

***CGWA HAS FORMULATED DRAFT POLICY GUIDELINES FOR CLEARANCE OF GROUND WATER ABSTRACTION FOR VARIOUS INDUSTRIAL/INFRASTRUCTURE USES. SUGGESTIONS/COMMENTS ARE INVITED ON THE DRAFT GUIDELINES.***

**DRAFT POLICY GUIDELINES FOR CLEARANCE OF GROUND WATER ABSTRACTION FOR VARIOUS INDUSTRIAL/INFRASTRUCTURE USES  
(NON NOTIFIED AREA)**

**INTRODCUTION**

The development of ground water in different areas of the country has not been uniform. Highly intensive development of ground water in certain areas for irrigation and industrial uses in the country has resulted in over-exploitation leading to secular decline in ground water levels in wells and tubewells and under certain situations, deterioration in quality of ground water. As a consequence, there has been i) increase in pumping depths, drastic reduction in well/tubewell yields and enormous rise in the cost of pumping ground water ii) widespread and acute scarcity of ground water in summer months for irrigation and drinking uses, and iii) increase in salinity ingress in coastal areas. For providing sustainability to ground water withdrawal structures in such areas and keeping in view the increasing thrust on development of ground water resources for meeting the growing demands of water in various sectors there is an urgent need to manage and augment the depleting ground water resources.

Water requirement for industries in India, is quite small as compared to the quantity of water needed in agriculture. However, when industrial demand is concentrated in specific locations, heavy point loads are created on available water resources. Industries require water for processing, cooling, boiler feed and other miscellaneous uses including domestic requirements. Mostly the industrial uses of water are non-consumptive, thus making reuse through recycling and other conservation measures possible. The amount of water consumed for any product, therefore, varies widely depending upon the process used, plant efficiency, technology employed, the degree to which water is re-circulated and other factors.

Unless treated, industrial waste would contain different kinds of toxic pollutants. Treatment of industrial waste water and recycling are essential to conserve water resources.

The prime objective of formulation of these guidelines for the withdrawal of ground water especially by the industries and infrastructure units is to focus on a specific part of ground water management viz. ensuring sustainability of ground water both in terms of quantity & quality and to focus on land based management of ground water resource. Looking into the variations of availability of water in different climatological

regions and diverse hydrogeological conditions in various states, the criteria's for the development and management including the prospects for the management of ground water in various regions are also varying and required to be addressed as area specific. The criteria to be considered for guidelines to be followed for abstraction of ground water for industrial use are as :

**i) Purpose of ground water use**

- Industries
- Infrastructure
- Mining
- Recreation
- Drinking & Domestic
- Any other use

**ii) Examining the area of ground water against its availability**

- Water requirement
- Availability of aquifer
  - a) Shallow aquifer (Hard rock, alluvial, coastal, hilly etc.)
  - b) Deeper aquifer (Hard rock, alluvial, coastal, hilly etc.)
- Status (stage wise) of ground water development of the area as defined by CGWB 2004.
  - a) Over- Exploited
  - b) Critical
  - c) Semi Critical
  - d) Safe

**iii) Availability of shallow aquifer**

- Estimation of ground water availability
- Existing and projected ground water withdrawals

**iv) Availability of deeper aquifer**

- Occurrence and distribution scenario of regional aquifer system
  - a) saturated thickness
  - b) water level trends
  - c) water level fluctuations
- Ground water resource and potential estimation- Micro watershed
- Status of shallow aquifer and recharge potential
- Impact and sustainability of shallow aquifer system due to withdrawal from deeper aquifer
- Connectivity with shallow aquifer

**v) Criteria of Recycle and reuse of effluents**

- Quantity of effluent generated
- Quality of effluent generated
- Existing treatment technologies and/or proposed to be adopted
- Whether the effluents quality confirms to the standards norms of CPCB/SPCB/PPC (s)
- Flow chart indicating optimal utilization of treated water
- Whether utilization of treated water to as per the laid norms of PCB/SPCB/PCC(s)/MoEF

**vi) Adoption of water conservation measures**

- Indicate the technologies used for ensuring water conservation
- Water audits for ensuring minimal use of water in various sectors
  - a) In terms of quantity
  - b) Quality
  - c) Recycle/Reuse and the purpose

**vii) Installation of water metering**

- Whether water metering of existing/or proposed to be installed
- Whether furnishing the return and if yes, then name of reporting agency?

**viii) Examining the scope of work of Rain water harvesting and ground water recharging potential**

- The quantum of harvested rain water and recharge to ground water, neutralizing/improving the effects of ground water abstractions.
- Whether rain water harvesting structure exist
- Proposed rain water harvesting structure
- Creation of water bodies in the premises
- Adoption of water bodies in the micro watershed with Panchayati Raj Institution/Local Govt. bodies.

**xi) Land use**

- The details land use pattern
- Type of land type conversation for industrial project
  - i. Waste land
  - ii. Govt. identified industrial parks
  - iii. Agriculture land
  - iv. Saline water belt

**x) Ground water draft**

The ground water draft details prior to establishing industrial unit :

- a) Details/number of existing ground water abstraction structures for various use.
  - i) Irrigation
  - ii) Drinking/domestic
  - iii) Industrial
  - iv) Other than i, ii, iii
  - v) Fitted with electric/diesel pumps
  - vi) Traditional methods, if any

**xi) Saline ground water aquifers**

- Saturated thickness of fresh water zones above saline water zones
- Saturated thickness of fresh water zones below saline water zones
- Saturated thickness of fresh water zones between saline water zones

Abstraction of fresh ground water may not be permitted to prevent

- Upconing of saline water into fresh water zone
- Lateral ingress of saline water
- Depletion/shrinkage of fresh water zones

**xii) Mining Areas**

- Open cast mining/excavation not intersecting ground water table
  - i) affecting natural surface water regime
  - ii) affecting ground water recharge regime
- Open cast mining/excavation intersecting ground water table
  - i) Pumping of ground water
  - ii) Declining of water table
  - iii) Affecting natural surface water regime
  - iv) Affecting ground water recharge regime
  - v) Affecting natural springs
- Underground mining
  - i) Affecting ground water recharge regime
    - Shallow aquifers
    - Deep aquifers
    - Affecting ground water flow direction
    - Affecting ground water recharge
    - Ground water resource/potentials-drying of upper aquifers

**Guidelines for processing cases for ground water clearance by the industries in semi critical, critical, over-exploited areas**

With a view to neutralize any adverse effect on the ground water regime due to heavy withdrawal by the industries in the semi critical, critical and over-exploited areas and since within the over-exploited category the level of development varies widely from 100% to over 300%, the following criteria are to be followed :-

**Evaluation of proposals to abstract ground water for industries**

Category	Stage of Development (%)	Recycle/Reuse	Other Waste Conservation Practices	Withdrawal permitted (%age of proposed recharge)
Safe	< 70	Mandatory recycle and reuse of water to be given	Water audit measures to be adopted	To be brought under the purview if quantity of abstraction exceeds 1000 m <sup>3</sup> /day in hard rock areas and 2000 m <sup>3</sup> /day in alluvial areas. RWH to be adopted
Semi-critical	70-100	Efficient utilization of recycle and reuse of water should be mandatory	Water audit measures to be adopted	Withdrawal may be permitted subject to undertaking of recharge measures. Since, the area is less stressed at least 50% recharge compared to withdrawal quantity may be made mandatory.
Critical	90-100	Efficient utilization of recycle and reuse of water should be mandatory	Water audit measures to be adopted	Withdrawal may be permitted subject to undertaking of recharge measures. The quantum of recharge should be equal to more than the proposed withdrawal.
Over-exploited	100- 200	Efficient utilization of recycle and reuse of water should be mandatory	Water audit measures to be adopted	Withdrawal may be permitted upto 90% of proposed recharge. Also withdrawal should not exceed a maximum limit of 2500 m <sup>3</sup> /day for each unit.
	200 – 300			Withdrawal may be permitted upto 80% of proposed recharge. Also withdrawal should not exceed a maximum limit of 2000 m <sup>3</sup> /day for each unit.

	> 300			Withdrawal may be permitted upto 60% of proposed recharge. Also withdrawal should not exceed a maximum limit of 1500 m <sup>3</sup> /day for each unit.
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However, in Over-exploited and Critical areas having deeper aquifers, withdrawal may be permitted irrespective of the stage of development subject to following :

- 1) Withdrawal of water from deeper aquifers only.
- 2) Implementing recharge measures to recharge shallow aquifers to the extent possible i.e. utilizing the entire surface runoff within the lease/industry area and
- 3) Recommendation of concerned Regional Directorate on feasibility of exploitation of deeper aquifers.

#### **Adoption of Rain Water Harvesting and Artificial Recharge by Existing Industries :**

To improve the ground water scenario of the area, the following measures were decided:

- All industries, including existing and new, which are drawing ground water shall undertake artificial recharge measures.
- The enforcement of this policy to undertake artificial recharge by existing industries should be vested with the respective State Pollution Control Boards.
- The State Pollution Control Boards should also have a mechanism to get the artificial recharge proposals vetted by any competent authority.
- Recycled and /or Treated water shall not be used for recharge to ground water.

#### **Fixing of lower limit for quantity of ground water withdrawal by Industries**

In many cases the quantity of ground water required by industries is very nominal which can be exempted from the purview of obtaining NOC. Any agency/firm desirous of extracting ground water below the specified limit should be exempted from obtaining NOC from CGWA.

For over-exploited areas – 25 m<sup>3</sup>/day  
 For Critical areas- 50 m<sup>3</sup>/day  
 For Semi Critical area - 100 m<sup>3</sup>/day

- However this shall not be applicable to industries which are using water as raw material like packaged drinking water industries, distilleries and breweries.
- There should be a monitoring mechanism, to check the actual withdrawal by the industry.
- The responsibility of verifying the actual requirement and withdrawal is to be vested with the State Pollution Control Boards.

- It should be mandatory for such industries to undertake Rain Water Harvesting to the extent possible within their premises and enforcement of the same to be vested with the State Pollution Control Boards. Alternately, the State Pollution Control Boards can issue the necessary NOC to the industries instead of referring them to CGWA and monitor the withdrawal.

#### **For Industries falling in Safe Category Areas**

These industries are not presently under purview of regulation by CGWA. However, In order to maintain the areas sustainability under the safe category, it is decided to regulate the ground water abstraction exceeding 1000 m<sup>3</sup>/day for hard rock area and 2000 m<sup>3</sup>/day for alluvial area and be brought under the purview of regulation and cases be processed at par with the non safe areas.

#### **Water table intersection by mining and dewatering of mine pit water**

Intersection of water table by the mining industries may be considered subject to :

- The mine water is put to gainful use. This may include water supply to adjacent area, utilization for dust suppression by the industry, utilization by the mining industry for its different processes, supplying to local water supply agency, utilization for artificial recharge etc.
- Piezometers for monitoring the ground water level are to be mandatorily installed within the mine areas and also peripheral area and to record of water level data be maintained.

#### **Abstraction of saline ground water by Industries**

Industry and infrastructure units may be encouraged to abstract saline ground water in the areas having inland/coastal salinity. Due care need to be taken in respect of disposal of the effluents by the units so as to protect the water bodies and the sub surface shallow aquifers from pollution. Proposals pertaining to such cases must have detailed report elucidating the mechanism of handing the saline water and its various uses. All precautions must be taken for protection of environment. Large scale recharge mechanism is mandatory in such cases to improve the ground water quality in the region.

#### **Guidelines for processing Infrastructure projects seeking ground water clearance from non notified areas**

- Since the water is required primarily for domestic and drinking, NOC should not be denied.
- NOC should be granted with the condition that the entire area run –off should be utilized for artificial recharge.
- For Infrastructure projects, the quantum of water for usage other than drinking/domestic does not exceed 25 % of the total requirement.
- The concerned State Government while sanctioning any infrastructure project should look into the water availability aspect also.

- Proponents should submit a status report on water supply available from water supplying agencies stating the quantum of water that would be provided by the agency.

### **Sale/Purchase of ground water for fulfilling its requirement from other sources**

Sale/Purchase of ground water for fulfilling its requirement from other sources should be discouraged as matter of policy. However, in area where ground water sources are not available within the industrial area or water supply agencies are unable to supply water and procuring water from outside sources becomes inevitable. The following is decided :

- In case the farmer/individuals selling ground water from his well is located in Safe Category area, it may be allowed.
- In case the farmer/individuals selling ground water from his well is located in Non Safe Category areas, the industry should take up artificial recharge measures to compensate the withdrawal from the area.
- Efficient/ improved ground water management practices/change of land use by growing less water demanding crops be followed.

### **Procedure to be followed for evaluation of industry/infrastructure projects proposals seeking ground water clearance from CGWA :**

- To constitute a district level committee for receiving and evaluating the project proposals, comprising of the following :

i) District Collector	Chairman
ii) Representative form SGWD	Member
iii) Representative from Industry	Member
iv) Hydrogeologist CGWB of concerned district	Member Secretary

The committee shall meet at least twice in a month depending on the number of proposals received for examination and forward the same to CGWA through Regional Director after reviewing.

- NOC should be issued only once and renewal system to be discontinued. However, therefore should be random site inspection of selected industries by CGWA alongwith the state authority and in such the industry/project is found to be a defaulter in adhering to the laid down terms and conditions, the NOC should be cancelled.
- It is proposed to levy a charge for processing cases from individuals and industries/infrastructure. The rates may be Rs 100/ for drinking/domestic and Rs. 500/ for industries/infrastructure projects.