



क्षेत्रीय कार्यालय—उ०प्र० प्रदूषण नियंत्रण बोर्ड, गाजियाबाद  
Regional Office, U.P. Pollution Control Board, Ghaziabad  
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संदर्भ संख्या : 1088/NGT OA-549/20/2021

दिनांक 21/09/2021

To,

The Registrar,  
The National Green Tribunal,  
Principal Bench,  
New Delhi  
[E-mail- judicial-ngt@gov.in](mailto:judicial-ngt@gov.in) & [ngt.filling@gmail.com](mailto:ngt.filling@gmail.com)

**Sub: Report of the Joint Committee submitted in compliance to Hon'ble National Green Tribunal (NGT), Principal Bench, New Delhi Order dated 14.06.2021 in O.A. No. 549/2019 in the matter of Mahakar Singh Vs State of U.P.**

Respected Sir,

With reference to the above subject mentioned above, this is to inform you that in compliance of Hon'ble National Green Tribunal order dated 14.06.2021 in OA No. 549/2019 in the matter of Mahakar Singh Vs State of U.P. Joint Committee has finalized the compliance report and same is hereby submitted for kind perusal and necessary action please.

**Enclosure: Joint report.**

Yours Sincerely

Regional Officer

**Copy to:**

- 1- Member Secretary, U.P. Pollution Control Board, Lucknow for information.
- 2- Shri Pradeep Misra, Advocate, Hon'ble Supreme Court/NGT, New Delhi for perusal and necessary action please.
- 3- Law Officer-I, U.P. Pollution Control Board, Lucknow for information.
- 4- Chief Environmental Officer, Circle-1, U.P. Pollution Control Board, Lucknow for information.

Regional Officer

क्षेत्रीय कार्यालय : आई०एन०एस०-२, सेक्टर-१६, वसुन्धरा, गाजियाबाद-२०१०१२ फोन-०१२०-४१६०१०८  
मुख्यालय : TC-12V, विभूति खण्ड, गोमती नगर, लखनऊ २२६०१०

**Report of the Joint Committee submitted in compliance to Hon'ble National Green Tribunal (NGT), Principal Bench, New Delhi Order dated 14.06.2021 in O.A. No. 549/2019 in the matter of Mahakar Singh Vs State of U.P.**

**1. Introduction**

Hon'ble NGT passed order on 14-06-2021 in O.A. No. 549/2019 in the matter of Mahakar Singh Vs State of U.P., and relevant paras of the Order dated 14.06.2021 are reproduced below: -

*".....5. From the report, it is seen that though there are observations regarding illegal cutting of trees, violations of EC conditions, illegal extraction of the groundwater but the action taken is not proportionate to the violations. Further, the Committee has not been able to make an assessment of the environmental compensation on the ground that data is awaited from the project proponent. It is stated that the Committee will make assessment within two months after receiving the data.*

*6. We find that the approach adopted by the Committee in deferring the matter till the project proponent gives data to be unsound. If the project proponent is avoiding giving data, there should be no difficulty in drawing adverse inference based on 'best judgement assessment' based on inferences from the circumstances. Indicative scale of compensation already stands approved by this Tribunal on the basis of expert Committee report. We also find that with regard to illegal cutting of trees the Forest Department has merely imposed some fine. Neither prosecution has been initiated, as required, nor adequate compensation recovered on the principle of restitution, based on value of the ecological services forgone forever.*

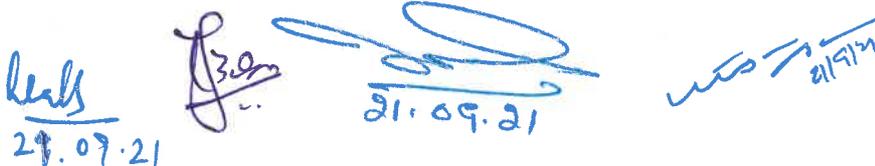
*7. Accordingly, we direct the joint Committee, in coordination with any other expert/institution to take/recommend further remedial action. The statutory authorities may exercise their jurisdiction in the matter to comply with the rule of law and file a compliance report before the next date by e-mail at judicial-ngt@gov.in preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF."*

*List for further consideration on 23.09.2021."*

A copy of the Hon'ble NGT order dated 14.06.2021 is enclosed as **Annexure-A1**.

**2. Initiatives of U.P. Pollution Control Board (UPPCB) As Nodal Agency and the Joint Committee constituted by Hon'ble NGT in the Matter**

In pursuance to Hon'ble NGT order dated 14.06.2021, a review meeting of the Joint Committee constituted by Hon'ble NGT (comprising District Magistrate Ghaziabad or his Representative, Representative of Central Pollution Control Board, Delhi, Representative of State Environmental Impact Assessment Authority (SEIAA), U.P. State, Representative of Central Ground Water Board (CGWB), Lucknow as members of the Joint Committee and U.P. Pollution Control Board (UPPCB), Ghaziabad as Nodal Agency was held on 23-07-2021 at 'Regional Office, U.P. Pollution Control Board (UPPCB), Ghaziabad' to ascertain the facts of the case and to discuss the course of action to be taken for



ensuring compliance to the said order. In the afore-said meeting, the representative of Hi-Tech Wave City project made a power point presentation before the committee and apprised with regard to (i) Project on-going and completed activities, (ii) aspects relating to cutting of trees in the project area prior to and during the construction activity, and (iii) abstraction of ground water related aspects.

Sh. Ashutosh Pandey, Assistant Conservator of Forests, Ghaziabad and representative of U.P. Forest Department, informed Joint Committee that as per records, the area in which Hi-Tech Wave City project has been developed was not a notified forest area or forest like area and would have been primarily agricultural or some other land in nature. It was also informed that as per The Land Revenue Record-2015, the name of the said project site in the forest area was not there. He also informed that the project proponent was fined Rs.1,00,000/- under the provisions of The Uttar Pradesh Protection of Trees Act, 1976 as the project proponent had violated the Act by illegal cutting of trees on the approach road and no violation has been reported otherwise. The case against said violation has already been compounded. A copy of Minutes of Joint Committee meeting held on 23.07.2021 is enclosed as **Annexure -A2**.

As a follow-up of the decision taken in a Joint Committee meeting held on 23.07.2021, Regional Officer, U.P. Pollution Control Board, Ghaziabad (UPPCB being nodal agency in the matter) vide letter dated 05.08.2021 requested 'Director, Central Building Research Institute (CBRI), Roorkee, Uttarakhand' and 'Executive Engineer, Public Works Department (PWD), Ghaziabad to attend the meeting of Joint Committee for assessment of quantity of water consumed by the High Tech City project during its on-going construction phase. A Copy of RO, UPPCB, Ghaziabad letter dated 05.08.2021 written to CBRI and PWD is enclosed as **Annexure-A3**.

A review meeting of the Joint Committee was held on 12.08.2021 through video conferencing. In the meeting, issues were discussed on the follow-up action taken as per the decisions taken in the Joint Committee meeting held on 23.07.2021.

Sh. Ashutosh Pandey, Assistant Conservator of Forests, Ghaziabad, representative of U.P. Forest Department, reiterated that as per The Land Revenue Record-2015, the name of the said project site title in the notified forest area was not there, however for illegal felling of trees on the approach road the project proponent was fined Rs. 1,00,000/- under the provisions of The Uttar Pradesh Protection of Trees Act, 1976.

As regards, water consumption during the construction phase of the Hi-Tech Wave City project, no response was received from 'Director, Central Building Research Institute (CBRI), Roorkee, Uttarakhand'. The 'Executive Engineer, Public Works Department (PWD), Ghaziabad informed UPPCB that PWD shall help the Joint Committee with regard to the water consumption related issue during the construction phase of the project. Also, Sh. Rajeev Kumar Rai, Executive Engineer, Public Works Department (PWD), Ghaziabad informed that information regarding existing built-up area of the project and a physical visit shall be required to ascertain the facts.

  
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Therefore, Joint Committee decided to visit the Hi-Tech City project site to discuss the issues with the project officials on 19.08.2021.

Thereafter, a meeting of the Joint Committee was held on 19-08-2021 at Hi-Tech Wave City project site. Members of the Joint Committee and the Officials of Public Works Department (PWD), Government of U.P. discussed the issues with regard to Bill of Quantities and built-up area with the Project representatives. Mr. Naresh Patel, General Manager who highlighted about the Project of M/s Uppal Chaddha Hi-Tech Developers Pvt. Ltd. (Hi-Tech Wave City). Joint Committee also directed the officials of the project to provide *land conversion certificate* obtained from concerned authorities, details of Form 1 and Form 1 A submitted to State Environmental Impact Assessment Authority (SEIAA), U.P for obtaining Environmental Clearance (EC), details of the project, total built-up area and its quantities, payments made if any during the construction phase for the purpose of procurement of water through approved or authorized tankers/vendors and any other relevant information to the Nodal agency for onward transmission of the related information to the PWD for assessment of water consumption during the construction phase of the Hi-Tech Wave City project and for further discussion in the next meeting of the Committee scheduled on 08.09.2021. Subsequently, The Hi-Tech Wave City Project officials vide letters dated 19.08.2021 and 01.09.2021 submitted following details to UPPCB as detailed below:

- (i) Details of Form 1 & Form 1A submitted to SEIAA for obtaining of Environmental Clearance
- (ii) Details of building constructed till date,
- (iii) Summary of built up of all types of construction,
- (iv) Project wise built-up area details,
- (v) Work orders pertaining to water tankers procured from vendors.
- (vi) Status report of the project

PWD, Ghaziabad has done the assessment of water consumption by the project proponent during construction phase and sent its report on 26.08.2021 to UPPCB and also assessed the quantity of water used for construction activity as 99903.19 KL. The assessment has been done on the basis of Standard Code of Practices which have been enlisted in Column 11 of attached report of PWD.

A meeting of the Joint Committee was held on 08.09.2021. A copy of minutes of meeting is annexed as **Annexure-A4**. Joint Committee discussed the assessment made by the PWD with regard to the total water consumption during the construction phase. As the water consumption by the man power used during the construction phase has not been assessed, the Joint Committee requested PWD to arrive at the water consumption during the construction phase of the project by the man power engaged by the project authorities during the construction activity, within a week, to enable Joint Committee to finalize report of the Committee.

  
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## 2.1 About Hi-Tech Wave City, Ghaziabad project

As per the information provided by the representative of Hi-Tech Wave City officials, the Government of Uttar Pradesh announced its policy for developments of Hi-Tech Townships in various towns of U.P. vide Government Order No.6087 / 9-A-2003-04 V / 03, dated 22/11/2003. M/s. Uppal Chaddha Hi-Tech Developers Pvt. Ltd. applied in the scheme captioned as "Development of Hi-Tech Townships in Uttar Pradesh" and selected the site along NH-24 at Ghaziabad. A location based schematic plan was prepared and submitted along with the proposals to the U.P. Government. Based on the recommendations of the U.P. Government appointed panel of experts, M/s. Uppal Chaddha Hi-Tech Developers Pvt. Ltd (Wave Hi-Tech Townships) was selected as Developer Company (DC) for development of a Hi-Tech Township at Ghaziabad. The proposal submitted by M/s. Uppal Chaddha Hi-Tech Developers Pvt. Ltd. was approved vide G.O. No. 2712-8-1-05 dated 21<sup>st</sup> May, 2005 of Awas and Sahari Niyajan Anubhag-I, Govt. of U.P. Lucknow. Ghaziabad Development Authority (GDA) was been authorized as competent authority (CA) for sanctioning and monitoring agency which was also provided a single window clearance system to smoothen the Hi-Tech Wave City development works. The land for site identified for Hi-tech Township lies in fourteen villages viz., Dasna, Bayana, Duryai, Mehrauli, Dujana, Talabpur / Hathipur, Inayatpur, ŞadiqpurKazipur, Naiphal, Shahpur Bamhaita, Shahpur Bamhaita, Kacheda Warsabad, Sadat Nagar Iqla, Girdharpur and Arifpur which are part of District Ghaziabad and Gautam Budha Nagar in U.P. State. As per the provided information, the total project area of M/s Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) is covered 4494.31 acres area in three phases. The first phase of project area having an area 1671 acres, comprised of sector 1 to 7, which is covered only in Ghaziabad district. The second phase having a project area of 2333 acres, in which about 80% area is covered in G.B. Nagar district and rest of the area is in Ghaziabad district. The third phase having an area 490.31 acres covers almost equally in Ghaziabad and G.B. Nagar districts. Details are given in the table below

Description	Area (Sq.m)	Area (Acres)	%
Plotted	2236210.32	552.56	
Group Housing Including EWS/LIG	4516330.59	1115.97	
EWS/LIG for plotted	54108.39	13.37	
<b>Sub Total</b>	<b>6806649.30</b>	<b>1681.90</b>	<b>37.42</b>
Public / Semi Public	1694438.43	418.69	9.32
Commercial/Office	1719732.18	424.94	9.46
Industrial	1091314.02	269.66	6.00
Recreational	545657.01	134.83	3.00
Green / Open Space Including Master Plan Green	3041563.32	751.56	16.72
Transport	60225.95	14.88	
Road	3228892.36	797.85	
<b>Total Road</b>	<b>3289118.31</b>	<b>812.73</b>	<b>18.08</b>
<b>Total</b>	<b>18188472.57</b>	<b>4494.31</b>	<b>100.0</b>

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As informed by the officials of Hi-Tech Wave City Project, the memorandum of understanding (MoU) for the Project captioned "Development of Hi-Tech Township in U.P." was signed between Developer Company (DC) and Co-coordinating Agency (CA) (i.e., GDA-Ghaziabad Development Authority) on 30.11.2005. As per Para 11 of MoU, DC submitted Detailed Project Report (DPR) of Wave Hi-Tech City, comprising Layout Plan of the proposed township, Land Use Plan etc. The DPR for the project was approved by CA (i.e. Ghaziabad Development Authority (GDA)) on 05.08.2006. The amendment to MOU was signed between DC and CA on 19.03.2009. The revised DPR was approved on 23.05.2009. Revised MoU for area 4494.31 Acres was signed between C.A. and D.C. on 17.02.2010 and the Conceptual DPR for 4494.31 Acres was approved on 21.10.2010. Revised Conceptual DPR for 4494.31 Acres was approved on 22.07.2011. Further, with some revision the DPR of 4494.31 acres was approved on 03.10.2013 and Developer Agreement (DA) layout released on 03.10.2013. The details are given in the table below.

S.No	Particulars	Date
1	UP Government approved M/s. Uppal Chaddha for development of Hi-Tech Townships in U.P. vide GO No. 2712-8-1-05 dated 21 <sup>st</sup> May, 2005 of Awas and Sahari Niyajan Anubhag-I, Govt. of U.P. Lucknow.	21.05.2005
2	MOU for development of the Township was signed between DC and CA	30.11.2005
3	The DPR for the project was approved by GDA	05.08.2006
4	The amendment to MOU was signed between DC and CA	19.03.2009
5	The revised DPR for the project was approved	23.05.2009
6	Revised MoU for area 4494.31 Acres was signed between C.A. and D.C.	17.02.2010
7	With some revision the DPR of 4494.31 acres was approved	03.10.2013
8	DA layout released	03.10.2013

## 2.2 Forest Cover

As informed by the officials of Hi-Tech Wave City, as per the assessment done during filing of the application to take environmental clearance from State Environment Impact Assessment Authority (SEIAA), U.P. before start of the project, the project area is devoid of any major vegetation. Also, the Hi-Tech Wave City project area is free from any notified forest land. It was also assessed that this area will have 33% of green after development of the project. The same has been represented through the Survey of India Topo Sheet No. H43X6 and H43X10 (Ghaziabad) that no forest cover / area is depicted within the project site.

However, the Hi-Tech Wave City project officials informed that certain trees were to be cut free to enable the construction of road & infrastructure as per the approved Master Plan. For the purpose, company had taken permission for cutting of 70 trees from Forest Department vide letter no. 452/22-1 dated 12.08.2016 by paying a process fee of Rs. 10,648/-. As the permission for cutting tree was not taken in case of approach roads, project officials have paid penalty of Rs. 1,00,000/- to Forest Department, U.P. State. Further, Project Proponent has damaged 31 trees situated in project area and violated the provisions of the U.P. Tree Protection Act, 1976. A case





was registered against the project proponent and penalty of Rs. 1,70,000/- was levied against the project proponent on 24.03.2021 and case was compounded as per said Act.

As per the above table, the project officials claim that the project had cut only 86 trees within project site area. Instead, company has planted around 14,130 trees till date in Hi- Tech Wave City and almost 2,55,500 shrubs are grooming in the project area.

### 2.3 Environmental Clearance

As informed by the officials of Hi-Tech Wave City, Environmental Clearance (EC) was issued for the project by State Environment Impact Assessment Authority (SEIAA), U.P. vide letter No. 1576 dated 07.10.2009 for approval of first DPR. EC was revised in 2011 as per the new Master Plan vide letter No. 2463 dated 13.10.2011. In 2013, the DPR with Master Plan was re-approved considering the changes proposed by the Proponent viz., M/s. Uppal Chaddha Hi-Tech Developers Pvt. Ltd. Finally, EC was issued to M/s. Uppal Chaddha Hi-Tech Developers Pvt. Ltd. by SEIAA vide letter No. 918 dated 31.07.2014 which is valid up to 30.07.2022 (Annexure-A5).

### 2.4 Consent to Establish and Operation obtained from U.P. Pollution Control Board

As per Hi-Tech Wave City Project officials, M/s. Uppal Chaddha Hi-Tech Developers Pvt. Ltd. obtained consent to establish from U.P. Pollution Control Board (UPPCB) vide UPPCB letter dated 10-03-2011 (Annexure-A6), which has been further extended for 05 years by UPPCB vide letter dated 29-11-2017 (Annexure-A7). Further, Consent to Operate was issued by UPPCB to M/s. Uppal Chaddha Hi-Tech Developers Pvt. Ltd. vide UPPCB letter dated 17.03.2020 for built-up area of 1,49,292 sq.m (Annexure-A8) which was valid till 31.12.2020. Further, the Consent has been renewed by UPPCB vide letter dated 05/08/2021, which is now valid till 31/12/2025 (Annexure-A9).

### 2.5 Construction Work Status of Hi-Tech Townships in U.P.

As per Hi-Tech Wave City Project officials, construction of Hi-Tech City, Noida yet to be started. Hi-Tech Wave City, Ghaziabad construction of buildings were started in January, 2016. Since 2016, buildings of different types were constructed such as G+1, G+2, Group Housing & Commercial buildings. The total built-up / constructed area till date is 6,87,059 Sq.m. The building type-wise built-up area of High Tech Wave City, Ghaziabad as per Hi-Tech Wave City Project officials is given in the Table below:

S.No	Project	Type of Projects	Towers	No of Units	Built- up Area (Sq.ft)
A	Dream Homes	Residential (G + 14)			
			T3	225	222,308.99
			T4	195	190,316.05
			T5	217	211,195.34

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S.No	Project	Type of Projects	Towers	No of Units	Built- up Area (Sq.ft)
			T6	217	221,665.29
			T7	370	353,357.56
			T8	600	487,632.52
			T9	615	504,337.84
<b>B</b>	<b>Executive Floor</b>	<b>Residential (S+ 5)</b>			
			T1	240	250,355.50
			T2	200	208,631.21
			T3	240	250,355.50
			T4	140	146,041.84
			T5	240	300,276.14
<b>C</b>	<b>Swamanorath</b>	<b>Residential (G+14)</b>			
			TA1	176	120,400.88
			TB1	120	55,715.32
<b>D</b>	<b>Wave galleria</b>	<b>Commercial (Basement+ LGF+ UGF+3)</b>		526	282,927.51
<b>E</b>	<b>EWS (S5)</b>	<b>EWS</b>	Block 1		19,442.00
			Block 2	144	19,442.00
			Block 3		19,442.00
			Block 4	144	19,442.00
			Block 5		19,442.00
			Block 6	144	19,442.00
			Block 7		19,442.00
			Block 8	144	19,442.00
<b>F</b>	<b>LIG (S5)</b>	<b>LIG</b>			
			T1	250	121,066.00
			T2	250	121,066.00
<b>G</b>	<b>EWS/LIG(WEF)</b>	<b>EWS/ LIG</b>			
			T1	468	192,843.52
			T2	398	159,238.90

**Floor Details:**

Sector	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	Sector 7	Total Plots	Built-up Area of 1 plot (Sq.ft)	Total Built-up Area (Sq.ft)
Wave Floor (G+2)	No of Plots								
112 Sqm	141			14			155		

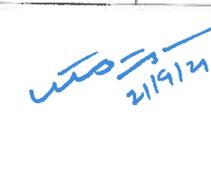
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Sector	Sector 2	Sector 3	Sector 4	Sector 5	Sector 6	Sector 7	Total Plots	Built-up Area of 1 plot (Sq.ft)	Total Built-up Area (Sq.ft)
								2,589.23	401,331
162 Sqm	128	11		178		6	323	3,598.70	1,161,181
240 Sqm	70		78	18			166	5,211.23	865,064
171 Sqm		11					11	3,935.11	43,286
<b>Prime Floor (G+1)</b>									
112 Sqm	61			24			85	1,691.56	143,783
162 Sqm	60			2			62	2,266.04	140,494
<b>Armonia Villa (G)</b>									
162 Sqm				36	7	18	61	1,350.00	82,350
								<b>Total</b>	<b>2,837,489</b>

Item-wise quantities of total built-up area of the Hi-Tech Wave City, Ghaziabad is given in the table below:

S. No.	Item Description	Unit	Built-up Quantity
1	Plain cement concrete (1:4:8)	Cum	15,976.75
2	Plain cement concrete (1:5:10)	Cum	5,857.71
3	M 20 grade of concrete	Cum	1,903.85
4	M 25 grade of concrete	Cum	244,976.69
5	Brick work (1:6) in super structure	Cum	48,419.56
6	Brick work (1:6) in foundation & Plinth	Cum	13,504.91
7	Brick work (1:4) in super structure	Cum	234.74
8	Half Brickwork (1:4) in foundation & Super structure	Sqm	400,969.32
9	Plaster 12mm thk (1:6)	Sqm	931,322.83
10	Plaster 6 mm thk (1:4)	Sqm	261,862.51
11	Plaster 6 mm thk (1:3)	Sqm	101,748.53





S. No	Item Description	Unit	Built-up Quantity
12	Plaster with floating coat (1:4)	Sqm	67,854.85
13	Marble/Granite stone flooring (1:4)	Sqm	65,516.84
14	Kota stone flooring (1:4)	Sqm	109,107.97
15	Ceremic tiles (1:4)	Sqm	295,944.71
16	Vitrified tiles (1:4)	Sqm	449,391.50
17	Vitrified tiles in skirting	Sqm	48,905.03
18	Brick Coba on roof	Sqm	50,829.65
19	Water proofing in sunken portion	Sqm	67,037.16
20	Water proofing cement based	Sqm	110,115.00
21	40 mm thk IPS Flooring (1:2:4)	Sqm	27,150.91
22	Gola (75x75)	RM	61,432.08
23	Khurra (45x45)	Nos	4,621.31
24	Plaster 15 mm (1:4)	sqm	315,054.80
25	Plaster 15 mm (1:6)	sqm	139,632.13
26	M 30 grade of concrete	Cum	3,746.24
27	M 35 grade of concrete	Cum	4,259.77
28	M 40 grade of concrete	Cum	5,448.51
29	AAC Blocks (150/200 mm)	Cum	15,681.87
30	AAC Blocks (100 mm)	sqm	57,030.10
31	Plaster 18 mm thk (1:5)/(1:6) in two coats	Sqm	111,622.13
32	Stone Cladding	Sqm	5,012.37
33	Kerb Stone Laying	RM	146.28
34	Concrete paver blocks	Sqm	4,535.35

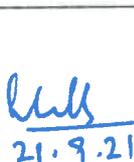
#### Pending Works:

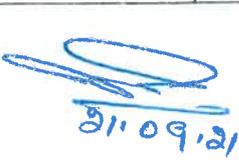
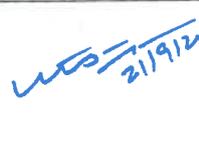
As per Hi-Tech Wave City Project officials, all construction related works in above-mentioned buildings have been completed in Hi-Tech Wave City, Ghaziabad and only some painting & finishing works are going on in few buildings.

#### Possession Status:

As per information provided by the project officials, possession for 6038 units have been issued to the customers in Hi-Tech Wave City, Ghaziabad till date (01.09.2021). The details of project-wise possession offered are shown in the Table in subsequent paras.

PRODUCT	No. of Unit sold/ Allotted	No. of unit for which possession issued
Plots Phase-I	3,690	2,630
Plots Phase-II	1,583	-
Mayfair Park	339	196
Veridia	2	



PRODUCT	No. of Unit sold/ Allotted	No. of unit for which possession issued
Wave Floor	1,737	1,764
Prime Floor	323	
Armonia Villa	45	22
Dream Homes	1,811	562
Wave Galleria	337	248
Swamanorath	258	-
Wave Executive Floor	769	497
Dream Bazaar	52	
EWS	646	119
LIG	498	
<b>TOTAL</b>	<b>12,090</b>	<b>6,038</b>

## 2.6 Estimated Water Consumption in the Construction Activities

As per the information provided by Hi-Tech Wave City officials, during construction phase of Hi-Tech Wave City, Ghaziabad, company had tie-up with tanker vendors for supply of water through tankers. The tanker supply was started in beginning of the year 2016. The year-wise water consumption from January, 2016 to August 2021 as provided by Hi-Tech City Project officials is detailed in the following table:

S. No.	Year	Consumption of Water in Construction Activities (in Cum)	Remarks
1	2011	-	During the period, land purchase and Infrastructure development and obtaining of approvals from Government of UP, GDA, EC from SEIAA, consent from UPPCB were carried out
2	2012	-	
3	2013	-	
4	2014	-	
5	2015	-	
6	2016	10800	Water used via purchase from Tanker Vendors
7	2017	14708	
8	2018	18615	
9	2019	24520	
10	2020	18615	
11	August 2021	3600	
	<b>Total.</b>	<b>90,858 KL</b>	

As per information provided by the officials of the project, total 90,858 KL water has been procured from tanker/vendor for construction use between January, 2016 to August, 2021.

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### 3. Observations of the Joint Committee

Based on the discussions held with the project officials during the site visit to Hi-Tech Wave City, Ghaziabad and verification of documents submitted to UPPCB (Nodal Agency in the matter), following observations/recommendations are made by the Joint Committee for consideration by the Hon'ble National Green Tribunal (NGT)

#### 3.1 Illegal cutting of trees by the project

As per the communication vide letter No. 2362/35-3 Ghaziabad, dated 08.11.2019 received from Forest Department, Ghaziabad by UPPCB, it was informed that "As per the Joint inspection dated 19-09-2019, damage of trees/cutting was found on the approach road to the project site of M/s Uppal Chaddha Hi-Tech Developers Pvt. Ltd (Wave Hi-Tech Townships) as per laid down provisions under The Uttar Pradesh Protection of Trees Act, 1976. Also, Forest Department, Ghaziabad vide afore-said letter informed that notice dated 21.10.2019 was issued under section 16 of The Uttar Pradesh Protection of Trees Act, 1976, directing the project proponent to comply with all the provisions under The Uttar Pradesh Protection of Trees Act, 1976 and to take approval from the department with any tree needs to be cut during development of the project.

Further, Forest Department, Ghaziabad informed that in the year 2015, DGM and Project Manager working in the said project were fined Rs.1,00,000/- in view of violations found under the provisions of The Uttar Pradesh Protection of Trees Act, 1976 i.e., by illegal cutting of trees on the approach road and no violation has been reported within the project site. Project Proponent had paid Rs. 1,00,000/- penalty to Forest Department on 20<sup>th</sup> June, 2015 (Receipt No. 2310 dated 20.06.2015). The proponent also obtained the permission for cutting of trees within the project site from the Forest Department, Ghaziabad vide letter dated 12.08.2016.

*Further, Divisional Director, U.P. Forest Department, Ghaziabad vide letter dated 08.09.2021 (Annexure A-10) has submitted that " no part of the inter-space land in the construction of the Wave City Ghaziabad has ever been included in the notified forest land. Thus, no reserved or protected notified forest land is used in the construction of the Wave City Ghaziabad."*

Further, Project Proponent has damaged 31 trees situated in project area and violated the provisions of the U.P. Tree Protection Act, 1976. A case was registered against the project proponent and penalty of Rs. 1,70,000/- was levied against the project proponent on 24.03.2021 and case was compounded as per said Act.

Also, as per information indicated in Form 1A submitted for obtaining EC from SEIAA, U.P. the relevant portion of para no. 3 related to vegetation is reproduced below:

*"The project area falls under area designated for hi-Tech city of Ghaziabad Master Plan and rest of the area lies outside the Master Plan. The area is free from forest land."*

  
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Also, Survey of India Open Series Map No. H43X6 (1: 50,000) First Edition 2010 indicate noexistence of reserved or protected notified forest landat Hi-Tech Wave City, Ghaziabad project site. A copy of the Survey of India Open Series Map No. H43X6 (1:50,000) First Edition 2010 is attached as **(Annexure A-11)** for perusal of the Hon'ble Tribunal.

### 3.2. Environmental Clearance obtained from SEIAA, U.P

As per informationsubmitted to RO, UPPCB, Ghaziabad vide letter dated 19.08.2021, by the *High-Tech Wave City* regarding Form1 and Form 1 A submitted to SEIAA, U.Pfor obtaining Environmental Clearance (EC), theproject officials have informed/ proposed at S.No. 2 (Use of natural resources for construction or operation of the project) and sub-para 2.2 which is reproduced below: -

*“ The availability of the ground water in Ghaziabad and especially in the vicinity of the project area has been studied through the available reports and the Master Plan. The conclusion has been drawn that sufficient quantity of potable underground water is available inside the project area. Therefore, the fresh water requirement of the township will be met by the tapping the underground water and the bulk requirement for flushing in group housings, commercial area and watering green areas will be met from treated effluent from STP’s. As per the calculation done on the basis of MOEF/SEAC norms, the STP required will be of 59 MLD.As per proposal submitted by project proponent to SEIAA, fresh water requirement is estimated as 59581 KLD which will be sourced from Ghaziabad Development Authority (GDA)”*

*However, the project authorities did not mention about the sources of water and expected quantities of water consumption during the construction phase of Hi-Tech Wave City, Ghaziabad or Hi-Tech City, Noida.*

M/s Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Townships) Obtained Environmental Clearance from State Environment Impact Assessment Authority, U.P. vide letter no. 918/Parya/SEAC/2069/2013/JDCA(S), dated 31-07-2014 for Wave Hi-Tech Township at Ghaziabad, U.P. While granting Environmental Clearance by SEIAA, U.P. vide letter dated 31-07-2014 to M/s. Uppal Chaddha Hi-Tech Developers Pvt. Ltd., imposed a general condition No.11 which indicate that *‘Obtain necessary clearances from the competent authority on the abstraction and use of ground water during the construction and operation phase’.*

M/s Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Townships) officials also apprised SEIAA on 03.10.2013 that the total water requirement as 92144 KLD and fresh water requirement as 59581 KLD for built up area of 5,15,78,130.39 sq.m. and total land area of 4494.31 acres (but mentioned as Hectares in EC issued on 31.07.2014)which will be sourced from Ghaziabad Development Authority.

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### 3.3 Consents obtained by M/s Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) from U.P. Pollution Control Board

As per U.P. Pollution Control Board (UPPCB), M/s Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) obtained consent to establish from UPPCB vide letter no. F82293/C-1/NOC/G-688/2011/8, dated 10-03-2011, which was further extended for 05 years vide UPPCB letter no H12767/ C-1/NOC-688/2017, dated 29-11-2017. According to the condition no.12 of the Consent to establish issued dated 29.11.2017, M/s Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) was directed to obtain NOC/ permission from Central Ground Water Authority for abstraction of ground water. Later, M/s Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) also been granted conditional consent to operate (water) by U.P. Pollution Control Board vide letter no. 51505/UPPCB/Ghaziabad (UPPCBRO)/CTO/water/Ghaziabad/ 2019, dated 17-03-2020 for built-up area of 149292 sq.m which was valid up to 31.12.2020. As per CTO dated 17-03-2020, total maximum daily domestic discharge permitted is 995 KLD treated through STP. Based on the compliance report submitted by the officials of the project, vide letter dated 02-09-2020 and also applied for renewal of CTO online on 28-01-2021 and based on the verification of compliance to the conditions of CTE/CTO and in view of violations observed by earlier Joint Committee inspection dated 19-09-2019, UPPCB has forfeited bank guarantee of Rs. 10 lakhs. Further, UPPCB renewed Consent to Operate with validity up to 31.12.2025 vide UPPCB letter No. no. 120002/ UPPCB/ Ghaziabad (UPPCBRO)/ CTO/ water/ Ghaziabad/2021, dated 05/08/2021.

### 3.3 NOC obtained from Central Ground Water Authority (CGWA) for abstraction of ground water by M/s Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township)

The High- Tech Wave City Project officials vide letter dated 01.09.2021 informed that the application for obtaining NOC for ground water extraction was submitted to Central Ground Water Authority (CGWA) vide application No. 21-4/4196/UP/INF/2017 and same was issued to M/s Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) vide CGWA letter No. CGWA/NOC/INF/ORIG/2019/5285 dated 17.05.2019 with validity from 08.05.2019 to 7.5.2021 (Annexure A-12) to extract fresh ground water of 38772 m<sup>3</sup>/day (14151780 m<sup>3</sup>/year). CGWA vide afore-said NOC, permitted 31 existing bore wells and 14 proposed bore wells to be used only for drinking/domestic uses/green belt, which was expired on 07-05-2021. Further, the NOC has been renewed by UP Ground Water Department for the period of five years.

As informed by CGWA, verification of compliance was done during joint inspection dated 19-09-2019 and report was submitted by Mr. Jagdamba Prasad, Sc.- D on 14-10-2019, in which it is mentioned that proponent has not installed flow meters in all energized tube wells and no piezometer was constructed in project area. In view of violation of NOC, recommendation to impose environmental compensation of Rs.1,00,000/- was sent by Regional Office, CGWB, Lucknow to CGWA, New Delhi. A penalty of Rs.1,00,000/- (Rupees One Lakh) was imposed by The Member Secretary, CGWA, New Delhi vide show cause notice dated 04-08-2020, in exercise of powers conferred under Section 15 of The Environment (Protection) Act, 1986, read with the

  
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paragraph 2(ii) of the notification of the Government of India in the Ministry of Environment and Forests vide S.O. 38(E) dated 14<sup>th</sup> January, 1997, for non-compliance to the conditions of NOC (related to installation of digital flow meters, roof top rain water harvesting, piezometers etc., and for not maintaining water consumption record during construction phase of the project ) on the basis of joint inspection report carried out on 19.09.2019 by the representatives of CGWA, UPPCB and U.P. Forest Department. Accordingly, Project Proponent has deposited penalty of Rs 1,00,000/- (Rupees One Lakh) in favour of 'DDO, CGWB, NR Lucknow' vide letter dated 03.09.2020 and same was deposited to 'PAO CGWB Faridabad' through challan on 21.09.2020 (Challan no 24).

*At present, total 11 tube wells are energized, out of which, 7 are in regular operation phase & 4 are kept in standby mode. Two piezometers are installed at site as per NOC. All 11 tube wells are energized and also mounted by digital flow meters & Logbook is maintained to book the daily consumption details as per the guidelines of CGWA.*

*In the absence of proper record with regards to extraction of ground water with project proponent during construction phase, it is pertinent to mention here that as per Survey of India Open Series Map No. H43X6 (1: 50,000) First Edition 2010 which indicates that there are bore wells in the Hi-Tech Wave City, Ghaziabad project site which might have been used earlier for agricultural activity. Thus, the possibility of abstraction of ground water from the pre-existing tube wells in the project site by Hi-Tech Wave City, Ghaziabad during construction phase cannot be ruled out.*

### 3.4 Assessment of water consumption during the construction phase

Details of project wise total built up area/ constructed area (687059.16 SQM) till date has been provided by the representative of High Tech Wave City vide letter dated 19.08.2021 and same was forwarded to Executive Engineer, PWD, Ghaziabad by Regional Officer, UPPCB, Ghaziabad vide letter dated 19.08.2021 to assess the expected quantity of water consumed in construction of the project. An assessment report regarding water consumption as per standard protocols based on the details of built-up area provided by project has been made by Executive Engineer, PWD, Ghaziabad in respect of High Tech Wave City, Ghaziabad and same has been submitted to RO, UPPCB, Ghaziabad vide letter dated 26.08.2021. As per PWD report, total estimated water consumption during the construction phase of the Hi-Tech Wave City Project, Ghaziabad is **99903.19 KL**(During the construction period of 2016 to 31.08.2021). Copy of same is annexed as **Annexure-A13**

Further, as per report received from PWD on 16.09.2021, based on the construction activity at Hi-Tech Wave City, Ghaziabad completed till date estimated man-days required for construction of built-up area provided by project officials is 21,68,126(annexed as **Annexure-A14**). However, as the Project proponent has applied for obtaining NOC from CGWA and same has been accorded on 17.05.2019. CGWA's Guidelines to Regulate and Control Ground water Extraction

  
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notified on 24.09.2020 does not take domestic consumption into consideration for levying environmental compensation.

### 3.5 Recommendations of the Joint Committee

Based on the information provided by the officials of M/s. Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) and records provided to UPPCB by the project officials, proposed and estimated environmental compensation for abstraction of ground water during the construction phase of the Hi-Tech Wave City, Ghaziabad by M/s. Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) is detailed below:

- Initial Consent to Establish obtained from UPPCB on 10.03.2011.
- Amended Environmental Clearance (EC) obtained for revised DPR from State Environment Impact Assessment Authority, U.P. on 31-07-2014.
- Status of NOC from CGWA: NOC obtained from CGWA on 17.05.2019 with validity from 08.05.2019 to 7.5.2021, to extract fresh ground water of 38772 m<sup>3</sup> /day or 14151780 m<sup>3</sup>/year (permitted 31 existing bore wells and 14 proposed bore wells), which was expired on 07-05-2021. Further, NOC for extraction of ground water renewed by UP Ground Water Department vide Letter No. 104/Bhu.J.V/Act(NOC)-21 dated 27.08.2021 and is valid for a period of five years.
- Estimated water consumption during the construction phase i.e., January, 2016 to August 2021 (2070 days): 99903.19 KL (averaged to 48.26 KLD).
- M/s. Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) has stated that during the construction phase i.e., January, 2016 to August, 2021 (2070 days) 90858 KL (averaged to 43.89 KLD) has been procured through vendors but authenticity of vendors has not been proved by the Project Proponent.
- As per CGWB, Hi-Tech Wave City, Ghaziabad is situated in an 'Over exploited area'.
- In compliance to Hon'ble Tribunal's order dated 14.06.2021 passed in the matter, environmental compensation proposed to be levied on M/s. Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) for illegal abstraction of ground water has been estimated in accordance with the report of Central Pollution Control Board entitled 'Assessment of Environmental Compensation in Case of Illegal Extraction of Ground Water (Annexure-A15)' for the construction period from January 2016 to September 23, 2020 and thereafter, proposed environmental compensation has been assessed as per CGWA's Guidelines to Regulate and Control Groundwater Extraction notified on 24.09.2020

  
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(Annexure A16) for the construction phase period from September 24, 2020 to August, 2021. Details are given in the table below.

S.No	Description of Item	Quantity	Violation Period	Rate	Penalty amount (in Rs.)
<b>Assessment Period -- January, 2016 to 23.09.2020(No. of Days – 1728)</b>					
1	Estimated water consumption for construction activity during the construction phase	48.26 KLD	1728 days	Rs. 60 per cubic meter per day (Infrastructure) Deterrent Factor as 1. <b>*As per CPCB Report dated 26.06.2019</b>	50,03,596.80
<b>Assessment Period – 24.09.2020 to 31.08.2021(No. of Days – 342)</b>					
2	Estimated water consumption for construction activity during the construction phase	48.26 KLD	342 days	Rs. 60 per cubic meter per day(Infrastructure) <b>*As per CGWA's Guidelines to Regulate and Control Groundwater Extraction notified on 24.09.2020</b>	9,90,295.20
<b>Total (in Rs.)</b>					<b>59, 93,892.00</b>

*Estimated environmental compensation for illegal abstraction of ground water for construction activity for the period January, 2016 to August, 2021 is estimated to be Rs. 59,93,892.00/- (Fifty-Nine Lakhs Ninety-Three Thousand Eight Hundred and Ninety Two Only).*

Central Ground Water Authority has been constituted under Section 3 (3) of the Environment (Protection) Act, 1986 to regulate and control development and management of ground water resources in the Country. Also, in exercise of powers under Section 5 of the Environment (Protection) Act, 1986, Central Ground Water Authority may recover Rs. 59,93,892.00/- (FiftyNine Lakhs Ninety Three Thousand Eight Hundred and Ninety Two Only) from M/s. Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) in view of the illegal abstraction of ground water during the construction phase period from January, 2016 to August 31, 2021.M/s. Uppal Chaddha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) may also carry out ground water recharge activities within the project site in accordance with the guidelines issued by Central Ground Water Board from time to time.

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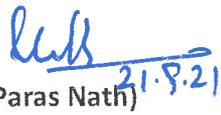
Report of the Joint Committee is hereby submitted for kind perusal of Hon'ble National Green Tribunal.



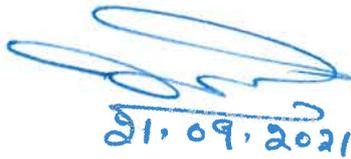
(D.P. Singh)  
SDM, Sadar, Ghaziabad



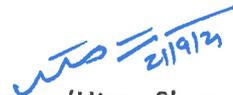
(J. Chandra Babu)  
Sc 'E', CPCB, Delhi



(Paras Nath)  
Member, SEIAA, UP



(Jagdamba Prasad)  
Scientist D, CGWB, NR, Lucknow



(Utsav Sharma)  
Regional Officer, UPPCB, Ghaziabad

Item No. 06

(Court No.1)

**BEFORE THE NATIONAL GREEN TRIBUNAL  
PRINCIPAL BENCH, NEW DELHI**

(By Video Conferencing)

Original Application No. 549/2019

Mahakar Singh

Applicant

Versus

State of Uttar Pradesh

Respondent

Date of hearing: 14.06.2021

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON  
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER  
HON'BLE MR. JUSTICE M. SATHYANARAYANAN, JUDICIAL MEMBER  
HON'BLE MR. JUSTICE BRIJESH SETHI, JUDICIAL MEMBER  
HON'BLE DR. NAGIN NANDA, EXPERT MEMBER**

Respondent: Mr. Pradeep Misra, Advocate and Mr. Daleep Dhyani, Advocate for UPPCB

**ORDER**

1. A report was sought from a joint Committee of Central Ground Water Authority (CGWA), Chief Conservator of Forest/Conservator of Forest, Ghaziabad and Uttar Pradesh Pollution Control Board (State PCB) with reference to the allegation of illegal cutting of trees, extraction of groundwater and construction without Environmental Clearance (EC) for the project of **Wave City at Ghaziabad and High Tech City at NOIDA by Real Estate Developers.**

2. The matter was considered by the Tribunal on 16.01.2020 in the light of the report dated 23.11.2019. Since several deficiencies were noticed and remedial action was directed. It was observed:

***"We find that though there are several deficiencies in compliance of conditions imposed by the CGWB while granting NOC for ground water extraction, the CGWB has failed to take necessary action even after the deficiencies have come to their notice. Since such situation is happening in number of cases, it is necessary to require presence of the CEO of the CGWA to ensure***

*that there is effective monitoring mechanism to remedy such violations without which the regulatory functions entrusted to the CGWA will have no meaning.”*

3. The matter was last considered on 14.07.2020 in the light of the affidavit filed by the CGWA on 27.02.2020 to the effect that groundwater had been illegally used by M/s. Uppal Chadha Hi Tech Developers Pvt. Ltd. (Water Hi Tech Township) for construction purposes in overexploited area where groundwater can be allowed to be extracted only for drinking and domestic purposes. The Tribunal found that no proper verification had been done nor remedial action taken for illegal extraction of groundwater. Accordingly, the constitution of the joint Committee was revised so as to comprise CPCB, Member Secretary, SEIAA, UP, State PCB, CGWA and District Magistrate, Ghaziabad for ensuring remedial action. The operative part of the order is as follows:-

*“3. In view of the above, an affidavit has been filed by the CGWA on 27.02.2020 inter-alia stating that M/s Uppal Chadha Hi Tech Developers Pvt. Ltd. (Wave Hi Tech Township) is liable to pay environmental compensation for unauthorized ground water extraction (if any done) for construction purposes during the period from the date of sanction of the project/commencement of construction to the date of completion of construction/ handing over of the possession. The area in question falls in over exploited area and ground water can be extracted only for drinking and domestic usage.*

*4. The report is incomplete and hypothetical and not factual. **There is no verification of the allegation of illegal drawl of the ground water nor proposed action has been taken. It is stated that if there is illegal extraction, there is liability. On the other hand, it is stated that environmental compensation of Rs. 5 lakhs has been assessed.***

*5. In view of the conflicting observations, it appears to be necessary to have further independent report in the matter from a joint Committee comprising CPCB, Member Secretary, SEIAA, UP, State PCB, CGWA and District Magistrate, Ghaziabad. The nodal agency will be the State PCB for compliance.*

*Let such report be furnished within three months by e-mail at [judicial-ngt@gov.in](mailto:judicial-ngt@gov.in) preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF.”*

4. In pursuance of above, report of the joint Committee has been filed on 09.03.2021. Relevant extracts from the report are as follows:-

**“3. Initiatives taken by U.P. Pollution Control Board (UPPCB):-**

*In compliance of above said order, a meeting of the Joint Committee constituted by Hon'ble NGT was held on 25-02-2021 at Regional Office, U.P. Pollution Control Board (UPPCB), Ghaziabad to ascertain the facts of the case and discuss the issues for ensuring compliance as raised in the said order. Minutes of meeting held on 25-02-2021 is enclosed as Annexure 2.*

*Main decisions taken in the aforesaid meeting are detailed below:*

- a) *As per report submitted by Forest department, proponent was fined Rs. 1,00,000/- due to violation found under The Uttar Pradesh Protection of Trees Act, 1976. Status of violations, action taken and present status of compliances is to be submitted by Forest department for perusal of the Committee.  
(Action required by Forest Department, Ghaziabad.)*
- b) *Project proponent has been issued environmental clearance by SEIAA, U.P. vide letter dated 31-07-2014, Status of violations, action taken and present status of compliances is to be submitted by SEIAA, U.P. for perusal of the Committee.  
(Action required by SEIAA, U.P.)*
- c) *Representative of CGWA informed that NOC for 31 existing bore wells and 14 proposed bore well was granted by CGWA on dated 08.05.2019 for drinking/domestic uses, which is valid up to 07-05-2021. Verification of compliance was done during joint inspection dated 19-09-2019 and report was submitted by Mr. Jagdamba Prashad, Sc.- D on 14-10-2019, in which it is mentioned that proponent has not installed flow meters in all energized tube wells and no piezometer is constructed in project area. In view of violation of NOC, recommendation to impose environmental compensation of Rs. 1,00,000/- was sent by Regional office, CGWB, Lucknow to CGWA, New Delhi, but no report and guideline/basis of such EC has been shared with joint committee. Committee requested CGWB to provide the background note for the basis/ guideline according to which recommendation of imposition EC of Rs. 1.0 lakh has been done with copies of necessary documents and report submitted in Hon'ble Tribunal in this regard. Further decision in the matter can be taken only after receiving all necessary documents by the Department.  
(Action required by CGWB)*
- d) *Representative of CGWA also informed that at present, a new mechanism has been developed by U.P. Ground Water Department to take decision on proposals of new borewells and further action should be taken by competent authority accordingly. However, in present scope, Hon'ble Tribunal has mandated the Committee to ascertain the basis of report of CG W13 and make recommendations accordingly. It has been decided by the Committee that inclusion of UP Ground Water Department as member for further necessary action shall be done once approved by Hon'ble Tribunal.*

e) In view of above, the Committee has proposed joint inspection of the Project on 05/03/2021 with all members of the Committee and again reiterated that all necessary documents be circulated to all members by 01/03/2021.

**An e-mail was sent to all concerned departments seeking updated status reports, vide e-mail dated 27-02-2021. Response from concerned department awaited.**

4. **Visit made by Joint Committee:-**

As decided in the Joint Committee meeting held on 25.02.2021, a visit was made to M/s Uppal Chadha Hi Tech Developers Pvt. Ltd. (Wave Hi-Tech Township), Ghaziabad on 05-03-2021 by the Joint Committee to understand the issues comprising following officials: -

1. Shri J.C. Babu, Sc. 'E' Central Pollution Control Board, Delhi.
2. Shri Ajoy Kumar Mandal, Member SEAC,
3. Shri Jagdamba Prashad, Scientist D, CGWB, Lucknow.
4. Shri B.K. Singh, Assistant Environmental Engineer, L.T.P. Pollution Control Board, Ghaziabad.
5. Shri Anshul Sharma, Junior Engineer, U.P. Pollution Control Board Ghaziabad.

The District Magistrate or his representative could not participate in the aforesaid visit and authorized the Joint Committee members for field visit on 5<sup>th</sup> March, 2021. Based on the information provided by the project authorities and the verification of records, details are provided below:

The total project area of M/s Uppal Chadha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) is covered **4494.31 acres** area in **three phases**. The **first phase** of project area having an area **1671 acres**, comprised of sector 1 to 7, which is covered only in Ghaziabad district. The second phase having a project area of **2333 acres**, in which about 80% area is covered in G.B. Nagar district and rest of the area in Ghaziabad district. The third phase having an area **490.31 acres** covers almost equally in Ghaziabad and G.B. Nagar districts. As per information provided by the project proponent, total no of proposed units is 20280, total units constructed as on 15<sup>th</sup> March 2021 is 5777, Total units handed over to the customers 1150, occupancy is 912.

The facts to be verified by the Joint Committee are illegal cutting of trees, extraction of ground water and construction without Environmental Clearance for the project of M/s Uppal Chadha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township).

Based on the records available with UPPCB (nodal agency) facts are detailed below:

- A. **Illegal cutting of trees:** As per the communication vide letter no. 2362/35-3 Ghaziabad, dated 08-11-2019 (Annexure 3), received from Forest Department, Ghaziabad by UPPCB, it was informed that "As per the Joint inspection dated On 19-09-2019 damage of trees/cutting/other damages has been found within the project site of M/s Uppal Chadha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech

Township) under The Uttar Pradesh Protection of Trees Act, 1976. Also, Forest Department, Ghaziabad vide aforesaid letter informed that notice dated 21.10.2019 has been issued under section 16 of The Uttar Pradesh Protection of Trees Act, 1976, directing the project proponent to comply with all the provisions under The Uttar Pradesh Protection of Trees Act, 1976 and to take approval from the department with any tree needs to be cut during development of the project. Further, Forest Department, Ghaziabad informed that in the year 2015, Shri Deepak Pathak, DGM and Shri Sudheer Arora, Project Manager working in the project were fined Rs.1,00,000/- in view of violation found under The Uttar Pradesh Protection of Trees Act, 1976." (Annexure 4). Project Proponent paid Rs. 1,00,000/- penalty to Forest Department on 20th June, 2015 (Annexure5).

The proponent also obtained permission for cutting of trees within the project site from the Forest Department, Ghaziabad vide letter dated 12-08-2016 (Annexure 6).

**However, Present Joint Committee is of the view that Forest Department, Ghaziabad should have been given facts with regard to the scenario of greenery before Start of the project and at present for ascertaining any cutting of trees/ plants within the project site. Forest Department, Ghaziabad may provide detailed assessment report covering total area of greenery before start of the project and at present and damage in greenery, if any.**

- B. Environmental Clearance obtained by M/s Uppal Chadha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township):

M/s Uppal Chadha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) Obtained Environmental Clearance from State Environment Impact Assessment Authority, U.P. vide letter no. 918/Parya/SEAC/2069/2013/IDCA(S), dated 31-07-2014 Copy enclosed as annexure 7.

- C. **Consents obtained by M/s Uppal Chadha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) from UPPCB:-**

M/s Uppal Chadha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) has obtained consent to establish from UPPCB vide letter no. F82293/C-1/NOC/G-688/2011/8, dated 10-03-2011, which was further extended for 05 years vide letter no H12767/C-1/NOC-688/2017, dated 29-11-2017. Copy annexed as Annexure 8.

M/s Uppal Chadha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township) has obtained conditional consent to operate (water) from T.J.P. Pollution Control Board vide letter no. 51505/UPPCB/Ghaziabad(UPPCBRO)/CTO/water/Ghaziabad/2019, dated 17-03-2019 and consent to operate (air) vide letter no.51648/UPPCB/Ghaziabad/(UPPCBRO)/CTO/air/Ghaziabad/2019, dated 17-03-2020, which is valid up to 31-12-2020. Project proponent has submitted compliance report vide letter dated 02-09-2020 and also applied for renewal of CTO online dated 28-01-2021, which is under consideration of UPPCB. As per CTO 17-03-2020, total maximum domestic discharge

permitted is 995 KLD treated through STP, which need to be re-assessed by UPPCB.

**Based on the verification of compliance to the condition of CTE/CTO and in view of violations observed by earlier Joint Committee inspection dated 19-09-2019, UPPCB has forfeited bank guarantee of Rs. 10 lakh, submitted by the project proponent.**

**D. Extraction of ground water:-**

As per Environmental Clearance obtained from SEIAA, T.J.P. vide letter no. Parya/SEAC/2069/2013/IDCA(S), dated 31-07-2014 by the project proponent, the total water requirement as 92144 KLD and fresh water requirement as 59581 KLD which will be sourced from Ghaziabad Development Authority.

As per the observation made by the officials of CGWA, Northern Region Lucknow, during the visit made on 15-02-2020 to 17-02-2020, out of 31 existing tube wells, only 25 tube wells could be located and 06 tube wells could not be located is the project site due to ongoing earthwork. As per the information provided by the project authorities, presently, there are 36 tube wells out of which 11 tube wells are operational (presently used only 07 tube wells for domestic water supply within the project) and 25 tube wells are temporarily closed /capped. A copy of the layout showing the location details of tube wells presently in operation and tube wells temporarily closed or capped is annexed as Annexure 9.

Upon receipt of online **Application dated 27-09-2017** from the proponent M/s Uppal Chadha Hi Tech Developers Pvt. Ltd (Wave Hi-Tech Township), Central Ground Water Authority has granted NOC on 08.05.2019 vide **NOC no. CGWA/NOC/INF/ORIG/2019/5258**, which is valid up to **07.05.2021 (Annexure 10)**. This NOC was issued only for the project area which is covered under vill.-Dasna Dehat, Block- Rajapur, Ghaziabad district for ground water abstraction of 38772 m<sup>3</sup>/ day or 14151780 m<sup>3</sup>/year through 31 number of existing tube wells and 14 new proposed tube wells. As informed by the project authorities during the visit on 05.03.2021, out of 11 tube wells, only 07 tube wells are operational at present for drinking and domestic water supply to the residents in Wave City project area. Daily ground water abstraction data recorded from lag book of 07 number of operational tube wells as 1089.34 m<sup>3</sup>/day (Annexure-11). Photographs taken by the present Joint Committee on 05-03-2021 during the visit to project site is annexed (Annexure-12).

A. penalty of Rs. 1,00,000/- (Rupees One Lakh) has been imposed by The Member Secretary, CGWA, New Delhi vide show cause notice dated 04-08-2020 (Annexure 13), in exercise of powers conferred under Section 15 of the Environment (Protection) Act, 1986, read with the paragraph 2(ii) of the notification of the Government of India in the Ministry of Environment and Forests vide S.O. 38(E) dated 14<sup>th</sup> January, 1997, for non-compliance to the conditions of said NOC on the basis of joint inspection report carried out on 19.09.2019 by representatives of CGWA, UPPCB and U.P. Forest Deptt. in view of violation of conditions of NOC related to installation of digital flow

meters, construction of piezometers etc., and for not maintaining water consumption record during construction phase of the project. Accordingly, Project Proponent has deposited penalty of Rs 1,00,000/- (Rupees One Lakh) in favor of DDO, CGWB, NR Lucknow vide letter dated 03.09.2020 and same was deposited to PAO CGWB Faridabad through challan on 21.09.2020 (Challan no 24). Copy of same is enclosed as Annexure-14.

***From the observations of CG WA teams in the past, it is evident that the project proponent (M/s Uppal Chadha Hi Tech Developers Pvt. Ltd. (Wave Hi-Tech Township), 41cistzialcosecl was having 31 existing tube wells (No evidence could be shown by the proponent with respect to commissioning of these existing tube wells) and also proposed 14 new tube wells (evidence of commissioning could be shown in respect of 11 tube wells, copy enclosed at Annexure 15) for which CGWA granted NOC for abstraction of ground water on 08.05. 2019. There is a need to ascertain the total water consumption from the construction phase to till date for the purpose of assessment of environmental compensation for illegal abstraction of ground water, which are awaited from the project proponent In view of the above, this Joint Committee may be granted two months' time from the date of receipt of complete information from the project proponent for assessment of environmental compensation in compliance to Hon'ble NGT orders passed in OA No. 549 of 2019 in the matter of Mahkar Singh Vs State of U. P."***

5. From the report, it is seen that though there are observations regarding illegal cutting of trees, violations of EC conditions, illegal extraction of the groundwater but the action taken is not proportionate to the violations. Further, the Committee has not been able to make an assessment of the environmental compensation on the ground that data is awaited from the project proponent. It is stated that the Committee will make assessment within two months after receiving the data.

6. We find that the approach adopted by the Committee in deferring the matter till the project proponent gives data to be unsound. If the project proponent is avoiding giving data, there should be no difficulty in drawing adverse inference based on 'best judgement assessment' based on inferences from the circumstances. Indicative scale of compensation already stands approved by this Tribunal on the basis of expert Committee report. We also find that with regard to illegal cutting of trees the Forest Department has merely imposed some fine. Neither

prosecution has been initiated, as required, nor adequate compensation recovered on the principle of restitution, based on value of the ecological services forgone forever.

7. Accordingly, we direct the joint Committee, in coordination with any other expert/institution to take/recommend further remedial action. The statutory authorities may exercise their jurisdiction in the matter to comply with the rule of law and file a compliance report before the next date by e-mail at [judicial-ngt@gov.in](mailto:judicial-ngt@gov.in) preferably in the form of searchable PDF/ OCR Support PDF and not in the form of Image PDF.

List for further consideration on 23.09.2021.

A copy of this order be forwarded to the CPCB, Member Secretary, SEIAA, UP, State PCB, CGWA and District Magistrate, Ghaziabad by e-mail to facilitate the compliance of the above order.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

M. Sathyanarayanan, JM

Brijesh Sethi, JM

Dr. Nagin Nanda, EM

June 14, 2021  
Original Application No. 549/2019  
AVT



क्षेत्रीय कार्यालय-उ0प्र0 प्रदूषण नियंत्रण बोर्ड, गाजियाबाद  
Regional Office, U.P. Pollution Control Board, Ghaziabad  
Website- [www.uppcb.com](http://www.uppcb.com), e-mail: roghaziabad@uppcb.com

संदर्भ संख्या : 742 / एन0जी0टी0-88 / ओ0ए0न-549 / 19 / 2021

दिनांक 05/8/2021

सेवा में,

1. प्रभागीय निदेशक, सामाजिक वानिकी प्रभाग, गाजियाबाद।
2. श्री जे0सी0 बाबू, वैज्ञानिक-ई, केन्द्रीय प्रदूषण नियंत्रण बोर्ड, नई दिल्ली।
3. श्री पारस नाथ, सदस्य, राज्य स्तरीय पर्यावरण प्रभाव आंकलन प्राधिकरण, पर्यावरण निदेशालय, विनित खण्ड, गोमतीनगर, लखनऊ।
4. श्री जगदम्बा प्रसाद, वैज्ञानिक-डी, केन्द्रीय भू-जल बोर्ड, भूजल भवन, सेक्टर-बी, सीतापुर रोड योजना, राम-राम बैंक चौराहा, लखनऊ।
5. श्रीमती अंकिता राय, हाईड्रोलॉजिस्ट, यू0पी0डी0डब्लू0डी0, गाजियाबाद।
6. डॉ0 अजय मित्तल, वैज्ञानिक, सेन्ट्रल बिल्डिंग रिसर्च इन्सिट्यूट (CBRI), रुड़की, उत्तराखण्ड-247667।

**विषय:** मा0 राष्ट्रीय हरित अधिकरण, नई दिल्ली में योजित OA No-549/2020 Mahakar Singh & Anr. Vs State of Uttar Pradesh & Ors. में पारित आदेश दिनांक 14.06.2021 के अनुपालन में दिनांक 23.07.2021 को सम्पन्न बैठक के कार्यवृत्त के सम्बन्ध में।

महोदय,

कृपया उपरोक्त विषयक का संदर्भ ग्रहण करने का कष्ट करें। मा0 एन0जी0टी0 नई दिल्ली में योजित OA No-549/2020 Mahakar Singh & Anr. Vs State of Uttar Pradesh & Ors. में पारित आदेश दिनांक 14.06.2021 में दिनांक 23.07.2021 को सम्पन्न बैठक का कार्यवृत्त पत्र के साथ संलग्नकर अग्रिम आवश्यक कार्यवाही हेतु प्रेषित किया जा रहा है।

संलग्नक: उपरोक्तानुसार।

भवदीय

(उत्सव शर्मा)  
क्षेत्रीय अधिकारी

प्रतिलिपि: निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु सादर प्रेषित।

1. सदस्य सचिव महोदय, केन्द्रीय प्रदूषण नियंत्रण बोर्ड, अर्जुन नगर, दिल्ली।
2. जिलाधिकारी महोदय, गाजियाबाद।
3. मुख्य पर्यावरण अधिकारी, वृत्त-1, उ0प्र0 प्रदूषण नियंत्रण बोर्ड, लखनऊ।

क्षेत्रीय अधिकारी

क्षेत्रीय कार्यालय : आई0एन0एस0-2, सेक्टर-16, वसुन्धरा, गाजियाबाद-201012 फोन-0120-4160108  
मुख्यालय : TC-12V, विभूति खण्ड, गोमती नगर, लखनऊ 226010

Minutes of the Joint Committee held on 23.07.2021 at Regional Office, UPPCB, Ghaziabad for ensuring compliance to Hon'ble NGT order dated 14.06.2021 in OA No. 549/2019 in the matter of Mahakar Singh Vs State of U.P.

A review meeting of the Joint Committee constituted by Hon'ble NGT was held on 23.07.2021 at Regional Office, UPPCB, Ghaziabad to ascertain the facts of the case and to discuss the course of action to be taken for ensuring compliance to Hon'ble National Green Tribunal order dated 14.06.2021 in O.A. 549/2019 in the matter of Mahakar Singh Versus State of Uttar Pradesh. Relevant portion Hon'ble NGT Order dated 14.06.2021 is reproduced below:

*".....From the report, it is seen that though there are observations regarding illegal cutting of trees, violations of EC conditions, illegal extraction of the groundwater but the action taken is not proportionate to the violations. Further, the Committee has not been able to make an assessment of the environmental compensation on the ground that data is awaited from the project proponent. It is stated that the Committee will make assessment within two months after receiving the data.*

*We find that the approach adopted by the Committee in deferring the matter till the project proponent gives data to be unsound. If the project proponent is avoiding giving data, there should be no difficulty in drawing adverse inference based on 'best judgement assessment' based on inferences from the circumstances. Indicative scale of compensation already stands approved by this Tribunal on the basis of expert Committee report. We also find that with regard to illegal cutting of trees the Forest Department has merely imposed some fine. Neither prosecution has been initiated, as required, nor adequate compensation recovered on the principle of restitution, based on value of the ecological services forgone forever.*

*Accordingly, we direct the joint Committee, in coordination with any other expert/institution to take/recommend further remedial action. The statutory authorities may exercise their jurisdiction in the matter to comply with the rule of law and file a compliance report before the next date by e-mail at [judicial-ngt@gov.in](mailto:judicial-ngt@gov.in) preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF.. .."*

*List of participants attended the Joint Committee meeting is attached as Annexure-1.*

The meeting started with formal introduction of participants and was followed by brief overview of the matter. Firstly, representative of Nodal Agency i.e., Regional Officer, UPPCB, Ghaziabad apprised the members of the original complaint, and subsequent orders passed by Hon'ble National Green Tribunal in the matter. Thereafter, Sh. J.C. Babu, Scientist 'E', Member of the Joint Committee and Representative of CPCB reiterated that the purpose of organizing today's Joint Committee meeting by U.P. Pollution Control Board (UPPCB), a nodal agency in the matter, to file its recommendations in compliance to Hon'ble Tribunal order specially on extent of damage to green/forest area in development of the project if any and to estimate the probable environmental compensation to be levied on the proponent for illegal abstraction of ground water. If required, the committee in the matter, may take the help of the expert institutions or available best technology to ascertain the above facts.

Thereafter, representative of M/s. Uppal Chadha Hitech Developers Pvt. Ltd., Ghaziabad (hereafter referred as project proponent) made a power point presentation before the Joint Committee with regard to the status of compliance with regard to cutting of trees and abstraction of ground water related aspects, Certified Compliance Report of Environmental Clearance from State Level Environmental Impact Assessment Authority issued to the unit, Point wise compliance report for the period of validity of NOC from Central Ground Water Department for groundwater extraction by the unit till 07.05.2021 and compliance report of NOC from UP Ground Water Department for

groundwater extraction and Details of water consumption used in the construction work done in the unit. With regards to ground water project proponent in their presentation have shown that 90858 cubic meter water has been used in construction of the project. However, assessment with regards to water required for construction of 687059.16 SQM has not been submitted.

To the queries of Joint Committee with regard to any damage to the forest area in the project area under reference in the matter, Sh. Ashutosh Pandey representative of U.P. Forest Department, informed the Joint Committee that as per records the said area in which project has been developed was not a forest area and green area, if any would have been primarily agricultural or some other land in nature. It was also informed that as per The Land Revenue Record-2015, the name of the said project site in the forest area was not there. He also informed that the project proponent was fined Rs. 1,00,000/- under provisions of The Uttar Pradesh Protection of Trees Act, 1976 as the project proponent had violated the Act by illegal cutting of trees on the approach road and no violation has been reported within any existing forest. The case against said violation has already been compounded.

As regards to the abstraction of ground water by the project proponent, Sh. Jagdamba Prasad representative of CGWA informed that NOC for 31 existing bore wells and 14 proposed bore wells was granted by CGWA on 17-05-2019 for drinking/ domestic uses, which was valid up to 07-05-2021. Sh. Rahul Dev Sharma representative of UP Ground Water Department (UPGWD) have informed the Committee that M/s. Uppal Chadha Hitech Developers Pvt. Ltd. has already applied for renewal for obtaining permission for abstraction of ground water and application is under consideration. He also informed that at present, a new mechanism has been developed by U.P. Ground Water Department to take decision on proposals of new bore wells and further action should be taken by the competent authority accordingly. Representative of CGWA also informed that the penalty imposed by CGWA was in line with prevalent laws at the time of default and there was no provision of imposing Environmental Compensation under the Guidelines issued in by the CGWA.

As the Hon'ble Tribunal has mandated the Joint Committee to ascertain the facts and file its recommendations on the above aspects, upon deliberations, following decisions were taken by the Joint Committee for taking further action by UPPCB, a nodal agency or concerned Departments for ensuring compliance to Hon'ble NGT as detailed below:

1. As per the direction laid down in para 7 of Hon'ble NGT order dated 14-06-2021, and to ascertain the facts relating to the forest coverage in the project site prior to start of the project by the project proponent and damage caused to the forest cover if any, a report obtained from Forest Research Institute or Forest Survey of India or any reputed expert institution at the cost of the project proponent, be submitted before Hon'ble NGT and the Joint Committee by U.P. Forest Department, within three months.
2. The estimate the quantum of water consumed by the Project Proponent during the construction phase of the existing project. As suggested by the joint committee UPPCB shall invite representative of Central Building Research Institute, Roorkee-India (CBRI) and Public Works Department (PWD) or for any such body/institute to support the Joint Committee in estimating the water consumption and probable environmental compensation. If required, visit of Joint Committee also be organized to the project site.
3. The Project proponent may furnish copy of Form-1 & Form-1A submitted at the time of applying for obtaining Environment Clearance from SEIAA in U.P. apart

from all the proofs that the water gathered through Tankers during the construction phase as well as proof of installation of bore wells within the project site.

Next date of Joint Committee shall be organized by UPPCB at the earliest and the representatives of CBRI and PWD or any reputed expert institution also be invited in the next meeting of Joint Committee, within ten days, to enable to comply to the Hon'ble Tribunal directions within the stipulated time.

Meeting ended with vote of thanks.

-- OO --

*Handwritten signature and date: 21/8/21*

Annexure-I

List of participants attended the Joint Committee meeting held on held on 23.07.2021 at Regional Office, UPPCB, Ghaziabad

1. Shri J.Chandra Babu, Sc. 'E', CPCB and Member, Joint Committee (Via Video Conferencing)
2. Shri Paras Nath, Member SEAC, SEIAA, U.P and Member, Joint Committee
3. Shri Jagdamba Prashad, Scientist D, CGWB, Lucknow.
4. Shri Utsav Sharma, Regional Officer, UPPCB, Ghaziabad and representative of UPPCB, Nodal Agency.
5. Smt. Sapna Srivastava, S.O. UPPCB, Ghaziabad.
6. Shri Ashutosh Pandey, S.D.O. Forest Department, Ghaziabad.
7. Shri Rahul Deo Sharma, J.E. UPGWD, Ghaziabad.
8. Shri Naresh Patel, G.M., M/s. Uppal Chadha Hitech Developers Pvt. Ltd., Ghaziabad.



क्षेत्रीय कार्यालय-उ०प्र० प्रदूषण नियंत्रण बोर्ड, गाजियाबाद  
Regional Office, U.P. Pollution Control Board, Ghaziabad  
Website- [www.uppcb.com](http://www.uppcb.com), e-mail: [roghaziabad@uppcb.com](mailto:roghaziabad@uppcb.com)

Annexure A3

संदर्भ संख्या : ३५१...../एन०जी०टी०-८८/ओ०ए०नं-५४९/१९/२०२१

दिनांक ०५/८/२०२१

सेवा में,

1. निदेशक,  
सेन्ट्रल बिल्डिंग रिसर्च इन्स्टीट्यूट (CBRI),  
रूड़की, उत्तराखण्ड-२४७६६७।
2. अधिशासी अभियंता,  
लोक निर्माण विभाग,  
गाजियाबाद।

**विषय: मा० राष्ट्रीय हरित अधिकरण, नई दिल्ली में योजित OA No-549/2020 Mahakar Singh & Anr. Vs State of Uttar Pradesh & Ors. में पारित आदेश दिनांक 14.06.2021 के अनुपालन के सम्बन्ध में।**

महोदय,

कृपया उपरोक्त विषयक का संदर्भ ग्रहण करने का कष्ट करें। मा० राष्ट्रीय हरित अधिकरण, नई दिल्ली में योजित OA No-549/2020 Mahakar Singh & Anr. Vs State of Uttar Pradesh & Ors. में पारित आदेश दिनांक 14.06.2021 (प्रति संलग्न) के अनुपालन में दिनांक 23.07.2021 को उ०प्र० प्रदूषण नियंत्रण बोर्ड, गाजियाबाद में सम्पन्न बैठक में मैसर्स मैसर्स उप्पल चडडा हाईटैक डेवलपर्स प्रा० लि०, ग्राम महरोली, शाहपुर बम्हेटा, गाजियाबाद द्वारा निर्माण कार्य में प्रयोग किये गये जल एवं कन्स्ट्रक्शन वेस्ट के निस्तारण के सम्बन्ध में Power Point Presentation दिया गया था, जिसकी प्रति संलग्न है।

मा० राष्ट्रीय हरित अधिकरण, नई दिल्ली द्वारा पारित आदेश दिनांक 14.06.2021 का मुख्य अंश निम्नवत है:-

*".....We find that the approach adopted by the Committee in deferring the matter till the project proponent gives data to be unsound. If the project proponent is avoiding giving data, there should be no difficulty in drawing adverse inference based on 'best judgement assessment' based on inferences from the circumstances. Indicative scale of compensation already stands approved by this Tribunal on the basis of expert Committee report. We also find that with regard to illegal cutting of trees the Forest Department has merely imposed some fine. Neither prosecution has been initiated, as required, nor adequate compensation recovered on the principle of restitution, based on value of the ecological services forgone forever...."*

मा० राष्ट्रीय हरित अधिकरण के आदेश के अन्तर्गत गठित समिति की बैठक दिनांक 23.07.2021 में लिये गये निर्णय के क्रम में निर्माण परियोजना हेतु प्रयोजनार्थ जल के आंकलन हेतु सहयोग लिये जाने का सुझाव दिया गया है।

उक्त के क्रम में आपसे अनुरोध है कि समिति की आगामी बैठक दिनांक 12.08.2021 को प्रतिभाग करने का कष्ट करें, जिससे कि परियोजना द्वारा निर्माण कार्य में प्रयोग किये गये जल के सम्बन्ध में निर्णय लिया जा सके व नियमानुसार कार्यवाही की जा सकें तथा मा० अधिकरण के सम्मुख आख्या ससमय प्रस्तुत की जा सकें।

संलग्नक:उपरोक्तानुसार।

भवदीय

(उत्सव शर्मा)  
क्षेत्रीय अधिकारी

प्रतिलिपि:निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु सादर प्रेषित।

1. जिलाधिकारी महोदय, गाजियाबाद।
2. मुख्य पर्यावरण अधिकारी, वृत्त-१, उ०प्र० प्रदूषण नियंत्रण बोर्ड, लखनऊ।

क्षेत्रीय अधिकारी

क्षेत्रीय कार्यालय : आई०एन०एस०-२, सेक्टर-१६, वसुन्धरा, गाजियाबाद-२०१०१२ फोन-०१२०-४१६०१०८  
मुख्यालय : TC-12V, विभूति खण्ड, गोमती नगर, लखनऊ २२६०१०

२७

**Minutes of Joint Committee held on 08.09.2021 at Regional Office, UPPCB, Ghaziabad for ensuring compliance to Hon'ble NGT order dated 14.06.2021 in O.A. No. 549/2019 in the matter of Mahakar Singh Vs State of U.P.**

A review meeting of the Joint Committee constituted by Hon'ble NGT was held on 08.09.2021 at Regional Office, UPPCB, Ghaziabad to ascertain the facts of the case and to discuss the course of action to be taken for ensuring compliance to Hon'ble NGT order dated 14.06.2021. List of participants attended the Joint Committee meeting is attached as **Annexure -1**.

The meeting started with formal introduction of participants and subsequent order passed by Hon'ble NGT on 14.06.2021 in the matter. Detail of discussion and decisions taken are as below:

- a) Mr. Madan Pal Singh, Sub Regional Forest Officer, Forest Deptt., Ghaziabad informed that as per The Land Revenue Record-2015, the name of the said project site in the forest area was not there. He also informed that the project proponent was fined Rs. 1,00,000/ under provisions of The Uttar Pradesh Protection of Trees Act, 1976 as the project proponent had violated the Act by illegal cutting of trees on the approach road. The case against said violation has already been compounded. A report has been submitted by Divisional Director, U.P. forest Department, Ghaziabad vide letter dated 08.09.2021, in which following information is provided: -

*".....In the thematic case, it is to be noted that there is no notified forest land involved in the land under Wave City Ghaziabad developed by M/S Uppal Chaddha Hi Tech Developers Pvt Ltd.*

*As per the Action Plan of Ghaziabad Forest Division which is approved by the Ministry of Environment Forest Water Conservation, Government of India, there is a total of 696.868 reserved forest land in Ghaziabad district which is located under the area of Modinagar Tehsil Ghaziabad and Loni Tehsil Ghaziabad. There is no reserved forest land of forest department under Ghaziabad tehsil area, While the land of the thematic wave city is located under the area of Ghaziabad Tehsil.*

*A certified photocopy of page no. 83 of the above-mentioned action plan of Ghaziabad Forest Division Ghaziabad is enclosed, in which is also clear that there is no*

*notified reserved forest land under Ghaziabad Tehsil area. In addition of above this is also to inform that according to Govt. notification no. 115/XIV-331-50 dated 10.02.1960 (Certified Photocopy attached), various routes in the entire U.P. are notified as reserved forest. The said notification was issued when present Ghaziabad District was a Tehsil of Meerut District. No notified protected forest land mentioned in the said notification has also been used for construction of Wave city Ghaziabad.*

*So, it is clear that no part of the inter-space land in the construction of the Wave city Ghaziabad has ever been included in the notified forest land. Thus, no reserved or protected notified forest land is used in the construction of the wave city Ghaziabad.”*

A copy of said report is annexed as **Annexure 2.**

- b) Details of project wise total built up area/ constructed area (687059.16 SQM) till date has been provided by the representative of Wave City vide letter dated 19.08.2021 and same was forwarded to Executive Engineer, PWD, Ghaziabad by Regional Officer, UPPCB, Ghaziabad vide letter dated 19.08.2021 to assess the expected quantity of water consumed in construction of the project. An assessment report regarding water consumption as per standard protocols based on the detail of built-up area provided by project has been made by Executive Engineer, PWD, Ghaziabad and same submitted to RO, UPPCB, Ghaziabad vide letter dated 26.08.2021. As per report, Total estimated water consumption during the construction phase of the project is **99903.19 KL**. Copy of same is annexed as **Annexure-3.**

Member of the Joint Committee felt that assessment of water quantity consumed by manpower involved in construction should also be incorporated as per Public Works Department (PWD), Government of UP. Therefore, committee requested PWD officials to submit a separate report regarding assessment of water quantity consumed by manpower utilized during the construction phase of the Wave City project, within a week, to enable Joint Committee to finalise report of the Committee

**(Report to be submitted by PWD)**

- c) Regional Officer, UPPCB, Ghaziabad informed the committee that in compliance of directions given to project representative during the meeting of the Joint committee dated 18.08.2021, a detailed project report has been submitted by the Wave City project representative vide letter dated 01.09.2021, which detailed construction work status, source and quantity of water consumed in construction work. Sh. J.C. Babu, Scientist "E", CPCB and Member of the Joint Committee suggested to circulate a copy of details submitted by the representative of Wave City Project to all the members of Joint Committee, so that members may contribute for finalization of the report of the Joint Committee for filing before Hon'ble for consideration

**(Copy of report to be provided by UPPCB)**

Next date of Joint Committee shall be organized by UPPCB preferably on 20.09.2021 upon receipt of report from PWD, Government of U.P. for finalization of the report and concurrence of members of the Joint Committee for filing the report before Hon'ble NGT

Meeting ended with vote of thanks.

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# State Level Environment Impact Assessment Authority, Uttar Pradesh

## Directorate of Environment, U.P.

Dr. Bhim Rao Ambedkar Paryavaran Parisar  
Vineet Khand-1, Gomti Nagar, Lucknow - 226 010  
Phone : 91-522-2300 541, Fax : 91-522-2300 543  
E-mail : doeuplko@yahoo.com  
Website : www.seiaaup.com

Ref.: 918/Parya/SEAC/2069/2013/JDCA(S)

Date: 31 July, 2014

To,

Sri Rakesh Garg (Director)  
M/s Uppal Chaddha Hi-tech Developers Pvt. Ltd.  
33, Community Centre, New Friends Colony,  
New Delhi-110065

Sub: Regarding Environment Clearance for the proposed revision in "Wave Hi Tech Township", (Expansion) at Vill-Mehrauli, Shahpur Bamheta, duriyai, Dasna, Sadiqpur/Qazipur, Bayana, aiphal & Expansion in Vill-Arifpur, Sadat Nagar Iqia & Inayatpur, Talabpur, Kachhehra, Warisabad, Dujana & Girdharpur, Ghaziabad, U.P.

Dear Sir,

Please refer to undated letter received in this office on 01/10/2013 addressed to the Secretary SEAC, Directorate of Environment, Lucknow. The SEAC considered the matter in its meeting held on 03/10/2013. The case was presented by the consultant M/s Perfect Enviro Solution Pvt. Ltd. along with the project proponent. The proponent, through the documents submitted and presentation made, informed the SEAC that:-

1. The revision in environment clearance is sought for Wave Hi Tech Township at village Mehrauli, Shahpur Bamheta, Duriyai, Dasna, Sadiqpur/Qazipur, Bayana, Naiphai and Expansion in villages – Arifpur, Sadat Nagar Iqia & Inayatpur, Talabpur, Kachhehra, Warisabad, Dujana & Girdharpur Ghaziabad, Uttar Pradesh.
2. The built up area as 51578130.39 sqmt, the total land area as 4494.31 Ha have been proposed.
3. Provision for plots, EWS/LIG plots, Group housing, Industrial area, Commercial complex, Educational, Medical, Community and other Recreational activities have been proposed. The revised project details are as below:
4. The Plot area of Residential plots will be 2236174 sqm & Built up area will be 10733635.2 sqm.
5. The Plot area of EWS/LIG will be 54107.51 sq m and Built up area will be 292180.554 sq m.
6. The Plot area of Residential group housing will be 4516257 sqm and Built up area will be 24387787.8 sq m.
7. The Plot area of Public and Semi Public areas will be 1694410.796 sq m and Built up area will be 4913791.31 sq m.
8. The Plot area of Commercial and Office areas will be 1719704.134 sq m and Built up area will be 9286402.323 sq m.
9. The Plot area of Industrial area will be 1091296.222 sq m and Built up area will be 1309555.467 sq m
10. The Plot area of Recreational area will be 545648.1112 sq m and Built up area will be 654777.7335 sq m.
11. The total water requirement as 92144 KLD and fresh water requirement as 59581 KLD which will be sourced from Ghaziabad Development Authority.
12. 73249 KLD waste water to be generated which will be treated in 60 number of STP capacity of 88 MLD has been proposed.

13. The 354 MTPD municipal waste, 4 liter/day used oil and 8 Kg per day E-waste is estimated to be generated.
14. The energy requirement 822 MW is estimated which will be met through the UPPCL. The backup power will be provided by 17 DG Sets (14 x 400 KVA, 2 x 750 KVA, 1 x 1500 KVA).
15. Parking norms as Ghaziabad Development Authority shall be followed.
16. 143053 Cum volume of water for RWH during peak hours and 4494 no of rain water harvesting pits shall be proposed.
17. Project is covered under category 8(b) of EIA Notification 2006 as amended.

Based on the recommendation of the SEAC meeting dated 03/10/2013 the SEIAA in its meeting dated 10/10/2013 has agreed to grant the Environment Clearance to the proposed project subject to the effective implementation of the following general and specific conditions.

a. General Conditions:

1. It shall be ensured that all standards related to ambient environmental quality and the emission/effluent standards as prescribed by the MoEF are strictly complied with.
2. It shall be ensured that obtain the no objection certificate from the U P pollution control board before start of construction.
3. It shall be ensured that no construction work or preparation of land by the project management except for securing the land is started on the project or the activity without the prior environmental clearance.
4. The proposed land use shall be in accordance to the prescribed land use. A land use certificate issued by the competent Authority shall be obtained in this regards.
5. All trees felling in the project area shall be as permitted by the forest department under the prescribed rules. Suitable clearance in this regard shall be obtained from the competent Authority.
6. Impact of drainage pattern on environment should be provided.
7. Surface hydrology and water regime of the project area within 10 km should be provided.
8. A suitable plan for providing shelter, light and fuel, water and waste disposal for construction labour during the construction phase shall be provided along with the number of proposed workers.
9. Measures shall be undertaken to recycle and reuse treated effluents for horticulture and plantation. A suitable plan for waste water recycling shall be submitted.
10. Obtain proper permission from competent authorities regarding enhanced traffic during and due to construction and operation of project.
11. Obtain necessary clearances from the competent Authority on the abstraction and use of ground water during the construction and operation phases.
12. Hazardous/inflammable/Explosive materials likely to be stored during the construction and operation phases shall be as per standard procedure as prescribed under law, Necessary clearances in this regards shall be obtained.
13. Solid wastes shall be suitably segregated and disposed. A separate and isolated municipal waste collection center should be provided. Necessary plans should be submitted in this regards.
14. Suitable rainwater harvesting systems as per designs of groundwater department shall be installed. Complete proposals in this regard should be submitted.
15. The emissions and effluents etc. from machines, instruments and transport during construction and operation phases should be according to the prescribed standards. Necessary plans in this regard shall be submitted.
16. Water sprinklers & other dust control measures should be undertaken to take care of dust generated during the construction and operation phases. Necessary plans in this regard shall be submitted.
17. Suitable noise abatement measures shall be adopted during the construction and operation phases in order to ensure that the noise emissions do not violate the prescribed ambient noise standards. Necessary plans in this regard shall be submitted.

18. Separate stock piles shall be maintained for excavated top soil and the top soil should be utilized for preparation of green belt.
19. Sewage effluents shall be kept separate from rain water collection and storage system and separately disposed. Other effluents should not be allowed to mix with domestic effluents.
20. Hazardous/Solid wastes generated during construction and operation phases should be disposed off as prescribed under law. Necessary clearances in this regard shall be obtained.
21. Alternate technologies for solid waste disposals (like vermin-culture etc.) should be used in consultation with expert organizations.
22. No wetland should be infringed during construction and operation phases. Any wetland coming in the project area should be suitably rejuvenated and conserved.
23. Pavements shall be so constructed as to allow infiltration of surface run-off of rain water. Fully impermeable pavements shall not be constructed. Construction of pavements around trees shall be as per scientifically accepted principles in order to provide suitable watering, aeration and nutrition to the tree.
24. The Green building Concept suggested by Indian Green Building Council, which is a part of CII-Godrej GBC, shall be studied and followed as far as possible.
25. Compliance with the safety procedures, norms and guidelines as outlined in National Building Code 2005 shall be compulsorily ensured.
26. Ensure usage of dual flush systems for flush cisterns and explore options to use sensor based fixtures, waterless urinals and other water saving techniques.
27. Explore options for use of dual pipe plumbing for use of water with different qualities such as municipal supply, recycled water, ground water etc.
28. Ensure use of measures for reducing water demand for landscaping and using xeriscaping, efficient irrigation equipments & controlled watering systems.
29. Make suitable provisions for using solar energy as alternative source of energy. Solar energy application should be incorporated for illumination of common areas, lighting for gardens and street lighting in addition to provision for solar water heating. Present a detailed report showing how much percentage of backup power for institution can be provided through solar energy so that use and polluting effects of DG sets can be minimized.
30. Make separate provision for segregation, collection, transport and disposal of e-waste.
31. Educate citizens and other stake-holders by putting up hoardings at different places to create environmental awareness.
32. Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided. Parking should be fully internalized and no public space should be utilized.
33. Prepare and present disaster management plan.
34. The project proponents shall ensure that no construction activity is undertaken without obtaining pre-environmental clearance.
35. A report on the energy conservation measures conforming to energy conservation norms finalized by Bureau of Energy efficiency should be prepared incorporating details about building materials and technology, R & U Factors etc.
36. Fly ash should be used as building material in the construction as per the provision of fly ash notification of September, 1999 and amended as on August, 2003 (The above condition is applicable only if the project lies within 100 km of Thermal Power Station).
37. The DG sets to be used during construction phase should use low sulphur diesel type and should conform to E.P. rules prescribed for air and noise emission standards.
38. Alternate technologies to Chlorination (for disinfection of waste water) including methods like Ultra Violet radiation, Ozonation etc. shall be examined and a report submitted with justification for selected technology.
39. The green belt design along the periphery of the plot shall achieve attenuation factor conforming to the day & night noise standards prescribed for residential land use. The open spaces inside the plot should be suitably landscaped & covered with vegetation of indigenous variety.

40. The construction of the building and the consequent increased traffic load should be such that the micro climate of the area is not adversely affected.
41. The building should be designed so as to take sufficient safeguards regarding seismic zone sensitivity.
42. High rise buildings should obtain clearance from aviation department or concerned authority.
43. Suitable measures shall be taken to restrain the development of small commercial activities or slums in the vicinity of the complex. All commercial activities should be restricted to special areas earmarked for the purpose.
44. It is suggested that literacy program for weaker sections of society/women/adults (including domestic help) and under privileged children could be provided in a formal way.
45. The use of Compact Fluorescent lamps should be encouraged. A management plan for the safe disposal of used/damaged CFLs should be submitted.
46. It shall be ensured that all Street and park lighting is solar powered. 50% of the same may be provided with dual (solar/electrical) alternatives.
47. Solar water heater shall be installed to the maximum possible capacity. Plans may be drawn up accordingly and submitted with justification.
48. Treated effluents shall be maximally reused to aim for zero discharge. Where ever not possible, a detailed management plan for disposal should be provided with quantities and quality of waste water.
49. The treated effluents should normally not be discharged into public sewers with terminal treatment facilities as they adversely affect the hydraulic capacity of STP. If unable, necessary permission from authorities should be taken.
50. Construction activities including movements of vehicles should be so managed so that no disturbance is caused to nearby residents.
51. All necessary statutory clearances should be obtained and submitted before start of any construction activity and if this condition is violated the clearance, if and when given, shall be automatically deemed to have been cancelled.
52. Parking areas should be in accordance with the norms of MOEF, Government of India. Plans may be drawn up accordingly and submitted.
53. The location of the STP should be such that it is away from human habitation & does not cause problem of odor. Odorless technology options should be examined & a report submitted.
54. The Environment Management plan should also include the break up costs on various activities and the management issues also so that the residents also participate in the implementation of the environment management plan.
55. Detailed plans for safe disposal of STP sludge shall be provided along with ultimate disposal location, quantitative estimates and measures proposed.
56. Status of the project as on date shall be submitted along with photographs from North, South, West and East side facing camera and adjoining areas should be provided.
57. Specific location along with dimensions with reference to STP, Parking, Open areas and Green belt etc. should be provided on the layout plan.
58. The DG sets shall be so installed so as to conform to prescribed stack heights and regulations and also to the noise standards as prescribed. Details should be submitted.
59. E-Waste Management should be done as per MoEF guidelines.
60. Electrical waste should be segregated & disposed suitably as not to impose Environmental Risk.
61. The use of suitably processed plastic waste in the construction of roads should be considered.
62. Displaced persons shall be suitably rehabilitated as per prescribed norms.
63. Dispensary for first aid shall be provided.
64. Safe disposal arrangement of used toiletries items in Hotels should be ensured. Toiletries items could be given complementary to guests, adopting suitable measures.
65. Diesel generating set stacks should be monitored for CO and HC.

66. Ground Water downstream of Rain Water Harvesting pit nearest to STP should be monitored for bacterial contamination. Necessary Hand Pumps should be provided for sampling. The monitoring is to be done both in pre and post monsoon, seasons.
67. The green belt shall consist of 50% trees, 25% shrubs and 25% grass as per MoEF norms.
68. A Separate electric meter shall be provided to monitor consumption of energy for the operation of sewage/effluent treatment in tanks.
69. An energy audit should be annually carried out during the operational phase and submitted to the authority.
70. Project proponents shall endeavor to obtain ISO: 14001 certification. All general and specific conditions mentioned under this environmental clearance should be included in the environmental manual to be prepared for the certification purposes and compliance.
71. Environmental Corporate Responsibility (ECR) plan along with budgetary provision amounting to 2% of total project cost shall be submitted (within the month) on need base assessment study in the study area. Income generating measures which can help in upliftment of weaker section of society consistent with the traditional skills of the people identified. The program me can include activities such as old age homes, rain water harvesting provisions in nearby areas, development of fodder farm, fruit bearing orchards, vocational training etc. In addition, vocational training for individuals shall be imparted so that poor section of society can take up self employment and jobs. Separate budget for community development activities and income generating programmers shall be specified. Revised ECR plan is to be submitted within 3 month. Failing which, the environmental Clearance shall be deemed to be cancelled.
72. Appropriate safety measures should be made for accidental fire.
73. Smoke meters should be installed as warning measures for accidental fires.
74. Plan for safe disposal of R.O reject is to be submitted.
75. Project falling with in 10 Km. area of Wild Life Sanctuary is to obtain a clearance from National Board Wild Life (NBWL) even if the eco- sensitive zone is not earmarked.
76. The environmental safeguards contained in EIA Report should be implemented in letter & spirit.
77. Provision should be made for supply of kerosene or cooking gas and pressure cooker to the labourers during construction phase.
78. Six monthly monitoring reports should be submitted to DoEn, U.P./UPSEB/ MoEF Regional Office, Lucknow.
79. Officials from DoEn, U.P./UPSEB/ MoEF Regional Office, Lucknow who would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents / data by the project proponents during their inspection.
80. In the case of any change(s) in the scope of the project, the project would require a fresh EC.
81. The SEIAA, UP reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound manner.
82. All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.
83. These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and control of Pollution) act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.
84. Any appeal against this Environmental Clearance shall lie with the National Environment Appellate Authority, if preferred, within a period of 30 days as prescribed under Section 11 of the National Environment Appellate Act, 1997.

**b. Specific Conditions:**

**Construction Phase**

- (i) Consent for Establishment shall be obtained from Uttar Pradesh Pollution Control Board under Air and Water Act and a copy shall be submitted to SEIAA, UP before start of any construction work at the site.
- (ii) All required sanitary and hygienic measures should be in place before starting construction activities and to be maintained throughout the construction phase.
- (iii) A First Aid Room will be provided in the project both during construction and operation of the project.
- (iv) Adequate drinking water and sanitary facilities should be provided for construction workers at the site. Provision should be made for mobile toilets. The safe disposal of wastewater and solid wastes generated during the construction phase should be ensured.
- (v) All the topsoil excavated during construction activities should be stored for use in horticulture/landscape development within the project site.
- (vi) Disposal of muck during construction phase should not create any adverse effect on the neighbouring communities and be disposed taking the necessary precautions for general safety and health aspects of people, only in approved sites with the approval of competent authority.
- (vii) The approach road to OSR shall be ensured.
- (viii) Soil and ground water samples will be tested to ascertain that there is no threat to ground water quality by leaching of heavy metals and other toxic contaminants.
- (ix) Construction spoils, including bituminous material and other hazardous materials, must not be allowed to contaminate watercourses and the dump sites for such material must be secured so that they should not leach into the ground water.
- (x) Any hazardous waste generated during construction phase, should be disposed off as per applicable rules & norms with necessary approvals of the Uttar Pradesh Pollution Control Board.
- (xi) The diesel generator sets to be used during construction phase should be low sulphur diesel type and should conform to Environment (Protection) Rules prescribed for air and noise emission standards.
- (xii) The diesel required for operating DG sets shall be stored in underground tanks and if required, clearance from Chief Controller of Explosives shall be taken.
- (xiii) Vehicles hired for bringing construction material to the site should be in good condition and should have a pollution check certificate and should conform to applicable air and noise emission standards and should be operated only during non-peak hours.
- (xiv) Ambient noise levels should conform to residential standards both during day and night. Incremental pollution loads on the ambient air and noise quality should be closely monitored during construction phase. Adequate measures should be made to reduce ambient air and noise level during construction phase, so as to conform to the stipulated standards by CPCB/UPPCB.
- (xv) Fly ash should be used as building material in the construction as per the provisions of Fly Ash Notification of September, 1999 and amended as on 27th August, 2003. (The above condition is applicable only if the project site is located within the 100 Km of Thermal Power Stations).
- (xvi) Ready mixed concrete must be used in building construction.
- (xvii) Storm water control and its re-use as per CGWB and BIS standards for various applications.
- (xviii) Water demand during construction should be reduced by use of premixed concrete, curing agents and other best practices referred.
- (xix) Permission to draw ground water shall be obtained from the competent Authority prior to construction/operation of the project.
- (xx) Separation of grey and black water should be done by the use of dual plumbing line for separation of grey and black water.

- (xxi) Fixtures for showers, toilet flushing and drinking should be of low flow either by use of aerators or pressure reducing devices or sensor based control.
- (xxii) Use of glass may be reduced by up to 40% to reduce the electricity consumption & load on air-conditioning. If necessary, use high quality double glass with special reflective coating in windows.
- (xxiii) Roof should meet prescriptive requirement as per Energy Conservation Building Code by using appropriate thermal insulation material to fulfill requirement.
- (xxiv) Opaque wall should meet prescriptive requirement as per Energy Conservation Building Code which is proposed to be mandatory for all airconditioned spaces while it is aspirational for non-airconditioned spaces by use of appropriate thermal insulation material to fulfill requirement.
- (xxv) The approval of the competent authority shall be obtained for structural safety of the buildings due to earthquake, adequacy of fire fighting equipments, etc. as per National Building Code including protection measures from lightening etc.
- (xxvi) Regular supervision of the above and other measures for monitoring should be in place all through the construction phase, so as to avoid disturbance to the surroundings.
- (xxvii) Under the provisions of Environment (Protection) Act, 1986, legal action shall be initiated against the project proponent if it was found that construction of the project has been started without obtaining environmental clearance.

#### Operation Phase

- i) The installation of the Sewage Treatment Plant (STP) should be certified by an independent expert and a report in this regard should be submitted to the SEIAA before the project is commissioned for operation. Treated affluent emanating from STP shall be recycled/reused to the maximum extent possible. Treatment of 100% grey water by decentralized treatment should be done. Discharge of unused treated affluent shall conform to the norms and standards of the Uttar Pradesh Pollution Control Board. Necessary measures should be made to mitigate the odour problem from STP.
- ii) The solid waste generated should be properly collected and segregated. Wet garbage should be composted and dry / inert solid waste should be disposed off to the approved sites for land filling after recovering recyclable material.
- iii) Diesel power generating sets proposed as source of back up power for elevators and common area illumination during operation phase should be of enclosed type and conform to rules made under the Environment (Protection) Act, 1986. The height of stack of DG sets should be equal to the height needed for the combined capacity of all proposed DG sets. Use low sulphur diesel. The location of the DG sets may be decided with in consultation with Uttar Pradesh Pollution Control Board.
- iv) Noise should be controlled to ensure that it does not exceed the prescribed standards. During night time the noise levels measured at the boundary of the building shall be restricted to the permissible levels to comply with the prevalent regulations.
- v) The green belt of the adequate width and density preferably with local species along the periphery of the plot shall be raised so as to provide protection against particulates and noise.
- vi) Weep holes in the compound walls shall be provided to ensure natural drainage of rain water in the catchment area during the monsoon period.
- vii) Rain water harvesting for roof run- off and surface run- off, as plan submitted should be implemented. Before recharging the surface run off, pre-treatment must be done to remove suspended matter, oil and grease. The borewell for rainwater recharging should be kept at least 5 mts. above the highest ground water table.
- viii) The ground water level and its quality should be monitored regularly in consultation with Central Ground Water Authority.
- ix) Traffic congestion near the entry and exit points from the roads adjoining the proposed project site must be avoided. Parking should be fully internalized and no public space should

- be utilized.
- x) A Report on the energy conservation measures confirming to energy conservation norms finalise by Bureau of Energy Efficiency should be prepared incorporating details about building materials & technology, R & U Factors etc and submit to the Ministry in three months time.
  - xi) Energy conservation measures like installation of CFLs/TFLs for the lighting the areas outside the building should be integral part of the project design and should be in place before project commissioning. Use CFLs and TFLs should be properly collected and disposed off/sent for recycling as per the prevailing guidelines/rules of the regulatory authority to avoid mercury contamination. Use of solar panels may be done to the extent possible.
  - xii) Adequate measures should be taken to prevent odour problem from solid waste processing plant and STP.
  - xiii) The building should have adequate distance between them to allow movement of fresh air and passage of natural light, air and ventilation.

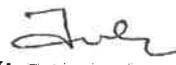
You are also directed to ensure that the proposed site is not a part of any no-development zone as required/prescribed/identified under law. In case of violation, this permission shall automatically deem to be invalid and cancelled. Also, in the event of any dispute on ownership of the proposed site, this permission shall automatically deem to be invalid and cancelled.

The above conditions will be enforced inter-alia, under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules made there under and also any other orders passed by the Hon'ble Courts of Law relating to the subject matter.

The project proponent will have to submit approved plans and proposals incorporating the conditions specified in the Environmental Clearance within 03 months of issuance of this clearance.

The SEIAA/MoEF reserves the right to revoke the environmental clearance, if conditions stipulated are not implemented to the satisfaction of SEIAA/MoEF. SEIAA may impose additional environmental conditions or modify the existing ones, if necessary.

This is to request you to take further necessary action in matter as per provision of Gazette Notification No. S.O. 1533(E) dated 14-09-2006, as amended and send regular compliance reports to the authority as prescribed in the aforesaid notification.

  
(J. S. Yadav)

Member Secretary, SEIAA

No.            /Parva/SEAC/2069/2013/JDCA(S) as above

Copy for information and necessary action to:

1. The Principal Secretary, Environment, U.P. Govt., Lucknow.
2. Dr. P.L. Ahuja Rai, Advisor, IA Division, Ministry of Environment & Forests, Govt. of India, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi.
3. Chief Conservator, Ministry of Environment & Forests, Regional Office (Central Region), Kendriya Bhawan, 5th Floor, Sector-H, Aliganj, Lucknow.
4. The Member Secretary, U.P. Pollution Control Board, PICUP Bhawan, Gomti Nagar, Lucknow.
5. District Magistrate, Ghaziabad, U.P.
6. Assitt. Director, Directorate of Environment, U.P., Vineet Khand-1, Gomti Nagar, Lucknow.
7. Copy for Web Master/Guard File

  
(Dr. R.K. Sardana)  
Director (I/C)/Secretary SEAC,  
Directorate of Environment, U.P.



# उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड

'पिकप भवन' तृतीय तल, बी-ब्लाक, विमूक्ति खण्ड,  
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संदर्भ संख्या

F-82273

पी-1/एन.ओ.सी./डी-466/2011

दिनांक

10-3-11

सेवा में,

मेरे

मैक्सिमम इन्फ्लुएन्स डेटिक डेवलपर्स प्रा. लि.,

11 कम्युनिटी सेंटर, न्यू प्रेन्सस कालोनी,

नई दिल्ली- 110024

विषय : पर्यावरणीय प्रदूषण की दृष्टि से / नई इकाई की स्थापना हेतु / कार्यरत इकाई की उत्पादन क्षमता में  
विस्तार / संयंत्रों के नवीनीकरण हेतु अनापत्ति प्रमाण पत्र निर्गमन

महोदय,

कृपया उपरोक्त विषयक अपने आवेदन पत्र दिनांक..... का संदर्भ लें। आपके आवेदन पर विचार किया गया है तथा कृपया अवगत हो कि उद्योग को पर्यावरणीय प्रदूषण के दृष्टिकोण से निम्नलिखित विशिष्ट शर्तों एवं सामान्य शर्तों (सालानक) के समुचित अनुपालन के साथ सशर्त अनापत्ति स्वीकृत की जाती है।

1. अनापत्ति प्रमाण-पत्र निम्नलिखित विशिष्ट वितरणों के लिए ही निर्गत किया जा रहा है :-

(क) स्थल : ग्राम सारिकपुर, कानीपुर, न्यचकल, अरिफपुर, हासन, महीरी, साहपुर,  
केमेट, बचन, सारिकनगर, एकलख इनाकनपुर, जनपद गोरखपुर। एन  
ग्राम दुपाय, खचेय, नारिसवाद टैंज, तलवपुर, गिरधरपुर जनपद गौतमबुद्धनगर

(ख) उत्पादन : ग्राम दुपाय, खचेय, नारिसवाद, टैंज, तलवपुर, गिरधरपुर जनपद-गौतमबुद्धनगर  
एन ग्राम सारिकपुर, कानीपुर, न्यचकल, अरिफपुर, हासन, महीरी,  
साहपुर, केमेट, बचन, सारिकनगर, एकलख इनाकनपुर जनपद गोरखपुर -  
में 1898.12 एकलख के अवालीय मशीन स्टेरी फ्लैट,  
कमतिमल तप उद्दि।

(ग) मुख्य कच्चे माल

(घ) औद्योगिक उत्प्रेषण की मात्रा

(ङ) प्रयुक्त ईंधन

उद्योगों के क्षेत्रों में उत्प्रेषण के सी.डी.ओ. सेट हेतु  
दिए गए अनुसूची

उपर्युक्त विषय वस्तु में किसी भी प्रकार से परिवर्तन करने पर पुनः अनापत्ति प्रमाण-पत्र प्राप्त करना आवश्यक होगा।

2. उद्योग में सभी आवश्यक यंत्र, संयंत्र, हरित पेंटिडका, उत्प्रेषण शुद्धिकरण संयंत्र तथा वायु प्रदूषण नियंत्रण व्यवस्था की स्थापना में की गयी प्रगति रिपोर्ट इस कार्यालय में प्रत्येक माह की दसवीं तारीख तक निरंतर प्रेषित करें।
3. उद्योग इकाई में परीक्षण उत्पादन तब तक प्रारम्भ नहीं करें जब तक कि वह बोर्ड से जल एवं वायु अ. 1यमों के अन्तर्गत सहमति प्राप्त न कर लें। जल एवं वायु सहमति प्राप्त करने हेतु इकाई ने उत्पादन प्रारम्भ करने की तिथि से कम से कम 2 माह पहले निर्धारित सहमति आवेदन पत्रों को उत्पादन पूर्व प्रथम आवेदन का उल्लेख करते हुए इस कार्यालय में अवश्य ही जमा कर दिया जाए। यदि उद्योग उपरोक्त का अनुपालन नहीं करता है तो उक्त अधिनियमों के वैधानिक प्रावधानों के अन्तर्गत उद्योग के विरुद्ध बिना किसी पूर्व सूचना के विधिक कार्यवाही की जा सकती है।
4. उद्योग में परीक्षण उत्पादन के पूर्व हमारे क्षेत्रीय कार्यालय द्वारा इकाई का निरीक्षण सुनिश्चित किया जाए।

घरेलू उत्प्रवाह, जिसकी मात्रा ..... से अधिक नहीं होगी। सेंटिक टैंक एवं सोक पिट के माध्यम से बोर्ड द्वारा निर्धारित मानकों के अनुरूप शुद्धिकृत कर निस्तारित किया जाए।

6. प्रदूषण नियन्त्रण हेतु प्रस्तावित शुद्धिकरण संयंत्र तथा निर्माण कार्य आपूर्ति के लिये दिये गए आदेश की प्रति इस कार्यालय में दिनांक ..... तक अवश्य प्रस्तुत की जाए।

७- मैसर्स ऊपल चड्ढा हार्ड टेक डेवलपर्स प्रा० लि०, ग्राम दुराय, खवेरा, वरिसवाड कैज, तलमपुर

गिरधरपुर, जनपद गैतममुडनगर एवं

- ग्राम सादिकपुर, काजीपुर न्यायफल, आरिफपुर, डासना महरीली शाहपुर बेम्हटा, बयाना, सादिकनगर, एकला, इनायतपुर जनपद गार्जियाबाद द्वारा क्षेत्रफल ४४६४.३९ एकड़ पर आवासीय परियोजना का निर्माण करें। संस्था द्वारा परियोजना में जनित घरेलू उत्प्रवाह ७३ एमएलडी के शोधन हेतु पूर्ण क्षमता के एसटीपी की स्थापना की जाये तथा शुद्धिकृत उत्प्रवाह का अधिकतम पुनः प्रयोग परियोजना में किया जाये। STP की Location चार्टिंग ६ दिनांक १०/८/०९
- ६- शेष शुद्धिकृत उत्प्रवाह का निस्तारण डासना ड्रेन के माध्यम से इस प्रकार से किया जाये एवं सुनिश्चित किया जाये कि डासना ड्रेन का प्राकृतिक स्वरूप किसी भी परिस्थिति में अवरुद्ध न होने पाये एवं जल थराव की समस्या उत्पन्न न हो।
- १०- संस्था द्वारा सालिड वेस्ट मैनेजमेन्ट प्रबन्धन बायोकम्पास्टिंग एवं रिसाइकलिंग द्वारा प्रस्तावों के अनुरूप किया जाये।
- ११- समस्त प्रस्तावित डी०जी०सेट पर ध्वनि रोधक व्यवस्थाओं के साथ-साथ बोर्ड मानकों के अनुसार पर्याप्त ऊँचाई की चिमनी भी स्थापित की जाये।
- १२- संस्था प्रस्तावनुसार रेन वाटर हार्वेस्टिंग व्यवस्था स्थापित करें।
- १३- संस्था नियमानुसार कम से कम ३३ प्रतिशत कुल प्रस्तावित क्षेत्रफल का हरित पट्टिका के रूप में विकसित करें।
- १४- संस्था को यह अनापत्ति प्रमाण पत्र जल अधिनियम, १९७४ एवं वायु अधिनियम, १९८९ के प्राविधानों के अन्तर्गत निर्गत किया जा रहा है।
- १५- संस्था द्वारा पर्यावरण एवं वन मंत्रालय, भारत सरकार/स्टेट इन्वायरमेन्ट इम्पेक्ट असेसमेंट अथॉरिटी से पर्यावरणीय क्लीरेंस प्राप्त किया जाये।
- १६- संस्था जमा बैंक गारण्टी का अक्षरशः अनुपालन करना सुनिश्चित करे, अनुपालन न करने की दशा में संस्था द्वारा प्रेषित बैंक गारण्टी बोर्ड के पक्ष में अवमुक्त की जा सकती है, जिसकी पूर्ण जिम्मेदारी स्वयं संस्था के जिम्मेदार पदाधिकारियों की होगी।
१७. बोर्ड मुख्यालय के पत्रक ५३४९/सी-१/एन०ओ०सी०/जी-४८८/०९ दिनांक १०/८/०९ जारी अनापत्ति प्रमाण पत्र को रिवोक किया जाता है।

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कृपया ध्यान दें कि उपर्युक्त लिखित विशिष्ट शर्तों एवं सामान्य शर्तों का प्रभावी एवं संतोषजनक अनुपालन न करने पर बोर्ड द्वारा निर्गत अनापत्ति प्रमाण-पत्र निरस्त कर दिया जाएगा। बोर्ड का अधिकार सुरक्षित है कि अनापत्ति की शर्तों में संशोधन किया जाय अथवा निरस्त कर दिया जाय। उपर्युक्त विशिष्ट एवं सामान्य शर्तों के सम्बन्ध में उद्योग द्वारा इस कार्यालय में दिनांक ११/१२/२०१२ तक प्रथम अनुपालन आख्या अवश्य प्रेषित की जाए। अनुपालन आख्या नियमित प्रेषित की जाए अन्यथा अनापत्ति निरस्त कर दी जाएगी।

भवदीय

~~सदस्य सचिव~~

पृष्ठांकन सं.

/एन ओ. सी.

तद दिनांक

प्रतिलिपि :

1. महाप्रबन्धक, जिला उद्योग केन्द्र : .....~~गजियाबाद~~.....
2. उपकर अधिकारी, उ. प्र. प्रदूषण नियंत्रण बोर्ड, लखनऊ।
3. क्षेत्रीय अधिकारी, उ. प्र. प्रदूषण नियंत्रण बोर्ड : .....~~गजियाबाद~~.....
4. ....

मुख्य पर्यावरण अधिकारी

(सर्किल- १ )



# उत्तर प्रदेश प्रदूषण नियंत्रण बोर्ड,

टीसी-12 वी, विभूति खण्ड,

गोमती नगर, लखनऊ

संदर्भ संख्या 1127/CA /सी-1/एनओसी-688/2017

दिनांक 11/11/17

सेवा में,

मैसर्स "उप्पल चड्डा हाईटेक डेवलपर्स प्रा0 लि0"

Mezzanine Floor, M-4,

South Extension Part-II

New Delhi-110049.

विषय : पर्यावरणीय प्रदूषण की दृष्टिकोण से हाईटेक टाउनशिप परियोजना हेतु पूर्व में निर्गत अनापत्ति प्रमाण पत्र की वैधता अवधि बढ़ाये जाने के संबंध में ।

महोदय,

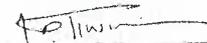
कृपया उपरोक्त विषयक अपने आवेदन पत्र जो कि बोर्ड मुख्यालय में दिनांक-16.11.2017 को प्राप्त हुआ है, का संदर्भ लें। आपके आवेदन पर विचार किया गया तथा निम्नलिखित शर्तों के समुचित अनुपालन के साथ हाईटेक सिटी परियोजना (गाजियाबाद के अन्तर्गत ग्राम- सादिकपुर काजीपुर, न्यायफल, बयाना, शाहपुर बेम्हैटा, डासना, महरोली, इकलाख, इनायतपुर, आरिफपुर, दुरवाई, पचैडा वारिसबाद, दुजाना, तलबपुर उर्फ हाथीपुर व गिरधरपुर सुनारसी) को पूर्व में जल (प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1974 एवम् वायु (प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1981 के अन्तर्गत बोर्ड के पत्रांक एफ 82293/सी-1/एनओसी0/जी-688/2011/8 दिनांक 10/03/2011 द्वारा निर्गत अनापत्ति प्रमाण पत्र की वैधता तिथि निम्नलिखित शर्तों के साथ पत्र निर्गमन की तिथि से 05 वर्ष हेतु बढ़ायी जाती है।

- परियोजना से जनित वेस्ट ऑयल तथा ई-वेस्ट का निस्तारण परिसंकटमय अपशिष्ट नियमावली तथा ई-वेस्ट नियमावली के प्राविधानों के अनुसार किया जाये।
- परियोजना विकास के दौरान डस्ट नियंत्रण हेतु वाटर स्पिन्कलर की व्यवस्था की जाये एवं पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय/कार्यालय द्वारा जारी मेमोरण्डम 2010 का पालन किया जाना अनिवार्य है।
- निर्माण गतिविधियों में लगे अस्थायी श्रमिकों के भोजन निर्माण हेतु एल0पी0जी0 की व्यवस्था की जाये तथा उनके सीवेज के निस्तारण हेतु सेप्टिक टैंक/सोकपिट की व्यवस्था की जाये।
- परियोजना द्वारा सीवेज शुद्धिकरण व्यवस्थाओं हेतु अलग से डी0जी0सेट स्थापित करें तथा उक्त हेतु अलग से विद्युत मीटर स्थापित करें।
- सालिड वेस्ट मैनेजमेन्ट एग0एस0डब्लू0 रूल्स-2016 के प्राविधानों के अनुसार करें।
- नगरीय टोस अपशिष्ट को एकत्रित करके सेग्रीग्रेट किया जाये जिससे प्राप्त बायोडिग्रेडेबिल वेस्ट को वर्मी कम्पोस्ट अथवा आर्गेनिक वेस्ट कन्वर्टर के माध्यम से बायो कम्पोस्ट तैयार किया जाये।
- परियोजना द्वारा रेन वाटर हार्वेस्टिंग व्यवस्था स्थापित करे एवं हरित पट्टिका का प्रस्ताव प्रेषित करें।
- गो राष्ट्रीय हरित अधिकरण द्वारा समय-समय पर दिए गए निर्देशों का अक्षरशः अनुपालन किया जाएगा।
- परियोजना का निर्माण अथॉरिटी द्वारा स्वीकृत नक्शा के अनुसार ही किया जाये।
- भू-स्वामित्व सम्बन्धी वाद विवाद होने तथा सरकारी भूमि पाये जाने की शिर्षा में परियोजना स्वयं उत्तरदायी होगी तथा यह अनापत्ति प्रमाण पत्र निरस्त कर दी जायेगी।
- परियोजना स्थल पर अथॉरिटी के नियमानुसार हरित पट्टिका विकसित की जाये।
- भूजल के दोहन हेतु केन्द्रीय भूजल प्राधिकरण से एन0ओसी0 प्राप्त किया जाये।
- परियोजना स्थल पर कन्स्ट्रक्शन एण्ड डिमोलिशन वेस्ट मैनेजमेन्ट रूल्स, 2016 के प्राविधानों के अनुसार परियोजना के निर्माण स्थल पर अनिवार्य रूप से (6'x4') डिस्पोजेबल बार्ड प्रदर्शित किया जाए।

कमला पृष्ठ 2

14. परियोजना द्वारा पर्यावरण (संरक्षण) अधिनियम 1986, जल(प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1974 तथा वायु (प्रदूषण निवारण तथा नियंत्रण) अधिनियम, 1981 अर्थात् अन्य सुरागत नियमों के आवश्यक प्राविधानों का अनुपालन सुनिश्चित किया जाये।
15. Unit will put tarpaulin scaffolding around the area of construction and the building for effective and efficient control of dust emission generated during construction of the project.
16. Storage of any construction material particularly sand will not be done on any part of street and roads in the projects area. The construction material of any kind stored on site will be fully covered in all respect so that it does not disperse in the air in any form.
17. All the construction material & debris will be carried in trucks or vehicles which are fully covered and protected so as to ensure that the construction debris or construction material does not get dispersed into the air or atmosphere in any form whatsoever.
18. The dust emission from the construction sites will be completely controlled and all precautions will be taken in that behalf.
19. The vehicles carrying construction debris or construction material of any kind will be cleaned before it is permitted to ply on the road after unloading of such material.
20. Every worker working on the construction site and involved in loading, unloading and carriage of construction debris or construction material shall be provided with mask to prevent inhalation of dust particle.
21. All medical help, investigation and treatment will be provided to the workers involved in the construction of building and carrying of construction of building and carrying of construction debris or construction material related to dust emission.
22. The transportation of construction material and debris waste to construction site, dumping site or any other place will be carried out in accordance with rules.
23. Fixing of sprinklers and creation of green air barriers will be done to control fugitive dust emission and improve environment.
24. Compulsory use of wet jet in grinding and stone cutting will be practiced.
25. Wind breaking wall will be constructed around the construction site.
26. Green belt will be developed around the buildings as per rules.
27. All approach roads & in campus roads should be sprinkled with water to suppress the dust emission

कृपया ध्यान दें कि उपर्युक्त लिखित विशिष्ट शर्तों एवं सामान्य शर्तों का प्रभावी एवं संतोषजनक अनुपालन न करने पर बैंक गारण्टी सं० 235GM 01173110002 दिनांक 07/11/2017 रु० 10 लाख बोर्ड के पक्ष में अवमुक्त करा ली जायेगी एवं अधिनियमों के तहत कार्यवाही की जा सकती है तथा बोर्ड द्वारा निर्गत अनापत्ति प्रमाण पत्र निरस्त किया जा सकता है। बोर्ड का अधिकार सुरक्षित है कि अनापत्ति की शर्तों में संशोधन किया जाये अथवा निरस्त कर दिया जाय। उपर्युक्त विशिष्ट एवं सामान्य शर्तों के संबंध में उद्योग द्वारा इस कार्यालय में दिनांक 31.12.2017 तक प्रथम अनुपालन आख्या अवश्य प्रेषित की जाए।

  
( आशीष तिवारी )  
सदस्य राचिव

पृष्ठांकन सं०

/सं०ओ०सी०

सहायक :

प्रतिलिपि : क्षेत्रीय अधिकारी, उप०प०प्रदूषण नियंत्रण बोर्ड, गाजियाबाद को सूचनाार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।

मुख्य पर्यावरण अधिकारी, वृत्त 1



**U.P. Pollution Control Board**

**CONSENT ORDER**

**Ref No. - 51648/UPPCB/Ghaziabad(UPPCBRO)/CTO/air/GHAZIABAD/2019**

**Dated : 17/03/2020**

**To ,**

Shri SACHIN SHARMA

M/s UPPAL CHADHA HI TECH DEVELOPERS PVT LTD

Village Mehrauli, Shahpur Bamhaita, Duryayi, Dasna, Sadiqpur/Kazipur, Bayana, Naiphall and expansion in villages Arifpur, Sadat Nagar IqlaInayatpur, Talabpur, KacheraWarsabad, Dujana Girdharpur, Ghaziabad, GHAZIABAD, 201002

GHAZIABAD

**Sub : Consent under section 21/22 of the Air (Prevention and control of Pollution) Act, 1981 (as amended) to M/s. UPPAL CHADHA HI TECH DEVELOPERS PVT LTD**

Reference Application No. 4703089

Dated : 17/03/2020

1. With reference to the application for consent for emission of air pollutants from the plant of M/s UPPAL CHADHA HI TECH DEVELOPERS PVT LTD. under Air Act 1981. It is being authorised for said emissions, as per the standards, in environment, by the Board as per enclosed conditions .
2. This consent is valid for the period from 25/02/2019 to 31/12/2020 .
3. In spite of the conditions and provisions mentioned in this consent order UP Pollution Control Board reserves its right and powers to reconsider/amend any or all conditions under section 21 (6) of the Air (Prevention and Control of Pollution) Act, 1981 as amended.

This consent is being issued with the permission of competent authority .

Ashok  
Kumar  
Tiwarei  
Digitally signed  
by Ashok Kumar  
Tiwarei  
Date: 2020.03.17  
15:37:57 +05'30'

**For and on behalf of U.P. Pollution Control Board**

**C.E.O**

**C-1**

**Enclosed : As above  
(condition of consent):**

Copy to: Regional Office, U.P. Pollution Control Board, Ghaziabad

Ashok  
Kumar  
Tiwarei  
Digitally signed  
by Ashok Kumar  
Tiwarei  
Date: 2020.03.17  
15:38:26 +05'30'

**C.E.O**

**C-1**

**U.P. Pollution Control Board**

Dated : 17/03/2020

**CONDITIONS OF CONSENT**

1. This consent is valid only for the approved production capacity of Residential flats in built up area 149292 sq m..
2. This consent is valid only for products and quantity mentioned above. Industry shall obtain prior approval before making any modification in product/ process /fuel/ plant machinery failing which consent would be deemed void.
- 3(a) The maximum rate of emission of flue gas should not be more than the emission norms for the stacks.
- 3(b) Air Pollution Source Details.

Air Pollution Source Details					
S.No	Air Pollution Source	Type of Fuel	Stack No.	Parameters	Height
1	2X 500 KVA D.G set	Diesel	1.2	Sulphur Dioxide	Each minimum 4.5 mt. above from the nearest roof
2	D.G Set 400 KVA	Diesel	3	Sulphur Dioxide	Minimum 4mt. above from the nearest roof
3	D.G Set 380 KVA	Diesel	4	Sulphur Dioxide	minimum 4 mt. above from the nearest roof
4	D.G Set 250 KVA	Diesel	5	Sulphur Dioxide	minimum 3.5 mt. above from the nearest roof
5	D.G Set 200 KVA	Diesel	6	Sulphur Dioxide	minimum 3 mt. above from the nearest roof
6	3X125 KVA D.G set	Diesel	7.8.9	Sulphur Dioxide	Each minimum 2.5 mt. above from the nearest roof
7	D.G Set 82.5 KVA	Diesel	10	Sulphur Dioxide	minimum 2 mt. above from the nearest roof
8	4X 62.5 KVA D.G set	Diesel	11.12.13.14	Sulphur Dioxide	Each minimum 2 mt. above from the nearest roof
9	D.G Set 30 KVA	Diesel	15	Sulphur Dioxide	minimum 1.5 mt. above from the nearest roof
10	3 X 25 KVA D.G set	Diesel	16.17.18	Sulphur Dioxide	Each minimum 1 mt. above from the nearest roof
11	D.G Set 15 KVA	Diesel	19	Sulphur Dioxide	minimum 1 mt. above from the nearest roof

3(c) The emissions by various stacks into the environment should be as per the norms of the Board .

Emission Quality Details Detail			
S.No	Stack No	Parameter	Standard
1	1.2.3.4.5.6.7.8.9.10.1 1.12.13.14.15.16.17.1 8.19	Sulphur Dioxide	As per E.P Rules 1986

4. Quantity of other pollutants should also be as per the norms prescribed by the Board/MOEF & CC/or otherwise mandatory .
5. The equipment for air pollution control system and monitoring ,as proposed by the industry and approved by the Board should be installed in their premises itself .
6. The modification or installation in the existing pollution control equipments should be done only by prior approval of Board .
7. The operation of air pollution control system and maintenance be done in such a way that the quantity of pollutants should be in accordance with the standards prescribed by the Board/MoEF & CC/or otherwise mandatory .
8. Unit should do provisions for fugitive emissions chimney/stack as per the norms of the Board/MOEF & CC/or otherwise mandatory .
9. The unit should submit the stack emissions monitoring report within one month from issuance of consent order along with the point wise compliance report of the consent order . Further quarterly monitoring report should be submitted .

### **Specific Conditions:**

1. The Unit shall comply with various provisions of Air (Prevention and Control of Pollution) Act 1981 as amended, Water (Prevention and Control of Pollution) Act 1974 as amended and all other applicable rules notified under E.P. Act 1986.
2. The Unit shall dispose the hazardous waste through authorized recyclers/TSDf and comply with the provisions of Hazardous and Other Wastes (Management and Trans-boundary Movement) Amendment Rules, 2016 and The Solid Waste Management Rules, 2016
3. The Unit shall submit the point wise compliance report of the conditions imposed in the previous CTO issued by the Board and the audited balance sheet for the current year and the details of fees deposited within a month failing which consent would be deemed void.
4. At the Unit site a display board size 4x6 feet shall be installed to display the provisions of Construction and Demolition Rules 2016.
5. This consent is only valid after the unit installed the stack as per E.P.Rules 1986 for the emission from the 2x500 KVA D.G set, 400 KVA D.G set,380 KVA D.G set, 250 KVA D.G set,200 KVA D.G set,3 X 125 KVA D.G set, 82.5 KVA D.G set, 4 X 62.5 KVA D.G set,30 KVA D.G set, 3X25 KVA D.G set,and 15 KVA D.G set only and the Unit should ensure that there is no adverse impact on public and environment.
6. The Unit shall develop proper green belt and rain water harvesting system as per guidelines. For green belt at least 8 feet height plants should be planted which shall be properly protected as proper irrigation and maneuvering arrangements shall be made. For the development of the green belt the guidelines issued vide Board office order no. H10405/220/2018/02 Dt. 16-02-2018 shall be complied.
7. This consent is valid only for products and quantity mentioned above. The Unit shall obtain prior approval before making any modification in product/process /fuel/ Plant machinery failing which consent would be deemed void.
8. The Unit will ensure the continuous and uninterrupted data supply from the OCEMS to the CPCB server. The unit shall maintain strict supervision on fluctuations in operating parameters with respect to each treatment unit of the Effluent treatment plant.
9. If the CPCB or UPPCB issues the Closure order against the Unit this consent order stands automatically suspended for that period.
10. The Unit shall abide by orders / directions issued by Hon'ble Supreme Court Hon'ble High Court, Hon'ble National Green Tribunal, Central Pollution Control Board and U.P Pollution Control Board for protection and safe guard of environment from time to time.

**Issued with the permission of competent authority .**

Ashok  
Kumar  
Tiwari  
Digitally signed  
by Ashok Kumar  
Tiwari  
Date: 2020.03.17  
15:39:07 +05'30'

**For and on behalf of U.P. Pollution Control Board .**

**C.E.O**

**C-1**



**U.P. Pollution Control Board**

**CONSENT ORDER**

**Ref No. -**  
**51505/UPPCB/Ghaziabad(UPPCBRO)/CTO/water/GHAZIABAD/2019**

**Dated : 17/03/2020**

**To ,**

Shri SACHIN SHARMA  
M/s UPPAL CHADHA HI TECH DEVELOPERS PVT LTD  
Village Mehrauli, Shahpur Bamhaita, Duryayi, Dasna, Sadiqpur/Kazipur, Bayana, Naiphall and expansion in villages Arifpur, Sadat Nagar Iqlalnayatpur, Talabpur, Kachera Warsabad, Dujana Girdharpur, Ghaziabad, GHAZIABAD, 201002  
GHAZIABAD

**Sub : Consent under Section 25/26 of The Water (Prevention and control of Pollution) Act, 1974 (as amended) for discharge of effluent to M/s. UPPAL CHADHA HI TECH DEVELOPERS PVT LTD**

**Reference Application No :4695040**

**Dated :17/03/2020**

1. For disposal of effluent into water body or drain or land under The Water (Prevention and control of Pollution) Act, 1974 as amended (here in after referred as the act ) M/s. UPPAL CHADHA HI TECH DEVELOPERS PVT LTD is hereby authorized by the board for discharge of their industrial effluent generated through ETP for irrigation/river through drain and disposal of domestic effluent through septic tank/soak pit subject to general and special conditions mentioned in the annexure ,in reference to their foresaid application .
2. This consent is valid for the period from 25/02/2019 to 31/12/2020 .
3. In spite of the conditions and provisions mentioned in this consent order UP Pollution Control Board reserves its right and powers to reconsider/amend any or all conditions under section 27(2) of the Water (Prevention and Control of Pollution) Act, 1974 as amended .

This consent is being issued with the permission of competent authority .

Ashok  
Kumar  
Tiwari  
Digitally signed  
by Ashok Kumar  
Tiwari  
Date: 2020.03.17  
15:21:45 +05'30'

**For and on behalf of U.P. Pollution Control Board**

**C.E.O**  
**C-1**

**Enclosed : As above**  
**(condition of consent):**

**Copy to: Regional Office, U.P. Pollution Control Board, Ghaziabad**

Ashok  
Kumar  
Tiwari  
Digitally signed  
by Ashok Kumar  
Tiwari  
Date: 2020.03.17  
15:22:07 +05'30'

**C.E.O**  
**C-1**

## U.P. POLLUTION CONTROL BOARD, LUCKNOW

Annexure to Consent issued to M/s.UPPAL CHADHA HI TECH DEVELOPERS PVT LTD vide

Consent Order No. 4695040/ Water

Dated : 17/03/2020

### CONDITIONS OF CONSENT

1. This consent is valid only for the approved production capacity of Residential flats in built up area 149292 sq m .
2. The quantity of maximum daily effluent discharge should not be more than the following :

Effluent Discharge Details			
S.No	Kind of Effluent	Maximum daily discharge, KL/day	Treatment facility and discharge point
1	Domestic	995 KLD	STP

3. Arrangement should be made for collection of water used in process and domestic effluent separately in closed water supply system. The treated domestic and industrial effluent if discharged outside the premises, if meets at the end of final discharge point, arrangement should be made for measurement of effluent and for collecting its sample. Except the effluent informed in the application for consent no other effluent should enter in the said arrangements for collection of effluent. It should also be ensured that domestic effluent should not be discharged in storm water drain .
- 4(a) The domestic effluent should be treated in treatment plant so that the should be in conformity with the following norms dated treated effluent .

Domestic Effluent		
S.No	Parameter	Standard
1	Total Suspended Solids	As per E.P Rules 1986
2	COD	As per E.P Rules 1986
3	Oil & Grease	As per E.P Rules 1986
4	BOD	As per E.P Rules 1986
5	Quantity of Discharge	995 KLD

- 4(b). The industrial effluent should be treated in treatment plant so that the treated effluent should be in conformity with the following norms. .

Industrial Effluent		
S.No	Parameter	Standard

5. Effluent generated in all the processes, bleed water, cooling effluent and the effluent generated from washing of floor and equipments etc should be treated before its disposal with treated industrial effluent so that it should be according to the norms prescribed under The Environment (Protection) Act,1986 or otherwise mandatory .
6. The other pollutant for which norms have not been prescribed, the same should not be more than the norms prescribed for the water used in manufacturing process of the industry .
7. The method for collecting industrial and domestic effluent and its analysis should be as per legal Indian standards and its subsequent amendments/standards prescribed under The Environment (Protection) Act, 1986.
8. The treated domestic and industrial effluent be mixed (as per the provisions of Condition No. 2) and disposed of on one disposal point. This common effluent disposal point should have arrangement for flow meter/V Notch for measuring effluent and its log book be maintained .

**Specific Conditions:**

1. The Unit will have to ensure permission from the CGWA for ground water extraction and it will be the responsibility of the unit to comply with the various conditions of the permission taken.
2. The Unit shall comply with various provisions of Air (Prevention and Control of Pollution) Act 1981 as amended, Water (Prevention and Control of Pollution) Act 1974 as amended and all other applicable rules notified under E.P. Act 1986.
3. The Unit shall dispose the hazardous waste through authorized recyclers/TSDf and comply with the provisions of Hazardous and Other Wastes (Management and Trans-boundary Movement) Amendment Rules, 2016 and The Solid Waste Management Rules, 2016
4. The treated effluent/sewage shall be used for irrigation purposes as much as possible.
5. The Unit shall comply with the provisions of notification dt. 07-10-2016 of Ministry of Water Resources, River Development and Ganga Conservation, GOI.
6. The Unit shall submit the point wise compliance report of the E.C issued by the SEIA and CTE issued by the Board and the audited balance sheet for the current year within a month failing which consent would be deemed void.
7. At the site a display board size 4x6 feet shall be installed to display the provisions of Construction and Demolition Rules 2016.
8. The Unit shall ensure proper operation and maintenance of Sewage Treatment Plant. Also independent flow meters, logbook and electric meter should be installed for Sewage treatment plant.
9. The Unit should be operated in such a way so that there is no adverse impact on public and environment.
10. The Unit shall develop proper green belt and rain water harvesting system as per guidelines. For green belt at least 8 feet height plants should be planted which shall be properly protected as proper irrigation and maneuvering arrangements shall be made. For the development of the green belt the guidelines issued vide Board office order no. H10405/220/2018/02 Dt. 16-02-2018 shall be complied.
11. This consent is valid only for products and quantity mentioned above. The Unit shall obtain prior approval before making any modification in product/process /fuel/ Plant machinery failing which consent would be deemed void.
12. The Unit shall submit quarterly monitoring reports of treated effluent from a certified / approved laboratory under E.P. Act 1986
13. The Unit will ensure the continuous and uninterrupted data supply from the OCEEMS to the CPCB server. The unit shall maintain strict supervision on fluctuations in operating parameters with respect to each treatment unit of the Effluent treatment plant.
14. If the CPCB or UPPCB issues the Closure order against the Unit this consent order stands automatically suspended for that period.
15. The Unit shall abide by orders / directions issued by Hon'ble Supreme Court Hon'ble High Court, Hon'ble National Green Tribunal, Central Pollution Control Board and U.P Pollution Control Board for protection and safe guard of environment from time to time.

**Issued with the permission of competent authority .**

Ashok Kumar Tiwari  
Digitally signed  
by Ashok Kumar  
Tiwari  
Date: 2020.03.17  
15:22:32 +05'30'

**For and on behalf of U.P. Pollution Control Board .**

**C.E.O**

**C-1**



UTTAR PRADESH POLLUTION CONTROL BOARD  
Building. No TC-12V Vibhuti Khand, Gomti Nagar, Lucknow-226010  
Phone:0522-2720828,2720831, Fax:0522-2720764, Email: info@uppcb.com, Website: www.uppcb.com

**CONSENT ORDER**

Ref No. -  
120002/UPPCB/Ghaziabad(UPPCBRO)/CTO/water/GHAZIABAD/2021

Dated : 05/08/2021

To ,

Shri SACHIN SHARMA  
M/s UPPAL CHADHA HI TECH DEVELOPERS PVT LTD  
Village Mehrauli, Shahpur Bamhaita, Duryayi, Dasna, Sadiqpur/Kazipur, Bayana, Naiphall and expansion in villages Arifpur, Sadat Nagar Iqbalnayatpur, Talabpur, Kachera Warsabad, Dujana Girdharpur, Ghaziabad, GHAZIABAD, 201002  
GHAZIABAD

Sub : Consent under Section 25/26 of The Water (Prevention and control of Pollution) Act, 1974 (as amended) for discharge of effluent to M/s. UPPAL CHADHA HI TECH DEVELOPERS PVT LTD

Reference Application No :11183990

Dated :05/08/2021

1. For disposal of effluent into water body or drain or land under The Water (Prevention and control of Pollution) Act, 1974 as amended (here in after referred as the act ) M/s. UPPAL CHADHA HI TECH DEVELOPERS PVT LTD is hereby authorized by the board for discharge of their industrial effluent generated through ETP for irrigation/river through drain and disposal of domestic effluent through septic tank/soak pit subject to general and special conditions mentioned in the annexure ,in reference to their foresaid application .
2. This consent is valid for the period from 01/01/2021 to 31/12/2025 .
3. In spite of the conditions and provisions mentioned in this consent order UP Pollution Control Board reserves its right and powers to reconsider/amend any or all conditions under section 27(2) of the Water (Prevention and Control of Pollution) Act, 1974 as amended .

This consent is being issued with the permission of competent authority .

Digitally signed by  
VIVEK ROY  
Date: 2021.08.05  
10:42:34  
+05'30'

VIVEK  
ROY

For and on behalf of U.P. Pollution Control Board

CEO-1

Enclosed : As above  
(condition of consent):

Copy to: Regional Officer, UPPCB, Ghaziabad.

Digitally signed by  
VIVEK ROY  
Date: 2021.08.05  
10:42:46 +05'30'

VIVEK  
ROY

CEO-1

**U.P. POLLUTION CONTROL BOARD, LUCKNOW**

Annexure to Consent issued to M/s.UPPAL CHADHA HI TECH DEVELOPERS PVT LTD vide

Consent Order No. 11183990/ Water

Dated : 05/08/2021

**CONDITIONS OF CONSENT**

1. This consent is valid only for the approved production capacity of Integrated Township (Total land Area 4494.31 Acre, total proposed builtup area 51578130.39 SQM (As per EC dated 31-07-2014) at present total existing builtup area is 336025 SQM.

2. The quantity of maximum daily effluent discharge should not be more than the following :

<b>Effluent Discharge Details</b>			
<b>S.No</b>	<b>Kind of Effluent</b>	<b>Maximum daily discharge,KL/day</b>	<b>Treatment facility and discharge point</b>
1	Domestic	995 KLD presently (Total waste water generation proposed once fully occupied - 73249 KLD)	STP

3. Arrangement should be made for collection of water used in process and domestic effluent separately in closed water supply system. The treated domestic and industrial effluent if discharged outside the premises, if meets at the end of final discharge point, arrangement should be made for measurement of effluent and for collecting its sample. Except the effluent informed in the application for consent no other effluent should enter in the said arrangements for collection of effluent. It should also be ensured that domestic effluent should not be discharged in storm water drain .

4(a) The domestic effluent should be treated in treatment plant so that the should be in conformity with the following norms dated treated effluent .

<b>Domestic Effluent</b>		
<b>S.No</b>	<b>Parameter</b>	<b>Standard</b>
1	Total Suspended Solids	As per EP Act, 1986
2	BOD	As per EP Act, 1986
3	COD	As per EP Act, 1986
4	Oil & Grease	As per EP Act, 1986
5	Quantity of Discharge	995 KLD

4(b). The industrial effluent should be treated in treatment plant so that the treated effluent should be in conformity with the following norms. .

<b>Industrial Effluent</b>		
<b>S.No</b>	<b>Parameter</b>	<b>Standard</b>

5. Effluent generated in all the processes, bleed water, cooling effluent and the effluent generated from washing of floor and equipments etc should be treated before its disposal with treated industrial effluent so that it should be according to the norms prescribed under The Environment (Protection) Act,1986 or otherwise mandatory .

6. The other pollutant for which norms have not been prescribed, the same should not be more than the norms prescribed for the water used in manufacturing process of the industry .

7. The method for collecting industrial and domestic effluent and its analysis should be as per legal Indian standards and its subsequent amendments/standards prescribed under The Environment (Protection) Act, 1986.

8. The treated domestic and industrial effluent be mixed (as per the provisions of Condition No. 2) and disposed of on one disposal point. This common effluent disposal point should have arrangement for flow meter/V Notch for measuring effluent and its log book be maintained .

9. The Unit will file the renewal application at least 2 months prior to the expiry of this Order.

### Specific Conditions:

1. Unit shall comply with Uttar Pradesh Groundwater (Management and Regulation) Act 2019. If the project fails to comply with this condition then this consent shall automatically stand revoked.
2. The Unit shall comply with various provisions of Air (Prevention and Control of Pollution) Act 1981 as amended, Water (Prevention and Control of Pollution) Act 1974 as amended and all other applicable rules notified under E.P. Act 1986.
3. The Unit shall dispose the hazardous waste through authorized recyclers/TSDf and comply with the provisions of Hazardous and Other Wastes (Management and Trans-boundary Movement) Amendment Rules, 2016 and The Solid Waste Management Rules, 2016.
4. The treated effluent/sewage shall be used for irrigation purposes as much as possible. The guidelines developed by the CPCB for the utilization of treated effluent for the irrigation purposes is available at the URL <http://cpcb.nic.in/NGT/Guidelines-UTE-Irrigation.pdf>
5. The Unit shall comply with the provisions of notification dt. 07-10-2016 of Ministry of Water Resources, River Development and Ganga Conservation, GOI.
6. The Unit shall submit the point wise compliance report of the CTO issued by the Board for the year 2020 and the audited balance sheet for the current year and the details of fees deposited during last year within a month failing which consent would be deemed void.
7. At the site a display board size 4x6 feet shall be installed to display the provisions of Construction and Demolition Rules 2016.
8. The Unit shall ensure proper operation and maintenance of Sewage Treatment Plant. Also independent flow meters, logbook and electric meter should be installed for Sewage treatment plant.
9. The Unit should be operated in such a way so that there is no adverse impact on public and environment.
10. The Unit shall develop proper green belt and rain water harvesting system as per guidelines. For green belt at least 8 feet height plants should be planted which shall be properly protected as proper irrigation and maneuvering arrangements shall be made. For the development of the green belt the guidelines issued vide Board office order no. H10405/220/2018/02 Dt. 16-02-2018 shall be complied.
11. This consent is valid only for products and quantity mentioned above. The Unit shall obtain prior approval before making any modification in product/process /fuel/ Plant machinery failing which consent would be deemed void.
12. The Unit shall submit quarterly monitoring reports of treated effluent from a certified / approved laboratory under E.P. Act 1986
13. The Unit will ensure the installation and continuous uninterrupted data supply from the OCEEMS to the CPCB server within a month failing which consent would be deemed void. The unit shall maintain strict supervision on fluctuations in operating parameters with respect to each treatment unit of the Effluent treatment plant.
14. If the CPCB or UPPCB issues the Closure order against the Unit this consent order stands automatically suspended for that period.
15. The Unit shall abide by orders / directions issued by Hon'ble Supreme Court Hon'ble High Court, Hon'ble National Green Tribunal, Central Pollution Control Board and U.P Pollution Control Board for protection and safe guard of environment from time to time.
16. This CTO will be subject to the order of Hon'ble NGT in OA no. 549/2019 in the matter of Mahakar Singh Vs State of UP.

Issued with the permission of competent authority .

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For and on behalf of U.P. Pollution Control Board .

CEO-1



**UTTAR PRADESH POLLUTION CONTROL BOARD**  
Building. No TC-12V Vibhuti Khand, Gomti Nagar, Lucknow-226010  
Phone:0522-2720828,2720831, Fax:0522-2720764, Email: info@uppcb.com, Website: www.uppcb.com

**CONSENT ORDER**

Ref No. -  
117805/UPPCB/Ghaziabad(UPPCBRO)/CTO/air/GHAZIABAD/2021

Dated : 05/08/2021

To ,

Shri Naresh Patel for Uppal Chaddha Hi tech Developers Pvt Ltd  
M/s UPPAL CHADHA HI TECH DEVELOPERS PVT LTD  
Kazipur More, Nh-24  
GHAZIABAD

**Sub :** Consent under section 21/22 of the Air (Prevention and control of Pollution) Act, 1981 (as amended) to M/s. UPPAL CHADHA HI TECH DEVELOPERS PVT LTD

Reference Application No. 10869806

Dated : 05/08/2021

1. With reference to the application for consent for emission of air pollutants from the plant of M/s UPPAL CHADHA HI TECH DEVELOPERS PVT LTD. under Air Act 1981. It is being authorised for said emissions, as per the standards, in environment, by the Board as per enclosed conditions .
2. This consent is valid for the period from 01/01/2021 to 31/12/2025 .
3. In spite of the conditions and provisions mentioned in this consent order UP Pollution Control Board reserves its right and powers to reconsider/amend any or all conditions under section 21 (6) of the Air (Prevention and Control of Pollution) Act, 1981 as amended.

This consent is being issued with the permission of competent authority .

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by VIVEK ROY  
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**For and on behalf of U.P. Pollution Control Board**

**CEO-1**

**Enclosed : As above  
(condition of consent):**

Copy to: Regional Officer, UPPCB, Ghaziabad.

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**CEO-1**

**U.P. Pollution Control Board**

Dated : 05/08/2021

**CONDITIONS OF CONSENT**

1. This consent is valid only for the approved production capacity of Integrated Township (Total land Area 4494.31 Acre, total proposed builtup area 51578130.39 SQM (As per EC dated 31-07-2014) at present total existing builtup area is 336025 SQM.
2. This consent is valid only for products and quantity mentioned above. Industry shall obtain prior approval before making any modification in product/ process /fuel/ plant machinery failing which consent would be deemed void.
- 3(a) The maximum rate of emission of flue gas should not be more than the emission norms for the stacks.
- 3(b) Air Pollution Source Details.

<b>Air Pollution Source Details</b>					
<b>S.No</b>	<b>Air Pollution Source</b>	<b>Type of Fuel</b>	<b>Stack No.</b>	<b>Parameters</b>	<b>Height</b>
1	2x500 KVA DG Sets.	HSD		Sulphur Dioxide	As per EP Act, 1986
2	1x400 KVA	HSD		Sulphur Dioxide	As per EP Act, 1986
3	2x380 KVA	HSD		Sulphur Dioxide	As per EP Act, 1986
4	1x320 KVA DG Set	HSD		Sulphur Dioxide	As per EP Act, 1986
5	1x250 KVA DG Set	HSD		Sulphur Dioxide	As per EP Act, 1986
6	1x200 KVA DG Set	HSD		Sulphur Dioxide	As per EP Act, 1986
7	7x125 KVA DG Set	HSD		Sulphur Dioxide	As per EP Act, 1986
8	1x180 KVA	HSD		Sulphur Dioxide	As per EP Act, 1986
9	1x140 KVA DG Sets	HSD		Sulphur Dioxide	As per EP Act, 1986
10	1x82.5 KVA DG Sets	HSD		Sulphur Dioxide	As per EP Act, 1986
11	2x40 KVA DG Sets	HSD		Sulphur Dioxide	As per EP Act, 1986
12	4x63 KVA DG Set	HSD		Sulphur Dioxide	As per EP Act, 1986

- 3(c) The emissions by various stacks into the environment should be as per the norms of the Board .

<b>Emission Quality Details Detail</b>			
<b>S.No</b>	<b>Stack No</b>	<b>Parameter</b>	<b>Standard</b>
1	1....12	Sulphur Dioxide	As per EP Act, 1986

4. Quantity of other pollutants should also be as per the norms prescribed by the Board/MOEF & CC/ otherwise mandatory .
5. The equipment for air pollution control system and monitoring ,as proposed by the industry and approved by the Board should be installed in their premises itself .
6. The modification or installation in the existing pollution control equipments should be done only by prior approval of Board .

7. The operation of air pollution control system and maintenance be done in such a way that the quantity of pollutants should be in accordance with the standards prescribed by the Board/MoEF & CC/or otherwise mandatory .
8. Unit should do provisions for fugitive emissions chimney/stack as per the norms of the Board/MOEF & CC/or otherwise mandatory .
9. The unit should submit the stack emissions monitoring report within one month from issuance of consent order along with the point wise compliance report of the consent order . Further quarterly monitoring report should be submitted .

**The Unit will file the renewal application at least 2 months prior to the expiry of this Order.**

**Specific Conditions:**

1. The Unit shall comply with various provisions of Air (Prevention and Control of Pollution) Act 1981 as amended, Water (Prevention and Control of Pollution) Act 1974 as amended and all other applicable rules notified under E.P. Act 1986.
2. The Unit shall dispose the hazardous waste through authorized recyclers/TSDF and comply with the provisions of Hazardous and Other Wastes (Management and Trans-boundary Movement) Amendment Rules, 2016 and The Solid Waste Management Rules, 2016
3. The Unit shall submit the point wise compliance report of the conditions imposed in the CTO issued by the Board for the year 2019 and the audited balance sheet for the current year and the details of fees deposited till date within a month failing which consent would be deemed void.
4. At the Unit site a display board size 4x6 feet shall be installed to display the provisions of Construction and Demolition Rules 2016.
5. This consent is only valid for the emission from the diesel based D.G sets of above mentioned capacities only and the Unit should ensure that there is no adverse impact on public and environment.
6. The Unit shall develop proper green belt and rain water harvesting system as per guidelines. For green belt at least 8 feet height plants should be planted which shall be properly protected as proper irrigation and maneuvering arrangements shall be made. For the development of the green belt the guidelines issued vide Board office order no. H10405/220/2018/02 Dt. 16-02-2018 shall be complied.
7. This consent is valid only for products and quantity mentioned above. The Unit shall obtain prior approval before making any modification in product/process /fuel/ Plant machinery failing which consent would be deemed void.
8. The Unit will ensure the continuous and uninterrupted data supply from the OCEMS to the CPCB server.
9. If the CPCB or UPPCB issues the Closure order against the Unit this consent order stands automatically suspended for that period.
10. The Unit shall abide by orders / directions issued by Hon'ble Supreme Court Hon'ble High Court, Hon'ble National Green Tribunal, Central Pollution Control Board and U.P Pollution Control Board for protection and safeguard of environment from time to time.
10. This CTO will be subject to the order of Hon'ble NGT in OA no. 549/2019 in the matter of Mahakar Singh Vs State of UP.
11. This CTO shall be valid for built up area 1,49,292 sqmt. Unit shall obtained revised CTO for the rest part of integrated project for which Environmental Clearance dated 31.07.2014 was obtained.

**Issued with the permission of competent authority .**

VIVEK Digitally signed  
by VIVEK ROY  
Date: 2023.08.05  
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**For and on behalf of U.P. Pollution Control Board .**

**CEO-1**

## कार्यालय-प्रभागीय निदेशक सामाजिक वानिकी प्रभाग गाजियाबाद।

पत्रांक: 1231 /35-3 दिनांक गाजियाबाद,

8 सितम्बर 2021

सेवा में,

क्षेत्रीय अधिकारी कार्यालय  
उ०प्र० प्रदूषण नियंत्रण बोर्ड,  
गाजियाबाद।

विषय:- मा० राष्ट्रीय हरित अधिकरण, नई दिल्ली में योजित ओ०ए०-549/2020 MAHAKAR Singh & Anr.Vs State Of Uttar Pradesh & Ors. में पारित आदेश दिनांक-14.06.2021 के अनुपालन के सम्बन्ध में।

सन्दर्भ:-आपका पत्रांक-944/एन०जी०टी०-88/ओ०ए०न०-549/19/2020, दिनांक-03.09.2021।

विषयांकित ओ०ए० में मा०एन०जी०टी० द्वारा पारित आदेश दिनांक-13.08.2019 में यू०पी०पी०सी०बी० को नोडल अधिकारी नियुक्त किया गया। मा०एन०जी०टी० द्वारा पारित आदेश दिनांक-14.06.2021 के क्रम में आपके द्वारा दिनांक-23.07.2021 तथा दिनांक-12.08.2021 को आपके कार्यालय में पूर्व में बैठक आहूत की चुकी है तथा तीसरी बैठक दिनांक-08.09.2021 को होनी सूचित की गयी है।

विषयगत प्रकरण में अवगत कराना है कि M/S Uppal Chaddha Hi Tech Developers Pvt Ltd द्वारा विकसित वेव सिटी गाजियाबाद के अन्तर्ग्रस्त भूमि में कोई अधिसूचित वन भूमि सम्मिलित अन्तर्ग्रस्त नहीं है। गाजियाबाद वन प्रभाग की कार्ययोजना जो पर्यावरण वन जलवायु परिवर्तन मंत्रालय भारत सरकार द्वारा अनुमोदित है के अनुसार गाजियाबाद जनपद में कुल 696.868 है० आरक्षित वन भूमि विद्यमान है जो मोदीनगर तहसील गाजियाबाद तथा लोनी तहसील गाजियाबाद के क्षेत्रान्तर्गत स्थित है। गाजियाबाद तहसील क्षेत्रान्तर्गत वन विभाग की कुल आरक्षित वन भूमि विद्यमान नहीं है। जबकि विषयगत वेव सिटी की भूमि गाजियाबाद तहसील के क्षेत्रान्तर्गत स्थित है। गाजियाबाद वन प्रभाग गाजियाबाद की उपर्युक्त उल्लेखित कार्ययोजना का पृष्ठ संख्या-83 की प्रमाणित छायाप्रति संलग्न है जिसमें भी सुस्पष्ट हो रहा है कि गाजियाबाद तहसील क्षेत्रान्तर्गत कोई अधिसूचित आरक्षित वन भूमि विद्यमान नहीं है। उपर्युक्त के अतिरिक्त यह भी अवगत कराना है कि शासकीय अधिसूचना संख्या - 115/XIV-331-50 दिनांक-10.02.1960 (प्रमाणित छायाप्रति) द्वारा सम्पूर्ण उ०प्र० में विभिन्न मार्गों को संरक्षित वन अधिसूचित किया गया था। उक्त अधिसूचना निर्गमन के समय वर्तमान गाजियाबाद जनपद तहसील मेरठ जनपद के अन्तर्गत था। उक्त अधिसूचना में उल्लेखित कोई अधिसूचित संरक्षित वन भूमि की भूमि भी वेव सिटी गाजियाबाद के निर्माण में प्रयुक्त नहीं की गयी है।

अतः सुस्पष्ट है कि वेव सिटी गाजियाबाद के निर्माण में अन्तर्ग्रस्त भूमि का कोई भी अंश/भाग अधिसूचित वन भूमि में कभी सम्मिलित नहीं रहा है। इस प्रकार वेव सिटी गाजियाबाद के निर्माण में आरक्षित या संरक्षित अधिसूचित वन भूमि प्रयोग में नहीं लाई गयी है।

विषयगत ओ०ए० मा०एन०जी०टी० नई दिल्ली में दिनांक-23.09.2021 को सुनवाई हेतु नियत है। अनुरोध है कि वेव सिटी गाजियाबाद के निर्माण में प्रयुक्त भूमि में पूर्णतया: या भाग में किसी अधिसूचित वन भूमि का प्रयोग न किये जाने की रिपोर्ट विहित प्रक्रियानुसार मा० एन०जी०टी० में यथासमय दाखिल करने का कष्ट करें।

संलग्नक-उपरोक्तानुसार।

(दीक्षा भण्डारी)

प्रभागीय निदेशक  
सामाजिक वानिकी प्रभाग गाजियाबाद

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गणित (४)

VAN BIRHAG  
MISCELLANEOUS  
FEBRUARY 10, 1960.

No. 115/XIV-331-50- Whereas the Government, Uttar Pradesh is of the opinion that the making of enquiry and record contemplated under sub-section (3) of section 29 of the Indian Forest Act, 1927 (Act No. XVI of 1927), will occupy such length of time as in the event of its continuance to endanger the rights of the State Government. Now, therefore, in exercise of the powers conferred by the proviso to the aforesaid sub-section and by sub-section (1) of the said section, read with section 80-A of the aforesaid Act, the Government of Uttar Pradesh is pleased to declare that ending such enquiry and record the provisions of Chapter IV of the said Act to be applicable to the land specified in the schedule hereto.

SCHEDULE

District	Sl. No.	Name of road	Mileage to be declared as Reserved or protected Forest			Total	Remarks		
			M. Ft.	M. Ft.	M. Ft.				
1	2	3	4	5	6	7			
Meerut	1	Meerut-Baghmat road	3	0	0	31	2	0	The
	2	Baghmat-Sabarahnur	1	0	0	24	2	0	bow
	3	Baraut-Chanruali	1	0	0	9	0	0	of ser
	4	Baghmat-Ioni Shadra	0	0	0	17	2	250	land
	5	Meerut-Nawana	2	0	0	17	0	0	land
	6	Meerut-Bulandshahar	2	0	0	29	0	0	land
	7	D.R.M. Road	41	0	0	35	0	0	land
	8	G.T. Road	870	0	0	873	0	0	on
	9	Begunabad-Basatikri	1	0	0	6	0	0	gro
	10	Moradnagar Railway Feeder	0	0	0	0	2	106	by
	11	Nodingar Railway Feeder	0	0	0	0	0	640	and
	12	Mohiddennur Railway Feeder	0	0	0	0	4	10	do
	13	Meerut-Sardhana Road	2	0	426	12	3	320	do
	14	Daurala-Sardhana	0	0	0	6	4	260	do
	15	Bulandshahar-Siana Garh Road	24	0	0	31	and	mile	
Muzaffar-nagar	16	Meerut-Bareilly	23	9	0	32	fg. 1 to 3	200	do
	17	National High way Rt. No. 24	28	6	0	31	3	200	do
	18	G.T. Road (Ghaziabad to Uttar Pradesh border)	3	1	0	28	3	0	do
	19	Ghaziabad-Hapur Road	874	0	548	879	2	70	do
Muzaffar-nagar	20	Hapur-Garh Road	1	0	0	6	1	251	do
	21					21	6	249	
	22					21	6	303	
	23					19			
Muzaffar-nagar	1	D.R.M. Road	56	0	0	79	0		
	2	Khatauli-Jaasath-Mirahpur-Bijnore	24	6	0	21			From Khatauli to
	3	Muzaffarnagar-Shanli-Kairana	2	0	0	31			
	4	Muzaffarnagar-Sheharanpur							M77 of D.R.M.

Photo copy tested.

08/09/2021

प्रमाणित निदेशक  
सामाजिक बानिकी प्रम  
गाजियाबाद

## अध्याय 10 वन खण्ड कार्य वृत्त

**10.1 सामान्य गठन** — इस कार्य वृत्त में उसर क्षेत्रों के वन खंडों के अतिरिक्त गाजियाबाद वन प्रभाग के वे तमाम पुराने तथा नये वन खण्ड सम्मिलित हैं, जो या तो भारतीय वन अधिनियम की धारा 20 के अन्तर्गत आरक्षित घोषित किये जा चुके हैं या जो अभी आरम्भिक सीमांकन के पश्चात धारा 4 के अन्तर्गत ही विज्ञापित किये गये हैं। इन वन खण्डों में से कुछ गंगा व यमुना नदियों के खादर क्षेत्र में तथा शेष नदियों से दूर बंजर भूमि पर स्थित है।

**10.2 वनस्पति का सामान्य रूप** — वन खण्डों में पाये जाने वाली वनस्पति का विस्तृत विवरण अध्याय 2 में दिया गया है। सामान्यतः यह वन अवकृष्ट श्रेणी के हैं तथा इन पर जैविक दबाव अत्यधिक है।

**10.3 प्रबन्ध के उद्देश्य** — प्रबन्ध के उद्देश्य निम्न हैं —

1. वर्तमान वानस्पतिक आवरण की सुरक्षा तथा अवनत वनों में सघन वृक्षारोपण कर सस्य में सुधार लाना।
2. वन खण्डों में उपलब्ध रिक्त भूमि में बहुउद्देश्य वृक्षारोपण कर स्थानीय ग्रामीण जनता के लिए चारा, पत्ती, घास, लघु प्रकाष्ठ, फल, फूल तथा कुटीर उद्योगों के लिए कच्चा माल उपलब्ध कराना।
3. ईंधन प्रजातियों के वृक्षारोपण का वृहद कार्यक्रम चलाकर जनता की निरन्तर बढ़ती हुई जलौनी लकड़ी की मांग को पूरा करना तथा मवेशियों के गोबर को पूर्णतया खाद के रूप में व खेतों में प्रयोग के लिए अवमुक्त रखना, ताकि कृषि उत्पादन में पर्याप्त वृद्धि हो।
4. वनीकरण के माध्यम से क्षेत्र के भू-क्षरण को रोकना, भूमि एवं जल संरक्षण करना तथा पर्यावरण, इकोलोजी तथा प्राकृतिक सौन्दर्य में सुधार लाना तथा भू-क्षरण को रोकना।
5. वन्य जन्तुओं के प्राकृतिक आवास स्थलों को संरक्षण प्रदान करना।
6. ग्रामीण जनता, बेरोजगार श्रमिकों व अन्त्योदय परिवारों को प्रत्यक्ष एवं परोक्ष रूप से रोजगार के साधन उपलब्ध कराना।

**10.4 क्षेत्रफल एवं आवंटन** : कार्य वृत्त में स्थित वन खण्डों का सकल क्षेत्रफल 696.868 हे० है, जिसका विवरण निम्न प्रकार है —

### सारणी-10.1 क्षेत्रफल का आवंटन (हे०)

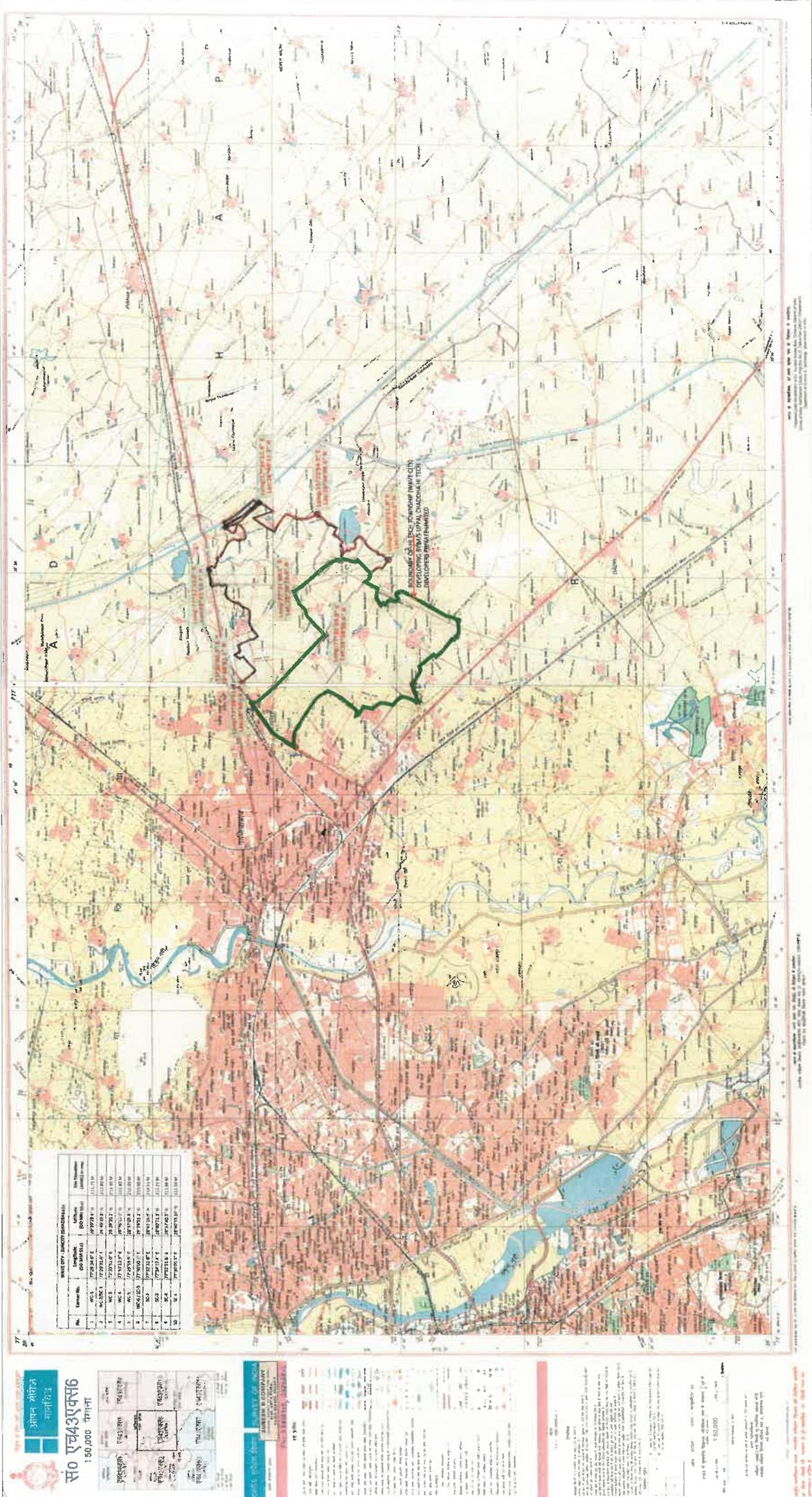
क्र. सं.	रेंज का नाम	विकास खण्ड	वन खण्ड का नाम	सकल क्षेत्रफल	
				एकड़ में	हेक्टेयर में
1	गाजियाबाद	लोनी	अहमदनगर नवादा	122	49.371
2	मोदीनगर	मुरादनगर	मौ०आमद बागपत	375	151.759
			भोजपुर	अतरौली खुर्द	147
		—	चुड़ियाला	743	300.682
		—	फरीदनगर	135	54.63
		—	तलहैटा	200	80.937
			योग	1722	696.868

Photo copy Attested.

18/09/2021

प्रभागीय निदेशक  
सामाजिक वनिकी प्रभाग  
गाजियाबाद

Annexure A-11-



No.	Coordinates	Location	Latitude	Longitude
1	24° 30' N	76° 30' E	24° 30' N	76° 30' E
2	24° 30' N	76° 35' E	24° 30' N	76° 35' E
3	24° 35' N	76° 30' E	24° 35' N	76° 30' E
4	24° 35' N	76° 35' E	24° 35' N	76° 35' E
5	24° 40' N	76° 30' E	24° 40' N	76° 30' E
6	24° 40' N	76° 35' E	24° 40' N	76° 35' E
7	24° 45' N	76° 30' E	24° 45' N	76° 30' E
8	24° 45' N	76° 35' E	24° 45' N	76° 35' E
9	24° 50' N	76° 30' E	24° 50' N	76° 30' E
10	24° 50' N	76° 35' E	24° 50' N	76° 35' E



भारत सरकार  
केन्द्रीय भूमि जल प्राधिकरण  
जल संसाधन, नदी विकास  
और गंगा संरक्षण मन्त्रालय  
Government of India  
Central Ground Water Authority  
Ministry of Water Resources,  
River Development & Ganga Rejuvenation

### NO OBJECTION CERTIFICATE (NOC) FOR GROUND WATER ABSTRACTION

Project Name	M/s Uppal Chadha Hi Tech Developers Pvt. Ltd. ( Wave Hi-Tech Township)		
Project Address:	NH-24		
Village:	Dasna Dehat	Block:	Rajapur
District:	Ghaziabad	State:	Uttar Pradesh
Pin Code:			
Communication Address:	C - 1, Sector - 3, Noida, District - Gautam Buddha Nagar, Uttar Pradesh - 201301		
Address of CGWB Regional Office :	Regional Director, Central Ground Water Board, Northern Region, Bhujal Bhawan, Sector - B, Sitapur Road Yojana, Ram Ram Chauraha, Lucknow, Uttar Pradesh - 226021		

1. NOC No.:	CGWA/NOC/INF/ORIG/2019/5285									
2. Application No.:	21-4/4196/UP/INF/2017	3. Category:	Infrastructure							
4. Project Status:	New Project	5. NOC Type:	New							
6. Valid from:	08/05/2019	7. Valid up to:	07/05/2021							
8. Ground Water Abstraction Permitted:										
	Fresh Water		Saline Water							
	Dewatering		Total							
	m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day							
	m <sup>3</sup> /day	m <sup>3</sup> /year	m <sup>3</sup> /day							
	38772	14151780	38772							
			14151780							
9. Details of ground water abstraction /Dewatering structures										
	Total Existing No.:31					Total Proposed No.:14				
	DW	DCB	BW	TW	MP	DW	DCB	BW	TW	MP
Abstraction Structure*	0	0	0	31	0	0	0	0	14	0
*DW- Dug Well; DCB-Dug-cum-Bore Well; BW-Bore Well; TW-Tube Well; MP-Mine Pit										
10. Quantum of ground water recharge(m <sup>3</sup> /year):	2401778									
11. Number of Piezometers (Observation wells) to be constructed/ monitored & Monitoring mechanism.	No. of Piezometers		Monitoring Mechanism							
			Manual	DWLR**	DWLR With Telemetry					
**DWLR - Digital Water Level Recorder	2		0	1	1					

(Compliance Conditions given overleaf)

**THIS NOC IS VALID ONLY FOR DRINKING  
DOMESTIC USES AND/OR GREEN BELT.**

Digitally signed by  
NANDAKUMARAN P  
Date: 2019.05.17.14:44:35 +05'30'

Member (CGWA)

18/11, Jamnagar House, Mansingh Road, New Delhi-110011  
Phone: (011) 23383561 Fax: 23382051, 23386743  
Website: cgwa-noc.gov.in

स्वच्छ सुरक्षित जल - खुशहाल कल  
CONSERVE WATER - SAVE LIFE

**Validity of this NOC shall be subject to compliance of the following mandatory conditions:**

- 1) No additional ground water abstraction and/or de-watering structures shall be constructed for this purpose without prior approval of the Central Ground Water Authority (CGWA).
- 2) The proponent shall seek prior permission from CGWA for any increase in quantum of groundwater abstraction (more than that permitted in NOC for specific period).
- 3) All new as well as existing ground water abstraction/ de-watering structures shall be fitted with digital water flow meters by the firm at its own cost immediately on completion of their construction or grant of NOC as the case may be. In case of renewal of NOCs, all existing ground water abstraction structures shall continue to be fitted with digital water flow meters. Intimation of installation of flow meters shall be sent by the proponent to the Regional Director of CGWB within 6 months of grant of NOC. Daily ground water abstraction data shall be monitored / continue to be monitored (in case of renewal) by the firm and recorded in a log book. Details of month-wise ground water abstraction shall be submitted to the Regional Director, CGWB, once every year.
- 4) In case the ground water abstraction is more than 10 m<sup>3</sup>/d, monthly water level monitoring data shall be maintained and submitted annually to the Regional Office of CGWB. Wherever groundwater withdrawal is more than 500 m<sup>3</sup>/d, the firm shall install telemetry system in one of the piezometers and share USER ID and password of the telemetry system with the Regional Director, CGWB.
- 5) In case ground water abstraction is more than 10 m<sup>3</sup>/d, ground water quality shall be monitored once in a year (during pre- monsoon period) and the report submitted to the Regional Office, CGWB. Wherever the extraction is less than 10 m<sup>3</sup>/day, ground water quality report shall be submitted by the proponent at the time of submission of self-compliance report.
- 6) Ground water augmentation measures, as stipulated in the NOC, shall be implemented (in new cases) / continue to be maintained (in case of renewal) in consultation with the concerned Regional Director, CGWB.
- 7) Proof of recharge/water harvesting structures constructed (photographs of structures) shall be submitted to the concerned Regional Director, CGWB within 6 months from the date of issue of NOC. The firm shall also undertake periodic maintenance of recharge structures at its own cost.
- 8) The project proponent shall take all necessary measures to prevent contamination of ground water in the premises failing which the firm shall be responsible for any consequences arising thereupon.
- 9) In case of industries that are likely to contaminate the ground water, no recharge measures shall be taken up by the firm inside the plant premises. The runoff generated from the rooftop shall be stored and put to beneficial use by the firm.
- 10) The firm shall optimize water use through recycling/ reuse of waste water after proper treatment.
- 11) Wherever the NOC is for abstraction of saline water and the existing wells (s) is /are yielding fresh water, the same shall be sealed and new tubewell(s) tapping saline water zone shall be constructed within 3 months of the issuance of NOC. The firm shall also ensure safe disposal of saline residue, if any.
- 12) In case of mining projects, additional key wells shall be established in consultation with the Regional Director, CGWB for ground water level monitoring four (4) times a year (January, May, August and November) in core as well as buffer zones of the mine.
- 13) Unexpected variations in inflow of ground water into the mine pit, if any, shall be reported to the concerned Regional Director, Central Ground Water Board.
- 14) The firm shall report compliance of the NOC conditions online in the website ([www.cgwa-noc.gov.in](http://www.cgwa-noc.gov.in)) within one year from the date of issue of this NOC.
- 15) This NOC is subject to prevailing Central/State Government rules/laws/norms or Court orders related to construction of tube well/ground water abstraction structure / recharge or conservation structure/discharge of effluents or any such matter as applicable.
- 16) This NOC does not absolve the proponents of their obligation / requirement to obtain other statutory and administrative clearances from appropriate authorities.
- 17) The issue of this NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and take decisions independently of the NOC.
- 18) This NOC is being issued without any prejudice to the directions of the Hon'ble NGT/court orders in cases related to ground water or any other related matters.
- 19) Application for renewal can be submitted online from 90 days before the expiry of NOC. Ground water withdrawal, if any, after expiry of NOC shall be illegal & liable for legal action as per provisions of Environment (Protection) Act, 1986.

**(Non-compliance of the conditions mentioned above is likely to result in the cancellation of NOC and legal action against the proponent.)**

कार्यालय अधिशासी अभियन्ता  
निर्माण खण्ड-2, लो0नि0वि0,  
गाजियाबाद।

Office of the Executive Engineer,  
C.D.-2, P.W.D., Ghaziabad-201001

उत्तर प्रदेश सरकार  
लोक निर्माण विभाग



लोहिया नगर ए-ब्लॉक के सामने,  
आर0डी0सी0 पलाई ओवर के नीचे निकट  
न्यू गाजियाबाद रेलवे स्टेशन, गाजियाबाद  
Office : 0120- 4105874  
Email:- cd2ghaziabad@gmail.com

पत्रांक 9-201 / 1501

दिनांक:- 20/8/21

सेवा में,

क्षेत्रीय अधिकारी,  
उ0प्र0 प्रदूषण नियंत्रण बोर्ड,  
गाजियाबाद।

विषय :- मा0 राष्ट्रीय हरित अधिकरण, नई दिल्ली में योजित OA No-549/2020 Mahakar Singh & Anr. Vs State of Uttar Pradesh & Ors. में पारित आदेश दिनांक 14.06.2021 के अनुपालन के सम्बन्ध में।

सन्दर्भ:- आपका पत्र संख्या 833/एन0जी0टी0-88/ओ0ए0नं0-549/19/2021 दिनांक 19.08.2021

महोदय,

आपके उपरोक्त विषयक सन्दर्भित पत्र के माध्यम से मैसर्स उप्पल चडडा हाईटैक डैवलपर्स प्रा0लि0, ग्राम महरोली, शाहपुर बम्हैटा, गाजियाबाद द्वारा अपने पत्र संख्या दिनांक 19.08.2021 के साथ संलग्न वेब सिटी गाजियाबाद के सम्बन्ध में Summary of Built-up area of all type of construction (Annexure-2) में दिये गये विवरण के आधार पर उक्त परियोजना के निर्माण में प्रयुक्त जल की मात्रा के सम्बन्ध में आख्या चाही गयी थी।

आपके पत्र के साथ संलग्न मैसर्स उप्पल चडडा हाईटैक डैवलपर्स प्रा0लि0, ग्राम महरोली, शाहपुर बम्हैटा, गाजियाबाद के पत्र संख्या दिनांक 19.08.2021 के माध्यम से उपलब्ध करायी गयी Built-up area के विवरण (Annexure-2) के आधार पर उक्त परियोजना में तकनीकी रूप/मानक के अनुसार प्रयुक्त होने वाले जल की मात्रा का आंकलन करते हुए मानक के अनुरूप आवश्यक जल की मात्रा का विवरण संलग्न कर गणना सीट (Annexure-A) के रूप में संलग्न कर आवश्यक कार्यवाही हेतु प्रेषित किया जा रहा है।

संलग्नक:- गणना सीट व विवरण मानक (IS Code/Supporting Document)

26/8/21  
(राजीव कुमार राय)  
अधिशासी अभियन्ता  
निर्माण खण्ड-2, लो0नि0वि0,  
गाजियाबाद।

पृ0सं0 एवं दिनांक उपरोक्तानुसार:-  
प्रतिलिपि:-

1. सहायक अभियन्ता चतुर्थ, निर्माण खण्ड-2, लो0नि0वि0, गाजियाबाद को उनके द्वारा उपलब्ध कराई गई सूचना के सम्बन्ध में आवश्यक कार्यवाही हेतु प्रेषित।
2. अवर अभियन्ता (प्र0), निर्माण खण्ड-2, लो0नि0वि0, गाजियाबाद को रिकॉर्ड हेतु।

अधिशासी अभियन्ता  
निर्माण खण्ड-2, लो0नि0वि0,  
गाजियाबाद।

**Calculation for consumption of Water in construction as per built-up details in Wave City, Ghaziabad.**

(As per Annexure-2 of letter no.- 833/NGT-88/OA No.-549/19/2021 Dated 19.08.2021 of R.O. U.P. C.B., Ghaziabad)

Ref:- Regional Office, U.P. Pollution Control Board, Ghaziabad Letter no.- 833/NGT-88/OA No.-549/19/2021 Dated 19.08.2021

Sl. No.	Item/Description	Unit	Qty.	Qty. of cement (as per norms) (Kg/unit)	For Mix/Mortar		For Curing		Total Qty. of water ((7-9)/1000) (KI)	Remark/Reference
					Water Cement Ratio	Qty. of water for mix/mortar (Ltr) (4x5x6)	Water cementitious material ratio	Qty. of water for curing (Ltr) (4x5x8)		
1	2	3	4	5	6	7	8	9	10	11
1	Plain Cement Concrete (1:4:8)	Cum	15976.75	220.00	0.60	2108931.00	0.38	1335656.30	3444.59	Indian Standard plan and reinforced concrete code of practice- 456 P-20,23
2	Plain Cement Concrete (1:5:10)	Cum	5857.71	220.00	0.60	773217.72	0.38	489704.56	1262.92	I.S.-456 P-20,23
3	M 20 grade of concrete	Cum	1903.85	300.00	0.55	314135.25	0.38	217038.90	531.17	I.S.-456 P-20,23
4	M 25 grade of concrete	Cum	244976.69	300.00	0.50	36746503.50	0.38	27927342.66	64673.85	I.S.-456 P-20,23
5	Brick work (1:6) in super structure	Cum	48419.56	62.50	0.50	1513111.25	0.38	1149964.55	2663.08	DSR-6.4.2, I.S.-456 P-20
6	Brick work (1:6) in foundation & Plinth	Cum	13504.91	55.00	0.50	371385.03	0.38	282252.62	653.64	DSR-6.2.2, I.S.-456 P-20
7	Brick work (1:4) in super structure	Cum	234.74	95.00	0.50	11150.15	0.38	8474.11	19.62	DSR-6.4.1, I.S.-456 P-20
8	Half Brick work (1:4) in foundation & Super Structure	Sqm	400969.32	10.64	0.50	2133156.78	0.38	1621199.15	3754.36	DSR-6.12.2, I.S.-456 P-20
9	Plaster 12 mm thick (1:6)	Sqm	931322.83	3.60	0.50	1676381.09	0.38	1274049.63	2950.43	DSR-13.1.2, I.S.-456 P-20
10	Plaster 6 mm thick (1:4)	Sqm	261862.51	3.67	0.50	480517.71	0.38	365193.46	845.71	DSR-13.16.1, I.S.-456 P-20
11	Plaster 6 mm thick (1:3)	Sqm	101748.53	3.67	0.50	186708.55	0.38	141898.50	328.61	DSR-13.16.1, I.S.-456 P-20
12	Plaster with floating coat (1:4)	Sqm	67854.85	7.67	0.50	260223.35	0.38	197769.75	457.99	DSR-13.7.2, I.S.-456 P-20
13	Marble/Granite stone flooring (1:4)	Sqm	65516.84	13.51	0.50	442566.25	0.00	0.00	442.57	DSR-11.23, I.S.-456 P-20
14	Kota Stone flooring (1:4)	Sqm	109107.97	14.91	0.50	813399.92	0.00	0.00	813.40	DSR-11.26, I.S.-456 P-20
15	Ceramic Tiles (1:4)	Sqm	295944.71	12.42	0.50	1837816.65	0.00	0.00	1837.82	DSR-11.37, I.S.-456 P-20
16	Vitrified tiles (1:4)	Sqm	449391.50	12.42	0.50	2790721.22	0.00	0.00	2790.72	DSR-11.41, I.S.-456 P-20
17	Vitrified tiles in skirting	Sqm	48905.03	8.80	0.50	215182.13	0.00	0.00	215.18	DSR-11.46, I.S.-456 P-20
18	Brk coba on roof	Sqm	50829.65	9.13	0.50	232037.35	0.38	176348.39	408.39	DSR-12.19, I.S.-456 P-20
19	Water proofing in sunken portion	Sqm	67037.16	1.23	0.50	41227.85	0.38	31333.17	72.56	DSR-22.50, I.S.-456 P-20
20	Water proofing cement based 40 mm thick JPS Flooring	Sqm	110115.00	38.70	0.50	2130725.25	0.38	1619351.19	3750.08	DSR-22.7.1, I.S.-456 P-20
21	40 mm thick JPS Flooring	Sqm	27150.91	17.00	0.50	230782.74	0.38	175394.88	406.18	DSR-11.3.1, I.S.-456 P-20

## Calculation for consumption of Water in construction as per built-up details in Wave City, Ghaziabad.

(As per Annexure-2 of letter no.- 833/NGT-88/OA No.-549/19/2021 Dated 19.08.2021 of R.O. U.P. C.B., Ghaziabad)

Ref:- Regional Office, U.P. Pollution Control Board, Ghaziabad Letter no.- 833/NGT-88/OA No.-549/19/2021 Dated 19.08.2021

Sl. No.	Item/Description	Unit	Qty.	Qty. of cement (as per norms) (Kg/unit)	For Mix/Mortar			For Curing		Total Qty. of water ((7+9)/1000) (KL)	Remark/Reference
					Water Cement Ratio	Qty. of water for mix/mortar (Lit) (4x5x6)	Water cementitious material ratio	Qty. of water for curing (Lit) (4x5x8)			
1			2								
22	Gola (75x75)	RM	61432.08	3.10	0.50	95219.72	0.38	72366.99	167.59	DSR-12.21, I.S.-456 P-20	
23	Khurra (45x45)	Nos	4621.31	6.00	0.50	13863.93	0.38	10536.59	24.40	DSR-12.22, I.S.-456 P-20	
24	Plaster 15 mm (1-4)	Sqm	315054.80	6.54	0.50	1030229.20	0.38	782974.19	1813.20	DSR-13.2.1, I.S.-456 P-20	
25	Plaster 15 mm (1-6)	Sqm	139632.13	4.30	0.50	300209.08	0.38	228158.90	528.37	DSR-13.2.2, I.S.-456 P-20	
26	M 30 grade of concrete	Cum	3746.24	320.00	0.45	539458.56	0.38	455542.78	995.00	I.S. 456 P-20-23	
27	M 35 grade of concrete	Cum	4259.77	340.00	0.45	651744.81	0.38	550362.28	1202.11	I.S. 456 P-20-23	
28	M 40 grade of concrete	Cum	5448.51	360.00	0.40	784585.44	0.38	745356.17	1529.94	I.S. 456 P-20-23	
29	AAC Blocks (150/200 mm)	Cum	15681.87	5.50	0.50	43125.14	0.38	32775.11	75.90	DSR-6.2.2, I.S.-456 P-20	
30	AAC Blocks (100 mm)	Sqm	57030.10	10.64	0.50	303400.13	0.38	230584.10	533.98	DSR-6.12.2, I.S.-456 P-20	
31	Plaster 18 mm thick (1:5)(1"5) in two coats	Sqm	111622.13	6.26	0.50	349377.27	0.38	265526.72	614.90	DSR-12.11, I.S.-456 P-20	
32	Stone Cladding	Sqm	5012.37	13.74	0.50	34434.98	0.00	0.00	34.43	DSR-8.18, I.S.-456 P-20	
33	Kerb Stone Laying	RM	146.28	0.37	0.50	27.06	0.38	20.57	0.05	DSR-16.69, I.S.-456 P-20	
34	Concrete paver blocks	Sqm	4535.38	-	-	-	-	13.33	60.46	UP PWD Specification	
<b>Total</b>									<b>99903.19</b>		

  
 Junior Engineer  
 C.D.-2, P.W.D.  
 Ghaziabad

  
 Assistant Engineer  
 C.D.-2, P.W.D.  
 Ghaziabad



क्षेत्रीय कार्यालय उ०प्र० प्रदूषण नियंत्रण बोर्ड, गाजियाबाद  
Regional Office, U.P. Pollution Control Board, Ghaziabad  
Website- www.uppcb.com, e-mail: oghaziabad@uppcb.com

Address 'B', P.

संदर्भ संख्या : ०३३/एन०जी०टी०-८८/ओ०ए०न-५४९/१९/२०२१

दिनांक 19/08/21

सेवा में

अधिशासी अभियंता,  
लाक निमाण विभाग,  
गाजियाबाद।

विषय: मा० राष्ट्रीय हरित अधिकरण, नई दिल्ली में योजित OA No-549/2020 Mahakar Singh & Anr. Vs State of Uttar Pradesh & Ors. में पारित आदेश दिनांक 14.06.2021 के अनुपालन के सम्बन्ध में।

महोदय

कृपया उपरोक्त विषयक मा० एन०जी०टी० द्वारा पारित आदेश दिनांक 14.06.2021 के अनुपालन में संयुक्त समिति की दिनांक 12.08.2021 को आहुत द्वितीय बैठक का सदस्य ग्रहण करने का कष्ट करें। उक्त बैठक में समिति द्वारा लिये गये निर्णय के अनुसार गैरर्स उष्णल चडडा हाईटैंक डेवलपर्स प्रा० लि०, ग्राम महरोली, शाहपुर बग्घेटा, गाजियाबाद के प्रतिनिधियों के साथ दिनांक 18.08.2021 को बैठक की गयी। बैठक में समिति द्वारा परियोजना में किये गये कुल निर्माण के सम्बन्ध में विस्तृत सूचना प्रेषित किये जाने हेतु इकाई प्रतिनिधि श्री नरेश पटेल, जनरल मैनेजर को निर्देशित किया गया था।

उक्त के अनुपालन में इकाई प्रतिनिधि द्वारा परियोजना में किये गये निर्माण की अद्यतन स्थिति के सम्बन्ध में सूचना इस कार्यालय में दिनांक 19.08.2021 को प्रेषित की गयी है, जिसकी छायाप्रति पत्र के साथ संलग्नकर इस अनुरोध के साथ प्रेषित की जा रही है कि इकाई द्वारा प्रेषित विवरण का अवलोकन कर निर्माण में प्रयुक्त जल की अनुमानित मात्रा के सम्बन्ध में अपनी आख्या प्रेषित करने का कष्ट करें। ताकि तथ्यों को मा० राष्ट्रीय हरित अधिकरण द्वारा गठित समिति के समक्ष प्रस्तुत किया जा सके। प्रकरण में मा० राष्ट्रीय हरित अधिकरण में अगली सुनवाई की तिथि दिनांक 23.09.2021 नियत है।

संलग्नक.उपरोक्तानुसार।

भवदीय

(उत्सव शर्मा)  
क्षेत्रीय अधिकारी

प्रतिलिपि निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु सादर प्रेषित।

1. प्रभागीय निदेशक, सामाजिक दानिकी प्रभाग, गाजियाबाद।
2. श्री जे०सी० बाबू, वैज्ञानिक-ई, केन्द्रीय प्रदूषण नियंत्रण बोर्ड, नई दिल्ली।
3. श्री पारस नाथ, सदस्य, राज्य स्तरीय पर्यावरण प्रभाव आंकलन प्राधिकरण, पर्यावरण निदेशालय, विनित खण्ड, गोमतीनगर, लखनऊ।
4. श्री जगदम्भा प्रसाद, वैज्ञानिक-डी, केन्द्रीय भू-जल बोर्ड, भूजल भवन, सेक्टर-बी, सीतापुर रोड योजना, राम-राम बैंक चौराहा, लखनऊ।

क्षेत्रीय अधिकारी

क्षेत्रीय कार्यालय : आई०एन०एस०-२, सेक्टर-१६, वसुन्धरा, गाजियाबाद-२०१०१२ फोन-०१२०-४१६०१०८  
मुख्यालय : TC-12V, विगृति खण्ड, गोमती नगर, लखनऊ 226010



Date: 19.08.2021

**The Nodal Agency**  
Regional Office  
Pollution Control Board  
INS-2, Sector-16, Vasundhara,  
Ghaziabad - 201012

**Subject: Submission of Built-up details of buildings constructed till date in Wave City Ghaziabad.**

Dear Sir,

Please take reference of the meeting held under guidance of NGT in Wave City on 18.08.2021. During this meeting, we were directed to submit details of construction held in Wave City till date. The construction started in Wave City from the year 2016.

Uppal Chadha Hi-Tech  
Developers Pvt. Ltd.  
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The above said details are enclosed with this letter as mentioned below:

- 1. Details of buildings constructed in Wave City till date – Annex-1
- 2. Summary of built up of all types of construction – Annex-2.
- 3. Project-wise built up details (Page 1 to 14) – Annex-3.

The above said details submitted by us are of all type of buildings constructed in Wave City as on 18.08.2021.

Please acknowledge.

Thanking You,

Sincerely Yours,

For Uppal Chadha Hi-Tech Developers Pvt. Ltd.



**(Deepak Palnuk)**  
**Authorized Signatory**

Enc: As above

Summary of All projects Quantities			
S.No.	Item Description	Unit	BOQ Quantity
1	Plain cement concrete (1:4:8)	Cum	15,976.75
2	Plain cement concrete (1:5:10)	Cum	5,857.71
3	M 20 grade of concrete	Cum	1,903.85
4	M 25 grade of concrete	Cum	244,976.69
5	Brick work (1:6) in super structure	Cum	48,419.56
6	Brick work (1:6) in foundation & Plinth	Cum	13,504.91
7	Brick work (1:4) in super structure	Cum	234.74
8	Half Brickwork (1:4) in foundation & Super	Sqm	400,969.32
9	Plaster 12mm thk (1:6)	Sqm	931,322.83
10	Plaster 6 mm thk (1:4)	Sqm	261,862.51
11	Plaster 6 mm thk (1:3)	Sqm	101,748.53
12	Plaster with floating coat (1:4)	Sqm	67,854.85
13	Marble/Granite stone flooring (1:4)	Sqm	65,516.84
14	Kota stone flooring (1:4)	Sqm	109,107.97
15	Ceremic tiles (1:4)	Sqm	295,944.71
16	Vitrified tiles (1:4)	Sqm	449,391.50
17	Vitrified tiles in skirting	Sqm	48,905.03
18	Brick Coba on roof	Sqm	50,829.65
19	Water proofing in sunken portion	Sqm	67,037.16
20	Water proofing cement based	Sqm	110,115.00
21	40 mm thk IPS Flooring (1:2:4)	Sqm	27,150.91
22	Gola (75x75)	RM	61,432.08
23	Khurra (45x45)	Nos	4,621.31
24	Plaster 15 mm (1:4)	sqm	315,054.80
25	Plaster 15 mm (1:6)	sqm	139,632.13
26	M 30 grade of concrete	Cum	3,746.24
27	M 35 grade of concrete	Cum	4,259.77
28	M 40 grade of concrete	Cum	5,448.51
29	AAC Blocks (150/200 mm)	Cum	15,681.87
30	AAC Blocks (100 mm)	sqm	57,030.10
31	Plaster 18 mm thk (1:5)/(1:6) in two coats	Sqm	111,622.13
32	Stone Cladding	sqm	5,012.37
33	Kerb Stone Laying	RM	146.28
34	Concrete paver blocks	sqm	4,535.35

IS 456 : 2000

**8.2.5 Mix Constituents****8.2.5.1 General**

For concrete to be durable, careful selection of the mix and materials is necessary, so that deleterious constituents do not exceed the limits.

**8.2.5.2 Chlorides in concrete**

Whenever there is chloride in concrete there is an increased risk of corrosion of embedded metal. The higher the chloride content, or if subsequently exposed to warm moist conditions, the greater the risk of corrosion. All constituents may contain chlorides and concrete may be contaminated by chlorides from the external environment. To minimize the chances of deterioration of concrete from harmful chemical salts, the levels of such harmful salts in concrete coming from concrete materials, that is, cement, aggregates water and admixtures, as well as by diffusion from the environment should be limited. The total amount of chloride content (as Cl) in the concrete at the time of placing shall be as given in Table 7.

The total acid soluble chloride content should be calculated from the mix proportions and the measured chloride contents of each of the constituents. Wherever possible, the total chloride content of the concrete should be determined.

**8.2.5.3 Sulphates in concrete**

Sulphates are present in most cements and in some aggregates; excessive amounts of water-soluble sulphate from these or other mix constituents can cause

expansion and disruption of concrete. To prevent this, the total water-soluble sulphate content of the concrete mix, expressed as  $SO_3$ , should not exceed 4 percent by mass of the cement in the mix. The sulphate content should be calculated as the total from the various constituents of the mix.

The 4 percent limit does not apply to concrete made with supersulphated cement complying with IS 6909.

**8.2.5.4 Alkali-aggregate reaction**

Some aggregates containing particular varieties of silica may be susceptible to attack by alkalis ( $Na_2O$  and  $K_2O$ ) originating from cement or other sources, producing an expansive reaction which can cause cracking and disruption of concrete. Damage to concrete from this reaction will normally only occur when all the following are present together:

- A high moisture level, within the concrete;
- A cement with high alkali content, or another source of alkali;
- Aggregate containing an alkali reactive constituent.

Where the service records of particular cement/aggregate combination are well established, and do not include any instances of cracking due to alkali-aggregate reaction, no further precautions should be necessary. When the materials are unfamiliar, precautions should take one or more of the following forms:

- Use of non-reactive aggregate from alternate sources.

**Table 5 Minimum Cement Content, Maximum Water-Cement Ratio and Minimum Grade of Concrete for Different Exposures with Normal Weight Aggregates of 20 mm Nominal Maximum Size**

(Clauses 6.1.2, 8.2.4.1 and 9.1.2)

Sl No.	Exposure	Plain Concrete			Reinforced Concrete		
		Minimum Cement Content kg/m <sup>3</sup>	Maximum Free Water-Cement Ratio	Minimum Grade of Concrete	Minimum Cement Content kg/m <sup>3</sup>	Maximum Free Water-Cement Ratio	Minimum Grade of Concrete
1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
i)	Mild	220	0.60	-	300	0.55	M 20
ii)	Moderate	240	0.60	M 15	300	0.50	M 25
iii)	Severe	250	0.50	M 20	320	0.45	M 30
iv)	Very severe	260	0.45	M 20	340	0.45	M 35
v)	Extreme	280	0.40	M 25	360	0.40	M 40

**NOTES:**

1 Cement content prescribed in this table is irrespective of the grades of cement and it is inclusive of additions mentioned in 5.2. The additions such as fly ash or ground granulated blast furnace slag may be taken into account in the concrete composition with respect to the cement content and water-cement ratio if the suitability is established and as long as the maximum amounts taken into account do not exceed the limit of pozzolona and slag specified in IS 1489 (Part 1) and IS 455 respectively.

2 Minimum grade for plain concrete under mild exposure condition is not specified.

However, when adequate past records for a similar grade exist and justify to the designer a value of standard deviation different from that shown in Table 8, it shall be permissible to use that value.

**Table 8 Assumed Standard Deviation**  
(Clause 9.2.4.2 and Table 11)

Grade of Concrete	Assumed Standard Deviation $N/mm^2$
M 10	3.5
M 15	
M 20	4.0
M 25	
M 30	5.0
M 35	
M 40	
M 45	
M 50	

NOTE—The above values correspond to the site control having proper storage of cement, weigh batching of all materials, controlled addition of water, regular checking of all materials, aggregate gradings and moisture content; and periodical checking of workability and strength. Where there is deviation from the above the values given in the above table shall be increased by 1N/mm<sup>2</sup>.

### 9.3 Nominal Mix Concrete

Nominal mix concrete may be used for concrete of M 20 or lower. The proportions of materials for nominal mix concrete shall be in accordance with Table 9.

9.3.1 The cement content of the mix specified in Table 9 for any nominal mix shall be proportionately increased if the quantity of water in a mix has to be increased to overcome the difficulties of placement and compaction, so that the water-cement ratio as specified is not exceeded.

## 10 PRODUCTION OF CONCRETE

### 10.1 Quality Assurance Measures

10.1.1 In order that the properties of the completed structure be consistent with the requirements and the assumptions made during the planning and the design, adequate quality assurance measures shall be taken. The construction should result in satisfactory strength, serviceability and long term durability so as to lower the overall life-cycle cost. Quality assurance in construction activity relates to proper design, use of adequate materials and components to be supplied by the producers, proper workmanship in the execution of works by the contractor and ultimately proper care during the use of structure including timely maintenance and repair by the owner.

10.1.2 Quality assurance measures are both technical and organizational. Some common cases should be specified in a general Quality Assurance Plan which shall identify the key elements necessary to provide fitness of the structure and the means by which they are to be provided and measured with the overall purpose to provide confidence that the realized project will work satisfactorily in service fulfilling intended needs. The job of quality control and quality assurance would involve quality audit of both the inputs as well as the outputs. Inputs are in the form of materials for concrete; workmanship in all stages of batching, mixing, transportation, placing, compaction and curing; and the related plant, machinery and equipments; resulting in the output in the form of concrete in place. To ensure proper performance, it is necessary that each step in concreting which will be covered by the next step is inspected as the work proceeds (see also 17).

**Table 9 Proportions for Nominal Mix Concrete**

(Clauses 9.3 and 9.3.1)

Grade of Concrete	Total Quantity of Dry Aggregates by Mass per 50 kg of Cement, to be Taken as the Sum of the Individual Masses of Fine and Coarse Aggregates, kg. <i>Max</i>	Proportion of Fine Aggregate to Coarse Aggregate (by Mass)	Quantity of Water per 50 kg of Cement, <i>Max</i>
(1)	(2)	(3)	(4)
M 5	800	Generally 1:2 but subject to an upper limit of 1.1 $\frac{1}{2}$ and a lower limit of 1.2 $\frac{1}{2}$	60
M 7.5	625		45
M 10	480		34
M 15	330		32
M 20	250		30

NOTE—The proportion of the fine to coarse aggregates should be adjusted from upper limit to lower limit progressively as the grading of fine aggregates becomes finer and the maximum size of coarse aggregate becomes larger. Graded coarse aggregate shall be used.

#### Example

For an average grading of fine aggregate (that is, Zone II of Table 4 of IS 383), the proportions shall be 1.1 $\frac{1}{2}$ , 1.2 and 1.2 $\frac{1}{2}$ , for maximum size of aggregates 10 mm, 20 mm and 40 mm respectively.

# Guide to External Curing of Concrete

Reported by ACI Committee 308

ACI 308R-16



American Concrete Institute



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### Guide to External Curing of Concrete

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# ACI 308R-16

## Guide to External Curing of Concrete

Reported by ACI Committee 308

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*This guide reviews and describes practices, procedures, materials, and monitoring methods for the external curing of concrete and provides guidance for specifying curing procedures. Current curing techniques are presented and commonly accepted methods, procedures, and materials are described. Methods are given for curing structures and buildings, pavements and other slabs-on-ground, and for mass concrete. Curing methods for several specific categories of cement-based products are discussed in this document.*

*The materials, processes, quality-control measures, and inspections described in this document should be tested, monitored, or performed as applicable only by individuals holding the appropriate ACI certifications or equivalent.*

**Keywords:** cold-weather construction; curing compound; hot-weather construction; mass concrete; reinforced concrete; sealer; shotcrete; slabs-on-ground

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**CHAPTER 1—INTRODUCTION**

**1.1—Introduction**

The principles and practices of external curing are applicable to all types of concrete construction. This document does not fully address curing for specialty concrete and special construction techniques (refer to 4.5), nor does it fully address internally cured concrete. For additional information on internally cured concrete using preconditioned absorptive lightweight aggregates, refer to ACI 308-213R, *Curing measures*, in general, are specified in ACI 308.1. Curing measures directed toward the maintenance of satisfactory concrete temperature under specific environmental conditions are addressed in greater detail in ACI 305R, ACI 306R, ACI 301, and ACI 318.

The fundamental principles of external curing remain the same as in the past; however, new research and methods of curing are presented herein. Topics such as internal curing, curing at elevated temperatures, sustainability, curing of moisture-sensitive flooring, sensors for mass concrete curing, and new curing monitoring techniques have been added or enhanced in this document.

**1.2—Curing**

Curing is an action taken to maintain moisture and temperature conditions in a freshly placed cementitious mixture to allow hydraulic cement hydration and, if pozzolans are used, pozzolanic reactions to occur so that the potential properties of the mixture may develop. A mixture is properly proportioned and adequately cured when the properties of the in-place concrete equal or exceed the



*Fig. 1.3.1a. Unhydrated particles of portland cement (magnification 2700x) (Sawwa 1994)*

design properties of the concrete. The curing period begins at placing and continues until the desired concrete properties have developed. The objectives of curing are to prevent the loss of moisture from concrete and maintain a favorable concrete temperature for a sufficient period of time. Proper curing allows the cementitious material within the concrete to properly hydrate. Hydration is the chemical reaction that leads to changes that take place when portland cement reacts with water. Both at depth and near the surface, curing has a significant influence on the properties of hardened concrete, such as strength, permeability, abrasion resistance, volume stability, propensity for early-age cracking, and resistance to freezing and thawing and deicing chemicals.

The term "curing" has also been used in a more general sense to describe the process by which hydraulic cementitious concrete matures and develops hardened properties over time as a result of the continued hydration of the cementitious materials in the presence of sufficient water and heat. While all concrete hydrates to varying levels of maturity with time, the rate and extent to which this development takes place depends on the natural environment surrounding the concrete and on the measures taken to modify this environment by limiting the loss of water, heat, or both, from the concrete; externally providing moisture and heat; or incorporating special materials in the mixture design.

**1.3—Curing and hydration of portland cement**

**1.3.1 Hydration of portland cement** Portland-cement concrete is a composite material in which aggregates are bound in a porous matrix of hardened cement paste. At the microscale, the hardened paste is held together by bonds that develop between the products of the reaction of cement with water and mechanically interlocks the aggregate. Similar products are formed from the reactions between cement, other cementitious materials, and water.

The cement-water reaction includes both chemical and physical processes that are collectively known as the hydration of the cement (Taylor 1997). As the hydration process continues, the strength of the interparticle bonding increases.



Fig 1.3.1b Multiple particles of partially hydrated portland cement—magnification 4000× (Sorosis 1994)

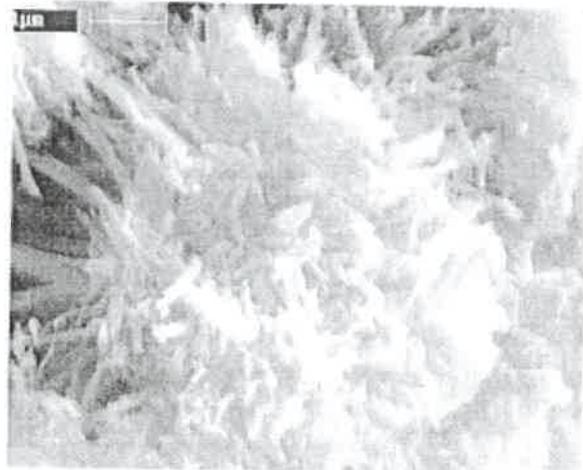


Fig 1.3.1c Close-up of single particle of hydrated cement—magnification 11,000× (Sorosis 1994)

and the interparticle porosity decreases. Figure 1.3.1a shows particles of unhydrated portland cement observed through a scanning electron microscope. In contrast, Fig. 1.3.1b shows the development of hydration products and interparticle bonding in partially hydrated cement. Figure 1.3.1c shows a single particle of partially hydrated portland cement. The surface of the particle is covered with the products of hydration in a densely packed, randomly oriented mass known as the cement gel. In hydration, water is required for the chemical formation of the gel products and for filling the micropores that develop between and within the gel products as they are being formed (Powers and Brownard 1947; Powers 1948). The rate and extent of hydration depend on the availability of water. Parrott and Killoh (1984) found that as cement paste comes to equilibrium with air at successively lower relative humidity (RH), the rate of cement hydration dropped significantly. Cement in equilibrium with air at 80 percent RH hydrated at only 10 percent the rate of companion specimens in a 100 percent RH curing environment. Snyder and Bentz (2004) observed that exposure to 90 percent or less RH is sufficient to suspend hydration at early ages. Therefore, curing procedures ensure that sufficient water is available to the cement to sustain the rate and degree of hydration necessary to achieve the desired concrete properties at the required time.

The water consumed in the formation of the gel products is known as the chemically bound water, or hydrate water, and its amount varies with cement composition and the conditions of hydration. A mass fraction of between 0.21 to 0.28 of chemically bound water is required to completely hydrate a unit mass of cement depending on its phase composition (Powers and Brownard 1947; Copeland et al. 1960; Mills 1966). An average value is approximately 0.25 (Kosmatka and Panarese 1988; Powers 1948). Coefficients for chemically bound water for the various clinker mineral phases are available in Molina (1992) and range between 0.21 for dicalcium silicate to 0.4 for tricalcium aluminate.

As seen in Fig. 1.3.1b and 1.3.1c, the gel that surrounds the hydrated cement particles is a porous, randomly

oriented mass. Besides the hydrate water, additional water is adsorbed onto the surfaces and in the interlayer spaces of the layered gel structure during the hydration process. This is known as physically bound water, or gel water. Gel water is typically present in all concrete in service, even under dry ambient conditions, as its removal at atmospheric pressure requires heating the hardened cement paste to 221°F (105°C) (Neville 1996). The amount of gel water adsorbed onto the expanding surface of the hydration products and into the gel pores is approximately equal to the amount that is chemically combined with the cement (Powers 1948). The amount of gel water has been calculated more precisely to be a mass fraction of approximately 0.20 for a unit mass of cement (Powers 1948; Powers and Brownard 1947; Cook, 1992; Taylor 1997).

Both the hydrate water and physically adsorbed gel water are distinct in the microstructure of the hardened cement paste, yet both are required concurrently as portland cement hydrates. Continued hydration of the cement is possible only when sufficient water is available both for the chemical reactions and for the filling of the gel pores being formed (Neville 1996). The amount of water consumed in the hydration of portland cement is the sum of the water incorporated physically onto the gel surfaces plus the water incorporated chemically into the hydrate products themselves (Neville 1996; Powers and Brownard 1947; Mindess and Young 1981; Taylor 1997). Because hydration can proceed only in saturated space, the total water requirement for cement hydration is approximately 0.44 g of water per gram of cement plus the curing water that needs to be added to keep the capillary pores of the paste saturated (Powers 1948). Other sources place this approximate value at 0.42 to 0.44 g of water for each gram of dry cement (Powers and Brownard 1947; Taylor 1997; Neville 1996). As long as sufficient water is available to form the hydration products, to fill the interlayer gel spaces and ensure that the reaction sites remain water-filled, the cement will continue to hydrate until all of the available pore space is filled with hydration products or

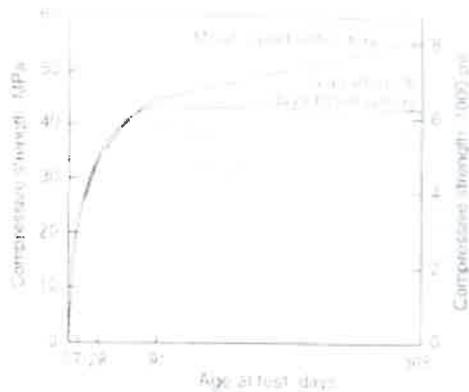


Fig. 1.3.1d. Compressive strength of 12 in. x 12 in. x 36 in. cylinders as a function of age for a variety of curing conditions (Kosmatka and Wilson 2011).

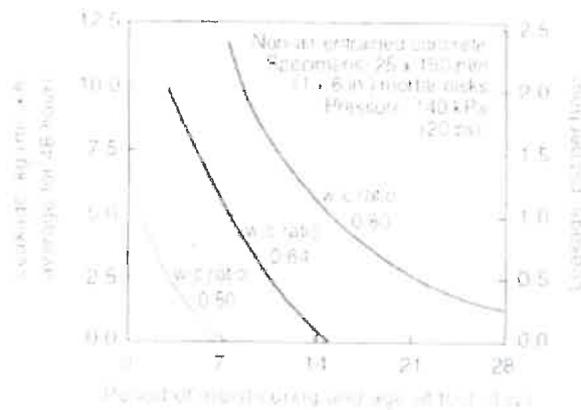


Fig. 1.3.1e. Influence of curing on water permeability of mortar specimens (Kosmatka and Wilson 2011).

until all of the cement has hydrated. When sufficient water is supplied, the former condition can be achieved for water-cementitious materials ratios ( $w/cm$ ) of approximately 0.38 and less depending on cement type, mixing, and other physical and chemical properties (Powers and Brownard 1947).

The key to the development of both strength and durability in concrete, however, is not so much the degree to which the cement has hydrated but the degree to which the pores between the cement particles have been filled with hydration products (Powers and Brownard 1947; Powers 1948). This is evident from the microperspective seen in Fig. 1.3.1b and from the macrobehavior illustrated in Fig. 1.3.1d and 1.3.1e, in which the continued pore filling that accompanies sustained moist-curing leads to a denser, stronger, less-permeable concrete. The degree to which the pores are filled, however, depends not only on the degree to which the cement has hydrated, but also on the initial volume of pores in the paste (that is the combined importance of the availability of curing water and the initial  $w/cm$ ).

The pore volume between cement particles seen in Fig. 1.3.1b (darker areas of the photograph) was originally occupied in the fresh paste by the mixing water. As the volume of

mixing water decreases relative to the volume of the cement, the initial porosity of the paste decreases as well. For this reason, pastes with lower  $w/cm$  have a lower initial porosity, requiring a reduced degree of hydration to achieve a given degree of pore filling. This is clearly demonstrated in Fig. 1.3.1e, which shows the combined effects of the duration of curing and  $w/cm$ . For the particular mortar specimens tested, a leakage rate of 0.5 lb ft<sup>2</sup> (h) (2.4 kg m<sup>2</sup> h) was achieved after 21 days of moist curing for a  $w/cm$  of 0.80. The same level of permeability and degree of pore-filling was reached after 10 days for  $w/cm = 0.64$ , and 2.5 days for  $w/cm = 0.50$ .

This interaction of mixing water and  $w/cm$  in developing the microstructure of hardened cement paste is potentially confusing. On one hand, it is important to minimize the volume of mixing water to minimize the pore space between cement particles. This is done by designing concrete mixtures with a low  $w/cm$ . On the other hand, it is necessary to provide the cement with sufficient water to sustain the filling of those pores with hydration products. While a high  $w/cm$  may provide sufficient water to promote a high degree of hydration, the net result would be a low degree of pore filling due to the high initial paste porosity. The more effective way to achieve a high degree of pore filling is to minimize initial paste porosity with a low  $w/cm$  and then to foster hydration by preventing loss of the internal mixing water, or externally applying curing water to promote the maximum possible degree of hydration. The maximum degree of hydration achievable is a function of both  $w/cm$  and the availability of water (Mills 1966).

**1.3.2 Need for curing.** Even if the amount of water initially incorporated into the concrete as mixing water will sustain sufficient hydration to develop the desired properties for a given concrete mixture, curing measures are still required to ensure that this water remains in the concrete until the desired properties are achieved. At lower initial water contents, where advantage is being taken of lower  $w/cm$  and lower initial porosity, it may be necessary to use curing measures that provide additional water to sustain hydration to the degree of pore filling required to achieve desired concrete properties. Concrete mixtures with a  $w/cm$  less than approximately 0.50 and sealed against loss of moisture cannot develop their full potential hydration due to lack of water; such mixtures would therefore benefit from externally applied curing water (Powers 1948). Powers also pointed out, however, that not all mixtures need to reach their full hydration potential to perform satisfactorily, and externally applied curing water is not always required for mixtures with  $w/cm$  less than 0.50.

A related issue in concrete with a low  $w/cm$  is that of self-desiccation, which is the internal drying of the concrete due to consumption of water by hydration (Neville 1996; Parrott et al. 1986; Patel et al. 1988; Spears 1983; Persson and Lagerlund 1997). As the cement hydrates, insufficient mixing water remains to sustain further hydration. Low- $w/cm$  mixtures sealed against water loss or water entry, can dry themselves from the inside. This problem is most commonly associated with mixtures with a  $w/cm$  of approximately 0.40 or less (Powers 1948; Mills 1966; Cather 1994; Meeks and

## 1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

## 3.0 MORTAR

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
3.1	Cement Mortar 1:1 (1 cement : 1 fine sand)	cum	10.20
3.2	Cement mortar 1:2 (1 cement : 2 fine sand)	cum	6.80
3.3	Cement mortar 1:3 (1 cement : 3 fine sand)	cum	5.10
3.4	Cement mortar 1:4 (1 cement : 4 fine sand)	cum	3.80
3.5	Cement mortar 1:5 (1 cement : 5 fine sand)	cum	3.10
3.6	Cement mortar 1:6 (1 cement : 6 fine sand)	cum	2.50
3.7	Cement mortar 1:2 (1 cement : 2 coarse sand)	cum	6.80
3.8	Cement mortar 1:3 (1 cement : 3 coarse sand)	cum	5.10
3.9	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	3.80
3.10	Cement mortar 1:5 (1 cement : 5 coarse sand)	cum	3.10
3.11	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	2.50
3.12	Cement mortar 1:2 (1 cement : 2 stone dust)	cum	6.80
3.13	Cement mortar 1:2 (1 cement : 2 marble dust)	cum	6.80
3.14	Cement mortar 1:5 (1 cement : 5 marble dust)	cum	3.10
3.15	White cement mortar 1:2 (1 white cement : 2 marble dust)	cum	6.80*
3.16	White cement mortar 1:3 (1 white cement : 3 marble dust)	cum	5.10*
3.17	White cement mortar 1:5 (1 white cement : 5 marble dust)	cum	3.10*

\* white cement

**1.0 COEFFICIENTS FOR CEMENT CONSUMPTION  
4.0 CONCRETE WORK**

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
<b>CEMENT CONCRETE (CAST - IN- SITU)</b>			
4.1	P.L cement concrete - all works upto plinth level		
4.1.2	1:1½:3 (1 Cement : 1½ coarse sand : 3 graded stone aggregate 20 mm nominal size)	cum	4.00
4.1.3	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	3.20
4.1.4	1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 40 mm nominal size)	cum	3.20
4.1.5	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	2.20
4.1.6	1:3:6 (1 Cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size)	cum	2.20
4.1.8	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	cum	1.70
4.1.10	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	cum	1.30
4.1.11	1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size)	cum	1.30
4.1.12	1:2:3½:9 (1 ordinary portland cement : 2 Fly ash : 3½ coarse sand : 9 graded stone aggregate 40 mm nominal size)	cum	1.70
4.1.13	1:2½:4:11 (1 ordinary portland cement : 2½ fly ash : 4 coarse sand : 11 graded stone aggregate 40 mm nominal size)	cum	1.30
4.2	P.L cement concrete in retaining walls, return walls etc		
4.2.2	1:1½:3 (1 cement : 1½ coarse sand : 3 graded stone aggregate 20 mm nominal size)	cum	4.00
4.2.3	1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	3.20
4.2.5	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	cum	2.20
4.2.8	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	cum	1.30
4.4	P.L cement concrete in kerbs, steps etc.		
4.4.1	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	cum	4.00

COEFFICIENTS FOR CEMENT CONSUMPTION IN 4.0 CONCRETE WORK

### 1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

#### 6.0 MASONRY WORK

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
6.1	Brick work in foundation & plinth with non modular bricks.		
6.1.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	0.95
6.1.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	0.625
6.2	Brick work in foundation & plinth with modular bricks.		
6.2.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	0.836
6.2.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	0.55
6.3	Brick work with machine moulded perforated bricks		
6.3.1	With non modular bricks.	cum	0.625
6.3.2	With modular bricks.	cum	0.55
6.4	Brick work in superstructure		
6.4.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	0.95
6.4.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	0.625
6.7	Half brick masonry in cement mortar (1:3) for closing cavity 5 to 7.5 cm wide in cavity wall.	100 metre	3.86
6.8	Brick work 7 cm in cement mortar (1:3)	100 sqm	9.23
6.9 & 6.10	Brick work in plain & gauged arches in cement mortar (1:3).	cum	1.28
<b>HALF BRICK MASONRY</b>			
6.12 & 6.13	Half brick masonry in foundations & plinth and superstructure		
6.12.1 & 6.13.1	Cement mortar 1:3 (1 cement : 3 coarse sand)	100 sqm	14.28
6.12.2 & 6.13.2	Cement mortar 1:4 (1 cement : 4 coarse sand)	100 sqm	10.64
<b>BRICK TILE WORK</b>			
6.16	Tile brick masonry in foundation and plinth.		
6.16.1	Cement mortar 1:4 (1 cement : 4 coarse sand)	cum	1.52
6.16.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1.00
6.17 & 6.18	Tile brick masonry with m/c moulded tiles in cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1.00
6.20 & 6.21	Tile brick masonry with tile bricks in plain gauged arches work in in cement mortar (1:3)	cum	1.33
6.22	Tile brick masonry work 5 cm thick in cement mortar (1:3)	100 sqm	7.65

COEFFICIENTS FOR CEMENT CONSUMPTION IN 6.0 MASONRY WORK

## 1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

## 8.0 CLADDING WORK

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
8.1	Marble work 18 mm thick for wall lining in cement mortar 1:3 including pointing with white cement mortar 1:2.	100 sqm	8.16 + 1.63*
8.2	P/F 18mm thick gang saw cut mirror polished pre moulded and prepolished machine cut for kitchen platforms, vanity counters etc. laid over 20mm thick base cement mortar 1:4.	100 sqm	9.12
8.4	Extra for fixing marble/granite stone over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive including cleaning etc. complete.	100 metre	1.27
8.7	P/F cramps in RCC/CC backing with cement mortar 1:2		
8.7.1	Gunmetal cramps	kg	0.0635
8.7.2	Stainless steel cramps	kg	0.0701
8.9	Stone tile work for wall lining over 12mm thick bed of cement mortar (1:3) and cement slurry @ 3.3 kg/sqm including pointing in white cement complete.	100 sqm	10.44 + 1.90*
8.11	P/F machine cut mirror/edge polished	100 sqm	8.16 + 3.30*
8.14	Stone work (machine cut edges) for wall lining etc. (vener work) in cement mortar (1:3) including pointing in white cement mortar (1:2).	100 sqm	9.18 + 1.56*
8.15	P/F stainless steel cramps in stone wall lining in cement mortar (1:2).	kg	0.07
8.16	P/F copper pins 7.5 cm long 6 mm diameter in stone wall lining in cement mortar (1:2).	each	0.007
8.17	Wall lining butch work with Dholpur stone 40 mm thick in cement mortar (1:3) including ruled pointing in cement mortar (1:2).	100 sqm	15.50 + 1.70*
8.18	Stone work (machine cut edges) for wall lining with grout of 12 mm thick in cement mortar (1:3) and jointed with Cement mortar (1:2).	100 sqm	13.744
8.21	P/F structural steel frame (for dry stone cladding) embedded in brick wall with cement concrete block (1:2:4)	100kg	1.05
8.23	P/F 50x50x50 mm 2nd class teak wood plugs in cement mortar 1:3	100 nos.	0.01
8.25	P/F 2nd class teak wood plain lining with wooden plugs	100 sqm	0.055
8.31	P/F 1st quality ceramic glazed wall tiles over 12 mm thick bed of cement Mortar (1:3) with grey cement slurry @ 3.3 kg/ sqm	sqm	0.1044

\* White cement

COEFFICIENTS FOR CEMENT CONSUMPTION S.H. : 8.0 CLADDING WORK

### 1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

#### 11.0 FLOORING

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
11.1	Brick on edge flooring		
11.1.1	1:4 (1 cement : 4 coarse sand)	sqm	0.1850
11.1.2	1:6 (1 cement : 6 coarse sand)	sqm	0.1285
11.3	Cement concrete flooring 1:2:4		
11.3.1	40mm thick with 20mm nominal size stone aggregate	sqm	0.17
11.4	52 mm thick cement concrete flooring	sqm	0.231
11.5	62 mm thick cement concrete flooring	sqm	0.263
11.6	Cement plaster skirting with cement mortar (1:3)	sqm	0.14
11.7	Cement concrete pavement with C.C. (1:2:4)	cum	3.20
<b>TERRAZO FLOORING</b>			
11.9	40 mm thick marble chips flooring with under layer 34 mm thick cement concrete (1:2:4)		
11.9.1	Dark shade pigment with ordinary cement	sqm	0.1695
11.9.2	Light shade pigment with white cement	sqm	0.129+0.0405*
11.9.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	0.1492+0.0202*
11.9.4	White cement without any pigment	sqm	0.129+0.0202*
11.9.5	Light shade pigment with ordinary cement	sqm	0.1695
11.9.6	Ordinary cement without any pigment	sqm	0.1695
11.10	40 mm thick marble chips flooring with under layer 31mm thick cement concrete 1:2:4		
11.10.1	Dark shade pigment with Ordinary cement	sqm	0.1783
11.10.2	Light shade pigment with white cement	sqm	0.1205+0.0578*
11.10.3	Medium shade pigment with 50% white cement and 50% ordinary cement	sqm	0.1494+0.0289*
11.10.4	White cement without any pigment	sqm	0.1205+0.0578*
11.10.5	Light shade pigment with ordinary cement	sqm	0.1783
11.10.6	Ordinary cement without any pigment	sqm	0.1783
11.11	40 mm thick marble chips flooring with under layer 28 mm thick cement concrete 1:2:4		
11.11.1	Dark shade pigment with ordinary cement	sqm	0.1907
11.11.2	Light shade pigment with white cement	sqm	0.1097+0.081*

COEFFICIENTS FOR CEMENT CONSUMPTION S.I. - 11.0 FLOORING

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
11.19	Chequered terrazo tiles 22 mm thick in floors on 20 mm thick bed of cement mortar (1:4).		
11.19.1	Light shade using white cement	sqm	0.0895+0.044*
11.19.2	Medium shade using 50% white cement, 50% ordinary cement	sqm	0.0917+0.021*
11.19.3	Dark shade using ordinary cement	sqm	0.0939
11.19.4	Ordinary cement without any pigment	sqm	0.0939
11.20	Chequered precast cement concrete tiles 22 mm thick in foot path on 20 mm thick bed of cement mortar (1:4).		
11.20.1	Light shade using white cement	sqm	0.1291+0.066*
11.20.2	Medium shade using 50% white cement 50% Grey cement	sqm	0.1621+0.033*
11.20.3	Dark shade using ordinary cement	sqm	0.1951
11.20.4	Ordinary cement without any pigment	sqm	0.1951
11.21	Providing and fixing 10mm thick acid and/or alkali resistant tiles.		
11.21.1	In flooring on a bed of 10 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)		
11.21.1.1	Acid and alkali resistant tile	sqm	0.0786**
11.21.2	In dado skirting on 12 mm thick mortar 1:4 (1 acid proof cement : 4 coarse sand)		
11.21.2.1	Acid and alkali resistant tile	sqm	0.0862**
11.22	Tile work in skirting, risers of steps etc. with 8 mm thick marble tile	sqm	0.1044
<b>STONE FLOORING</b>			
11.23	Marble stone flooring with 18 mm thick marble stone over 20 mm thick cement mortar (1:4).	sqm	0.13512
<b>KOTA STONE FLOORING</b>			
11.26	Kota stone slab flooring over 20 mm thick bed of cement mortar (1:4).	sqm	0.1491
11.27	Kota stone slabs 20 mm thick in risers of steps, skirting etc. laid on 12 mm (average) thick cement mortar 1:3.	sqm	0.1374
<b>SAND STONE FLOORING</b>			
11.28	40 mm thick fine dressed stone flooring over 20 mm (average) thick base of cement mortar 1:5 with joints finished flush.	sqm	0.0776
11.29	40 mm thick fine dressed stone flooring over 20 mm (average) thick base of cement mortar 1:5 including pointing with cement mortar 1:2.	sqm	0.0931

COEFFICIENTS FOR CEMENT CONSUMPTION S/L - II/F FLOORING

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
11.30	40 mm thick rubbed stone flooring over 20 mm (average) thick base of cement mortar 1:5 with joints 3mm thick, side buttered with cement mortar 1:2.	sqm	0.0931
<b>CERAMIC GLAZED TILES</b>			
11.37	P/L ceramic glazed floor tiles laid on 20 mm thick Cement Mortar (1:4) with grey cement slurry @ 3.3 kg/sqm	sqm	0.1242
11.38	P/L ceramic glazed floor tiles laid on 20mm thick bed of Cement Mortar (1:4) with grey cement slurry @ 3.3 kg/sqm	sqm	0.1242
11.39 & 11.40	P/L rectified Glazed Ceramic floor tiles laid on 20mm thick cement mortar (1:4)	sqm	0.1242
<b>VITRIFIED FLOOR TILES</b>			
11.41	P/L vitrified floor tile laid on 20mm thick cement mortar (1:4).	sqm	0.1242
11.44	Crazy ceramic tile flooring	sqm	0.1046
11.46	P/L vitrified tile in skirting in cement mortar (1:3).	sqm	0.088
11.51	P/L Machine cut, Mirror polished, Italian Marble stone flooring	Sqm.	0.085 + 0.05*
11.52	P/L Machine cut Mirror polished Marble stone flooring	Sqm.	0.085 + 0.05*
11.55	P/L flamed finish granite stone flooring	100 sqm	13.50
11.56	P/L polished granite stone .....	100 sqm	13.50

\* White cement

\*\* Acid alkali resistant cement

## 1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

## 12.0 ROOFING

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
12.16	10 cm thick mud phaska with flat tile bricks grouted with cement mortar (1:3).	100 sqm	3.11
12.17	10cm thick mud phaska with machine moulded tile bricks grouted with cement mortar (1:3)	100 sqm	3.11
12.19	Providing and laying brick tiles over mummy roofs grouted with cement mortar (1:3)	100 sqm	9.13
12.20	Providing and laying pressed clay tiles on roofs jointed with cement mortar (1:4)	100 sqm	9.92
12.21	Providing gola 75x75 mm in cement concrete (1:2:4)	metre	0.031
12.22	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete (1:2:4)	each	0.06
12.23	Providing sand stone slab for roofing and laying cement mortar (1:4)	100 sqm	0.74
12.38	Providing and fixing M.S. holder bat clamps in cement concrete blocks 10x10x10cm of 1:2:4 mix	each	0.005
12.55	P.F heat resistant tile on roof with cement mortar (1:4) and filling joints with white cement marble mix	sqm	0.1367

## 1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

## 13.0 FINISHING

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
<b>CEMENT PLASTER (IN FINE SAND)</b>			
13.1	12 mm cement plaster:		
13.1.1	1:4 (1 cement : 4 fine sand)	100 sqm	5.47
13.1.2	1:6 (1 cement : 6 fine sand)	100 sqm	3.60
13.2	15 mm cement plaster:		
13.2.1	1:4 (1 cement : 4 fine sand)	100 sqm	6.54
13.2.2	1:6 (1 cement : 6 fine sand)	100 sqm	4.30
13.3	20 mm cement plaster:		
13.3.1	1:4 (1 cement : 4 fine sand)	100 sqm	8.51
13.3.2	1:6 (1 cement : 6 fine sand)	100 sqm	5.60
<b>CEMENT PLASTER (IN COARSE SAND)</b>			
13.4	12 mm cement plaster:		
13.4.1	1:4 (1 cement : 4 coarse sand)	100 sqm	5.47
13.4.2	1:6 (1 cement : 6 coarse sand)	100 sqm	3.60
13.5	15 mm cement plaster:		
13.5.1	1:4 (1 cement : 4 coarse sand)	100 sqm	6.54
13.5.2	1:6 (1 cement : 6 coarse sand)	100 sqm	4.30
13.6	20 mm cement plaster:		
13.6.1	1:4 (1 cement : 4 coarse sand)	100 sqm	8.51
13.6.2	1:6 (1 cement : 6 coarse sand)	100 sqm	5.60
<b>CEMENT PLASTER WITH A FLOATING COAT OF NEAT CEMENT</b>			
13.7	12 mm cement plaster finished with a floating coat of neat cement:		
13.7.1	1:3 (1 cement : 3 fine sand)	100 sqm	9.54
13.7.2	1:4 (1 cement : 4 fine sand)	100 sqm	7.67
13.8	15 mm cement plaster finished with a floating coat of neat cement:		
13.8.1	1:3 (1 cement : 3 fine sand)	100 sqm	10.97
13.8.2	1:4 (1 cement : 4 fine sand)	100 sqm	8.74

COEFFICIENTS FOR CEMENT CONSUMPTION IN 13.0 FINISHING

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
13.9	Cement plaster (1:3) finished with a floating coat of neat cement.		
13.9.1	12 mm Cement Plaster	100 sqm	9.54
13.9.2	20 mm Cement Plaster	100 sqm	13.62
13.10	15 mm cement plaster (1:3) finished with a floating coat of neat cement.	100 sqm	10.97
<b>CEMENT PLASTER IN TWO COATS</b>			
13.11	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 finished with a top layer 6mm thick cement plaster 1:6	100 sqm	6.26
13.12	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 and a top layer 6mm thick cement plaster (1:3).	100 sqm	8.13
13.13	12 mm cement plaster 1:2 (1 cement : 2 stone dust)	100 sqm	9.79
13.14	15 mm cement plaster 1:2 (1 cement : 2 stone dust)	100 sqm	11.70
13.15	20 mm cement plaster 1:2 (1 cement : 2 stone dust)	100 sqm	15.23
<b>6 MM CEMENT PLASTER</b>			
13.16	6 mm cement plaster of mix		
13.16.1	1:3 (1 cement : 3 fine sand)	100 sqm	3.67
13.17	6 mm cement plaster (1:3) finished with a floating coat of neat cement.	100 sqm	5.87
13.18	Neat cement punning	100 sqm	2.20
<b>ROUGH CAST PLASTER</b>			
13.19	Rough cast plaster in two layers, under layer 12 mm cement plaster (1:4) and top layer 10mm cement plaster (1:3)	100 sqm	11.59
<b>PEBBLE DASH PLASTER</b>			
13.20	Pebble dash plaster in two layers, under layer 12mm cement plaster 1:4 and top layer 10mm cement plaster with cement mortar (1:3)	100 sqm	11.59
<b>PLAIN CEMENT MORTAR BANDS</b>			
13.28	12 mm thick plain cement mortar bands in cement mortar (1:4) : (Flush / Sunk / Raised / Moulded Band)	100 metre 1cm wide	0.053
13.29	18 mm thick plain cement mortar band in cement mortar (1:4)	100 metre 1cm wide	0.076

COEFFICIENTS FOR CEMENT CONSUMPTION S/R - FOR FINISHING

## 1.0 COEFFICIENTS FOR CEMENT CONSUMPTION

## 22.0 WATER PROOFING

Code No.	Description	Unit	Quantity of cement per unit quantity of work (Quintals)
22.1	P.L integral cement based treatment for water proofing on horizontal surface :		
	22.1.1 Using rough kota stone	sqm	0.342
22.2	P.L integral cement based treatment for water proofing on the vertical surface :		
	22.2.1 Using rough Kofa stone	sqm	0.443
22.3	P.L water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of:		
	i) 1st course of applying cement slurry @ 4.4 kg/sqm		
	ii) IInd course of 20mm cement plaster (1:3)		
	iii) IIIrd course of applying blown or residual bitumen applied hot at 1.7 Kg per sqm of area		
	iv) IVth course of 400 micron thick PVC sheet	sqm	0.158
22.5	P.L water proofing treatment in sunken portion of WCs, bathroom etc.	sqm	0.0123
22.6	P.L water proofing treatment on roofs.	sqm	0.0195
22.7	P.L integral cement based water proofing treatment on roofs, balconies, terraces etc. :		
	22.7.1 With average thickness of 120mm and minimum thickness at khurra as 65 mm	sqm	0.387
22.14	Grading roof for water proofing treatment with		
	22.14.1 Cement concrete 1:2:4	cum	3.20
	22.14.2 Cement mortar 1:3	cum	5.10
	22.14.3 Cement mortar 1:4	cum	3.80

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
2203	Carriage of fine sand	cum	0.15	103.77	15.57
	Laying charges (Based on actual observation)				
	LABOUR				
0123	Mason (brick layer) 1st class	day	0.50	738.00	369.00
0124	Mason (brick layer) 2nd class	day	0.50	679.00	339.50
0114	Beldar	day	1.00	558.00	558.00
0115	Coolie	day	0.50	558.00	279.00
	TOTAL				6422.95 W
	Add 1 % Water charges on "W"				64.23
	TOTAL				6487.18 X
	Add GST on "X" (multiplying factor 0.1405)				911.45
	TOTAL				7398.63 Y
	Add 15% CPOH on "Y"				1109.79
	TOTAL				8508.42 Z
	Add Cess @ 1% on "Z"				85.08
	Cost for 10.00 sqm				8593.51
	Cost for 1.00 sqm				859.35
	Say				859.35

- 16.69 Providing and laying at or near ground level factory made kerb stone of M-25 grade cement concrete in position to the required line, level and curvature, jointed with cement mortar 1:3 (1 cement: 3 coarse sand), including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm), including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
8686	Details of cost 100 metre i.e. $100 \times 0.375 \times 0.20 = 7.50$ cum. No. of kerb stones = $100 / 0.405 = 247$ Nos Precast C.C. Kerb stone M - 25 = $247 \times 0.40 \times 0.375 \times 0.20 = 7.41$ cum MATERIAL	cum	7.41	5500.00	40755.00
3.8	Precast C.C. Kerb stone M - 25 Mortar 1:3 for fixing joints = $246 \times 1 \times [(0.115 + 0.20) / 2] \times 0.375 \times 0.005$ = 0.073 cum. Cement mortar 1:3 (1 cement : 3 coarse sand)	cum	0.073	4664.55	340.51
0123	Rate as per Item Number 3.8 of SH: Mortars				
	Labour for fixing of kerb stones				
0123	Mason (brick layer) 1st class	day	2.50	738.00	1845.00
0124	Mason (brick layer) 2nd class	day	2.50	679.00	1697.50
0114	Beldar	day	2.50	558.00	1395.00

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
0115	Coolie	day	1.65	558.00	920.70
	TOTAL				46953.71 W
	Add 1 % Water charges on "W"				469.54
	TOTAL				47423.25 X
	Add GST on "X" (multiplying factor 0.1405)				6662.97
	TOTAL				54086.22 Y
	Add 15% CPOH on "Y"				8112.93
	TOTAL				62199.15 Z
	Add Cess @ 1% on "Z"				621.99
	Cost of 7.50 cum				62821.14
	cost for 1 cum.				8376.15
	Say				8376.15

**16.70 Providing and fixing G.I. chain link fabric fencing of required width in mesh size 50x50 mm including strengthening with 2 mm dia wire or nuts, bolts and washers as required complete as per the direction of Engineer-In-charge.**

**16.70.1 Made of G.I. wire of dia 4 mm**

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 10 sqm.				
	MATERIAL				
	G.I. chain link 50x50 mm mesh = 10.00 sqm.				
	Wastage @ 5% = 0.50 sqm.				
	Total = 10.50 sqm.				
8695	Chain link fabric fencing mesh of size 50x50 mm made of G.I. wire of dia 4 mm	sqm	10.50	280.00	2940.00
9977	Carriage	L.S.	156.00	2.00	312.00
	LABOUR				
0103	Blacksmith 2nd class	day	2.14	679.00	1453.06
0114	Beldar	day	1.62	558.00	903.96
9999	Sundries including G.I. wire, nuts and bolts and washers.	L.S.	174.75	2.00	349.50
	TOTAL				5958.52 W
	Add 1 % Water charges on "W"				59.59
	TOTAL				6018.11 X
	Add GST on "X" (multiplying factor 0.1405)				845.54
	TOTAL				6863.65 Y
	Add 15% CPOH on "Y"				1029.55
	TOTAL				7893.20 Z
	Add Cess @ 1% on "Z"				78.93
	Cost for 10 sqm.				7972.13
	Cost for 1 sqm.				797.21
	Say				797.20

**Calculation of quantity of Manpower/Labour for execution of different construction activities.**

(As per Annexure-2 of letter no. - 833/NGT-88/OA No.-549/19/2021 Dated 19.08.2021 of R.O. U.P. C.B., Ghazipur)

Ref. Regional Office, U.P. Pollution Control Board, Ghazipur Letter no. - 833/NGT-88/OA No.-549/19/2021 Dated 19.08.2021

Sl. No.	Item/Description	Unit	Qb	Norms for Required Labour days as per DAR/Per Unit								Required Labour days						Total Labour Days	Remark/Reference
				Mason	Behtar	Bhisti	Coolie	Mate	Mason	Behtar	Bhisti	Coolie	Mate						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
1	Plain Cement Concrete (1:4:8)	Cum	15976.75	0.100	1.630	0.700	-	-	1598.00	26047.00	11164.00	0.00	0.00	38824.00	DAR-4.1.8				
2	Plain Cement Concrete (1:5:10)	Cum	5857.71	0.100	1.630	0.700	-	-	586.00	9548.00	4100.00	0.00	0.00	14234.00	DAR-4.1.10				
3	M 20 grade of concrete	Cum	1903.85	0.170	2.000	0.900	-	-	374.00	3808.00	1713.00	0.00	0.00	5845.00	DAR-5.1.2				
4	M 25 grade of concrete	Cum	244976.69	0.170	2.000	0.900	-	-	41640.00	489953.00	270679.00	0.00	0.00	752078.00	DAR-5.1.2				
5	Brick work (1:6) in super structure	Cum	48419.56	0.470	-	0.200	1.800	-	22757.00	0.00	9684.00	87155.21	0.00	119596.21	DAR-6.4.2				
6	Brick work (1:6) in foundation & Plinth	Cum	13504.91	0.330	-	0.180	1.000	-	4457.00	0.00	2431.00	13304.91	0.00	20192.91	DAR-6.2.2				
7	Brick work (1:4) in super structure	Cum	234.74	0.470	-	0.200	1.800	-	110.00	0.00	47.00	422.53	0.00	579.53	DAR-6.4.1				
8	Half Brick work (1:4) in foundation & Super structure	Sqm	408969.32	0.045	-	0.070	0.155	-	18044.00	0.00	28068.00	62150.24	0.00	108262.24	DAR-6.12.2				
9	Plaster 12 mm thick (1:6)	Sqm	911322.83	0.067	-	0.092	0.075	-	62399.00	0.00	85682.00	69849.21	0.00	217930.21	DAR-13.1.2				
10	Plaster 6 mm thick (1:4)	Sqm	261862.51	0.051	-	0.092	0.075	-	13355.00	0.00	24091.00	19839.69	0.00	57085.69	DAR-13.1.6.1				
11	Plaster 6 mm thick (1:3)	Sqm	101748.53	0.051	-	0.092	0.075	-	5189.00	0.00	9361.00	7631.14	0.00	22181.14	DAR-13.1.6.1				
12	Plaster with floating coat (1:4)	Sqm	67854.85	0.067	-	0.092	0.075	-	4540.00	0.00	6243.00	5089.11	0.00	15878.11	DAR-13.7.2				
13	Marble/Granite stone flooring (1:4)	Sqm	65536.84	0.120	0.600	0.100	0.100	-	7862.00	39310.00	6552.00	6551.68	0.00	60275.68	DAR-11.2.3				
14	Kota Stone flooring (1:4)	Sqm	109107.97	0.120	0.600	-	0.100	-	13093.00	65465.00	0.00	10910.80	0.00	89468.80	DAR-11.2.6				
15	Ceramic Tiles (1:4)	Sqm	295944.71	0.200	-	-	0.200	-	59189.00	0.00	0.00	59188.94	0.00	118377.94	DAR-11.3.7				
16	Vitrified tiles (1:4)	Sqm	449301.50	0.200	-	-	0.200	-	89878.00	0.00	0.00	89878.30	0.00	179756.30	DAR-11.4.1				
17	Vitrified tiles in skirting	Sqm	48905.03	0.250	-	-	0.250	-	12226.00	0.00	0.00	12226.26	0.00	24452.26	DAR-11.4.6.1				
18	Brick coba on roof	Sqm	50829.65	0.081	-	0.027	0.108	-	4117.00	0.00	1372.00	5489.60	0.00	10978.60	DAR-12.19.1				
19	Water proofing in sunken portion	Sqm	67037.16	0.200	0.200	0.025	-	-	13407.00	13407.00	1676.00	0.00	0.00	28490.00	DAR-22.5				
20	Water proofing cement based	Sqm	110115.00	0.005	0.175	0.028	-	0.004	551.00	19270.00	3683.00	0.00	440.46	23344.46	DAR-22.7.1				
21	40 mm thick B'S Flooring (1:2:4)	Sqm	27150.91	0.080	0.140	0.104	-	-	2172.60	3801.00	2824.00	0.00	0.00	8797.00	DAR-11.3.1				
22	Gela (75x75)	RM	61432.08	0.0005	0.0085	0.0025	0.0056	0.00037	31.00	522.00	154.00	344.02	22.73	1073.75	DAR-12.2.1				
23	Khaurin (45x45)	Nos	4621.31	0.0005	0.0090	0.0037	0.0060	0.0004	2.00	47.00	12.00	27.73	1.85	85.58	DAR-12.2.2				
24	Plaster 15 mm (1:4)	Sqm	315054.80	0.08	-	0.099	0.088	-	25204.00	0.00	31990.00	27724.82	0.00	84118.82	DAR-13.7.1				
25	Plaster 15 mm (1:6)	Sqm	139632.13	0.08	-	0.099	0.088	-	11171.00	0.00	13824.00	12287.63	0.00	37282.63	DAR-13.2.2				

**Calculation of quantity of Manpower/ Labour for execution of different construction activities.**

(As per Annexure 2 of letter no.- 833 NCI-88 OA No.-510/19/2021 Dated 19.08.2021 of R.O. C.P.R. Ghazisbad)

Regional Office, C.P. Fertilizer Control Board, Ghazisbad Letter no. 833 NCI/88 OA No. 549/19/2021 Dated 19.08.2021

Sl No	Item Description	Unit	Qn	Norms for Required Labour days as per DAR Part Unit						Required Labour days						Total Labour Days	Remark Reference
				Mason	Beltdar	Bhusti	Coolie	Misc	Mason	Beltdar	Bhusti	Coolie	Misc				
1		3	4	5	6	7	8	9	10	11	12	13	14	15	16		
26	M 30 grade of concrete	Cum	5746.24	0.17	2.00	0.90	-	-	657.00	7492.00	3572.00	0.00	0.00	11501.00	DAR-5/17		
27	M 15 grade of concrete	Cum	4289.77	0.17	2.00	0.90	-	-	724.00	8520.00	3834.90	0.00	0.00	13078.00	DAR-5/17		
28	M 40 grade of concrete	Cum	5448.51	0.17	2.00	0.90	-	-	926.00	10897.00	4903.00	0.00	0.00	16727.00	DAR-5/17		
29	AAC Blocks (50.250) (wall)	Cum	15681.87	0.72	-	-	1.37	-	11291.00	0.00	0.00	21484.16	0.00	32775.16	DAR-6/17		
30	AAC Blocks (100 mm)	Sqm	57050.10	0.072	-	0.02	0.137	-	4106.00	0.00	1141.00	7813.12	0.00	13060.12	DAR-6/17		
31	Plaster 18 mm thick (1:5 of C/S) in two coats	Sqm	111622.13	0.121	-	0.105	0.129	-	13506.00	0.00	11720.00	14399.25	0.00	39625.25	DAR-13/17		
32	Stone Chalking	Sqm	5012.57	0.10	0.11	-	-	-	501.00	551.00	0.00	0.00	0.00	1052.00	DAR-8/22		
33	kerb Stone 1.2m x 0.25m	RM	146.28	0.0250	0.0250	-	0.0385	-	4.00	4.00	0.00	2.41	0.00	10.41	DAR-16/68		
34	Concrete paver blocks	Sqm	4555.58	0.0500	0.1000	-	0.0500	-	227.00	454.00	0.00	226.77	0.00	907.77	DAR-16/68		
<b>Total</b>									<b>445836.00</b>	<b>699066.00</b>	<b>488741.00</b>	<b>533997.55</b>	<b>465.04</b>	<b>2168125.59</b>			

**Total Man Power Say 2168126.00 (Twenty One Lacs Sixty Eight One Hundred Twenty Six Numbers)**

  
 Junior Engineer  
 C.D.-2, P.W.D.,  
 Ghazisbad

  
 Assistant Engineer  
 C.D.-2, P.W.D.,  
 Ghazisbad

C/S  
  
 Executive Engineer  
 Construction Div.-2  
 P.W.D., Ghazisbad

# REPORT ON

## "ASSESSMENT OF ENVIRONMENTAL COMPENSATION IN CASE OF ILLEGAL EXTRACTION OF GROUND WATER"

(SUBMITTED IN COMPLIANCE TO HON'BLE NGT ORDER DATED 7/5/2019 IN  
ORIGINAL APPLICATION NO. 327/2018 IN THE MATTER OF SHAILESH SINGH Vs  
CENTRAL GROUND WATER BOARD & ORS)



**CENTRAL POLLUTION CONTROL BOARD**  
(Ministry of Environment, Forest & Climate Change)  
Parivesh Bhawan East Arjun Nagar,  
Delhi-110032

**26 June, 2019**

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3.	ANNEXURE-II : CASE STUDIES SHOWING ESTIMATION OF ENVIRONMENTAL COMPENSATION FOR ILLEGAL EXTRACTION OF GROUND WATER.	

  
(A. SUDHAKAR)

SCIENTIST 'E'  
CENTRAL POLLUTION CONTROL BOARD  
PARIVESH BHAWAN, EAST ARJUN NAGAR  
DELHI - 110032

PLACE: DELHI  
DATED :- 01.07.2019

**“ASSESSMENT OF ENVIRONMENTAL COMPENSATION IN CASE  
OF ILLEGAL EXTRACTION OF GROUND WATER”**

**1. Background**

The Hon'ble National Green Tribunal (NGT), Principal Bench, New Delhi passed order on 3/1/2019 in Original Application No. 327/2018 in the matter of Shailesh Singh v/s Central Ground Water Board & Ors directed Central Pollution Control Board (CPCB) in para 32 that:

*“CPCB may constitute a mechanism to deal with individual cases of violation of norms, as existed prior to Notification of 12/12/2018, to determine the environment compensation to be recovered or other coercive measures to be taken, including prosecution, for past illegal extraction of ground water, as per law.”*

In compliance to the Hon'ble NGT order dated 3/1/2019, CPCB submitted report on Environmental Compensation (EC) for illegal extraction of ground water to the Hon'ble NGT on 30/4/2019. Hon'ble National Green Tribunal reviewed the report and directed CPCB vide order dated 7/5/2019 in para 10 & 11 which are reproduced as follows:

***Para 10: CPCB has, vide e-mail dated 30.04.2019, forwarded a report which deals with assessment of environmental compensation for illegal extraction of ground water. We do not find the report of the CPCB to be complete for the following reasons:***

- (i) The OCS areas which need regulation for conservation of ground water cannot be further treated separately as notified or non-notified. Conservation of ground water in the said areas is of equal necessity. Depletion of ground water in the said area affects the sub-terranean flow and results in contamination of ground water and also poses a potential danger for drying up of important natural resource in violation of established principle of “Intergenerational Equity”.***

- (ii) *The compensation to be recovered for illegal extraction has to be deterrent specially when it is for commercial or industrial purpose and linked to the quantum of ground water extracted and the period for which such extraction takes place.*
- (iii) *Scenario analysis with robust scientific logic is required for all the classes considered in comparable terms which have not been done in the present report.*

**Para 11:** *Let the CPCB furnish a fresh report on or before 30.06.2019 by email at [ngt.filing@gmail.com](mailto:ngt.filing@gmail.com).*

A copy of Hon'ble NGT order dated 7/5/2019 is enclosed as Annexure I .

## **2. Follow up action by CPCB**

In compliance to Hon'ble NGT order dated 3/1/2019, CPCB constituted a committee under the Chairmanship of Shri A. Sudhakar, DH, WQM-I Division with Shri P. K. Gupta, DH, IPC-VI Division, Shri Vishal Gandhi, Sc D, UPC-I Division and Smt. Suniti Parashar, Scientist B, WQM-I Division as members.

The Committee has deliberated on the issues and submitted its report to the Hon'ble NGT on 30/4/2019. Further, in compliance of NGT order dated 7/5/2019, same committee reviewed the report as directed by Hon'ble NGT. The compliance status of Hon'ble NGT direction and suggestions, highlights of the revised report are summarized below:

S.No.	Directions/Suggestions of Hon'ble NGT	Compliance Status/Highlights
1	Intergenerational Equity	<ul style="list-style-type: none"> <li>▪ It is considered that incidence of illegal extraction of ground water, regardless of the category of area (notified or non-notified) will attract the environment compensation.</li> <li>▪ EC is purely based on illegal extraction of ground water in OCS (Over-exploited, Critical and Semi-critical) and safe areas.</li> <li>▪ The rate of environment compensation will</li> </ul>

		increase as the criticality of ground water availability in the area increases or amount of ground water extraction increases.
2	Deterrent in terms of commercial/industrial purpose	<ul style="list-style-type: none"> <li>▪ Considering the water as a basic need of human, environmental compensation charges in case of domestic/household uses are kept low and higher rates of environmental compensation are prescribed for institutional, commercial, infrastructural and industrial purposes by the extraction of ground water.</li> <li>▪ Environmental Compensation Rates (EC<sub>GW</sub>) for illegal extraction of ground water also increase with increase in water consumption as well as water scarcity in the area.</li> <li>▪ For drinking/domestic purposes, minimum EC suggested as Rs 10,000/- (for households) and Rs 50,000 (institutional activity, commercial complexes, townships etc).</li> <li>▪ For industrial activity minimum EC is suggested as Rs 1,00,000/-</li> <li>▪ Estimation made for illegal extraction in industrial cases shows deterrent EC for OCS areas in scenario analysis</li> </ul>
3	Scenario Analysis	Case Studies in terms of scenario analysis for different classes have been done and incorporated in the report ( <i>Annexure-II</i> ).

### 3. Methodology for Assessing Environmental Compensation (EC)

The committee discussed the issue on 13/5/2019 and 7/6/2019. The committee deliberated in detail on the issue of Environmental Compensation to be recovered

from individuals/industries such as domestic, packaging units, mining & infrastructure projects and industrial units in case of illegal extraction of ground water. The Guidelines/Criteria for evaluation of proposals/requests for Ground Water Abstraction, 2015 were also discussed and based on this mechanism to levy Environmental Compensation has been evolved.

#### **4. Ideology of Environmental Compensation w.r.t illegal extraction of ground water**

Ground water is becoming an increasingly scarce resource because of its unabated and indiscriminate over-exploitation. Growth in ground water exploitation, however, has led to a steep fall in water table in several parts of the country. The falling water table is a matter of special concern since it tends to reduce the accessibility of the resource to small and marginal farmers due to increase in costs of extraction.

#### **5. Formula for Environmental Compensation for illegal extraction of ground water**

The committee recommended that the formula considering water consumption, no of days, rates for imposing Environmental Compensation based on the purpose for illegal abstraction of ground water as well as the deterrent factor detailed below:-

$$EC_{GW} = \text{Water consumption per day} \times \text{Environmental Compensation rate for illegal extraction of ground water (ECR}_{GW}) \times \text{No. of Days} \times \text{Deterrent Factor}$$

Where, water consumption is in  $m^3/\text{day}$  and  $ECR_{GW}$  in  $Rs/m^3$

#### **6. Environmental Compensation Rate ( $ECR_{GW}$ )**

- (i) The committee decided that the Environmental Compensation Rate ( $ECR_{GW}$ ) for illegal extraction of ground water should increase with increase in water consumption as well as water scarcity in the area. Further,  $ECR_{GW}$  are kept relaxed for drinking and domestic use as compared to other uses, considering the basic need of human being.

(ii) Categorisation of the area shall be (safe, semi-critical, critical and over-exploited) based on the ground water resources estimation in the year 2009, 2011 and 2013 or the latest estimation carried out by CGWB.

(iii) Environmental Compensation Rate ( $EC_{GW}$ ) for illegal use of ground water for various purposes such as drinking/domestic use, industrial activities such as water packaging units, mining and industrial sectors as finalized by the committee are given in tables below:

#### 6.1 $EC_{GW}$ for Drinking & Domestic use (For household purposes)

The rate of Environmental Compensation for domestic and drinking purpose for individual household shall be charged at the rate Rs 100/- per day for OCS categories (Over-exploited, Critical and Semi-Critical Category). Similarly, for safe category, the EC rate shall be charged as Rs 50/- per day. Minimum environmental compensation for household shall be Rs 10,000/-

#### 6.2 $EC_{GW}$ for Drinking & Domestic use (For institutional activity, commercial complexes, townships etc)

S.No.	Area Category	Water Consumption ( $m^3/day$ )			
		<2	2 to <5	5 to <25	25 & above
		Environmental Compensation Rate ( $EC_{GW}$ ) in Rs./ $m^3$			
1	Safe	4	6	8	10
2	Semi Critical	12	14	16	20
3	Critical	22	24	26	30
4	Over-Exploited	32	34	36	40

**Note: -Minimum  $EC_{GW}$  shall not be less than Rs. 50,000/- (for institutional activity, commercial complexes, townships etc)**

## 6.2 ECR<sub>GW</sub> for Packaged Drinking Water Units

S.No.	Area Category	Water Consumption (m <sup>3</sup> /day)			
		<200	200 to <1000	1000 to <5000	5000 & above
		Environmental Compensation Rate (ECR <sub>GW</sub> ) in Rs./m <sup>3</sup>			
1	Safe	12	18	24	30
2	Semi critical	24	36	48	60
3	Critical	36	48	66	90
4	Over-exploited	48	72	96	120

*Note :-Minimum ECR<sub>GW</sub> shall not be less than Rs 1,00,000/-*

## 6.3 ECR<sub>GW</sub> for Mining, Infrastructure and Dewatering Projects

S.No.	Area Category	Water Consumption (m <sup>3</sup> /day)			
		<200	200 to <1000	1000 to <5000	5000 & above
		Environmental Compensation Rate (ECR <sub>GW</sub> ) in Rs./m <sup>3</sup>			
1	Safe	15	21	30	40
2	Semi critical	30	45	60	75
3	Critical	45	60	85	115
4	Over-exploited	60	90	120	150

*Note :-Minimum ECR<sub>GW</sub> shall not be less than Rs 1,00,000/-*

## 6.4 ECR<sub>GW</sub> for Industrial Units

S.No.	Area Category	Water Consumption (m <sup>3</sup> /day)			
		<200	200 to <1000	1000 to <5000	5000 & above
		Environmental Compensation Rate (ECR <sub>GW</sub> ) in Rs./m <sup>3</sup>			
1	Safe	20	30	40	50
2	Semi critical	40	60	80	100
3	Critical	60	80	110	150
4	Over-exploited	80	120	160	200

*Minimum ECR<sub>GW</sub>=Rs 1,00,000/-*

## 6.5 Deterrent factors to compensate losses and environmental damage (for packaging drinking water units, mining, industrial and commercial purposes)

The activities such as packaging drinking water, mining, industrial and others draw ground water to add commercial value to the products manufactured. Hence, these activities attract stricter provisions of deterrence and intergenerational equity. It is proposed to levy following deterrent factors to compensate the losses and environmental damages as detailed in the following table:-

### 6.5 :- Deterrent Factor

S.No.	Water Consumption	Deterrent Factor		
		< 2 years	2-5 years	>5 years
1	<1000 KLD	1.00	1.00	1.25
2	1000-5000 KLD	1.00	1.00	1.50
3	>5000 KLD	1.00	1.25	2.00

*Note: The industrial operations may be reviewed and only permitted, if it is safe to continue withdrawal of ground water at the rate permitted.*

## 7. Relaxation

Central Ground Water Authority (CGWA) reserves the right to relax or interpret these mechanisms in case of any exigency or situation of National strategic importance, as per Guidelines/Criteria for evaluation of proposals/requests for Ground Water Abstraction, 2015.

## 8. Recommendations

The committee has given following recommendations:

1. In case of fixation of liability, it always lies with current owner of the premises where illegal extraction of groundwater is taking place.
2. Violation duration may be assumed as at least one year in case where no evidence for period of installation of borewell could be established.
3. For illegal industrial ground water abstraction, where metering system is not available, water consumption may be estimated as per consent conditions imposed by SPCB/PCC.

4. Water intensive industries should only be permitted in safe, semi-critical and critical area, and should not be allowed to establish new industries in over-exploited area.
5. Water in over-exploited area should be permitted only for drinking purposes and industries established in this area without prior consent or NOC from CGWA or another concerned department must be closed down with immediate effect . No expansion in existing industrial activity should be permitted, irrespective of additional water demand arises or not.
6. Present categorization of area (Over-exploited, Critical and Semi-Critical), as per CGWA shall be considered for calculation of EC, regardless of the area category when the period of violation started.
7. In case of all existing cases having more than 5000 KLD ground water demand, permission may be given only after examining scientific assessment of water availability and assessing intergenerational equity by CGWA.
8. The industrial units should be directed to adopt State of the Art technologies, use of surface water, treated waste water and reduce specific water consumption, thereby ground water demand is reduced by 10% over three years' period. The industries also be encouraged to create facilities for storage of excess storm water and adequate measures such as groundwater recharge as well as restoration of lakes /ponds in the vicinity of the industry.
9. In addition, all repeated violations will attract EC at 1.25 times the previous EC.
10. Authorities assigned for levy EC and taking penal action are listed below:

S. No.	Actions	Authority
1.	To seal illegal bore-well/tube-well to stop extraction of water and further closure of project	District Magistrate
2.	To levy EC <sub>GW</sub> as per prescribed method	District Magistrate/ CGWA
3.	To levy EC on industries involved in illegal abstraction of Groundwater , as per the method prescribed in	CPCB/SPCB/PCC

	report of CPCB- "EC for industrial units"	
4.	Prosecution of Violator	CGWA under Environment (Protection) Act, 1986 (or) SPCB/PCC under Water (Prevention and Control of Pollution), Act, 1974

11. CGWA shall maintain a separate account for collection and utilization of environmental compensation levied for illegal extraction of ground water on the violators.
12. For easy understanding w.r.t levying of EC on violators as per the recommendation of CPCB, case studies given at Annexure II may please be referred.

## References

1. CGWA. 2015. *Guidelines/Criteria for evaluation of proposals/requests for ground water abstraction*. New Delhi-Central Ground Water Authority, Ministry of Water Resources, River Development & Ganga Rejuvenation, Government of India.
2. CGWB. 2017. *Categorisation of Assessment Units [Online]*. [Accessed 20 February 2019]. Available from: <http://cgwa-noc.gov.in/LandingPage/NotifiedAreas/>

**MINISTRY OF JAL SHAKTI****(Department Of Water Resources, River Development And Ganga Rejuvenation)****(CENTRAL GROUND WATER AUTHORITY)****NOTIFICATION**

New Delhi, the 24th September, 2020

**S.O. 3289(E).**—WHEREAS, on the directions of Hon'ble Supreme Court vide its order dated the 10th December, 1996 passed in Civil writ Petition No 4677 of 1985, MC Mehta Vs Union of India, the Central Government constituted the Central Ground Water Authority (hereafter referred to as the 'Authority') vide notification number S.O. 38 (E), dated the 14<sup>th</sup> January, 1997 to exercise powers under Section 5 of the Environment (Protection) act, 1986 (29 of 1986) for the purposes of regulation and control of Ground Water management and development and to exercise certain powers and perform certain functions relating thereto;

AND WHEREAS, the Authority has been regulating ground water development and management by way of issuing 'No Objection Certificates' for ground water extraction to industries or infrastructure projects or Mining Projects etc., and framed guidelines in this connection from time to time in twenty two States and two Union territories, where ground water development is not being regulated by the State Government Union Territory administration concerned;

AND WHEREAS, some of the State Governments or, Union territories enacted legislations and issued regulatory directions or orders for regulating ground water development and management;

AND WHEREAS, the Hon'ble National Green Tribunal, New Delhi vide order dated the 15<sup>th</sup> April 2015 in OA Nos. 204/205/206 of 2014 has issued directions to the Authority to ensure that any person operating tube-well, or any means to extract ground water shall obtain permission from the Authority and shall operate the same subject to the law in force, even if such unit is existing unit or the unit is yet to be established;

AND WHEREAS, the said Hon'ble Tribunal vide its order dated the 09<sup>th</sup> July, 2015 in OA Nos. 34 and 37 of 2014 directed all industrial units which are members of the Common Effluent Treatment Plants (CETPs) to approach the Authority through State Pollution Control Board for obtaining 'No Objection Certificate' in accordance with the law;

AND WHEREAS, the aforesaid Hon'ble Tribunal vide order dated the 13<sup>th</sup> July, 2017 in OA No 200- of 2014 directed that every industry should be directed to pay for extraction of such water, that too, subject to the conditions stated in the order permitting such extraction;

AND WHEREAS, the said Hon'ble Tribunal vide its order dated the 28<sup>th</sup> August, 2018 in O.A. Nos. 176 of 2015 and 59 of 2012 respectively directed the Ministry of Water Resources, River Development and Ganga Rejuvenation to forthwith review the existing mechanism so as to ensure effective steps for conserving the groundwater resources;

AND WHEREAS, in pursuance of the directions of the Hon'ble National Green Tribunal and powers conferred by sub-section (3) of section 3 and section 5 of the Environment (Protection) Act, 1986 the Authority, with a view to protect the ground water resources had circulated the draft guidelines for grant of 'No Objection Certificate' on the 11<sup>th</sup> October, 2017 inviting comments and suggestions from all the stakeholders;

AND WHEREAS, all objections and suggestions received in response to the said draft guideline have been duly considered by the Central Government, the Authority notified the guidelines to regulate groundwater over-exploitation and to conserve the groundwater resources in the country vide notification number S.O. 6140 (E), dated the 12<sup>th</sup> December, 2018;

AND WHEREAS, the aforesaid Hon'ble Tribunal vide order dated the 03<sup>rd</sup> January 2019 in the OA No. 176 of 2015 directed that the above mentioned notification dated the 12<sup>th</sup> December, 2018 may not be given effect to as it is unsustainable if tested on 'Precautionary Principle, Sustainable development as well as Inter-generational Equity Principles' and if implemented, will result in fast depletion of groundwater and damage to water bodies and will be destructive of the fundamental right to life under Article 21 of the Constitution of India;

AND WHEREAS, the said Hon'ble Tribunal vide order dated the 11<sup>th</sup> September, 2019 constituted a committee to deliberate on steps for preventing depletion of groundwater, robust monitoring mechanism

against unauthorised extractions and fulfillment of 'No Objection Certificate' conditions, environment compensation etc and to submit a report;

AND WHEREAS, the aforesaid committee submitted the report along-with draft guidelines to regulate groundwater extraction and groundwater conservation in Hon'ble Tribunal on the 16<sup>th</sup> March, 2020;

AND WHEREAS, the above said Hon'ble Tribunal vide order dated the 20<sup>th</sup> July, 2020 directed to comply with certain points for sustainable groundwater management while issuing 'No Objection Certificates' to commercial establishments by the Authority;

Now therefore, in pursuance of the directions of Hon'ble National Green Tribunal and the powers conferred by sub-section (3) of Section 3 read with Section 5 of the Environment (Protection) Act, 1986 (29 of 1986), the Department of Water Resources, River Development & Ganga Rejuvenation, hereby notifies the guidelines to regulate and control groundwater extraction in the country in supersession to this Ministry notification vide S.O. 6140 (E), dated the 12<sup>th</sup> December, 2018 as per the Schedule below:

### **SCHEDULE**

#### **Guidelines to regulate and control ground water extraction in India**

**(with immediate effect)**

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[F. No. CGWA-21/4/2020-CGWA]

ASHISH KUMAR, Director

**ANNEXURES**

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- Annexure VIII: List of States/ Union territories where ground water extraction is being regulated by Central Ground Water Authority (CGWA)
- Annexure IX: Glossary of technical terms used
- Annexure X : Annual water audits by the industries

**Guidelines to regulate and control groundwater extraction in India****Preamble and Background:**

On the directions of Hon'ble Supreme Court vide its order dated 10th December, 1996 passed in Civil writ Petition No 4677 of 1985, MC Mehta Vs Union of India, the Central Government had constituted the Central Ground Water Board as Authority vide notification number S.O. 38 (E), dated the 14<sup>th</sup> January, 1997 to exercise powers under sub section (3) of section 3 of the Environment (Protection) act, 1986 (29 of 1986) for the purposes of regulation and control of Ground Water Management and Development and to exercise certain powers and perform certain functions as per the said Act.

The Authority has been regulating ground water development and management by way of issuing 'No Objection Certificates' for ground water extraction to industries or infrastructure projects or Mining Projects etc., and framed guidelines in this connection from time to time applicable in twenty two States and two Union territories, where ground water development is not being regulated by the State Government and Union territory administration concerned.

To have sustainable management of water resources in the country groundwater abstraction guidelines have been prepared to regulate groundwater extraction and conserve the scarce groundwater resources in the country.

These guidelines will come into force with immediate effect from the date of Gazette Notification and will supersede all earlier guidelines issued by the Central Ground Water Authority (CGWA).

These guidelines will have pan India applicability. Ground water abstraction in States/ Uts (which are not regulating ground water abstraction) shall continue to be regulated by Central Ground Water Authority.

Further, wherever States/ Uts have come out with their own groundwater abstraction guidelines, which are inconsistent with the CGWA guidelines, the provisions of CGWA guidelines will prevail. However, in case the guidelines followed by such States/ Uts contain some more stringent provisions than CGWA guidelines, such provisions may also be given effect to by the States/ Uts Authorities in addition to those contained in the CGWA guidelines. States may be at liberty to suggest additional conditions/ criteria based on the local hydro-geological situations which shall be reviewed by CGWA/Ministry of Jal Shakti, Government of India before acceptance.

All new/existing industries, industries seeking expansion, infrastructure projects and mining projects abstracting ground water, unless specifically exempted under Para 1.0 below, will be required to seek No Objection Certificate from Central Ground Water Authority or, the concerned State/ UT Ground Water

Authority as the case may be. The entire process of grant of No Objection Certificate shall be online through a web based application system.

Water management plans shall be prepared by all the State Ground Water Authorities/ Organizations for all Over-exploited, Critical and Semi-critical assessment units starting with Over-exploited units. Water management plans shall be reviewed and updated periodically. Water management plans, data on water availability and scarcity and policy framed in this regard shall be placed on the websites of Central Ground Water Authority/ State Ground Water Authority.

### 1.0 Exemptions from seeking No Objection Certificate:

Following categories of consumers shall be exempted from seeking No Objection Certificate for ground water extraction:

- (i) Individual domestic consumers in both rural and urban areas for drinking water and domestic uses.
- (ii) Rural drinking water supply schemes.
- (iii) Armed Forces Establishments and Central Armed Police Forces establishments in both rural and urban areas.
- (iv) Agricultural activities.
- (v) Micro and small Enterprises drawing ground water less than 10 cum/day.

### 1.1 Registration of Drilling Rigs

State / Ut Governments shall be responsible for registering drilling rigs operating within their jurisdiction and for maintaining the database of wells drilled by them. Appropriate link shall be provided in CGWA portal for making the data available to CGWA.

### 2.0 Drinking & Domestic use for Residential apartments/ Group Housing Societies/ Government water supply agencies in urban areas

For grant of No Objection Certificate for ground water extraction, the project proponent has to furnish the details as per the guidelines issued by the CGWA in proper format as available in CGWA website. No Objection Certificate for new /existing wells shall be granted only in such cases where the local Government water supply agency is unable to supply requisite amount of water in the area.

No Objection Certificate shall be granted subject to the following specific conditions:

- i) Installation of Sewage Treatment Plants shall be mandatory for all residential apartments/ Group Housing Societies where ground water requirement is more than 20 m<sup>3</sup>/day. The water from Sewage Treatment Plants shall be utilized for toilet flushing, car washing, gardening etc.
- ii) The No Objection Certificate shall be valid for a period of five years from the date of issue or till such time local Government water supply is provided to the project area, whichever is earlier. In case the project proponent receives water supply from the concerned local Government Water Supply Agency during the validity of the No Objection Certificate, intimation regarding availability of public water supply shall be sent by the project proponent to CGWA and No Objection Certificate will be cancelled by the Authority. In other cases, the project proponent will apply for renewal of No Objection Certificate, ninety days before the expiry of No Objection Certificate.
- iii) Proponents shall be liable to pay ground water abstraction charges for the quantum of ground water proposed to be extracted, as per rates mentioned in Table 5.1.

### Documents to be submitted with the application

- a) Details of water requirement computed as per National Building Code, 2016 (Annexure I), taking into account recycling/ reuse of treated water for flushing etc.
- b) Affidavit on non-judicial stamp paper of Rs. 10/- by the applicant, confirming non/ inadequate availability of public water supply in case of users requiring ground water up to 10 m<sup>3</sup>/ day for drinking/ domestic use.
- c) Certificate of non-availability of water from local government water supply agency in cases requiring ground water in excess of 10 m<sup>3</sup>/ day for drinking/ domestic use. Government water supply agencies

applying for No Objection Certificate shall submit copy of government approval of the scheme/project proposed to be implemented.

- d) Ground water quality data of existing bore well/ tube well/ dug well from any National Accreditation Board for Testing and Calibration Laboratories (NABL) accredited laboratory or Govt. approved laboratory (in case of existing projects applying for no objection certificate)
- e) Proposal for rain water harvesting/ recharge within the premises as per Model Building Bye Laws issued by Ministry of Housing & Urban Affairs.

### 3.0 Agriculture Sector

Agriculture sector is the backbone of the Indian economy. As per Minor Irrigation Census 2013-14, 87.86% of wells are owned by marginal, small and semi-medium farmers having land holding up to 4 hectares (ha). Around 9.18 % of wells are owned by medium farmers having land holding 4 – 10 ha and 2.96% of the wells are owned by big farmers having land holding more than 10 ha.

Considering the number of ground water abstraction structures, regulation of ground water in agriculture sector through a 'command and control' strategy will prove to be an arduous task. Therefore, a participatory approach for sustainable ground water management would be more productive.

States/Uts are advised to review their free/subsidized electricity policy to farmers, bring suitable water pricing policy and may work further towards crop rotation/diversification/other initiatives to reduce over-dependence on groundwater.

Agriculture sector shall be exempted from obtaining No Objection Certificate for ground water extraction.

### 4.0 Commercial Use

No new major industries shall be granted No Objection Certificate in over-exploited assessment areas except as per the policy guidelines.

Availability of ground water resources shall be given due regard while considering applications for grant of No Objection Certificate for commercial use.

Commercial entities extracting ground water shall be required to submit online annual water audit report including an audit of water use as mentioned in the relevant sections. CGWA/ State Ground Water Authority (SGWA) shall publish all such audit reports online.

CGWA/ SGWAs shall engage independent agencies to verify the compliance of No Objection Certificate conditions periodically.

#### 4.1 Industrial Use

In Over-exploited assessment units, No Objection Certificate shall not be granted for ground water abstraction to any new industry except those falling in the category of Micro, Small and Medium Enterprises (MSME). However, No Objection Certificate for drinking/ domestic use for work force, green belt use by these new industries shall be permitted. Expansion of existing industries involving increase in quantum of ground water abstraction in over-exploited assessment units shall not be permitted. No Objection Certificate shall not be granted to new packaged water industries in Overexploited areas, even if they belong to MSME category.

No Objection Certificate for ground water extraction by industries shall be granted subject to the following specific conditions:

- i) No Objection Certificate shall be granted only in such cases where local government water supply agencies are not able to supply the desired quantity of water.
- ii) All industries shall be required to adopt latest water efficient technologies so as to reduce dependence on ground water resources.
- iii) All industries abstracting ground water in excess of 100 m<sup>3</sup>/d shall be required to undertake annual water audit through Confederation of Indian Industries (CII)/ Federation Indian Chamber of Commerce and Industry (FICCI)/ National Productivity Council (NPC) certified auditors and submit audit reports within three months of completion of the same to CGWA. All such industries shall be

- required to reduce their ground water use by at least 20% over the next three years through appropriate means.
- iv) Construction of observation well(s) (piezometer)(s) within the premises and installation of appropriate water level monitoring mechanism as mentioned in Section 15 shall be mandatory for industries drawing/ proposing to draw more than 10 m<sup>3</sup>/day of ground water and. Monitoring of water level shall be done by the project proponent. The piezometer (observation well) shall be constructed at a minimum distance of 15 m from the bore well/production well. Depth and aquifer zone tapped in the piezometer shall be the same as that of the pumping well/ wells. Detailed guidelines for design and construction of piezometers are given in **Annexure II**. Monthly water level data shall be submitted to the CGWA through the web portal.
  - v) The proponent shall be required to adopt roof top rain water harvesting/ recharge in the project premises. Industries which are likely to pollute ground water (chemical, pharmaceutical, dyes, pigments, paints, textiles, tannery, pesticides/ insecticides, fertilizers, slaughter house, explosives etc.) shall store the harvested rain water in surface storage tanks for use in the industry.
  - vi) Injection of treated/ untreated waste water into aquifer system is strictly prohibited.
  - vii) Industries which are likely to cause ground water pollution e.g. Tanning, Slaughter Houses, Dye, Chemical/ Petrochemical, Coal washeries, other hazardous units etc. (as per CPCB list) need to undertake necessary well head protection measures to ensure prevention of ground water pollution (**Annexure III**).
  - viii) All industries drawing ground water in safe, semi-critical and critical assessment units shall be required to pay ground water abstraction charges as applicable as per Tables 5.2 A and 5.3 A.
  - ix) All existing industries drawing ground water in over-exploited assessment units shall be liable to pay ground water restoration charges as applicable as per Tables 5.2 B and 5.3 B.

#### **Documents to be submitted with the application**

- (a) An affidavit on non judicial stamp paper of Rs. 10/- regarding non availability of water supply from local government agencies in cases where ground water requirement is up to 10 m<sup>3</sup>/day.
- (b) Certificate regarding non/ partial availability of fresh water/ treated waste water supply from the local government water supply agency in cases where requirement of ground water is more than 10 m<sup>3</sup>/day.
- (c) Ground water quality data of existing bore well/ tube well/ dug well from any NABL accredited laboratory or Govt. approved laboratory (in case of existing projects applying for No Objection Certificate)
- (d) Water quality data of bore well/ tube well/ dug well in respect of existing industries from NABL accredited laboratories/Government approved laboratories.
- (e) Proposal for rain water harvesting/ recharge within the premises as per Model Building Bye Laws issued by Ministry of Housing & Urban Affairs.
- (f) **Impact Assessment report:** All projects extracting/proposing to extract ground water in excess of 100 m<sup>3</sup>/day in Over-exploited, Critical and Semi-critical areas shall have to mandatorily submit impact assessment report of existing/ proposed ground water withdrawal on the ground water regime and also socio-economic impacts report prepared by accredited consultants. Pro-forma for the report is given in **Annexure IV**.

#### **4.2 Mining Projects**

All existing as well as new mining projects will be required to obtain No Objection Certificate for ground water abstraction: Since mining projects are location specific, there will be no ban on grant of No Objection Certificate for abstraction of ground water for such projects in over-exploited assessment units.

No Objection Certificate for mining projects shall be granted subject to the following specific conditions:

- i) It shall be mandatory for all the mining industries to ensure that water available from de-watering operations is properly treated and should be gainfully utilized for supply for irrigation, dust

- suppression, mining process, recharge in downstream and for maintaining e-flows in the river system.
- ii) Construction of observation well(s) (piezometers) along the periphery in the premises, for monthly ground water level monitoring, shall be mandatory for mines drawing/ proposing to draw more than 10 m<sup>3</sup>/day of ground water. Depth and aquifer zone tapped in the piezometer shall be commensurate with that of pumping well/ wells.
  - iii) In addition, the proponent shall monitor ground water levels by establishing observation wells (piezometers) in the core and buffer zones as specified in the No Objection Certificate.
  - iv) In case of coal and other base metal mining the project proponent shall use the advance dewatering technology (by construction of series of dewatering abstraction structures) to avoid contamination of surface water.
  - v) In addition to this, all mining units shall also monitor the water quality of mine seepage and mine discharge through NABL accredited/ Govt. approved laboratories and the same shall be submitted at the time of self compliance.
  - vi) All mining projects drawing ground water in safe, semi-critical and critical assessment units shall be required to pay ground water abstraction charges as applicable as per Tables 5.4 A.
  - vii) All mining projects drawing ground water in over-exploited assessment units shall be liable to pay ground water restoration charges as per Table 5.4 B.

#### **Documents to be submitted with the application**

- (a) Mining plan approved by the concerned Govt. agency/ department.
- (b) Proposal for rain water harvesting/ recharge within the premises as per Model Building Bye Laws issued by Ministry of Housing & Urban Affairs.
- (c) Comprehensive report prepared by accredited consultant on ground water conditions in both core and buffer zones of the mine, depth wise and year wise mine seepage calculations, impact assessment of mining and dewatering on ground water regime and its socio-economic impact, details of recycling, reuse and recharge, reduction of pumping with use of technology for mining and water management to minimize and mitigate the adverse impact on ground water, based on local conditions. Format for report is given in **Annexure V**.

#### **4.3 Infrastructure projects:**

Since infrastructure projects are location specific, grant of No Objection Certificate to such projects located in over-exploited assessment units shall not be banned. New infrastructure projects/ residential buildings may require dewatering during construction activity and/ or use ground water for construction. In both cases, applicants shall seek No Objection Certificate from CGWA before commencement of work. However, in over-exploited assessment units, use of ground water for construction activity shall be permitted only if no treated sewage water is available within 10 km radius of the site. New as well as existing Infrastructure projects shall also be required to seek No Objection Certificate for abstraction of ground water.

No 'No Objection Certificate' shall be granted for extraction of groundwater for Water Parks, Theme Parks and Amusement Parks in over-exploited assessment units.

Indicative list of Infrastructure projects is given in Annexure VI.

The No Objection Certificate for ground water abstraction will be granted subject to the following specific conditions:

- i) In case of infrastructure projects that require dewatering, proponent shall be required to carry out regular monitoring of dewatering discharge rate (using a digital water flow meter) and submit the data through the web portal to CGWA/SGWA as applicable. Monitoring records and results should be retained by the proponent for two years, for inspection or reporting as required by CGWA/SGWA.

- ii) Installation of Sewage Treatment Plants (STP) shall be mandatory for new projects, where ground water requirement is more than 20 m<sup>3</sup>/day. The water from STP shall be utilized for toilet flushing, car washing, gardening etc.
- iii) For infrastructure dewatering/ construction activity, No Objection Certificate shall be valid for specific period as per the detailed proposal submitted by the project proponent.
- iv) All infrastructure projects drawing ground water in safe, semi-critical and critical assessment units shall be required to pay ground water abstraction charges as applicable as per Table 5.3 A.
- v) All infrastructure projects (new/ existing) drawing ground water in over-exploited assessment units shall be liable to pay ground water restoration charges as per Table 5.3 B.

#### **Documents to be submitted with the application**

- (a) In cases where dewatering is involved, submission of impact assessment report prepared by an accredited consultant on the ground water situation in the area giving detailed plan of pumping, proposed usage of pumped water and comprehensive impact assessment of the same on the ground water regime shall be mandatory. The report should highlight environmental risks and proposed management strategies to overcome any significant environmental issues such as ground water level decline, land subsidence etc.
- (b) An affidavit on non judicial stamp paper of Rs. 10/- regarding non availability of water from any other source in case water is required for construction in safe and semi critical areas.
- (c) Certificate from a government agency regarding non availability of treated sewage water for construction within 10 km radius of the site in critical and over-exploited areas.
- (d) Certificate of non-availability of water from local government water supply agency in respect of all categories of assessments units for commercial use.
- (e) Proposal for rain water harvesting/ recharge within the premises as per Model Building Bye Laws issued by Ministry of Housing & Urban Affairs.
- (f) Details of water requirement computed as per National Building Code, 2016 (**Annexure I**), taking into account recycling/ reuse of treated water for flushing etc. (in case of completed infrastructure projects for commercial use).
- (g) Completion certificate from the concerned agency for infrastructure projects requiring water for commercial use.

#### **5.0 Ground water abstraction/ restoration charges**

All residential apartments/ group housing societies/ Government water supply agencies in urban areas shall be required to pay ground water abstraction charges.

All industries/mining/ infrastructure projects drawing ground water in safe, semi-critical and critical assessment units will have to pay ground water abstraction charges based on quantum of ground water extraction and category of assessment unit as per details given in this guideline.

All existing mining/ infrastructure projects and existing industries including MSME drawing ground water in over-exploited assessment units will have to pay ground water restoration charges based on quantum of ground water extraction. Further, new MSME, new infrastructure and new Mining projects in over exploited areas shall also be required to pay ground water restoration charges.

Existing industries, infrastructure units and mining projects which have installed/constructed artificial recharge structures in compliance of the conditions prescribed in the groundwater guidelines prevailing at the time of grant of No Objection Certificate or its renewal shall be eligible for a rebate of 50% (fifty percent) in the ground water abstraction charges/ground water restoration charges, subject to their satisfactory performance and verification.

The revenue generated from the proposed water abstraction/ restoration charges shall be kept in a separate fund for implementation of site specific suitable demand/ supply side interventions.

### 5.1 Rates of Ground water abstraction /restoration charges

#### I. Drinking and domestic use for residential apartments/ group housing societies/ Government water supply agencies in Urban areas

All residential apartments/ Group Housing Societies requiring water only for drinking/domestic use requiring No Objection Certificate would pay ground water abstraction charges as per rates given below in Table 5.1.

**Table 5.1 Ground Water Abstraction charges for Drinking & Domestic use.**

Quantum of Groundwater withdrawal (m <sup>3</sup> /month)	Rate of ground water abstraction charges (Rs. per m <sup>3</sup> )
0-25	No charge
26-50	1.00
>50	2.00

Government water supply agencies and Government infrastructure projects shall pay Ground water abstraction Charges @ Rs. 0.50 per m<sup>3</sup>.

#### II. Packaged Drinking Water units

Rates of ground water abstraction charges for packaged drinking water units in safe, semi-critical and critical assessment units are given in Table 5.2 A and those for ground water restoration charges in over-exploited assessment units are given in Table 5.2 B.

**Table 5.2 A: Rates of ground water abstraction charges for packaged drinking water units (Rs per m<sup>3</sup>)**

S.No.	Category of area ↓ Ground water use →	Quantum of ground water withdrawal				
		Up to 50m <sup>3</sup> /day	51 to <200 m <sup>3</sup> /day	200 to <1000 m <sup>3</sup> /day	1000 to <5000 m <sup>3</sup> /day	5000 m <sup>3</sup> /day and above
1.	Safe	1.00	3.00	5.00	8.00	10.00
2.	Semi-critical	2.00	5.00	10.00	15.00	20.00
3.	Critical	4.00	10.00	20.00	40.00	60.00

**Table 5.2 B: Rates of ground water restoration charges for packaged drinking water units (Rs per m<sup>3</sup>)**

S.No.	Category of area ↓ Ground water use →	Quantum of ground water withdrawal				
		Up to 50 m <sup>3</sup> /day	51 to <200 m <sup>3</sup> /day	200 to <1000 m <sup>3</sup> /day	1000 to <5000 m <sup>3</sup> /day	5000 m <sup>3</sup> /day and above
1.	Over-exploited (existing industries only)	8.00	20.00	40.00	80.00	120.00

### III. Other Industries & infrastructure projects

Rates of ground water abstraction charges for other industries and infrastructure projects in safe, semi-critical and critical assessment units are given in Table 5.3 A and those for ground water restoration charges in over-exploited assessment units are given in Table 5.3 B.

**Table 5.3 A: Rates of Ground Water abstraction charges for other industries & infrastructure projects (Rs per m<sup>3</sup>)**

S.No.	Category of area ↓ Ground water use →	Quantum of ground water withdrawal			
		< 200 m <sup>3</sup> /day	200 to <1000 m <sup>3</sup> /day	1000 to <5000 m <sup>3</sup> /day	5000 m <sup>3</sup> /day and above
1.	Safe	1.00	2.00	3.00	5.00
2.	Semi-critical	2.00	3.00	5.00	8.00
3.	Critical	4.00	6.00	8.00	10.00

**Table 5.3 B: Rates of ground water restoration charges for other industries & infrastructure projects (Rs per m<sup>3</sup>)**

S.No.	Category of area ↓ Ground water use →	Quantum of ground water withdrawal			
		< 200 m <sup>3</sup> /day	200 to <1000 m <sup>3</sup> /day	1000 to <5000 m <sup>3</sup> /day	5000 m <sup>3</sup> /day and above
1.	Over-exploited (existing industries / new Industries as per the present Guidelines)	6.00	10.00	16.00	20.00

### IV. Mining projects

Rates of ground water abstraction charges for mining, which are drawing ground water in safe, semi-critical and critical assessment units are given in Table 5.4 A and those for ground water restoration charges in case of projects drawing ground water in over-exploited assessment units are given in Table 5.4 B.

**Table 5.4 A: Rates of ground water abstraction charges for mining (Rs. per m<sup>3</sup>)**

S.No.	Category of area ↓ Ground water use →	Quantum of ground water withdrawal			
		< 200 m <sup>3</sup> /day	200 to <1000 m <sup>3</sup> /day	1000 to <5000 m <sup>3</sup> /day	5000 m <sup>3</sup> /day and above
1.	Safe	1.00	2.00	2.50	3.00
2.	Semi-critical	2.00	2.50	3.00	4.00
3.	Critical	3.00	4.00	5.00	6.00

**Table 5.4 B: Rates of ground water restoration charges for mining (Rs. per m<sup>3</sup>)**

S.No.	Category of area ↓ Ground water use →	Quantum of ground water withdrawal			
		< 200 m <sup>3</sup> /day	200 to <1000 m <sup>3</sup> /day	1000 to <5000 m <sup>3</sup> /day	5000 m <sup>3</sup> /day and above
1.	Over-exploited	4.00	5.00	6.00	7.00

### 6.0 Bulk Water Supply

All private tankers abstracting ground water and use it for supply as bulk water suppliers will now mandatorily seek No Objection Certificate for ground water abstraction. The bulk water suppliers through tankers drawing ground water in safe, semi-critical and critical assessment units shall pay groundwater abstraction charges as per the **Table-6.1 A**. The bulk water suppliers drawing ground water in over-exploited assessment units shall pay the groundwater restoration charges as per the **Table-6.1 B**. All tankers will have to install GPS based system for their monitoring of movement/area of operation.

Modalities for issue of No Objection Certificate for bulk/tanker water supplies shall be worked out in consultation with States/Uts and suitable guidelines in this regard will be framed and issued separately for the same.

**Table-6.1A: Groundwater abstraction charges for Bulk/Tanker water supplies**

Category	Rate per m <sup>3</sup> (in Rs.)
Safe	10
Semi Critical	20
Critical	25

**Table-6.1B: Groundwater abstraction charges for Bulk/Tanker water supplies**

Category	Rate per m <sup>3</sup> (in Rs.)
Over Exploited	35

### 7.0 Abstraction of Saline ground water

Abstraction of saline ground water in areas having either saline ground water at all depths or pockets of saline ground water in an otherwise fresh water area for use by industries/ dewatering by infrastructure/ mining projects including those located in over-exploited areas would be encouraged. Such industries shall be exempted from paying ground water abstraction charges.

The list of such assessment units having saline ground water at all depths as per the latest assessment of dynamic ground water resources will be made available by the CGWA in their website. However, due care shall be taken in respect of disposal of effluents by the units so as to protect the water bodies and the aquifers from pollution.

Detailed guidelines in this regard shall be prepared and issued separately.

### 8.0 Protection of Wetland Areas

The wet land areas in the country are very crucial as they are direct reflection of the presence of ground water in such areas. The protection of the wetland areas is being separately handled by the Wetland Authorities. Since ground water is very crucial for the survival of the wetland area, any excessive ground water development within the zone of wetland area would affect the volume of water in that wetland.

Projects falling within 500 m. from the periphery of demarcated wetland areas shall mandatorily submit a detailed proposal indicating that any ground water abstraction by the project proponent does not affect the protected wetland areas. Furthermore, before seeking permission from CGWA, the projects shall take consent/approval from the appropriate Wetland Authorities to establish their projects in the area.

#### 9.0 General compliance conditions in No Objection Certificate

- i. Installation of digital water flow meter (conforming to BIS/ IS standards) having telemetry system in the abstraction structure(s) shall be mandatory for all users seeking No Objection Certificate and intimation regarding their installation shall be communicated to the CGWA within 30 days of grant of No Objection Certificate through the web-portal.
- ii. Proponents shall mandatorily get water flow meter calibrated on from an authorized agency once in a year.
- iii. Proponents shall install roof top rain water harvesting & recharge systems in the project area.
- iv. Proponents shall pay Ground Water Abstraction/ Restoration Charges based on quantum of ground water extraction as applicable as per the rates given in Section 6.
- v. Construction of purpose-built observation wells (piezometers) for ground water level monitoring shall be mandatory as per Section 15. Water level data shall be made available to CGWA through web portal. Detailed guidelines for construction of piezometers are given in **Annexure-II**.
- vi. Proponents shall monitor quality of ground water from the abstraction structure(s) once in a year. Water samples from bore wells/ tube wells / dug wells shall be collected during April/May every year and analysed in NABL accredited laboratories for basic parameters (cations and anions), heavy metals, pesticides/ organic compounds etc. Water quality data shall be made available to CGWA through the web portal.
- vii. If the existing well becomes defunct due to mechanical failure within the validity period of No Objection Certificate, the user can construct a replacement well under intimation to CGWA on web portal. The defunct well shall be properly sealed (**Refer Annexure VII**). The user will be required to submit documentary proof in this regard. However, if the existing abstraction structures fails to yield water and he proponent desires to drill another tubewell in the same premises, prior permission of the Authority shall be required. If the replacement well is to be drilled in some different place, the proponent shall obtain fresh No Objection Certificate.
- viii. Wherever feasible, requirement of water for greenbelt (horticulture) shall be met from recycled / treated waste water.
- ix. In case of change of ownership, new owner of the industry will have to apply for incorporation of necessary changes in the No Objection Certificate with documentary proof within 60 days of taking over possession of the premises.

#### 10.0 Monitoring of compliance of No Objection Certificate Conditions

To monitor the compliance of No Objection Certificate conditions, Central Ground Water Authority and State/ UT Ground Water Authorities shall take the following steps:

- a. Suitable MIS will be developed for compliance monitoring.
- b. District Collectors/Deputy Commissioners (DCs) /District Magistrates (DMs) are authorized to take enforcement measures like sealing of unauthorized ground water abstraction structures, disconnection of electricity, launching of prosecution against those violating the No Objection Certificate conditions and taking action for imposition of Environmental Compensation.
- c. Technical officers of CGWB/ CGWA and State groundwater organizations are authorized to take actions with respect to monitoring and periodic inspections with the approval of competent authority.
- d. In case of violation of any of the No Objection Certificate conditions, the proponents shall be liable to pay the penalties as per **Section 16**.

### 11.0 Renewal of No Objection Certificate

No objection certificate shall be renewed periodically, subject to the compliance of the conditions mentioned therein:

- i. The applicant shall apply for renewal of No Objection Certificate at least ninety days prior to expiry of its validity.
- ii. Application for renewal of No Objection Certificate shall be accompanied by the Compliance Report.
- iii. Before granting renewal, Central Ground Water Authority or State/ Ut Authority shall satisfy itself that the conditions of No Objection Certificate have been complied with.
- iv. In case of change in category of the assessment unit, renewals would be granted with conditions as laid down for new category.
- v. No Objection Certificate will be renewed for the terms specified for various uses as follows:

Category	Use	Term of renewal
Critical, Semi-critical and safe	Infrastructure projects for drinking & domestic use and urban Water Supply Agencies	5 years
	Industries	3 years
	Mines	2 years
Over exploited	All users in 'Over-exploited areas'	2 years

- vi. If the application for renewal is submitted in time and the CGWA/ the respective State/ Ut Authority is unable to process the application in time, No Objection Certificate shall be deemed to be extended till the date of renewal of No Objection Certificate.
- vii. If the proponent fails to apply for renewal within 3 months from the date of expiry of No Objection Certificate, the proponent shall be liable to pay Environmental Compensation for the period starting from the date of expiry of No Objection Certificate till No Objection Certificate is renewed by the competent authority.

### 12.0 Extension of No Objection Certificate

If the proponent is unable to construct the well(s) during the validity period of No Objection Certificate for genuine reasons, the proponent will have to apply for extension of No Objection Certificate. Application for extension should be supported by documents justifying the reasons for delay. Other conditions for grant of extension of No Objection Certificate will be the same as that for fresh No Objection Certificate.

Extension of No Objection Certificate will be granted for a maximum period of two years. No further extension will be granted after the expiry of the extended period. In that case, the applicant will have to apply afresh for grant of No Objection Certificate.

### 13.0 Delegation of powers against illegal groundwater withdrawal

Central Ground Water Authority has appointed the District Magistrate/ District Collector/ Sub Divisional Magistrates of each Revenue District/Sub division as Authorized Officers, who have been delegated the power to seal illegal wells, disconnect electricity supply to the energised well, launch prosecution against offenders etc. including grievance redressal related to ground water in their respective jurisdictions.

In order to further decentralise and strengthen the monitoring and compliance mechanism as per the guidelines, officials of concerned Departments of Revenue and Industries of the States/Uts shall be appointed as Authorised Officers in consultation with the State/Ut Governments.

A copy of the No Objection Certificate issued by the CGWA in the No Objection Certificate Application Portal (NOCAP) will be forwarded to the respective District Magistrate/ District Collector. In case of any violation of the directions of Central Ground Water Authority and non-fulfilment of the conditions laid

down in the No Objection Certificate, the Authorised Officers will file appropriate Petition/Original Application etc under sections 15 to 21 of the Environment (Protection) Act, 1986 in appropriate Courts.

#### 14.0 Ground Water Level Monitoring

All the project proponents (drawing ground water more than 10 cum/d) have to mandatorily construct Piezometers (observation wells) within their premises for monitoring of the ground water levels. Such a mechanism of compliance conditions has been made to ensure that every month the ground water level in the project area can be monitored and observed. In this regard the necessary criteria for monitoring of water levels through piezometers by the project proponents is given in Table 14.1.

**Table 14.1 No. of Piezometers to be constructed & Type of Water Level Monitoring Mechanism**

S.No.	Quantum of Ground water withdrawal (cum/d)	No. of piezometer required	Monitoring mechanism		
			Manual	DWLR	DWLR with Telemetry
1	<10	0	0	0	0
2	11-50	1	1	0	0
3	51-500	1	0	1	0
4	>500	2	0	1	1

The piezometer shall be suitably located to ensure that zone of aquifer tapped in the piezometer is the same as that of the pumping well.

#### 15.0 Environmental Compensation

Extraction of ground water for commercial use by industries, infrastructure units and mining projects without a valid No Objection Certificate from appropriate authority shall be considered illegal and such entities shall be liable to pay Environmental Compensation for the quantum of ground water so extracted. The norms prescribed by Central Pollution Control Board (CPCB) shall be utilized for calculating the Environmental compensation as mentioned below:

$$EC_{GW} = \text{Ground water consumption per day} \times \text{Environmental Compensation rate (ECR}_{GW}) \times \text{No. of days} \times \text{Deterrence factor}$$

where ground water consumption is in m<sup>3</sup>/day and ECR<sub>GW</sub> in Rs./ cum

##### 15.1 Rates of Environmental Compensation:

Rates of Environmental Compensation (ECR<sub>GW</sub>) for various types of users in different categories of assessment units are given in Table 15.1 to 15.3.

**Table 15.1 : ECR<sub>GW</sub> for Packaged Drinking Water units**

S.No.	Area Category	Water Consumption (cum/day)			
		<200/	200 to <1000	1000 to <5000	5000 & above
Environmental Compensation Rate (ECR <sub>GW</sub> ) in Rs./m <sup>3</sup>					
	Safe	12	18	24	30
2	Semi critical	24	36	48	60
3	Critical	36	48	66	90
4	Over- exploited	48	72	96	120

**Note :-**Minimum ECR<sub>GW</sub> shall not be less than Rs 1,00,000/-

**Table 15.2: ECR<sub>GW</sub> for Mining/ infrastructure dewatering projects**

S.No.	Area Category	Water Consumption (cum/day)			
		<200	200 to <1000	1000 to <5000	5000 & above
		Environmental Compensation Rate (ECR <sub>GW</sub> ) in Rs./m <sup>3</sup>			
1	Safe	15	21	30	40
2	Semi critical	30	45	60	75
3	Critical	45	60	85	115
4	Over- exploited	60	90	120	150

**Note :-**Minimum EC<sub>GW</sub> shall not be less than Rs 1,00,000/-

**Table 15.3: ECR<sub>GW</sub> for Industrial units**

S.No.	Area Category	Water Consumption (cum/day)			
		<200	200 to <1000	1000 to <5000	5000 & above
		Environmental Compensation Rate (ECR <sub>GW</sub> ) in Rs./m <sup>3</sup>			
1	Safe	20	30	40	50
2	Semi critical	40	60	80	100
3	Critical	60	80	110	150
4	Over- exploited	80	120	160	200

**Note :-**Minimum EC<sub>GW</sub> shall not be less than Rs 1,00,000/-

### 15.2 Deterrent Factors to compensate losses and environmental damage (for packaged drinking water units, mining, industries and infrastructural dewatering projects)

The following deterrent factors based on the duration of illegal ground water extraction shall be levied to compensate for the losses and environmental damages as detailed in Table 15.4.

**Table 15.4: Deterrent factor based on quantum of ground water withdrawal and number of years of illegal withdrawal**

S.No.	Water Consumption	Deterrence Factor		
		< 2 years	2-5 years	>5 years
1	<1000 KLD	1.00	1.00	1.25
2	1000-5000 KLD	1.00	1.00	1.50
3	>5000 KLD	1.00	1.25	2.00

**Note:** KLD – Kilolitre per day

### 16.0 Provision of Penalty

Penalty shall be imposed on the proponents for non-compliance of No Objection Certificate conditions issued by the appropriate authority. Rates of penalty proposed for non-compliance of various conditions of No Objection Certificate are given in Table 16.1. The rates of the penalty shall be reviewed periodically with the approval of competent authority in Ministry of Jal Shakti.

**Table 16.1: Penalty provision for non Compliance of No Objection Certificate conditions**

S. No.	Items	Charges in Rs.
1	Non installation/faulty Digital water Flow meter with telemetry system.	200000
2	Non disclosure/ construction of additional groundwater abstraction structures a) Non-functional Structures. b) Defunct/Abandoned Note: Given rates are for unit non-functional/defunct/abandoned structures. This shall be multiplied with total such structures to arrive at consolidated penalty.	200000 100000
3	Reporting of fresh water zones as Brackish / Saline zones in application.	200000
4	Non Installation of Piezometer.	200000
5	Non Installation/faulty DWLR/Telemetry system	100000
6	Non Construction/Inadequate capacity of Recharge / Water conservation structures.	500000
7	Non maintenance of Recharge structures.	200000
8	Injection of treated/untreated water into the aquifer system. Note: In addition to penalty, the proponent shall bear the cost of aquifer remediation as per the provisions of Environment (Protection) Act, 1986.	1000000
9	Non Submission of Water level/Water quality Data.	50000
10	Non-maintenance of log book of daily withdrawal/non submission of Groundwater abstraction data.	50000
11	Non submission of photograph of recharge structure(s).	50000
12	Non Submission of Self Compliance report.	100000
13	Construction of groundwater abstraction structures by un authorized/unregistered Drilling Rigs (per structures).	100000
14	Non registration of water supply tankers.	500000
15	Submission of false information/ undertaking.	100000

Charges shall also be payable for correction/modification in the existing issued No Objection Certificate letter. The details of such charges are given in [Table 16.2](#).

**Table 16.2: Proposed Charges for correction/Modification in the existing issued No Objection Certificate**

S. No.	Items	Charges in Rs.
1	Change in recharge quantum	10000
2	Change in User ID.	5000
3	Change in firm Name	5000
4	Extension of No Objection Certificate	5000
5	Issuance of duplicate No Objection Certificate	5000
6	Issuance of corrigendum to No Objection Certificate	5000
7	Any other items/corrections etc	5000

**17.0 Other important Conditions (Applicable to all):**

- i. Sale of ground water by a person/ agency not having valid no objection certificate from CGWA/State Ground Water Authority is not permitted.
- ii. In infrastructure projects, paved/parking area must be covered with interlocking/perforated tiles or other suitable measures to ensure groundwater infiltration/harvesting.
- iii. In case of Infrastructure projects, the firm/entity shall ensure implementation of dual water supply system in the projects. Compliance of the same shall be submitted through the web portal.
- iv. Non-compliance of conditions mentioned in the No Objection Certificate may be taken as sufficient reason for cancellation of no objection certificate accorded/ non-renewal of No Objection Certificate.
- v. No application shall be entertained without supporting documents as specified in relevant sections.
- vi. Abstraction structure(s) should be located inside the premises of project property.
- vii. Self compliance of conditions laid down in the no objection certificate shall be reported by the users online in the web portal of Central Ground Water Authority/state Ground Water Authority.
- viii. Processing fee prescribed, if any, from time to time shall be charged for various services.

**Note:**

1. Guidelines are subject to modification from time to time.
2. In case of any discrepancy between Hindi and English versions of this document including the annexures, the English version shall prevail.

**Annexure I****Estimation of Water Requirements for drinking and domestic use****(Source: National Building Code 2016, BIS)**

## a) Residential Buildings:

Accommodations	Population
1 Bedroom dwelling unit	4
2 Bedroom dwelling unit	5
3 Bedroom dwelling unit	6
4 Bedroom dwelling unit and above	7

**Notes:**

- 1) The above figures consider a domestic household including support personnel, wherever applicable.
- 2) For plotted development, the population may be arrived at after due consideration of the expected number and type of domestic household units.
- 3) Dwelling unit under EWS category shall have population requirement of 4 and studio apartment shall have population requirement of 2.

As a general rule the following rates per capita per day may be considered for domestic and non-domestic needs:

## a) For communities with populations up to 20,000:

1)	Water supply through stand post:	40 lphd (Min)
2)	Water supply through house service connection	70 to 100 lphd

- b) For communities with: 100 to 135 lphd  
population 20,000 to 100,00 together with  
full flushing system
- c) For communities with population: 150 to 200 lphd  
above 100,000 together with  
full flushing system

**Note**—The value of water supply given as 150 to 200 litre per head per day may be reduced to 135 litre per head per day for houses for Medium Income Group (MIG) and Low Income Groups (LIG) and Economically Weaker Section of Society (EWS), depending upon prevailing conditions and availability of water.

Out of the 150 to 200 litre per head per day, 45 litre per head per day may be taken for flushing requirements and the remaining quantity for other domestic purposes.

**A. Water Requirements for Buildings Other than Residences**

Sl No.	Type of Building	Domestic litres per head/ day	Flushing Litres per head/ day	Total Consumption Litres per head/ day
1.	Factories including canteen where bath rooms are required to be provided	30	15	45
2.	Factories including canteen where no bath rooms are required to be provided	20	10	30
3.	Hospital (excluding laundry and kitchen):			
	a) Number of beds not exceeding 100	230	110	340
	b) Number of beds exceeding 100	300	150	450
	c) Out Patient Department (OPD)	10	5	15
4.	Nurses' homes and medical quarters	90	45	135
5.	Hostels	90	45	135
6.	Hotels (up to 3 star) excluding laundry, kitchen, staff and water bodies	120	60	180
7.	Hotels (4 star and above) excluding laundry, kitchen, staff and water bodies	260	60	320
8.	Offices (including canteen)	25	20	45
9.	Restaurants and food court including water requirement for kitchen:			
	a) Restaurants	55 per seat	15 per seat	70 per seat
	b) Food Court	25 per seat	10 per seat	35 per seat
10.	Clubhouse	25	20	45
11.	Stadiums	4	6	10

		5 per seat	10 per seat	15 per seat
12.	Cinemas, concert halls and theatres and multiplex			
13.	Schools/Educational institutions:			
	a) Without boarding facilities	25	20	45
	b) With boarding facilities	90	45	135
14.	Shopping and retail (mall)			
	a) Staff	25	20	45
	b) Visitors	5	10	15
15.	Traffic Terminal stations			
	a) Airports	40	30	70
	b) Railway stations (Junction) with bathing facility	40	30	70
	c) Railway stations (Junction) without bathing facility	30	15	45
	d) Railway stations (Intermediate) with bathing facility	25	20	45
	e) Railway stations (Intermediate) without bathing facility	15	10	25
	f) Interstate bus terminals	25	20	45
	g) Intrastate Bus Terminals/Metro Stations	10	5	15

**Notes:**

1. For calculating water demand for visitors, consumption of 15 litre per head per day may be taken.
2. The water demand includes requirement of patients, attendants, visitors and staff. Additional water demand for kitchen, laundry and clinical water shall be computed as per actual requirements.
3. The number of persons shall be determined by average number of passengers handled by stations, with due considerations given to the staff and vendors who are using these facilities.
4. Consideration should be given for seasonal average peak requirements.
5. The hospitals may be categorized as Category A (25 to 50 beds), Category B(51 to 100 beds), Category C (101 to 300 beds), Category D (301 to 500) and Category E (501 to 750 beds).

**Annexure II****Guidelines for construction of Piezometers and monitoring of Ground Water Levels and Quality**

Piezometer is a borewell/tubewell used only for measuring the water level by lowering a tape/sounder or automatic / digital water level measuring equipment. It is also used to take water sample for water quality testing whenever needed. General guidelines for installation of piezometers are as follows:

- The piezometer is to be installed/constructed at the minimum distance of 50 m from the pumping well through which ground water is being withdrawn. The diameter of the piezometer should be about four inches to six inches.
- The depth of the piezometer should be the same as that of the pumping well from which ground water is being abstracted. If, more than one pumping wells are constructed tapping aquifers at different depths, more than one piezometers shall be required to be constructed tapping different aquifers as in the pumping wells.

- The measurement of water level in piezometer should be taken, only after the pumping from the surrounding tubewells has been stopped for about four to six hours.
- The ground water quality has to be monitored once in a year during pre-monsoon (April/ May) period by industries and mines drawing ground water. Samples of ground water should be analyzed from NABL accredited laboratory.
- A permanent display board should be installed at Piezometer/ Tubewell site for providing the location, piezometer/ tubewell number, depth and zone tapped of piezometer/tubewell for standard referencing and identification.
- Any other site specific requirement regarding safety and access for measurement may be taken care off.

### Annexure III

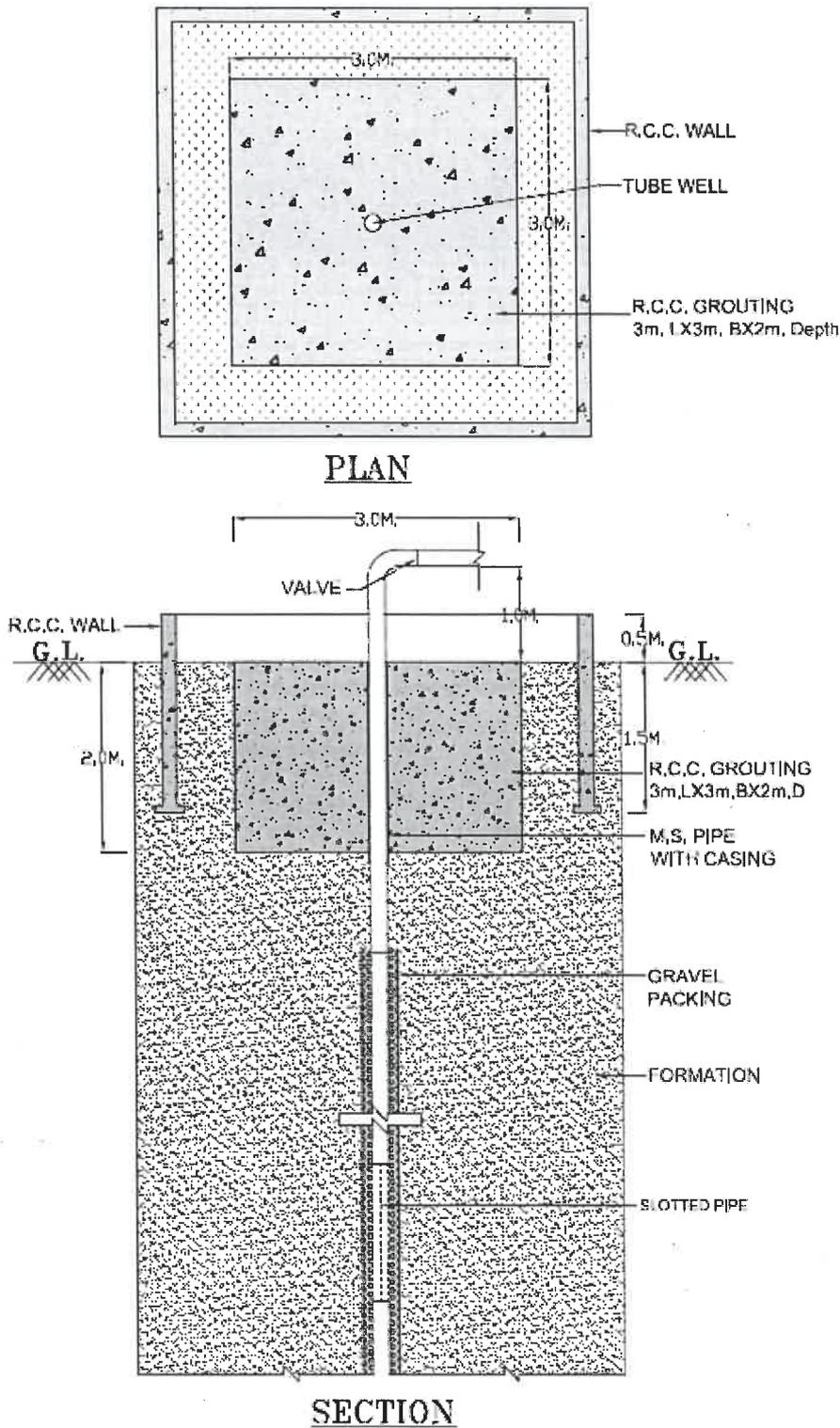
#### **Measures to be adopted to ensure prevention from pollution in the plant premises of polluting industries/ projects**

It has been observed that ground water in and around polluting industries like Tannery, Slaughter Houses, Dye, Chemical, Coalwashery, other hazardous units, etc., is polluted. In order to prevent further deterioration of ground water quality, it is essential to take all necessary measures for well head protection. All industries/ projects falling under this category are hereby directed to follow the under mentioned procedure both for existing and new category.

1. No tube well/ bore well / dug well should be constructed in the vicinity of the processing unit. Tube well/ bore well should be constructed at the place which is hygienically maintained.
2. Only Mild Steel pipe should be used for assembly/ casing and PVC (Poly Vinyl Chloride) or similar pipes should not be used. The tube well/ bore well having PVC or similar pipes should be abandoned and filled back.
3. Around the tube well/ bore well, RCC (Reinforced Concrete Cement) grouting of 3 meters (length) x 3 meters (width) x 2 meters (depth) must be provided. The pipe of the tube well/ bore well must be raised 1 meter above ground level (1 magl). The tube well/ bore well must be surrounded by RCC wall of 0.5 meter height and 1.5 meter depth to prevent any surface contamination to enter the constructed tube well/ bore well. Plan/Sectional diagram is enclosed for reference (Appendix 1 and 2).
3. The tube well/ bore well must be fitted with NRV (Non Return Valve) in order to ensure that the constructed tube well/ bore well is exclusively used for abstraction of ground water only.
4. At no point of time there should be any injection of any water or fluid into the constructed tube well/ bore well/ Piezometer.
5. The industries/ projects under this category should not implement any recharge measures within the plant premises.
6. Any tube well/ bore well located/ constructed in the vicinity of STP (Sewage Treatment Plant) or ETP (Effluent Treatment Plant) should be abandoned and filled back.
7. The piezometer to be constructed for monitoring purpose should follow the same procedure as that for tube well/ bore well for such industries/ projects.

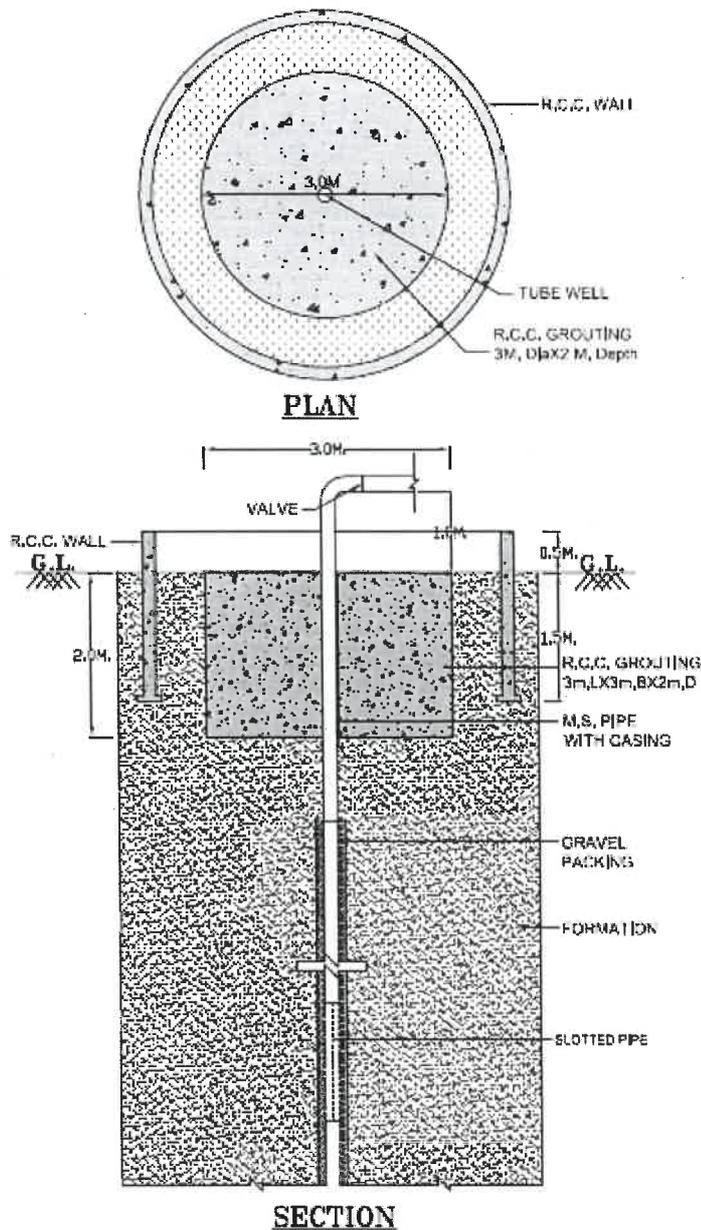
Appendix 1

Plan/ Sectional diagram showing well head protection



## Appendix 2

Plan/ Sectional diagram showing well head protection



## Annexure-IV

**Outline of hydro-geological Report for obtaining No Objection Certificate for industries**

1. Brief about the proposed project giving location details, coordinates, google/ toposheet maps, etc. demarcating the project area.
2. Ground water situation in and around the project area including water level and quality data and maps along with quality issues, if any. In case of mines, ground water conditions in both core and buffer zone should be described.
3. Details of the tubewells/ borewells proposed to be constructed. This includes the drilling depth, diameter, tentative lithological log, details of pump to be lowered, H.P. of pump, tentative discharge of tubewells/ borewells, etc. Locations to be marked on the site plan/ map. Location of proposed piezometers.

4. Details of Geophysical studies carried out in and around the project area. Ground water resources computation of the block in which the project falls.
5. Approved Mine plan in case of mines and detailed dewatering plan in case of mine/ infrastructure dewatering projects.
6. Proposed usage of pumped water in case of mining/ infrastructure dewatering projects.
7. Comprehensive assessment of the impact on the ground water regime in and around the project area highlighting the risks and proposed management strategies proposed to overcome any significant environmental issues.
8. Proposed measures for disposal of waste water by industries drawing saline water.
9. Measures to be adopted for water conservation which include recycling, reuse, treatment, etc. This includes the water balance chart being adopted by the firm along with details of water conservation methods to be adopted.
  - Brief write up along with capacity and flow chart of Sewage Treatment Plants / Effluent Treatment Plants / Combined Effluent Treatment Plants existing/ proposed within the project.
  - Details of water conservation measures to be adopted to reduce/ save the ground water.
  - Total water balance chart showing the usage of water for various processes.
10. Any other details pertaining to the project.

## Annexure V

### **Format of the Report on ground water conditions (for mining projects)**

Introduction

Project description

Background

Objectives and scope

Regional setting

Location

Landuse

Climate

Topography and drainage

Geology –Regional and Local

General Hydrogeology (aquifer types, aquifer depth, zone tapped etc.)

Groundwater condition (In core and buffer zones)

Spatial and temporal variations in water levels Groundwater quality (Shallow and deep aquifer)

Impact of groundwater extraction on local groundwater

Hydrograph of water level/piezometer in monitoring wells

Trend analysis of historical water levels Flow net analysis (groundwater flow direction)

Year wise/ bench wise mine dewatering computation as per approved mine plan

Conclusions

## Annexure VI

**Indicative list of Infrastructure projects**

Residential townships including commercial buildings
Office building
School
College
University
Special Economic Zone
Metro Station
Railway Station
Bus Depot
Airport
Seaport
Highway infrastructure
Fire station
Warehouse
Business Plaza
Malls & Multiplex
Hospitals
Nursing Homes
Resort
Hotel/ Restaurant/ Food Plaza
Holiday home/Guest house/ Hostels
Banquet Hall/ Marriage Gardens
IT Complex
Logistics & Cargo
Clubs
Trade Centre

## Annexure -VII

**Supreme Court Order in Civil Writ petition 36 of 2009 regarding measures for prevention of fatal accidents of small children due to their falling into abandoned bore wells and tube wells**

In Re: Measures for prevention of fatal accidents of small children due to their falling into abandoned bore wells and tube wells

Union of India and Ors.

Respondents(s)

**ORDER**

With this Court issuing requisite guidelines vide order dated 11th February, 2010, subject to slight modifications, nothing survives in the present writ petition.

That modification is as follows:

- (i) The owner of the land/ premises, before taking any steps for constructing bore well/ tube well must inform in writing to the concerned authorities in the area, i.e., District Collector/ District Magistrate/ Sarpanch of the Gram Panchayat/ any other Statutory Authority/ concerned officers of the Department of Ground Water/ Public Health/ Municipal Corporation, as the case may be, about the construction of bore well/ tube well.
- (ii) Registration of all the drilling agencies, namely, Government/ Semi Government, Private etc. should be mandatory with the district administration/ Statutory Authority wherever applicable.
- (iii) Erection of signboard at the time of construction near the well with the following details:-
  - (a) Complete address of the drilling agency at the time of construction/ rehabilitation of well.
  - (b) Complete address of the user agency/owner of the well.
- (iv) Erection of barbed wire fencing or any other suitable barrier around the well during construction.
- (v) Construction of cement/ concrete platform measuring 0.50x0.50x0.60 meter (0.30 meter above ground level and 0.30 meter below ground level) around the well casing.
- (vi) Capping of well assembly by welding steel plate or by providing a strong cap to be fixed to the casing pipe with bolts & nuts.
- (vii) In case of pump repair, the tube well should not be left uncovered.
- (viii) Filling of mud pits and channels after completion of works.
- (ix) Filling up abandoned bore wells by clay/sand/boulders/pebbles/drill cuttings etc. from bottom to ground level.
- (x) On completion of the drilling operations at a particular location, the ground conditions are to be restored as before the start of drilling.
- (xi) District Collector should be empowered to verify that the above guidelines are being followed and proper monitoring check about the status of bore holes/ tube wells are being taken care through the concerned state/ Central Government agencies.
- (xii) District/ Block/ Village wise status of bore wells/tube wells drilled viz. No. of wells in use, No. of abandoned bore wells/ tube wells found open, No. of abandoned bore wells/ tube wells properly filled up to ground level and balance number of abandoned bore wells/ tube wells to be filled up to ground level is to be maintained at District Level.  
 In rural areas, the monitoring of the above is to be done through Village Sarpanch and the Executive from the Agriculture Department.  
 In case of urban areas, the monitoring of the above is to be done through Junior Engineer and the Executive from the concerned Department of Ground Water/Public Health/ Municipal Corporation etc.
- (xiii) If a bore well/ tube well is 'Abandoned' at any stage, a certificate from the concerned department of Ground Water/ Public Health/ Municipal Corporation/ Private Contractor etc. must be obtained by the aforesaid agencies that the 'Abandoned' bore well/tube well is properly filled upto the ground level. Random inspection of the abandoned wells is also to be done by the Executive of the concerned agency/ department. Information on all such data on the above are to be maintained in the District Collector/ Block Development Office of the State.

We are informed that the last paragraph of the earlier order dated 11th February, 2010, concerning publicity has been duly complied with.

Subject to the above, the writ petition is disposed of.

.....CJI.  
[S.H. KAPADIA]

.....J.  
[K.S. RADHAKRISHNANA]

.....J.  
[SWATANTER KUMAR]

New Delhi,  
August 6, 2010

### ANNEXURE VIII

List of States/Union territories where ground water extraction is being regulated by Central Ground Water Authority

1. Andaman and Nicobar Islands
2. Assam
3. Arunachal Pradesh
4. Bihar
5. Chhattisgarh
6. Dadra and Nagar Haveli and Daman and Diu
7. Gujarat
8. Haryana
9. Jharkhand
10. Madhya Pradesh
11. Maharashtra
12. Manipur
13. Meghalaya
14. Mizoram
15. Nagaland
16. Odisha
17. Punjab
18. Rajasthan
19. Sikkim
20. Tripura
21. Uttar Pradesh
22. Uttarakhand
23. Andhra Pradesh (only mining projects)
24. Telangana (only mining projects)

**Glossary of technical terms used**

1. **Safe area:** Area categorized as SAFE from the ground water resources point of view, based on the latest ground water resources assessment carried out jointly by CGWB and State ground water organizations. Details available on the websites of NOCAP and CGWB.
2. **Semi-critical area:** Area categorized as SEMI-CRITICAL from the ground water resources point of view, based on the latest ground water resources assessment carried out jointly by CGWB and State ground water organizations. Details available on the websites of NOCAP and CGWB.
3. **Critical area:** Area categorized as CRITICAL from the ground water resources point of view, based on the latest ground water resources assessment carried out jointly by CGWB and State ground water organisations. Details available on the websites of NOCAP and CGWB.
4. **Over-exploited area:** Area categorized as OVER-EXPLOITED from the ground water resources point of view, based on the latest ground water resources assessment carried out jointly by CGWB and State ground water organisations. Details available on the websites of NOCAP and CGWB.
5. **Aquifer:** Geological formation capable of storing and transmitting ground water.
6. **Deeper Aquifer:** In areas having multiple aquifer system, the aquifer(s) occurring below the uppermost aquifer.
7. **Well:** Any structure used for the extraction of groundwater, including open wells, dug wells, bore wells, dug-cum-bore wells, tube wells, filter points, collector wells, infiltration galleries, recharge wells, or any of their combinations or variations.
8. **Government Agency:** May be Central or State Government body.
9. **Supplier:** Government/ Government approved Water Supply Agency.
10. **Mine:** Area where mining activity is taking place, or area abandoned after mining.
11. **Illegal Ground Water abstraction Structure:** Any energized abstraction structure viz. dugwell, tubewell, borewell which is being used to withdraw ground water without valid No Objection Certificate from Central Ground Water Authority.
12. **Rainwater Harvesting:** The technique or system of collection and storage of rainwater, at micro watershed scale, including roof-top harvesting, for future use or for recharge of groundwater.
13. **Mining Project:** Project which involves mining activity either open cast or underground or both.
14. **Ground Water Draft:** Quantum of ground water withdrawal.
15. **Saline Water:** Water having salinity in excess of 2500  $\mu$ siemens/cm at 25<sup>o</sup>C.
16. **Water Table Intersection:** Intersection of the water table on excavation of the overlying material due to mining or other activities.
17. **Drinking and domestic use:** Besides drinking & domestic use of households, this category will cover drinking requirement of industries not requiring water for industrial process; drinking, washing, cleaning use etc. in case of hospitals, hotels, malls & multiplexes, institutions, offices, banquet halls, fire stations, metro stations, railway stations, airports, sea ports, stadia etc.
18. **Recycle/Reuse:** Using treated waste water for various purposes/ putting water to multiple uses.
19. **Government Department:** Either Central Government or State Government.
20. **Municipality:** Municipality, a Municipal Corporation or similar body of local urban governance by any other name.
21. **Groundwater:** Water, which exists below the surface in the zone of saturation and can be extracted through wells or any other means or emerges as springs and base flows in streams and rivers;
22. **Bgl :** Below Ground Level.
23. **BCM :** Billion cubic metres.

24. **Groundwater Abstraction structure:** Structure used to withdraw groundwater like bore well / tube well / dug well/dug cum bore well/tunnel well.
25. **Observation well or Piezometer:** A bore well/tube well used only for measuring the water level/piezometric head and to take water sample periodically but not used for groundwater abstraction.
26. **Water Audit:** A method of quantifying water use in simple or complex systems, with a view to reducing water usage and often saving money on otherwise unnecessary water use.
27. **Ground water pollution:** If concentration of any parameter in ground water exceeds the maximum permissible limit for drinking water prescribed by the Bureau of Indian Standards.
28. **Cooperative Group Housing Societies/ Builder flats:** A Housing Society is a society formed by house owners within a residential complex. The housing society formed must be formally registered with registrar of co-operatives.
29. **KLD – Kilo Litre per day**
30. **EC<sub>GW</sub>** - Environmental compensation for drawing illegal ground water.
31. **EC<sub>GWR</sub>** - Environmental compensation rates for drawing illegal ground water.

## ANNEXURE X

### Annual water audits by the industries (Source – CII)

Water audit is a systematic process of objectively obtaining a water balance by measuring flow of water from the site of water withdrawal or treatment, through the distribution system, and into areas where it is used and finally discharged. Conducting a water audit involves calculating water balance, water use and identifying ways for saving water.

Water audit involves preliminary water survey and detailed water audit. Preliminary water survey is conducted to collect background information regarding plant activities, water consumption and water discharge pattern and water billing, rates and water cess. After the analysis of the secondary data collected from the industry, detailed water audit is conducted, which involves the following steps:

- On site training and discussion with facility manager and personnel
- Water system analysis
- Quantification of baseline water map
- Monitoring and measurements using pressure and flow meters and various other devices
- Quantification of inefficiencies and leaks
- Quantification of water quality loads and discharges
- Quantification of variability in flows and quality parameters
- Strategies for water treatment and reuse or direct use

A detailed water balance is finally developed. Water quality requirement at various user areas is mapped, which helps in developing 'recycle' and 'reuse' opportunities.

The detailed water audit report contains the following:

- Water consumption and wastewater generation pattern
- Specific water use and conservation
- Complete water balance of the facility
- Water saving opportunities
- Method of implementing the proposals
- Full description and figures
- Investment required

Industries can undertake following measures for water conservation:

- Setting up of norms for water budgeting
- Modernization of industrial process to reduce water consumption
- Recycling water with a re-circulating cooling system
- Ozonation cooling water approach which can result in five fold reduction in blow down when compared to traditional chemical treatment
- Reduction in reuse of de-ionized water by eliminating some plenum flushes, converting from a continuous flow to an intermittent flow system and improving control on the use
- Use of waste water for gardening
- Proper processing of effluents to adhere to the norms of disposal.