6' 20.861" N	88° 20' 4.917" E
15	27° 6' 20.648" N	88° 20' 5.606" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	DP	DARJUEELING PULBAZAR
RIVER	RG	RANGEET

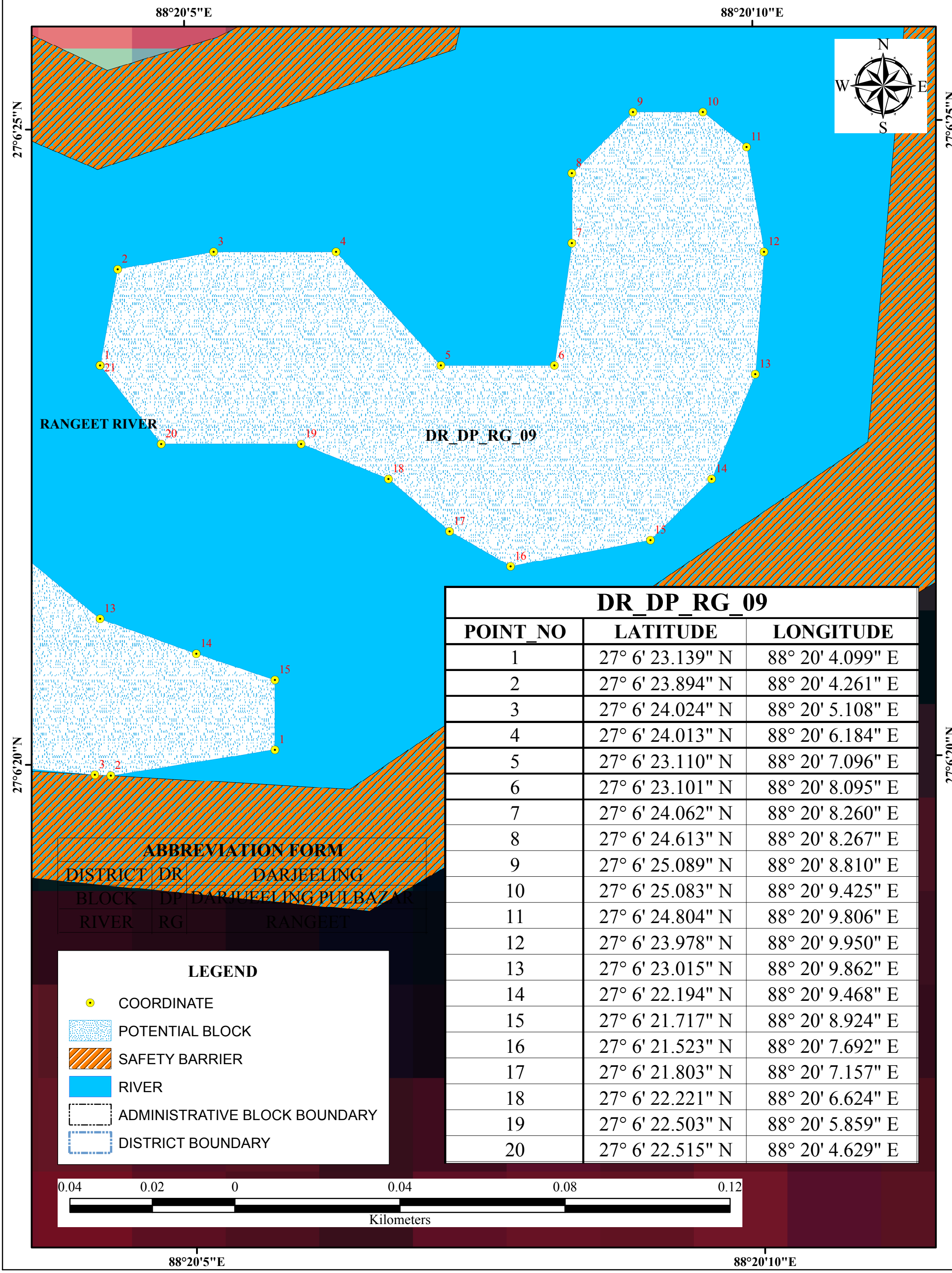
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.04 0.02 0 0.04 0.08 0.12

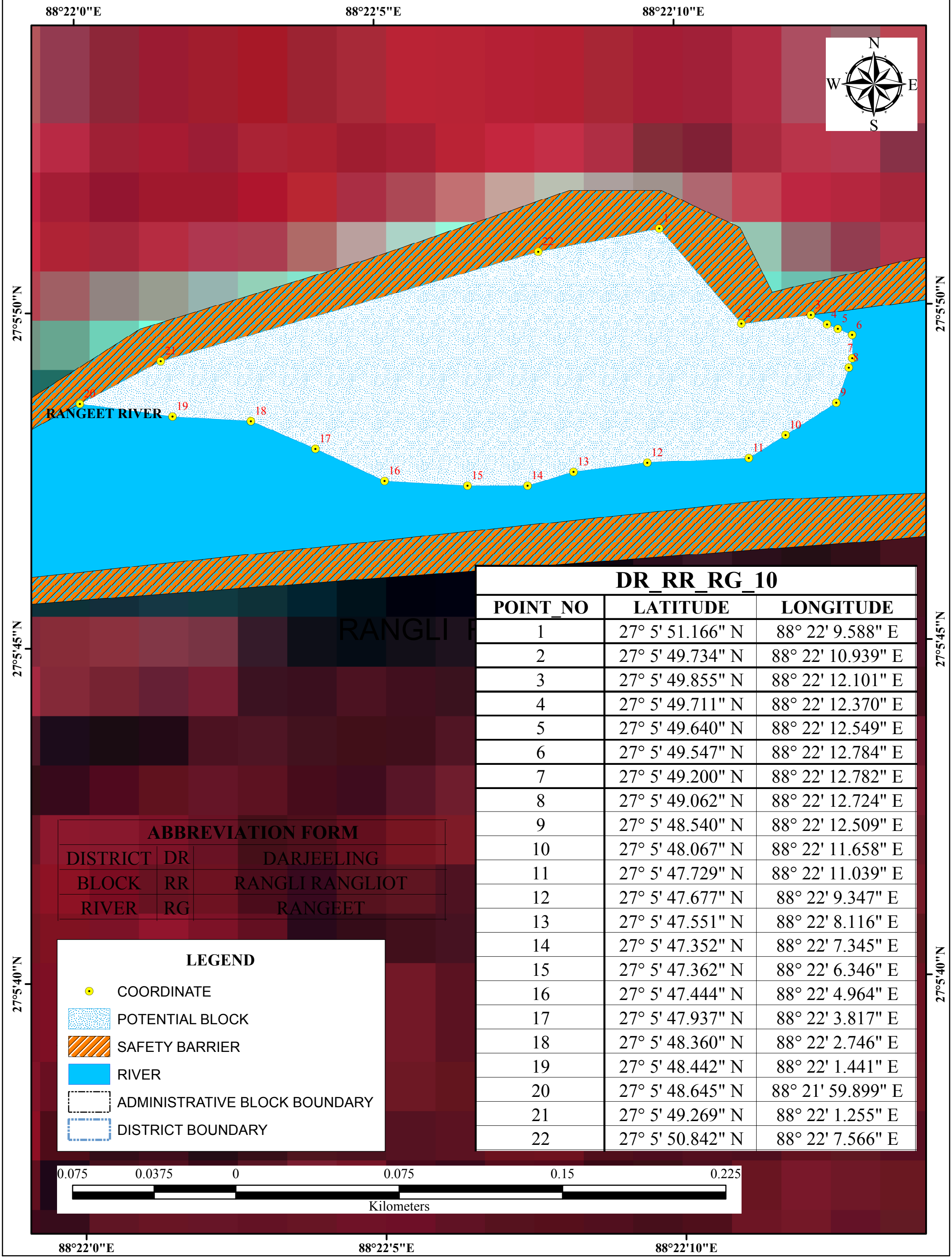
Kilometers

POTENTIAL BLOCK DR_DP_RG_09 OF RANGEET RIVER



DR_DP_RG_09		
POINT_NO	LATITUDE	LONGITUDE
1	27° 6' 23.139" N	88° 20' 4.099" E
2	27° 6' 23.894" N	88° 20' 4.261" E
3	27° 6' 24.024" N	88° 20' 5.108" E
4	27° 6' 24.013" N	88° 20' 6.184" E
5	27° 6' 23.110" N	88° 20' 7.096" E
6	27° 6' 23.101" N	88° 20' 8.095" E
7	27° 6' 24.062" N	88° 20' 8.260" E
8	27° 6' 24.613" N	88° 20' 8.267" E
9	27° 6' 25.089" N	88° 20' 8.810" E
10	27° 6' 25.083" N	88° 20' 9.425" E
11	27° 6' 24.804" N	88° 20' 9.806" E
12	27° 6' 23.978" N	88° 20' 9.950" E
13	27° 6' 23.015" N	88° 20' 9.862" E
14	27° 6' 22.194" N	88° 20' 9.468" E
15	27° 6' 21.717" N	88° 20' 8.924" E
16	27° 6' 21.523" N	88° 20' 7.692" E
17	27° 6' 21.803" N	88° 20' 7.157" E
18	27° 6' 22.221" N	88° 20' 6.624" E
19	27° 6' 22.503" N	88° 20' 5.859" E
20	27° 6' 22.515" N	88° 20' 4.629" E

POTENTIAL BLOCK DR_RR_RG_10 OF RANGEET RIVER



DR_RR_RG_10		
POINT_NO	LATITUDE	LONGITUDE
1	27° 5' 51.166" N	88° 22' 9.588" E
2	27° 5' 49.734" N	88° 22' 10.939" E
3	27° 5' 49.855" N	88° 22' 12.101" E
4	27° 5' 49.711" N	88° 22' 12.370" E
5	27° 5' 49.640" N	88° 22' 12.549" E
6	27° 5' 49.547" N	88° 22' 12.784" E
7	27° 5' 49.200" N	88° 22' 12.782" E
8	27° 5' 49.062" N	88° 22' 12.724" E
9	27° 5' 48.540" N	88° 22' 12.509" E
10	27° 5' 48.067" N	88° 22' 11.658" E
11	27° 5' 47.729" N	88° 22' 11.039" E
12	27° 5' 47.677" N	88° 22' 9.347" E
13	27° 5' 47.551" N	88° 22' 8.116" E
14	27° 5' 47.352" N	88° 22' 7.345" E
15	27° 5' 47.362" N	88° 22' 6.346" E
16	27° 5' 47.444" N	88° 22' 4.964" E
17	27° 5' 47.937" N	88° 22' 3.817" E
18	27° 5' 48.360" N	88° 22' 2.746" E
19	27° 5' 48.442" N	88° 22' 1.441" E
20	27° 5' 48.645" N	88° 21' 59.899" E
21	27° 5' 49.269" N	88° 22' 1.255" E
22	27° 5' 50.842" N	88° 22' 7.566" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	RR	RANGLI RANGLIOT
RIVER	RG	RANGEET

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.075 0.0375 0 0.075 0.15 0.225

Kilometers

POTENTIAL BLOCK DR_KB_TA_01 OF TARI RIVER

DR_KB_TA_01		
POINT_NO	LATITUDE	LONGITUDE
1	26° 34' 43.261" N	88° 13' 17.842" E
2	26° 34' 43.148" N	88° 13' 17.773" E
3	26° 34' 45.047" N	88° 13' 16.394" E
4	26° 34' 46.789" N	88° 13' 13.782" E
5	26° 34' 49.373" N	88° 13' 13.331" E
6	26° 34' 52.153" N	88° 13' 15.035" E
7	26° 34' 55.805" N	88° 13' 15.312" E
8	26° 34' 59.050" N	88° 13' 12.956" E
9	26° 35' 2.692" N	88° 13' 14.429" E
10	26° 35' 4.411" N	88° 13' 16.722" E
11	26° 35' 4.906" N	88° 13' 17.383" E
12	26° 35' 6.305" N	88° 13' 19.249" E
13	26° 35' 8.110" N	88° 13' 18.968" E
14	26° 35' 8.269" N	88° 13' 19.351" E
15	26° 35' 5.763" N	88° 13' 19.233" E
16	26° 35' 3.592" N	88° 13' 17.661" E
17	26° 35' 0.125" N	88° 13' 14.870" E
18	26° 34' 55.671" N	88° 13' 16.831" E
19	26° 34' 50.252" N	88° 13' 14.975" E
20	26° 34' 48.408" N	88° 13' 15.472" E

88°13'0"E 88°13'5"E 88°13'10"E 88°13'15"E 88°13'20"E

26°35'10"N 26°35'5"N 26°35'0"N 26°34'55"N 26°34'50"N 26°34'45"N

N W E S

TARI RIVER

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KB	KHORIBARI
RIVER	TA	TARI

0.1 0.05 0 0.1 0.2 0.3

Kilometers

POTENTIAL BLOCK DR_KS_TS_01 OF TEESTA RIVER

88°27'20"E 88°27'25"E 88°27'30"E 88°27'35"E 88°27'40"E 88°27'45"E

26°55'35"N 26°55'30"N 26°55'25"N 26°55'20"N 26°55'15"N 26°55'10"N 26°55'5"N

N W E S

TEESTA RIVER

KURSEONG

DR_KS_TS_01		
POINT_NO	LATITUDE	LONGITUDE
1	26° 55' 31.982" N	88° 27' 21.928" E
2	26° 55' 29.647" N	88° 27' 24.537" E
3	26° 55' 30.327" N	88° 27' 25.314" E
4	26° 55' 29.290" N	88° 27' 25.876" E
5	26° 55' 28.336" N	88° 27' 26.631" E
6	26° 55' 27.040" N	88° 27' 27.286" E
7	26° 55' 26.377" N	88° 27' 28.248" E
8	26° 55' 26.274" N	88° 27' 28.298" E
9	26° 55' 26.032" N	88° 27' 28.547" E
10	26° 55' 25.562" N	88° 27' 28.801" E
11	26° 55' 24.347" N	88° 27' 29.937" E
12	26° 55' 23.131" N	88° 27' 31.072" E
13	26° 55' 22.521" N	88° 27' 31.928" E
14	26° 55' 22.231" N	88° 27' 32.458" E
15	26° 55' 22.076" N	88° 27' 32.618" E
16	26° 55' 21.882" N	88° 27' 33.100" E
17	26° 55' 21.118" N	88° 27' 34.499" E
18	26° 55' 20.844" N	88° 27' 35.666" E
19	26° 55' 19.588" N	88° 27' 38.772" E
20	26° 55' 19.573" N	88° 27' 41.760" E
21	26° 55' 19.478" N	88° 27' 43.495" E
22	26° 55' 19.152" N	88° 27' 44.085" E
23	26° 55' 18.395" N	88° 27' 45.068" E
24	26° 55' 17.738" N	88° 27' 45.391" E
25	26° 55' 18.534" N	88° 27' 43.291" E
26	26° 55' 18.811" N	88° 27' 41.472" E
27	26° 55' 19.094" N	88° 27' 38.982" E
28	26° 55' 19.721" N	88° 27' 36.592" E
29	26° 55' 20.792" N	88° 27' 32.769" E
30	26° 55' 22.368" N	88° 27' 30.007" E
31	26° 55' 24.715" N	88° 27' 27.544" E
32	26° 55' 28.097" N	88° 27' 24.805" E
33	26° 55' 28.104" N	88° 27' 22.823" E
34	26° 55' 28.175" N	88° 27' 22.783" E
35	26° 55' 30.158" N	88° 27' 20.194" E
36	26° 55' 34.203" N	88° 27' 19.124" E

0.1 0.05 0 0.1 0.2 0.3

Kilometers

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

LEGEND

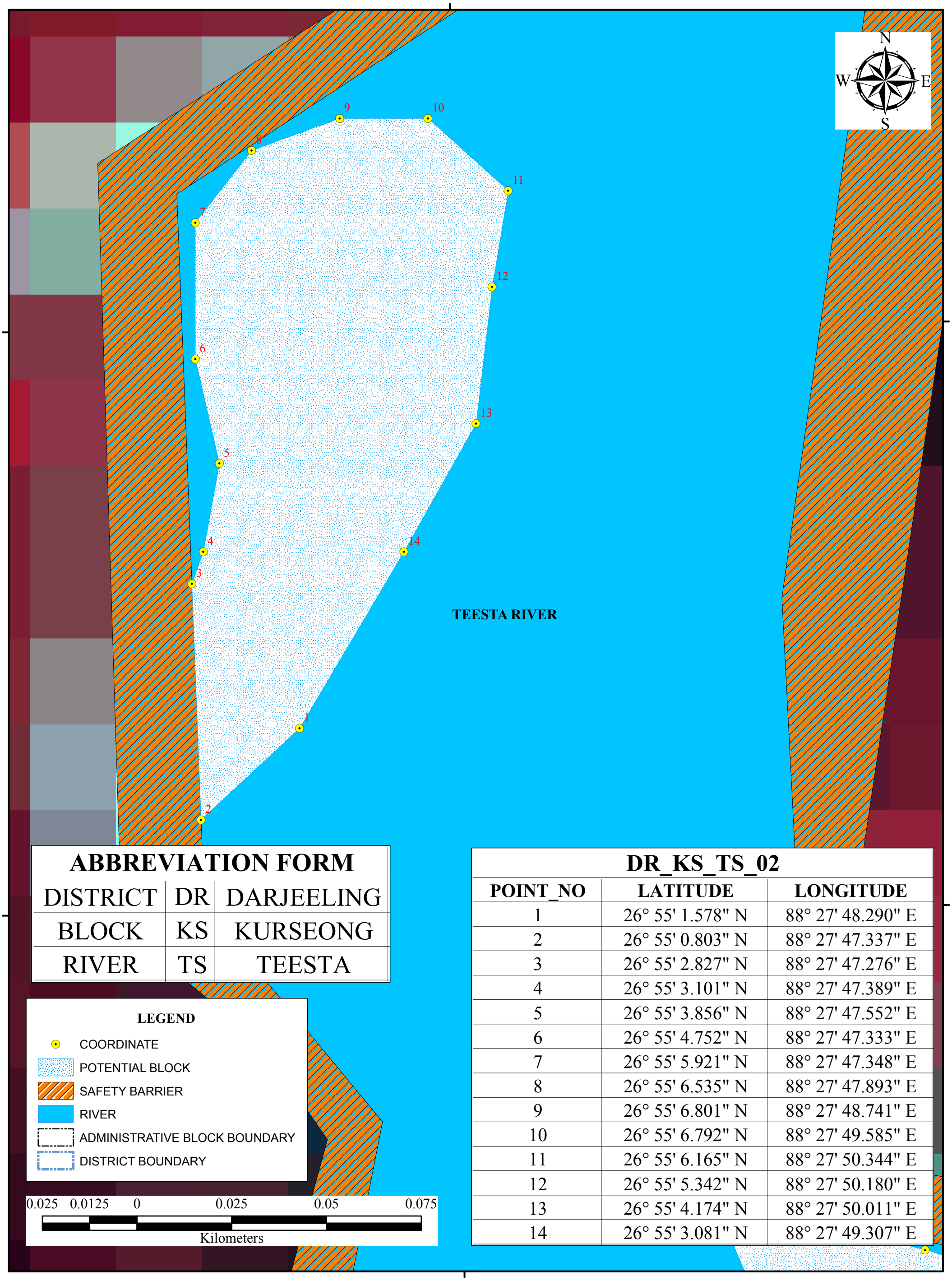
- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

POTENTIAL BLOCK DR_KS_TS_02 OF TEESTA RIVER

88°27'50"E

26°55'5"N

26°55'0"N



ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

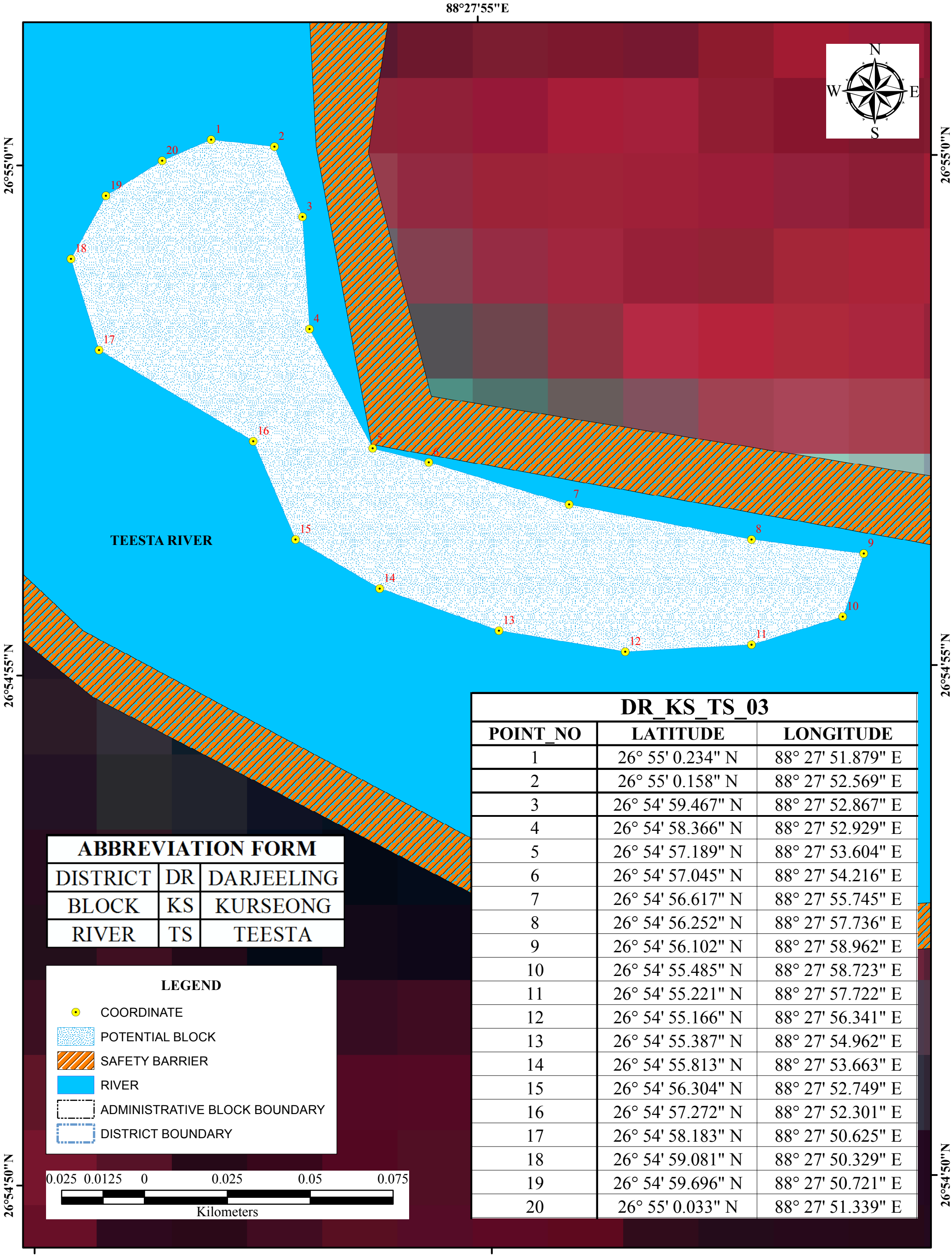
0.025 0.0125 0 0.025 0.05 0.075

Kilometers

DR_KS_TS_02		
POINT_NO	LATITUDE	LONGITUDE
1	26° 55' 1.578" N	88° 27' 48.290" E
2	26° 55' 0.803" N	88° 27' 47.337" E
3	26° 55' 2.827" N	88° 27' 47.276" E
4	26° 55' 3.101" N	88° 27' 47.389" E
5	26° 55' 3.856" N	88° 27' 47.552" E
6	26° 55' 4.752" N	88° 27' 47.333" E
7	26° 55' 5.921" N	88° 27' 47.348" E
8	26° 55' 6.535" N	88° 27' 47.893" E
9	26° 55' 6.801" N	88° 27' 48.741" E
10	26° 55' 6.792" N	88° 27' 49.585" E
11	26° 55' 6.165" N	88° 27' 50.344" E
12	26° 55' 5.342" N	88° 27' 50.180" E
13	26° 55' 4.174" N	88° 27' 50.011" E
14	26° 55' 3.081" N	88° 27' 49.307" E

88°27'50"E

POTENTIAL BLOCK DR_KS_TS_03 OF TEESTA RIVER



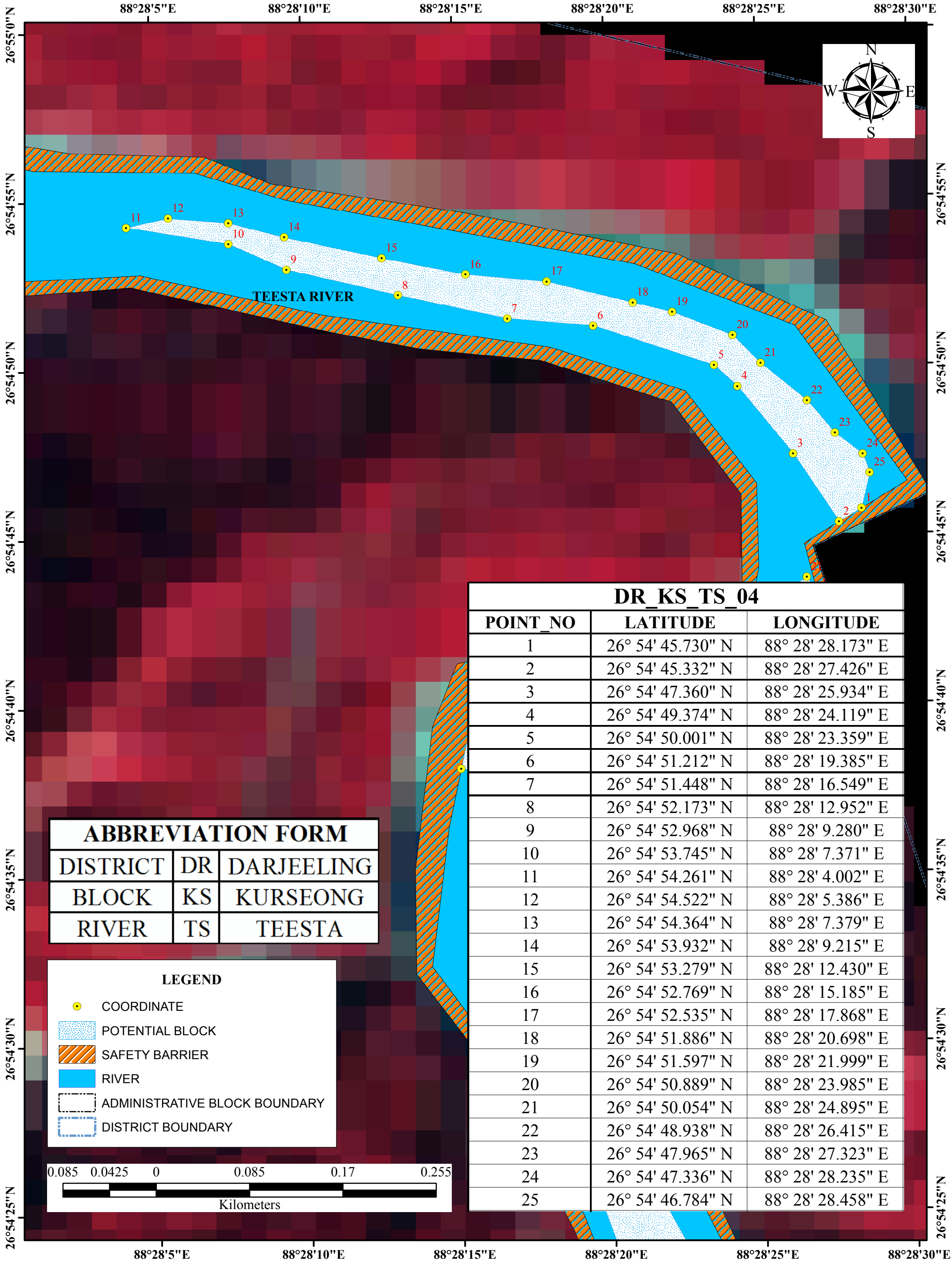
ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

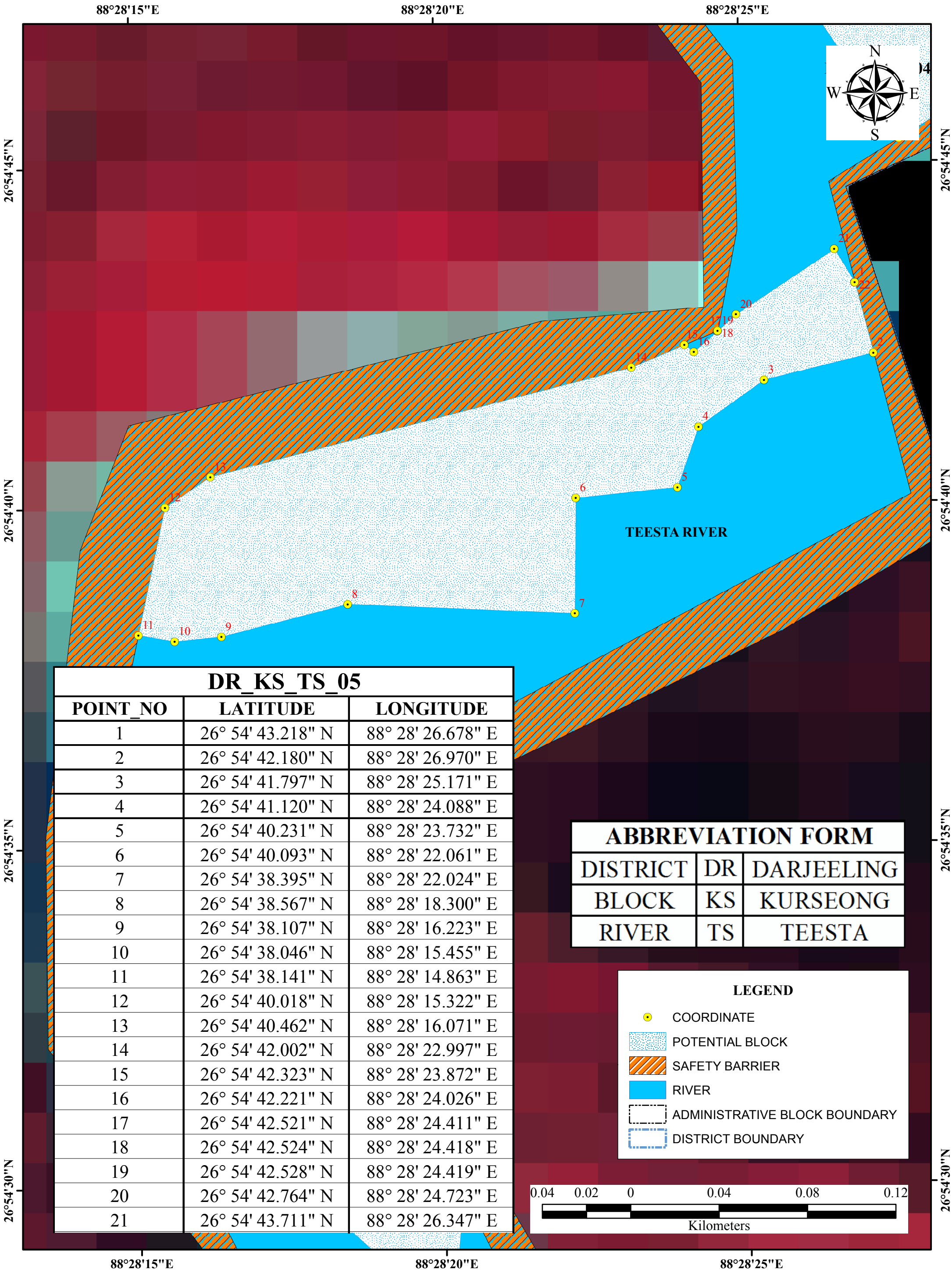
DR_KS_TS_03		
POINT_NO	LATITUDE	LONGITUDE
1	26° 55' 0.234" N	88° 27' 51.879" E
2	26° 55' 0.158" N	88° 27' 52.569" E
3	26° 54' 59.467" N	88° 27' 52.867" E
4	26° 54' 58.366" N	88° 27' 52.929" E
5	26° 54' 57.189" N	88° 27' 53.604" E
6	26° 54' 57.045" N	88° 27' 54.216" E
7	26° 54' 56.617" N	88° 27' 55.745" E
8	26° 54' 56.252" N	88° 27' 57.736" E
9	26° 54' 56.102" N	88° 27' 58.962" E
10	26° 54' 55.485" N	88° 27' 58.723" E
11	26° 54' 55.221" N	88° 27' 57.722" E
12	26° 54' 55.166" N	88° 27' 56.341" E
13	26° 54' 55.387" N	88° 27' 54.962" E
14	26° 54' 55.813" N	88° 27' 53.663" E
15	26° 54' 56.304" N	88° 27' 52.749" E
16	26° 54' 57.272" N	88° 27' 52.301" E
17	26° 54' 58.183" N	88° 27' 50.625" E
18	26° 54' 59.081" N	88° 27' 50.329" E
19	26° 54' 59.696" N	88° 27' 50.721" E
20	26° 55' 0.033" N	88° 27' 51.339" E

POTENTIAL BLOCK DR_KS_TS_04 OF TEESTA RIVER



DR_KS_TS_04		
POINT_NO	LATITUDE	LONGITUDE
1	26° 54' 45.730" N	88° 28' 28.173" E
2	26° 54' 45.332" N	88° 28' 27.426" E
3	26° 54' 47.360" N	88° 28' 25.934" E
4	26° 54' 49.374" N	88° 28' 24.119" E
5	26° 54' 50.001" N	88° 28' 23.359" E
6	26° 54' 51.212" N	88° 28' 19.385" E
7	26° 54' 51.448" N	88° 28' 16.549" E
8	26° 54' 52.173" N	88° 28' 12.952" E
9	26° 54' 52.968" N	88° 28' 9.280" E
10	26° 54' 53.745" N	88° 28' 7.371" E
11	26° 54' 54.261" N	88° 28' 4.002" E
12	26° 54' 54.522" N	88° 28' 5.386" E
13	26° 54' 54.364" N	88° 28' 7.379" E
14	26° 54' 53.932" N	88° 28' 9.215" E
15	26° 54' 53.279" N	88° 28' 12.430" E
16	26° 54' 52.769" N	88° 28' 15.185" E
17	26° 54' 52.535" N	88° 28' 17.868" E
18	26° 54' 51.886" N	88° 28' 20.698" E
19	26° 54' 51.597" N	88° 28' 21.999" E
20	26° 54' 50.889" N	88° 28' 23.985" E
21	26° 54' 50.054" N	88° 28' 24.895" E
22	26° 54' 48.938" N	88° 28' 26.415" E
23	26° 54' 47.965" N	88° 28' 27.323" E
24	26° 54' 47.336" N	88° 28' 28.235" E
25	26° 54' 46.784" N	88° 28' 28.458" E

POTENTIAL BLOCK DR_KS_TS_05 OF TEESTA RIVER



DR_KS_TS_05		
POINT_NO	LATITUDE	LONGITUDE
1	26° 54' 43.218" N	88° 28' 26.678" E
2	26° 54' 42.180" N	88° 28' 26.970" E
3	26° 54' 41.797" N	88° 28' 25.171" E
4	26° 54' 41.120" N	88° 28' 24.088" E
5	26° 54' 40.231" N	88° 28' 23.732" E
6	26° 54' 40.093" N	88° 28' 22.061" E
7	26° 54' 38.395" N	88° 28' 22.024" E
8	26° 54' 38.567" N	88° 28' 18.300" E
9	26° 54' 38.107" N	88° 28' 16.223" E
10	26° 54' 38.046" N	88° 28' 15.455" E
11	26° 54' 38.141" N	88° 28' 14.863" E
12	26° 54' 40.018" N	88° 28' 15.322" E
13	26° 54' 40.462" N	88° 28' 16.071" E
14	26° 54' 42.002" N	88° 28' 22.997" E
15	26° 54' 42.323" N	88° 28' 23.872" E
16	26° 54' 42.221" N	88° 28' 24.026" E
17	26° 54' 42.521" N	88° 28' 24.411" E
18	26° 54' 42.524" N	88° 28' 24.418" E
19	26° 54' 42.528" N	88° 28' 24.419" E
20	26° 54' 42.764" N	88° 28' 24.723" E
21	26° 54' 43.711" N	88° 28' 26.347" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

POTENTIAL BLOCK DR_KS_TS_05A OF TEESTA RIVER

88°28'15"E 88°28'20"E 88°28'25"E

26°54'35"N 26°54'30"N 26°54'25"N 26°54'20"N

N W E S

TEESTA RIVER

DR_KS_TS_05A		
POINT_NO	LATITUDE	LONGITUDE
1	26° 54' 28.786" N	88° 28' 19.981" E
2	26° 54' 28.798" N	88° 28' 18.907" E
3	26° 54' 29.425" N	88° 28' 18.148" E
4	26° 54' 31.501" N	88° 28' 16.870" E
5	26° 54' 33.231" N	88° 28' 15.895" E
6	26° 54' 35.371" N	88° 28' 15.156" E
7	26° 54' 36.664" N	88° 28' 16.477" E
8	26° 54' 36.708" N	88° 28' 18.856" E
9	26° 54' 36.106" N	88° 28' 18.854" E
10	26° 54' 35.792" N	88° 28' 18.174" E
11	26° 54' 33.864" N	88° 28' 17.602" E
12	26° 54' 31.578" N	88° 28' 19.155" E
13	26° 54' 29.865" N	88° 28' 20.095" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

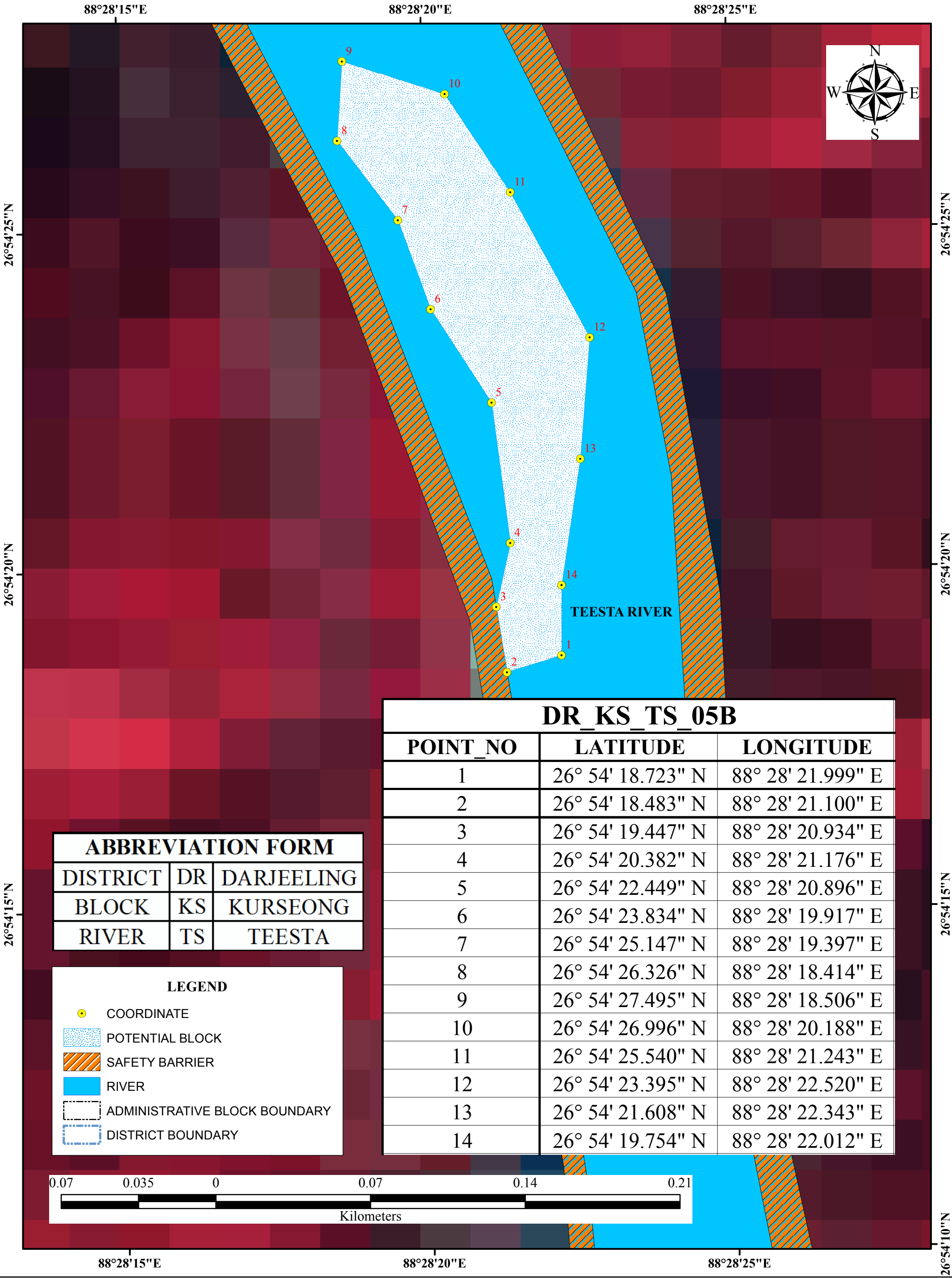
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.07 0.035 0 0.07 0.14 0.21

Kilometers

POTENTIAL BLOCK DR_KS_TS_05B OF TEESTA RIVER



ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

LEGEND

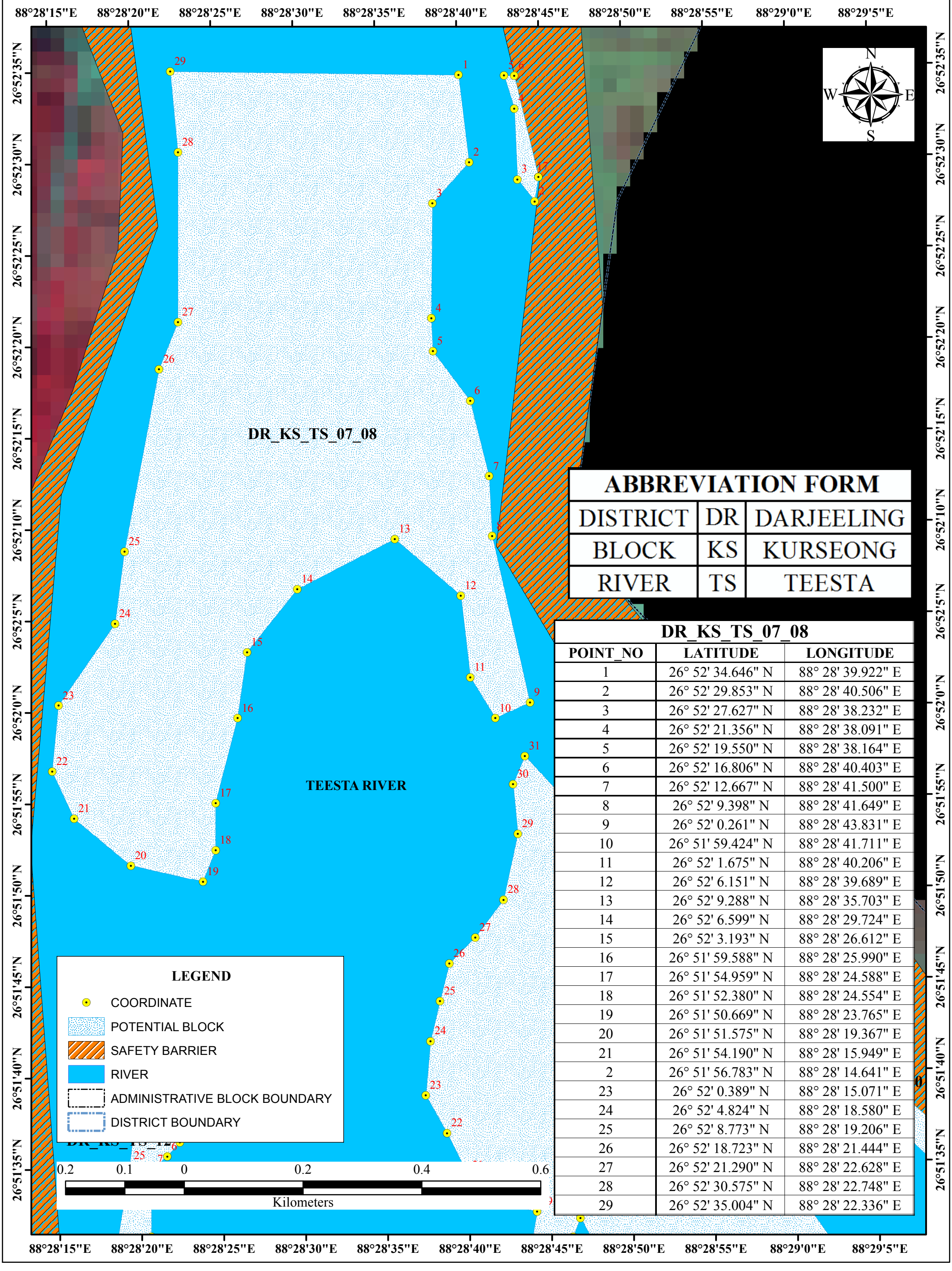
- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KS_TS_05B		
POINT_NO	LATITUDE	LONGITUDE
1	26° 54' 18.723" N	88° 28' 21.999" E
2	26° 54' 18.483" N	88° 28' 21.100" E
3	26° 54' 19.447" N	88° 28' 20.934" E
4	26° 54' 20.382" N	88° 28' 21.176" E
5	26° 54' 22.449" N	88° 28' 20.896" E
6	26° 54' 23.834" N	88° 28' 19.917" E
7	26° 54' 25.147" N	88° 28' 19.397" E
8	26° 54' 26.326" N	88° 28' 18.414" E
9	26° 54' 27.495" N	88° 28' 18.506" E
10	26° 54' 26.996" N	88° 28' 20.188" E
11	26° 54' 25.540" N	88° 28' 21.243" E
12	26° 54' 23.395" N	88° 28' 22.520" E
13	26° 54' 21.608" N	88° 28' 22.343" E
14	26° 54' 19.754" N	88° 28' 22.012" E

0.07 0.035 0 0.07 0.14 0.21

Kilometers

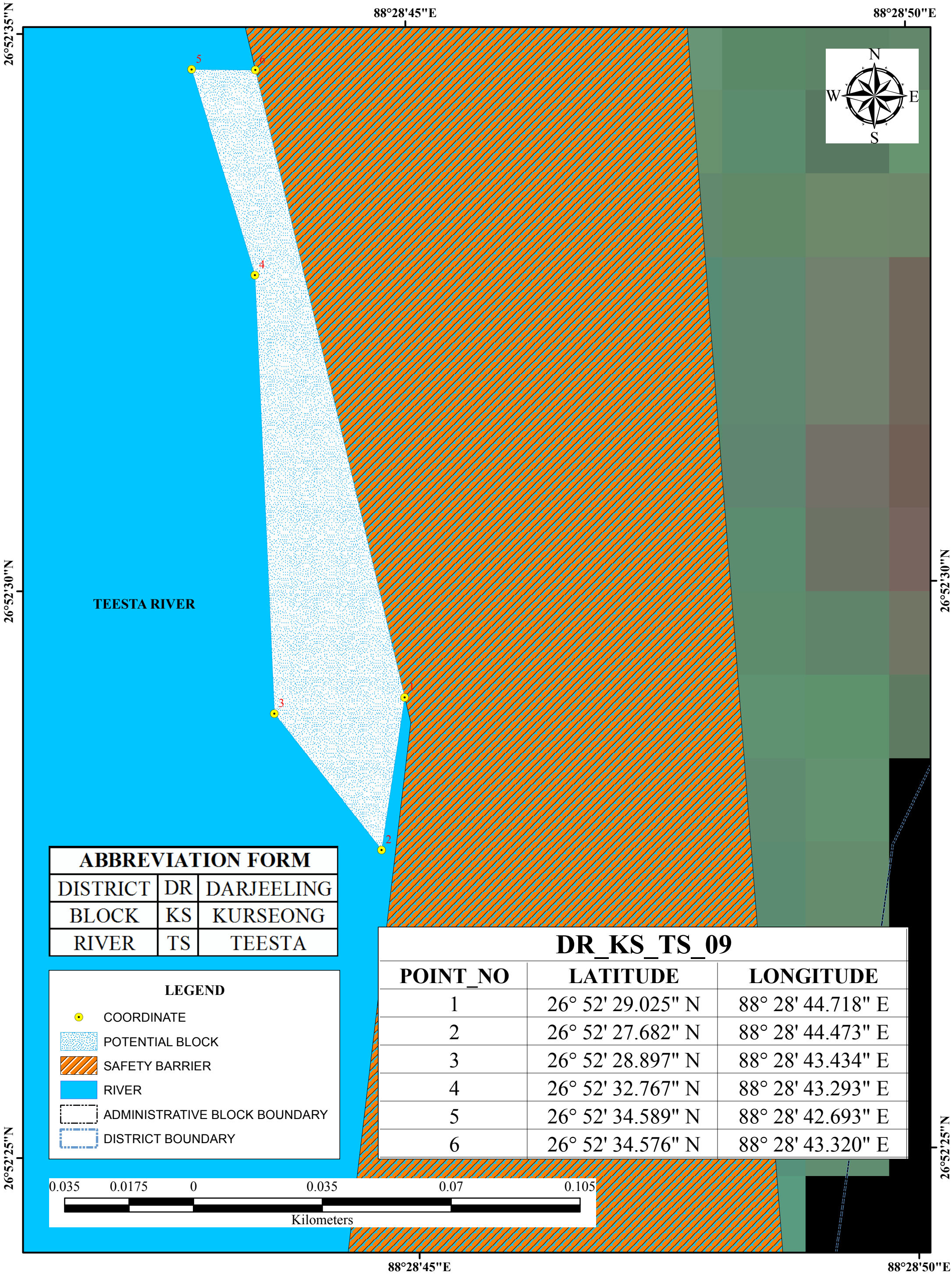
POTENTIAL BLOCK DR_KS_TS_07_08 OF TEESTA RIVER



ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

DR_KS_TS_07_08		
POINT_NO	LATITUDE	LONGITUDE
1	26° 52' 34.646" N	88° 28' 39.922" E
2	26° 52' 29.853" N	88° 28' 40.506" E
3	26° 52' 27.627" N	88° 28' 38.232" E
4	26° 52' 21.356" N	88° 28' 38.091" E
5	26° 52' 19.550" N	88° 28' 38.164" E
6	26° 52' 16.806" N	88° 28' 40.403" E
7	26° 52' 12.667" N	88° 28' 41.500" E
8	26° 52' 9.398" N	88° 28' 41.649" E
9	26° 52' 0.261" N	88° 28' 43.831" E
10	26° 51' 59.424" N	88° 28' 41.711" E
11	26° 52' 1.675" N	88° 28' 40.206" E
12	26° 52' 6.151" N	88° 28' 39.689" E
13	26° 52' 9.288" N	88° 28' 35.703" E
14	26° 52' 6.599" N	88° 28' 29.724" E
15	26° 52' 3.193" N	88° 28' 26.612" E
16	26° 51' 59.588" N	88° 28' 25.990" E
17	26° 51' 54.959" N	88° 28' 24.588" E
18	26° 51' 52.380" N	88° 28' 24.554" E
19	26° 51' 50.669" N	88° 28' 23.765" E
20	26° 51' 51.575" N	88° 28' 19.367" E
21	26° 51' 54.190" N	88° 28' 15.949" E
2	26° 51' 56.783" N	88° 28' 14.641" E
23	26° 52' 0.389" N	88° 28' 15.071" E
24	26° 52' 4.824" N	88° 28' 18.580" E
25	26° 52' 8.773" N	88° 28' 19.206" E
26	26° 52' 18.723" N	88° 28' 21.444" E
27	26° 52' 21.290" N	88° 28' 22.628" E
28	26° 52' 30.575" N	88° 28' 22.748" E
29	26° 52' 35.004" N	88° 28' 22.336" E

POTENTIAL BLOCK DR_KS_TS_09 OF TEESTA RIVER



ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

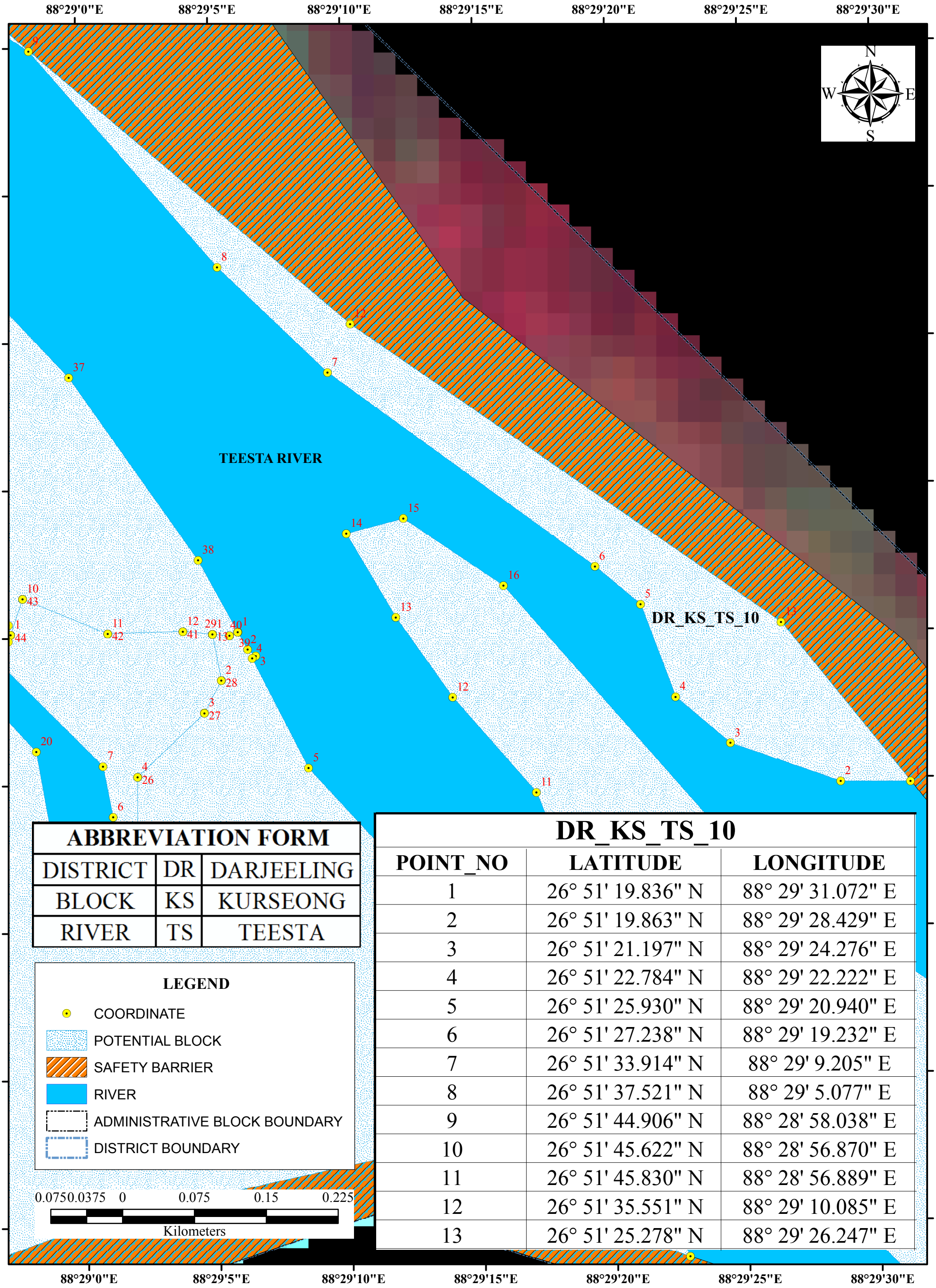
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KS_TS_09

POINT_NO	LATITUDE	LONGITUDE
1	26° 52' 29.025" N	88° 28' 44.718" E
2	26° 52' 27.682" N	88° 28' 44.473" E
3	26° 52' 28.897" N	88° 28' 43.434" E
4	26° 52' 32.767" N	88° 28' 43.293" E
5	26° 52' 34.589" N	88° 28' 42.693" E
6	26° 52' 34.576" N	88° 28' 43.320" E

POTENTIAL BLOCK DR_KS_TS_10 OF TEESTA RIVER



ABBREVIATION FORM

DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KS_TS_10

POINT_NO	LATITUDE	LONGITUDE
1	26° 51' 19.836" N	88° 29' 31.072" E
2	26° 51' 19.863" N	88° 29' 28.429" E
3	26° 51' 21.197" N	88° 29' 24.276" E
4	26° 51' 22.784" N	88° 29' 22.222" E
5	26° 51' 25.930" N	88° 29' 20.940" E
6	26° 51' 27.238" N	88° 29' 19.232" E
7	26° 51' 33.914" N	88° 29' 9.205" E
8	26° 51' 37.521" N	88° 29' 5.077" E
9	26° 51' 44.906" N	88° 28' 58.038" E
10	26° 51' 45.622" N	88° 28' 56.870" E
11	26° 51' 45.830" N	88° 28' 56.889" E
12	26° 51' 35.551" N	88° 29' 10.085" E
13	26° 51' 25.278" N	88° 29' 26.247" E

POTENTIAL BLOCK DR_KS_TS_11 OF TEESTA RIVER

88°28'35"E 88°28'40"E 88°28'45"E 88°28'50"E 88°28'55"E 88°29'0"E 88°29'5"E 88°29'10"E 88°29'15"E

26°51'55"N 26°51'50"N 26°51'45"N 26°51'40"N 26°51'35"N 26°51'30"N 26°51'25"N 26°51'20"N 26°51'15"N 26°51'10"N 26°51'5"N

N W E S

DR_KS_TS_11

TEESTA RIVER

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.1 0.05 0 0.1 0.2 0.3

Kilometers

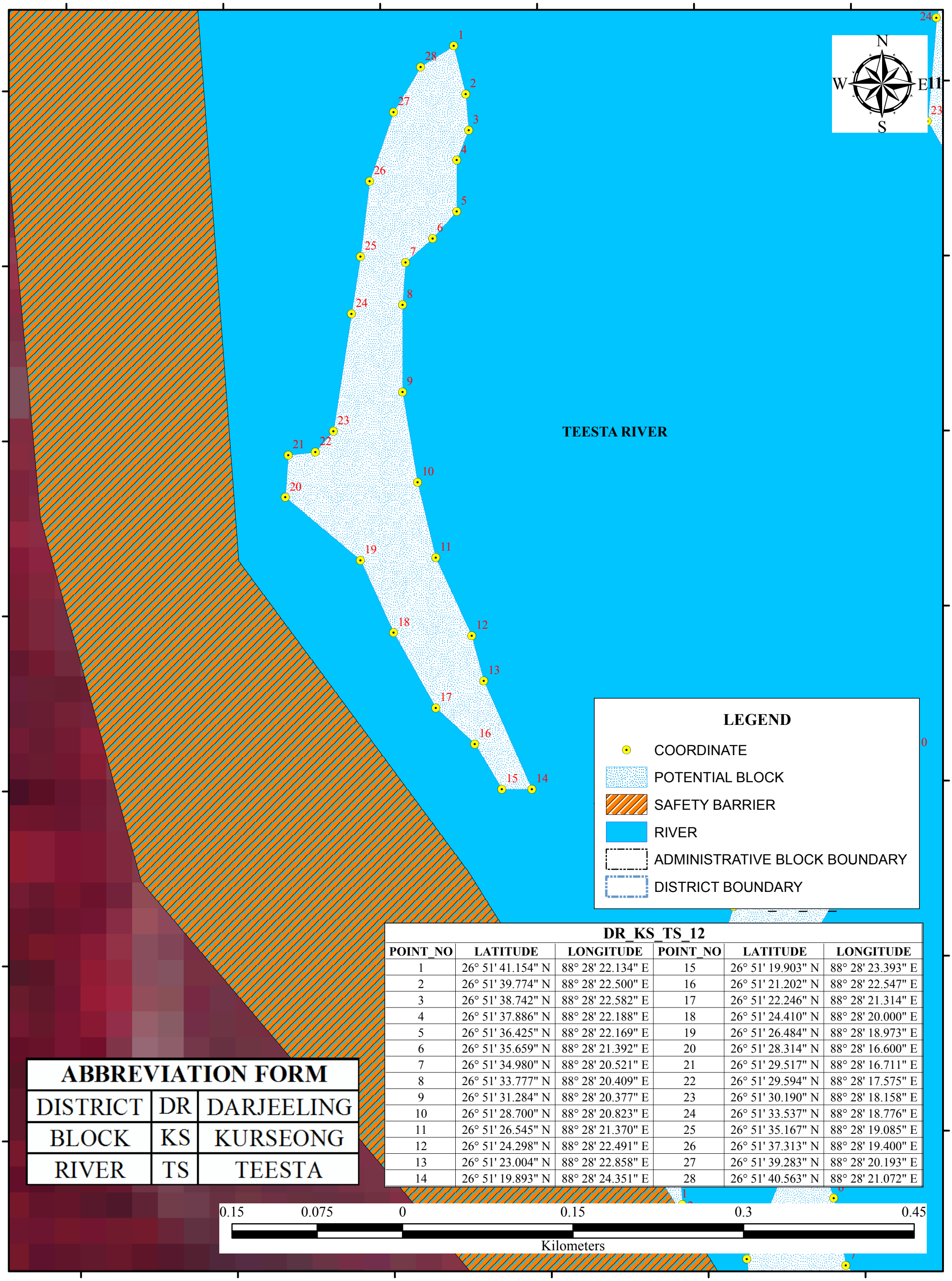
DR_KS_TS_11

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 51' 25.127" N	88° 28' 57.107" E	22	26° 51' 36.768" N	88° 28' 38.465" E
2	26° 51' 25.459" N	88° 28' 57.030" E	23	26° 51' 38.844" N	88° 28' 37.197" E
3	26° 51' 27.487" N	88° 28' 55.461" E	24	26° 51' 41.807" N	88° 28' 37.523" E
4	26° 51' 28.967" N	88° 28' 53.755" E	25	26° 51' 43.994" N	88° 28' 38.127" E
5	26° 51' 29.844" N	88° 28' 52.137" E	26	26° 51' 46.051" N	88° 28' 38.729" E
6	26° 51' 25.903" N	88° 28' 49.559" E	27	26° 51' 47.453" N	88° 28' 40.329" E
7	26° 51' 27.628" N	88° 28' 49.130" E	28	26° 51' 49.498" N	88° 28' 42.081" E
8	26° 51' 32.042" N	88° 28' 46.542" E	29	26° 51' 53.100" N	88° 28' 42.991" E
9	26° 51' 31.016" N	88° 28' 46.097" E	30	26° 51' 55.811" N	88° 28' 42.739" E
10	26° 51' 29.728" N	88° 28' 45.889" E	31	26° 51' 57.351" N	88° 28' 43.478" E
11	26° 51' 28.704" N	88° 28' 45.204" E	32	26° 51' 53.962" N	88° 28' 46.885" E
12	26° 51' 27.854" N	88° 28' 44.235" E	33	26° 51' 48.449" N	88° 28' 48.145" E
13	26° 51' 27.089" N	88° 28' 43.362" E	34	26° 51' 46.117" N	88° 28' 49.074" E
14	26° 51' 26.583" N	88° 28' 42.397" E	35	26° 51' 44.310" N	88° 28' 50.858" E
15	26° 51' 26.771" N	88° 28' 40.865" E	36	26° 51' 41.663" N	88° 28' 51.326" E
16	26° 51' 28.050" N	88° 28' 41.936" E	37	26° 51' 33.840" N	88° 28' 59.421" E
17	26° 51' 29.414" N	88° 28' 43.009" E	38	26° 51' 27.599" N	88° 29' 4.229" E
18	26° 51' 30.527" N	88° 28' 43.502" E	39	26° 51' 25.147" N	88° 29' 5.701" E
19	26° 51' 32.414" N	88° 28' 43.910" E	40	26° 51' 25.027" N	88° 29' 5.384" E
20	26° 51' 33.005" N	88° 28' 40.573" E	41	26° 51' 25.183" N	88° 29' 3.622" E
21	26° 51' 34.433" N	88° 28' 39.728" E	42	26° 51' 25.144" N	88° 29' 0.784" E
			43	26° 51' 26.347" N	88° 28' 57.578" E

POTENTIAL BLOCK DR_KS_TS_12 OF TEESTA RIVER

88°28'10"E 88°28'15"E 88°28'20"E 88°28'25"E 88°28'30"E 88°28'35"E

26°51'40"N 26°51'35"N 26°51'30"N 26°51'25"N 26°51'20"N 26°51'15"N 26°51'10"N



LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KS_TS_12

POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 51' 41.154" N	88° 28' 22.134" E	15	26° 51' 19.903" N	88° 28' 23.393" E
2	26° 51' 39.774" N	88° 28' 22.500" E	16	26° 51' 21.202" N	88° 28' 22.547" E
3	26° 51' 38.742" N	88° 28' 22.582" E	17	26° 51' 22.246" N	88° 28' 21.314" E
4	26° 51' 37.886" N	88° 28' 22.188" E	18	26° 51' 24.410" N	88° 28' 20.000" E
5	26° 51' 36.425" N	88° 28' 22.169" E	19	26° 51' 26.484" N	88° 28' 18.973" E
6	26° 51' 35.659" N	88° 28' 21.392" E	20	26° 51' 28.314" N	88° 28' 16.600" E
7	26° 51' 34.980" N	88° 28' 20.521" E	21	26° 51' 29.517" N	88° 28' 16.711" E
8	26° 51' 33.777" N	88° 28' 20.409" E	22	26° 51' 29.594" N	88° 28' 17.575" E
9	26° 51' 31.284" N	88° 28' 20.377" E	23	26° 51' 30.190" N	88° 28' 18.158" E
10	26° 51' 28.700" N	88° 28' 20.823" E	24	26° 51' 33.537" N	88° 28' 18.776" E
11	26° 51' 26.545" N	88° 28' 21.370" E	25	26° 51' 35.167" N	88° 28' 19.085" E
12	26° 51' 24.298" N	88° 28' 22.491" E	26	26° 51' 37.313" N	88° 28' 19.400" E
13	26° 51' 23.004" N	88° 28' 22.858" E	27	26° 51' 39.283" N	88° 28' 20.193" E
14	26° 51' 19.893" N	88° 28' 24.351" E	28	26° 51' 40.563" N	88° 28' 21.072" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

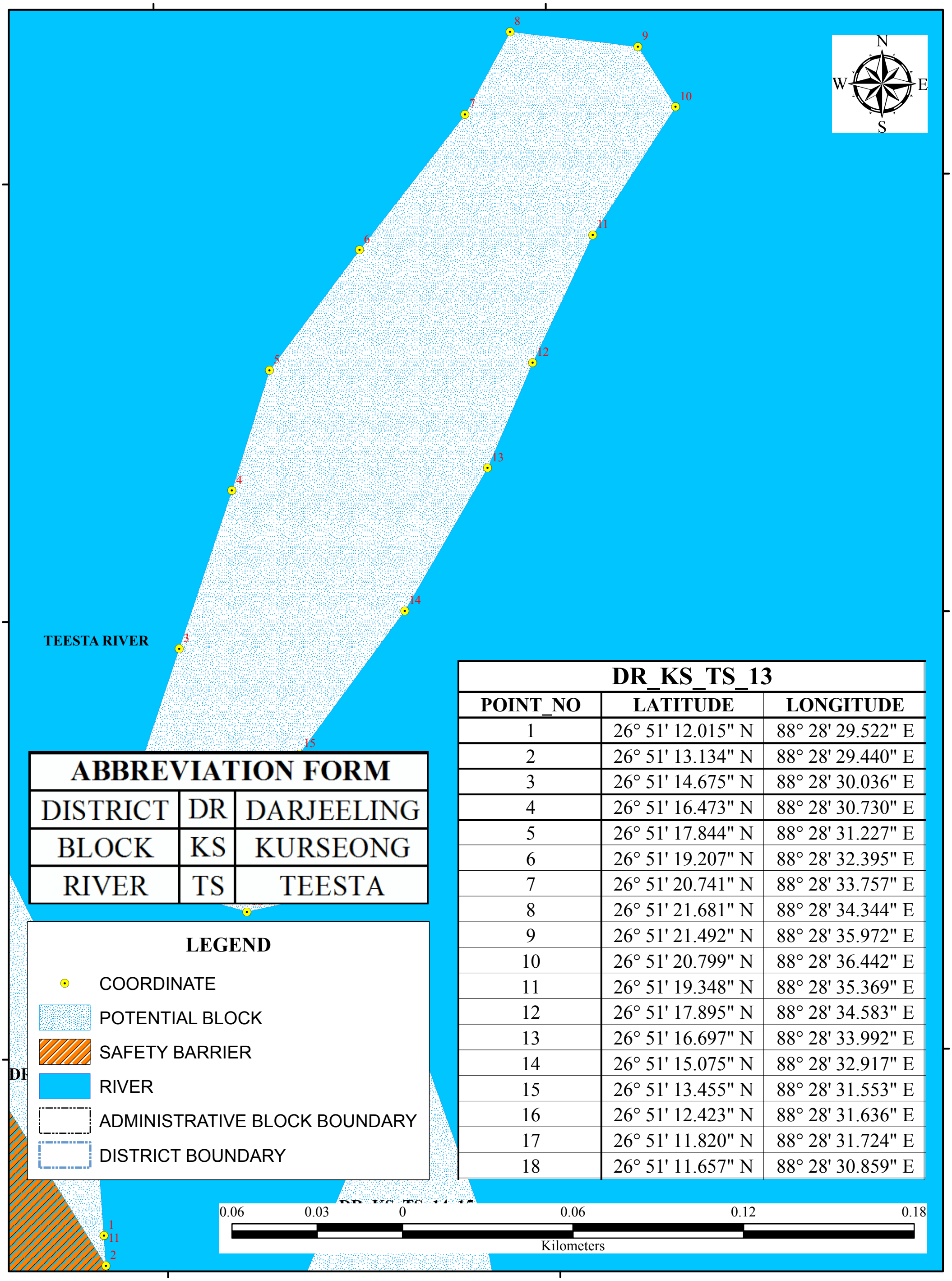
0.15 0.075 0 0.15 0.3 0.45

Kilometers

POTENTIAL BLOCK DR_KS_TS_13 OF TEESTA RIVER

88°28'30"E 88°28'35"E

26°51'20"N 26°51'15"N 26°51'10"N



ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KS_TS_13		
POINT_NO	LATITUDE	LONGITUDE
1	26° 51' 12.015" N	88° 28' 29.522" E
2	26° 51' 13.134" N	88° 28' 29.440" E
3	26° 51' 14.675" N	88° 28' 30.036" E
4	26° 51' 16.473" N	88° 28' 30.730" E
5	26° 51' 17.844" N	88° 28' 31.227" E
6	26° 51' 19.207" N	88° 28' 32.395" E
7	26° 51' 20.741" N	88° 28' 33.757" E
8	26° 51' 21.681" N	88° 28' 34.344" E
9	26° 51' 21.492" N	88° 28' 35.972" E
10	26° 51' 20.799" N	88° 28' 36.442" E
11	26° 51' 19.348" N	88° 28' 35.369" E
12	26° 51' 17.895" N	88° 28' 34.583" E
13	26° 51' 16.697" N	88° 28' 33.992" E
14	26° 51' 15.075" N	88° 28' 32.917" E
15	26° 51' 13.455" N	88° 28' 31.553" E
16	26° 51' 12.423" N	88° 28' 31.636" E
17	26° 51' 11.820" N	88° 28' 31.724" E
18	26° 51' 11.657" N	88° 28' 30.859" E

0.06 0.03 0 0.06 0.12 0.18

Kilometers

POTENTIAL BLOCK DR_KS_TS_13A OF TEESTA RIVER

88°28'25"E

88°28'30"E

26°51'10"N

26°51'5"N

DR_KS_TS_13A

TEESTA RIVER

N

W

E

S

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

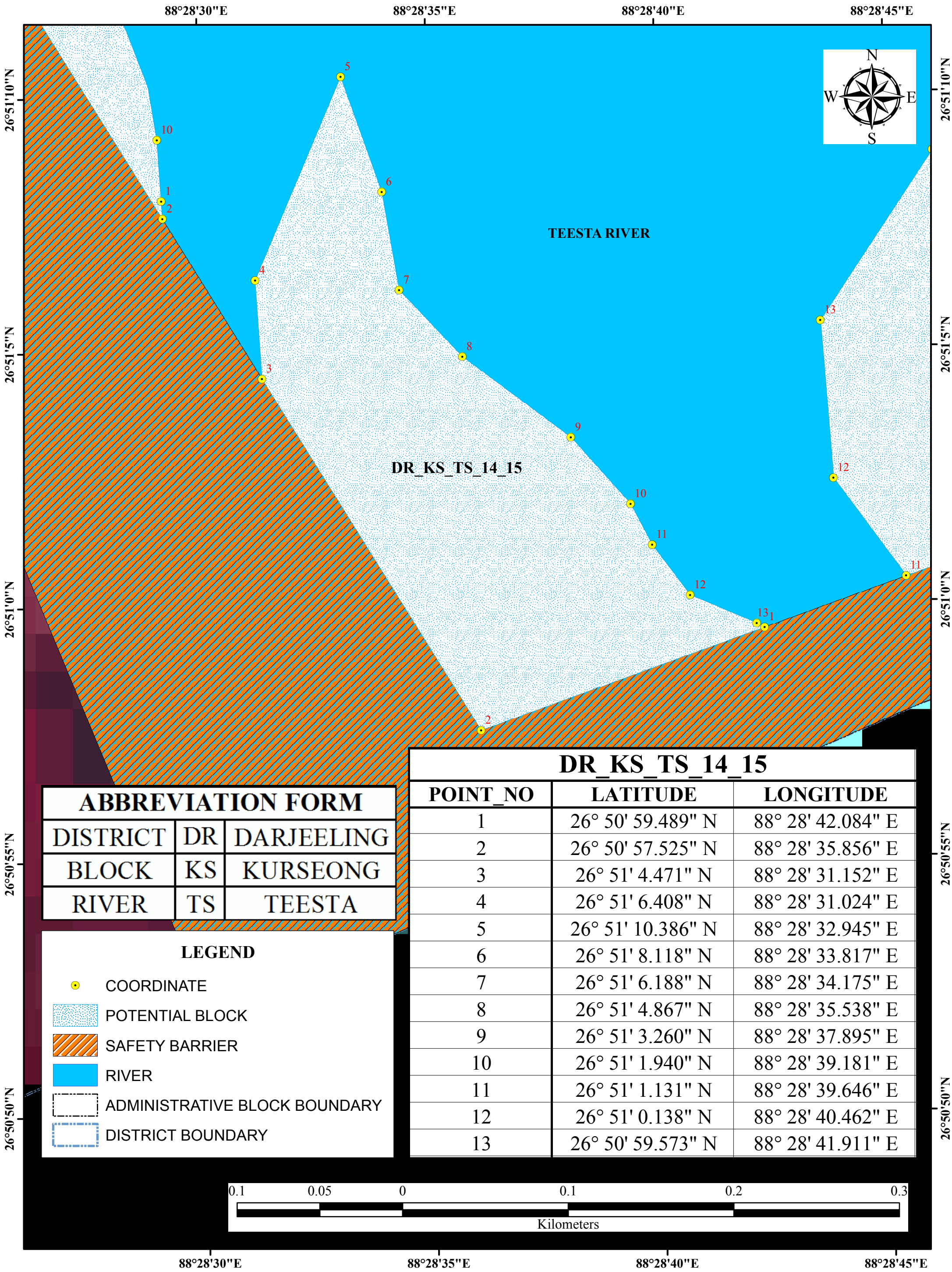
DR_KS_TS_13A

POINT_NO	LATITUDE	LONGITUDE
1	26° 51' 7.979" N	88° 28' 28.990" E
2	26° 51' 7.633" N	88° 28' 29.011" E
3	26° 51' 13.929" N	88° 28' 24.748" E
4	26° 51' 13.956" N	88° 28' 24.754" E
5	26° 51' 13.771" N	88° 28' 25.998" E
6	26° 51' 13.075" N	88° 28' 26.851" E
7	26° 51' 12.551" N	88° 28' 27.611" E
8	26° 51' 11.340" N	88° 28' 28.267" E
9	26° 51' 10.218" N	88° 28' 28.732" E
10	26° 51' 9.184" N	88° 28' 28.910" E

0.05 0.025 0 0.05 0.1 0.15

Kilometers

POTENTIAL BLOCK DR_KS_TS_14_15 OF TEESTA RIVER



ABBREVIATION FORM

DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

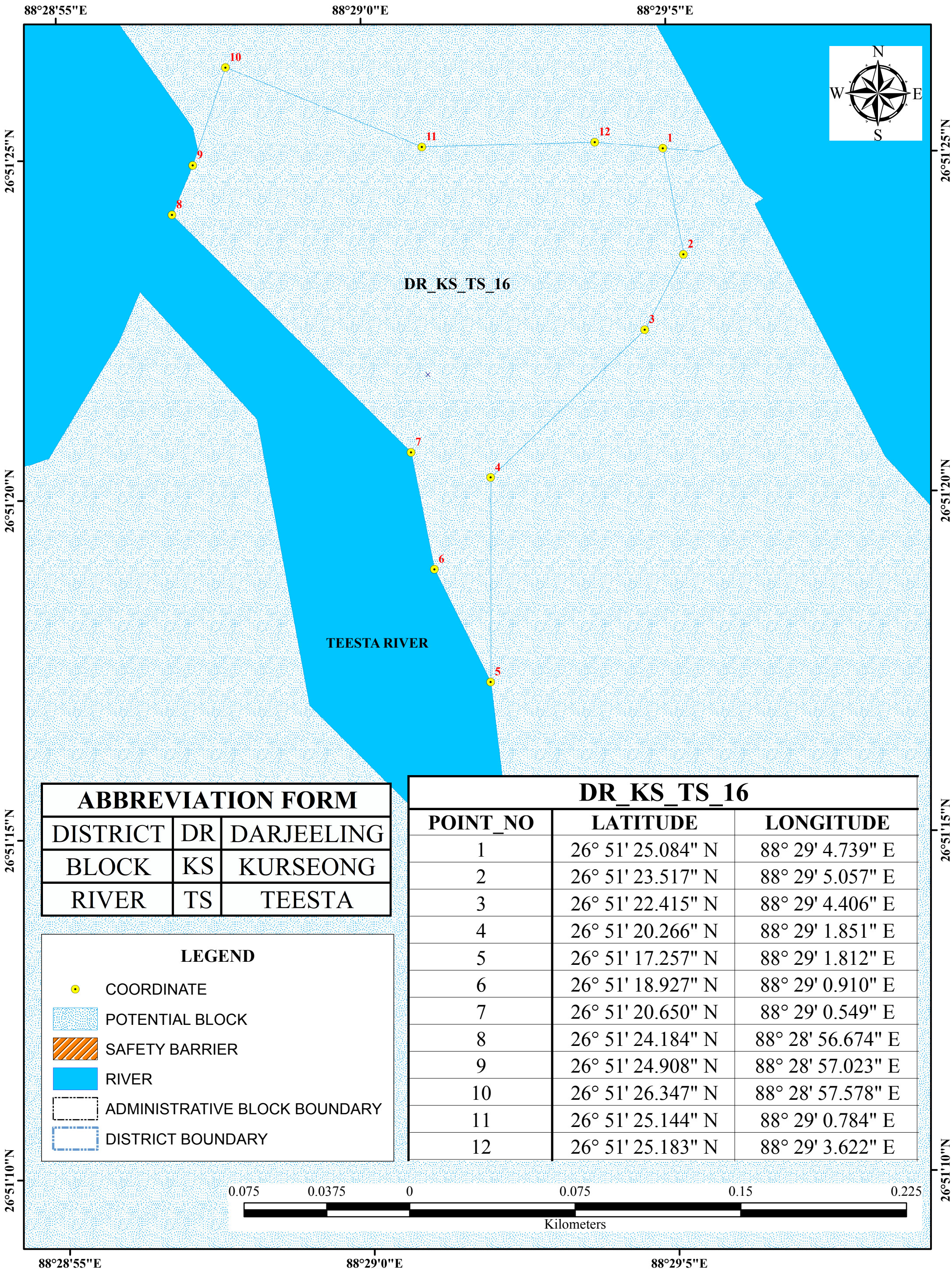
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KS_TS_14_15

POINT_NO	LATITUDE	LONGITUDE
1	26° 50' 59.489" N	88° 28' 42.084" E
2	26° 50' 57.525" N	88° 28' 35.856" E
3	26° 51' 4.471" N	88° 28' 31.152" E
4	26° 51' 6.408" N	88° 28' 31.024" E
5	26° 51' 10.386" N	88° 28' 32.945" E
6	26° 51' 8.118" N	88° 28' 33.817" E
7	26° 51' 6.188" N	88° 28' 34.175" E
8	26° 51' 4.867" N	88° 28' 35.538" E
9	26° 51' 3.260" N	88° 28' 37.895" E
10	26° 51' 1.940" N	88° 28' 39.181" E
11	26° 51' 1.131" N	88° 28' 39.646" E
12	26° 51' 0.138" N	88° 28' 40.462" E
13	26° 50' 59.573" N	88° 28' 41.911" E

POTENTIAL BLOCK DR_KS_TS_16 OF TEESTA RIVER



ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

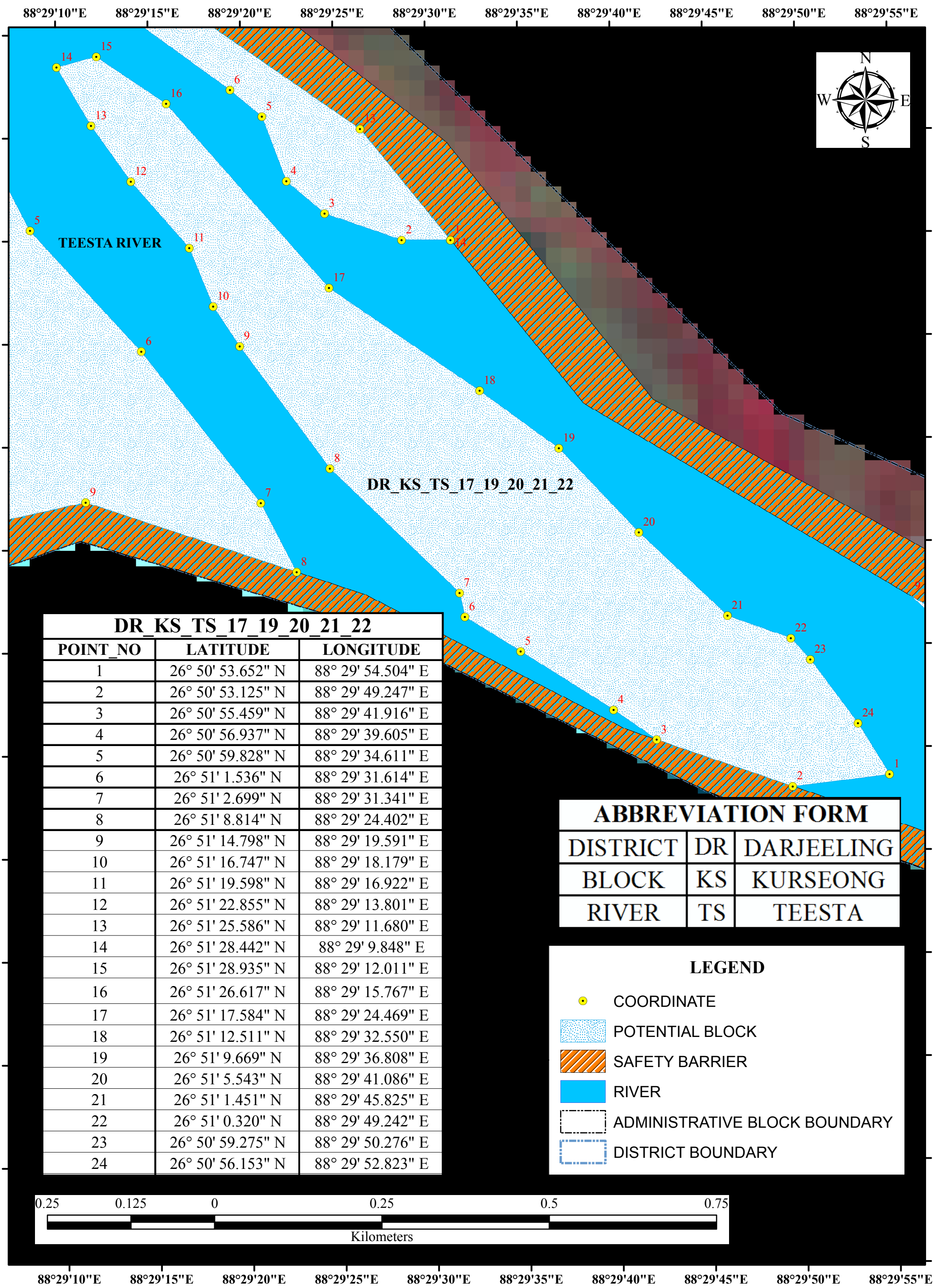
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

DR_KS_TS_16

POINT_NO	LATITUDE	LONGITUDE
1	26° 51' 25.084" N	88° 29' 4.739" E
2	26° 51' 23.517" N	88° 29' 5.057" E
3	26° 51' 22.415" N	88° 29' 4.406" E
4	26° 51' 20.266" N	88° 29' 1.851" E
5	26° 51' 17.257" N	88° 29' 1.812" E
6	26° 51' 18.927" N	88° 29' 0.910" E
7	26° 51' 20.650" N	88° 29' 0.549" E
8	26° 51' 24.184" N	88° 28' 56.674" E
9	26° 51' 24.908" N	88° 28' 57.023" E
10	26° 51' 26.347" N	88° 28' 57.578" E
11	26° 51' 25.144" N	88° 29' 0.784" E
12	26° 51' 25.183" N	88° 29' 3.622" E

POTENTIAL BLOCK DR_KS_TS_17_19_20_21_22 OF TEESTA RIVER



DR_KS_TS_17_19_20_21_22		
POINT_NO	LATITUDE	LONGITUDE
1	26° 50' 53.652" N	88° 29' 54.504" E
2	26° 50' 53.125" N	88° 29' 49.247" E
3	26° 50' 55.459" N	88° 29' 41.916" E
4	26° 50' 56.937" N	88° 29' 39.605" E
5	26° 50' 59.828" N	88° 29' 34.611" E
6	26° 51' 1.536" N	88° 29' 31.614" E
7	26° 51' 2.699" N	88° 29' 31.341" E
8	26° 51' 8.814" N	88° 29' 24.402" E
9	26° 51' 14.798" N	88° 29' 19.591" E
10	26° 51' 16.747" N	88° 29' 18.179" E
11	26° 51' 19.598" N	88° 29' 16.922" E
12	26° 51' 22.855" N	88° 29' 13.801" E
13	26° 51' 25.586" N	88° 29' 11.680" E
14	26° 51' 28.442" N	88° 29' 9.848" E
15	26° 51' 28.935" N	88° 29' 12.011" E
16	26° 51' 26.617" N	88° 29' 15.767" E
17	26° 51' 17.584" N	88° 29' 24.469" E
18	26° 51' 12.511" N	88° 29' 32.550" E
19	26° 51' 9.669" N	88° 29' 36.808" E
20	26° 51' 5.543" N	88° 29' 41.086" E
21	26° 51' 1.451" N	88° 29' 45.825" E
22	26° 51' 0.320" N	88° 29' 49.242" E
23	26° 50' 59.275" N	88° 29' 50.276" E
24	26° 50' 56.153" N	88° 29' 52.823" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

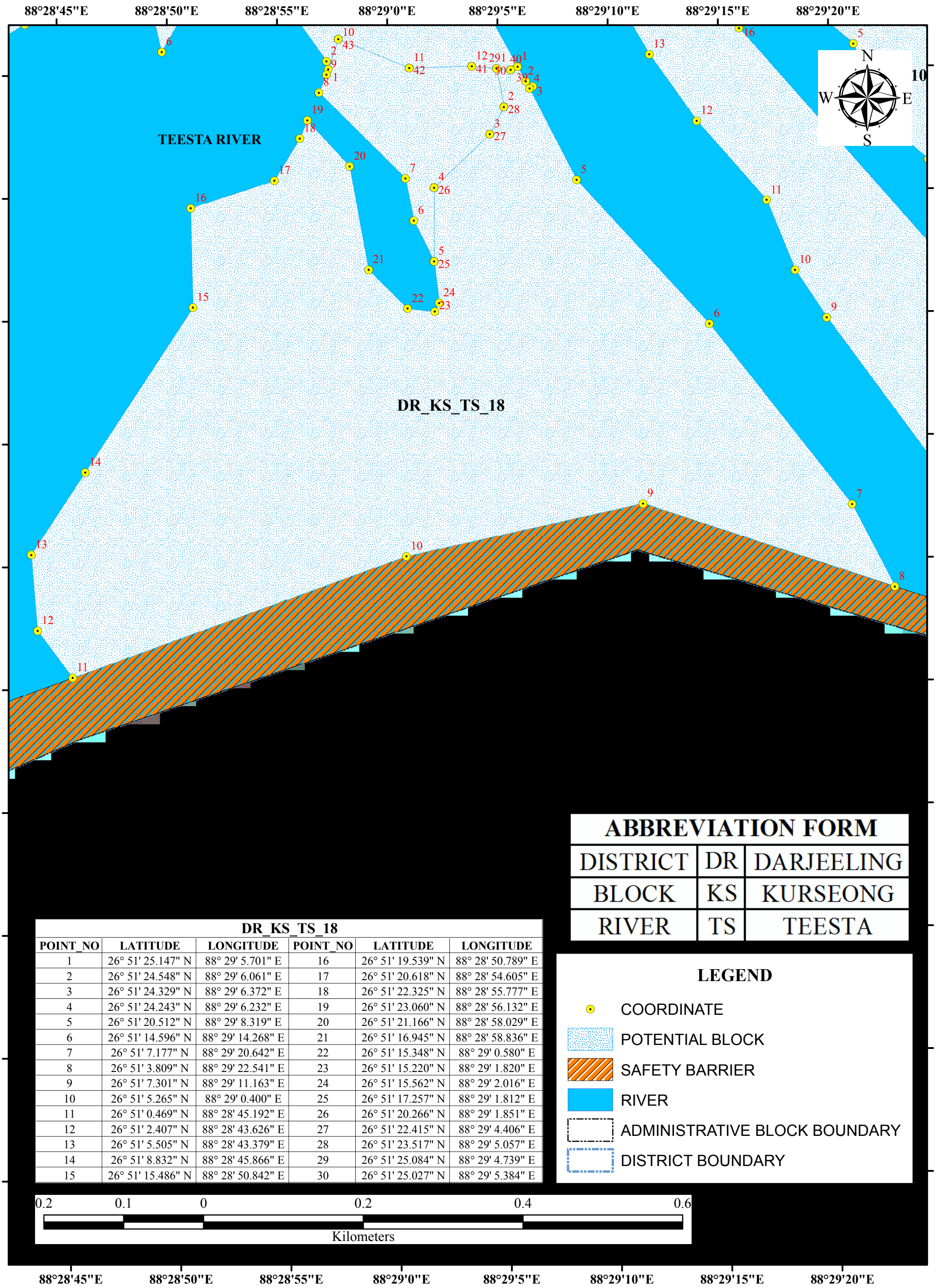
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.25 0.125 0 0.25 0.5 0.75

Kilometers

POTENTIAL BLOCK DR_KS_TS_18 OF TEESTA RIVER



DR_KS_TS_18					
POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 51' 25.147" N	88° 29' 5.701" E	16	26° 51' 19.539" N	88° 28' 50.789" E
2	26° 51' 24.548" N	88° 29' 6.061" E	17	26° 51' 20.618" N	88° 28' 54.605" E
3	26° 51' 24.329" N	88° 29' 6.372" E	18	26° 51' 22.325" N	88° 28' 55.777" E
4	26° 51' 24.243" N	88° 29' 6.232" E	19	26° 51' 23.060" N	88° 28' 56.132" E
5	26° 51' 20.512" N	88° 29' 8.319" E	20	26° 51' 21.166" N	88° 28' 58.029" E
6	26° 51' 14.596" N	88° 29' 14.268" E	21	26° 51' 16.945" N	88° 28' 58.836" E
7	26° 51' 7.177" N	88° 29' 20.642" E	22	26° 51' 15.348" N	88° 29' 0.580" E
8	26° 51' 3.809" N	88° 29' 22.541" E	23	26° 51' 15.220" N	88° 29' 1.820" E
9	26° 51' 7.301" N	88° 29' 11.163" E	24	26° 51' 15.562" N	88° 29' 2.016" E
10	26° 51' 5.265" N	88° 29' 0.400" E	25	26° 51' 17.257" N	88° 29' 1.812" E
11	26° 51' 0.469" N	88° 28' 45.192" E	26	26° 51' 20.266" N	88° 29' 1.851" E
12	26° 51' 2.407" N	88° 28' 43.626" E	27	26° 51' 22.415" N	88° 29' 4.406" E
13	26° 51' 5.505" N	88° 28' 43.379" E	28	26° 51' 23.517" N	88° 29' 5.057" E
14	26° 51' 8.832" N	88° 28' 45.866" E	29	26° 51' 25.084" N	88° 29' 4.739" E
15	26° 51' 15.486" N	88° 28' 50.842" E	30	26° 51' 25.027" N	88° 29' 5.384" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.2 0.1 0 0.2 0.4 0.6

Kilometers

POTENTIAL BLOCK DR_KS_TS_22A OF TEESTA RIVER

88°30'0"E 88°30'5"E 88°30'10"E 88°30'15"E

26°51'0"N 26°50'55"N 26°50'50"N 26°50'45"N

N W E S

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

TEESTA RIVER

DR_KS_TS_22A		
POINT_NO	LATITUDE	LONGITUDE
1	26° 50' 59.290" N	88° 30' 3.171" E
2	26° 50' 57.229" N	88° 30' 4.941" E
3	26° 50' 58.344" N	88° 30' 7.544" E
4	26° 50' 49.972" N	88° 30' 11.915" E
5	26° 50' 49.666" N	88° 30' 13.104" E
6	26° 50' 48.031" N	88° 30' 12.669" E
7	26° 50' 53.360" N	88° 30' 6.068" E
8	26° 50' 55.969" N	88° 30' 3.347" E
9	26° 51' 2.298" N	88° 29' 55.740" E
10	26° 51' 1.631" N	88° 29' 56.971" E
11	26° 51' 0.417" N	88° 30' 2.369" E

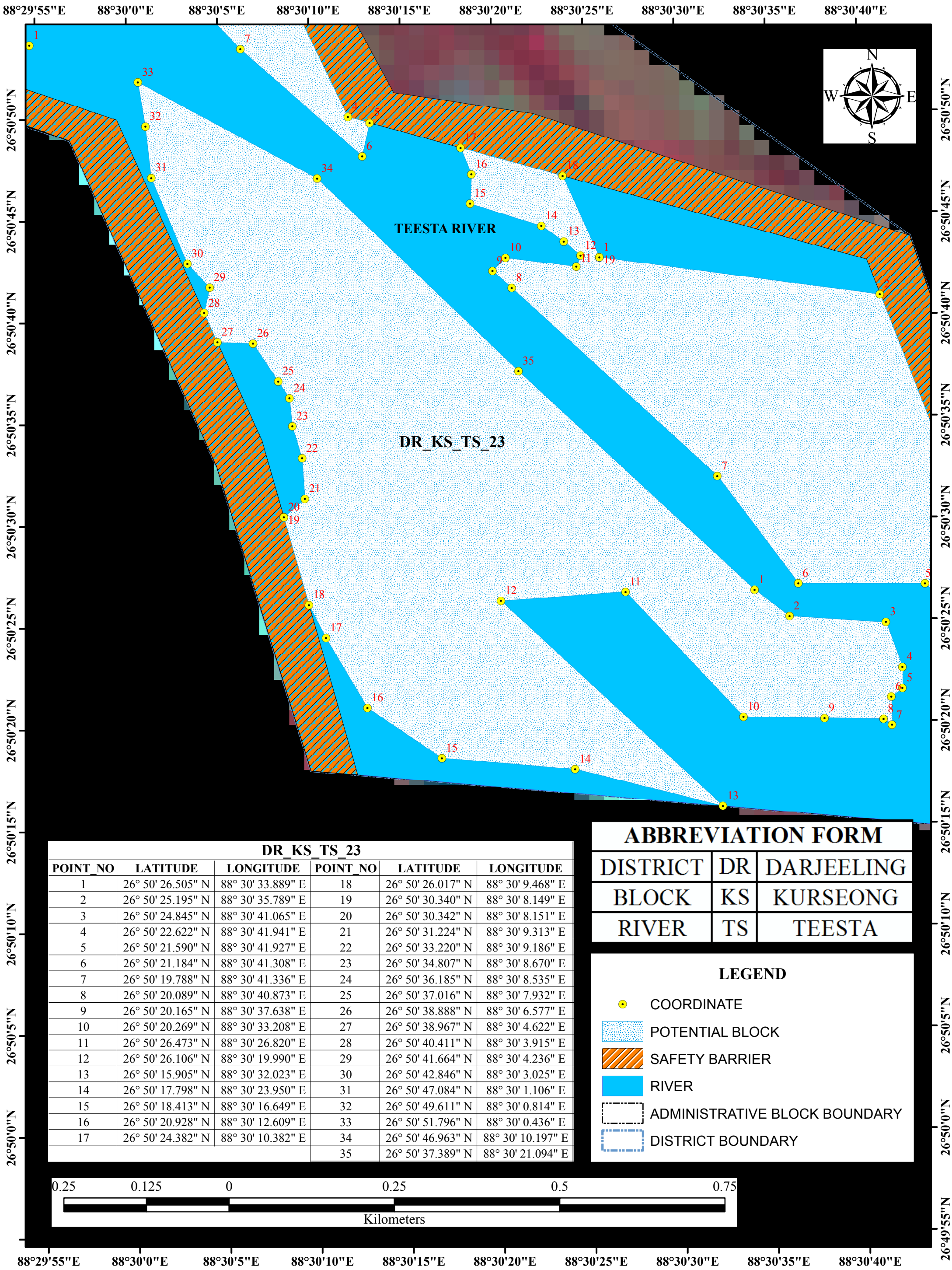
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.1 0.05 0 0.1 0.2 0.3

Kilometers

POTENTIAL BLOCK DR_KS_TS_23 OF TEESTA RIVER



DR_KS_TS_23					
POINT_NO	LATITUDE	LONGITUDE	POINT_NO	LATITUDE	LONGITUDE
1	26° 50' 26.505" N	88° 30' 33.889" E	18	26° 50' 26.017" N	88° 30' 9.468" E
2	26° 50' 25.195" N	88° 30' 35.789" E	19	26° 50' 30.340" N	88° 30' 8.149" E
3	26° 50' 24.845" N	88° 30' 41.065" E	20	26° 50' 30.342" N	88° 30' 8.151" E
4	26° 50' 22.622" N	88° 30' 41.941" E	21	26° 50' 31.224" N	88° 30' 9.313" E
5	26° 50' 21.590" N	88° 30' 41.927" E	22	26° 50' 33.220" N	88° 30' 9.186" E
6	26° 50' 21.184" N	88° 30' 41.308" E	23	26° 50' 34.807" N	88° 30' 8.670" E
7	26° 50' 19.788" N	88° 30' 41.336" E	24	26° 50' 36.185" N	88° 30' 8.535" E
8	26° 50' 20.089" N	88° 30' 40.873" E	25	26° 50' 37.016" N	88° 30' 7.932" E
9	26° 50' 20.165" N	88° 30' 37.638" E	26	26° 50' 38.888" N	88° 30' 6.577" E
10	26° 50' 20.269" N	88° 30' 33.208" E	27	26° 50' 38.967" N	88° 30' 4.622" E
11	26° 50' 26.473" N	88° 30' 26.820" E	28	26° 50' 40.411" N	88° 30' 3.915" E
12	26° 50' 26.106" N	88° 30' 19.990" E	29	26° 50' 41.664" N	88° 30' 4.236" E
13	26° 50' 15.905" N	88° 30' 32.023" E	30	26° 50' 42.846" N	88° 30' 3.025" E
14	26° 50' 17.798" N	88° 30' 23.950" E	31	26° 50' 47.084" N	88° 30' 1.106" E
15	26° 50' 18.413" N	88° 30' 16.649" E	32	26° 50' 49.611" N	88° 30' 0.814" E
16	26° 50' 20.928" N	88° 30' 12.609" E	33	26° 50' 51.796" N	88° 30' 0.436" E
17	26° 50' 24.382" N	88° 30' 10.382" E	34	26° 50' 46.963" N	88° 30' 10.197" E
			35	26° 50' 37.389" N	88° 30' 21.094" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

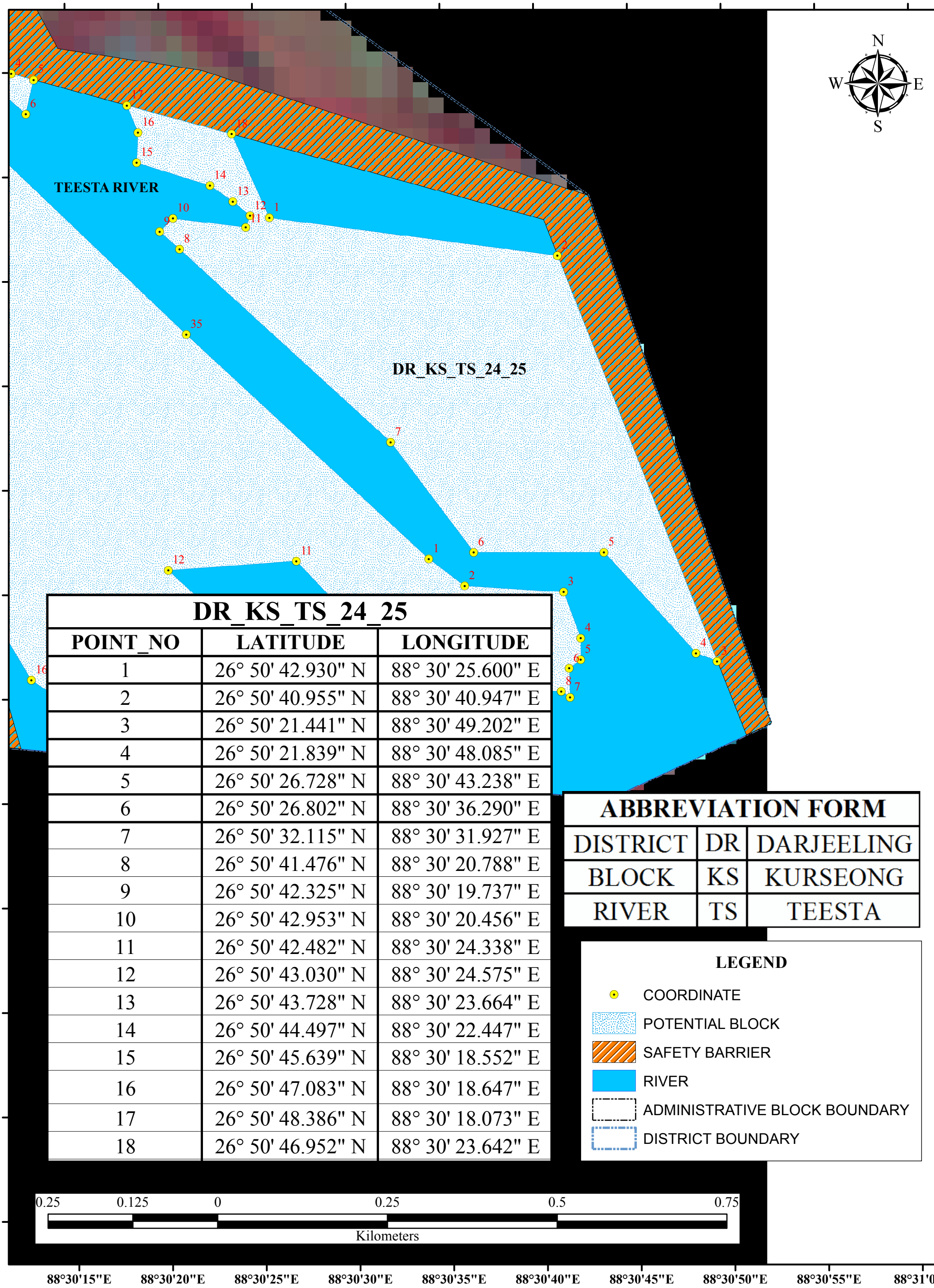
LEGEND

- COORDINATE
- POTENTIAL BLOCK
- SAFETY BARRIER
- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.25 0.125 0 0.25 0.5 0.75

Kilometers

POTENTIAL BLOCK DR_KS_TS_24_25 OF TEESTA RIVER



DR_KS_TS_24_25		
POINT_NO	LATITUDE	LONGITUDE
1	26° 50' 42.930" N	88° 30' 25.600" E
2	26° 50' 40.955" N	88° 30' 40.947" E
3	26° 50' 21.441" N	88° 30' 49.202" E
4	26° 50' 21.839" N	88° 30' 48.085" E
5	26° 50' 26.728" N	88° 30' 43.238" E
6	26° 50' 26.802" N	88° 30' 36.290" E
7	26° 50' 32.115" N	88° 30' 31.927" E
8	26° 50' 41.476" N	88° 30' 20.788" E
9	26° 50' 42.325" N	88° 30' 19.737" E
10	26° 50' 42.953" N	88° 30' 20.456" E
11	26° 50' 42.482" N	88° 30' 24.338" E
12	26° 50' 43.030" N	88° 30' 24.575" E
13	26° 50' 43.728" N	88° 30' 23.664" E
14	26° 50' 44.497" N	88° 30' 22.447" E
15	26° 50' 45.639" N	88° 30' 18.552" E
16	26° 50' 47.083" N	88° 30' 18.647" E
17	26° 50' 48.386" N	88° 30' 18.073" E
18	26° 50' 46.952" N	88° 30' 23.642" E

ABBREVIATION FORM		
DISTRICT	DR	DARJEELING
BLOCK	KS	KURSEONG
RIVER	TS	TEESTA

LEGEND

- COORDINATE
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- RIVER
- ADMINISTRATIVE BLOCK BOUNDARY
- DISTRICT BOUNDARY

0.25 0.125 0 0.25 0.5 0.75

Kilometers

ANNEXURE 5.1

Compliance to the Observations
Government of West Bengal
Office of the District Land & Land Reforms Officer, Darjeeling
District Survey Report, Darjeeling, West Bengal
Memo No. 74/ADM (LR)/C/DJ/2021, dated 02.09.2021

SL NO	OBSERVATIONS	COMPLIANCE
1	Table no. 8.1 (Details of mining leases of the district) the same mining sites have been repeated in Sl. No. 15 and 52.	Complied With. Please refer Table no. 8.1 of Overview of mining activity in the district

ANNEXURE 5.2

Compliance to the Minutes of the twenty-eighth meeting of the reconstituted State Level Expert Appraisal Committee, West Bengal held on 08.01.2022 at 10:30 a.m. at the Conference Room, Paribesh Bhawan, Kolkata

Sl. No.	Observations	Compliance
1	In the drainage map watersheds and micro-watersheds should be marked	The watershed level up to 3rd order streams are marked in the drainage map and is depicted in Plate No. 3A
2	Hydrographs at key intersections along the entire stretch of the river falling in the particular district along with a discussion on the runoff of the river in the upstream and downstream within the district.	Given in section 3.6 page no 26 to 27. Depth of mining has been selected in accordance with the depth to water level depicting from the Hydrographs.
3	A separate map showing locations of dams, barrages, bridge, river bed tube wells, river bed collector wells and infiltration galleries.	Given as Plate no 1B. All major bridges, Barrages, river bed wells, and other hydraulic structures are marked in the drainage map of the district and also labelled.
4	Depth to base flow in the riverbed sand mining areas, present and proposed, in pre-monsoon and post-monsoon periods.	Depth of the base flow is below proposed mining depth as observed from the field study. During study period, no mining activity commenced.
5	Field photographs showing activities of replenishment study.	Representative Photographs of Survey of the River bed profile used for replenishment and aggradation measurement study is being furnished in Plate No. 4.
6	A map showing long-term (10-year or more) erosion-accretion areas on both the banks of the rivers which would help to identify no-mining zone on the river bed along with a discussion.	Given in Plate no 5A & 5B. Though all the rivers of the district doesn't shows much difference when studied the image archives from 1985 to 2021, however, a stretch of Mahananda River is showing 300m increase in riverbed and is furnished as one of the representative image detection study.
7	In each proposed block, the RL of the sand surface (pre and post Monsoon) will be useful and the suggested mining depth corresponds to a particular RL of the deepest layer mined (not depth on absolute terms in case replenished quantity is different)	Elevation levels for each potential zone are furnished as Annexure-2. However, DGPS survey of each block shall be carried while preparation of the Mining Plans and final adjustment of depth parameters shall be done accordingly. In no circumstances, mining depth shall be increased beyond the depth suggested for each potential zone in this DSR.
8	Depth of mining considered for calculation of potential reserve. It presumes that base flow depth is more than the mining depth in pre-monsoon period. That needs to be substantiated with data for each block.	Depths of Mining Considered for each potential zone are furnished on the basis of average and are given in Table no 7.9, Page no 87-88. However, after finalization of the sand Blocks, each block shall be surveyed again during the course of Mining Plan preparation and final depths shall be suggested accordingly.
9	Ground water level pre and post monsoon in the watershed (of district) may be put in a map.	Complied with. The same has been furnished as Plate no 3B and 3C.
10	It was also suggested to show in maps the approach roads (accessibility plan complying with guidelines) for the blocks.	The major transport networks for the district are depicted in Figure no 10.2, Page no 107. The accessibility from each block shall be detailed in the Mining Plan.

Sl. No.	Observations	Compliance
11	Sand mining in designated upstream blocks may affect the replenishment in blocks downstream and this consideration may be relevant for estimating the percentage of replenishment. What should be the percentage for minable reserve with respect to potential reserve of sand?	This study shall be undertaken by the Mines Branch, Dep. of Industry, Commerce & Enterprise, GoWB in subsequent years and annual reports shall be generated covering these points. However, as per the EMGSM, 2020, not more than 60% of the area will be covered under extraction plan.
12	Data on river flow on all seasons and the sediment load data (especially during seasons of replenishment) will constitute a baseline condition to judge any effect of increased mining on the river flow characteristics.	This study shall be undertaken by the Mines Branch, Dep. of Industry, Commerce & Enterprise, GoWB in subsequent years and annual reports shall be generated covering these points.
13	Existing mining leases may be shown on river map along with potential blocks	Existing Mining Leases having Environmental Clearance as on 31st January, 2022 are furnished in Plate no 2A and 2B.
14	On the river map, potential new blocks and existing blocks may also be designated by serial or code number so that it matches with the tables.	Furnished in Plate no 2A and 2B
15	It will be appropriate if the methodology adopted (not only the available theory) for annual replenishment estimation is clearly and objectively narrated with applicable data and sample calculations.	Change detection through satellite imagery study, Field evidences and empirical formulae are utilized for replenishment study. Detail discussions are done in chapter 7 of this report.
16	Representative satellite and/or drone photography, if used for surveying, may also be produced in DSR.	All the plates are satellite imagery based and are furnished in Plate no 2A and 2B.
17	The suggested mining depth should be indicated for each block in the table (not done for PurbaBardhaman).	Complied with. Suggested mining depths are furnished in Table no 7.3, Page no 69-76.
18	Order of sections in the report is not logical in some reports.	Corrected as per specified format of DSR.
19	A table showing all general compliances in DSR as per the Mining Rules may be furnished.	Complied with. Given as Annexure-1.
20	For existing mines (sand and other minerals), minable reserve has not been mentioned.	Details of the mining leases given in Table no 8.1, Page no 97-102.
21	All the documents leave much to be desired in respect of reserve assessment and replenishments estimations.	Given in section 7.2/V, page no 66-86.
22	Reserve assessment has been rudimentary and the replenishment estimation needs to be carried out using accepted methods and models available for the purpose.	No attempt has been done for mineable reserve assessment in this DSR. Efforts have been restricted to define the potential sand resources in each rivers of the district. Mineable reserve estimation shall be done once the Blocks are demarcated as per West Bengal Minor Mineral Concession Rules, 2016 and

Sl. No.	Observations	Compliance
		based on EMGSM 2020.
23	Rivers are one of the main sources to supply sand for construction projects. Depending on river morphology and hydraulic characteristics, its sediment transport capacity, and mining operation method, the extraction of river bed materials may affect its ecosystem through bank and bed erosion. This needs to be incorporated in the DSR.	Mining impact given in Chapter 11, page no 108-111.
24	To advance the mechanisms of river pit infilling, the effects of various parameters (i.e., the distance between pits, the pit plan shape, the pit depth, sediment size, and approaching flow velocity) needs to be investigated.	This study shall be undertaken by the Mines Branch, Dep. of Industry, Commerce & Enterprise, GoWB in subsequent years and annual reports shall be generated covering these points.
25	Monitoring should provide data to evaluate the upstream and downstream effects of sand and gravel extraction activities, and long-term changes. A brief report summarizing the annual results of the physical and biological monitoring should document the evolution of the sites over time, and the cumulative effects of sand and gravel extraction. The summary should also recommend any maintenance or modification of extraction rates needed to minimize impacts of extraction.	This study shall be undertaken by the Mines Branch, Dep. of Industry, Commerce & Enterprise, GoWB in subsequent years and annual reports shall be generated covering these points.
26	Sand Replenishment, Geomorphology and Hydrology Physical monitoring requirements of sand and gravel extraction activities should include surveyed channel cross-sections, longitudinal profiles, bed material measurements, geomorphic maps, and discharge and sediment transport measurements. The physical data will illustrate bar replenishment and any changes in channel morphology, bank erosion, or particle size.	Explained in detailed in Chapter no 7.
27	With reference to (point no 4.1.1 g) of enforcement guidelines 2020 read with Standard environmental conditions for sand mining (point no 8 page 73) of SSMMG-2016, all DSRs so prepared, should contain a chapter on NO MINING ZONE with name of mouza, dag no and geo references along with areas of sensitivity. Appraisal of the DSRs should NOT be taken for consideration without the chapter on NO MINING ZONE and AREAS of SENSITIVITY.	Section on No mining zone is given in Page no 90-92.

Sl. No.	Observations	Compliance
28	The areas of sensitivity should contain those NON-FOREST AREAS which are in excellent line of habitat for wild animals, birds, turtles, dolphins and other aquatic life, which need be excluded from the list of mining areas on ecological and environmental grounds. This is utmost necessary and has to be done to avoid conflict about wetland use in near future.	ENVIS centre on Wildlife and Protection areas map as published in August 2020, shows wildlife habitat in the potential sand mining areas.
29	For example, low lying swamps by the side of river Ajay in Paschim Midnapur and Ahiran lake, pathanbeel, Bishnupur beel area in Murshidabad District provide an excellent nitche for migratory birds in the winter. Part of river Damodar and the confluence of Damodar and Hooghly in East Barddhaman District house one of the last surviving habitats of endangered gangetic dolphin (Platinista gangeticus), should be identified in consultation with the concerned forest circles of the Department of Forests and to be excluded from the list of mining areas.	Part of comment 30.
30	Though all the DSRs so prepared, have not followed the same format yet it is felt that necessary remedial measures to mitigate the effect of mining and a reclamation plan in mined out areas should be included, especially in those DSRs which have not yet mentioned the same.	DSR Format Compliance under Notification S. O. 3611 (E), Dated 25th July 2018, Appendix-X (I).
31	Data, satellite imageries and allied information in respect of flora, fauna and their habitat biological environment, if collected from ENVIS centre may be included in the DSRs for ready reference.	Source of all the secondary figures and tables included in the DSR.
32	DSR comprises of secondary data which are required to be endorsed by concerned Departments.	References for secondary data are furnished in the DSR under references.
33	Revision should be done every year and actual survey should be done.	This study shall be undertaken by the Mines Branch, Dep. of Industry, Commerce & Enterprise, GoWB in subsequent years and annual reports shall be generated covering these points.
34	It is to be clearly mentioned that there are no other minerals than sand in this district.	Noted.
35	Dates of NIC database and other data should be provided	Noted and given in page no 14-15.
36	Outcome / response to the public consultation should be mentioned	Given as compliance statements in the DSR.

Sl. No.	Observations	Compliance
37	No-Mining-Zone should be clearly mentioned with special mention to the ecologically and otherwise sensitive zones. Bridges and river-bed tubewells should also be clearly demarcated. Wildlife should also be considered	Restricted zone given as Plate no 2A and 2B. Location of bridges, dam given in 1B
38	Hydrographs of the rivers and volume of rain should be studied to correlate with the minable sand reserve	Incorporated in the Replenishment study section 7.2/V, page no 66-86.
39	Text parts (as in Chapter 6) should be provided with proper reference and citation of authentic books. Sources of Tables and figures should be mentioned. Some are very old data – those should be replaced by latest data	Source of all the secondary figures and tables included in the DSR.
40	Depth of mining and distance from banks should be clearly mentioned and highlighted	Given in Table no 7.9, Page no 87-88.
41	Secondary (Collected) data/ map from other departments should be certified from the respective departments (e.g., Forest and wildlife data, demography, aquifer, transportation route to the blocks)	References used from Public Domain/ Websites are furnished in the Reference section in this DSR.
42	Evidence (like dated photographs) of surveying, collection of primary data to be provided	Field photographs are furnished in Plate 4.
43	Sample calculation and methodology for calculation for minable resource and replenishment data to be provided with proper units	Given in Table no 7.7 and Table no 7.11.
44	If any predictive model is used, its validity should be established	Predictive Model has been carried out based on EMGSM 2020. The validity checking requires consecutive study which needs to be undertaken by the concerned department.
45	Evidence for 4 times physical survey to be provided	Field photographs are furnished in Plate 4. Field registers are available at office and can be furnished on demand.
46	Land utilization and forests data are upto 2013/2014 – should be updated	Latest available data incorporated in the DSR.

ANNEXURE 5.3

Compliance to the SEAC members' comments received through mail on 25th March 2022

Sr. No.	Observations	Compliance
1	Inclusion executive summary at the beginning	Executive summary included in page no 2 to 3.
2	Compliance table of the DM/SEAC members' observations may be placed at the end. Instead, a table of compliance with the guidelines to be placed at the beginning indicating the page number	Complied with and given as separate document.
3	DSR specific observation should not be included in all in the compliance table of all the DSR.	Complied with.
4	DSR compliance table should come just after the executive summary	Complied with and given as Annexxure-1
5	Need to mention page number in the DSR compliance table.	Modified table furnished as Annexure-1
6	Legend should be given for sand bar coding	Complied with and furnished as abbreviation in page no 76.
7	Citation of reference should be given for Empirical formula by which Replenishment calculated.	Complied with and given in page no 80 to 83.
8	Map Source to be given for each map such as Watershed, Transport, Location, Drainage etc.	Complied with and given in Plate no 1 and 3.
9	Mention conclusion and Recommendation instead Summary	Complied with and given in page no 115-118.
10	Reference should be in a standard referencing format	Complied with and given in page no 119-120.
11	Source and date of collecting data for satellite imagery should be given.	Complied with and given in Plate no 2.

ANNEXURE 5.4

Compliance to the Minutes of the 61st meeting of the SEIAA, West Bengal held on 23.05.2022 at Kolkata

Sl. No.	Observations	Compliance
1	List of definitions of technical terms used in the DSR to be included.	Complied with.
2	Each potential zone should have a unique code no. and area bearing all the coordinates of all the points defining the boundary.	Complied with. Please refer Annexure 3.
3	A map showing the potential zone with the legend, mentioning all the coordinates of the polygon, defining the zone to be attached as annexure in the DSR.	Complied with. Please refer Annexure 4.
4	Dept. of Industry, Commerce & Enterprises will issue unique code with reference to the original coding of potential zones to each lessee. This unique code issued to lessee should be reflected in the LoI.	Shall be complied with.
5	Dept. of Industry, Commerce & Enterprises will upload the updated map showing the location of the LoI issued against the area and sand mining lease areas in different colour coding.	Shall be complied with.
6	Date of approval should be mentioned in all the pages of the annexures of DSRs.	Noted.
7	The consultant is further requested to refer the DSRs prepared by other states in order to confirm that no relevant point is missed out in any of our DSRs.	Complied with.
8	The consultant may also refer to the baseline data available with Irrigation Dept.	At present Replenishment Study is being conducted for all the sand producing Districts of West Bengal. This will be covered in the relevant reports.

ANNEXURE 5.5

Compliance to the Minutes of the 66th meeting of the SEIAA, West Bengal held on 06.07.2022 at Kolkata

Sl. No.	Observations	Compliance
1	The format of all the DSRs should be uniform.	Complied with.
2	The corrections required to be done regarding Annexure-3.	Complied with. Please refer Annexure 3.
3	List of existing lease is attached with the documents in Chapter 8.1. The list should contain the date of issue and validity.	Complied with. The details of the existing leases updated as per the data provided from concern department.
4	Sequence of meetings and observation given by SEAC and SEIAA should be mentioned in chronological order and be a part of the whole document.	Complied with. Please refer Annexure-5.

Annexure 6
SEIAA 72nd Meeting (2nd September, 2022) Minutes of Meeting

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State Environment Impact Assessment Authority
Pranisampad Bhawan, 5th Floor, Sector-III, Salt Lake, Kolkata - 700106
(West Bengal)
Minutes of SEIAA Meeting

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Subject:- 72nd meeting of SEIAA

Venue:- Conference Room of Environment Department, Prani Sampad Bhavan, 5th Floor, LB Block, Sector III, Salt Lake, Kolkata 700106.

From :- 02 Sep 2022

To :- 02 Sep 2022

CONSIDERATION/RECONSIDERATION OF TOR PROPOSAL (Extension/Amendment/Corrigendum)

1. Proposal No. :- **SIA/WB/IND2/277592/2022** File No- **EN/T-II-1/019/2022** Proposed amendment in Terms of Reference for the Ethanol/Extra Natural Alcohol (ENA) Manufacturing Plant at Plot No- 35(P), 42(P),45(P), 46(P),47(P), 48(P), 49(P), 50(P), 51, 52, 53, 54(P), 55(P), 56(P), 57(P), 93(P), 128(P), 422(P), 426(P), J.L No. 93, Malda Industrial Growth Centre, Phase II, Opp. Jubilee Petrol Pump , Vill – Mandilpur, P. O. – Narayanpur, P. S. – Malda, PIN– 732141, West Bengal by **M/s. Gujarat Ambuja Exports Ltd.**

Type Of Project : **Amendement**

INTRODUCTION

This has reference to the online application vide proposal no. **SIA/WB/IND2/277592/2022** dated **20 Jun 2022** along with the copies of EIA/EMP seeking Modification of Terms of reference (TOR) under the provisions of the EIA Notification, 2006 for the above mentioned proposed project. The proposed project activity is listed under Category **B** of EIA Notification, 2006 and the proposal is appraised at state level.

The ToR was approved by SEIAA during its 58th meeting held on 11.05.2022. Accordingly the project proponent (PP) had obtained ToR vide no. 889/EN/T-II-1/019/2022 dated 18.05.2022 from SEIAA. Now the PP had applied for amendment in the ToR for addition of 4.9 MW Captive Power Plant along with the proposed ENA plant.

SEAC recommended for amendment in Terms of Reference with the condition that ESP should be provided as emission control device.

PROJECT DETAILS

The project of M/s **GUJARAT AMBUJA EXPORTS LTD** located in as follows :

State of the project			
S. No.	**State**	**District**	**Tehsil**
(1.)	West Bengal	Malda	Maldah (old)

The salient features of the project submitted by the project proponent is available at Report under online proposal no. **SIA/WB/IND2/277592/2022**

DELIBERATION IN SEIAA

SEIAA considered the recommendation of SEAC and accepted the same.

RECOMMENDATIONS OF SEIAA

Approved for amendment in Terms of Reference.

Conclusion :

Recommended

2. Proposal No. :- **SIA/WB/MIS/278136/2022** File No- **EN/T-II-1/030/2018**
Validity extension of Terms of Reference for the residential complex 'SANKALPA II' at Premises No. 36, MAR (Plot No. BF/1, BF/2, BF/3), SANKALPA SITE – II, Action Area – I, New Town, Rajarhat, Kolkata - 700156, West Bengal by **M/s. West Bengal Infrastructure Development Finance Corporation Ltd.**

Type Of Project : **Extension**

INTRODUCTION

This has reference to the online application vide proposal no. **SIA/WB/MIS/278136/2022** dated **22 Jun 2022** along with the copies of EIA/EMP seeking Modification of Terms of reference (TOR) under the provisions of the EIA Notification, 2006 for the above mentioned proposed project. The proposed project activity is listed under Category **B** of EIA Notification, 2006 and the proposal is appraised at state level.

The ToR was issued by SEAC vide Memo No. 674-2N-100/2010(E) dated 03.12.2018. Now the PP had applied for extension of validity of ToR.

SEAC recommended validity extension of Terms of Reference up to 02.12.2022 as per the provision of Notification vide No. S.O. 751(E) dated 17.02.2020 issued by MoEF&CC.

PROJECT DETAILS

The project of M/s **WEST BENGAL INFRASTRUCTURE DEVELOPMENT FINANCE CORPORATION LIMITED** located in as follows :

State of the project			
S. No.	**State**	**District**	**Tehsil**
(1.)	West Bengal	North 24 Parganas	Rajarhat

The salient features of the project submitted by the project proponent is available at Report under online proposal no. **SIA/WB/MIS/278136/2022**

DELIBERATION IN SEIAA

SEIAA considered the recommendation of SEAC and accepted the same.

RECOMMENDATIONS OF SEIAA

Approved extension of validity of Terms of Reference.

Conclusion :

Recommended

3. Proposal No. :- **SIA/WB/MIS/278503/2022** File No- **EN/T-II-1/031/2018**
Validity extension of Terms of Reference for the residential complex 'SANKALPA III' at Premises No. 23, MAR (Plot No. CA/12 to CA/17), SANKALPA SITE – III, Action Area-I, New Town, Rajarhat, Kolkata - 700156, West Bengal by **M/s. West Bengal Infrastructure Development Finance Corporation Ltd.**

Type Of Project : **Extension**

INTRODUCTION

This has reference to the online application vide proposal no. **SIA/WB/MIS/278503/2022** dated **22 Jun 2022** along with the copies of EIA/EMP seeking Modification of Terms of reference (TOR) under the provisions of the EIA Notification, 2006 for the above mentioned proposed project. The proposed project activity is listed under Category **B** of EIA Notification, 2006 and the proposal is appraised at state level.

The ToR was issued by SEAC vide Memo No. 715-2N-103/2010(E) dated 10.12.2018. Now the PP had applied for extension of validity of ToR.

SEAC recommended validity extension of Terms of Reference up to 09.12.2022 as per the provision of Notification vide No. S.O. 751(E) dated 17.02.2020 issued by MoEF&CC.

PROJECT DETAILS

The project of M/s **WEST BENGAL INFRASTRUCTURE DEVELOPMENT FINANCE CORPORATION LIMITED** located in as follows :

State of the project			
S. No.	**State**	**District**	**Tehsil**
(1.)	West Bengal	North 24 Parganas	Rajarhat

The salient features of the project submitted by the project proponent is available at Report under online proposal no. **SIA/WB/MIS/278503/2022**

DELIBERATION IN SEIAA

SEIAA considered the recommendation of SEAC and accepted the same.

RECOMMENDATIONS OF SEIAA

Approved extension of validity of Terms of Reference.

Conclusion :

Recommended

MISCELLANEOUS

1. Discussion on draft DSRs of Darjeeling, Jalpaiguri and Kalimpong.

   The DSRs of Darjeeling, Jalpaiguri and Kalimpong are approved.

2. Complaint received from Ankur Sharma about flouting of environmental norms at "Mayfair Tea Resort" at New Chumta Tea Garden, Siliguri, PIN : 734001, West Bengal by M/s. Lotus Projects Private Limited on about 26 acres of vested property.

   A complaint regarding construction activities in the name of "Mayfair Tea Resort" within the New Chumta Tea Garden, Siliguri, PIN : 734001 by M/s. Lotus Projects Private Limited without obtaining Environment Clearance nor the requisite permissions from the WBPCB. It is observed that the area also falls within the Designated Eco Sensitive Zone of Mahananda Wild Life Sanctuary.

   The following actions are suggested :-

   a) **An inquiry into the project activities by WBPCB and submission of a report thereof.**
   b) **A letter may be sent to the PCCF(Wild Life) and Chief Wild Life Warden, West Bengal to obtain his comments on the project.**

3. Reply received from M/s. Larica Estates Limited to show cause notice vide no. 1250/EN/T-/II-1/077/2012(Pt.-1) dated 30.06.2022 in respect of Premises no. 295/A, Ward No. 5, Mouza – Baluria, JL No. 37, Baluria Road, PS – Barasat, Dist. - North 24 Parganas, PIN: 700126, West Bengal.

   In the reply received from M/s. Larica Estates Limited, it is observed that they have refuted the inquiry conducted by WBPCB regarding the total built up area of the Larica Township Project. It is therefore decided that an assessment of the total built up area of the project be made by a Registered Surveyor to ascertain the fact. The Surveyor is also required to check from the land records of the project area for presence of any designated water body and the present status of the same. Member Secretary may arrange for engaging a Registered Surveyor for the purpose.

4. Reply received from M/s. Manya Dealtrade Pvt. Ltd. & Ors. to show cause notice vide no. 1669/EN/T-II-1/063/2018 dated 29.07.2022 in respect of "Srijan Botanica" at Holding No. 336, Dr. B. C. Roy Road, Ward No. 25, P.S. – Sonarpur, Rajpur-Sonarpur Municipality, Dist. – South 24 Parganas, PIN : 700152, West Bengal.

   On the basis of a complain received regarding filling up of water body in the project "Srijan Botanica" a show cause notice was sent to M/s. Srijan Realty Pvt. Ltd. However, the reply has been received from M/s. Manya Dealtrade Pvt. Ltd. & Ors. on the subject claiming that M/s. Srijan Realty Pvt. Ltd. is not the land owner of the project and M/s. Manya Dealtrade Pvt. Ltd. & Ors. are the land owners of the project. The project proponent claims to have received Consent to Establish from WBPCB and Sanctioned Building Plan from Rajpur-Sonarpur Municipality having a total built up area of 16,349.77 sq.m.

   In the light of above an inquiry into the project may please be conducted by WBPCB and submit a report.