

BEFORE THE NATIONAL GREEN TRIBUNAL,  
PRINCIPAL BENCH, NEW DELHI

Original Application No. 859 of 2022

IN THE MATTER OF

Abhisht Kusum Gupta

...APPLICANT

VERSUS

State Of Uttar Pradesh & Ors.

...RESPONDENTS

NDOH- 24-01-2025

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Filed By:

  
(SUNIL J MATHEWS/JYOTI RAND)

COUNSEL FOR THE APPLICANT

114 & 128 Lawyer's Chambers, R.K. Jain Block

Supreme Court of India, New Delhi-110001

Email: sjmathews@gmail.com

Place: New Delhi

(M) 9311567212

Date: 19.11.24

BEFORE THE NATIONAL GREEN TRIBUNAL,  
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**MOST RESPECTFULLY SHOWETH:**

- A. That the Original Application (O.A) No. 859 of 2022 was filed on November 3, 2022, by the Applicant concerning the Respondents' failure to protect the Hindon River. This failure has resulted in the degradation and deterioration of the environment across six key districts in Western Uttar Pradesh, namely Saharanpur, Muzaffarnagar, Meerut, Baghpat, Ghaziabad, and Gautam Buddha Nagar. The Applicant seeks directions for the Respondents to take immediate and concrete measures for the upgradation, conservation, and rejuvenation of the Hindon River.
- B. That an action plan was prepared by the Central Pollution Control Board titled "*Pollution Source Mapping of River Hindon and its Tributaries and Restoration plan for Polluted Stretches*" pursuant to the directions passed by this Hon'ble NGT vide Order dated 17.03.2023.
- C. That on 06.10.2023, the Applicant filed an Interlocutory Application before

this Hon'ble NGT to issue directions to the Respondent Nos. 1, 2, 10 & 11 to immediately take appropriate steps to implement the report submitted by the Central Pollution Control Board, which if implemented, will remove the pollution and restore the river to its pristine glory and act as a standard operating procedure for preventing pollution in other rivers as well. Further, it was prayed by the Applicant that directions be issued to Respondent Nos. 10 and 11 to release funds amounting to ₹21.22 crores to the State Pollution Control Board for the purpose of water quality monitoring of the Hindon River Basin. This allocation would facilitate real-time monitoring of pollution levels and the identification of polluters.

D. That vide Order dated 14.10.2024, the Hon'ble Tribunal directed the Applicant to file objections to the report submitted by Chief Secretary, Uttar Pradesh making following observation: -

*"3. Learned Counsel for the State of UP submits that the report has been filed by the Chief Secretary yesterday which was Sunday. We find that in filing the report not only there is non-compliance of the direction of the Tribunal dated 11.07.2024 but also the OM dated 04.09.2024 Learned Counsel for the State has tendered an apology and has submitted that in future the report will be filed on time. In view of such a statement, the matter is adjourned.*

*4. It will be open to the Applicant to file objection to the report within two weeks."*

E. That the Applicant as per the above direction of the Hon'ble Tribunal has filed the following objections against the Report of Chief Secretary, State of U.P.:

**OBJECTIONS ON BEHALF OF THE APPLICANT TO THE REPORT  
SUBMITTED BY THE CHIEF SECRETARY, STATE OF U.P.**

1. That as per the Report dated 27.01.2023 Page (56-68) of the report/(pages) 566-578 of the Original Application the UPPCB has requested for the fund of Rs. 21.22 crores starting from 2022. Subsequently, as submitted by the Secretary, the Government of Uttar Pradesh, mentioned the estimated budget is **Rs. 21.22 Crore**, Page 16 of the report titled **“Pollution Source Mapping of River Hindon and its Tributaries and Restoration Plan for Polluted Stretches”** submitted along with the report of CPCB dated 09.07.2024 /1381 of the Original Application. However, no such allocation has been made despite the passage of 2 years. This is essential and is also mentioned in the Original Application on creation of river monitoring stations. (Para 4.22 Original Application) and Para (4.16 Original Application) requesting to implement a warning and alarm system. It shall include a plan to set up monitoring stations in order to avert dangers to the water quality, detect and investigate the causes of incidental pollution and provide early warning in order to mitigate excessive spread of pollution in the river as done for **River Rhine in Germany**.
  
2. Measures proposed by the CPCB Report and those responsible as per the report titled **“Pollution Source Mapping of River Hindon and its Tributaries and Restoration Plan for Polluted Stretches”** have been submitted **along** with the report of the CPCB dated 09.07.2024/**1451-1489** of the Original Application. (Page 86-124) of the report).

3. The state government has made no attempt to examine the issue independently of the CPCB, content to go by what the CPCB says. It also has nothing novel to offer by way of a road map to clean up and revive the river and is satisfied to follow the recommendations of the central body.
4. That the report shows that only two meetings have been held by the Chief Secretary in a year. The first review meeting was held on 06.11.2023 and the other meeting on 11.10.2024. Both meetings were held just before the scheduled dates of hearing of this honorable forum which itself shows a casual attitude to the task asked of the Chief Secretary and other officials.
5. That Similarly, all work done by various district authorities seem to have been done in the days preceding the scheduled court dates. This is also indicative of lack of resolve and will to deal with the issue and the low priority assigned to the task. Furthermore, the District-wise plan must be with the deadline.
6. The state government ought to have immediately set up joint action groups and review committees to deal with the problems raised in this petition on a regular basis. Any ad-hoc arrangements smack of non-application of mind and energy towards resolving the issue.
7. There is no improvement in the pollution status of the river Hindon as clearly seen in the report.

8. Importantly, the report of the state chief secretary also does not address the issue of timelines. Most of the report is vague. It states that attempts are being made to complete all the steps suggested by the CPCB, including setting up STPs. But no firm commitment has been made on whether such work is being monitored at the highest level or if they would be completed by any definite deadline.

It is regretted to report that not only was the Central Pollution Control Board report submitted in hurry misleading the Hon'ble NGT but also it did not address the core issue of actual implementation of propositions to address the systemic failure in ensuring preventing encroachment in the floodplains.

### RECOMMENDATIONS

1. It is submitted that the meeting was held to create a Hindon river-front committee in Gautam Buddha Nagar. However, the same requires wider participation involving other stakeholders to have any traction on the ground. The copy of Hindon River Front meeting letter dated 21-10-2024 is herewith as **Annexure A-1**.
2. There is an immediate need to use phytoremediation – a method involving use of plants to clean up the various stretches of the river. This involves use of micro-organisms and plants such as duckweed to rejuvenate the river. The copy of Article is herewith Annexed as a **Annexure A-2**
3. Artificial constructed wetlands that mimic natural processes to filter contaminants from water which required to be installed where wastewater

enters the river. It is cost-effective local materials like reeds and aquatic grasses. However, its long-term, low-maintenance solution for nutrient and pollutant removal.

4. Riverbank plantation is another easiest and essential recommendation. Planting trees and shrubs along the riverbanks helps to reduce erosion and filter pollutants. In addition, it provides ecological benefits, such as neem, arjun, and vetiver grass and creates green belts that improve local air quality and biodiversity.
5. Till the time the floodplain is not determined, a 150-meter-wide stretch on either side should be considered as the floodplain. That area ought to be filled with heavy plantation of trees to curb pollution and also arrest encroachment. This area could be used to restore the original bio-diversity of the floodplains and also keep out encroachers from this sensitive space.

In the light of above revelation, it is humbly submitted that to fulfill the order of Hon'ble NGT dtd. 14-10-2024 in letter and spirit, the competent authority may be requested to review deficiencies in CPCB report.

**Filed By:**

*Jyoti Ran*  
**(SUNIL J MATHEWS/JYOTI RAN)**

**COUNSEL FOR THE APPLICANT**

114 & 128 Lawyer's Chambers, R.K. Jain Block

Supreme Court of India, New Delhi-110001

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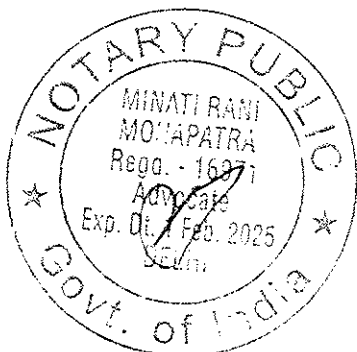
State Of Uttar Pradesh & Ors.

...RESPONDENTS

**AFFIDAVIT**

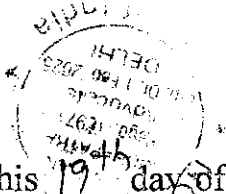
I, Sunil Mathews, S/o Prof. K. Mathews, aged about 46 years, R/o K-204, Supertech Eco Citi, Sector-137, Noida, U.P.-201301, presently at New Delhi, do hereby solemnly affirm and declare as under:

1. That I am the Counsel on behalf of the Applicant in the accompanying case and am well conversant with the facts of the case and am duly competent to swear the present Affidavit.
2. That the accompanying application has been drafted and is being filed by me and the contents of the same are true and correct.
3. That the contents of the accompanying application may be considered as part and parcel of this affidavit and hence, the same are not being repeated herein for the sake of brevity.



*Sunil Mathews*  
DEPONENT

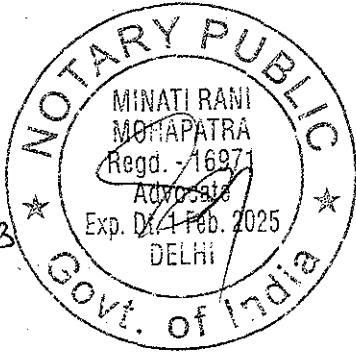
**VERIFICATION**



Verified at Delhi on this 19 day of November, 2024 that the contents of the above affidavit are true and correct to my knowledge. No part of it is false and nothing material has been concealed therefrom.

*Signature*  
**DEPONENT**

19 NOV 2024



*Signature*  
D-13/11/23  
**IDENTIFIED**

**ATTESTED**

*Signature*  
MINATI RANI MOHAPATRA  
ADVOCATE (NOTARY)  
Mob. No.: 8130128457

19 NOV 2024

## नवीन ओखला औद्योगिक विकास प्राधिकरण

मुख्य प्रशासनिक भवन, सैक्टर-8, नौएडा, जिला-गौतमबुद्धनगर

पत्रांक- नौएडा/अनुमोकाअनु(एसओपी0)/2024/का.प्र.म(जल-पर्यावरण)205

दिनांक: 21/10/2024

## समीक्षा बैठक का कार्यवृत्त

दिनांक 23.09.2024 को अतोहस्तादारी की अध्यक्षता में हिण्डन एवं यमुना नदी के मध्य विकसित नौएडा औद्योगिक विकास क्षेत्र में रिवर फ्रन्ट डवलपमेन्ट के अन्तर्गत हिण्डन फ्लड प्लेन डवलपमेन्ट योजना हेतु हिण्डन रिवर में पिछले 100 वर्ष, 50 वर्ष एवं 25 वर्ष में आयी बाढ़ का अध्ययन, रिवर का कोर्स बदलने के परिणाम, embankment की लोकेशन के अध्ययन हेतु श्री अभिष्ट कुसुम गुप्ता, पर्यावरणविद् के प्रस्ताव का अध्ययन एवं स्थल निरीक्षण कर आख्या प्रस्तुत किये जाने के सम्बन्ध में बैठक आहूत की गई, जिसमें निम्न अधिकारियों द्वारा प्रतिभाग किया गया-

1. श्रीमती मीना भार्गव, महाप्रबन्धक (नियोजन)
2. श्री आर0 पी0 सिंह, महाप्रबन्धक (जल)
3. श्री विजय रावल, उप-महाप्रबन्धक (सिविल)
4. श्री देवेन्द्र निगम वरिष्ठ प्रबन्धक (जल-बाध)
5. श्री प्रताप सिंह प्रबन्धक (जल-बाध)
6. श्री अभिष्ट कुसुम गुप्ता, पर्यावरणविद्
7. सुश्री समन्वया चौत्रे, अधिकृत

बैठक में निम्न प्रस्तावित बिन्दुओं पर विचार विमर्श किया-

1. हिण्डन रिवर फ्रन्ट डवलपमेन्ट हेतु पूर्व में प्रस्तुत प्रस्ताव के सम्बन्ध में विचार विमर्श उपरान्त संज्ञानित हुआ कि नौएडा क्षेत्र में हिण्डन के प्रवेश से यमुना नदी में मिलने तक नौएडा प्राधिकरण एवं ग्रेटर नौएडा प्राधिकरण का क्षेत्र पड़ता है, क्योंकि हिण्डन रिवर के फ्लड प्लेन एरिया में भवन निर्माण आदि की गतिविधियां चल रही हैं, जिसके कारण राजस्व विभाग, सिंचाई विभाग एवं जिला प्रशासन का प्रतिनिधित्व कार्यवाही में आवश्यक है।

अपेक्षित कार्यवाही-जिला प्रशासन, नौएडा/गाजियाबाद एवं सिंचाई विभाग, गाजियाबाद/ओखला नई, दिल्ली

2. क्षेत्रीय अधिकारी, उत्तर प्रदेश प्रदूषण नियन्त्रण बोर्ड, गौतमबुद्धनगर, ग्रेटर नौएडा एवं गाजियाबाद को भी प्रस्तावित कार्ययोजना में शामिल किया जाये।  
अपेक्षित कार्यवाही-उ0 प्र0 प्रदूषण नियन्त्रण बोर्ड, नौएडा।
3. अधिशासी अभियन्ता, सिंचाई विभाग श्री मुकेश वैश्य से दूरभाष पर वार्ता कर अग्रिम बैठक में सिंचाई विभाग हिण्डन नदी से सम्बन्धित विवरण सहित उपस्थित होने का आग्रह किया गया। उनके द्वारा बताया गया कि वर्तमान में उनकी नियुक्ति लखनऊ में है। उनके स्थान पर अधिशासी अभियन्ता, सिंचाई विभाग, ओखला, नई दिल्ली को प्रतिभाग किये जाने हेतु अवगत कराया जाये।

अपेक्षित कार्यवाही-सिंचाई विभाग ओखला, नई दिल्ली

4. माननीय न्यायालय द्वारा पारित आदेश के अनुपालन में हिण्डन नदी की स्वच्छता तथा पर्यावरण की सुरक्षा के दृष्टिगत नौएडा क्षेत्र के अन्तर्गत आने वाले ग्राम-छज्जारसी, बहलोलपुर-चोटपुर की नालियों के पानी को हिण्डन नदी में प्रवाहित होने की रोकथाम हेतु ग्राम-बहलोलपुर-चोटपुर में एक सम्पवेल का निर्माण किये जाने हेतु रु0 198.75 लाख का प्रस्ताव सैद्धान्तिक स्वीकृति हेतु ससन स्तर के सस वरिष्ठ प्रबन्धक, जल-प्रथम के खण्ड द्वारा प्रेषित किया गया है। नौएडा क्षेत्र में बहलोल पुर एवं चोटपुर ग्राम की नालियों के पानी को एकत्रित करते हुए सैक्टर-89 में स्थित सीवेज पम्पिंग स्टेशन के माध्यम से सैक्टर-123 में स्थित एस0टी0पी0 में निस्तारित किया जायेगा।

अपेक्षित कार्यवाही-जल विभाग, नौएडा।

5. सिविल विभाग यह सुनिश्चित करें कि ग्राम चोटपुर नौएडा आबादी का कोई भी Out fall हिण्डन नदी की तरफ न हो तथा आबादी क्षेत्र का Slope नौएडा परिक्षेत्र में ही रखा जाये।

अपेक्षित कार्यवाही-सिविल विभाग, नौएडा।

SRe

(सतीश पाल)

अपर मुख्य कार्यपालक अधिकारी  
नौएडा

HOME / STORIES / STARTUP / WATER

## Scientist Uses Duckweed to Revive Rivers & Treat Millions of Litres of Wastewater Daily

Lemnion Green Solutions, a startup inspired by duckweed's potential for wastewater treatment, facilitates the ecological rejuvenation of nullahs and rivers. It employs biological systems to treat wastewater of capacities ranging from 1 KLD [kilolitres per day] to 3,000 KLD.

By Rinchen Norbu Wangchuk

June 20, 2023



Dr Prasanna Jogdeo, a marine biotechnologist, first learnt about duckweeds while pursuing his master's degree from

the University of East Anglia in the United Kingdom back in 2009-10.

1931

(11)

"As a part of the course, we were supposed to do a six-month research project. I chose to do a project with Professor Keith Waldron at the Institute of Food Research (IFR), Norwich. The project was titled 'Starch Optimisation in Lemna minor', a species of duckweed. Upon learning about duckweed, I understood its magic, potential for wastewater treatment and as a protein supplement. Duckweed was something which hooked me on to the subject of phytoremediation," says Jogdeo, speaking to **The Better India**.

But what is phytoremediation? According to the Nature journal, it refers to the "use of plants and associated soil microbes to reduce the concentrations or toxic effects of contaminants in the environment." In duckweeds, which float on or just beneath the surface of still or slow-moving bodies of freshwater and wetlands, he found a nature-based solution for the growing requirement of wastewater treatment and rejuvenation of dying water bodies.

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Following his master's, Dr Jogdeo came back to his native Pune as a lecturer at the renowned Fergusson College in 2010. Here, he met his student Pooja Tendulkar and introduced her to the duckweeds. Their shared fascination with duckweeds prompted a couple of collaborative projects

in Pune and extensive research on how they can be used for wastewater treatment.

1932

(12)

In 2013, Prasanna went to Nanyang Technological University (NTU), Singapore to pursue his PhD. Despite spending the next four years working towards his PhD, the collaborative work and discussions with Pooja continued, and soon the idea of Lemnion took birth.

This collaboration eventually resulted in the creation of a startup in 2018 called Lemnion Green Solutions. The name 'Lemnion' comes from a family of duckweed called *Lemnaceae*.

Advertisement

"We started the company based on our shared fascination for duckweed and its potential for wastewater treatment. However, we went ahead and acquired more exposure. When we went beyond just wastewater treatment and into the ecological rejuvenation of water bodies, we realised that duckweed was only a part, albeit important, of the process," explains Jogdeo.

Today, the **Pune-based startup** provides a range of services including ecological rejuvenation of water bodies (rivers, nullahs, ponds) and biological systems to treat wastewater.

Lemnion works with both businesses and governments, and has completed about 30 projects which include ecological rejuvenation of targeted stretches of nullahs and rivers

1933

ranging from 100 m to 2,000 m and biological systems to treat wastewater of capacities ranging from 1 KLD [kilolitres per day] to 3,000 KLD across multiple geographies, particularly in Maharashtra.

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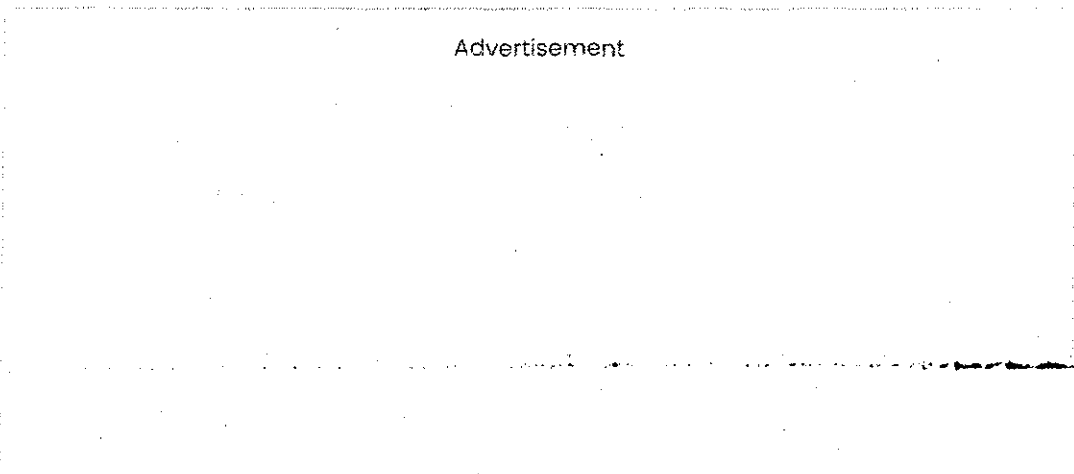
*Dr Prasanna Jogdeo (in a black T-shirt) speaking to an audience about his startup's work.*

## Employing duckweed

"Use of duckweed can be one of the many interventions employed in the rejuvenation of water bodies. Ecological rejuvenation is a holistic and multidisciplinary process," says Tendulkar.

Duckweed is an excellent phytoremediator (plants that uptake nutrients from wastewater). It's the smallest angiosperm, which grows/floats on the surface of the water and accumulates nutrients through the roots. It also grows really fast, doubling its biomass in 48 to 96 hours. They also accumulate nutrients from wastewater and convert them into protein. "Duckweed contains up to 40% protein, a composition similar to that of soybeans," she adds.

"When employed for treatment of wastewater, the system is designed with enough retention time (approximately four days) of water for efficient treatment, and duckweed is inoculated in the system. As duckweed covers the entire water surface in the system, around 75% can be removed every other week after use, and employed as manure for the garden," says Dr Jogdeo.



Where do they source duckweed from? Usually, duckweed is sourced from local natural water bodies.

"Out of a total of 37 species found worldwide, about four or five are found in India. Once obtained from the environment, we prepare pure cultures of the available species and use them. There are some species that show really fast growth but are less robust; some which are excellent phytoremediators and accumulate a lot of protein; some which are used as polishers," he explains.

To address the problems of wastewater and polluted water bodies, however, Lemnion doesn't depend on one specific type of system or fixed parameters. They provide solutions based on a "proven toolkit" which can be configured for specific cases.

"Basic principles involved in such work include water flow regulation, nutrient balance, improved biodiversity and stakeholder participation. For wastewater treatment, the technology involved is phytoremediation where specific phytoremediating plants with specific microbial cultures are employed for effective wastewater treatment. In addition to duckweeds, we also use canna, taro, sedges and grasses like vetiver and pampas," explains Dr Jogdeo.



*Pooja Tendulkar, the co-founder of Lemnion Green Solutions, explaining the Kamandalu river project to Mr Rohit Patil.*

## Rejuvenating a water body

The first major ecological rejuvenation project Lemnion worked on was the Kamandalu river located in Sangli district, Maharashtra. Located on the banks of this river is a village called Kavathe Mahankal which has a population of about

**1936**

sunil mathews &lt;sjmathews@gmail.com&gt;

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**Service of the Objections filed in Case No. O.A. 859 of 2022, titled Abhisht Kusum Gupta vs. State of U.P. & Ors.**

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**Sunil J. Mathews** <sjmathews@gmail.com>

20 November 2024 at 10:29

To: secy-mowr@nic.in, ccb.cpcb@nic.in, chairman@uppcb.in, "Amrit Abhijat Principal Secretary, UD, GoUP" <acsud.goup@gmail.com>, psecup.urbandev@nic.in, crd-up@nic.in, rgupta.up@nic.in, commmee@nic.in, commsah@nic.in, nagarnigamsaharanpur@gmail.com, dmmuz@nic.in, nnmee@nic.in, dmgha@nic.in, dmbag@nic.in, ceo@noidaauthorityonline.com, ceo@gnida.in, cs-uttaranchal@nic.in, chiefsecyuk@gmail.com, psecup.irrig@nic.in, nppshamli@gmail.com, npp.loni@gmail.com, nppsardhana@gmail.com, ceo@upsida.co.in

Dear All,

Kindly find attached the Objections filed by the Applicant against the Report of Chief Secretary, U.P, in the Hon'ble National Green Tribunal w.r.t the **Case No. O.A. 859 of 2022, titled Abhisht Kusum Gupta vs. State of Uttar Pradesh & Others**. This email and the attached document serve as confirmation that the Proof of Service has been duly filed to all government officials involved in the aforementioned case.

Please review and confirm the receipt of these documents at your earliest convenience. The Next Date Of Hearing is **24-01-2025** .

Regards.

--  
Sunil J. Mathews, Advocate  
Attn: Padmanabhan  
114, Lawyer's Chambers  
Supreme Court of India  
New Delhi - 110 001

Mobile: +91.93115.67212

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 **Objections w.r.t OA NO 859 OF 2022.pdf**  
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