IN THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI
ORIGINAL APPLICATION NO.569/2023

IN THE MATTER OF:
ALOK KUMAR ……..Applicant

Versus

UNION OF INDIA MINISTRY
OF ENVIRONMENT FOREST & CLIMATE CHANGE

……Respondents

INDEX

THROUGH

PRIYANKA SWAMI
ADVOCATE
COUNSEL FOR EXECUTIVE ENGINEER,
IRRIGATION CONSTRUCTION DIVISION, GHAZIABAD
F13, GROUND FLOOR,
JANGPURA, NEW DELHI - 110014

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COMPLIANCE REPORT ON BEHALF OF THE EXECUTIVE ENGINEER IRRIGATION CONSTRUCTION DIVISION, GHAZIABAD

Most Respectfully Showeth:

1. That this Compliance Report is filed in response to the Hon'ble National Green Tribunal's order dated 07.08.2024, wherein the Hon'ble NGT directed the Irrigation Department to demarcate the floodplain zone of the Yamuna and Hindon rivers.

2. That in compliance with the said order, the Irrigation Department has demarcated the floodplain zone along a significant stretch of the Yamuna and Hindon rivers, covering 72 kilometers of the Yamuna river within Gautam Budh Nagar district and 10 kilometers of the Hindon river. To clearly demarcate the floodplain zone, 294 robust RCC pillars were installed as per the contour made by the Survey of India along the designated river stretches.

3. That the advocate of the state convened a meeting with the Director of Survey of India and officials of the Irrigation Department of Uttar Pradesh to discuss the demarcation of the floodplain zone. The minutes of this meeting are annexed herewith as **ANNEXURE 1** .

4. That the Hon'ble NGT, vide order dated 08.07.2024 in IA No. 240/2024, approved the recommendations, timeline of 6 months, and budget as

requested by the Survey of India for the demarcation of the floodplain zone of the Hindon river. However, 2 months out of these 6 months were hindered in the process of providing funds, which were ultimately provided on 14.10.2024.

5. That the Irrigation Department is making all efforts to comply with the remaining directions of the Hon'ble NGT. As per letter no. 5544 dated 17/10/2024 received from the office of Director, Survey of India, Uttar Pradesh Geo-Spatial Directorate, the timeline of the project is as follows:

    a. **Tendering process and award of contract:** 1.5 Months
       The Survey of India will take 1.5 months to complete the tendering process for selecting a contractor to carry out the survey work. This involves preparing the tender documents, inviting bids, evaluating the bids, and awarding the contract.
    b. **Data acquisition and Post processing for generation of DSM, DEM, Contours and ORI:** 2 Months (Outsourced team directed From other project to the project area, work started on 16/10/2024, 30sqr km area drone flying completed. Data acquisition work likely to be completed by 31 Dec, 2024)
       The actual data acquisition and processing is expected to take 2 months. This involves capturing aerial data using drones or other aerial platforms, processing the data to create a Digital Surface Model (DSM) and a Digital Elevation Model (DEM), and generating contours and ortho-rectified imagery (ORI).
    c. **Feature Extraction:** 2-2.5 Months (By February, 2025)
       The process of extracting relevant features from the generated data, such as topographical features and administrative boundaries, will take an additional 2 to 2.5 months.

   A true copy of the letter no. 5544 dated 17/10/2024 received from the office of Director, Survey of India, Uttar Pradesh Geo-Spatial Directorate is marked as **ANNEXURE 2**

6. That after the Survey of India provides the Digital Elevation Model (DEM)/Contour Map by February 2025, the Irrigation Department will need additional time for the following activities:
    a. Marking of HFL on DEM/Map. - 15 Days
       This involves analysing the DEM/Map and marking the High Flood Level (HFL) to identify the areas prone to flooding.
    b. Fixing of coordinates of Flood plain zone on ground by survey of india. - 45 Days

The Survey of India will physically mark the coordinates of the floodplain zone on the ground based on the HFL marking and the DEM/Map.

c. Fixing of Pillar of flood plain zone on both side of Hindon river in District Ghaziabad and Gautambuddh nagar. - 90 Days
This involves installing pillars along the demarcated floodplain zone to clearly indicate the boundaries on the ground.

7. That in light of the timeline for the pending survey and subsequent activities, the Irrigation Department anticipates completing the demarcation of the floodplain zones of the Yamuna and Hindon rivers by July 2025.

PRAYER

In light of the above, it is humbly requested that the Hon'ble NGT may be pleased to:

a. Take the Compliance Report on record;
b. Considering the above-mentioned averments, grant additional time to comply with the remaining directions till July 2025; and
c. Pass any other order(s) as deemed fit and proper in the facts and circumstances of the case.

For this act of kindness, the Applicant shall, as in duty bound, ever pray.

THROUGH

PRIYANKA SWAMI
ADVOCATE
COUNSEL FOR EXECUTIVE ENGINEER,
IRRIGATION CONSTRUCTION DIVISION, GHAZIABAD
F13, GROUND FLOOR,
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AFFIDAVIT

Affidavit of **Sh. Rajkumar Vern** aged about **56** years s/o **Sh. Nanak Chand Vern**, presently posted as **Executive Engineer** having office at **Irrigation Construction Division, Ghaziabad.**

NOTARY RENU AGARWAL Delhi GOVT. OF INDIA

1. That I am posted as stated above and well conversant with the facts of the present case and as such competent to swear this affidavit before this Tribunal.

2. That the accompanying report has been drafted by our counsel upon my instructions.

3. That the contents of the accompanying additional affidavit are true and correct and the knowledge has been derived from official records and nothing material has been concealed therefrom.

DEPONENT

VERIFICATION

Verified on solemn affirmation at New Delhi on this 22 OCT 2024 day of 2024, that the contents of the foregoing affidavit are true and correct to the best of my knowledge and no part of it is false and nothing material has been concealed therefrom.

NOTARY
RENU AGARWAL
Delhi
Regd. No. 17806
GOVT. OF INDIA

DEPONENT

D/5957/2022
I identified the deponant who has signed in my presence

ATTESTED
NOTARY PUBLIC
(INDIA)
22 OCT 2024

मा0 राष्ट्रीय हरित अधिकरण, नई दिल्ली में विचाराधीन ओ0ए0 संख्या 569/2023 आलोक कुमार बनाम यूनियन ऑफ इण्डिया व अन्य के सम्बन्ध में दिनांक 11.10.2024 को जूम ऐप के माध्यम से आयोजित बैठक का कार्यवृत्त।

समीक्षा बैठक में निम्नांकित अधिकारी उपस्थित हुएः–

1. श्रीमती गरिमा प्रसाद, अतिरिक्त ऐडवोकेट जनरल।
2. श्रीमती प्रियंका स्वामी, स्थायी अधिवक्ता, मा0 एन0जी0टी0।
3. श्री डी0एन0 पाठक, निदेशक, सर्वे आफ इण्डिया, लखनऊ।
4. श्री रविन्द्र मीना, अधीक्षण सर्वेक्षक, सर्वे आफ इण्डिया, लखनऊ।
5. श्री डी0के0 पाण्डुवाल, मुख्य अभियन्ता (यमुना) सिंचाई एवं जल संसाधन विभाग, ओखला।
6. श्री प्रभात कुमार सिंह, अधीक्षण अभियन्ता, ड्रेनेज मण्डल, गाजियाबाद।
7. राजकुमार वर्न, अधिशासी अभियन्ता सिंचाई निर्माण खण्ड, गाजियाबाद।
8. श्रीमती वर्तिका त्रिपाठी, सहायक अभियन्ता, सिंचाई निर्माण खण्ड, गाजियाबाद।
9. श्री एन0पी0 सिंह, सहायक अभियन्ता–प्रथम, सिंचाई निर्माण खण्ड, गाजियाबाद।

श्रीमती गरिमा प्रसाद, अतिरिक्त ऐडवोकेट जनरल की अध्यक्षता में दिनांक 11.10.2024 को जूम ऐप के माध्यम से बैठक की कार्यवाही प्रारम्भ की गयी, बैठक में निम्नलिखित बिन्दुओं पर चर्चा हुई तथा निर्देश निर्गत किए गएः–

1. श्रीमती गरिमा प्रसाद अतिरिक्त ऐडवोकेट जनरल द्वारा मा0 एन0जी0टी0 द्वारा पारित आदेशों पर विस्तृत चर्चा की गयी तथा श्री डी0एन0 पाठक, निदेशक, सर्वे आफ इण्डिया, लखनऊ से हिण्डन नदी के सर्वे हेतु टाईम शेडयूल/टाईम लाईन की वांछना की गयी।
2. सर्वे आफ इण्डिया, लखनऊ द्वारा हिण्डन नदी के सर्वे हेतु टाईम शेडयूल/टाईम लाईन के लिये दिनांक 18.10.2024 तक का समय प्रदान करने की वांछना की गयी।
3. सिंचाई विभाग से भी हिण्डन नदी के सर्वे हेतु टाईम शेडयूल/टाईम लाईन की वांछना की गयी, जिसके क्रम में श्रीमती गरिमा प्रसाद जी को अवगत कराया गया कि सर्वे आफ इण्डिया, लखनऊ द्वारा अपनी टाईम शेडयूल/टाईम लाईन प्रदान करने के उपरान्त ही सिंचाई विभाग द्वारा टाईम शेडयूल/टाईम लाईन प्रदान किया जाना सम्भव होगा।

अधिशासी अभियन्ता
सिंचाई निर्माण खण्ड, गाजियाबाद

पत्रांकः– सी–11 /सि0नि0ख0गा/एन0जी0टी0/दिनांक 11/10/2024

प्रतिलिपि निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित है।

1– श्रीमती प्रियंका स्वामी, स्थायी अधिवक्ता, मा0 एन0जी0टी0।
2– निदेशक, सर्वे आफ इण्डिया, लखनऊ।
3– मुख्य अभियन्ता (जल संसाधना) सिंचाई एवं जल संसाधन विभाग, उ0प्र0, लखनऊ।
4– मुख्य अभियन्ता (यमुना) सिंचाई एवं जल संसाधन विभाग, ओखला।
5– अधीक्षण अभियन्ता, ड्रेनेज मण्डल, गाजियाबाद।
6– समस्त सहायक अभियन्ता, सिंचाई निर्माण खण्ड, गाजियाबाद।

अधिशासी अभियन्ता
सिंचाई निर्माण खण्ड, गाजियाबाद

अति महत्वपूर्ण कोर्ट केस

भारत सरकार
GOVT. OF INDIA

निदेशक का कार्यालय/Office of Director
भारतीय सर्वेक्षण विभाग/Survey of India
मानचित्र भवन/Manchitra Bhawan
उत्तर प्रदेश भू-स्थानिक निदेशालय (उत्तरीक्षेत्र)
Uttar Pradesh G.D (Northern Zone)
5, विभूतिखण्ड, गोमतीनगर, लखनऊ -226010(उ0प्र0)
5, Vibhuti Khand, Gomti Nagar, Lucknow-226010 (UP)

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ई-मेल@E-mail: up.gdc.soi@gov.in (Tech)
upgdc-lko@up.nic.in (Admn)

पत्र सं0 त- 5544 /39-सी-ED (कोर्ट केस) दिनांक: 17 /10/2024

सेवा में,

अधिशासी अभियन्ता,
सिंचाई निर्माण खण्ड, गाजियाबाद।

विषयः- मा0 राष्ट्रीय हरित अधिकरण, नई दिल्ली में विचाराधीन ओ.ए. संख्या 569/2023 आलोक कुमार बनाम यूनियन ऑफ इण्डिया व अन्य में पारित आदेशों के अनुपालन में जनपद गौतमबुद्ध नगर एवं गाजीयाबाद में हिण्डन नदी के फ्लड जोन के चिन्हीकरण एवं सीमांकन के भुगतान उपरान्त कार्य की समय रेखा से अवगत कराने के संबंध में।

सदंर्भः- आपका पत्रांक 2988/सिनिखगा/एन.जी.टी, दिनांक 09/10/2024

महोदय,

उपरोक्त विषय व आपके संदर्भित पत्र के अन्तर्गत आपको निम्नानुसार अवगत कराया जाता हैः-

1. That Survey of India, the National mapping agency established in 1767, is an oldest scientific department of India. Survey of India started Great Trigonometric Survey in 1802 which created the national geodetic frame. This geodetic framework was the basis of all further Surveying and Mapping in the country. Subsequently, Survey of India prepared maps of entire country on 1:2,50,000 scales with 100 m contour interval by the year 1960. Survey of India prepared 1:50,000 scale map with 20m contour interval by year 1980 and also nearly 60% of the country was mapped on 1:25,000 scale maps with 5-10m contour interval by year 1990. Apart from this survey of India has been engaged in various survey activity like tunnel alignment, magnetic survey, cantonment survey, demarcation of international boundary and state boundary, preparation of topographical maps at various scales, project survey etc.

2. That post year 2000, Survey of India engaged in many nationwide projects. In National Urban Information Scheme (NUIS), from 2006 to 2018, the 1:2000 and 1:10,000 scale data for 152 towns were created for Ministry of Housing and Urban Affairs. In Integrated Coastal Zone Management (ICZM) project, from 2010 to 2018, the contours at 0.5 meter vertical interval and base map at 1:10,000 scale in the belt of seven km from the coast of India was prepared for Ministry of Environment & Forest. In National Mission for Clean Ganga (NMCG), started in the year 2018, Digital Elevation Model of 0.5 meter accuracy and High Resolution GIS Data is being created in belt of 10 kilometer either side of river Ganga. In National Hydrologic Project (NHP), started in the year 2017, the Digital Elevation Model of 0.5 meter accuracy in the

belt of 5 kilometer either side of River bank of main Rivers of Uttar Pradesh, State of Goa, some area of Punjab, West Bengal, Tripura and Nagaland is being created. Under NHP, the 3-5meter accuracy Digital Elevation Model (DEM) and Geo data base on 1: 25,000 scale of approximately 8 lakh square kilometre area (including area of Uttar Pradesh), height to Hydromat stations, Bathymetry of few rivers of West Bengal has also been prepared. Under NHP & NMCG, the 0.5 meter accuracy DEM of approx 94,000 square kilometer is prepared. In Survey of Villages and Mapping with Improvised Technology in Village Areas (SWAMITVA), started in year 2020, the Land Parcel Map of abadi area of notified rural villages using 5 cm ground sampling distance Orthorectified Imagery is being generated for Ministry of Panchayati Raj. Data under SVAMITVA was created by establishing Continuous Operating Reference System (CORS) network & imagery data was captured by Drone flying.

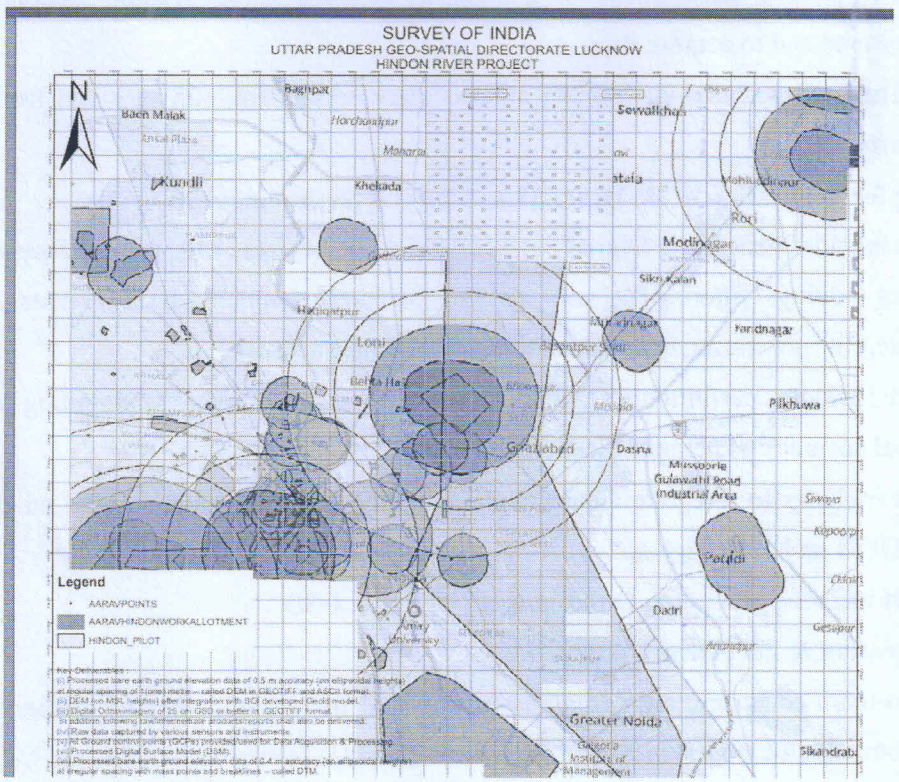
3. In December 2022 National Geospatial Policy(NGP- 2022) has been promulgated in which the mandate of Survey of India is to establish and maintain Geodetic Reference Frame (GRF), Digital Elevation Model , Administrative and functional areas Boundary, Geographical names and Ortho imagery. As per NGP-2022, the responsibility of main Geospatial themes are responsibility of various Ministries/Departments is as below;-

S. No.	Responsibility	Nodal Ministry/Department (Organizations)
i.	Geodetic Reference Frame	Department of Science & Technology(Survey of India)
ii.	Orthoimagery	Department of Science & Technology (Survey of India) Department of Space (Space based technology)(National Remote Sensing Centre)
iii.	Functional Areas (Administrative Boundaries)	Department of Science & Technology (Survey of India)
iv.	Geographical Names (Toponymy)	Department of Science & Technology (Survey of India)
v(a).	Elevation	Department of Science & Technology (Survey of India)
v(b).	Depth	Ministry of Ports, Shipping & Waterways (Inland Water) Ministry of Earth Science (Ocean & Sea)
vi.	Water	Department of Water Resources, River Development and Ganga Rejuvenation
vii.	Transport Networks	Ministry of Road Transport and Highways Ministry of Railways Ministry of Ports, Shipping & Waterways Ministry of Civil Aviation
viii.	Buildings and Settlements	Ministry of Housing and Urban Affairs (Urban) Ministry of Panchayati Raj (Rural)
ix.	Land Cover and Land Use	Department of Space (National Remote Sensing Centre) Ministry of Environment, Forest & Climate Change (Forests)(Forest Survey of India)
x.	Physical Infrastructure	Ministry of Housing and Urban Affairs (Urban) Ministry of Panchayati Raj (Rural)
xi.	Land Parcels	Department of Land Resources (Rural) Ministry of

		Housing and Urban Affairs (Urban)
xii.	Addresses	Ministry of Housing and Urban Affairs (Urban) Ministry of Panchayati Raj (Rural)
xiii(a).	Geology	Ministry of Mines (Geological Survey of India)
xiii(b)	Soils	Department of Agricultural Research and Education (National Bureau of Soil Survey and Land Use Planning)
xiv.	Population Distribution	Ministry of Home Affairs (Office of the Registrar General & Census Commissioner, India)

So, post year 2022 Survey of India responsibility is five data themes as mentioned above.

4. The Presently digital elevation model (DEM) and other data of required accuracy for the requisite area of Hindan River is not available hence new survey is required.



Area of interest of River Hindan Rever Gaziabad and Gautambuddha Nagar marked in SoI Toposheet

Total area of interest of Basin of Hindan River for carrying out fresh survey to generate .5m resolution DEM is approximately 850 Sq Km in both Gaziabad and Gautambuddha Nagar Districts combined.

5. Methodology and technology

(a) Provision of Ground Control Points and Identification, Establishment, Densification & Utilization of Ground Control Points (GCPs)

This part includes planning, observation, computation and monumentation of Ground Control Points. Eexisting CORS (Continuously Operating Reference Station) of Survey of India and Control points established under various mapping work shall be utilized for the project. Densification of CORS network for more precise and reliable horizontal and Vertical control if required.

(b) Data Acquisition using High end sensor (Optical/ Lidar)

This part includes Acquisition of Raw Digital data by Aerial Platform for generating Digital Elevation Model (DEM) of 0.5-meter accuracy and Digital Ortho-imagery of 20 cm GSD (Ground Sampling Distance).

(c) Pre-processing

i. This part includes Flight planning, sensor calibration, Flight execution as per plan, Quality assurance and Quality control(QA/QC) for review of flight line alignment, raw data validation for completeness, avoiding data voids, strip matching, pre-processing of on-board Global Navigation Satellite system / Inertial Measurement Unit (GNSS/IMU) data for trajectory file and other pre-processing steps needed for point cloud extraction/ preparing data for post-processing stage.

ii. This process includes obtaining necessary clearances from Authorities concerned for flying over the survey area and to acquire data.

iii. This part includes mobilizing all necessary equipment, software and hardware for carrying out the activity.

(d) Post-Processing for generation of DSM, DEM and Digital Ortho-imagery

i. This part includes generating Digital Surface Model (DSM) from raw/ pre-processed data and performing necessary editing/ filtering of non- ground points (vegetation, built-up areas, bridges, elevated structures etc.) for generating bare-earth DEM of 0.5-meter accuracy.

ii. This part includes performing QA/QC at various stages of project including validating horizontal and vertical accuracy as per specifications.

iii. This part includes to integrate Geoid model supplied by SoI with the DEM on ellipsoidal heights for yielding DEM on MSL heights.

iv. This part includes generating Ortho-imagery of 20 cm GSD.

(e) Base Map Generation & 2D Feature Extraction

i. The ortho-rectified image, after data/image (obtained from Aerial Survey) processing, shall act as a base map from which topographical and man-made (visible) features as mentioned by irrigation dept. in the introduction section shall be extracted.

ii. Administrative boundaries, revenue boundaries etc. available with SoI will be incorporated during Feature Extraction

(f) **2D Feature Extraction**

2D topographical features shall be derived from Ortho-rectified using suitable (Geographical Information System) GIS software. The base map shall comprise of various layers in GIS format as per the requirements of the project.

(Open Geospatial Consortium) OGC compliant GIS database models shall be implemented for generation of GIS layer data structure for storing spatial & attribute data.

The features to be extracted shall be as per the deliverables/ wish list provided by the irrigation department.

(g) Ground truthing, validation of Topographical and man-made features in maps shall be carried out by Irrigation Department.

(h) As per National Geospatial Policy-2022 (attached), it is the responsibility of the Survey of India to carry out work of Sl.No.5(a) to 5(e) while work related to Sl.No.5(f) is to be carried out by respective Government Department as laid down in Annexure III of the Policy(Page No. 22 to 24 of the NGP document) .

However Survey of India will provide existing Topographical Features pertaining to the Area of Interest on 1:25000 Scale as required by the UP Irrigation Department. After curating the data for the Project Area.

Work Plan/ Roles and Responsibilities

i. Survey of India (SoI)

a) Project will be executed under close supervision of SoI.

b) Activities given in Sl.No. 5(a) to 5(e) will be outsourced by SoI. The quality checking shall be under the supervision of SOI.

c) To the extent it is feasible, SoI will deploy maximum resources for these activities on priority.

d) All mentioned above including Project planning, preparation of bid/RFP, bid processing, award of work, work execution as per contract etc. would be done under the supervision of SoI and shall adhere with the norms as laid by Government of India

ii. Irrigation Department, Govt. of UP

a) Topographical features or any other features to be incorporated must be communicated well in advance

b) Activities at Sl.No.5(g) including activities involving ground truthing would be under taken by Irrigation department.

TIME SCHEDULE –

Time line of the Project will be as follows

ACTIVITY	**DURATION**	**TIME-LINE**(14/10/2024 is start Date of Project after receipt of Payment from Project authorities)
Tendering process and award of contract	1.5 Months	-
Data acquisition and Post processing for generation of DSM, DEM, Contours and ORI	2 Months	Outsourced team directed From other project to the project area, work started on 16/10/2024, 30sqr km area drone flying completed. Data acquisition work likely to be completed by 31 Dec, 2024.
Feature Extraction	2-2.5 Months	By February, 2025

Survey and maping activity wise Time line calculation for completing work 850 sq. km Project area is as under:

ACTIVITY	Out turn	No. and Duration of deployment
Data acquisition and Post processing for generation of DSM, DEM, Contours and ORI	65 to 75 sq.km per Drone team per month	6 Drone team for 2 months (6 Drone Team x 65 to 75 sq km per month x 2 month = 850 sq km approx area to be surveyed)
Data curation on 1:25k Scale for the Project Area	1 man days per sq km	Required Man days for the activity= 1 man days per sq km x 850 sq km = 850 man days , 17 digitisers are proposed to be deployed for Feature extraction work with requisite Hardware and software 17 digitizers x 25 days x 2 month = 850 approx man days

उक्त आपको सूचना एवं आवश्यक कार्यवाही हेतु प्रेषित है।

संलग्नः- यथोपरि।

17/1/24

(डी.एन. पाठक)

निदेशक

प्रतिलिपिः-

1. भारत के महासर्वेक्षक, देहरादून को सूचनार्थ प्रेषित।
2. अपर महासर्वेक्षक, उत्तरी क्षेत्र चण्डीगढ़ को सूचनार्थ प्रेषित।
3. मुख्य अभियन्ता (यमुना), सिंचाई एवं जल संशाधन विभाग, उ0प्र0 ओखला।