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BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI
ORIGINAL APPLICATION NO.569/2023

ALOK KUMAR

APPLICANT

VERSUS

UNION OF INDIA & ORS.

RESPONDENT(S)

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Date: 15.09.2025

Through

Place: New Delhi

Priyanka Swami

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**STATUS REPORT ON DEMARCATION OF HINDON RIVER
FLOODPLAINS WITH AFFIDAVIT**

1. This report is submitted in compliance with the Hon'ble NGT's order dated 26.05.2025. It summarizes the current status of floodplain demarcation for the Hindon and Yamuna rivers, explains the survey methodology, and addresses the Tribunal's queries on the use of drone surveys and Highest Flood Level (HFL) determination.

2. Hindon River Floodplain Survey – Status and Challenges:-

The Hindon River floodplain in Ghaziabad and Greater Noida covers approximately 850 km². To date, about 200 km² have been surveyed and delineated, leaving 650 km² remaining. The UP Geospatial Directorate (Survey of India) reports that progress on the remaining area has been impeded by procedural and environmental constraints. Specifically, portions of the survey area lie within an aviation "red zone," meaning that aerial operations

require special clearance. As noted by the Survey of India, "*due to the concerned area being in the red zone, the work of data collection is hampered due to non-permission of drone flying*". Letters seeking authorization have been sent to the Ministry of Civil Aviation (MOCA) and to local air traffic control, but no permission has yet been granted.

In addition, unusually heavy monsoon rains have submerged large stretches of the river and its banks, further delaying fieldwork. The Directorate's communications indicate that "*due to excessive rainfall during the monsoon season... most of the rivers of the state are submerged, which is hampering the data collection*". These factors have made it infeasible to complete the UAV (drone) survey at present. The authorities expect that once the requisite clearances are obtained, the remaining 650 km² of the Hindon floodplain can be surveyed within approximately 2–3 months.

- **Summary of Challenges:** The combination of regulatory approvals pending (MOCA/ATC clearance for UAV flights) and adverse monsoon conditions has caused the current delay. The State has been working at the departmental level to expedite permissions, and drone data collection will resume as soon as possible.

- **Expected Timeline:** Upon securing authorization, the Survey of India indicates that the drone survey and data processing for the remaining 650 km² can be completed in about 2–3 months. Thereafter, the floodplain boundaries can be finalized.

True copy of the communication dated 11/09/2025 from survey of India regarding flood plain zoning of Hindon river and issues in data collection due to drone permission and rainfall is annexed herewith and marked as *Annexure-1*.

3. Tribunal's Observation (26.05.2025) – Drone Methodology and HFL Determination:-In its order dated 26.05.2025, the Tribunal noted that the Hindon survey had not followed the same drone-based methodology used for the River Ganga, and it directed the Survey of India to explain why this was so and how the 1:100-year Highest Flood Level (HFL) with one-meter contour line will be determined. The following points respond to that query:

- **Methodology Consistency:** The Survey of India confirms that it intends to employ the *same high-resolution UAV photogrammetric techniques* used on the Ganga. Under these methods, drone flights collect overlapping high-resolution imagery, which is processed to generate a Digital Surface Model (DSM) and Digital Elevation Model (DEM) of the river

corridor. From the DEM, contour maps (at 1 m vertical intervals) are derived. This produces a precise topographic representation of the floodplain. (In fact, similar drone surveys have already been conducted over part of the Hindon, and the technique is in principle identical to that used on the Ganga.)

- **Reason for Delay on Hindon:** The reason this methodology has not yet been fully applied to Hindon is purely operational – namely, the need for clearances and the recent flood conditions as described above. There is no technical difference in approach; once permissions are granted, UAV teams will resume operations and use the same processing pipeline to map the Hindon floodplain.
- **Determining the 1:100-Year HFL Contour:** The **1:100-year HFL** is determined by hydrological analysis of the river's flow records (flood frequency estimation) and flood modeling. In practice, flood data (e.g. highest observed water levels and modelled 100-year discharge) yield a specific water elevation above a datum. This elevation is then overlaid on the surveyed terrain model. In the DEM derived from the drone data, a horizontal contour line at the calculated HFL elevation is drawn at one-meter vertical intervals. The contour line corresponding

to the 100-year flood height marks the outer boundary of the floodplain. In short, *"the floodplain zone with a 1:100-year Highest Flood Level, with a one-meter contour, will be ascertained using drone survey"* by generating the elevation model and selecting the HFL contour. This is the same approach prescribed for the Ganga, and it will be implemented for Hindon once the survey data are available.

4. In conclusion, the State's agencies are actively pursuing completion of the Hindon River survey as directed. Delays have been caused by regulatory clearance requirements and seasonal flooding, and efforts are underway to overcome these challenges. Once UAV operations resume, the Survey of India will apply the established drone-mapping method (DSM/DEM generation and contouring) to derive the 1:100-year HFL contour.

Date: 13.09.2025

Place: New Delhi

Through



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I, Rajkumar Vern Aged About 57 Years S/O Shri Nanak Chand Vern Is Presently Posted As Irrigation Construction Division, Ghaziabad, Uttar Pradesh. Having An Office At Ghaziabad, Uttar Pardesh.b

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 status report has been drafted by our counsel upon my instructions.
3. That the contents of the accompanying status report are true and correct, and the knowledge has been derived from official records and nothing material has been concealed therefrom.



[Signature]

DEPONENT



VERIFICATION

Verified on solemn affirmation at Ghaziabad. on 15 this SEP 2025 day of 2025, 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.

D14476/10
I identified the deponent who has signed in my presence

ATTESTED
[Signature]
NOTARY PUBLIC (INDIA)

[Signature]

DEPONENT

15 SEP 2025

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 (उत्तरी क्षेत्र)
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पत्र सं० त-3230/39-C-ED(Court case)

दिनांक:-11/09/2025

सेवा में,

अधिशाली अभियन्ता,,

सिंचाई निर्माण खण्ड, गाजियाबाद।

(ई-मेल:- ee_icdgzb@yahoo.in)

विषय:- मा० राष्ट्रीय हरित अधिकरण नई दिल्ली में विचाराधीन ओ ए संख्या - 569/2023 अलोक कुमार बनाम यूनियन ऑफ इंडिया व अन्य में पारित आदेशों के अनुपालन में जनपद गौतमबुद्धनगर एवं गाजियाबाद में हिण्डन नदी के फ्लड प्लेन जोन के चिन्हीकरण एवं सीमांकन के संबंध में।

- संदर्भ:-
1. आपके कार्यालय का पत्रांक- 3396/सिनिखगा/एन.जी.टी. दिनांक 09/09/2025
 2. इस कार्यालय का पत्र संख्या त-1767/39-C-ED (Court Case) दिनांक 14/05/2025
 3. इस कार्यालय का पत्र संख्या त-2858/41-D-5 (ATC) दिनांक 06/08/2025
 4. इस कार्यालय का पत्र संख्या त-3209/39-C-ED (Court Case) दिनांक 09/09/2025

महोदय,

उपरोक्त विषय व संदर्भित पत्र (1) के अनुक्रम में आपको अवगत कराना है कि हिण्डन नदी के फ्लड प्लेन जोन के निर्धारण हेतु जनपद गाजियाबाद एवं गौतमबुद्धनगर के 850 वर्ग किमी. के सापेक्ष बचे हुए 650 वर्ग किमी. क्षेत्र की भौतिक प्रगति के विषय में आपको संदर्भित पत्र क्रमांक (2) द्वारा दिनांक 14/05/2025 को सूचित किया गया था। जिसमें आपको अवगत कराया गया था कि संबंधित क्षेत्र रेड जोन में होने के कारण सर्वेक्षण हेतु ड्रोन फ्लाइंग की अनुमति न होने के कारण डाटा संग्रहण का कार्य बाधित है। जिसके लिए इस कार्यालय द्वारा संदर्भित पत्र क्रमांक (3) द्वारा MOCA को पत्र लिखकर ड्रोन फ्लाइंग की अनुमति देने के लिए आग्रह किया गया है। जिसका कोई उत्तर अभी तक इस कार्यालय को प्राप्त नहीं हुआ है। इसके अतिरिक्त कार्यालय विभागीय स्तर पर भी संदर्भित पत्र क्रमांक (4) द्वारा ड्रोन फ्लाइंग की अनुमति के लिए प्रयासरत है।

आपको यह भी अवगत कराना है कि पिछले कुछ माह से मानसून काल में वर्षा अत्यधिक होने के कारण प्रदेश की अधिकांश नदियां जलमग्न हैं। जिससे की डाटा संग्रहण का कार्य प्रभावित हुआ है।

MOCA व Local ATC से ड्रोन सर्वेक्षण की अनुमति प्राप्त होने के 2-3 माह में सम्पूर्ण (ड्रोन डाटा संग्रहण) सर्वेक्षण कार्य पूर्ण करने के उपरान्त आपको शेष 650 वर्ग किमी. क्षेत्र का डाटा उपलब्ध करा दिया जायेगा।

उपरोक्त आपके सूचनार्थ एवं अग्रिम कार्यवाही हेतु प्रेषित है।

संलग्न:- यथोपरि।

भवदीय,



(रविन्द्र मीना)

अधीक्षण सर्वेक्षक

कृते निदेशक

प्रतिलिपि:- अपर महासर्वेक्षक, उत्तरी क्षेत्र, दिल्ली कैंट को सूचनार्थ प्रेषित।